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U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office

September 1, 1970 Volume 878 Number 1

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of July 1970

Examiner affirmed	138
Examiner affirmed in part	17
Examiner reversed	29
Total	184

Certificates of Correction for the Week of Sept. 1, 1970

D. 209,758
D. 217,029
Re. 26,865
3,192,793
3,309,050
3,347,509
3,373,033
3,387,293
3,391,668
3,392,455
3,395,282
3,401,375
3,413,845
3,414,510
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3,423,986
3,424,070
3,434,862
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3,511,967
3,512,277
3,512,844
3,512,971
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3,513,706
3,513,898
3,513,958
3,513,979
3,514,990
3,515,178
3,515,617
3,515,662

Disclaimers

3,276,517.—*Leonard F. Lowe,* East Stroudsburg, Pa. WATER HEATER. Patent dated Oct. 4, 1966. Disclaimer filed May 22, 1970, by the assignee, *The Patterson-Kelley Co., Inc.*

Hereby enters this disclaimer to claim 12 of said patent.

3,344,838.—*Henry Nouveou,* Saint Germain les Corbeil, France. METHOD FOR PRODUCING AN EXOTHERMIC LINING FOR INGOT AND FOUNDRY MOLDS AND HOT TOPS. Patent dated Oct. 3, 1967. Disclaimer filed July 15, 1970, by the assignee, *Societe Anonyme Produits Metallurgie Doittau S.A.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Oct. 3, 1984.

Reduction in Patent Application Disclosure

Notice of proposed Guidelines for Preparation of Patent Application Disclosure was published in the Federal Register of January 14, 1969 (34 F.R. 524), and in the OFFICIAL GAZETTE of the Patent Office of February 4, 1969 (859 O.G. 1). Comments from the general public were invited.

After consideration of comments received, new guidelines are deemed unnecessary, even though the average length of specification seems to be increasing. Applicants and their attorneys are reminded that 35 U.S.C. 112 requires inventions to be described "in such full, clear, concise, and exact terms as to enable any person skilled in the art * * * to make and use the same * * *." To satisfy the "concise" requirement, lengthy and unnecessary descriptive detail should be avoided.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: July 24, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70-9862; Filed, July 30, 1970; 8:45 a.m.]

35 F.R. 12296, July 31, 1970

Disclosure Document Practice

The notice of March 26, 1969 (862 O.G. 1) establishing the Disclosure Document Program indicated that a document submitted under this program will be destroyed two years after its receipt date unless it is referred to in a related patent application within said two year period.

In order to implement the retention aspect of this program, it is necessary that reference to each Disclosure Document, referred to in a patent application, be made in a separate letter, identifying the Document by its title, number, and date of receipt. Acknowledgment of receipt of this letter will be made in the next official communication from the Patent Office.

RICHARD A. WAHL,
Assistant Commissioner.

Aug. 11, 1970.

New Applications Received During May 1970

Patents	8198
Designs	462
Plant Patents	9
Reissues	38
	8707

Issue—September 1, 1970

Patents	902	No. 3,526,004 to No. 3,526,905, incl.
Designs	40	No. 218,546 to No. 218,585, incl.
Total	942	

Patent Front Page Format

August 4, 1970 marks the inauguration of certain changes and innovations in the form and method of producing printed copies of patents. Nearly 100 patents in this issue were electrophotographically composed for printing as part of a comprehensive system for developing and utilizing a patent full-text library in computer processable form. Numbers of patents produced in this manner are scheduled to increase until *all* patents enter the machineable data base.

Patents produced by this new system are distinguishable in appearance from all others in the following respects:

(a) Front page

The first sheet of each patent presents an arrangement of the applicable bibliographic type of data elements which are itemized and discussed elsewhere; an abstract of the disclosure (or a claim when no abstract is available); and, a reduced reproduction of a representative drawing figure when the patent contains any drawings.

(b) Other changes

With identification of the patent appearing on the front page, the title of the invention and the name of the inventor will no longer be printed in the heading of drawings. The patent number, date of issuance, and sheet-of-sheets information will continue to be printed on the drawings.

All of the bibliographic type of data and the abstract which previously appeared on sheets containing text matter are removed from such pages and consolidated on the front page.

Data elements presented on the front page are accompanied by a number which appears in brackets.

The numbers are data element identifiers which have been adopted internationally for use on patents and published applications to facilitate the worldwide use of such documents as set forth below:

[11] Patent number
[21] Application number
[22] Filing date
[31] Application number (of a Convention priority application)
[32] Filing date (of Convention priority application)
[33] Country in which the Convention priority application was filed
[45] Date of Patent issue: followed by terminal disclaimer, if any
[51] International Patent Classification: basic classification in bold face type; other in light face
[52] U.S. Classification: Original class and subclass in bold face type; cross-references in light face
[54] Title of the invention: Followed by the number of claims and drawing figures
[56] References cited: List of prior art documents cited by the examiner, arranged in the following categories:
    United States Patents
    Foreign Patents or Applications
    Other Publications
[60] Related U.S. Applications:
    [62] Due to Division(s)
    [63] Due to Continuation(s)
    [64] Due to reissue(s)
[72] Name(s) of the Inventor(s)
[73] Assignee(s)
[•] Field of Search: Subclasses recorded on the file wrapper as searched by the examiner
[•] Primary Examiner: The person responsible for review of the patent allowance or who, in addition, examined and allowed the patent application
[•] Assistant Examiner: the person who examined and allowed the patent application, other than a primary examiner
[•] Attorney: the principal attorney of record at the time the allowed application was prepared for patent printing
[•] Abstract

Element numbers have not been assigned to the items denoted by the sign [•]

For earlier information respecting the front page format and date entries, reference is made to the notice published in the OFFICIAL GAZETTE of March 11, 1969 (860 O.G. 336–7).

WILLIAM E. SCHUYLER, JR.,
July 16, 1970. *Commissioner of Patents.*

United States Adopted Names

List No. 26

March 1, 1970 to June 30, 1970

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (USAN) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the United States Pharmacopeia or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Secretary, United States Adopted Names Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

amcinafide: topical anti-inflammatory
artegraft: arterial graft of bovine origin
carmustine: antineoplastic
carperone: tranquilizer
clotrimazole: antifungal
desonide: anti-inflammatory
dextrates: pharmaceutic aid (binding aid and diluent for tablets)
letimide hydrochloride: analgesic
lorbamate: muscle relaxant
methadyl acetate: narcotic analgesic
minoxidil: antihypertensive
mitocarcin: antineoplastic
mycophenolate sodium: oncolytic
mycophenolic acid: oncolytic
naproxen: anti-inflammatory; analgesic; antipyretic
naproxol: anti-inflammatory; analgesic; antipyretic
pivampicillin hydrochloride: antibiotic
polyglycolic acid: surgical suture material
probucol: anticholesteremic
rafoxanide: anthelmintic
terbutaline sulfate: bronchodilator
tilorone hydrochloride: antiviral
tiprenolol hydrochloride: beta sympatholytic
zinc sulfanilate: antibacterial

Registration to Practice

The following list contains the names of all applicants for registration to practice before the United States Patent Office who attained passing grades in the examination of March 31, 1970. Information tending to affect the eligibility of any of said applicants on moral or ethical grounds should be furnished the Commissioner of Patents on or before September 28, 1970.

ROBERT GOTTSCHALK,
Aug. 7, 1970. *Chairman, Committe on Enrollment.*

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Holford, Alden D., Hq. 8th Signal Batt., APO 0911, Bad Kreuznach, West Germany

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PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 11, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	12-09-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-08-68
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	12-03-68
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-13-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-06-68
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-01-69
SECURITY, GROUP 220—S. BOYD, Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	9-23-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-08-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-10-69
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	12-30-68
DESIGNS, GROUP 290—S. BOYD, Director Industrial Arts; Household, Personal and Fine Arts.	10-29-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	5-22-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-09-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-02-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	7-14-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	7-10-69

Total number of pending applications (excluding Designs)	182, 635
Total number of Design applications pending	3, 115

Expiration of patents: The patents within the range of numbers indicated below expire during August 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,647,259 to 2,650,359, inclusive
Plant Patents	Numbers 1,208 to 1,212 inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Carl E. Nelson

No. 8235. Decided February 12, 1970

[57 CCPA —; 420 F.2d 1079; 164 USPQ 458]

1. Patentability—Affidavit Under Rule 131—Diligence—Genus and Species Inventions.

"We are not persuaded that the Board erred in its holding regarding [no showing of] diligence [in Rule 131 affidavits]. We cannot agree with appellant that the generic invention calling for 'a phenothiazine' and the specific invention calling for 'perphenazine' are the same thing or should be treated as the same in this case. It is altogether possible that a claim to the generic invention would have been unpatentable over prior art apart from the Kennedy reference. Accordingly, we must consider the evidence only as it relates to the specific invention claimed."

2. Same—Same—Same.

"The effective date of the Kennedy reference has not been precisely determined, but appellant appears to agree that it is some time in December 1961. Accordingly, reasonable diligence is tested with respect to the period from December 1961 to July 2, 1962, appellant's date of constructive reduction to practice. * * * perphenazine was not named in any document as the particular species of phenothiazine to be used in appellant's composition until February 19, 1962. Neither the affidavits nor the supporting exhibits indicate what was happening with respect to perphenazine during this period from December to February. While constant effort is not required, the record before us does not give any reason whatever to explain the delay, and we will not speculate on possible explanations. The evidence is insufficient to show even a tentative consideration of perphenazine during the two-month period. For these reasons, we cannot say that the Board erred in finding an insufficient showing of reasonable diligence."

Appeal from Patent Office. Serial No. 401,994.

AFFIRMED.

Raymond Underwood (*I. L. Wolk*, *Albert W. Rinehart*, of counsel) for appellant.

Joseph Schimmel (*Fred W. Sherling*, *Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before Rich, *Acting Chief Judge*, Almond, Baldwin, Lane, *Associate Judges*, and Rao, *Chief Judge*, United States Customs Court, sitting by designation

Lane, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals which affirmed the rejection of claims 1, 3, 4 and 5, all the claims in appellant's patent application Serial No. 401,994, filed October 6, 1964, for "Therapeutic Composition and Its Use." Applicant has been permitted to rely upon the date of a parent application Serial No. 207,039, filed July 2, 1962, for a constructive reduction to practice as to the claims in issue.

We affirm the Board's decision.

The Invention

Claim 1 is illustrative of the claims on appeal.

1. A pharmaceutical composition, in unit dosage form for the treatment of mental disorders involving a marked depressive mood, comprising in combination from 10 to 25 mg. of amitryptyline and from 1 to 4 mg. of perphenazine.

The dosages recited are standard and no issue was raised concerning their recitation in the claims.

The Rejection

All the claims were rejected as unpatentable under 35 U.S.C. 103 over a publication of Kennedy and Arnett, "An Effective Drug Combination," Am. Jour. of Psychiatry, vol. 118, No. 6, December 1961 pages 547–548. This article discloses the use of a combination of perphenazine and amitryptyline to treat mental disorders.

Rule 131 Affidavits

Applicant did not deny the pertinence of the reference but sought to overcome it by submitting two affidavits under Rule 131. The critical date being December 1961, the applicant's first affidavit averred that on August 15, 1961, applicant had prepared a paper entitled "Concept of Invention: Beneficial Integration of Amitryptyline and a phenothiazine," which paper was attached to the affidavit. It describes the idea of coadministering amitryptyline (an antidepressant) and "a phenothiazine tranquilizer" to reduce the incidence or the severity of phenothiazine side effects. In attempting to show what was meant by phenothiazine tranquilizer, the affidavit averred applicant's prior familiarity with an article by Dr. Ayd, published in March 1961. The Ayd publication classified ten specific compounds as phenothiazines and described the therapeutic potencies of each of them. One of these ten is perphenazine, which was not mentioned in either the first affidavit or the Concept of Invention document. Also submitted were later documents describing the uses and properties of the claimed composition but having no relevance to the issues before us.

Applicant's second affidavit presented exhibits A to Z and averred that these exhibits from his and his employer's records "show that the combination was constantly being considered from November 1961 to July 1962," the latter date being relied upon for constructive reductive to practice by filing of the parent application for patent. Applicant averred familiarity with all these exhibits "concerned with his Concept; that he never abandoned this Concept during the period of November 1961 to July 1962 and that the invention was diligently pursued by him all that time." Briefly, the exhibits show a steady interest on the part of various officers of applicant's employer and assignee, Merck & Co., Inc., in developing and marketing a composition comprising a phenothiazine and amitryptaline. Perphenazine as the particular species of phenothiazine is not named in any exhibit until one dated February 19, 1962, but was consistently mentioned from that time on. The exhibits indicate that the designation of a particular phenothiazine was predicated partially on medical considerations but predominantly on availability since the phenothiazines were patented to, and produced exclusively by, other companies.

The Board

The Board affirmed the Examiner in holding that the evidence did not show that the *claimed* composition, which specifically recites perphenazine, had been conceived prior to the critical date. The Board further held that even if conception had been proved, there was no showing of due diligence as to the *claimed* invention from a time prior to December 1961, up to the filing of an application the following July.

APPELLANT

Appellant argues that only one invention is involved. He urges that the Concept of Invention shows complete conception of that single invention and that it would have been useless and unnecessary to set out each of the ten phenothiazine species when they were already well known in the art. He also argues that the exhibits show reasonable diligence in reducing "the Concept" to practice.

OPINION

We shall assume, without holding, that appellant has satisfactorily shown conception of the claimed composition prior to the reference date.

[1] We are not persuaded that the Board erred in its holding regarding diligence. We cannot agree with appellant that the generic invention calling for "a phenothiazine" and the specific invention calling for "perphenazine" are the same thing or should be treated as the same in this case. It is altogether possible that a claim to the generic invention would have been unpatentable over prior art apart from the Kennedy reference. Accordingly, we must consider the evidence only as it relates to the specific invention claimed.

[2] The effective date of the Kennedy reference has not been precisely determined, but appellant appears to agree that it is some time in December 1961. Accordingly, reasonable diligence is tested with respect to the period from December 1961 to July 2, 1962, appellant's date of constructive reduction to practice. As mentioned above, perphenazine was not named in any document as the particular species of phenothiazine to be used in appellant's composition until February 19, 1962. Neither the affidavits nor the supporting exhibits indicate what was happening with respect to perphenazine during this period from December to February. While constant effort is not required, the record before us does not give any reason whatever to explain the delay, and we will not speculate on possible explanations. The evidence is insufficient to show even a tentative consideration of perphenazine during the two-month period. For these reasons, we cannot say that the Board erred in finding an insufficient showing of reasonable diligence.

The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,547,648, A. V. Loughren, AUTOMATIC CONTRAST CONTROL SYSTEM FOR TELEVISION APPARATUS, **filed** Nov. 20, 1959, D.C., N.D. Ill. (Chicago), Doc. 59c1847, *Hazeltine Research, Inc.* v. *Zenith Radio Corporation.* Final judgment and decree, Apr. 5, 1965. Two mandates filed July 3, 1969.

2,602,105, Welch and Welch, BATTERY TERMINAL CONNECTION, **filed** Mar. 19, 1970, U.S. Ct. of App., 4th Cir., Doc. 14,468, *Charles H. Welch and James M. Welch* v. *General Motors Corporation.*

2,604,359, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATING APPARATUS, **filed** July 10, 1969, D.C. Kans. (Wichita), Doc. W–4192, *Valmont Industries, Inc., Frank L. Zybach and Albert E. Trowbridge* v. *Gifford-Hill & Company, Inc.* Upon stipulation, dismissed with prejudice, except that this dismissal shall not be deemed to be an acknowledgment by defendant or an adjudication by this Court that the patent in suit is valid or invalid, June 16, 1970.

2,707,985. (See 2,740,740.)

2,740,740, F. C. Binnall, METHOD OF MAKING BAGS; **2,707,985**, same, BAG MAKING MACHINE, **filed** June 10, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1393, *Beatrice Lenore Binnall* v. *Food Machinery Corp.*

2,803,105, Stoddard and Seem, APPARATUS FOR PROCESSING TEXTILE YARNS; **2,803,108**, same, METHODS OF PROCESSING TEXTILE YARNS; **2,803,109**, same, METHOD OF PROCESSING THERMOPLASTIC YARNS, **filed** June 26, 1970, D.C., E.D. Pa. (Philadelphia), Doc. 70–1728, *Sauquoit Fibers Company* v. *Leesona Corporation and Permatwist Co. et al.*

2,803,108. (See 2,803,105.)

2,803,109. (See 2,803,105.)

2,842,772, S. Littman, MANUFACTURE OF GARMENTS OR ARTICLES FROM SHEET MATERIAL, **filed** Feb. 4, 1966, D.C., N.D. Ga. (Atlanta), Doc. 9948, *Nelson Planning, Limited* v. *Oxford Mfg. Co., Inc. et al.* Consent dismissal with prejudice, June 18, 1970.

2,872,023, A. R. Bechtel, Jr., FLAT WIRE CONVEYOR BELT, **filed** June 26, 1970, D.C., N.D. Calif. (San Francisco), Doc. C70–1360, *Alloy Wire Belt Co.* v. *Ashworth Bros. Inc.*

2,928,562, C. R. Gollnick, REFUSE COLLECTING AND TRANSPORTING EQUIPMENT, **filed** Oct. 1, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1675, *Leach Company* v. *General Sani-Can Mfg. Corp.* Final judgment, patent valid and infringed; enjoining defendants from further infringement, May 15, 1970.

2,962,837, J. H. Lemelson, TOY GUN CONTAINING RICOCHET NOISE MECHANISM, **filed** Dec. 9, 1968, D.C., S.D.N.Y., Doc. 68–C–4890, *Jerome H. Lemelson* v. *Ideal Toy Corporation.* Stipulation and order of dismissal with prejudice, June 18, 1970.

2,967,315, Helbig and Warner, HAND-PROPELLED POLISHING MACHINE, **filed** July 20, 1967, D.C., S.D.N.Y., Doc. 67–C–2795, *Polymatic Industries, Inc.* v. *Polo Grounds Car Wash.* Stipulation and order of discontinuance with prejudice, Feb. 2, 1970. **Same, filed** May 12, 1967, D.C., S.D.N.Y., Doc. 67–C–1887, *Polymatic Industries, Inc.* v. *Howard & Schneider Associates.* Order of dismissal with prejudice, Jan. 22, 1970.

2,975,814, G. A. Tinnerman, PLASTIC ANCHORING FASTENER WITH DIVERGING SHANKS, **filed** Jan. 25, 1970, D.C., N.D. Ohio (Cleveland), Doc. C68-62, *George A. Tinnerman* v. *Tinnerman Products, Inc.* Order dismissing complaint and counterclaim, June 24, 1970.

2,994,119, A. R. Gagne, MACHINE FOR MAKING CONCRETE CONDUIT; **3,000,070**, same, MACHINE FOR MAKING MULTI-DUCT CONDUIT, **filed** June 25, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1542, *T.E.L. Pre-Cast Corporation, et al.* v. *Gagne Enterprises, Inc. et al.*

3,000,070. (See 2,994,119.)

3,040,993, E. J. Schultz, LIGHTING FIXTURE, **filed** June 26, 1970, D.C., S.D.N.Y., Doc. 70–C–2737, *Esco Lighting Co., Inc.* v. *Lighting Services, Inc.*

3,051,939, R. W. Gilbert, ANALOG-TO-DIGITAL CONVERTER; **3,316,547**, S. K. Ammann, INTEGRATING ANALOG-TO-DIGITAL CONVERTER, **filed** Apr. 17, 1970, D.C., N.D. Calif. (San Francisco), Doc. C–70–815, *Weston Instruments, Inc.* v. *Data Technology Corporation.*

3,108,597, Moss and Browner, GENERATOR FOR ELECTRONIC MUSCLE STIMULATOR, **filed** Apr. 22, 1968, D.C. Kans. (Wichita), Doc. W–3989, *Relaxacisor, Inc., known as Eastwood General Corporation* v. *Dynatone Electronics Corporation, James Shelton and Doe I through Doe IV.* Judgment by consent, patent is owned by plaintiff and said patent and claims 1 to 6 thereof are valid, June 23, 1970.

3,110,905, T. M. Rhodes, TUFTED PILE FABRIC COMPRISING A FLAT WOVEN SYNTHETIC PLASTIC BACKING; **3,336,178**, R. G. Levitch, DOUBLE BACKED PILE CARPET; **3,359,934**, Schwartz and Port, TUFTED CARPET HAVING SPLITTABLE FILLING YARNS IN THE PRIMARY BACKING, **filed** May 26, 1970, D.C., Del. (Wilmington), Doc. 3906, *Thiokol Chemical Corporation* v. *Burlington Industries, Inc. and Avisun Corporation.* **Same, filed** Sept. 19, 1969, D.C. Del. (Wilmington), Doc. 3782, *Thiokol Chemical Corporation* v. *Burlington Industries, Inc. and Amoco Chemicals Corporation.* Defendants' motions to dismiss granted, June 5, 1970.

3,138,875, F. L. Christensen, DIAMOND SCRIBER, **filed** Jan. 2, 1969, D.C.N.J. (Newark), Doc. C–5–69, *Tempress Research Co.* v. *Accurate Diamond Tool Corp.* Order of dismissal of action on settlement, June 19, 1970.

3,188,468, L. E. Packard, METHOD AND APPARATUS FOR AUTOMATIC STANDARDIZATION IN LIQUID SCINTILLATION SPECTROMETRY, **filed** June 8, 1970, D.C. Conn. (New Haven), Doc. 13884, *Packard Instrument Company, Inc.* v. *Picker Corporation et al.*

3,271,669, T. Lode, ALTERNATING CURRENT DIODE LOOP CAPACITANCE MEASUREMENT CIRCUITS; **3,318,153**, same, DIODE LOOP CAPACITOR COMPARATIVE CIRCUIT INCLUDING A PAIR OF TRANSFORMER WINDINGS COUPLED IN PHASE, **filed** June 12, 1970, D.C., W.D. Wash. (Seattle), Doc. 9042, *Rosemount Engineering Company* v. *The Garrett Corporation, doing business as Airesearch Manufacturing Co.*

3,274,906, Worson and Dill, JOINT INSTALLATION APPARATUS, **filed** June 16 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1330–HP, *Edoco Technical Products, Inc.* v. *Robert F. Dill.*

3,275,316, G. V. Cleary, INSERT FOR NEWSPAPERS, **filed** June 23, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1512, *Free Standing Stuffer, Inc.* v. *National Broadcasting Company, Inc.*

3,280,273, Flygstad and Sell, SELF-SUPPORTING OPERATOR'S HEADSET, **filed** June 24, 1970, D.C., N.D. Calif. (San Francisco), Doc. C70–1340, *The Telex Corporation* v. *Pacific Plantronics, Inc.*

3,282,057, A. W. Prosser, UNDERGROUND LINE AND METHOD OF INSTALLING SAME, **filed** June 12, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1426, *Gordon H. Allen et al.* v. *W. H. Brady Co.*

3,309,256, R. Warsager, APPARATUS FOR SURFACE DECORATING OF ARTICLES, **filed** Sept. 5, 1968, D.C., Conn. (New Haven), Doc. 12746, *Rubin Warsager* v. *The Bristol Brass Corporation.* Action dismissed on stipulation of parties, May 19, 1970.

3,313,477, G. Brown, TRANSPARENT BANK CONSTRUCTION HAVING COIN SORTING MEANS, **filed** Dec. 4, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2495, *Superior Toy & Mfg. Co.* v. *Marcor Incorporated.* Consent judgment, patent valid and infringed, defendants are hereby perpetually restrained and enjoined, June 9, 1970.

3,316,547. (See 3, 051,939.)

3,318,153. (See 3,271,669.)

3,336,178. (See 3,110,905.)

3,353,115, T. H. Maiman, RUBY LASER SYSTEMS, **filed** June 23, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1380–WPG, *Hughes Aircraft Company* v. *Union Carbide Corporation.*

3,359,934. (See 3,110,905.)

PATENTS

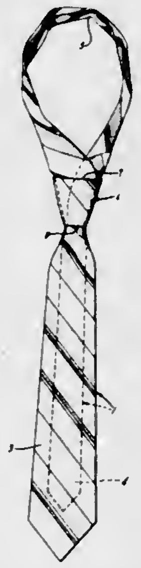
GRANTED SEPTEMBER 1, 1970

GENERAL AND MECHANICAL

3,526,004

NECKTIE AND REMOVABLE KNOT

Fred Brandenberger, 49 Rivoli St.,
San Francisco, Calif. 94117
Filed May 19, 1969, Ser. No. 825,752
Int. Cl. A41d *25/02*
U.S. Cl. 2—150 **1 Claim**



A novel necktie combination comprises a conventional four-in-hand tie with a portable, adjustable and removable knot. The combination permits a conventional necktie to be placed around the collar and then the portable knot slipped over the ends and adjusted against the collar, thereby eliminating the tying and untying operation, wear and tear on the tie but permitting use of a basically conventional tie and a novel knot which may or may not correspond with the color scheme of the tie itself as desired.

3,526,005

METHOD OF PREPARING AN INTRAVASCULAR DEFECT BY IMPLANTING A PYROLYTIC CARBON COATED PROSTHESIS

Jack C. Bokros, San Diego, and Willard H. Ellis, Encinitas, Calif., assignors, by mesne assignments, to Gulf General Atomic Incorporated, San Diego, Calif., a corporation of Delaware
No Drawing. Filed June 29, 1967, Ser. No. 649,811
Int. Cl. A61f *1/22, 1/24*
U.S. Cl. 3—1 **6 Claims**

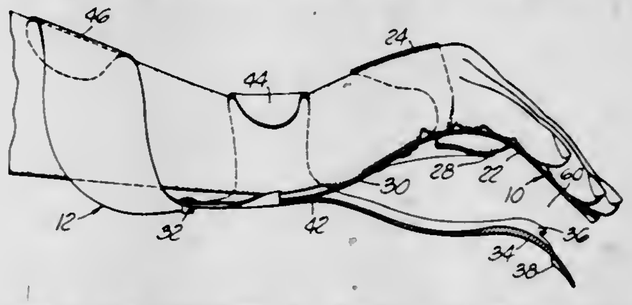
A prosthetic device for implantation in or use with a living body. A substrate is coated with impervious isotropic pyrolytic carbon which provides an inert and antithrombogenic outer surface. The conditions at which the pyrolytic carbon is deposited are controlled to match the thermal coefficient of expansion of the pyrolytic carbon to that of the substrate and to provide a strong carbon which contributes substantial structural strength to the composite prosthetic device.

3,526,006

WRIST EXTENSOR OPERATED HAND SPLINT

Robert L. Beardmore, 1719 Wright St.,
Pomona, Calif. 91766
Filed May 1, 1968, Ser. No. 725,671
Int. Cl. A61f *1/06*
U.S. Cl. 3—12 **4 Claims**

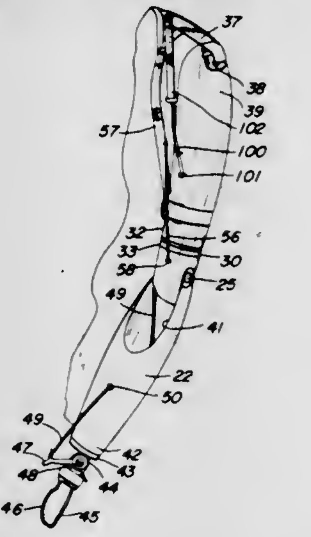
This patent describes a novel wrist extensor operated hand splint adapted to be carried on the hand and lower forearm comprising two smooth parts; the first of said parts having a forward portion which has a contour conforming generally to the curvature of the palm and fingers of a hand when the fingers are partially extended, extending upwardly from said contoured portion, a retaining portion adapted to pass between the thumb and forefinger and terminate at a point at the top of the hand, extending laterally from said contoured portion a relatively small curved member adapted to support the thumb, extending from the rear of said contoured portion a normally straight springy resilient member which at its free end has a means for making a pivotable connection; the second of said parts having a forward portion provided with one or more projections for use in the holding of objects, the rear portion of said second part being adapted to abut the underside of the arms and having at each side thereof oppositely curved surfaces adapted to wrap around said lower forearm and spaced longitudinally so that said forearm can pass therebetween when said second part is being put on, the rear portion of said second part also being provided with a means for making a pivotable connection; said means for making a pivotable connection on said first and second parts being adapted to join together to provide a closing gripping action between the edges of said forward portions of said parts to enable the grasping of objects therebetween. This patent also describes a supporting means for said device which facilitates the putting on and aking off of said splint.



3,526,007

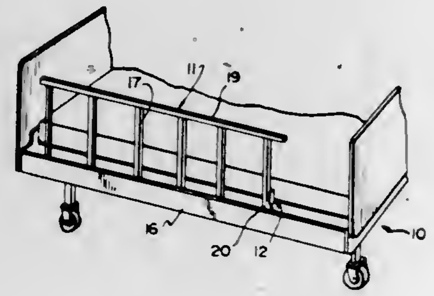
PROSTHETIC ARM HAVING HUMERAL ROTATION

Joseph J. Ivko and Renette M. Ivko, both of 403 Las Olas Drive, Crown Point, Ind. 46307
Filed Nov. 13, 1967, Ser. No. 682,381
Int. Cl. A61f *1/04, 1/06*
U.S. Cl. 3—12.1 **16 Claims**



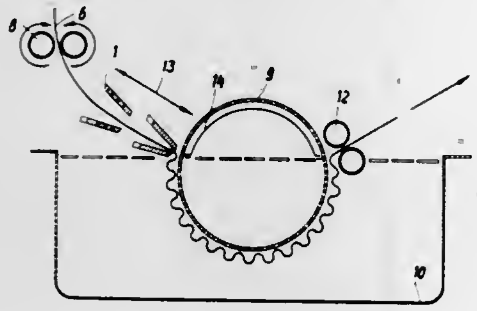
A prosthetic device for upper arm amputees which permits the realization of substantially natural movements including humeral rotation of about 180° by the incorporation therein of selectively actuatable bearing assembly responsive to voluntary excursions of the deltoid muscles associated with the limb upon which the device is mounted.

3,526,008
LATCH AND SUPPORT ASSEMBLY FOR BED RESTRAINING SIDES
Fred Pruim, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1968, Ser. No. 769,084
Int. Cl. A47c *21/00*
U.S. Cl. 5—331 **1 Claim**



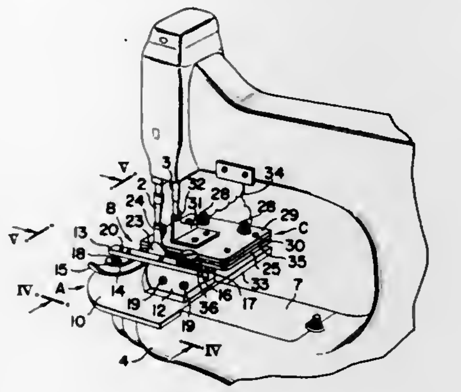
A bed having collapsible restraining sides is disclosed herein and is of the general type having spaced bars connected at one end by a top rail and pivotally connected at the other end to the side rail of the bed. The restraining side collapses in a parallelogram fashion with the bars pivoting to a generally horizontal position beside the bed. The latch and supporting assembly of this invention is disclosed in conjunction with the restraining sides to provide a means for supporting the restraining sides in the up position, but which may be readily released to allow the restraining sides to be collapsed to the down position.

3,526,009
METHOD FOR TREATING TEXTILE FABRICS AND THE LIKE
Heinz Fleissner, Egelsbach, near Frankfurt, Germany, assignor to Anstalt Fuer Patentdienst, Vaduz, Liechtenstein.
Original application Aug. 25, 1964, Ser. No. 391,994, now Patent No. 3,374,646, dated Mar. 26, 1968. Divided and this application Jan. 24, 1968, Ser. No. 729,832
Claims priority, application Switzerland, Aug. 26, 1963, 10,538/63
Int. Cl. D06f *17/02;* **B05c** *8/04*
U.S. Cl. 8—152 **15 Claims**



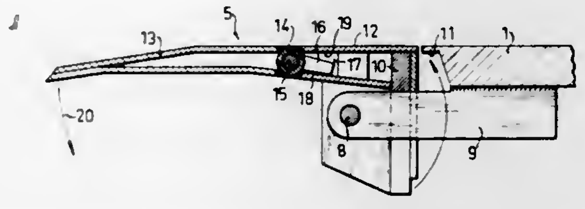
A rotating perforated sieve drum is partially disposed in a treatment bath with a suction pump connected to the interior thereof. Lengths of textile material are treated in the bath by feeding the material in wavy folds onto the surface of the drum.

3,526,010
AUTOMATIC EDGE FOLDING AND SETTING MACHINE
Seiichi Shinjyo, Kurume-shi, Japan, assignor to Nippon Rubber Co., Ltd., Tokyo, Japan
Filed Aug. 12, 1968, Ser. No. 751,810
Int. Cl. A43d *11/00*
U.S. Cl. 12—55 **5 Claims**



Apparatus for stitching uppers such as of canvas shoes, is adapted to fold back an edge portion of an upper canvas in predetermined width and to cure the folded edge portion at a suitable temperature, thus folding permanently the upper canvas on its edge portion thereby making it easy and positive to sew the edge of the canvas subsequently.

3,526,011
TRANSLOADING BRIDGE FOR RAMPS
Kurt Alten, 14 Ringstrasse, 3015 Wennigsen am Deister, Germany
Filed June 6, 1968, Ser. No. 735,037
Claims priority, application Germany, June 9, 1967, A 55,925; Dec. 21, 1967, A 57,761
Int. Cl. B65g *11/00*
U.S. Cl. 14—71 **10 Claims**

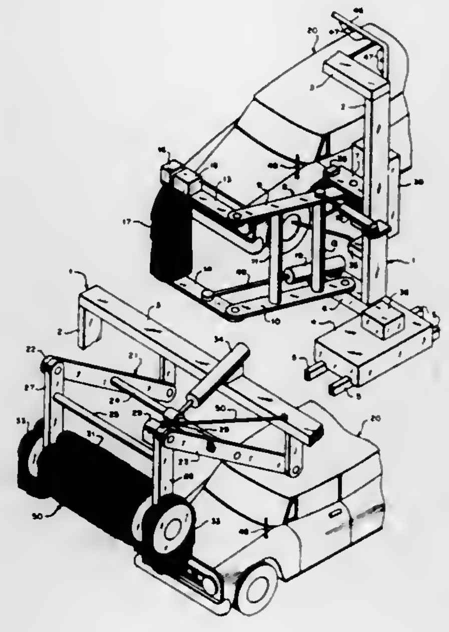


A bridge arrangement preferably counterbalanced for resting lightly on a load surface. A main plate is pivoted at one end to a ramp. A main plate extension at the other end engages the load surface to form a bridge between the ramp and load surface. When not in use, the extension depends pivotally from the main plate. When in use, the extension pivots upwardly to a stopped position. The extension has sections on the outer edge which pivot a limited amount in the vertical direction and thus permit the bridge arrangement to fit on an inclined road surface.

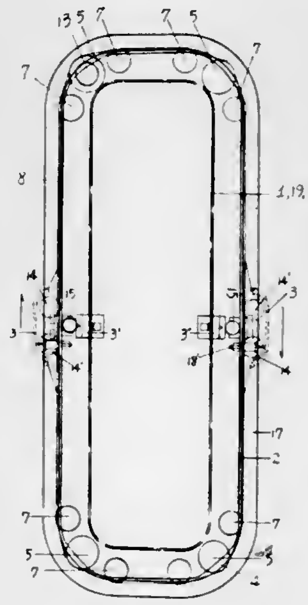
3,526,012
CAR WASHING APPARATUS
John F. Cirino, Churchville, Pa., assignor to Little Darling Corp., Churchville, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1968, Ser. No. 717,212
Int. Cl. B60s *3/06*
U.S. Cl. 15—21 **7 Claims**

A means and method for automatically washing road vehicles. A travelling crane traverses the length of the stationary vehicle and returns. The crane is provided with a segmented top brush and a pair of side brushes. Each of the brushes is mounted on a pivoting

trapeze and is urged toward the vehicle and withdrawn from it by the action of a pneumatic cylinder. Limit switches sense the relative positions of brushes and vehicle and control a programmed order of action. The brushes are brought into cleaning actuation in a specific order.

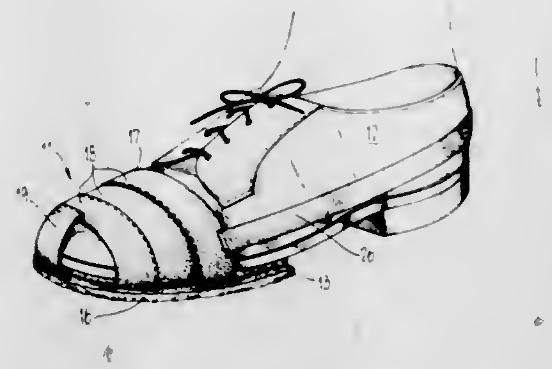


3,526,013
DEVICE FOR DRIVING SWEEPER FOR COKE OVEN DOOR
Hiroshi Kato, Tokyo, Japan, assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Aug. 16, 1966, Ser. No. 572,783
Claims priority, application Japan, Aug. 20, 1965, 40/68,042
Int. Cl. A01k *31/04*
U.S. Cl. 15—93 **2 Claims**



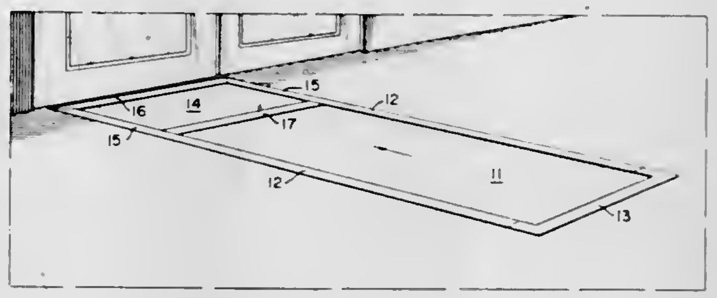
A self-propelled, self-steering cleaning device for coke oven door comprising a supported frame large enough to enclose a door frame to be cleaned, said support frame having a track thereon with driving means, engaging gears carried by the frame to propel a cleaning device around the frame, provision being made to keep cleaning blades in constant cleaning relationship to the door frame by adjusting the precise locus of movement of the cleaning device.

3,526,014
FOOT FLOOR-SCOURING ATTACHMENT
Lester Edwards, 1317 Ward St., Berkeley, Calif. 94702
Filed July 10, 1968, Ser. No. 743,896
Int. Cl. A47l *13/18*
U.S. Cl. 15—227 **7 Claims**



A floor scouring attachment for the foot of a custodian or the like is described. The attachment comprises a generally planar sole pad formed of two planar layers of the scouring material. An elastic vamp portion is secured to the sole pad between the two layers and extends between opposite side edges thereof to form an elastic receptacle for receiving the foot of a user. An elastic heel band is secured to the vamp portion and extends rearwardly therefrom to encircle the heel of a user's foot and maintain the vamp portion and sole pad on the user's foot.

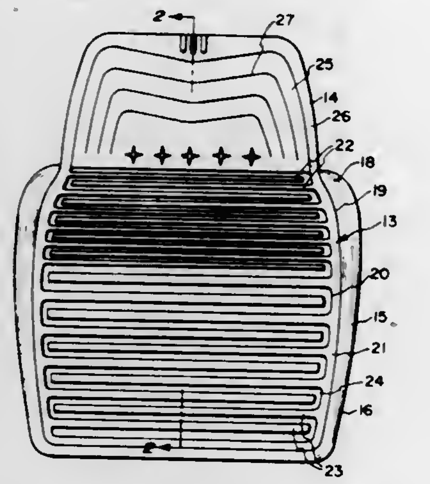
3,526,015
ENTRY RUG CLEANING MECHANISM
John J. Nappi, 80 Beckley Road, Berlin, Conn. 06037
Filed May 22, 1968, Ser. No. 731,127
Int. Cl. A47l *23/02;* **E04f** *19/10*
U.S. Cl. 15—36 **10 Claims**



An entry rug cleaning mechanism has a set of rollers mounted on a frame over which an endless rug is suspended with a portion of the rug supported in position to be walked upon at a door or entry way when the frame is recessed into the floor. The rug is driven to move past vacuum cleaning agitating, fluid spraying and drying means which operate on the rug as it runs beneath the floor level.

3,526,016
SHOE SCRAPER FLOOR MAT AND LOCATING FRAME COMBINATION FOR MOTOR VEHICLES
Stanley S. Stata, Rockford, Ill., assignor of forty-nine percent to Andrew F. Wintercorn, Rockford, Ill.
Filed Oct. 8, 1968, Ser. No. 765,817
Int. Cl. A47l *23/22*
U.S. Cl. 15—216 **17 Claims**

A vehicle floor mat construction for a carpeted vehicle floor having a rigid generally U-shaped frame secured to the floor, and a mat of flexible material including a pan having a shoe scraper means therein whereby dirt and moisture scraped from shoes is retained in the pan, the arms of the U-shaped frame being curved inwardly at their forward ends and the mat having its lateral edges at the forward end also curved inwardly to conform to the frame so that the mat is retained in the frame against forward displacement although it is still removable from the frame to facilitate cleaning of the pan and scraper means. Interfitting projections and recesses on the forward end of the frame and mat insure keeping the top of the mat flush with the top of the frame even though the toeboard extension on the mat is flexed upwardly with respect to the mat to overlie the carpet on the toeboard portion of the floor.



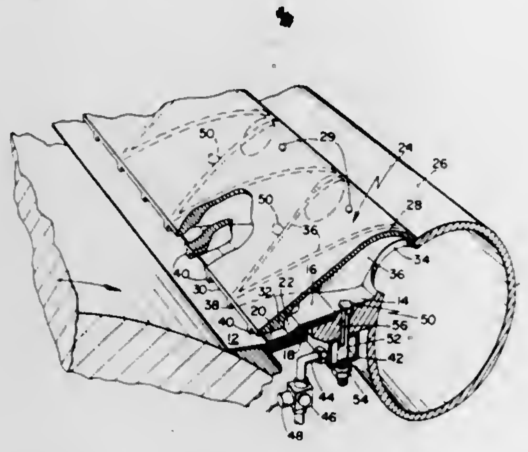
3,526,017
DOCTOR SYSTEM SUCTION APPARATUS

William Kleimola, East Walpole, Mass., assignor to Bird Machine Company, South Walpole, Mass., a corporation of Massachusetts

Filed Nov. 14, 1966, Ser. No. 594,111

Int. Cl. D21g *3/00*

U.S. Cl. 15—308 **5 Claims**



A suction nozzle is mountable along a doctor blade to provide an inlet for removing debris from the surface of the doctor blade, and a blowback discharge member located interiorly of the suction nozzle for intermittent operation to dislodge accumulations of debris blocking the inlet. A removable clean-out tool is provided for sliding along the nozzle.

3,526,018
EVISCERATORS

John Kenneth Lovitt, Bakersfield, Calif., assignor of twenty-four percent each to Emil C. Reed, Fadel N. Fadel, and James Bays, all of Bakersfield, Calif.

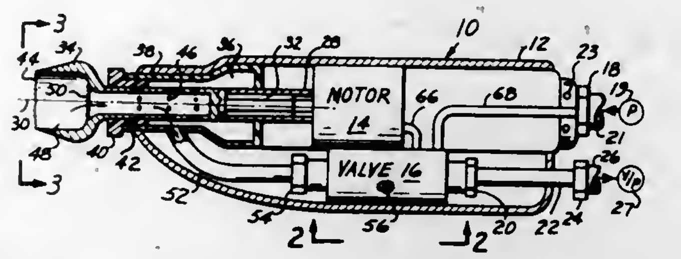
Filed Dec. 5, 1967, Ser. No. 688,235

Int. Cl. A22c *21/06*

U.S. Cl. 17—1 **1 Claim**

This disclosure relates to eviscerators for removing the entrails from animals.

An eviscerator according to the present disclosure comprises a cutter means having a cutter edge and adapted to be rotated about an axis. A cavity is formed in said cutter means and an opening is formed to said cavity adjacent the cutting edge of the cutter means. Motor means is adapted to rotate the cutter means about its axis, and vacuum means is adaped to exert a vacuum in said cavity in one condition.



The method of removing entrails from an animal according to the present disclosure comprises cutting an artificial opening in the animal from which the entrails are to be removed. Suction is then applied to the material within the artificial opening to hold the same, enabling the entrails to be withdrawn from the animal. Preferably, the artificial opening is cut through or around the anus of the animal.

3,526,019
SPINNERET FOR CONJUGATE SPINNING

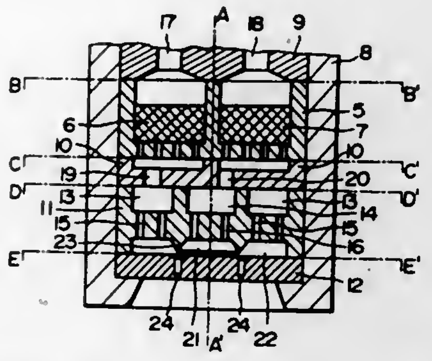
Masao Matsui, Takatsuki, and Kentaro Fujita and Kazukiyo Iwamoto, Osaka, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, and Snia Viscosa Societa Nationale Industria Applicazioni Viscosa S.p.A., Milan, Italy

Filed June 21, 1967, Ser. No. 647,713

Claims priority, application Japan, July 1, 1966, 41/43,104

Int. Cl. D01d *1/10*

U.S. Cl. 18—8 **8 Claims**



A spinneret for conjugate spinning, in which a distributing mechanism for feeding two spinning solutions supplied from filter block to each orifice on a spinneret plate is provided between the filter block having two eccentrically arranged filters and a spinneret plate provided with a plurality of orifices arranged on its circumference, said distributing mechanism being constituted with main distributing channel and subdistributing channel and the sizes of said distributing channels being determined so as that a particular definition is satisfied.

3,526,020
EXTRUSION TECHNIQUES AND APPARATUS

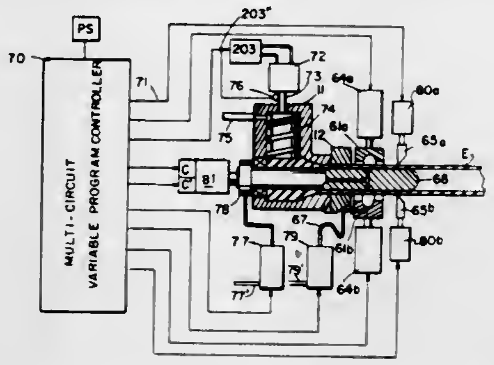
Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 691,622, Oct. 2, 1957. This application June 11, 1968, Ser. No. 736,081

Int. Cl. B29d *23/04*

U.S. Cl. 18—14 **15 Claims**

An apparatus and method are provided for forming elongated tubular extrusions which vary in shape along their length to facilitate, for example, assembly of sections thereof after they are cut to length. In one form, tubing is extruded and during the extrusion process, or immediately thereafter, the cross sectional shape of the extrusion is varied or changed in a predetermined manner so that portions of the tubing vary in shape from other portions there. Channels or outwardly bulging formations are automatically provided along predetermined lengths of the tubing to facilitate assembly of sections of the extrusion after they are cut to length and, in certain instances, to retain sealing material between assembled sections. In another form, predetermined portions of the exterior and/or interior surfaces of a tubular extrusion are varied in shape to permit cut sections thereof to be easily assembled and retained together.



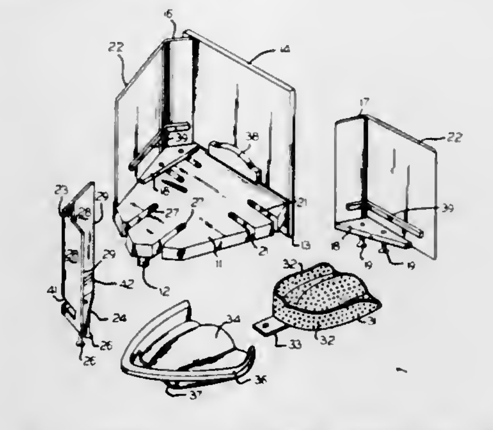
3,526,021
FLASK FOR CASTING ORTHODONTIC STUDY MODELS

Raymond C. Rohlfing, % Ortho-Tech Laboratories, Inc., 5900 Hampton Ave., St. Louis, Mo. 63109

Filed Feb. 19, 1968, Ser. No. 706,321

Int. Cl. A61c *13/00*

U.S. Cl. 18—33 **5 Claims**



A flask for casting orthodontic study models characterized by a fixed wall extending upward from a flask base, with movable side walls having elements converging toward a plane extending transversely of the fixed wall, and a movable end wall having divergent elements thereof closing against said converging elements, a dental impression tray adapted to be received in the polygonal area defined by said walls, and a gasket underlying said tray and having marginal portions extending around said tray and between said walls for trapping casting material poured into said flask.

3,526,022
FITTING

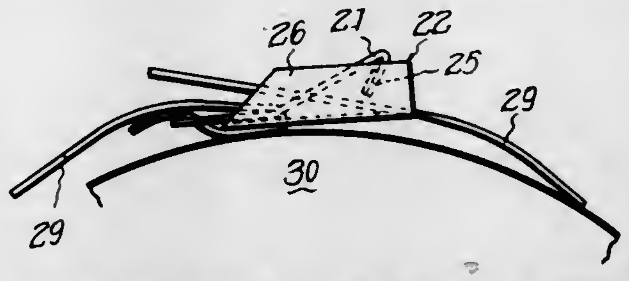
Mitsuji Ichikawa, Tokyo, Japan, assignor to Eiraku Sangyo Kabushikikaisha, Tokyo, Japan, a company of Japan

Filed July 22, 1968, Ser. No. 746,441

Int. Cl. B65d *63/06*

U.S. Cl. 24—23 **2 Claims**

The connector comprises a substantially flat body portion having a tongue extending at an angle thereto, and having a slot arranged to permit the end of a band to be passed outward through the slot and then folded around the tongue. The tongue is so arranged relative to the slot that a free span of the band extends to the end of the tongue and is placed under tension to tighten the band when the tongue is bent substantially into the plane of the body portion.



3,526,023
APPARATUS FOR BOX CRIMPING SYNTHETIC YARNS

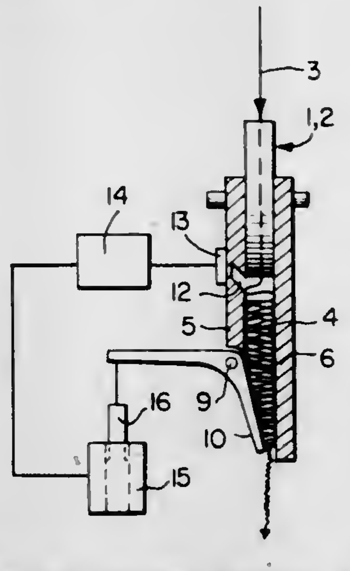
Johan J. Mertens, Rozendaal, Netherlands, assignor to Algemene Kunstzijde Unie, N.V., Arnhem, Netherlands, a corporation of the Netherlands

Claims priority, application Netherlands, Aug. 18, 1967, 6711372

Filed Aug. 9, 1968, Ser. No. 751,399

Int. Cl. D02g *1/12*

U.S. Cl. 28—1.7 **2 Claims**



A method for box-crimping synthetic yarn which comprises forcing a yarn into one end of a stuffer box against a wad of the yarn already crimped within the box, crimping the yarn at the stuffing pressure found within the box, discharging crimped yarn from the wad of yarn at the other end of the box, and simultaneously applying a counter-pressure to the wad of yarn that acts in a direction opposite to the direction of travel of the yarn from the box so that the stuffing pressure within the stuffer box remains substantially equal to a desired value.

The apparatus for carrying out this method includes a stuffer box, a pair of driven feed rollers for forcing a yarn into the box, and a closable discharge means for applying the counterpressure to the wad of yarn at the discharge end of the box so that the stuffing pressure is maintained substantially equal to the desired value.

3,526,024
APPARATUS FOR TREATING TEXTILE MATERIAL

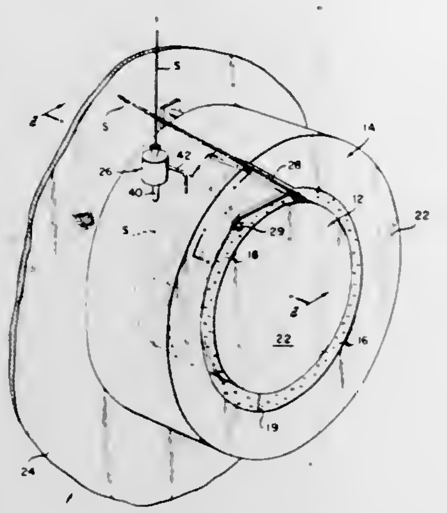
Robert C. Fay, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Filed Oct. 16, 1968, Ser. No. 768,005

Int. Cl. D02j *13/00*

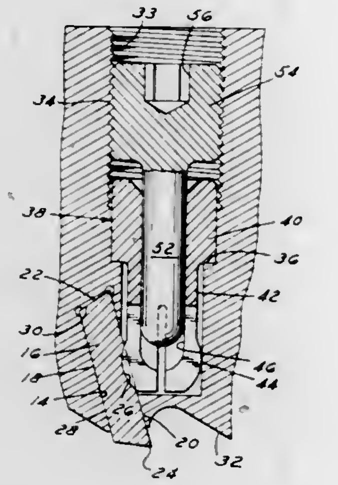
U.S. Cl. 28—62 **7 Claims**

Improved apparatus for treating textile yarn in a gaseous atmosphere comprising a rotatable perforate drum for supportably receiving a plurality of wraps of yarn, a gas distributing manifold surrounding the drum in spaced relation thereto to form a yarn treating passageway therebetween, and gas circulating means for directing a gas across the passageway including conduit means and gas impelling means positioned closely adjacent the drum and manifold, the manifold; drum and gas circulating means being compactly arranged and enclosed in an insulated housing to facilitate economical construction and operation of the apparatus.



3,526,025
SPLIT PIN INSERT LOCK

Terry L. Sletten, Westland, Mich., assignor to The Valeron Corporation, a corporation of Michigan
Filed Jan. 29, 1968, Ser. No. 701,151
Int. Cl. B26d *1/04, 1/00;* **B23p** *15/42*
U.S. Cl. 29—95.1 **11 Claims**

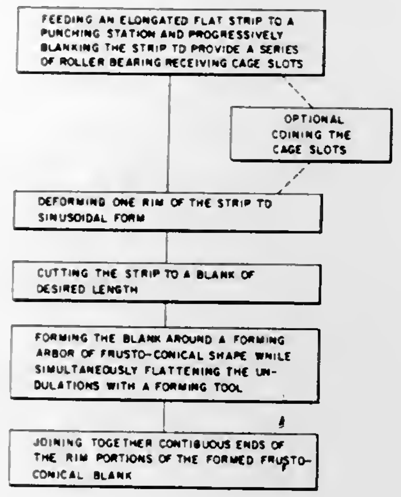


Means for holding a replaceable cutting insert on a holder, particularly suited for broaches, and including a small pin with a bulbular end received in a bore hole intersecting the insert seat, and wherein the bulbular end of the pin is slit longitudinally and is spread laterally by means received within the slit end to establish locking engagement with a cutting insert on the insert seat.

3,526,026
METHOD OF MAKING A CAGE FOR A TAPERED ROLLER BEARING

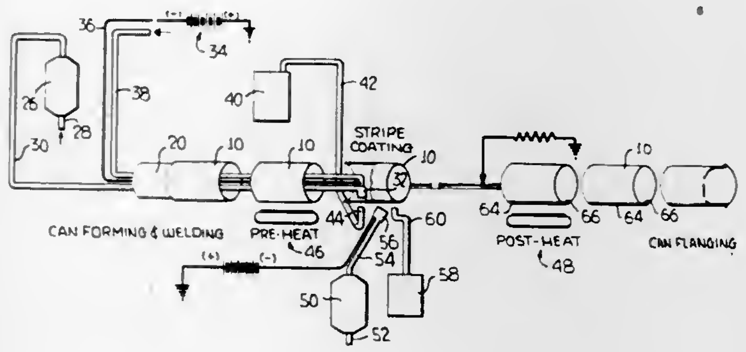
Henry T. Warchol, 2 Sackville Ave.,
Westfield, Mass. 01085
Filed Oct. 30, 1967, Ser. No. 678,928
Int. Cl. B21d *51/10;* **B31b** *49/00;* **B31c** *11/02*
U.S. Cl. 29—148.4 **2 Claims**

The method of manufacturing a cage for a tapered roller bearing which includes the steps of punching spaced holes in a strip of sheet metal to form a blank having rim portions connected by spaced bars defining roller pockets therebetween for the reception of rollers, deforming one of said rim portions to elongate its length, forming said blank into frusto-conical shape, and welding together the abutting ends of said rim portions.


FEEDING AN ELONGATED FLAT STRIP TO A PUNCHING STATION AND PROGRESSIVELY BLANKING THE STRIP TO PROVIDE A SERIES OF ROLLER BEARING RECEIVING CAGE SLOTS
OPTIONAL COINING THE CAGE SLOTS
DEFORMING ONE RIM OF THE STRIP TO SINUSOIDAL FORM
CUTTING THE STRIP TO A BLANK OF DESIRED LENGTH
FORMING THE BLANK AROUND A FORMING ARBOR OF FRUSTO-CONICAL SHAPE WHILE SIMULTANEOUSLY FLATTENING THE UNDULATIONS WITH A FORMING TOOL
JOINING TOGETHER CONTIGUOUS ENDS OF THE RIM PORTIONS OF THE FORMED FRUSTO-CONICAL BLANK

3,526,027
APPARATUS FOR COATING SIDE SEAM AREAS OF CONTAINERS

Ernesto H. Manuel, Park Forest, Edward D. Higgins, Palos Heights, and James G. Buck, Western Springs, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed May 29, 1967, Ser. No. 641,980
Int. Cl. B05b *5/02, 13/06;* **B23p** *19/00*
U.S. Cl. 29—200 **5 Claims**

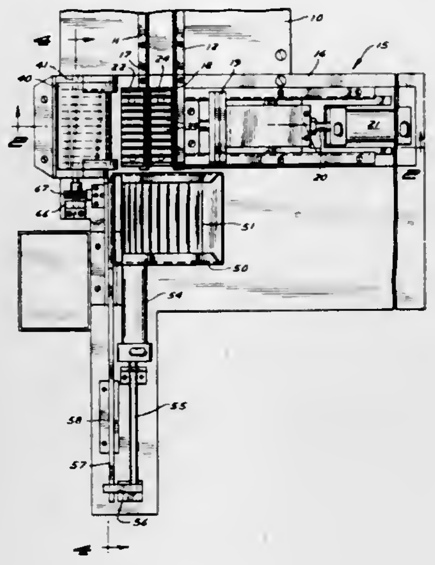


Apparatus for coating side seam areas of formed metal containers by fusing of polymer resin powders on the inside and/or outside seam areas. Vacuum means are provided exteriorly of the containers for the recovery of overspray powder and powder blowing out of nozzles when no container bodies are going through the powder dispensing section of the apparatus.

3,526,028
CARTRIDGE CLIP APPLYING MACHINE

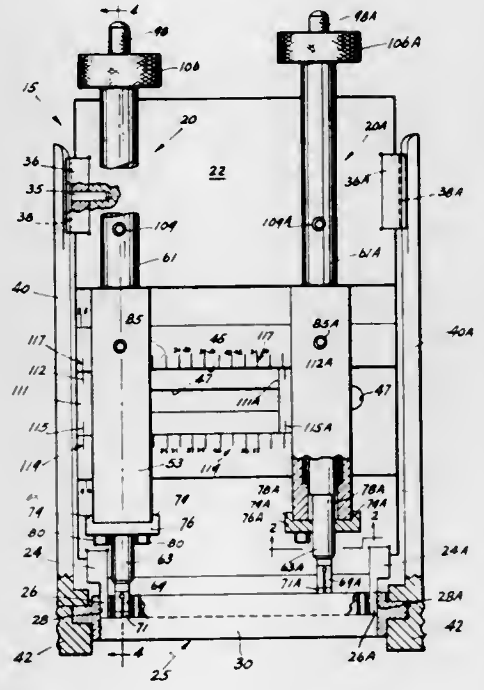
George E. Winch, Anoka, Minn., assignor to Federal Cartridge Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 20, 1968, Ser. No. 706,848
Int. Cl. B23p *19/00;* **B65b** *5/00, 35/56*
U.S. Cl. 29—200 **5 Claims**

A machine for applying a clip to a row of cartridges in side by side relation wherein the row is moved from the discharge rail of a gage and weigh machine into a holding fixture hinged on horizontal axis. An ejector applies a clip having end tabs endwise over the rim ends of the cartridges and the fixture is then swung upwardly with the tabs moving along converging surfaces to bend the tabs inwardly to secure the cartridges in the clip.



3,526,029
EJECTOR DEVICE

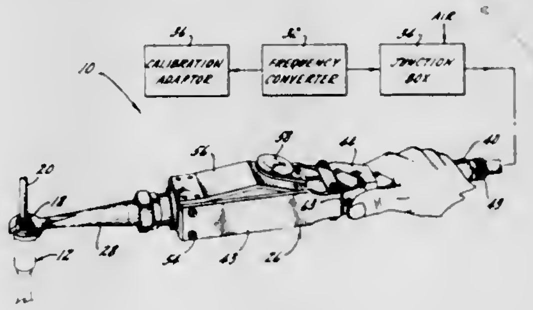
Daniel J. Mesce, Nutley, and Reynold H. Astrove, Harrington Park, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 704,049
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **16 Claims**



An ejector device to assemble and locate polarizing tabs with extreme accuracy in an electrical connector by the provision of means to force selected contact spring elements of the electrical connector apart so as to permit a polarizing tab to be ejected with extreme accuracy into a position on selected rib portions adjacent to and separating pairs of the contact spring elements at opposite sides of the connector so as to condition the electrical connector for the acceptance or rejection of electrical printed circuit cards applied to the electrical connector, the cards having indexing slots arranged in a predetermined relation to the polarizing tabs so as to assure that a proper circuit card and the correct electrical connection thereof is effected at a preselected electrical connector.

3,526,030
METHODS AND APPARATUS EMPLOYING VIBRATORY ENERGY FOR WRENCHING

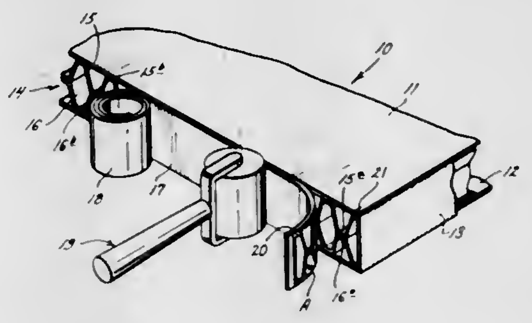
Nicholas Maropis, West Chester, Pa., and William A. Wilson and Herman T. Blaise, Huntsville, Ala., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Continuation-in-part of application Ser. No. 674,999, Oct. 12, 1967. This application Dec. 7, 1967, Ser. No. 688,868
Int. Cl. B23p *11/00, 19/00, 19/04*
U.S. Cl. 29—428 **10 Claims**



Method and apparatus for applying vibratory energy primarily to mechanical fasteners which are elastically compliant along the radius vector so as to effect improved tightening or loosening of said fasteners, wherein the direction of the particle motion constituting the introduced vibration is essentially along the radius vector of the fastener to which the vibration is introduced. Provision is made for tightening the fastener to a predetermined specified torque level and for applying the requisite vibratory energy while simultaneously rotating the fastener an additional amount without extending the said torque level.

3,526,031
STRUCTURAL ASSEMBLY AND METHOD

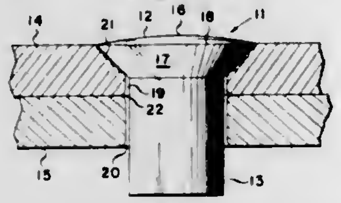
Vincent Lee Truitt, Des Peres, Mo., assignor to McDonnell Douglas Corporation, St. Louis County, Mo., a corporation of Maryland
Filed Mar. 1, 1968, Ser. No. 709,611
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.1 **5 Claims**



A structural assembly in which the attachment of a member to hidden or blind components is easily carried out through the practice of a method of transferring the image of the hidden or blind components to the visible surfaces of the attachment member so that the image can be used to guide the operator in effecting the mounting of the member.

3,526,032
RIVETING METHOD EMPLOYING METAL FLOW IN BOTH THE MANUFACTURED HEAD AND THE UPSET HEAD

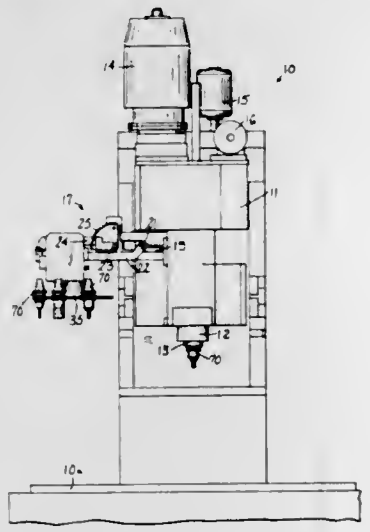
Fred C. Pipher, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Application July 31, 1967, Ser. No. 657,305, which is a continuation-in-part of application Ser. No. 424,784, Jan. 11, 1965. Divided and this application Feb. 19, 1969, Ser. No. 800,424
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—509 **1 Claim**



A fastening method employing a rivet having a head with a generally truncated conical undersurface flared uniformly outward from its shank and a convex crown portion which is integral with the rivet head. The rivet, upon being driven, flows into minute cavities or recesses in the countersunk portion of the plate and the convex crown portion of the rivet deforms into a substantially flat configuration which is flush with the external surface of the plate.

3,526,033
MACHINE TOOL WITH TOOL CHANGER

Alan J. Saunders, Manchester, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn., a corporation of Delaware
Filed Sept. 19, 1967, Ser. No. 668,769
Int. Cl. B23q *3/157*
U.S. Cl. 29—568 **24 Claims**

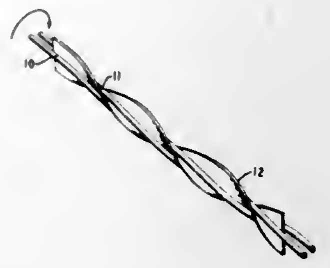


This disclosure relates to a machine tool having facility for interchanging tools with a vertical spindle. A rotatable tool holding magazine is carried on the head of the machine and is swingably mounted thereon to a tool storage position or a tool change position beneath the spindle to accept a tool from the spindle or allow the spindle to accept a tool from the magazine.

3,526,034
METHOD OF FABRICATING TWISTED-WIRE HYBRID COUPLERS

Henry R. Beurrier, Chester Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Feb. 2, 1968, Ser. No. 702,587
Int. Cl. H01f *7/06*
U.S. Cl. 29—602 **2 Claims**

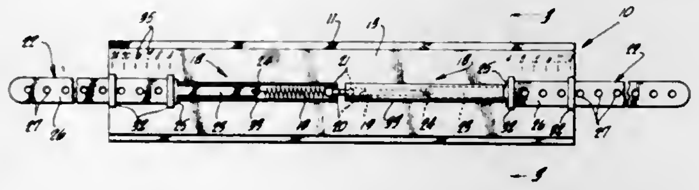
The electrical properties of a twisted-wire hybrid coupler depend upon the wire size and the thickness of the insulation. The method of construction disclosed utilizes bare wire and a separate sheet of insulation which wraps itself about the bare wires during a twisting operation.



The use of a separate insulator greatly decreases the variety of insulated wire sizes that must be stocked and increases the reproducibility of couplers since the insulator thickness can be maintained more uniform.

3,526,035
ORTHODONTIC HEADGEAR

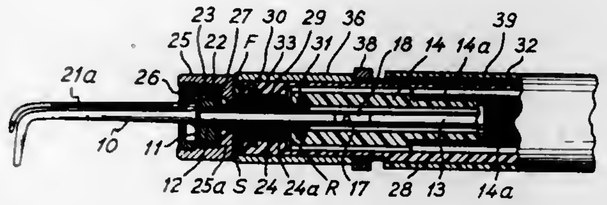
Maclay M. Armstrong, 2312 NW. 199th, Seattle, Wash. 98177
Continuation of application Ser. No. 786,329, Dec. 23, 1968. This application Aug. 12, 1969, Ser. No. 857,532
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **26 Claims**



An orthodontic extraoral headgear using wire coil springs to apply corrective forces to a patient's teeth or jaws. A force scale is positioned adjacent each spring to provide a direct-reading indication of spring restoring force for any given spring elongation. Means are provided to prevent both longitudinal and rotational distortion of the springs.

3,526,036
ULTRASONIC DENTAL APPARATUS

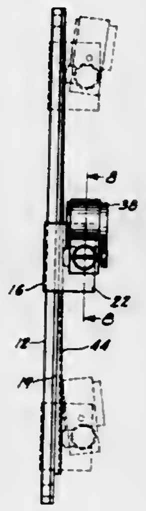
Sven Karl Lennart Goof, 4 Bjaelkevangen, 2800 Lyngby, Denmark
Filed Jan. 2, 1969, Ser. No. 789,114
Claims priority, application Great Britain, Apr. 1, 1968, 15,608/68
Int. Cl. A61c *1/08*
U.S. Cl. 32—28 **22 Claims**



Annular passages are provided in the handpiece portion of an ultrasonic dental tool for passage of cooling fluid to cool the transducer of the tool. The annular passages are in communication with passages in the tip structure for cooling the vibrating member. This arrangement provides a single cooling system and enables the overall size of the structure to be minimized. Also a switch is mounted in the handpiece which is hand actuable by the operator.

3,526,037
ARCHERY BOW SIGHT

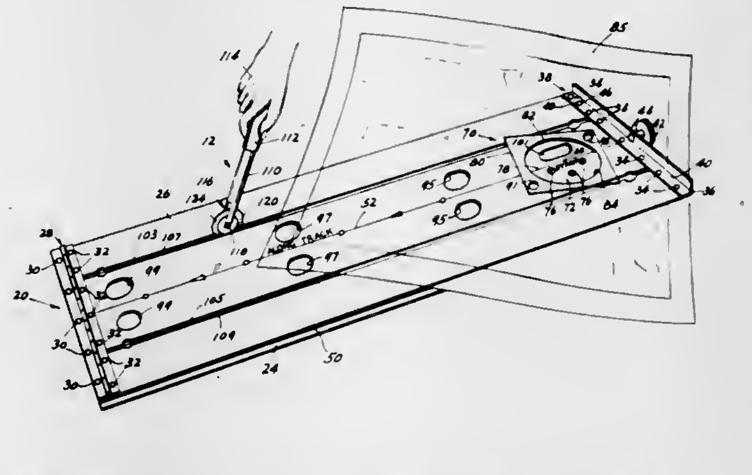
Charles D. Crosby, Rte. 4, Box 146A, Florence, Ala. 35630
Filed July 12, 1968, Ser. No. 744,565
Int. Cl. F41g *1/46, 1/00*
U.S. Cl. 33—46 **7 Claims**



A bow sight in which a magnifying lens is pivotally supported in a carriage slidably mounted on a straight sight bar for elevational adjustments, in which a cam surface extending along the sight bar is engaged by a cam follower connected to the lens and causes the lens to be rotated as the carriage is moved along the sight bar so that the center of rotation of the optical axis of the lens will remain in an archer's aiming eye when in some predetermined fixed position, and in which the cam follower is adjustably mounted with respect to the pivotal axis of the lens whereby the rate of rotation of the lens as it moves linearly may be varied.

3,526,038
STRIP MAP PREPARATION DEVICE FOR AIRCRAFT USE

Manuel Katz, Monsey, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Aug. 14, 1967, Ser. No. 660,249
Int. Cl. B43l *13/00*
U.S. Cl. 33—75 **6 Claims**



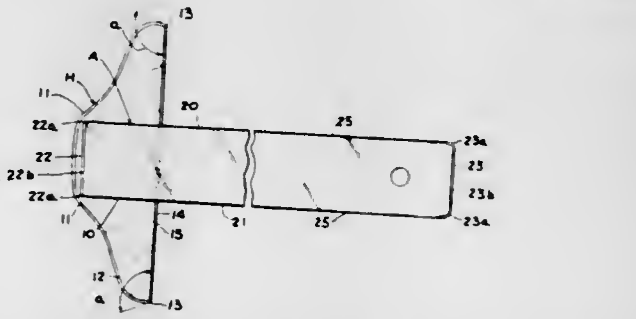
A device for forming a strip map including a base element and a clear plastic clamping element pivotally mounted on the base element, and between which elements there may be clamped a map bearing sheet of paper. The clamping element has inscribed thereon a center guide line along which a predetermined flight track drawn on a map may be aligned as viewed through the clamping element.

Further a clear plastic angularly adjustable protractor element is carried by the clamping element and through which a predetermined position for the start of the flight of the aircraft may be seen on the map. The map may then be so oriented that the flight track drawn on the map passes through the start position on the protractor so that the protractor may thereupon be angularly positioned by the operator so that a north pointing arrow inscribed on the protractor extends parallel to a grid north line shown on the map and viewable through the clear plastic protractor and clamping element. Thereafter the angular direction of the proposed flight path of the aircraft from the start position and along the flight track may be read out by the operator from the protractor and inscribed on the map by the operator through an opening provided in the plastic clamping element.

The plastic clamping element further includes a pair of longitudinal slots extending parallel to the flight track line for guiding a cutting tool to effectively severe the map bearing sheet into a strip map of a predetermined width along the proposed flight track of the aircraft and in alignment with the guide line inscribed on the clamping element.

3,526,039
T-SQUARE

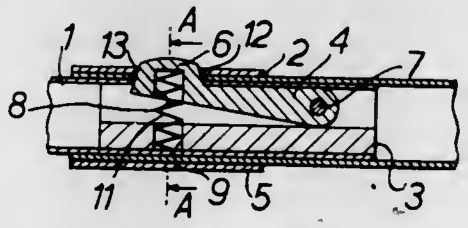
Gregory S. Dolgorukov, Ferndale, Mich.
(407 Fisher Building, Detroit, Mich. 48202)
Application Oct. 13, 1966, Ser. No. 586,568, now Patent No. 3,398,449, dated Aug. 27, 1968, which is a continuation of application Ser. No. 288,577, May 15, 1963, now abandoned, which is a continuation-in-part of application Ser. No. 178,868, Mar. 12, 1962, and Ser. No. 855,826, Nov. 27, 1959, now abandoned. Divided and this application June 3, 1968, Ser. No. 734,136
Int. Cl. B43l *7/00*
U.S. Cl. 33—112 **4 Claims**



A T-square having a one-piece arm of transparent acrylic plastic whose surfaces are optically flat and all of whose surface intersections have been chamfered for approximately .020 inch to remove material subject to initiation therein of minute cracks which would grow into the acrylic material and cause nicking and breakage of the arm.

3,526,040
MEASURING INSTRUMENT

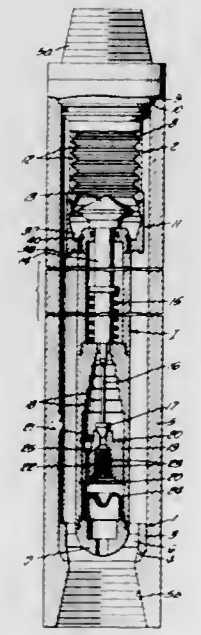
Sidney G. Young, 154 Blackfriars Road, London, SE. 1, England
Filed May 3, 1968, Ser. No. 726,466
Int. Cl. G01b *3/08*
U.S. Cl. 33—161 **8 Claims**



A linear measuring instrument of two or more telescopic tubular staffs having alignable holes through which part of a pivotal lever constituting locking means is adapted to pass under spring influence when the staffs are extended and/or retracted. The optional provision of stops in the staffs, preferably blocks for mounting the pivotal levers, absorbs shocks when the retracted instrument is placed heavily on the ground. The holes in the or each outer staff of the instrument are preferably reinforced such as by a sleeve.

3,526,041
PULSE RING MOUNTING

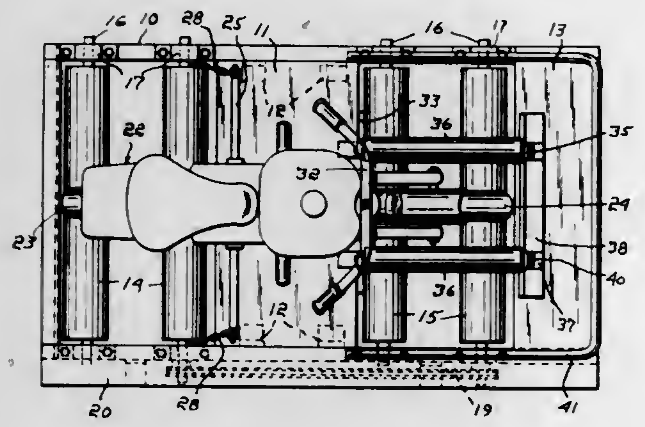
Robert Lee Alder, Pasadena, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed June 29, 1966, Ser. No. 561,637
Int. Cl. E21b *47/02*
U.S. Cl. 33—205 **6 Claims**



A pulse ring mounting for signaling drift indicators having a window through which the shaft knob may be removed in order to allow the pulse ring mounting to be removed from the instrument housing over the free end of the shaft.

3,526,042
MOTORCYCLE OPERATOR TRAINER

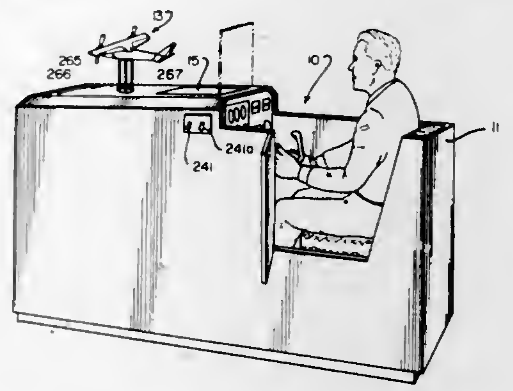
Bernard G. Nelson, Rockland, Maine, assignor to Motorcycle Training Corporation, Camden, Maine, a corporation of Maine
Filed Aug. 9, 1967, Ser. No. 659,444
Int. Cl. G09b *9/04*
U.S. Cl. 35—11 **7 Claims**



Device for training and testing motorcycle operators and demonstrating motorcycles by simulating certain road conditions, the device having a base provided with means supporting the front and rear wheels of a motorcycle and movable by the rear wheel to drive the front wheel and with transverse stabilizing means securing the motorcycle to the device on opposite sides of the motorcycle and, optionally, with means operable to limit the steering of the motorcycle.

3,526,043
AVIATION TRAINER

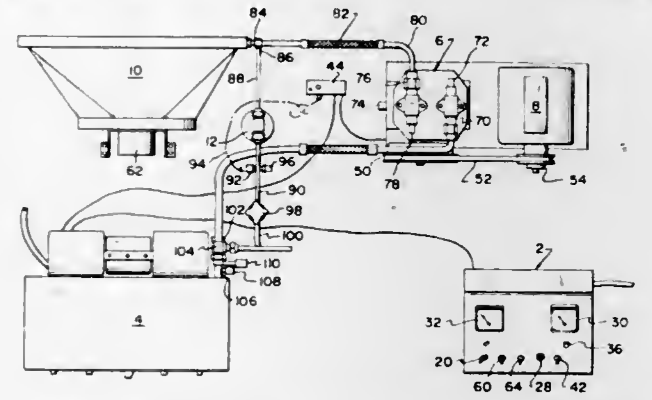
Rudolf A. Frasca, 606 S. Neil St., Champaign, Ill. 61820
Continuation-in-part of application Ser. No. 714,671, Mar. 20, 1968. This application May 16, 1969, Ser. No. 825,191
Int. Cl. G09b *9/08*
U.S. Cl. 35—12 **26 Claims**



A stationary trainer having a multi-engine computer incorporated into it, so that the trainer can be used to simulate and to teach the principles of flying multi-engine aircraft. In the disclosed embodiment, the multi-engine aircraft simulated is a twin-engine aircraft, however, by duplicating equipment, the trainer can be adapted to simulate the operation of aircraft having four or more engines as well.

3,526,044
AUTOMOTIVE AIR CONDITIONING SIMULATION SYSTEM

Boyce H. Dwiggins, Hollywood, Fla., assignor to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed June 5, 1968, Ser. No. 734,631
Int. Cl. G09b *25/02*
U.S. Cl. 35—13 **17 Claims**

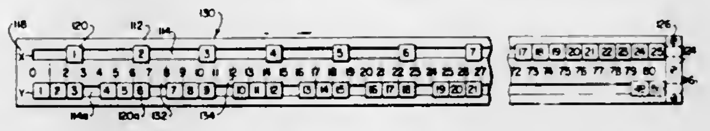


An automotive air conditioning system for simulating both normal and defective operation of a typical automobile air conditioning unit and various components thereof. The apparatus is scaled for portability and to be fully operated by commonly available electrical service through conventional outlets.

3,526,045
SEGMENTED MOVABLE NUMBER LINE AND METHOD OF USE

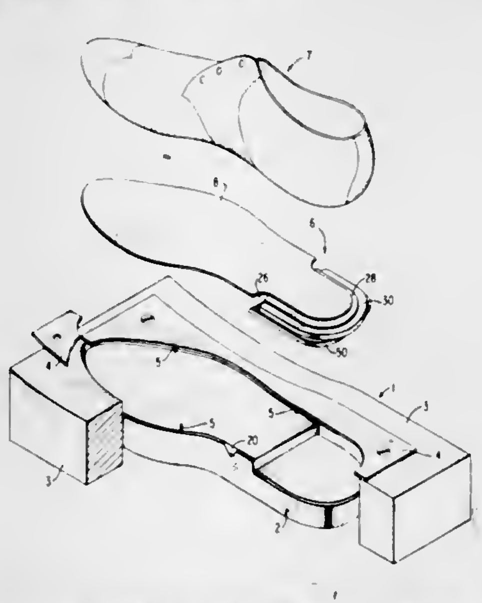
Anna Elizabeth Stone, R.D. 3 N. Plank Road, Newburgh, N.Y. 12550
Filed Dec. 26, 1967, Ser. No. 693,562
Int. Cl. G09b *19/02*
U.S. Cl. 35—31 **6 Claims**

A segmented movable number line including a plurality of counters each independently slidably mounted on a frame and a number marking on each of the counters, the numbers on successively adjacent counters forming a progressive number series. A calculator incorporates a plurality of movable number lines arranged in a manner which clearly demonstrates abstract number concepts through the manipulation of the movable counters in the various number lines. The calculator may also include conventional fixed number lines useful with the movable number line in addition and subtraction processes.



3,526,046
UNITIZED WELT SOLE

Joseph J. Ferreira, Raynham, Mass., assignor to Frank Noone Shoe Co., Inc., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 683,978, Nov. 17, 1967. This application Nov. 14, 1968, Ser. No. 775,657
Int. Cl. A43b *13/12*
U.S. Cl. 36—30 **21 Claims**

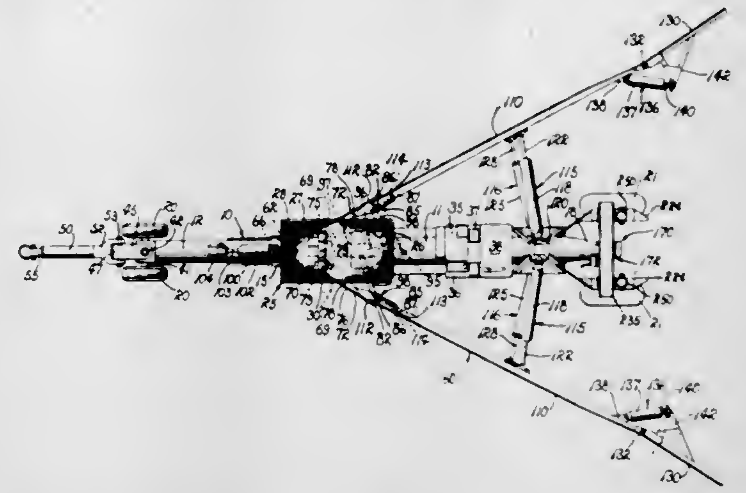


A shoe bottom assembly having an outsole and heel filler with plastic material surrounding the periphery of the outsole and lying immediately forward of the heel filler. A complete shoe may be formed by placing the outsole and heel filler in a mold, placing an assembled shoe upper against the outsole and then injecting fluent plastic material from one side of the mold into the crevice between the upper and the outsole to bond the plastic material both to the shoe bottom assembly and to the assembled shoe upper.

3,526,047
DITCHING MACHINE HAVING VERTICALLY ADJUSTABLE WHEELS

Edmund Roessler, 2025 N. Archie, Fresno, Calif. 93703; Kenneth P. Goltz, 608 W. Scott, Clovis, Calif. 93612; and Martin M. Medllin, 820 Willis, Madera, Calif. 93637
Filed Oct. 9, 1967, Ser. No. 684,884
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. E02f *5/02;* **B60s** *9/20;* **B62d** *61/12*
U.S. Cl. 37—98 **4 Claims**

A ditching machine for digging irrigation and drainage ditches, canals and the like and for reforming and cleaning existing canals of weeds and other extraneous material. The ditching machine includes a wheel suspension system including vertically adjustable hydraulic cylinders which enables the machine to negotiate sloping banks during entry into existing canals and during its exit therefrom with virtually no danger of tipping. Laterally adjustable moldboards are provided to allow the machine to form a wide variety of different configurations and sizes of canals. The machine is easily converted to a relatively narrow lateral dimension for highway transport.



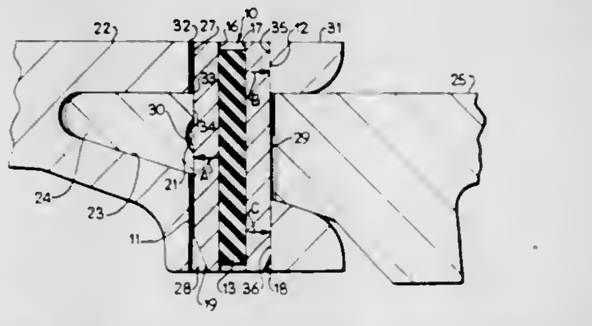
3,526,048
CELLULOSE FIBERS CROSS-LINKED AND ESTERIFIED WITH POLYCARBOXYLIC ACIDS

Stanley P. Rowland, New Orleans, and Clark M. Welch and Mary Ann F. Brannan, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed June 7, 1967, Ser. No. 645,097
Int. Cl. D06m *13/20, 13/32*
U.S. Cl. 38—144 **20 Claims**

Crosslinked fibrous compositions comprising cellulose esterified with a polycarboxylic acid, which acid meets the following requirements: (1) contains no functional groups except carboxyl, (2) contains at least three free carboxylic groups, (3) each carboxyl group attached to a separate carbon atom, (4) at least two of the plurality of carboxyl groups separated by no more than one carbon atom, are prepared by treating fibrous cellulose with said carboxylic acid having varying amounts of the carboxylic acid function neutralized with an alkali metal hydroxide, ammonium hydroxide or an amine, and heating the treated cellulose to induce esterification and concurrent crosslinking. Fabrics composed of such fibers are capable of developing durable creases.

3,526,049
RETAINER PIN FOR EARTH ENGAGING MEMBER

Irvin H. Nichols, Auburn, Calif. (4040 Badillo Circle, Apt. 87, Baldwin Park, Calif. 91706)
Continuation of application Ser. No. 647,458, June 20, 1967. This application June 17, 1969, Ser. No. 835,300
Int. Cl. E02f *9/28*
U.S. Cl. 37—142 **2 Claims**



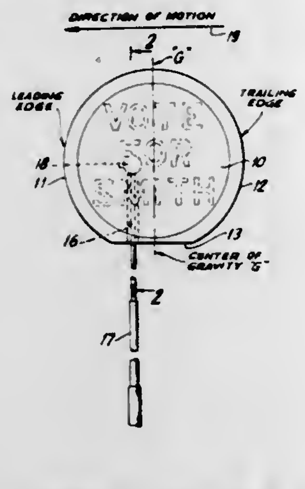
A drive pin for fastening one member to another including a duality of elongated members having opposed faces interconnected with a layer of resilient compressible material, one of said members being provided with a localized outward bulge intermediate the ends thereof for entering a recess in an opening into which said device is driven for retaining said device in such an opening.

ERRATUM

For Class 38—144 see:
Patent No. 3,526,048

3,526,050
EMBLEMATIC ARTICLE OR MEDALLION

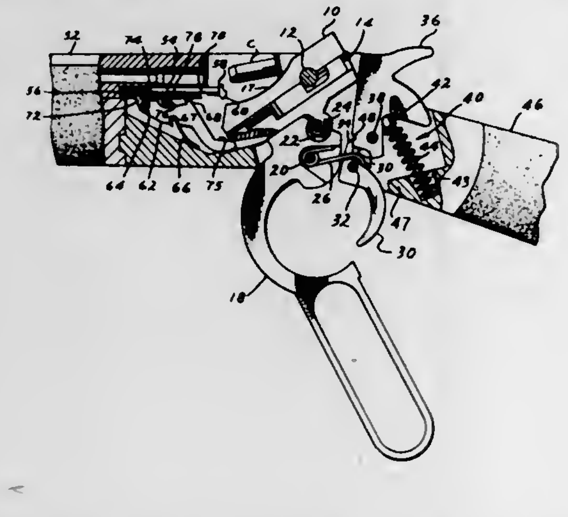
John J. Weller, Emmaus, Pa., assignor, by mesne assignments, to Standard Plastics, Inc., a corporation of Pennsylvania
Filed May 22, 1968, Ser. No. 731,138
Int. Cl. G09f *7/00*
U.S. Cl. 40—129 **5 Claims**



An emblematic article or medallion is provided for use with an automobile radio antenna. The medallion is preferably made of foam plastic and has a substantially flat geometric configuration with front and back faces of substantially the same area, the medallion also having a leading and a trailing edge and an aperture for receiving a supporting member therein, e.g. the end of a radio antenna, the aperture extending into the cross-sectional thickness of the medallion from one edge thereof. The aperture in elevation is disposed intermediate the leading edge and the vertical axis of the center of gravity, the distance from the axis of center of gravity being advantageously about 10 to 35% of the effective width of the medallion determined by dividing the area of one face of the medallion by its height.

3,526,051
LEVER OPERATED FIREARM BREECH MECHANISM WITH A PIVOTED BREECH BLOCK

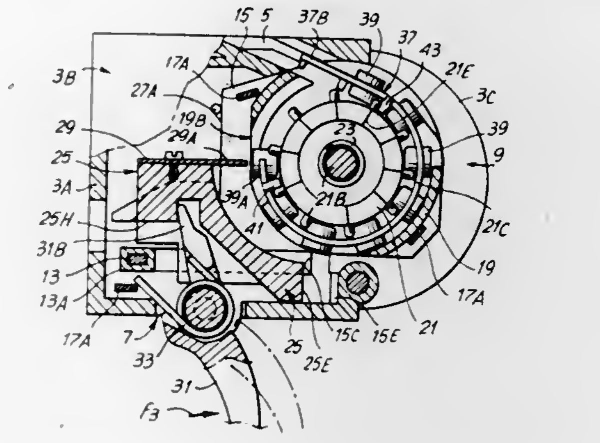
Charles G. Greco, Wilbraham, Mass., and Walter Delis, Simsbury, Conn., assignors to Professional Industries, Inc., Agawam, Mass., a corporation of Massachusetts
Filed Aug. 13, 1968, Ser. No. 752,202
Int. Cl. F41c *11/04, 15/08, 15/14*
U.S. Cl. 42—28 **5 Claims**



A breech mechanism for firearms with a "Martini-Type" action having a pivoting breech block which is automatically positioned for loading said firearm wherein the action lever and the trigger are biased by a single torsion spring which also positions said breech block for loading and wherein the cartridge removing means is a breech block actuated ejector-extractor mechanism, which first provides for spring ejection of a cartridge and then, if necessary, prying extraction of the cartridge.

3,526,052
FIRING MECHANISM FOR A TOY GUN

Giampiero Ferri, Via Stoppani 38, Florence, Italy
Filed May 31, 1968, Ser. No. 733,433
Claims priority, application Italy, June 7, 1967, 4,615/67
Int. Cl. F41c *3/06, 3/08*
U.S. Cl. 42—57 **10 Claims**

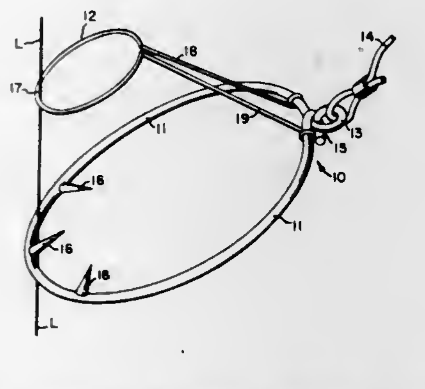


In one embodiment a strip of caps, each of which caps is of cup form, is loaded into a toy gun mechanism and is curved around a cylinder. Successive trip actions by a trigger advance successive caps to a firing position and the spent strip of caps is progressively advanced until it leaves through an outlet of the casing of the mechanism.

In a second embodiment unloading of the cap strip is effected through the same opening as the inlet opening.

3,526,053
FISHING GAFF

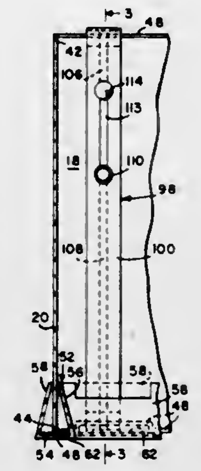
Edward E. Matthews, McAllen, Tex. (P.O. Box 1394, Galveston, Tex. 77550)
Filed Nov. 25, 1968, Ser. No. 778,535
Int. Cl. A01k *97/14*
U.S. Cl. 43—5 **7 Claims**



A fishing gaff comprising a shaped member including a loop on one end and a hook on the other end adapted to engage said member in proximity to said loop, a line secured to said loop, a plurality of spaced and inwardly extending tines on said member, the shaped member and tines in a common plane, a fishing line guide secured to said shaped member, said gaff passed downwardly on a fishing line to engage a first caught on said fishing line, said guide preventing the fish from passing through said shaped member.

3,526,054
PREFABRICATED WALL CONSTRUCTION WITH ELECTRICAL POWER SUPPLY AND APPLIANCE INSTALLATIONS

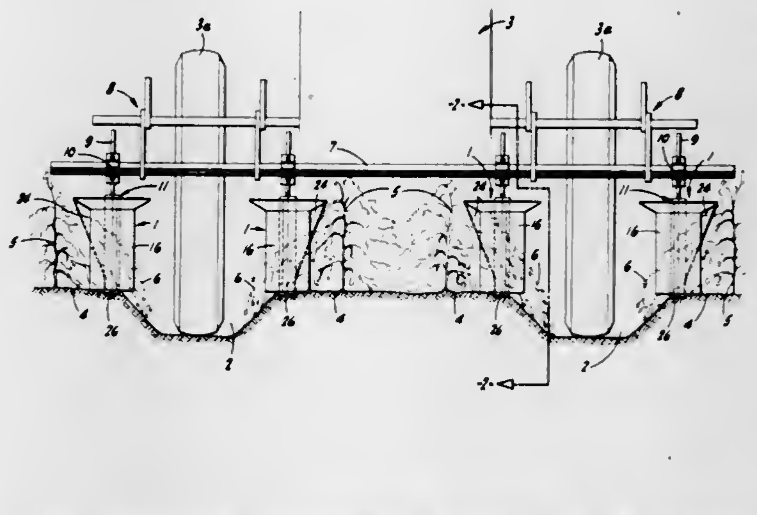
Kizhanatham R. Raman, 834 Sutter Ave., Palo Alto, Calif. 94303
Filed Nov. 1, 1966, Ser. No. 591,224
Int. Cl. A63h *33/10*
U.S. Cl. 46—21 **11 Claims**



A prefabricated wall construction with electrical installations including a plurality of separable walls adapted to be supported erect and in abutting relationship, said walls including electrical conductor strip means along the upper edge and the lower edge, electric power supply means interconnecting the upper and lower edge strip means and an electric appliance fixture means disposed along a surface of one of said walls in electrical engagement with said upper and lower strip means for establishing an electrical operating circuit therebetween.

3,526,055
ROW CROP VINE LIFTER

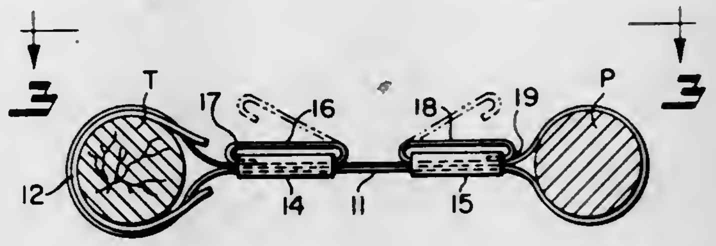
Dean A. Cortopassi, 11292 N. Alpine Road, Stockton, Calif. 95205
Filed July 26, 1968, Ser. No. 748,060
Int. Cl. A01b *39/28*
U.S. Cl. 47—1 **4 Claims**



An agricultural implement—adapted to be tractor-mounted—which includes a vertical axis rotary cylinder, and a combination baffle plate and deflector wing, arranged in an assembly such that—upon advance of the tractor—vines or runners, growing into a furrow from a row of plants on an adjacent longitudinal bed, are effectively turned out of the furrow and onto such bed in intertwined relation to, and for continued growth with, the remainder of the plants.

3,526,056
ADJUSTABLE LOOP TIE FASTENER

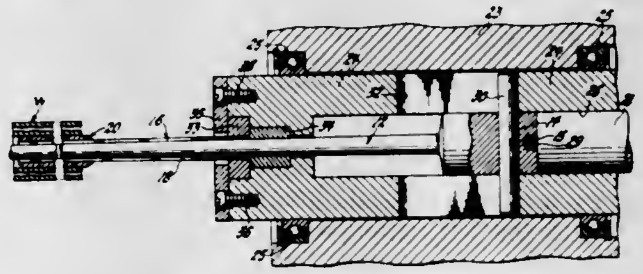
Edward J. Stropkay, 11348 Spruce Drive, Chesterland, Ohio 44026
Filed Sept. 29, 1967, Ser. No. 671,833
Int. Cl. A01g *17/12;* **A43c** *11/00*
U.S. Cl. 47—42 **2 Claims**



A tree tie and the like comprising a single length of nylon strap having adjustable loops at its respective ends, with the strap ends at such loops secured solely by threading about retainer sleeves or slides. A winding device can be applied to the strap for variable shortening of the same.

3,526,057
ART OF PRECISION SURFACE ABRADING

Arthur J. Hackman, Jr., 611 Rivard, Grosse Pointe, Mich.
Filed Feb. 14, 1968, Ser. No. 705,505
Int. Cl. B24b *27/00*
U.S. Cl. 51—1 **12 Claims**



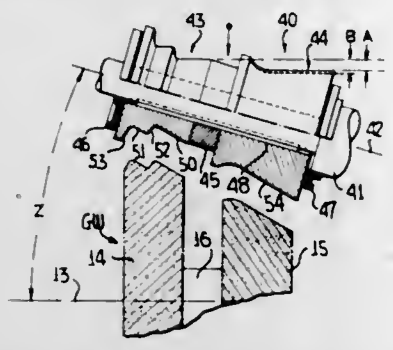
Lap size changing means are provided comprising an axially tapered lap holding part which is capable of radially expanding or contracting, said lap holding part having means to hold in axially fast relationship to itself a lap which is capable of radially expanding or contracting with said lap holding part, means for moving an axially tapered arbor in respect to the axial taper on said lap holding part to radially expand or contract said lap holding part, means for maintaining said lap holding part axially stationary during its radial expansion or contraction so that said lap radially expands or contracts with said lap holding part without changing the relative axial position of said lap in respect to a workpart said lap is abrading, whereby the radial expansion or contraction of said lap can be accomplished while said lap is in the process of abrading said workpart.

3,526,058
DIAMOND ROLLER DRESSER

Ralph E. Price, Waynesboro, Pa., assignor to Litton Industries, Inc., a corporation of Delaware
Filed June 28, 1967, Ser. No. 649,696
Int. Cl. B24b *7/00, 5/00*
U.S. Cl. 51—5 **5 Claims**

This disclosure relates to a dressing roller for a grinding wheel which grinds adjacent cylindrical and annular surfaces of the workpiece. Portions of the dressing roller corresponding to the annular surface of the workpiece are frusto-conical rather than cylindrical and annular because an annular dressing surface does not perform a satisfactory dressing operation as does a conical surface.

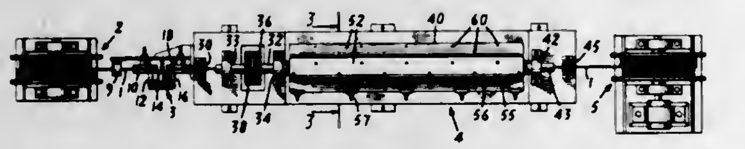
In order to dress a grinding wheel with such a dressing roller, the angle between the axis of the dressing roller and the axis of the grinding wheel must be different than the angle between the axis of the workpiece and the axis



of the grinding wheel by an amount corresponding to the difference between the annular surface of the workpiece and the corresponding conical surface of the dressing roller. This disclosure particularly rleates to dressing rollers having diamond impregnated surfaces.

3,526,059
MECHANICAL WIRE DESCALER

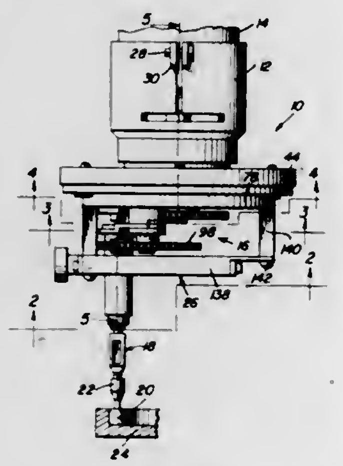
Raffaele Trimarchi, Jersey City, N.J., assignor of one-half to Paul Magarelli, Bogota, N.J.
Filed Aug. 11, 1967, Ser. No. 659,908
Int. Cl. B24b *7/00, 9/00*
U.S. Cl. 51—5 5 Claims



A wire descaler for mechanically breaking the scale on wire by a system of scale-breaker rollers arranged to flex and bend the wire along each circumferential section of each axial length thereof and subsequently abrade the wire while advancing it longitudinally through a rotatably driven elongated container having therein an abrasive material rotatably driven and held in close contact with the wire abrading the wire circumferentially and longitudinally.

3,526,060
JIG GRINDER

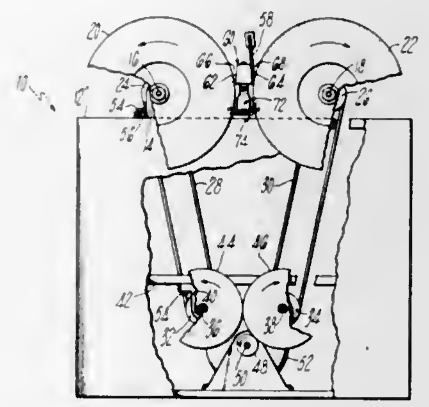
Clifton W. Hall, Knoxville, Tenn., and Clemmon H. Radford, deceased, late of Clinton, Tenn., by Voncile H. Radford, administratrix, 134 S. Main St., Evergreen, Ala. 36401; said Hall assignor to said Voncile H. Radford
Filed Jan. 20, 1967, Ser. No. 610,730
Int. Cl. B24b *5/00*
U.S. Cl. 51—90 12 Claims



A drive mechanism for a grinding tool having an input planet gear carrier that rotates the tool about a fixed axis at a low angular speed while the tool is driven about its own axis at an extremely high overdrive speed ratio. The position of the tool axis relative to the fixed axis is adjustable without change in the drive ratio of the gearing. Facilities are also provided for dressing the tool.

3,526,061
HONING MACHINE

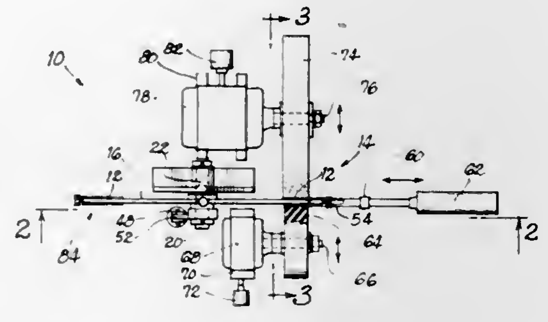
Silvio R. Battocchi, 85 Westbourne Parkway, Hartford, Conn. 06112
Filed Jan. 25, 1968, Ser. No. 700,569
Int. Cl. B24b *9/00*
U.S. Cl. 51—102 7 Claims



A honing machine comprising two grinding wheels in spaced peripheral alignment, a blade guide disposed between the grinding wheels, the grinding wheels and the blade guide jointly defining a pair of generally V shaped blade receiving slots, and releasable clamping means for maintaining the blade guide in adjusted relation to the grinding wheels, the grinding wheels being power driven in opposite angular directions with each grinding wheel rotating from a cutting edge toward a back edge of a blade received in one of the blade receiving slots.

3,526,062
HIGH PRODUCTION PRECISION GRINDING MACHINE

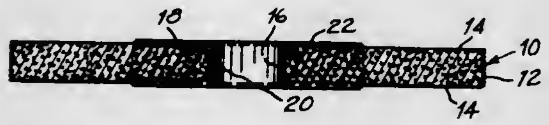
Peter J. Sommer, Elmhurst, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 29, 1968, Ser. No. 701,292
Int. Cl. B24b *5/04*
U.S. Cl. 51—108 10 Claims



A precision grinding machine, comprising an indexing turret, a plurality of work holders on said turret, each work holder comprising a pair of centers for supporting a workpiece, one of said centers being readily retractable to provide for the quick insertion and removal of workpieces, means for indexing said turret to bring the work holders successively to a work station, a movable supporting member engageable by the turret adjacent the work station to provide rigid support for the work holder at the work station, means for advancing and retracting said movable support, a drive wheel mounted on a first carriage, means for moving the first carriage to bring the drive wheel into engagement with the workpiece at the work station, a grinding wheel mounted on a second carriage, and means for moving the second carriage to bring the grinding wheel into engagement with the workpiece at the work station.

3,526,063
INTEGRAL MOUNTING MEANS AND REINFORCEMENT FOR GRINDING WHEELS

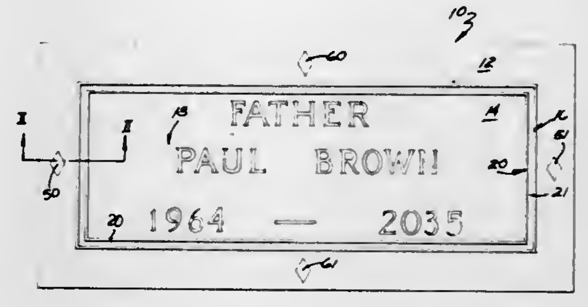
Arnold M. Cook, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Original application Mar. 8, 1965, Ser. No. 437,919, now Patent No. 3,354,510, dated Nov. 28, 1967. Divided and this application June 28, 1967, Ser. No. 672,659
Int. Cl. B24b *7/00*
U.S. Cl. 51—206 2 Claims



A central annular mounting and drive engaging portion of a porous grinding wheel has integrally molded bearing surfaces within a center arbor hole and side flange bearing surfaces with or without identifying indicia thereon of a cured resinous material injected into and reinforcing the central annular portion of the wheel. The cured resinous material fills and extends through pores in the central annular portion to form the bearing surfaces on opposite sides of the wheel and within the center hole.

3,526,064
STENCIL FOR ABRASIVE BLAST

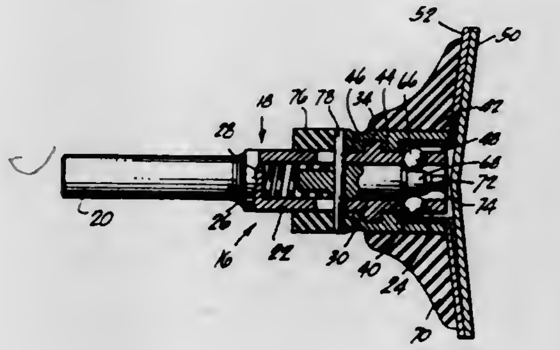
Daniel M. Spidell, Jr., 1715 Ranch Drive, NW., Grand Rapids, Mich. 49504
Filed Mar. 29, 1967, Ser. No. 626,824
Int. Cl. B24b *55/00*
U.S. Cl. 51—262 16 Claims



A stencil for cutting letters, symbols, and the like into stone by means of an abrasive blast, wherein the stencil is comprised of two basic parts cut from a single stencil by means of a steel rule or other cutting die. The two basic parts so cut comprise a border portion and a central inscription portion. The border portion peripherally encloses the inscription portion, which may be removed from and reinserted back into the border portion, with the two such portions having closely-fitting contiguous edges. Also, cut-outs are provided through the border portion by which the entire stencil may readily be positioned and aligned upon the face of a stone, as by aligning the cut-outs over indices such as scribe lines on the stone. The inscription portion may include numerous letter and symbol inscriptions cut thereinto by a die simultaneously with the mutual separation of these two portions and forming of the aforementioned cut-outs, during a single stamping or die-cutting operation.

3,526,065
ROTARY FINISHING TOOL

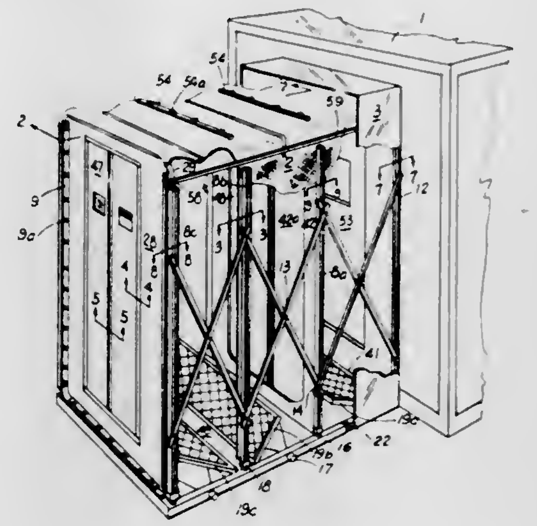
James H. Lee, 2924 W. 234th St., Torrance, Calif. 90505
Filed Sept. 26, 1967, Ser. No. 670,537
Int. Cl. B24d *13/14*
U.S. Cl. 51—358 5 Claims



Rotary disk tool for sanding, polishing etc. Rigid metallic driving hub has shank at one end to attach power source and peripheral socket at other end. Disk has connector shell centered on rear face. Shell fits into peripheral socket and has free end shaped to be driven by inner or outer wall of socket. In preferred form, has inward flange of hexagon shape to fit and be driven by center post of socket. Detent balls move radially outward of post to block disengagement of shell and "fly-off." Safety lock is not affected by driving load.

3,526,066
PORTABLE SHELTER

Charles E. Hagar, Maryland Heights, and Edward R. Gamble, Clayton, Mo., assignors to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 6, 1968, Ser. No. 773,715
Int. Cl. E04b *7/16;* **A47k** *3/23*
U.S. Cl. 52—27 5 Claims



A collapsible shelter defined by flexible wall means suspended from telescoping frame means which are extended and retracted along a base to open and collapse the shelter. Shower means can be provided within the chamber to move to a selected position when the frame is extended.

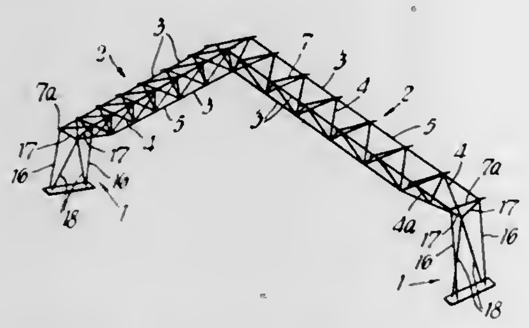
3,526,067
BUILDING CONSTRUCTION AND STRUCTURAL ELEMENT THEREFOR

Oskar Furter, Villa Landenberg, Sarnen, Switzerland; Aldo Henggeler, 17 Matthofring, Lucerne, Switzerland; Roland Crottaz, Kernmatt, Hergiswil am See, Switzerland; and Hans Seghizzi, Seestrasse, Meggen, Lucerne, Switzerland
Filed Jan. 30, 1968, Ser. No. 701,707
Claims priority, application Switzerland, Feb. 1, 1967, 1,491/67
Int. Cl. E04h *1/12;* **E04g** *21/14;* **E04c** *3/26*
U.S. Cl. 52—79 **10 Claims**

The invention relates to an industrially produced structural element forming a room unit and to buildings erected from such elements. The elements comprise a rectangular or square floor portion and a ceiling portion of the same shape and coextensive with the floor portion. The floor and ceiling portions are spaced at the required distance from each other by light columns placed each at one corner of the floor and ceiling portions and detachably secured to these portions. For erecting a building by means of these elements, any desired number of elements are laterally joined to each other and superposed one above the other. When a plurality of elements are superposed to erect a building having several floors, the light columns supporting the ceiling portion of an element cannot take up the increased charge. Prefabricated heavy concrete or metal pillars will then be placed at certain points between a ceiling portion of a lower element and extend through the recessed floor portion of the superposed element to support the ceiling portion of the superposed element. The ceiling portions can be formed by a grid structure composed of a series of parallel webs extending at right angles to each other. The webs can be provided with recesses to form two series of passages for plumber's and electrician's conduits, or for the provision of prestressing cables.

3,526,068
TRIANGULATED PORTAL FRAMES

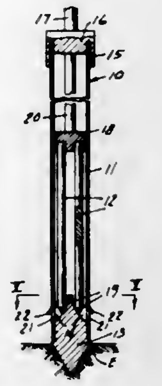
Peter Godfrey Buxton, Kenley, England, assignor to The British Aluminium Company Limited, London, England, a company of Great Britain
Filed Mar. 18, 1968, Ser. No. 713,762
Int. Cl. E04c *3/38;* **E04b** *1/32*
U.S. Cl. 52—86 **12 Claims**



A portal frame capable of being used in the construction of buildings such as glasshouses, sheds, garages and the like, formed from a pair of uprights each in the form of a sub-portal frame and joined at their upper ends by a crossmember formed from one or more lattice girders of triangular cross-section each formed from three parallel beams interconnected by struts and stays.

3,526,069
ANCHORING DEVICE

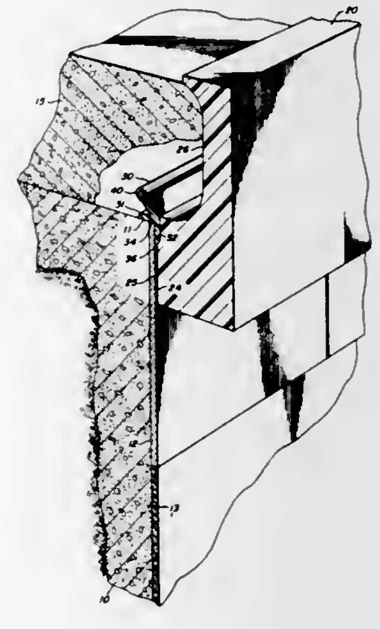
Robert F. Deike, Cheyenne, Wyo., assignor of one-fourth each to Anna B. Chamberlain and William H. Chamberlain, both of Laramie County, Wyo.
Filed Sept. 9, 1968, Ser. No. 758,554
Int. Cl. E02d *5/80*
U.S. Cl. 52—160 **15 Claims**



A ground or earth anchor for poles, posts, towers, guylines, tie-down mountings and the like composed of a pile member to be driven in the ground to a desired depth, rigid tentacle rods slidably carried by the pile member, means for forcing the rods downwardly along the pile member, and forming shoes on the pile member coacting with apertures in the pile member to provide extrusion orifices to deform the tentacle rods laterally outward and upwardly from the pile member to form anchoring roots resisting movement of the pile member under tension loads. The tentacle rods may be hollow with openings in their extended ends to force fluid, such as concrete, into the ground or to receive fluid, such as oil or water, from the ground.

3,526,070
POOL DECK FORM

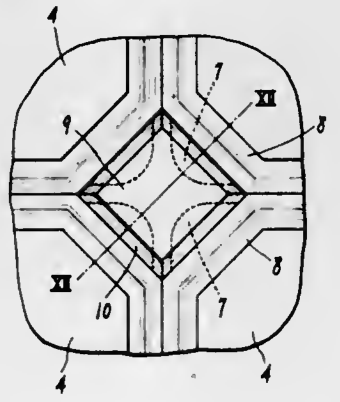
Max W. Deason, 3224 N. Erma Ave., Tucson, Ariz. 85705
Filed Nov. 13, 1968, Ser. No. 775,473
Int. Cl. E04g *11/00;* **E04b** *3/16*
U.S. Cl. 52—169 **5 Claims**



A continuous strip form of semirigid material having a contoured surface for holding concrete until set. The strip form includes a mounting surface having pressure-sensitive adhesive thereon for securing the strip form along the upper edge of a pool wall to be decked. An elongated joint member is positioned adjacent the strip form along the upper edge of the pool wall and includes an anchor lip extending therealong for embedding in the concrete. The strip form is removed when the concrete is set and the joint member remains.

3,526,071
PANEL FOR CURTAIN WALLS AND METHOD OF JOINTING CORNERS OF THE SAME

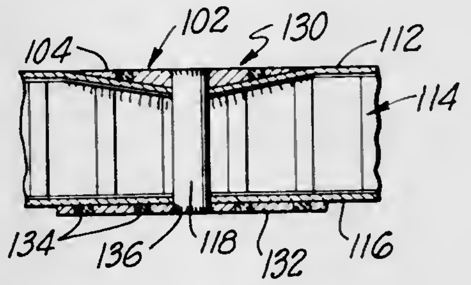
Hiroshi Watanabe, Ikeda, Japan, assignor to Kogyo Gonu Company Limited, Osaka Prefecture, Japan
Continuation of application Ser. No. 637,668, May 11, 1967. This application Feb. 17, 1969, Ser. No. 802,749
Int. Cl. E04b *1/36*
U.S. Cl. 52—403 **2 Claims**



A plate-shaped panel for curtain walls surrounded on periphery with a gasket so that, when the panel is set, said gasket may form a favorable joint and eliminate the need of extensive jointing work. At the corner of four panels, each gasket is provided with a projection which support a piece of rubber closing any air gap.

3,526,072
LOAD DISTRIBUTING SYSTEM FOR PANELS INCORPORATING HONEYCOMB CORE

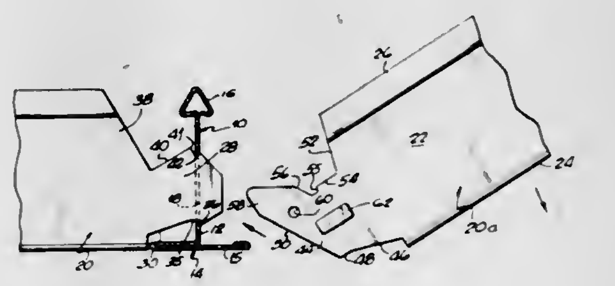
James R. Campbell, 1504 Carmelita St., Laguna Beach, Calif. 92651
Continuation of application Ser. No. 412,374, Dec. 8, 1965. This application Mar. 29, 1968, Ser. No. 724,669
Int. Cl. E04c *2/36*
US. Cl. 52—617 **2 Claims**



A load distributing system for honeycomb core panels having surface sheets which includes a load distributing member having load distributing means overlying only the outer surface of one surface sheet and urged into engagement with the surface sheet to a sufficient extent to cause a depression in said one surface sheet corresponding to the configuration of the portion of said load distributing member engaging said one surface sheet. The load distributing member has a portion extending through openings in the surface sheet and the honeycomb core and securement means connects the surface sheet engaging portion of the load distributing member with the outer surface of the surface sheet. Also embraced within the disclosure is a method of securing the load distributing member to a honeycomb core panel having surface sheets where an elongated portion of the load distributing member is inserted in openings in said sheets and said core and another portion of the load distributing member is engaged with only the outer surface of the first surface sheet and is urged axially against the first surface sheet to form a cavity therein corresponding to the configuration of the other portion of the load distributing member.

3,526,073
TRANSVERSE RUNNERS FOR GRIDS FOR SUSPENDED TILE CEILINGS

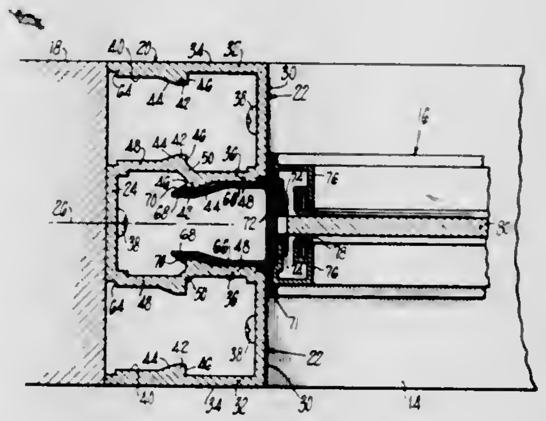
Eugene Brady, Ardsley, N.Y., assignor to Acoustical Ceiling Accessories Co., Inc., Bronx, N.Y.
Filed Apr. 14, 1969, Ser. No. 815,893
Int. Cl. E04c *2/42*
U.S. Cl. 52—667 **11 Claims**



In a grid for suspended tile ceilings formed of inverted T-shaped main and transverse runners, said main runners having vertical slots in their uprights; the transverse runners having extensions of their upright portions adapted to partially extend through the slots in the main runner uprights from opposed ends, the projecting end of one of the transverse runners foldable over the inner end of the extension of the other transverse runner in said slot.

3,526,074
SERPENTINE CROSS SECTION FRAME ASSEMBLY

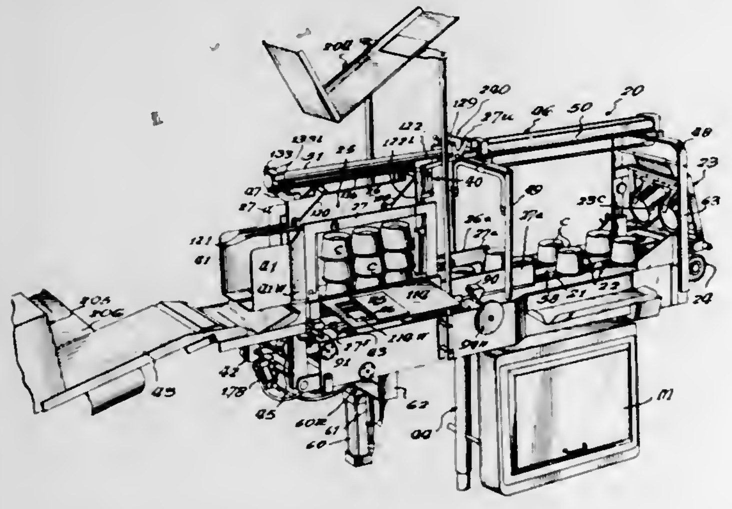
Robert A. Miller, Plainville, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Continuation of application Ser. No. 670,296, Sept. 25, 1967. This application Mar. 17, 1969, Ser. No. 809,478
Int. Cl. E06b *1/14, 1/40*
U.S. Cl 52—731 **5 Claims**



An elongate jamb readily securable to a door opening while providing a neat and clean exterior appearance devoid of exposed connectors consists essentially of a completely symmetrical serpentine extruded jamb having a pair of elongated generally U-shaped channel portions facing in a first direction and integrally joined by a connecting flange which traverses the longitudinal center line of the jamb for forming an oppositely facing central channel. Each channel of the serpentine jamb is provided with interior shoulders for retainably receiving the hooks of a channel cover strip which upon assembly provides a flat, flush exterior surface with the jamb. The cover strip is an extruded member adapted to fit within any of the channels of the serpentine jamb and may be adapted to transom glazing or similar modifications of the door opening.

3,526,075
COLLATOR APPARATUS AND METHOD

Martin Mueller and Bernard Zurhoefer, Chicago, Ill, assignors, by mesne assignments, to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Oct. 23, 1967, Ser. No. 677,098
Int. Cl. B65b *35/50*
U.S. Cl. 53—26 **23 Claims**

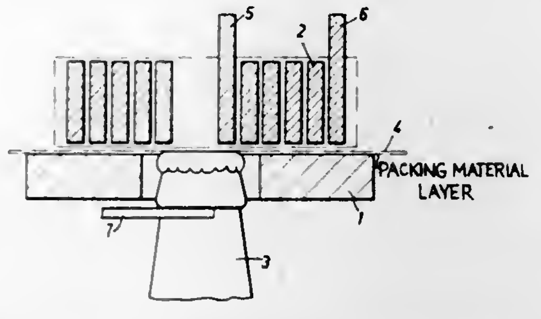


A collator machine for receiving individually fed articles, accumulating the articles in horizontal rows, elevating successive rows to form vertical tiers that define a composite array and discharging the array endwise into a container. A pair of continuously running conveyor belts are positioned side-by-side to form rows and tiers in side-by-side relation for discharge into the container. A depositor feeds the cups in pairs to the conveyor belts and the cups are moved to side-by-side storage compartments at an oppositely disposed accumulator position having a fixed central partition and movable side partitions. Counting and totalizing means are provided for each compartment for controlling an article elevating means. Swingably mounted support gates are located on the accumulator partitions, and the elevator means lifts the articles into supporting engagement with the support gates. Subsequent rows of articles lift the preceding rows and then take their support on the gates. A longitudinally movable pusher unit is then operated to shift the entire array of articles endwise into the container, and to shift the filled container down an inclined ramp.

3,526,076
METHOD AND APPARATUS FOR CLOSING CONTAINERS WITH CLOSURES SIMILAR TO BOTTLE CAPS

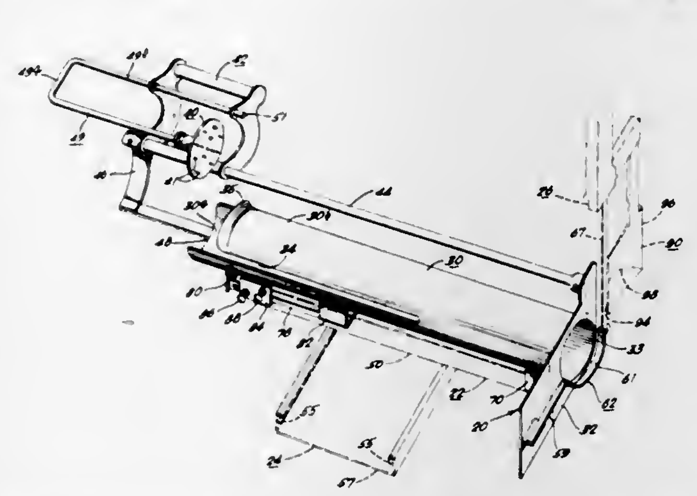
Gerhard Siewerth, Wiesloch, and Walter Auerswald, Mannheim, Germany, assignors to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a corporation of Germany
Filed Mar. 18, 1968, Ser. No. 713,706
Claims priority, application Germany, Mar. 18, 1967, B 91,681
Int. Cl. B65b *7/28*
U.S. Cl. 53—41 **5 Claims**

Method of closing containers su[illegible]bottles with closures similar to bottle caps include the steps of punching a closure blank out of a metal band and simultaneously pressing the closure blank onto the container so as to close an opening thereof in one operating step by passing a shock current discharge through an induction coil whereby a pressure wave is exerted on the closure blank. Container-closing apparatus for carrying out the above method includes a shock current induction coil having a single-layer spiral winding disposed in a given plane, a punch die having an opening with a profile corresponding to an opening of the container that is to be closed, the punch die being disposed in a plane underlying and spaced from said given plane a given distance so as to provide clearance for the insertion of a metal band therebetween, and means for inserting the container in the opening of the punch die.



3,526,077
APPARATUS FOR PACKAGING MEAT AND LIKE PRODUCTS

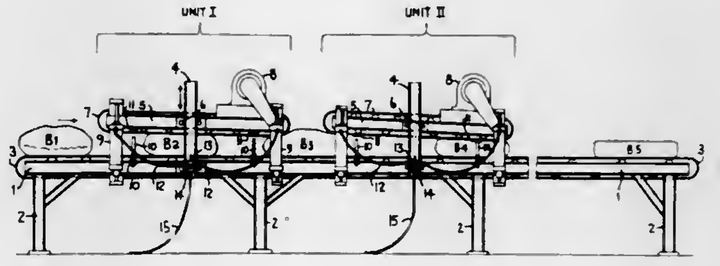
George A. Mixon, Fort Lauderdale, Fla., assignor to Mol-Pak Corp., Fort Lauderdale, Fla., a corporation of Florida
Continuation-in-part of application Ser. No. 479,949, Aug. 16, 1965. This application Oct. 25, 1968, Ser. No. 770,530
Int. Cl. A22c *7/00;* **B65b** *25/06, 39/14*
U.S. Cl. 53—123 **6 Claims**



A method for packaging meat products and the like consisting of the steps of slicing a cut of meat of predetermined size and shape, positioning the cut of meat in a tray having at least one cavity section with a sidewall slightly smaller than the thickness of the cut and a base conforming generally to the cross section of the cut so that the cut of meat fits snugly therein, enveloping the tray and cut in a heat shrinkable filmy material and freezing the packaged meat product, an apparatus for packaging cuts of an elongated meat product and the like in open trays comprising an elongated hollow tubular member of a predetermined cross section conforming generally to the cross section of the elongated meat product, plunger means engageable in one end of the tubular member to advance the meat product longitudinally therein toward the discharge end, a tray support member adjacent the discharge end for mounting a tray in a vertical position to receive a cut of the meat product therein, stationary backup means supporting the tray in a vertical receiving position at the discharge end of the tubular member, cutting means and means for actuating the tubular member relative to the cutting means to sever a cut of meat from the main portion.

3,526,078
PACKAGE COMPACTING DEVICE

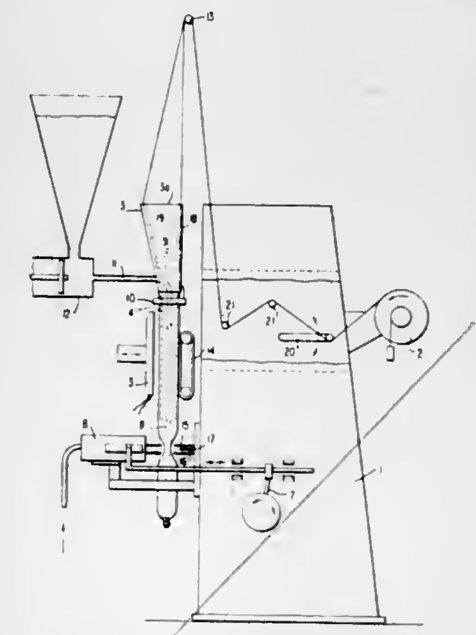
Cloyde G. Dye, Barberton, Ohio, assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 582,074, Sept. 26, 1966. This application Apr. 28, 1969, Ser. No. 825,108
Int. Cl. B65b *1/24*
U.S. Cl. 53—124 **8 Claims**



Disclosed is a device for producing firm, rigid packages of compacted, finely-divided, particulate material from enclosed, highly-aerated packages of the material. The device includes a base frame which supports conveying means such as an endless belt. The device further includes compacting means disposed along the conveying means for applying a squeezing force to the package, thereby reducing the volume and driving air from the package.

3,526,079
APPARATUS FOR THE CONTINUOUS PRODUCTION OF TUBULAR PACKAGES

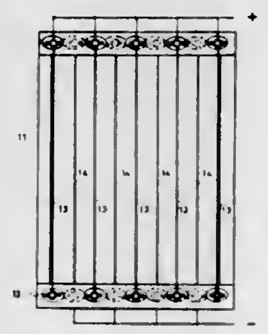
Wilhelm Günther Maxeiner, deceased, late of Wiesbaden-Biebrich, Germany, by Minna Martha Karola Maxeiner, nee Martin, Brigitte Maxeiner, and Jutta Maxeiner, heirs, and Gerhard Schönbach, Wiesbaden-Biebrich, and Georg Trzeciak and Gerd Hohl, Wiesbaden-Schierstein, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed Nov. 7, 1967, Ser. No. 681,293
Claims priority, application Germany, Nov. 9, 1966, K 60,665
Int. Cl. B65b *9/12*
U.S. Cl. 53—180 **6 Claims**



This invention relates to apparatus for the continuous production of filled tubes from a film web which is thermoplastic on both surfaces, which comprises means for advancing the web downwardly, converting the web from a flat to a tubular form, interrupting the advancement of the tube and forming two transverse seals in the tube, severing the tube between the seals and welding the edges of the web together, and filling a desired product into the tube upon further advancement of the latter.

3,526,080
ATOMIC ENERGY DUST TRAPPING DEVICE

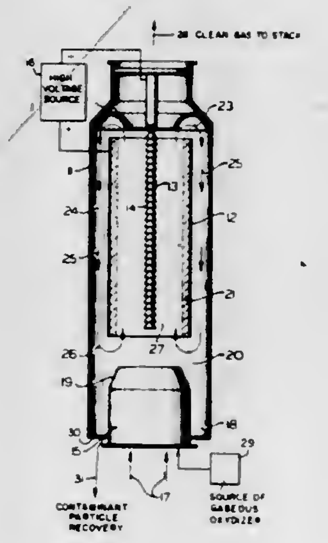
Alexander M. Senkewich, New York, N.Y., assignor of five percent to Marjorie Kingston, Flushing, N.Y., and five percent to Linda Heilman, Rye, N.Y.
Filed Apr. 5, 1965, Ser. No. 445,636
Int. Cl. B03c *3/38*
U.S. Cl. 55—102 **6 Claims**



A dust collecting screen operated by voltage from an atomic battery.

3,526,081
GAS PURIFICATION

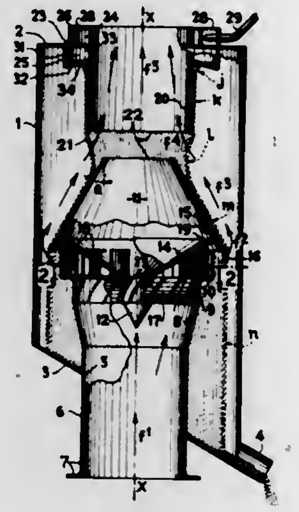
Wilhelm Kusters, 45 Eberburgweg, Aachen, Germany
Filed June 14, 1966, Ser. No. 557,466
Claims priority, application Germany, July 9, 1965, K 56,578
Int. Cl. B03c *3/14*
U.S. Cl. 55—127 **5 Claims**



Gas purification apparatus having axially aligned entry treatment chamber and exit members, concentric first and second electrodes axially disposed within said treatment chamber, wherein the treatment chamber has a diameter greater than the diameter of the larger of the two electrodes, whereby providing annular channel means between the larger-diameter electrode and the inner wall of the treatment chamber; means for imparting a voltage differential to the electrodes, whereby to form a corona discharge from the central electrode adapted to move contaminant particles within a gas stream present between the electrodes radially outward toward the larger diameter electrode, whereby forming a layer of gas adjacent to the inner surface of the larger-diameter electrode, which is laden with such particles and means straddling the larger-diameter electrode at the downstream end thereof, adapted to deflect at least this laden portion of the gas 180° from its position adjacent to the internal surface of the larger-diameter electrode to a position within the annular passage between the treatment chamber and the larger-diameter electrode.

3,526,082
APPARATUS FOR REMOVING DUST FROM GASES

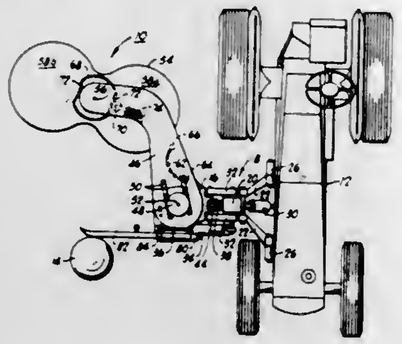
Jean Louis Edouard Thuillier, 12 Salles la Source-Cadayrac, France
Filed June 27, 1968, Ser. No. 740,720
Claims priority, application France, July 6, 1967, 113,430
Int. Cl. B01d *47/10*
U.S. Cl. 55—235 **13 Claims**



An apparatus for removing dust from a gas. The apparatus comprises a case in which means are provided for imparting a giratory motion to the gas and means for feeding and guiding dust-removing water so that the water travels in the opposite direction to the gas and constitutes a stable wall of water which is concentric with the giratory motion of the gas. Means are provided to constrain the gas to pass through the wall of water.

3,526,083
POST MOWER

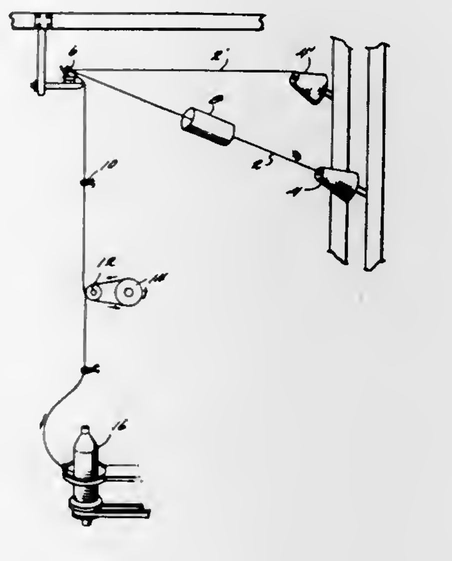
Robert O. Barry, 3621 NW. 65th Terrace 73116, and John F. Watson, 716 NW. 15th St. 73103, both of Oklahoma City, Okla.
Filed Dec. 19, 1967, Ser. No. 691,907
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **11 Claims**



Apparatus for mowing around posts, pipes, or whatever, the apparatus being borne by a motive device to mow completely around the object during a single pass by the motive device. The apparatus relies upon a figure-eight cutting head, a pair of rotating mowers in side-by-side array, which is pivotally supported by a central axis from a support arm extending outward from the motive device. Means are provided to sense or respond to the post object to set the support arm and cutter head in motion such that they seek an optimum position from which the forward motion of the motor device causes proper circulation of the cutting head about each successive post object.

3,526,084
PRODUCTION OF UNIQUE YARNS

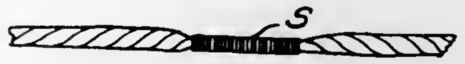
Joe F. London, Jr., and James L. Taylor, Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,368
Int. Cl. D02g *3/04;* **D03d** *15/00*
U.S. Cl. 57—140 **10 Claims**



A process for producing a fabric having a crepe-like effect which includes plying a substantially twist free yarn with another substantially twist free yarn, the yarns having different shrinkage properties. Thereafter, the composite yarn is subjected to a twisting operation wherein a twist level ranging from 5 to 15 turns per inch is placed in the composite yarn. The thus twisted composite yarn is incorporated into a fabric.

3,526,085
SPLICE AND METHOD OF MAKING SAME

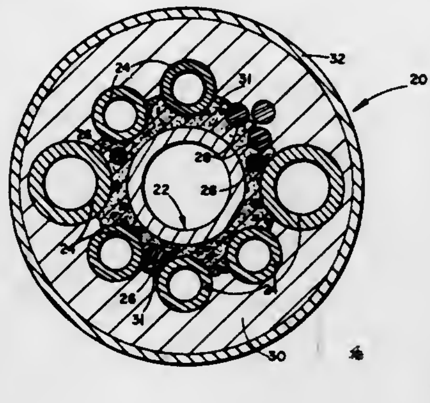
Walter F. Illman, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Original application May 25, 1967, Ser. No. 641,357. Divided and this application June 6, 1968, Ser. No. 750,664
Int. Cl. D02g *3/22;* **B65h** *69/06, 69/04*
U.S. Cl. 57—142 **17 Claims**



A splice and a method for making the same, the splice having flexibility and strength at least equal to the strength of the individual yarn being spliced. The yarn ends to be spliced are arranged in overlapping side-by-side relationship and a wrapping material is helically wound and embedded in the yarn ends, the wrapping material being removable after the yarn has been manipulated into a fabric. The wrapping material for the splice may be water soluble material, a solvent soluble material, or a relatively inert material and it may be multifilament or monofilament.

3,526,086
MULTICONDUIT UNDERWATER LINE

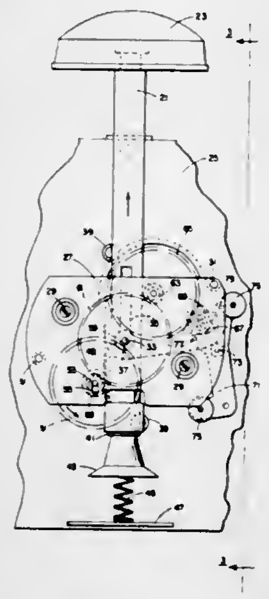
George W. Morgan, Anaheim, Calif., assignor to North American Rockwell Corporation
Filed Apr. 12, 1968, Ser. No. 721,014
Int. Cl. D07b *1/20;* **F16l** *11/00, 9/18*
U.S. Cl. 57—149 **1 Claim**



A flexible underwater line having a plurality of conduits laid in a spiral configuration about a central core member, which member may be a conduit or a high tensile strength cable. Where the central core member is a conduit, high tensile strength cables may be situated axially along said conduit. A flexible protective sheath surrounds the spiral configuration in order to bundle the conduits together and to form an integrated cable-like structure. Within the sheath, the spaces around the conduits may be filled with a substance for providing lubricity between the conduits.

3,526,087
RANDOM DELAY TOY TIMER

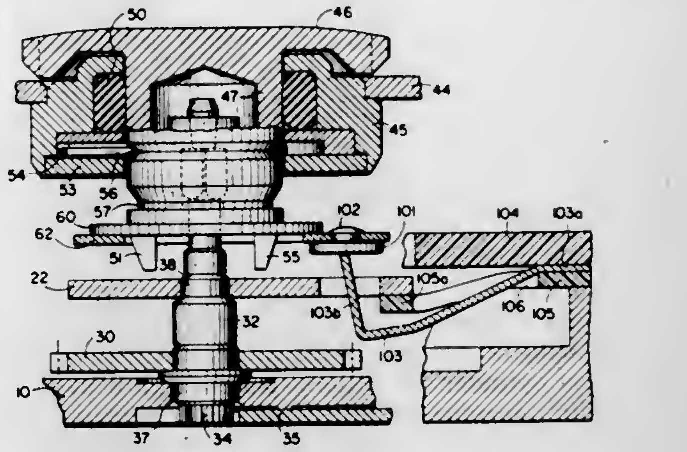
Adolph Eddy Goldfarb, 19434 Londelius St., Northridge, Calif., and Rene Soriano, Los Angeles, Calif.; said Soriano assignor to said Goldfarb
Filed Mar. 14, 1969, Ser. No. 807,175
Int. Cl. G04b *45/00*
U.S. Cl. 58—2 **7 Claims**



A toy timer incorporating means operated by a push-down handle or plunger for stopping for randomly varied lengths of time the operation of the timer.

3,526,088
WATCH SETTING CROWN MECHANISM

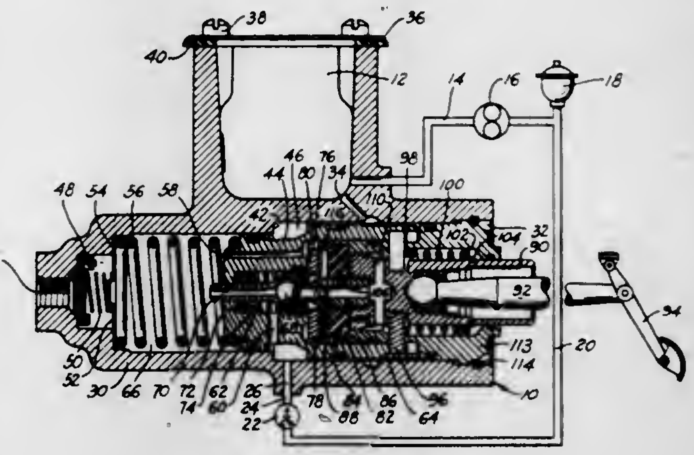
Heinz Meitinger, Pforzheim, Germany, assignor to Timex Corporation, a corporation of Connecticut
Filed May 2, 1969, Ser. No. 821,443
Claims priority, application Germany, June 21, 1968, 1,773,680
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **6 Claims**



A watch includes an oscillator, such as a balance wheel, a battery and an electronic circuit. An on-off switch, to connect and disconnect the circuit to the battery, includes a set of contacts one of which is operated by the setting crown mechanism. The operated switch contact is positioned on a spring member. The spring member also positions the balance wheel during the setting of the watch hands.

3,526,089
REACTION MEANS FOR FLUID PRESSURE CONTROL VALVE

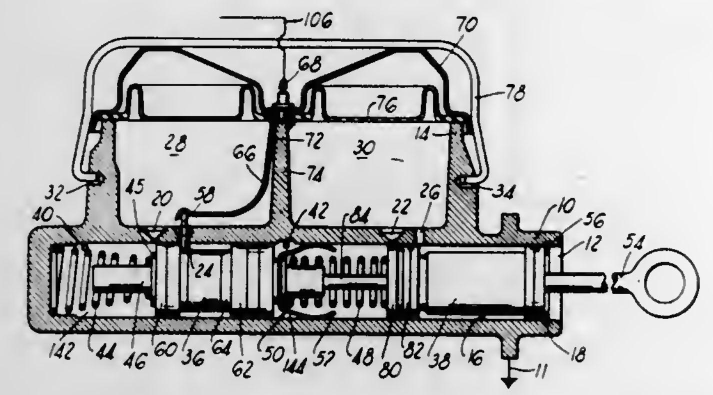
Keith H. Fulmer, South Bend, Ind., assignor to The Bendix Corporation
Continuation of application Ser. No. 678,830, Oct. 30, 1967. This application Dec. 18, 1968, Ser. No. 797,306
Int. Cl. F15b *13/14, 15/18*
U.S. Cl. 60—54.5 **12 Claims**



A reaction means for a control valve between the pressure generating chamber and a reservoir communication in a control chamber which provides a limited area friction seal for an actuating member of the control valve that also permits self-aligning of the valve elements.

3,526,090
MASTER CYLINDER MALFUNCTION INDICATOR

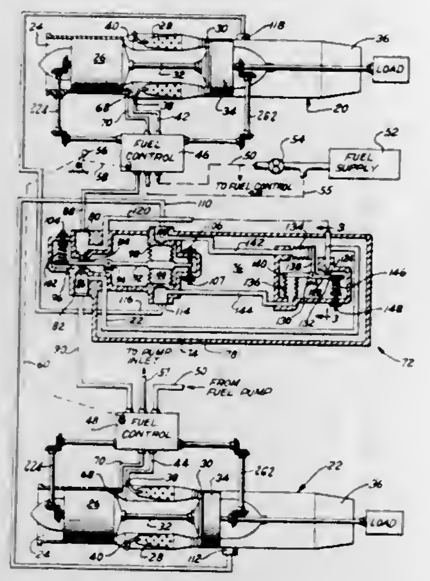
Raymond A. Reznicek, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,581
Int. Cl. F15b *7/00, 7/08*
U.S. Cl. 60—54.6 **8 Claims**



Warning signal switch means for a brake master cylinder utilizing a closed electrical circuit having in series a master cylinder secondary piston and a caged spring assembly operatively connected to the master cylinder primary piston and the master cylinder housing.

3,526,091
CONTROL APPARATUS FOR EQUALIZING AND/OR LIMITING AN ENGINE OPERATING CONDITION OF A PLURALITY OF GAS TURBINE ENGINES

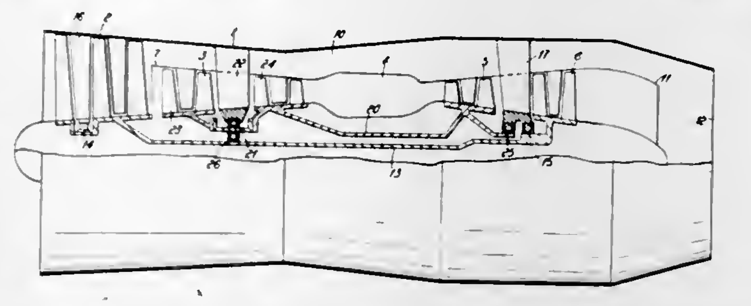
Robert W. Schuster, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Nov. 15, 1968, Ser. No. 776,197
Int. Cl. F02b *73/00;* **F02c** *9/08*
U.S. Cl. 60—39.16 **10 Claims**



Control apparatus for equalizing the power of output of at least two gas turbine engines wherein each engine is controlled by separate fuel control systems both of which fuel control systems are connected to respond to engine torque sensing and comparing apparatus provided with oppositely acting bellows one of which responds to a fluid pressure representing output torque of one engine and the other of which responds to a fluid pressure representing output torque of the second engine and control means actuated by the two bellows for increasing fuel flow to one of the two engines to increase the output torque thereof in the event of output torque error therebetween. A pair of mutually assisting bellows each of which responds to one of the two fluid pressures representing torque output of the two engines and control means actuated by the mutually assisting bellows operates to limit the combined torque output of the two engines to a predetermined value and to increase fuel flow to one or both of the two engines irrespective of a torque error therebetween to maintain the predetermined combined torque output.

3,526,092
GAS TURBINE ENGINE HAVING IMPROVED BEARING SUPPORT MEANS FOR CONCENTRIC SHAFTS

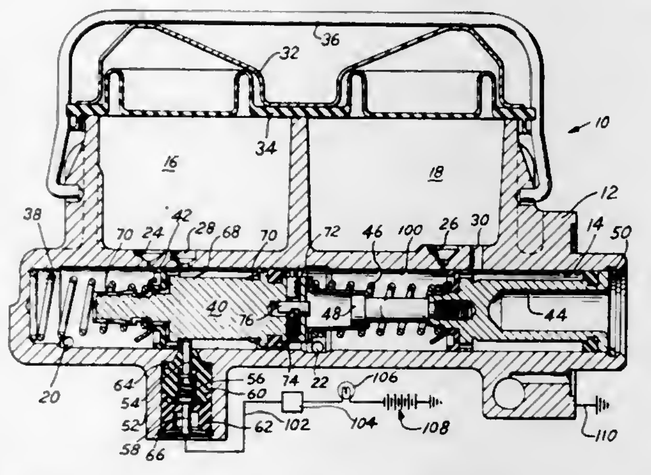
Thomas Steel, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Aug. 21, 1968, Ser. No. 754,190
Claims priority, application Great Britain, Sept. 15, 1967, 42,226/67
Int. Cl. F02c *7/02, 7/06*
U.S. Cl. 60—39.16 **4 Claims**



A gas turbine engine has a low pressure shaft on which a low pressure compressor and a low pressure turbine are mounted and a high pressure shaft on which a high pressure compressor and a high pressure turbine are mounted, and shaft bearings which are arranged respectively upstream and downstream of the engine combustion equipment, the high pressure shaft having its upstream bearing arranged downstream of its upstream end and having its downstream bearing arranged downstream of a rotor of the high pressure turbine, the high pressure shaft being unsupported between its upstream and downstream bearings; an intershaft bearing being disposed between the high and low pressure shafts, the intershaft bearing being aligned with the upstream bearing of the high pressure shaft.

3,526,093
SWITCH MEANS FOR SPLIT MASTER CYLINDERS

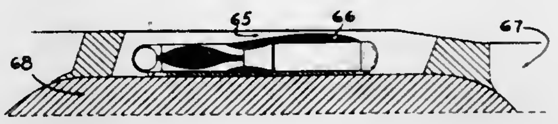
Jack A. Kimura and Paul B. Shutt, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Jan. 15, 1969, Ser. No. 792,902
Int. Cl. F15b *7/08;* **H01h** *35/38;* **B60t** *11/20*
U.S. Cl. 60—54.6 **11 Claims**



A switch means for a closed circuit indicating means which includes a first switch contact to a piston means and a second switch contact from the latter to a housing of a master cylinder, which second switch contact has a contact that is radially reciprocable and operated by, as well as held in place by, an axially reciprocable plunger.

3,526,094
RAMJET ENGINE WITH RETRACTABLE LOW-SPEED DEFLECTORS

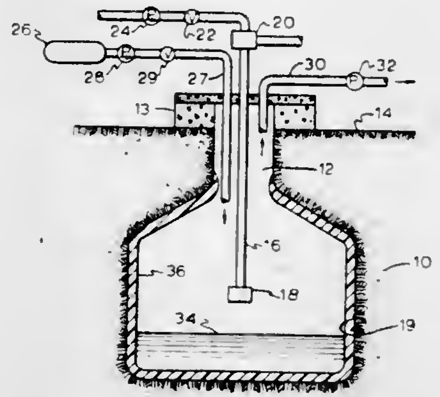
Jacques Tricand de la Goutte and Hugues Tricand de la Goutte, both of 3440 Bienvenue, Ville Brossard, South Gate, Quebec, Canada
Filed Dec. 14, 1967, Ser. No. 691,119
Int. Cl. F02k *7/10*
U.S. Cl. 60—244 **4 Claims**



A ramjet engine having a plurality of combustors mounted on a rotary carrier and retractable air and exhaust deflectors to permit operation at subsonic speed.

3,526,095
LIQUID GAS STORAGE SYSTEM

Ralph E. Peck, 10 W. 34th St., Chicago, Ill. 60616
Continuation-in-part of application Ser. No. 739,520, June 24, 1968. This application July 24, 1969, Ser. No. 845,940
Int. Cl. B65g *5/00*
U.S. Cl. 61—.5 **17 Claims**

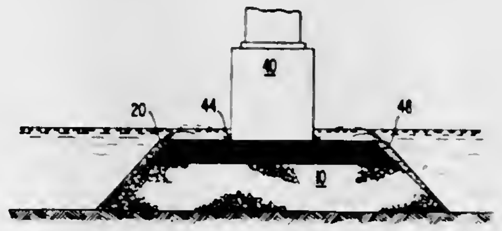


A system and method for storing liquefied gases in chambers. The walls of the chamber are coated with a petroleum fraction which is at least partly a liquid at room temperature, and which boils at temperatures below levels which would obtain petroleum oils. The petroleum fraction may be a mixture of such liquid hydrocarbons and heavier hydrocarbons applied to the walls of the chamber and solidified to a non-brittle, waxlike state after charging the chamber with a liquefied gas having temperatures which are sufficiently low to flexibly solidify said petroleum fraction.

3,526,096
METHOD OF MAKING ROCKFILI FOUNDATIONS

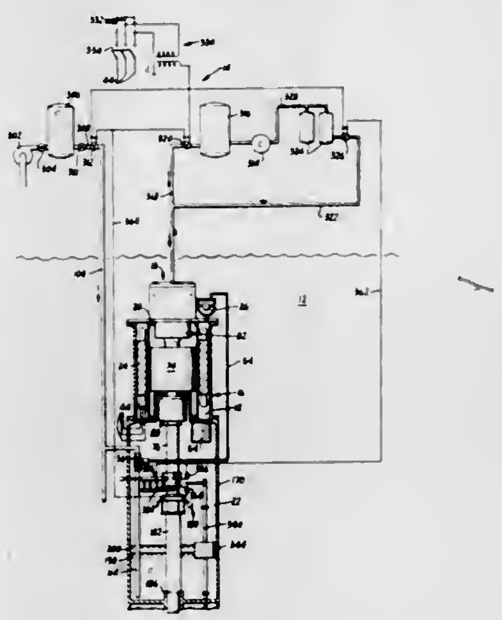
Joseph P. Frein, Boise, Idaho, and Arthur Casagrande, Belmont, Mass., assignors to Morrison-Knudsen Company, Inc., a corporation of Delaware
Filed Dec. 11, 1968, Ser. No. 783,016
Int. Cl. E02d *27/04, 27/52*
U.S. Cl. 61—46 **16 Claims**

Rockfill foundation for support of a bridge pier, or the like, in which the lower portion of the foundation is made from large size, hard durable rock without any particular treatment. The upper portion of the foundation is formed from individually compacted rock layers raising to within a desired range of water surface. A surcharge of rock approximately equal to the expected load is added to the compacted layer. Surcharged rock is then used to form a breakwater around the work area for construction of a weight distributor block on the upper surface of the compacted layers.



3,526,097
SUBMERGIBLE APPARATUS

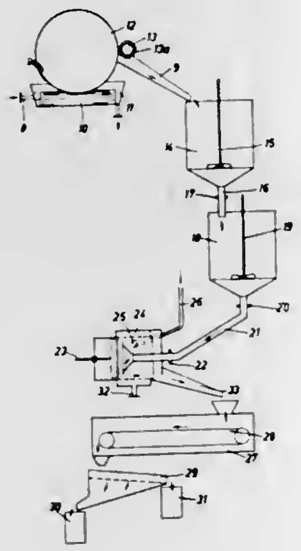
Arthur J. Nelson, 1998 Broadway St., San Francisco, Calif. 94109
Original application Aug. 4, 1966, Ser. No. 570,197, now Patent No. 3,432,704, dated Mar. 11, 1969. Divided and this application Oct. 9, 1968, Ser. No. 766,252
Int. Cl. B63c *11/00*
U.S. Cl. 61—69 **11 Claims**



An apparatus for submergence in a fluid to provide an environment isolated from the fluid. The apparatus comprises a housing defining a primary chamber having an upper portion containing a first volume of fluid, a lower portion containing a second volume of fluid and an intermediate portion containing a buffer fluid floating on the second volume to act as a piston isolating the first and second volumes. Valve structure is provided to selectively open and close the lower portion of the chamber to a body of fluid in which the apparatus is submerged whereby the lower portion may be opened to permit the second body of fluid to communicate with a body of fluid in which the apparatus is submerged and closed to prevent the escape of the buffer fluid. Monitoring and control structure is provided to monitor the level of the buffer layer and control the first volume of fluid to maintain level of the layer within a predetermined range.

3,526,098
PREPARING SOLID POLYMERS IN AN AQUEOUS DISPERSION BY THAWING

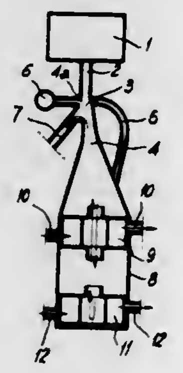
Helmut Huhn and Gerhard Hogrefe, Walsrode, and Joachim Stolberg, Bomlitz, Germany, assignors to Firma Wolff & Co. Aktiengesellschaft, Walsrode, Germany
Filed Aug. 11, 1967, Ser. No. 660,060
Claims priority, application Germany, Aug. 16, 1966, W 42,214
Int. Cl. B01d *9/04*
U.S. Cl. 62—58 **10 Claims**



A process for the preparation of solid polymers from aqueous dispersions thereof, which comprises the steps of freezing the aqueous dispersion while being passed through a vessel, breaking up the frozen mass, introducing it into a hot liquid for thawing, whereby a suspension of the polymer in the molten liquid is obtained, separating the solid polymer particles from the liquid, washing, drying and finally screening the particles to obtain finer and coarser particles separately.

3,526,099
HEAT EXCHANGING APPARATUS

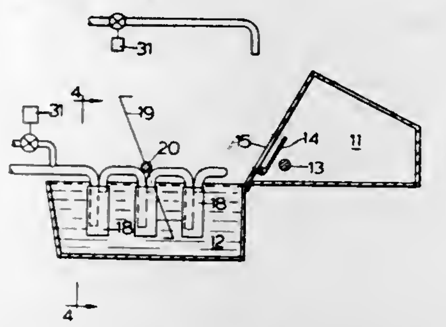
Cyrille François Pavlin, Jouy-en-Josas, Edouard M. E. A. Macé, Meudon-la-Foret, Marcel Augustin Joseph Jannot, Sarcelles, and Benjamin Jean Marcel Salmon, Suresnes, France, assignors to Bertin et Compagnie, Paris, France, a French body corporate
Filed Feb. 29, 1968, Ser. No. 709,448
Claims priority, application France Mar. 1, 1967, 97,014
Int. Cl. F25b *9/00*
U.S. Cl. 62—88 **17 Claims**



The invention comprehends a heat exchange apparatus, in particular a refrigerating apparatus, operating by compression and expansion of gas, in which the gas is heated or cooled in fluid bi-stable members whereby the compression and expansion of the gas are caused to alternate.

3,526,100
CONTINUOUS ICE-MAKING MACHINES

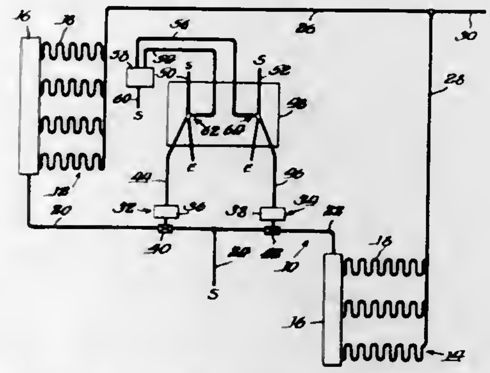
Henry Arthur Briel, Johannesburg, Republic of South Africa, assignor to Ice-Master (Proprietary) Limited, Johannesburg, Republic of South Africa
Filed Apr. 5, 1968, Ser. No. 719,002
Int. Cl. F25c *1/08*
U.S. Cl. 62—136 **1 Claim**



A continuous ice-making machine comprises a hopper having a first and a second chamber; the hopper being rotatable between a first position in which water is fed into the first chamber and a second position in which the water passes to the second chamber where icing is effected by an evaporator in the form of a series of fingers, the hopper being biased to the first position and rotation taking place once the water in the first chamber reaches a predetermined level; a releasable catch to hold the hopper in the second position, a stirrer carried on a rotatable shaft and adapted to release the catch when its movement is obstructed by the formation of ice, the stirrer acting between the fingers of the evaporator, and means to blow hot gas on the fingers of the evaporator to discharge the ice.

3,526,101
FLUIDIC COOLING CONTROL

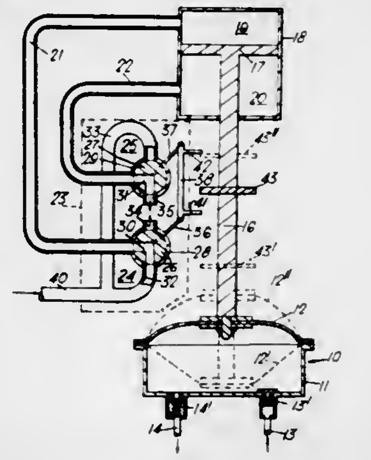
David H. Thorburn, Oak Park, Ill., assignor, by mesne assignments, to Powers Regulator Company, Skokie, Ill., a corporation of Delaware
Filed Aug. 5, 1968, Ser. No. 750,217
Int. Cl. F25b *41/04*
U.S. Cl. 62—223 **9 Claims**



A cooling system including a pair of cooling or refrigeration units which are selectively controlled by fluidic relays in accordance with sensed environmental temperature. The first cooling unit is adapted to operate only when the sensed temperature is greater than a predetermined reference value, while the second cooling unit operates only when the temperature is equal to or less than the reference value but greater than a predetermined minimum value. To accomplish this selectivity, a pair of monostable fluidic relays are adapted to open and close valves which control the flow of coolant to the cooling units. The relays exhaust in a stable condition, but operate in the presence of control signals to provide a fluid signal to open the valves. The control signals are selectively transmitted to the relays by means of a switch which is actuated by a temperature responsive transducer. Whenever the temperature in the vicinity of the transducer is greater than the reference value, a control signal is transmitted to the first relay, thus causing the first valve to open, allowing operation of the first cooling unit. As the temperature sensed by the transducer falls below the reference value, the switch disconnects the control signal from the first relay and connects a similar control signal to the second relay, thus causing the second cooling unit to operate. When the temperature sensed by the transducer reaches the minimum value the switch acts to remove the control signal from the second relay and neither cooling unit operates.

3,526,102
PUMPING AND COOLING SYSTEM

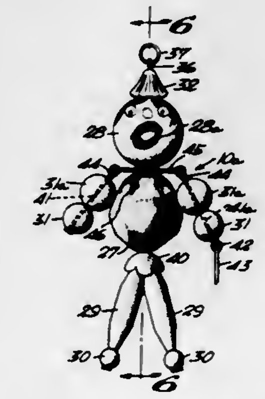
William F. Boylett, Ormskirk, Joseph William Hill, Saint Helens, Tom B. Leamon, Ormskirk, and George Shaw, Bickerstaff, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Aug. 21, 1968, Ser. No. 754,283
Claims priority, application Great Britain, Aug. 25, 1967, 39,195/67
Int. Cl. F25d *23/12;* **B67d** *5/62*
U.S. Cl. 62—259 **10 Claims**



A pumping and cooling system for a protective suit comprises a coolant circuit including passages in the suit and a flow passage in heat exchange with an evaporating refrigerator; and a reciprocating pump in the circuit is operated by pressure fluid from the refrigerant through valve means having two settings corresponding to the two strokes of the pump and operated cyclically by changeover means.

3,526,103
WIRE AND BEAD JEWELRY CONSTRUCTION

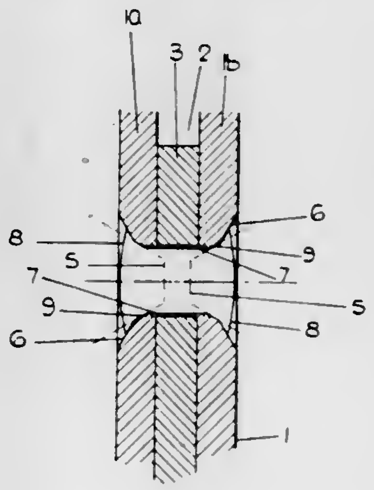
Joseph G. Lieber, 560 NE. 68th St., Miami, Fla. 33150
Filed Mar. 20, 1968, Ser. No. 714,560
Int. Cl. A44c *25/00*
U.S. Cl. 63—2 **1 Claim**



Novelty jewelry in the form of animal and human caricatures utilizing beads strung on wire pins, comparatively large torso and head beads being strung on a main wire pins, inner ends of which are appropriately linked animal or human appendages being strung on auxiliary wire pins, inner ends of which are approximately linked to the main wire pin at positions therealong, selectively, between the torso and head beads and at the outer ends of said beads.

3,526,104
LATCH NEEDLES

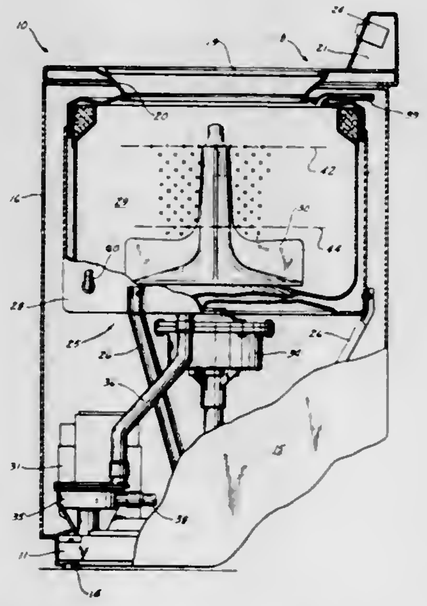
George William Beighton, Groby, England, and Arthur Iden Britcher, Antrim, Northern Ireland, assignors to T. Grieve and Company Limited
Original application Oct. 11, 1966, Ser. No. 585,855, now Patent No. 3,439,729, dated Apr. 22, 1969. Divided and this application Sept. 9, 1968, Ser. No. 798,210
Claims priority, application Great Britain, Dec. 8, 1965, 51,970/65
Int. Cl. D04b *35/04*
U.S. Cl. 66—122 **3 Claims**



A latch needle is provided, wherein the needle is specifically adapted for fine gage knitting machines its spindle having rivet-like ends, being threaded into at least one cheek of the needle and being keyed against rotation within the cheeks, and wherein a latch is rotatively carried on the spindle.

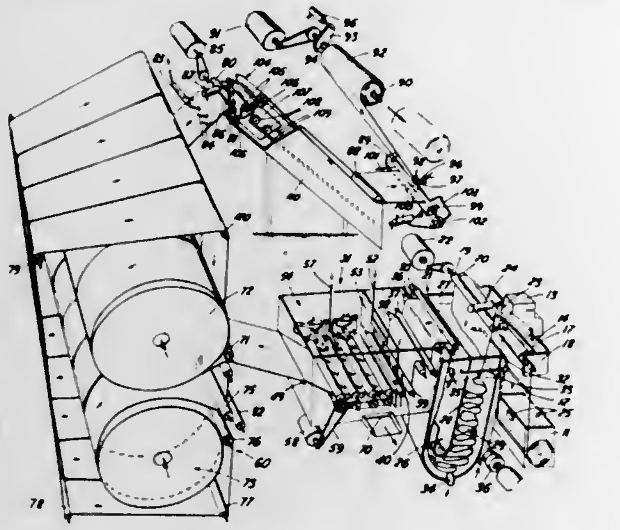
3,526,105
CENTRIFUGAL EXTRACTOR CONTROL

Tad B. Anthony, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 762,793
Int. Cl. D06f *23/04, 39/08*
U.S. Cl. 68—12 **5 Claims**



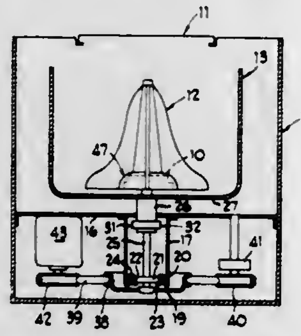
A fabric washing apparatus including a centrifugal extraction operation and comprising control means for operating commonly driven centrifugal extractor means and pumping means to achieve a rapid pump-out of liquid during a period of retarded extractor speed followed by slow speed rotation of the extractor whereby a fast pump-out is combined with a gentle speed extraction for "permanent press" fabrics. The speed control may also be combined with a cool-down operation.

3,526,106
APPARATUS FOR LAUNDERING CONTINUOUS FEED TOWEL LENGTHS
Walter David Kennedy, David Edward John Saunders, and Arthur Reginald Marshall, East Grinstead, England, assignors to David Kennedy (Engineers) Limited, East Grinstead, Sussex, England, and Universal Towel Company Limited, East Grinstead, Sussex, England, a British company
Filed Oct. 7, 1968, Ser. No. 765,547
Int. Cl. D06f *29/02, 31/00*
U.S. Cl. 68—13 **13 Claims**



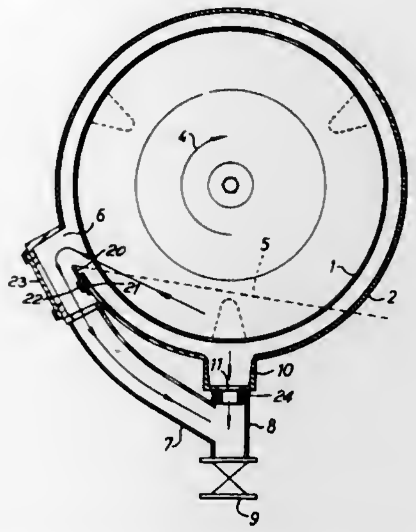
Apparatus for laundering continuous feed towel lengths comprises apparatus which allows soiled lengths to be joined together end-to-end to form a continuous succession, which washes the towel lengths, in a flat state, and which winds each towel length in turn on a mandrel, means being provided for stopping the feeding process so that another towel length may be joined into the succession and further means being provided for stopping the winding-up process to allow separation and removal of each towel length after it has been wound on the mandrel.

3,526,107
HYDRAULIC TRANSMISSION FOR FABRIC-TREATING MACHINES
Curtis E. Kurtz, Arlington Heights, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,303
Int. Cl. D06f *23/04*
U.S. Cl. 68—23.7 **20 Claims**



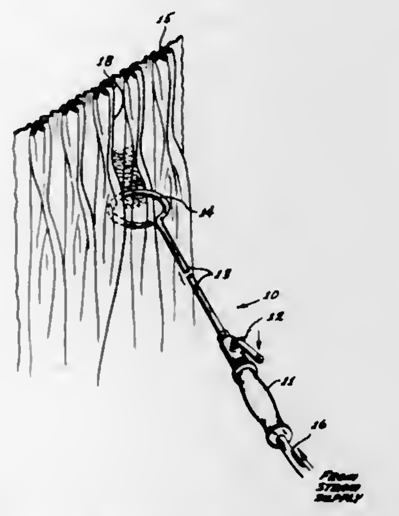
A hydraulic transmission for operating an agitator for a fabric-washing operation and rotating a fabric container for a spin-extract operation and having a pump comprising a pumping element and a housing therefor, the pumping element being rotatable to supply washing fluid in the container to a vane-type hydraulic motor having a vane fixed to the container and a vane housing connected to the pump housing and to the agitator, the pump providing fluid under pressure reacting against the vane to provide movement of the housings to operate the agitator, the container being held against rotation during agitator operation and releasable to effect hydraulic coupling of the pump housing and pumping element to rotate the vane and its housing and thereby the container.

3,526,108
DRAIN SYSTEM FOR LAUNDRY WASHING MACHINES
Geoffrey Luther Grimwood, Wooldale, Holmfirth, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, Yorkshire, England
Filed Mar. 15, 1968, Ser. No. 713,501
Claims priority, application Great Britain, Mar. 17, 1967, 12,605/67
Int. Cl. D06f *37/26*
U.S. Cl. 68—208 **4 Claims**



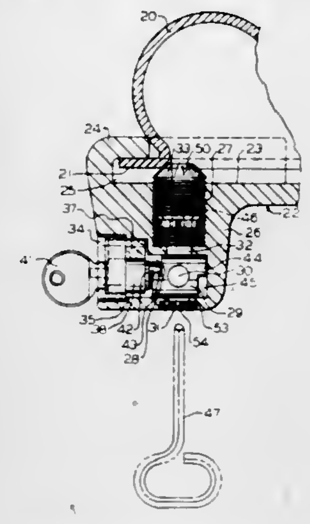
In a laundry washer extractor the casing **2** which encloses the rotary basket **1** has a valve controlled drain **8**, **9** which communicates restrictedly with the bottom **10** of the casing and communicates substantially unrestrictedly with a large port **6** located approximately at the optimum liquid level **5** at which for an average load the liquid should stand at the commencement of an extraction operation for the achievement of good distribution of the load about the basket and for the avoidance of unduly retarded acceleration and buffeting. The said large port is preferably provided at that side of the casing towards which the liquid level inclines upwardly.

3,526,109
PORTABLE STEAMER FOR PLEATED AND FOLDED FABRICS
Robert M. Kirche, 411 W. Arbor Vitae, Inglewood, Calif. 90301
Filed Sept. 16, 1969, Ser. No. 858,327
Int. Cl. D06c *1/00*
U.S. Cl. 68—222 **9 Claims**



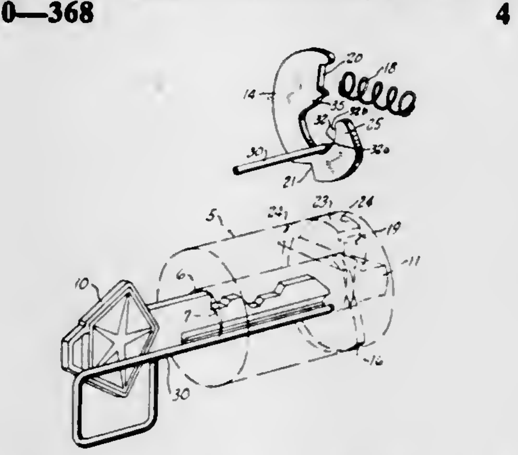
A fabric steaming apparatus of a lightweight construction having an elongated wand and a steam applying head at the end thereof which is adapted to closely engage and conform to pleats and folds. The wand and steam head are fabricated from thin wall tubing so that they will rapidly approach the temperature of the steam preventing the steam from condensing therein.

3,526,110
TRAILER COUPLER COVER LOCK
Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 21, 1968, Ser. No. 777,617
Int. Cl. E05b *65/12*
U.S. Cl. 70—258 **15 Claims**



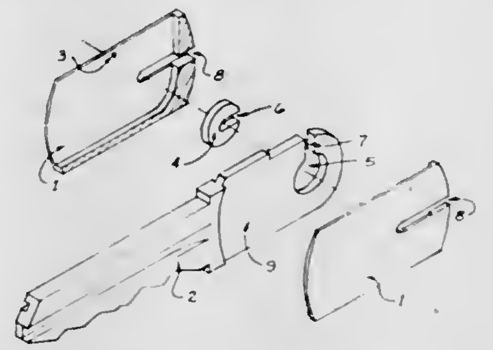
To prevent the unauthorized tow-away of a detached trailer, the entrance of a towing vehicle ball into the trailer hitch coupler socket is precluded by a lock-controlled, flanged cover plate closing the entrance to the coupler socket. The cover plate adjustably completely houses a set screw which, when adjusted, clamps a portion of a rim on the coupler socket against and under a portion of the cover plate flange. Also operatively mounted within the cover plate with only its key slot exposed is a non-removable cylinder lock which turns a housed plug extension having a transverse bore therein, registering in one turned position of the plug extension with alined openings in the cover plate whereby an externally applied tool may engage and operate the set screw, but in another turned position of the plug extension external insertion of a tool for set screw operation is prevented.

3,526,111
REMOVABLE LOCK WITH IMPROVED RETAINER
Edward N. Jacobi, Milwaukee, Wis., assignor to Briggs & Stratton Corporation, Wauwatosa, Wis., a corporation of Delaware
Filed July 15, 1968, Ser. No. 744,858
Int. Cl. E05b *27/00, 29/00, 33/00*
U.S. Cl. 70—368 **4 Claims**



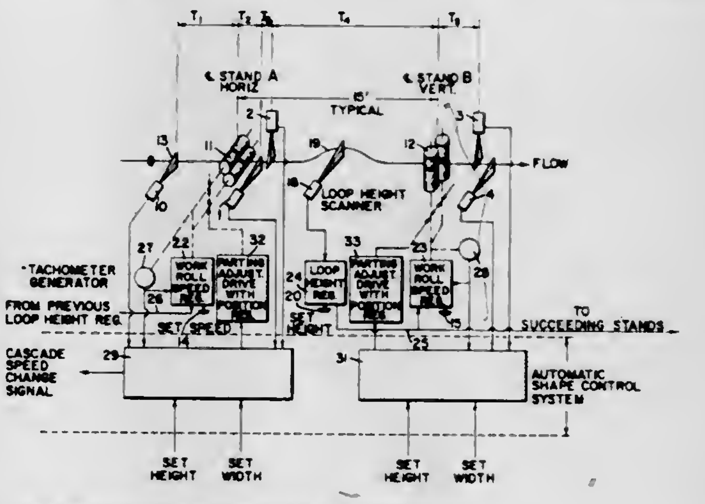
The assembled cylinder and lock case of a key controlled tumbler lock is removably held in position in the structure with which the lock is associated by a crescent shaped retainer pivotally mounted in a transverse slot in the inner end portion of the lock case. In the operative projected position of the retainer a substantial part of its arcuate outer edge portion projects from the side of the lock case to engage a rearwardly facing shoulder on the mounting structure. A finger on the retainer projects into the cylinder-receiving bore of the lock case to be engaged by a rod-like tool inserted into the cylinder from its front end alongside the key so that rotation of the cylinder by its key with the tool in place retracts the retainer to free the lock for removal.

3,526,112
KEYS WITH ROTATING HEADS AND METHOD OF MAKING SAME
Jack D. Herrington, 5741 Monterrey Road, Fort Worth, Tex. 76101
Filed Mar. 27, 1968, Ser. No. 716,574
Int. Cl. E05b *19/04*
U.S. Cl. 70—395 **9 Claims**



This invention is concerned with the provision of a novel key with a rotating head designed in such manner that by moving the head the finished key can be attached to, or removed from, a key holder, independent of any key attachment device the holder may contain, and so that the key is of minimum size when the head is in closed position and attached to the key holder but when opened and disengaged from the keyholder, provides a wider head to serve as an operating handle for the key. In addition, the invention contemplates two different methods of making and assembling the key: one of complete manufacture and full assembly for supply for key copying; another for manufacture and supply of the key in two or more parts for assembly by the key copier.

3,526,113
AUTOMATIC SHAPE CONTROL SYSTEM FOR BAR MILL
John R. McNaugher, Holden, Mass., assignor to Morgan Construction Company, Worcester, Mass., a corporation of Massachusetts
Filed Apr. 12, 1968, Ser. No. 720,892
Int. Cl. B21b *37/02, 37/04*
U.S. Cl. 72—8 **19 Claims**

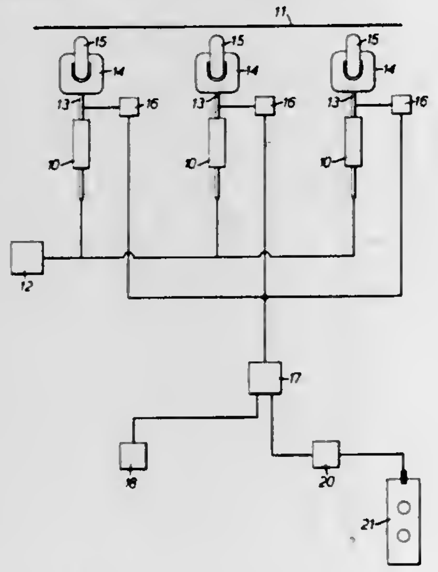


• THIS INPUT IS NOT PRESENT WHEN STAND A IS THE PIVOT STAND

A rolling mill for rods, bars and various shaped cross-sections has finishing stands with roll axes oriented ninety degrees (90°) relative to adjacent stands and automatic control of the rolling parameters to obtain precise transverse dimensions. Two transverse dimensions and the loop size between stands are sensed and used to control stand speed and roll separation in a feedback control loop while variables relating to stand loading and product characteristics are used to make supplementary or compensating adjustments. Further control signals are derived relating to mass flow to provide compatible adjustment of rolling parameters throughout the mill.

3,526,114
ROLLING OF STRIP

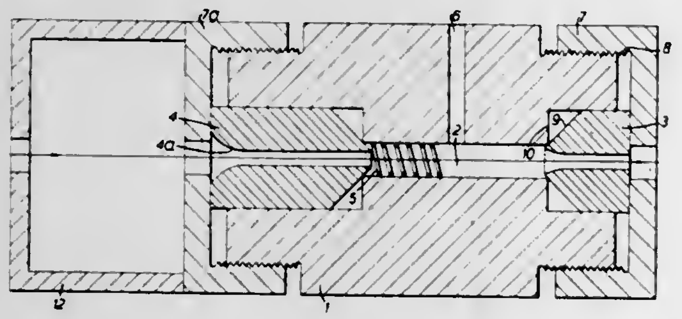
John George Wistreich, Belmont, Surrey, England, assignor to The British Iron and Steel Research Association
Continuation-in-part of application Ser. No. 544,464, Apr. 22, 1966. This application July 7, 1969, Ser. No. 839,426
Claims priority, application Great Britain, Apr. 23, 1965, 17,339/65
Int. Cl. B21b *37/12*
U.S. Cl. 72—9 **16 Claims**



A method and apparatus for obtaining an indication of strip shape. Three rotatable rollers are mounted in cradles designed to permit the rollers to lightly contact a moving strip in three parallel tracks evenly spaced across the width of the strip. Each roller actuates a sensing transducer which produces an electrical signal proportional to strip tension. The transducer signals are processed to produce a signal proportional to the difference in elongation between the center and edge portions of the strip.

3,526,115
DRAWING OF MATERIALS THROUGH REDUCING DIES

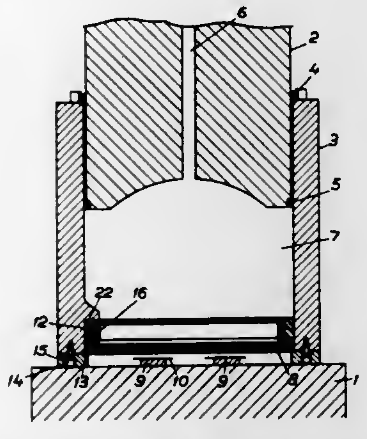
Brian M. Armstrong and Andrew Middlemiss, Sheffield, England, assignors to The British Iron and Steel Research Association
Filed Sept. 28, 1967, Ser. No. 671,373
Claims priority, application Great Britain, Sept. 28, 1966, 43,267/66; Aug. 15, 1967, 37,392/67
Int. Cl. B21b *45/02;* **B21c** *3/00*
U.S. Cl. 72—45 **6 Claims**



A wire is fed through a lubricant bath, a tubular seal, a chamber and a die and draws lubricant from the bath into the chamber to build up pressure therein. A pump initially pressurizes the chamber to a high pressure value and is cut off when the pressure built up by wire movement reaches that value.

3,526,116
PRESS FOR SHAPING SHEET METAL BY MEANS OF MEMBRANES

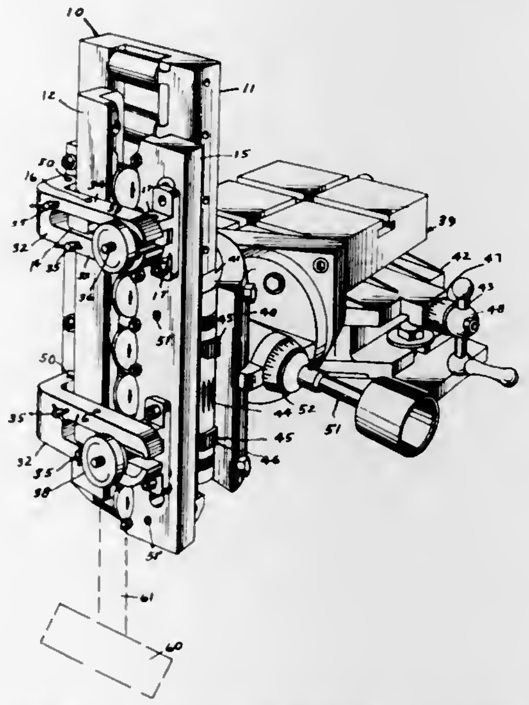
Torstein Landa, Harry Claesson, and Pertti Syväkari, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Feb. 29, 1968, Ser. No. 709,340
Claims priority, application Sweden, Mar. 3, 1967, 2,906/67
Int. Cl. B21d *22/12*
U.S. Cl. 72—63 **1 Claim**



In a press for shaping sheet material by a diaphragm arranged in a pressure cylinder, the diaphragm has a cylindrical attachment part which is clamped between a shoulder on the cylinder and a holding ring. This part has an internal collar which is engaged by a support ring inside the attachment part. The support ring is shorter than the attachment part.

3,526,117
BAR FORMING MACHINE

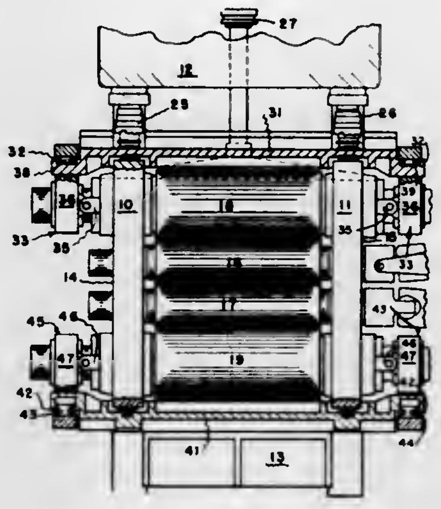
Robert B. Way, 439 Vermont Ave., Erie, Pa. 16505
Filed Apr. 22, 1968, Ser. No. 723,005
Int. Cl. B21d *1/02*
U.S. Cl. 72—165 **11 Claims**



A machine for straightening metal bars, especially triangular shaped metal bars that have at least three flat sides. Basically the machine has a row of first rolls parallel to each other supported on a rotatable member that can swing the rolls about an axis. The rotatable member is supported on the machine by a compound mechanism by which it can be moved both vertically and horizontally. A row of second rolls is supported above the first row on a frame. The frame is pivoted to the machine so that the axes of the second rolls have their axes fixed relative to each other but the rolls swing and float on the frame in an arc of fixed radius. Thus, when a bar having two nonparallel sides passes between the first rolls and second rolls one side of the bar will engage the first rolls and the second rolls will swing to a position to engage the second side of the bar. Since the second rolls float, they will move to a position where both first rolls and second rolls engage the bar over the entire width of the bar. A means is provided to restrain the bar from moving laterally from engagement with both the first and second rolls. In one embodiment, this is a third set of rolls. In another embodiment, this is a fiber strip which engages the widest edge of the bar. Where rectangular bars are to be straightened, a fiber strip can be attached on both sides. The bar can be either pushed or pulled through the straightener. By means of the compound up-and-down adjustment and the rotatable member, the straightener can be moved relative to the forming rolls sufficient to place a stress in the bar to compensate for and to stress the bar in a direction to remove any twist from the bar and to deliver the bar perfectly straight from the straightener.

3,526,118
APPARATUS FOR BENDING THE ROLLS OF A ROLLING MILL AND LIKE DEVICE

Jeremiah Wagner O'Brien, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 22, 1966, Ser. No. 596,139
Int. Cl. B21b *13/14*
U.S. Cl. 72—243 **7 Claims**

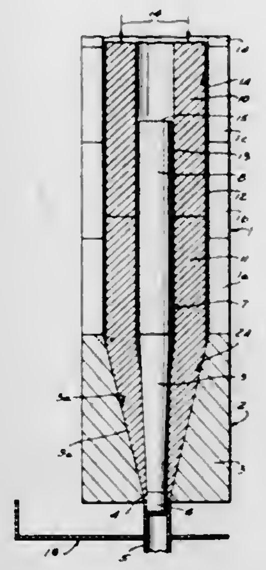


The present invention relates to a rolling mill and, more particularly, to an improved arrangement for applying a controlled crown to one or more of the rolls of the rolling mill.

3,526,119
METHOD AND APPARATUS FOR EXTRUDING METALLIC TUBES

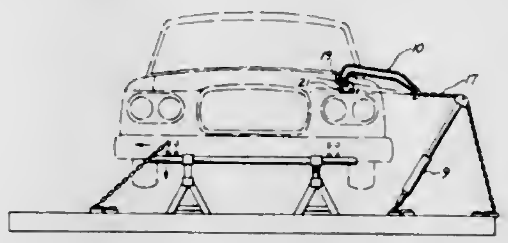
Hans Wassen, Hilden, Germany, assignor to Stahl- und Rohrenwerk Reisholz GmbH, Dusseldorf-Reisholz, Germany
Filed July 17, 1967, Ser. No. 653,938
Claims priority, application Germany, July 20, 1966, T 31,624
Int. Cl. B21c *25/04*
U.S. Cl. 72—264 **13 Claims**

Tubular metallic blanks are extruded between a matrix and a floating mandrel to form tubes which are calibrated from without by the internal surface of a throat portion at the downstream end of the matrix and from within by an annual surface of constant circumferential length provided on a tip of the floating mandrel. The mandrel has a second portion which diverges in a direction away from the tip and defines with a funnel-shaped upstream portion of the matrix an annular clearance of gradually diminishing cross-sectional area. The trailing ends of the blanks are subjected to a pressure which is below the flow limit corresponding to the temperature of the blanks but is high enough to effect lengthwise advance.



3,526,120
EXTENSION CLAMP

Wayne E. Hunnicutt, Big Bend, and Peter G. Rossbach, Waukesha, Wis., assignors to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 744,748
Int. Cl. B21d *11/02*
U.S. Cl. 72—302 **12 Claims**

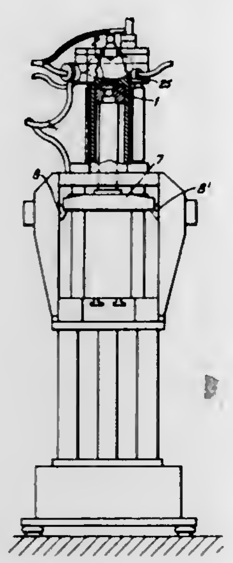


An extension clamp is disclosed for attaching to, and pulling a sheet metal object where the line of pull is obstructed by structure.

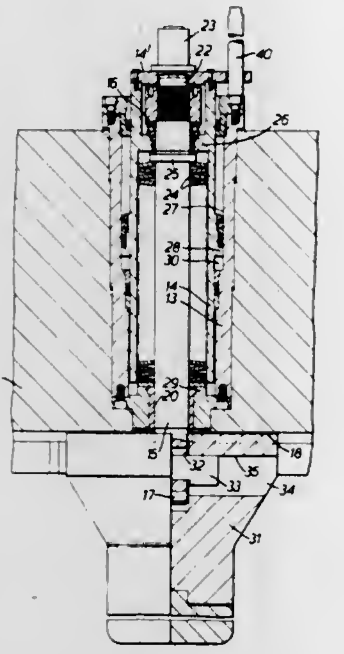
3,526,121
IMPULSE-FORMING AND LIKE MACHINES

Frederick Ernest Bennett and William Allen Hewitt, Birmingham, Clifford Gerald Price, Stourbridge, and Stephen Albert Tobias, Birmingham, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed Dec. 12, 1967, Ser. No. 689,821
Claims priority, application Great Britain, Dec. 13, 1966, 55,854/66
Int. Cl. B21j *9/12*
U.S. Cl. 72—453 **9 Claims**

In an impulse-forming, forging or like machine of the kind in which the moving member is moved by pressure of a gas, possibly air, applied initially to a sealed portion of the operating area of a piston member, the seal being broken subsequently to enable the pressurized gas to be applied suddenly to substantially the full operating area of the piston to cause said moving member to be impulsed, means are provided substantially to prevent impulsing when there is likelihood of the impulsive force delivered by the machine being below a predetermined level. Thus stops may be provided for preventing impulsive movement of the moving member, said stops being adapted to be withdrawn only when the machine is in fully operational condition. Delays are introduced especially during "warm-up" periods and also if the fuel supply line to a combustion energised system is not correctly pressurized.

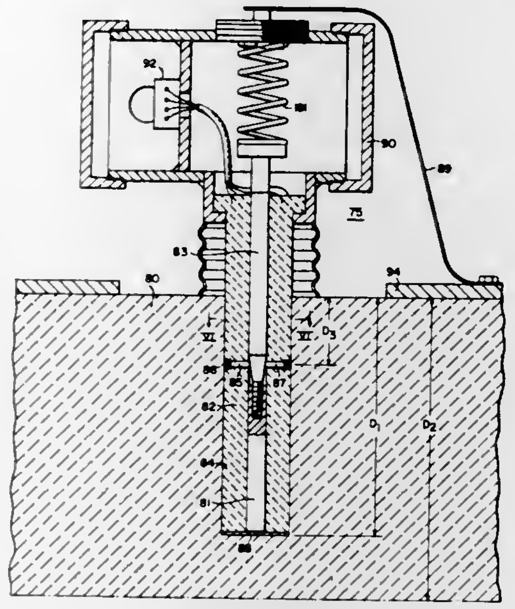


3,526,122
DIEHOLDER FOR A PRESS
Trevor Hemingway, Dronfield, near Sheffield, England, assignor to Davy and United Engineering Company Limited, Sheffield, England
Filed Sept. 11, 1967, Ser. No. 666,577
Claims priority, application Great Britain, Sept. 13, 1966, 40,888/66
Int. Cl. B21j *13/02*
U.S. Cl. 72—462 **7 Claims**



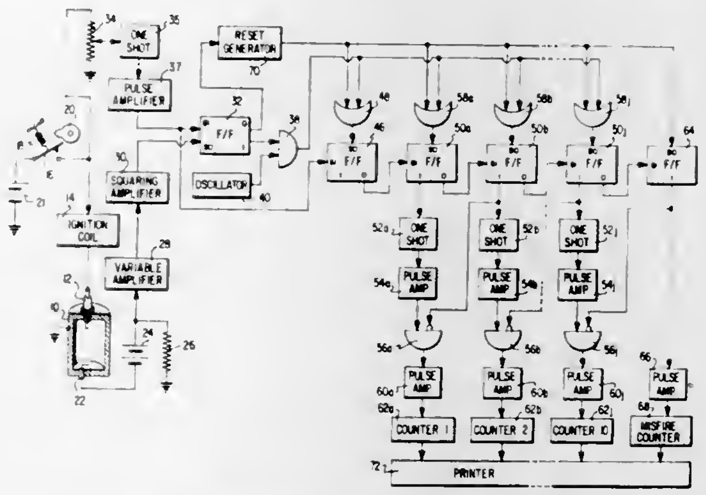
A press having clamping means by which a work tool can be clamped to the lower surface of the upper crosshead of the press. The clamping means includes a rod to which the tool is attached and to enable the press to be used for the process of upsetting in which no tool is clamped to the crosshead, the rod is retractable into the crosshead to provide an unobstructed lower surface on the crosshead.

3,526,123
HEAT FLOW SENSING DEVICE
Richard E. Putman, Penn Hills, and Lee E. Brecher, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1967, Ser. No. 630,006
Int. Cl. G01n *25/00*
U.S. Cl. 73—15 **4 Claims**



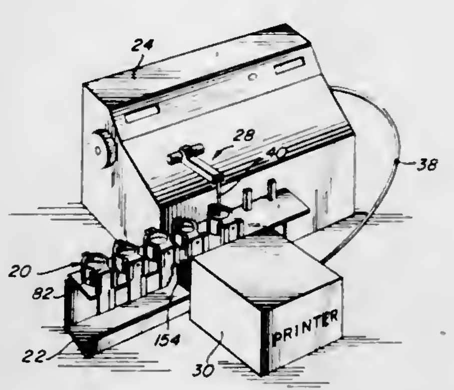
An elongated heat flow sensing probe is adapted for insertion into the wall of an apparatus such as furnace. The probe has two concentric portions. For a wall having a known thermal conductivity, the cross sectional areas and thermal conductivities of the portions are chosen such that the probe has the equivalent heat transfer characteristic as the wall. Thermocouples at predetermined locations in the probe measure the wall temperature.

3,526,124
APPARATUS FOR MEASURING THE BURNING RATE OF FUEL
Wolfgang J. Wostl, South Holland, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,595
Int. Cl. G01n *33/22*
U.S. Cl. 73—35 **7 Claims**



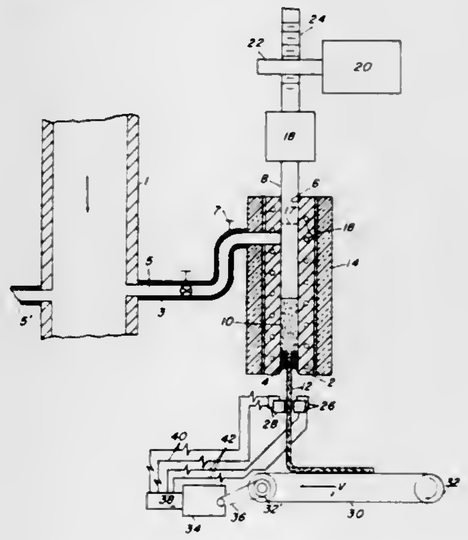
Apparatus for measuring the burning rate of fuel and automatically recording the rate. The electrical signal which is applied to the spark plug in a combustion chamber also starts the counting of oscillator pulses by a timer. When the flame has crossed the combustion chamber to reach an ionization gap, the counter is stopped and its output is read. The counter output can be applied to circuitry which, over a large number of tests, divides the flame propagation times into discrete groups.

3,526,125
TEST SAMPLE IDENTIFYING SYSTEM AND APPARATUS FOR USE IN CONNECTION THEREWITH
Saul R. Gilford and Robert J. Emary, Oberlin, Ohio, assignors to Gilford Instrument Laboratories Inc., Oberlin, Ohio, a corporation of Ohio
Filed Dec. 19, 1967, Ser. No. 691,751
Int. Cl. A61b *5/00*
U.S. Cl. 73—53 **27 Claims**



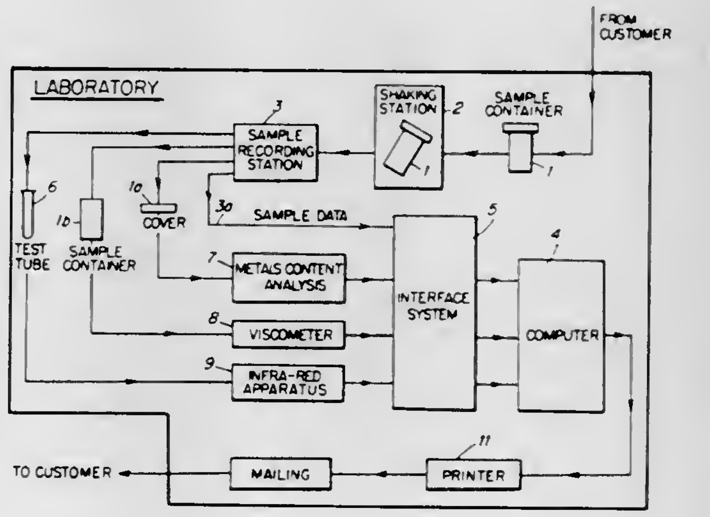
A testing system wherein positive identification as to source, test performed and results for each of a plurality of containers carrying test samples is maintained, the system providing each container with cards carrying identifying indicia, means for presenting said containers to sample testing means to perform an identified test and simultaneously providing synchronized data printing means to apply the test results to the card without moving the container from its testing position and wherein the completion of the test and the printing of the results occur substantially simultaneously. The containers are provided with means for indexing the position of same for performance of the test and receipt of the printed results. The invention further contemplates the use of identifying cards to which are applied peelable readherable labels and transport means to direct the containers to the proper sample testing means. Identification as to source, the test to be performed and results thereof are carried by said identifying card.

3,526,126
METHOD AND APPARATUS FOR DETERMINING THE MOLECULAR WEIGHT DISTRIBUTION OF POLYMERS
Zigmond W Wilchinsky, Westfield, and Edward N. Kresge, Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 3, 1968, Ser. No. 756,985
Int. Cl. G01n *11/04*
U.S. Cl. 73—56 **9 Claims**



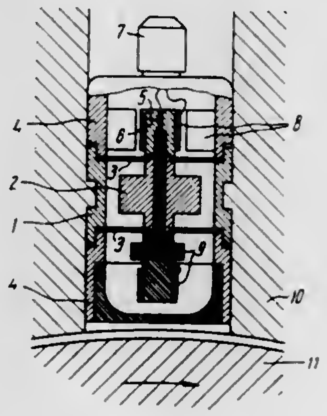
The method of determining the molecular weight distribution of polymers which consists of extruding the polymer through a capillary die, measuring the cross-section or swell of the extrudate, and conveying the extrudate away from the die. The rate of conveying the extrudate away is varied in accordance with the measurement of the cross-section, and the variation in the rate of conveyance is related to the molecular weight distribution.

3,526,127
ENGINE OIL ANALYSIS SYSTEM
Albert B. Sarkis, New Hyde Park, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed Mar. 24, 1969, Ser. No. 809,658
Int. Cl. G01n *21/34, 33/30;* **F16n** *29/00*
U.S. Cl. 73—64 **21 Claims**



A computer analyzes and inter-relates data relating to viscosity, infra-red characteristics and metal content of an oil sample and provides output data corresponding to the condition of the engine and of the engine oil. The output data is fed to a printer for providing a report form summarizing the condition of the engine and of the engine oil.

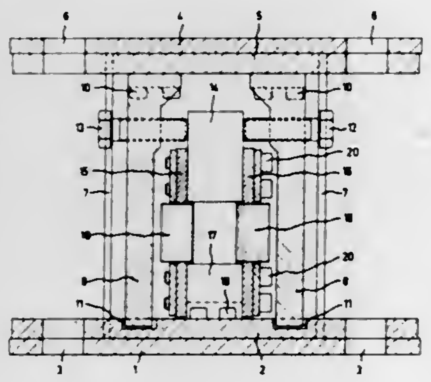
3,526,128
DEVICE FOR MEASURING ABSOLUTE VIBRATIONS IN THE ROTOR-STATOR SYSTEM
Afanasy Mikhailovich Kornienko, Prospekt Pravdy 7, kv. 104; Anatoly Petrovich Borisenko, Poselak Pesochin, ul. Shkolnaya 23; Vasily Alexeevich Sotnikov, Ul. Gogolya 1, kv. 20; and Irina Nikolaevna Derbunovich, Ul. Novoproektnaya 6, kv. 3, all of Kharkov, U.S.S.R.
Filed Mar. 1, 1967, Ser. No. 619,724
Int. Cl. G01h *11/00*
U.S. Cl. 73—71.2 **4 Claims**



A device for measuring absolute vibrations in a rotor-stator system comprising a sealed casing fastened to the stator and having therein an inertial mass mounted by elastic suspension means for free travel in the casing and is held stationary within the inertial co-ordinate system having a fluid surrounding the mass to provide a distributed damping of the mass and its suspension. A contactless transducer for converting vibrations into electric signals, said transducer being rigidly connected to the inertial mass and being magnetically inductively responsive to relative movements of said rotor, the casing being non-magnetic and free from inductive interference with said transducer.

3,526,129
ARRANGEMENT FOR MEASURING TENSILE FORCES

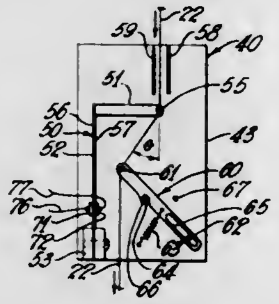
Ake Anderson, Vallingby, Sweden, assignor to Arenco Electronics Aktiebolag, Stockholm-Vallingby, Sweden
Filed Dec. 18, 1967, Ser. No. 691,280
Claims priority, application Sweden, Dec. 30, 1966, 17,949/66
Int. Cl. G01e *5/04, 5/10, 1/12*
U.S. Cl. 73—144 **6 Claims**



An arrangement for measuring tensile forces in articles in the form of strip, wire-rope, wire or the like, said article being arranged to abut a roller or a similar means, said arrangement comprising two parallel plates, one of which supporting the roller and the other being arranged on a stationary support, between said plates and extending perpendicular thereto a number of resilient members being disposed and inside said members between the plates two rigid members being arranged, between said rigid members and between the rigid members and the plate on the support measuring rods of a magnetoelastic material being arranged.

3,526,130
APPARATUS AND METHOD FOR MEASURING TENSION IN LINEAR MATERIAL

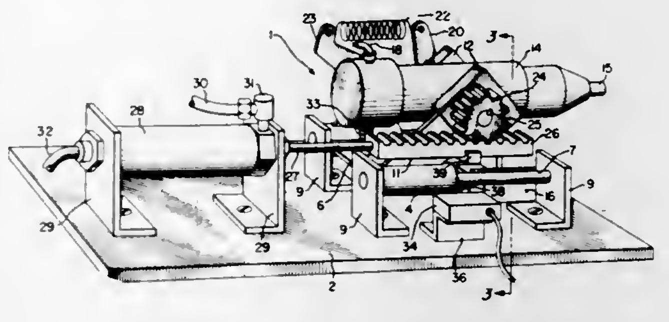
Sheldon A. Canfield, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Apr. 8, 1968, Ser. No. 719,632
Int. Cl. G01l *5/10*
U.S. Cl. 73—144 **9 Claims**



Apparatus and method for measuring tension in linearly extended flexible material where a member is strained by bending the material on means associated with the member and sensing the strain in the member as an indication of the magnitude of tension in the material.

3,526,131
TIRE MARKING APPARATUS

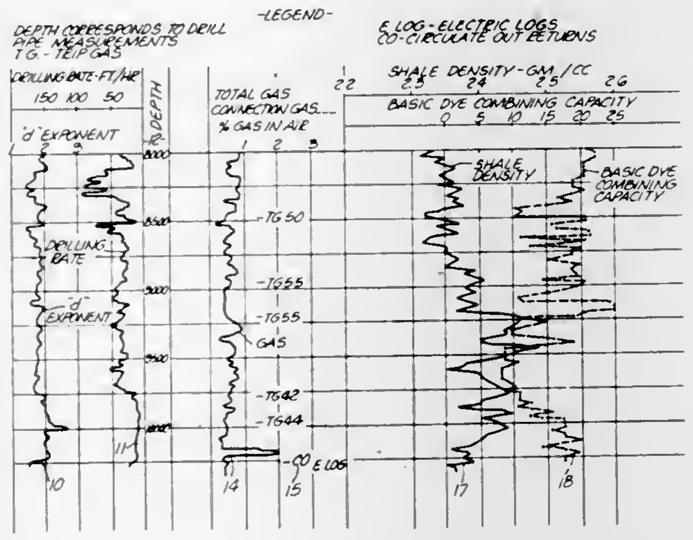
Arnold S. Buser, Akron, and William D. Braden, Stow, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 9, 1968, Ser. No. 758,438
Int. Cl. B60c *19/00*
U.S. Cl. 73—146 **11 Claims**



An apparatus for marking the location on a tire of the first harmonic. The apparatus has a heated branding iron which is automatically dipped in wax and pressed against a tire at the location to be marked. The branding iron is moved to and from the tire by a pneumatic actuator cylinder which, in turn, is controlled by an electronic control circuit which operates in response to force variation readings taken around the circumference of a tire by a conventional force variation measurement machine. The heated branding iron makes a permanent indentation on the tire and simultaneously deposits a wax ring around the indentation to make it more readily visible.

3,526,132
METHOD OF LOGGING WELLS

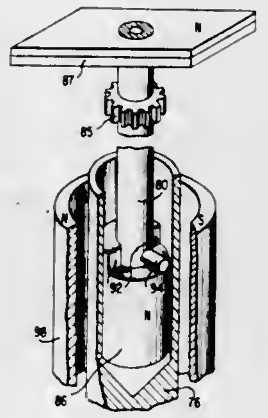
Donald J. Weintritt, Houston, Tex., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed May 14, 1968, Ser. No. 729,109
Int. Cl. E21b *49/02*
U.S. Cl. 73—153 **4 Claims**



The invention provides an improvement in well logging, in which the capacity of formation shale samples to combine with a basic dye such as methylene blue is determined, and the capacities are then plotted as a function of well depth. The results are highly useful in judging the nature of the formations penetrated and are helpful in predicting the nature of the underlying strata.

3,526,133
MAGNETIC COUPLING

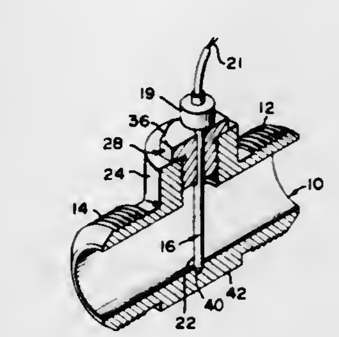
Robert G. Love and Paul A. Moore, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed June 15, 1967, Ser. No. 646,272
Int. Cl. G01f *1/06*
U.S. Cl. 73—229 **29 Claims**



A combination magnetic and mechanical coupling between a driving shaft and a relatively high inertia driven shaft. The driven shaft has a relatively low inertia magnetic element mounted thereon for limited rotation thereabout. This element assists in the reestablishment of the magnetic coupling, when it is lost, by imparting a mechanical impulse of acceleration to the driven shaft at least once during said full rotation of the driving shaft relative to the driven shaft.

3,526,134
THERMOBULB MOUNT

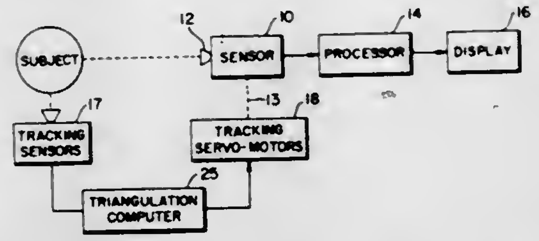
T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert B. Schaus, Northridge, Calif.
Filed May 21, 1968, Ser. No. 730,702
Int. Cl. G01k *1/08, 1/14*
U.S. Cl. 73—343 **2 Claims**



A fixture for holding a temperature sensing element in a pipeline so as to prevent damage to the element which might otherwise be caused by fluid flow through the pipeline. The fixture comprises an installation boss with a hole through which the sensing element extends, and a recess formed on the inside of the pipeline opposite the boss for supporting the outboard end of the sensing element.

3,526,135
TEMPERATURE DETECTING SYSTEM

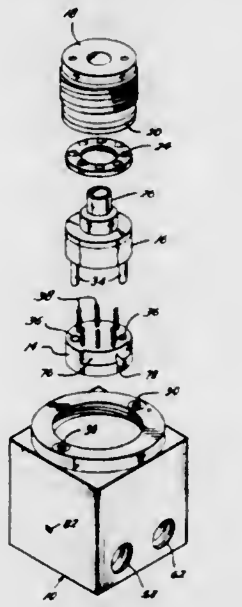
Edward C. Wortz, Northridge, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 29, 1967, Ser. No. 694,632
Int. Cl. G01j *5/00*
U.S. Cl. 73—355 **14 Claims**



A radiation thermometer for detecting changes in temperature of localized body regions as an indication of vasomotor activity in response to stimuli. An ultraviolet tracking device may be provided to keep the thermometer sensor aligned with the regions of interest.

3,526,136
MULTIPLE VALVE MECHANISM FOR TESTING INSTRUMENTS

Bruce J. Caldwell, Sr., P.O. Box 1081 77001, and Carl P. Kriegel, 4018 Lockwood Drive 77026, both of Houston, Tex.
Filed July 8, 1968, Ser. No. 743,156
Int. Cl. G01l *19/00*
U.S. Cl. 73—388 **6 Claims**

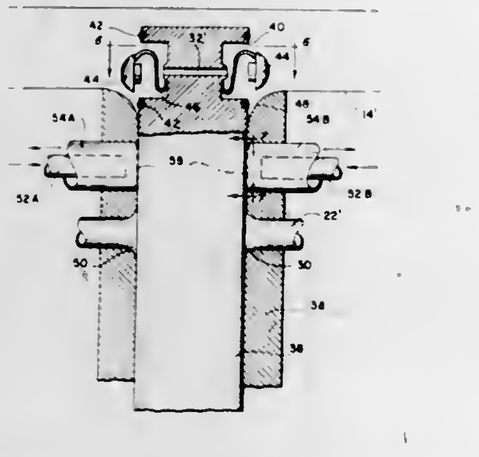


Valve mechanism for use with testing instruments, such as a manometer for indicating difference in pressure between spaced locations in a fluid flow system. The mechanism has a main valve movable to one position to connect the manometer into the fluid flow system and to another position to shut off or isolate the manometer from the system. Additional valves are provided for bleeding off the pressure from the manometer when isolated from the system preliminary to testing the manometer; for shutting off fluid flow communication between the arms of the manometer to facilitate testing the same, and for gradually repressurizing the manometer before the main valve is again moved to in-service position to place the manometer back in operation in the system. The main valve is constructed to automatically equalize the pressure in the manometer and in the fluid flow system on the moving member of the main valve during movement of the same from one position to the other to render the valve more easily operated.

3,526,137
SAMPLING APPARATUS FOR USE WITH CHEMICAL PROCESSES AND THE LIKE

Martin J. Cohen, West Palm Beach, Fla., assignor to Franklin Gno Corporation, West Palm Beach, Fla., a corporation of Florida

Filed Feb. 3, 1969, Ser. No. 796,004
Int. Cl. G01n *1/10*
U.S. Cl. 73—422 2 Claims

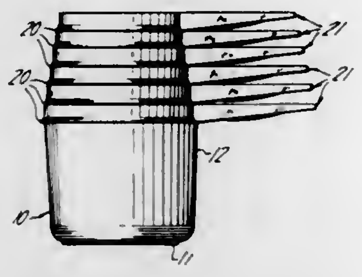


A sample is obtained by repetitively oscillating an open-ended chamber between alignment with one of a pair of pipes and alignment with the other of the pair of pipes. The chamber is formed in a member and the ends of the chamber are closed as the chamber moves between the pipes. The member is supported by a closely fitting guide which allows the chamber to open and close as the chamber oscillates between the pipes.

3,526,138
NESTABLE AND DRIPLESS MEASURING CUP

James B. Swett, Barrington, R.I., and Sidney Z. Smith, Worcester, Mass., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware

Filed Aug. 12, 1968, Ser. No. 751,988
Int. Cl. G01f *19/00*
U.S. Cl. 73—426 6 Claims



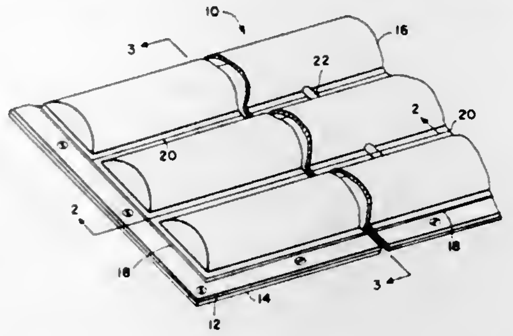
A measuring cup having a rim around an upper edge portion adapting the cup to be placed in another larger size cup in nested relationship. A sharp edge portion is provided below the upper edge of the cup to cut off the drip when liquids are poured. The cup is provided with a handle that is adapted to be gripped by the thumb and forefinger for easy manipulation of the cup.

3,526,139
DETECTOR PANELS-MICROMETEOROID IMPACT

James W. Mayo and Walter M. Cook, Jr., Newport News, Va., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Nov. 21, 1968, Ser. No. 777,766
Int. Cl. G01d *21/00*
U.S. Cl. 73—432 10 Claims

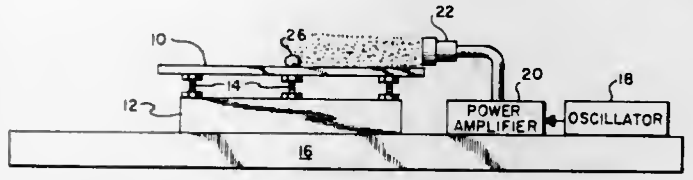
A large area meteoroid detector panel fabricated from two sheets of metal attached together to form a pressure vessel which contain a plurality of cells and one or more sensing devices. Meteoroids penetrating one of the sheets cause a loss of pressure within the panel which loss is detected by one of the sensing devices.



3,526,140
METHOD AND APPARATUS OF SIMULATING ZERO GRAVITY CONDITIONS

Helmut G. Lackner, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Mar. 11, 1969, Ser. No. 806,149
Int. Cl. G01l *1/00*
U.S. Cl. 73—432 6 Claims



A method and apparatus for determining the effects of acoustic radiation pressure on a liquid suspended in a substantially frictionless environment. The apparatus includes an ultrasonic transducer excited by the output of a power amplifier. The power amplifier amplifies the output of an oscillator which has been adjusted to deliver an output at a frequency of approximately 100 kHz. The transducer is oriented so that the acoustic energy or pressure generated thereby is directed in a beam toward droplets of a cryogenic liquid floating on a precisely leveled plate. The droplet floats on a vapor envelope that surrounds and thermally insulates the droplet. Such a droplet can sustain for some time up to a minute. This apparatus and method makes it possible to investigate the transfer behavior of cryogenic liquids under zero gravity.

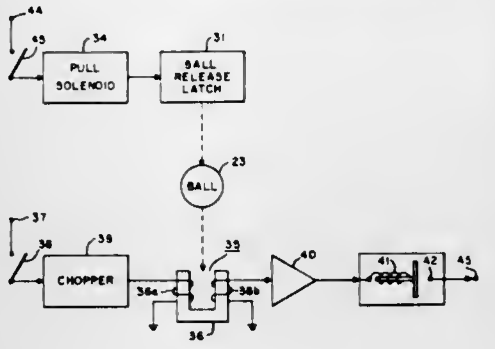
3,526,141
VELOCITY-SENSING APPARATUS

Robert L. Archer, Woodbury, N.Y., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware

Filed May 31, 1966, Ser. No. 553,793
Int. Cl. G01p *7/00*
U.S. Cl. 73—503 2 Claims

An apparatus for sensing the attainment of a predetermined increase in velocity by an accelerating body comprises a housing adapted to be mounted on the body and including an elongated chamber essentially parallel to the direction of acceleration and filled with a viscous fluid. A spherical steel ball is disposed in the chamber and is movable axially in the chamber and restrained from axial movement substantially solely by viscous fluid drag. The chamber includes three or more longitudinal radially inwardly extending fins with inner knife edges forming a substantially antifriction guide for the steel ball while restraining it from transverse movement in the chamber but providing substantially unrestricted axial circulation of the contained fluid. The apparatus further

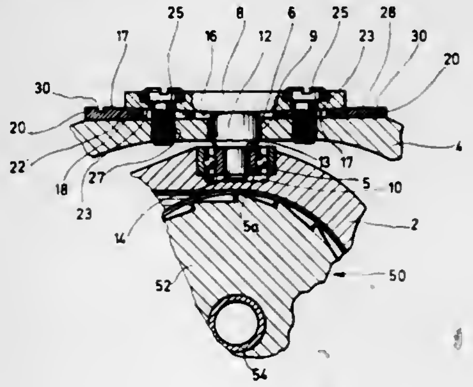
includes a permanent magnet movable between restraining and nonrestraining positions on the steel ball, such magnet being releasably latched in restraining position and biased to nonrestraining position. The magnet is disposed to restrain the ball at the leading end of the chamber and there is provided means at the other end of the chamber for sensing the arrival of the ball after release by the magnet, the arrival of the ball at the sensing means being an indication of a predetermined increase in the velocity.



3,526,142
GYRO BEARING CONSTRUCTION

Herbert Fuhr, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany

Filed Oct. 31, 1967, Ser. No. 679,441
Claims priority, application Germany, Nov. 12, 1966, B 68,547
Int. Cl. G01c *19/16*
U.S. Cl. 74—5 5 Claims



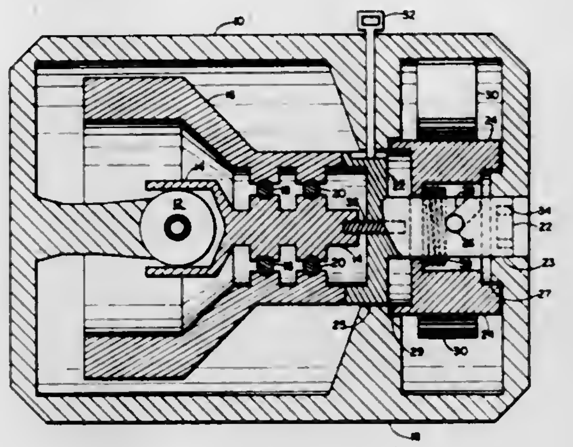
A mounting for bearings particularly for the support bearings for a gimbal of a gyroscope includes a carrier plate having a journal or pivot axle projecting from one side which is adapted to be secured to a frame or supporting structure. The supporting structure includes a suitable opening for the journal and the plate is secured to the supporting structure over oppositely arranged wedge members in the form of rectangular plates having enlarged slots through which securing bolts for the plate extend. Both the wedge members and the plate are formed with wedging surfaces or bevels on adjacent contacting surfaces. One or more of the wedge plates may be shifted in order to shift the plate in a direction toward or away from the associated supporting structure or plane.

3,526,143
CONTROL APPARATUS

Julian Carl Henley, St. Petersburg, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 23, 1968, Ser. No. 786,206
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.1 1 Claim

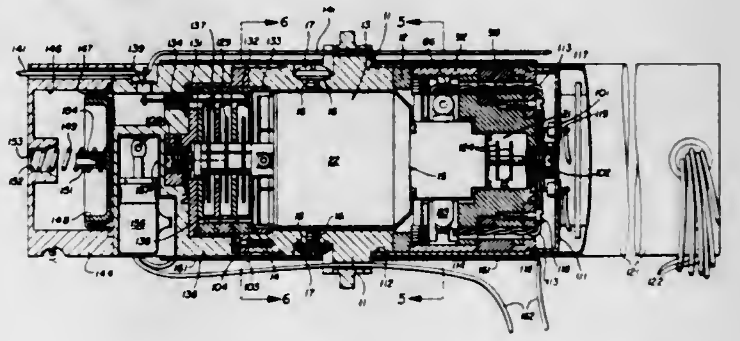
A caging mechanism for a spring driven gyroscope in which a spin up driver remains engaged to the rotor until all of the spring energy is dissipated. A pin through the driver is held in inclined slots in a spring driven arbor by the torque of the drive spring. When the torque ceases, the pin rides out of the inclined slots and the driver is forced out of engagement with the rotor.



3,526,144
SERVO TORQUE BALANCE DC RATE GYRO

Philip G. Leigh, Oakland, and Edward G. Seavey, Concord, Calif., assignors to Systron-Donnor Corporation, Concord, Calif., a corporation of California

Filed Nov. 9, 1966, Ser. No. 593,140
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.5 10 Claims



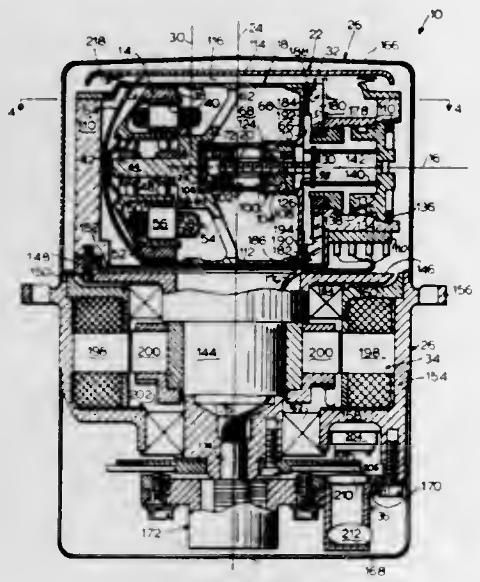
Rate gyro with gimbaling means having paddle means and means for sensing the position of the paddle means for restraining movement of the gimbaling means to provide a servo torque balance.

3,526,145
ACCELERATION INTEGRATING GYRO

Donald R. Boerner, Wayne, Walter J. Krupick, Succasunna, and Hugh E. Riordan, Wyckoff, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware

Filed Mar. 26, 1965, Ser. No. 443,035
Int. Cl. G01c *19/28, 19/30*
U.S. Cl. 74—5.46 3 Claims

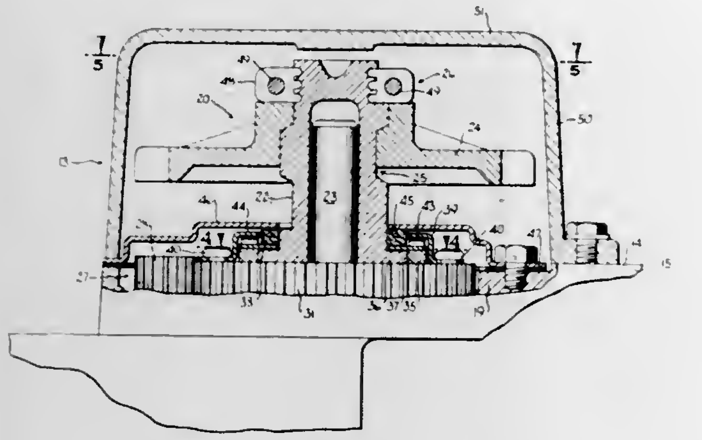
An acceleration integrating gyro has a rotor which is rotatable about a first axis, a float gimbal which is pivotable about a second axis that intersects the first axis substantially at right angles thereto, a casing gimbal which is pivotable about a third axis that is disposed substantially at right angles to said second axis, and a support gimbal which has an axis parallel to the third axis. The float gimbal has a peripheral wall which is coaxial with the rotor along the first axis with means supporting the rotor for rotation of the rotor about the first axis, and has a pair of end walls axially-spaced along the first axis, forming a cavity for enclosing the rotor. The rotor and the float are offset from the second axis for making the float pendulous about the second axis. The casing gimbal has a peripheral wall which is concentric about the third axis with pivot means supporting the float for pivoting the float relative to the casing about the second



axis, and has a pair of end walls axially-spaced along the third axis forming a cavity for containing a damping fluid for immersing the float therein. The support gimbal has pivot means for pivoting the casing relative to the support gimbal about the third axis.

3,526,146
ELECTRIC STARTER FOR SMALL INTERNAL COMBUSTION ENGINES

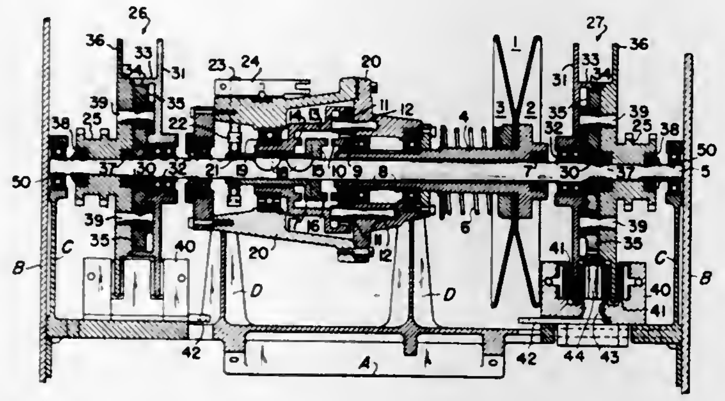
Joseph R. Harkness, Germantown, Wis., assignor to Briggs & Stratton Corporation, Wauwatosa, Wis., a corporation of Delaware
Filed Feb. 19, 1969, Ser. No. 800,386
Int. Cl. F02n *11/00*
U.S. Cl. 74—7 **9 Claims**



A single cylinder vertical shaft internal combustion engine with an electric motor driven starter. The starter is carried on a bracket which is fixed to the crankcase of the engine and has a vertical spindle projecting upwardly therefrom and an electric motor suspended from the underside thereof. A spool journalled on the spindle has a starter gear mounted thereon, to be propelled axially along the spool by a Bendix-type driving connection therebetween to and from an operative position meshing with a ring gear on the flywheel of the engine. An impositive drive transmission connects the shaft of the electric motor with the spool.

3,526,147
POWER TRANSMISSION

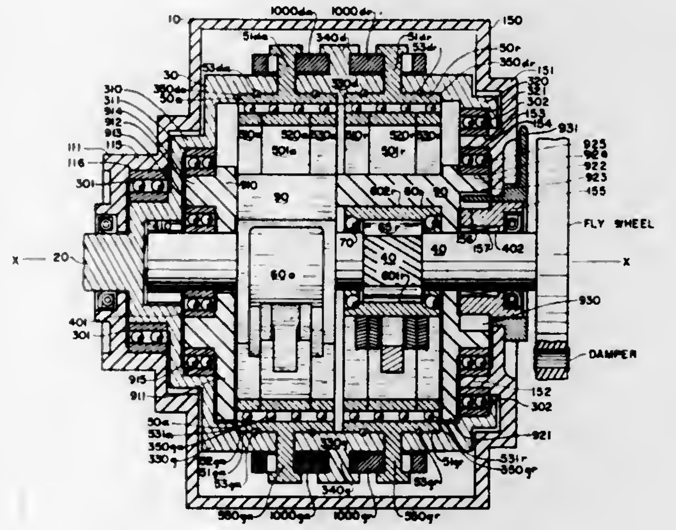
Martin T. Baker, Fort Lauderdale, Fla., assignor to ATV, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 16, 1968, Ser. No. 768,027
Int. Cl. F16h *37/00, 37/06, 57/10*
U.S. Cl. 74—15.2 **10 Claims**



A power transmission having a main shaft around a portion of which a power input shaft is concentrically mounted. Power is transmitted to the main shaft through gear means including a sun gear splined to the power input shaft, spur gears mounted around and driven by the sun gear, and a ring gear driven by the spur gears. A drive sleeve is slidably mounted around and keyed to the main shaft. Dogs extending from opposing faces of the drive sleeve engage mating dogs on either the sun gear or the ring gear to drive the main shaft either clockwise or counterclockwise. Power output means includes a sun gear splined to the main shaft and planetary gears positioned around and driven by the sun gear. A brake disk mounted around the main shaft is fastened to the planetary gears. A clutch disk mounted around the main shaft adjacent the brake disk is driven by the planetary gears. Means are provided to alternatively hold either the clutch disk or the brake disk. Power take-off means are attached to the brake disk.

3,526,148
MECHANICAL TRANSMISSION

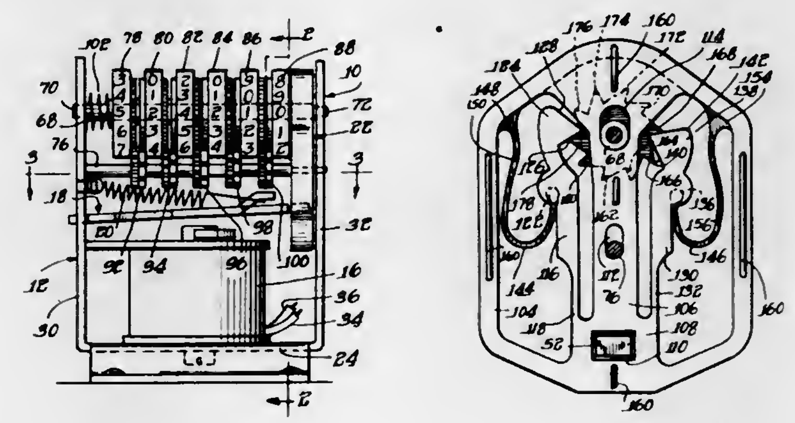
Jean F. G. M. L. Charpentier, 254 N. Highland, Akron, Ohio 44303
Filed Jan. 15, 1968, Ser. No. 697,788
Int. Cl. F16h *33/04*
U.S. Cl. 74—114 **7 Claims**



The mechanical improvement constitutes a driving shaft, coaxial rotors and coaxial driven shaft. One-way clutches and oscillators between the rotors and driven shafts effect direct transmission to the driven shaft from the driving shaft. Preferably the actuators are transversely disposed side-by-side and coaxially mounted in respect to the driven shaft and cooperate with the one-way clutches. A one-to-one drive ratio can be achieved.

3,526,149
VERGE

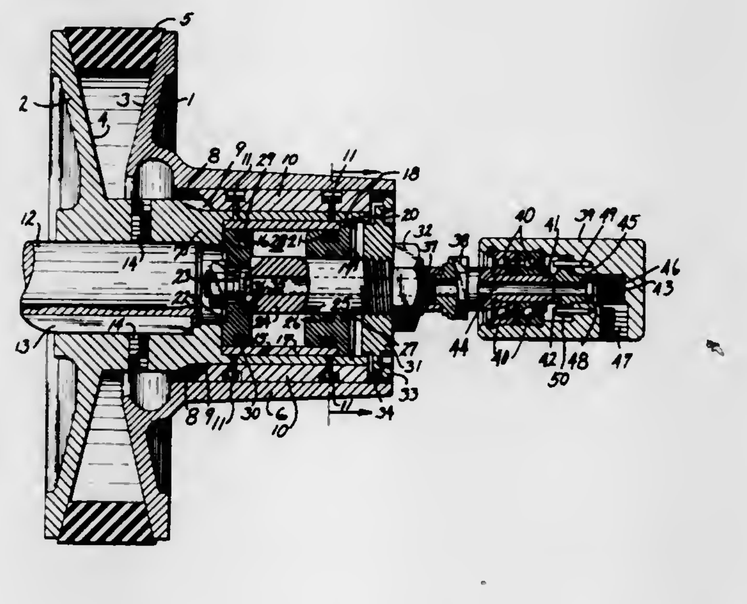
Burnell J. Wollar, Barrington, Ill., assignor to ENM Company, Chicago, Ill., a corporation of Delaware
Original application Dec. 28, 1967, Ser. No. 694,165. Divided and this application Apr. 14, 1969, Ser. No. 815,986
Int. Cl. F16h *27/04*
U.S. Cl. 74—142 **10 Claims**



A thermoplastic molded unitary verge used to connect a ratchet wheel with a power source. The verge includes a carrier held in alignment by a pair of shafts. A pair of pawls are formed integral with the carrier and engageable with the ratchet wheel. A pair of resilient elements are also formed integral with the carrier and are connected to the pawls to urge the pawls into engagement with the ratchet wheel.

3,526,150
VARIABLE PITCH PULLEY

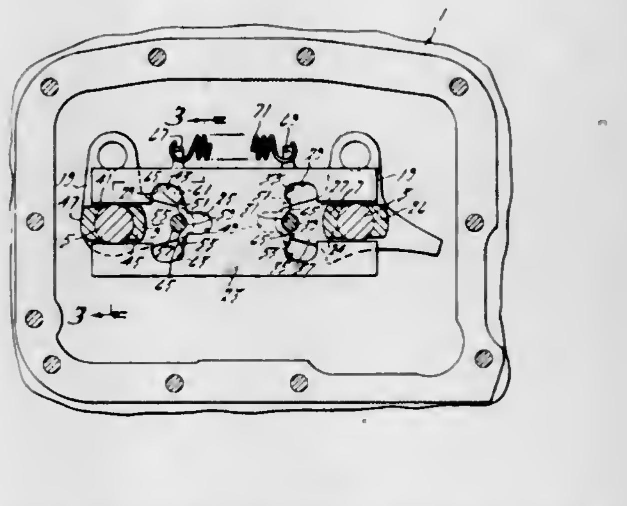
Noel S. Iverson, New Ulm, Minn., assignor to New Ulm Manufacturing, New Ulm, Minn., a corporation of Minnesota
Filed Jan. 23, 1969, Ser. No. 793,294
Int. Cl. F16h *55/56*
U.S. Cl. 74—230.17 **7 Claims**



An infinitely variable pitch pulley including a pair of opposed coaxial cone flanges having telescoping hubs enclosing fluid pressure operated mechanism for moving one of the cone flanges axially relative to the other cone flange to vary the effective pitch diameter thereof relative to a V-belt entrained between the cone flanges.

3,526,151
TRANSMISSION SHIFTING MECHANISM

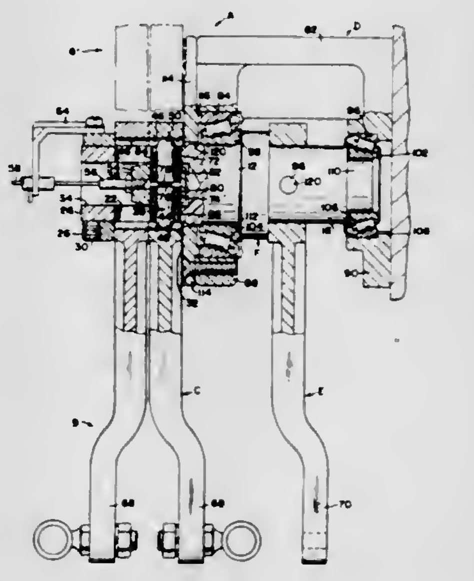
Ervin R. Miller, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 4, 1968, Ser. No. 780,982
Int. Cl. G05g *5/10*
U.S. Cl. 74—477 **10 Claims**



A transmission shifting mechanism including a pair of slideably mounted locking plates having shift recesses separated by cam portions in one end portion of each plate and a locking recess and locking edges in the other end portion of each plate. The shift recesses and cam portions are biased by a spring toward engagement with pins connected to rotatable shift shafts. Movement of one shift shaft causes the locking plates to move to prevent movement of the other shift shaft.

3,526,152
DUAL STATION STEERING MECHANISM

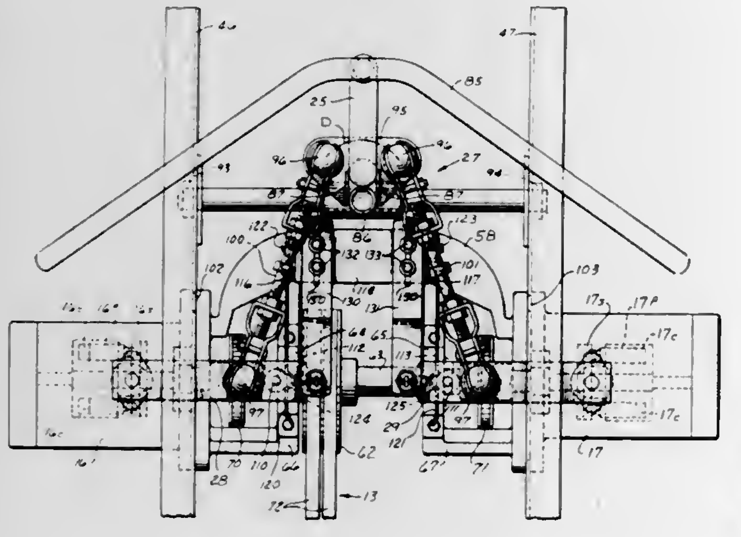
Robert K. Farrington, Shaker Heights, and Louis T. Horvath, Solon, Ohio, assignors to Marmac Products, Inc., Bedford Heights, Ohio, a corporation of Ohio
Filed Mar. 24, 1969, Ser. No. 809,886
Int. Cl. G05g *11/00*
U.S. Cl. 74—479 **9 Claims**



A steering interchanger by which the steering mechanism of a boat can be controlled from one or the other of two steering stations on a boat. The interchanger comprises a pair of arms oscillatably supported on a rotatable body wherein the arms are connected separately to the two steering stations and the body is connected to the boat steering mechanism. A pair of axially aligned pin halves are movable in said body between the arms engaging opposed torque transmitting surfaces of one or the other of the arms, the pin halves being housed in cylindrical anti-friction sleeve members which permit the pin halves to roll relative to said surfaces rather than slide. These and other features provide an interchanger which is adaptable to different makes of boats and boat drives.

3,526,153
NEUTRAL INDICATING AND IGNITION SWITCHING MEANS IN A CONTROL MECHANISM FOR A DUAL HYDRAULIC TRANSMISSION

Edmund O. Howell and Charles B. Adams, New Holland, and Bruce D. Schwalm, Leola, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 14, 1969, Ser. No. 815,725
Int. Cl. G05g *1/00*
U.S. Cl. 74—491 7 Claims



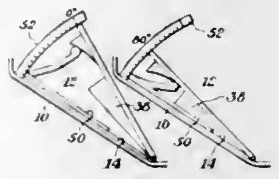
A tractor with two transversely spaced wheels has two sets of hydraulic pumps and motors for separately driving the wheels. The pintle arms on the centrally mounted pumps control the speed of the wheels and are actuated by a single operating lever connected to the pintle arms by a linkage mechanism. Resilient detents are engaged by rollers on the pintle arms which indicate the neutral position of the arms. A second set of rollers on the pintle arms in the neutral positions engage normally opened switches of the starting circuit to close the switches.

3,526,154
SPEED CONTROL SYSTEM FOR MOTOR VEHICLES

Edward J. Niedek, 28953 James St., Warren, Mich. 48092
Filed Aug. 12, 1968, Ser. No. 751,834
Int. Cl. G05g *5/06*
U.S. Cl. 74—526 3 Claims

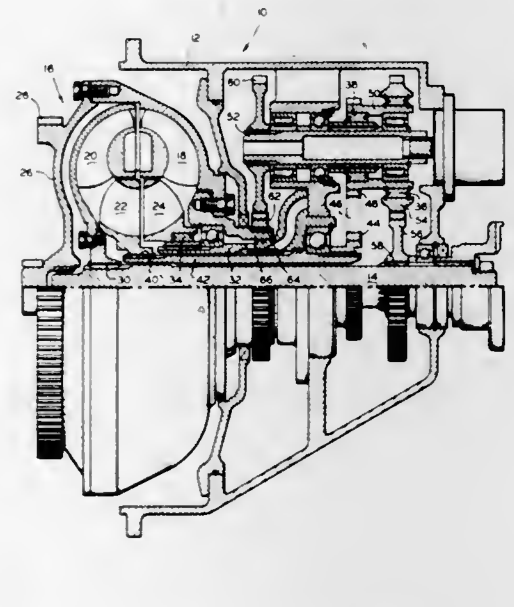
A mechanism is disposed between the accelerator pedal and the linkage controlling the flow of fuel to an internal combustion engine (and thereby controlling the speed thereof) to limit the arc through which the pedal can be swung by foot pressure.

A calibrated gauge for measuring the angle of the wedge is provided so that a peace officer or anyone else may quickly and accurately check the setting of the device to determine if the vehicle could be operated in excess of the speed limit of the jurisdiction in which the vehicle is being operated.



3,526,155
TRANSMISSION

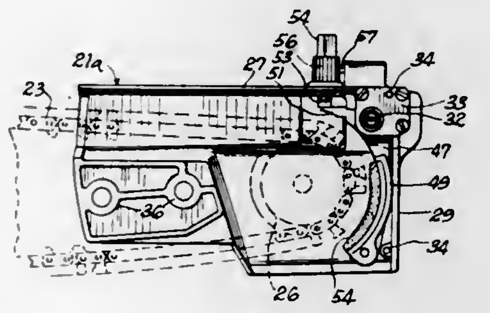
Miszyslaw J. Waclawek, Burlington, Iowa, assignor to Clark Equipment Company, a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 785,083
Int. Cl. F16h *47/00, 47/06*
U.S. Cl. 74—718 9 Claims



A transmission including a hydrodynamic torque converter with a reactor. The reactor can be connected by gearing and a one-way clutch to an output shaft to provide in one mode of operation a split path power flow and can be connected by gearing and another one-way clutch to an impeller to provide in another mode of operation a regenerative power flow.

3,526,156
SAW CHAIN SHARPENING MEANS

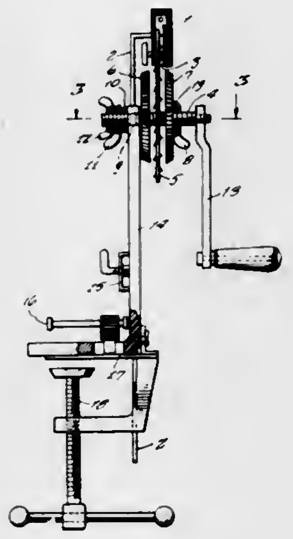
Richard W. Condon, Park Forest, and Vernon L. Krabbe, Beecher, Ill., assignors, by mesne assignments, to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 17, 1968, Ser. No. 721,956
Int. Cl. B23d *63/12*
U.S. Cl. 76—25 9 Claims



A device for sharpening a saw chain while the chain is mounted upon the sprocket and guide bar of a chain saw and while being driven by the sprocket. The device includes a housing adapted to be mounted on the body of a chain saw to enclose the sprocket and a portion of the guide bar. A shaft is supported in the housing for rotatable and axial movement and an operating knob is telescopically mounted on the shaft exteriorly of the housing. The arm carries an arcuate sharpening element arranged in close proximity to the sprocket and the sharpening element is movable into and out of operative position and is oscillatable relative to the chain by movement of the knob.

3,526,157
COMBINATION OF CIRCULAR SAW JOINTER AND VISE

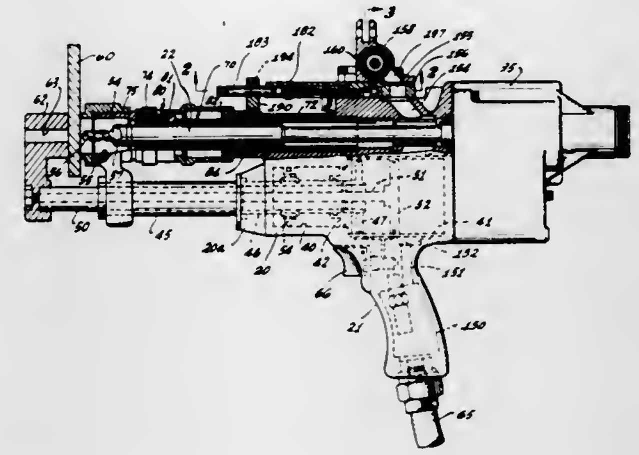
Ezra Rachal, 303 Powell Ave., Monroe, La. 71201
Filed Oct. 23, 1967, Ser. No. 677,326
Int. Cl. B23d *63/08*
U.S. Cl. 76—48 1 Claim



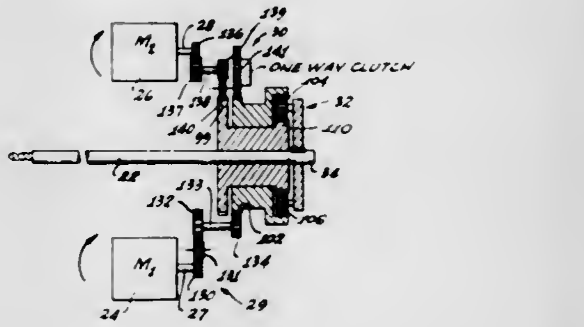
Apparatus which can be used both in jointing circular saw blades and in filing same.

3,526,158
TWO-SPEED POWER TAPER DRILL

Ralph D. Adams, Glendora, and Rudolf R. Schindler, Los Angeles, Calif., assignors to Omark-Winslow Aerospace Tool Co., Portland, Oreg., a corporation of Oregon
Filed July 10, 1968, Ser. No. 743,791
Int. Cl. B23b *45/14*
U.S. Cl. 77—13 10 Claims

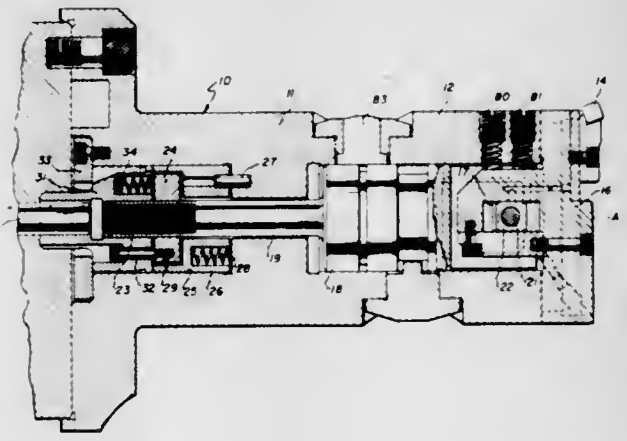


A power drill for drilling taper holes with provision for drilling at a high rotational speed until the drill bit breaks through the work, and then at a lower rotational speed for taper reaming, the lower speed being conducive to a superior finish. Two motors drive the drill bit enough through a planetary gear set at the high rotational speed while the bit is boring through the work; and means are provided whereby at breakthrough, one of the motors is stopped, and the planetary gear set, then driven solely by the other motor, rotates the bit at the reduced speed. The reduced or low speed rate is such that a chip can be taken by the taper bit, such as cannot be accomplished at the high speed rate, and under this condition a taper hole of superior finish is produced.



3,526,159
MACHINE TOOL

Joseph G. S. Robinson, Worcester, and Frank R. Anderson, Shrewsbury, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,161
Int. Cl. B23b *29/034*
U.S. Cl. 77—58 7 Claims

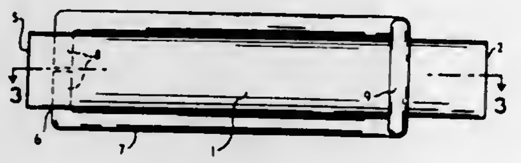


This invention has to do with a machine tool having a boring head with an automatic arrangement for adjusting the cutting tool relative to its axis of rotation, the adjustment operating by the use of two sleeves which are operated by pistons and which carry long, lead threads to produce adjustment of a screw-type element which operates on the cutting tool.

3,526,160
WRENCH WITH PIVOTABLE HANDLE

Guy Norman Thurber, 112 1st St. E., Saskatoon, Saskatchewan, Canada
Filed Feb. 11, 1969, Ser. No. 798,299
Int. Cl. B25b *13/00;* **B25g** *1/00*
U.S. Cl. 81—177.8 2 Claims

This tool of the so-called "Ruby wrench" type is in the form of an elongated member with a nut-accommodating socket in one end and having a torque-applying handle pivotally mounted near the other end that normally lies in folded or closed position parallel with said member and is swingable outwardly through approximately 90 degrees to an open or operative position normal to said socketed member for use as a torque applicator.

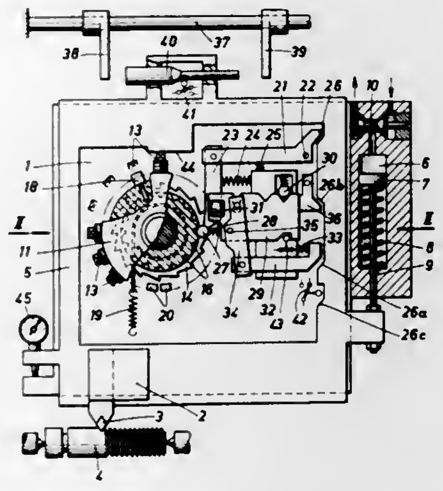


3,526,161
COMBINATION OF LATHE AND THREAD-CUTTING ATTACHMENT

Josef Birgmayer and Karl Husarik, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria

Filed June 12, 1968, Ser. No. 736,483
Claims priority, application Austria, Sept. 22, 1967, A 8,620/67
Int. Cl. B23b *1/00*
U.S. Cl. 82—5 **9 Claims**

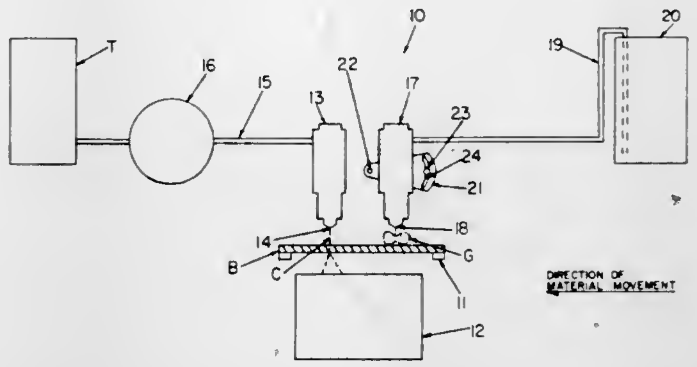
A carriage is mounted on a lathe bed and movable in a longitudinal direction relative to said bed. A cross slide is mounted on said carriage and movable relative to said carriage transversely to said longitudinal direction. Carriage drive means are mounted on said bed and operable to move said carriage relative to said bed in said longitudinal direction. An attachment base is mounted on said cross slide. An attachment slide is slidably mounted on said attachment base for advancing and withdrawing movements, which are transverse to said longitudinal direction. A tool is carried by said attachment slide. A fluid-operable piston motor is carried by said attachment base and operable to impart an advancing movement to said attachment slide. A stop roll is rotatably mounted on said attachment base and formed with a plurality of angularly spaced radial bores. A plurality of stop screws screws are axially adjustably mounted in respective ones of said bores. A ratchet is coupled to said roll. An actuating pawl is coupled to said attachment slide and adapted to impart an incremental angular movement to said ratchet in response to a withdrawing movement of said attachment slide. Said roll is rotatable by said pawl and ratchet to successive angular positions, in which successive ones of said stop screws are in the path of the advancing attachment slide and limit the advancing movement thereof. A plunger is carried by said attachment base and extends and is movable relative thereto in said longitudinal direction and arranged normally to move in unison with said attachment base. A rod is carried by said bed and extends in said longitudinal direction. Two stops are carried by said rod and adjustable along the same. Said stops extend into the path of said plunger and are arranged to move said plunger relative to said attachment base when said carriage is moving in said longitudinal direction while said plunger is in engagement with one of said stops on said rod. Means comprising an admission control switch are provided for controlling the admission of fluid to said piston motor. Said admission control switch is arranged to be actuated in response to said movement of said plunger relative to said attachment base. A carriage drive control switch is actuable by said attachment slide and arranged to initiate a forward movement of said carriage in response to an advancing movement of said attachment slide and a rearward movement of said carriage in response to a withdrawing movement of said attachment slide.



3,526,162
PROCESS AND APPARATUS FOR CUTTING OF NON-METALLIC MATERIALS

Jesse A. Willcox, Excelsior, Minnesota, assignor to Rogers, Freels & Associates, Inc., Minneapolis, Minnesota a corporation of Minnesota

Filed May 21, 1968, Ser. No. 730,873
Int. Cl. B26f *1/26*
U.S. Cl. 83—16 **9 Claims**

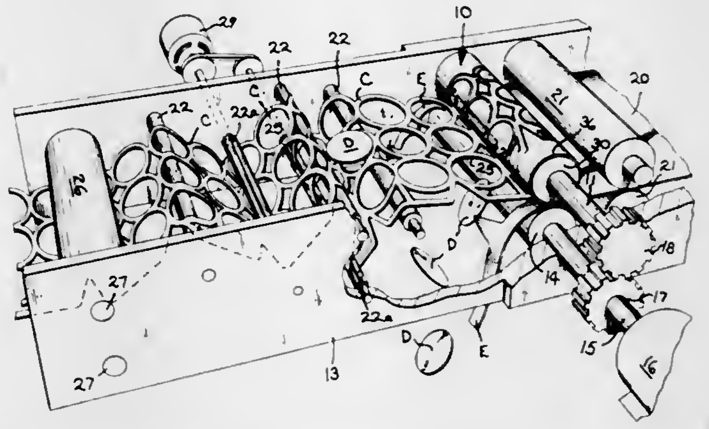


A process and apparatus for cutting a body of non-metallic material comprising a nozzle means for delivering a jet of liquid cryogenic gas to a selected zone of the body of non-metallic materials to be cut. A second nozzle means for delivering a high velocity jet of liquid, such as water, to the treated zone of the non-metallic body to thereby effectively cut through the non-metallic body.

3,526,163
ROTARY DIE CUTTER

Robert W. Lowery, Brentwood, Missouri, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 21, 1967, Ser. No. 692,487
Int. Cl. B23d *25/12;* **B65h** *35/10;* **B26d** *1/56*
U.S. Cl. 83—27 **5 Claims**



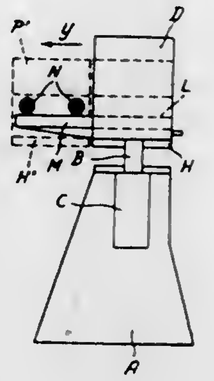
A rotary die cutter is provided for cutting sheet plastic material into articles having precise patterns or configurations. The cutter has a cylindrical shaft with a knife extending radially outwardly therefrom. One of the surfaces defining the knife blade is disposed at a predetermined angle. The shaft is covered with a rubber coating which is flush with the cutting edge of the knife but which is recessed in the area of said one surface.

3,526,164
PRESS WITH MOVABLE TABLE, IN PARTICULAR PUNCHING PRESS

Artorige Chiesa, Genoa, Italy

Filed Feb. 27, 1968, Ser. No. 708,552
Claims priority, application Italy, March 3, 1967, 13,333/67
Int. Cl. B26d *5/02, 7/26*
U.S. Cl. 83—533 **4 Claims**

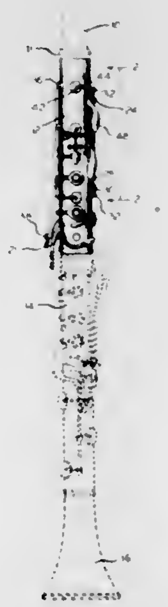
A press, in particular a punching press, wherein the vertically reciprocating upper table is linked to its driving mechanism, that is operatively supported by a base frame, so that, during a period of inoperation of the press, the upper table can be displaced laterally away from its vertically overlying and confronting operational position with respect to the bottom table on the base frame.



3,526,165
CLARINETS

Jack W. Robbins, 1252 W. Grace, Chicago, Illinois

Filed Sept. 23, 1968, Ser. No. 761,505
Int. Cl. G10c *7/06*
U.S. Cl. 84—382 **1 Claim**



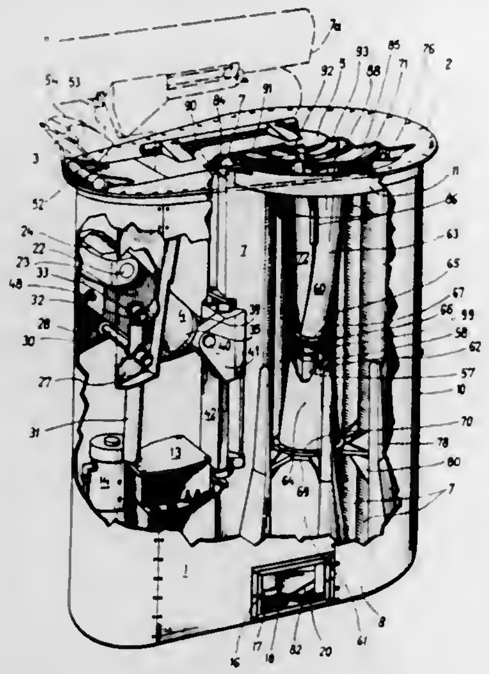
A clarinet having a Boehm system of fingering and in addition provided with an additional B natural hole and an additional C natural hole, and means for playing said holes with the left hand.

3,526,166
LAUNCHING AND LOADING DEVICE FOR ROCKET-PROPELLED MISSILES

Franz Pfister, Hochstadt, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany

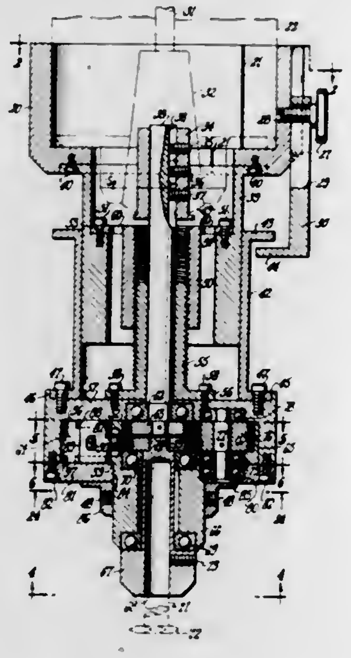
Filed Sept. 5, 1968, Ser. No. 757,547
Claims priority, application Germany, Sept. 8, 1967, 1,553,988
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.802 **5 Claims**

A launching unit for rocket-propelled missiles includes a lifting mechanism which, in response to a sequence control, moves the missiles out of a magazine and from a protective enclosure into a launching position outside the enclosure. The magazine is drum-shaped and rotatable on a vertical axis. The lifting mechanism is arranged radially of the magazine, and the central support of the magazine has an opening facing the lifting mechanism. The distance of the pivot point of the lifting mechanism from the axis of the magazine is less than the turning radius of the lifting mechanism. Locking means are provided to retain in position those missiles not aligned with the lifting mechanism.



3,526,167
MULTI-PURPOSE MILLING HEADS

Francisco Escobedo, Inglewood, California, assignor to Fresco Industries Inc., Gardena, California a corporation of California
Filed May 23, 1968, Ser. No. 731,494
Int. Cl. B23c *3/28, 3/32, 1/12*
U.S. Cl. 90—11.58 **14 Claims**



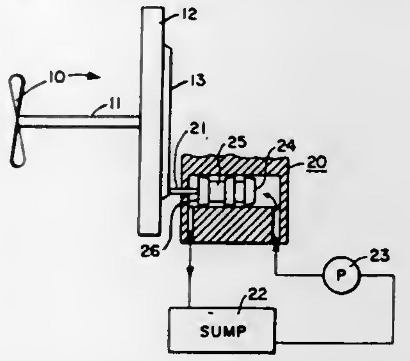
Detachable cutter for coupling to spindle such as that of milling machine. By means of gear train of three gears, pivoted on the intermediate gear like a scissors, head holds adjacent ends of its contained drive shaft segments selectively in axial alignment or offset. Shift of shaft positions can be made without stopping drive, by means of slide block which journals two of trio of gears. Calibrated adjustment screw with lock means move slide block and enable return of the continually parallel shafts to any previous offset positions. Interchangeable pairs of threaded guide cylinders permit axial displacement of gear train housing and its dependent cutter shaft along spiral path determined by pitch of guide threads; consequent thread pattern is thus transferred to bore of workpiece by the cutter. Alternate guide cylinders, unthreaded, prevent axial displacement and maintain cutter at constant level so as to form internal, external and bottom grooves in bores, or to level the surface of, or to bevel a workpiece, etc. Head also usable for profiling or scalloping, forming external as well as internal threads, etc. Adapter unit also provided to further extend radial positioning of cutter for arcuate cuts. Pivoted gear train assembly also usable in other drive shaft connections.

ERRATUM

For Class 92—98 see:
Patent No. 3,526,171

3,526,168
HYDRAULIC PISTON

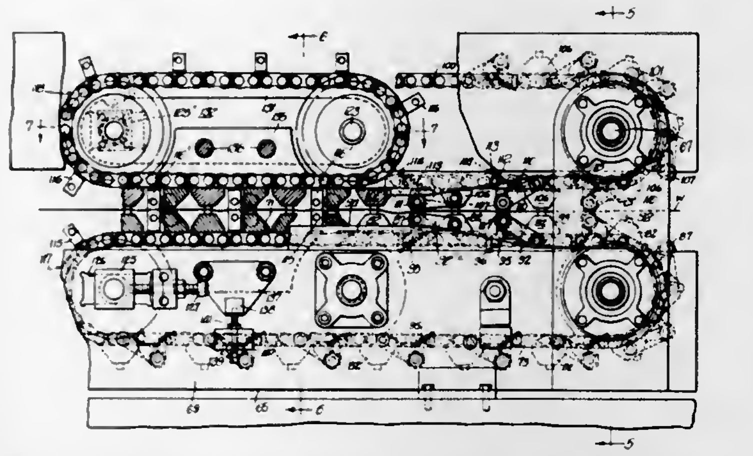
Charles R. Brown, Shady Side, Maryland, assignor to Westinghouse Electric Corporation, Pittsburgh, Pennsylvania a corporation of Pennsylvania
Filed Oct. 30, 1968, Ser. No. 771,713
Int. Cl. F01b *31/00;* **F16j** *1/00*
U.S. Cl. 92—181 **4 Claims**



A substantially frictionless self-centering hydraulic piston and cylinder assembly for developing a force that may be resisted by a force applied displaced from the piston axis comprising a cylinder having a piston with two spaced apart piston sections separated by a cutaway land area therebetween and with the walls of each piston section tapered in a manner to provide controlled fluid leakage to substantially center the piston in the cylinder during operation.

3,526,169
METHOD OF FORMING CONTAINERS FROM THERMOPLASTIC WEBS OR TUBING

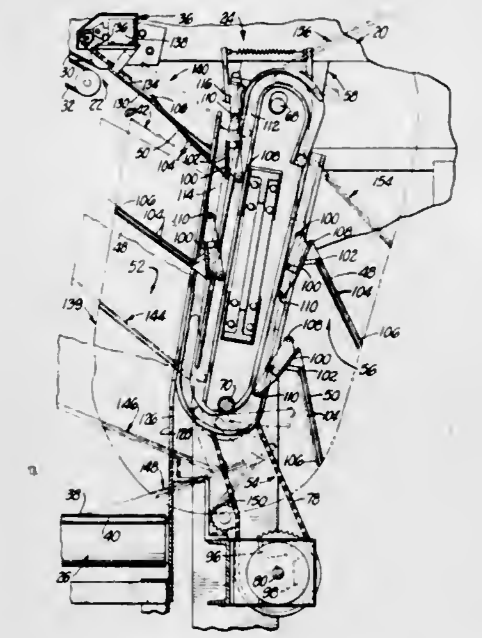
Albert A. Levenson, Jr., Worth, Illinois, assignor to Continental Can Company, Inc., New York, New York a corporation of New York
Original application Dec. 27, 1963, Ser. No. 333,846, now Patent No. 3,419,453, dated Dec. 31, 1968. Divided and this application May 23, 1968, Ser. No. 731,406
Int. Cl. B31b *49/04*
U.S. Cl. 93—35 **4 Claims**



A method of fabricating bags in an automatic bag machine by feeding flattened thermoplastic tubing between conveyors which carry a means to grip the tubing at intervals and transversely seal the same so as to divide it into bag lengths and wherein provision is made for relieving the tension in the seal forming area of the material which normally results from pulling the material through the machine.

3,526,170
AUTOMATIC STACKING DEVICE FOR PUBLICATION CONVEYOR

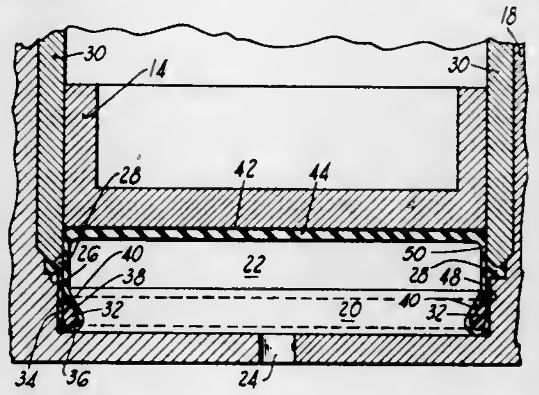
Samuel Oderman, Corona Del Mar, California; Raymond L. Wiseman, Santa Ana, California and George T. Rushforth, Mission Viejo, California, assignors to Sta-Hi Corporation, Newport Beach, California a corporation of California
Filed March 29, 1968, Ser. No. 717,231
Int. Cl. B65b *57/20, 65/08;* **B31b** *1/98*
U.S. Cl. 93—93 **30 Claims**



Stack support members of two sets are positioned alternately, each set being separately movable and all being movable in a continuous path downwardly through a stacking region. Each set is stopped as one of its support members reaches the stacking region upper end while the other set continues to move a support member downwardly through the stacking region receiving publications into a stack thereon. A releasable latch engages free ends of the support members during stopping at the stacking region upper end co-operating with particular guides to tilt the support members upwardly and pretension the same for snap entrance into the stacking region upon movement thereof being resumed. The guides always control the angle of extension of the support members throughout movement and withdraw the support members in a general horizontal direction from beneath the publication stacks above and depositing the same on a receiving surface at the stacking region lower end.

3,526,171
ROLLING DIAPHRAGM REINFORCEMENT

Charles M. Barnes, St. Joseph, Michigan, assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 759,935
Int. Cl. F01b *19/02;* **F16j** *3/00, 15/52*
U.S. Cl. 92—98 **2 Claims**



A tear-drop ring confined by a diaphragm folded thereover and therethrough to support rolling action such that it is equal all around said ring.

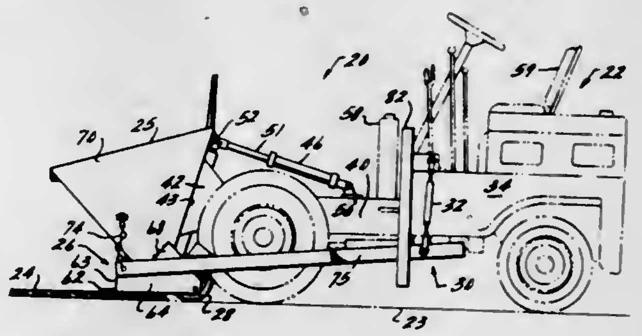
3,526,172
METHOD FOR PRODUCING A HARD PAVING OR SURFACING MATERIAL

Edward B. Stuart, Pittsburgh, Pennsylvania, assignor to Chemical Service Engineers, Inc., Pittsburgh, Pennsylvania a corporation of Pennsylvania
No Drawing. Filed Sept. 24, 1968, Ser. No. 762,122
Int. Cl. E01c *11/24*
U.S. Cl. 94—25 **6 Claims**

This invention relates to a paving material and method for manufacturing the same. Specifically, the paving material comprises soil in finely divided form in a matrix or dispersion of calcium carbonate. This material is produced by blending moist soil or other relatively fine inert ingredients such as crushed rock, sand, gravel etc. with finely divided calcium and/or magnesium oxides and/or hydroxides. The calcium and/or magnesium-containing material of the compact is reacted with carbon dioxide in gaseous form to produce a matrix of calcium and/or magnesium carbonate throughout the compact. This calcium carbonate matrix binds, densifies and hardens the structure of the compact.

3,526,173
MACHINE AND IMPROVEMENT THEREIN FOR LAYING SURFACING MATERIAL SUCH AS ASPHALT OR THE LIKE

Lawrence F. Brandstetter, Cincinnati, Ohio and George William Brandstetter, Columbia Township, Hamilton County, Ohio, assignors to George Brandstetter & Sons Co., Cincinnati, Ohio a corporation of Ohio
Filed May 15, 1968, Ser. No. 729,277
Int. Cl. E01c *19/12*
U.S. Cl. 94—44 **7 Claims**

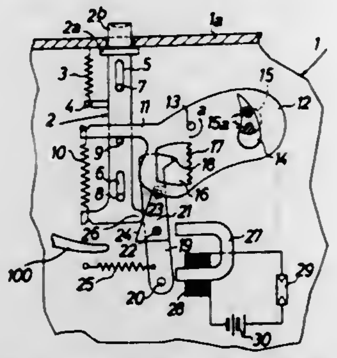


An apparatus for laying surfacing material such as asphalt or the like comprising a vehicular machine, a hopper operatively mounted at one end of the machine, screed means disposed below the hopper for leveling off surfacing material discharged from a gate in the bottom of the hopper as the vehicular machine is operated over grade line, and a first-class lever system for controlling the height of the screed means and by which the depth of a layer of discharged material during operation of the apparatus is determinable. The first-class lever system comprises a pair of stabilizing arms to which the screed means is pivotally connected at corresponding ends of such arms, a pair of grade guide wheels whose axle functions as a fulcrum for the stabilizing arms, and turnbuckle, crank or equivalent means supported by the machine for adjusting the elevation of the other corresponding ends of the stabilizing arms, thereby controlling the height of the screed means above the grade line.

3,526,174
PHOTOELECTRIC EXPOSURE CONTROL FOR CAMERAS

Karl Wagner, Ottobrunn, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Jan. 4, 1968, Ser. No. 695,622
Claims priority, application Germany, Jan. 7, 1967, A 54,554
Int. Cl. G03b *7/12, 9/02*
U.S. Cl. 95—10 **19 Claims**

An exposure control for photographic cameras wherein the shutter release pivots or shifts the armature of a stationary



electromagnet against the opposition of a spring and simultaneously causes a diaphragm vane to move from an end position in order to furnish a diaphragm aperture reflecting the intensity of scene light. To this end, the winding of the electromagnet is connected in circuit with a photosensitive element which enables the electromagnet to attract the armature with a force which is a function of scene brightness and to overcome the bias of the spring so as to move the armature to an end position when the vane assumes a corresponding position to select the proper aperture. The armature then engages and arrests the vane against further movement with or in response to movement of the shutter release.

A guide assembly including a cam mounted on the diaphragm vane or on the armature and a follower on the shutter release serves to determine the extent of movement of the vane or armature in response to progressive displacement of the shutter release.

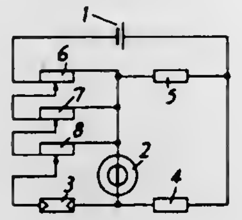
3,526,175
PHOTOELECTRIC MEASURING DEVICES

Hubertus Reimann, Dresden, Germany, and Siegfried Schütze, Dresden, Germany, assignors to VEB Pentacon, Dresden Kamera- und Kinowerke, Dresden, Germany

Filed Apr. 28, 1967, Ser. No. 634,756

Int. Cl. G01j *1/44*

U.S. Cl. 95—10 **4 Claims**



A photo-electric measuring device having an arrangement for electrically introducing exposure factors such as diaphragm aperture, shutter speed, and film sensitivity. There is included at least two logarithmic potentiometers having constant internal resistance and a logarithmic variable voltage output connected in cascade with each potentiometer having a sliding contact operatively connected to a respective mechanical setting member. This arrangement is connected to a light sensitive element influenced by the prevailing light conditions and an indicating device influenced by the light sensitive element and the positions of the sliding contacts of the potentiometers. Under constant light conditions, adjustment of the mechanical setting members is made until a required indication occurs on the indicating device thereby adjusting the mechanical setting members to obtain factors required for accurate exposure.

3,526,176
PHOTOELECTRIC EXPOSURE CONTROL FOR CAMERAS

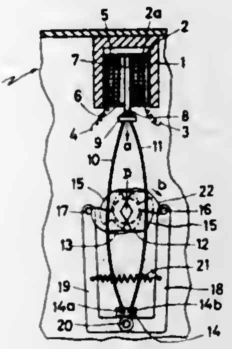
Hubert Hackenberg, Munich, Germany; Friedrich Bestenreiner, Grunwald, near Munich, Germany; and Reinhold Deml, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Jan. 22, 1968, Ser. No. 699,692

Claims priority, application Germany, Jan. 26, 1967, A 54,724

Int. Cl. G01j *1/00;* **G03b** *9/02*

U.S. Cl. 95—10 **23 Claims**



An exposure control for photographic cameras which determines the aperture size and/or the exposure time as a function of scene brightness. A movable armature is positioned in accordance with the energization of an electromagnet whose coil is connected in series or in parallel with a light-sensitive receiver exposed to scene light to control the displacement of the armature as a function of scene brightness. The armature can deform a carrier assembly which includes one or more articulated or flexible carriers supporting vanes which can define an aperture of varying size and/or can maintain the aperture open for varying periods of time.

The coil of the electromagnet can receive current directly from a battery or from a capacitor which is charged through the light-sensitive receiver during partial depression of the shutter release and is caused to discharge through the coil in response to further depression of the shutter release.

3,526,177
ELECTRONICALLY CONTROLLED SHUTTER FOR PHOTOGRAPHIC CAMERAS

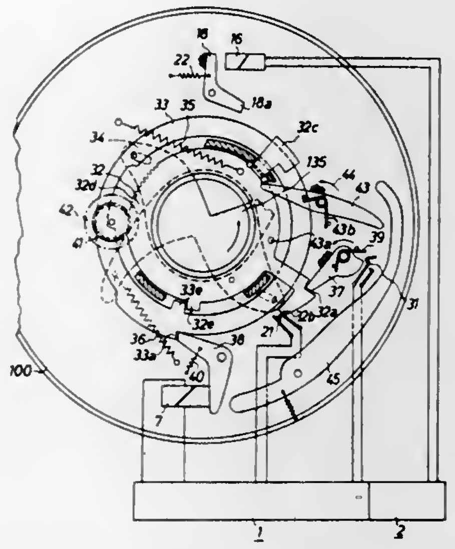
Gerd Kiper, Ludersen, Germany; Dieter Engelsmann, Unterhaching, Germany; and Günther Pawlik, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Jan. 4, 1968, Ser. No. 695,730

Claims priority, application Germany, Jan. 7, 1967, A 54,553

Int. Cl. G01j *1/46;* **G03b** *7/08*

U.S. Cl. 95—10 **10 Claims**



An electronically operated diaphragm shutter wherein the movements of blades are controlled by an electronic timing circuit having a first portion which controls movements of blades as a function of a range of relatively high scene brightnesses and a second portion energizable to control movements of blades as a function of a range of relatively low scene brightnesses. A relay which is connected in an indicating circuit automatically energizes the appropriate portion of the timing circuit in accordance with measurements of scene brightness by the indicating circuit. The latter includes signal lamps which light up to indicate whether or not the scene brightness is satisfactory for exposures with hand-held camera.

3,526,178
CAMERA FOR DAYLIGHT AND FLASH PHOTOGRAPHY

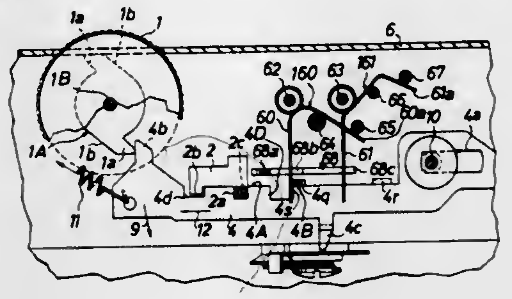
Günter Fauth, Unterhaching, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Dec. 22, 1967, Ser. No. 692,976

Claims priority, application Germany, Dec. 24, 1966, A 26,915

Int. Cl. G03b *9/70*

U.S. Cl. 95—11.5 **13 Claims**



The synchronizing switch of a still camera comprises two torsion springs which can be flexed by an impeller of the shutter when the impeller travels under the bias of a spring to propel a shutter blade to open position. The impeller consists of current conducting material and temporarily engages both springs during travel from a starting position. The springs are installed in prestressed condition and bear permanently against two terminals which can be connected with complementary terminals of an illuminating arrangement when the latter is attached to the housing of the camera. The impeller also serves to prevent advance of the film by more than the length of a frame between successive exposures.

3,526,179
CAMERA HAVING AN INDICATING MEANS FOR FLASH PHOTOGRAPHY

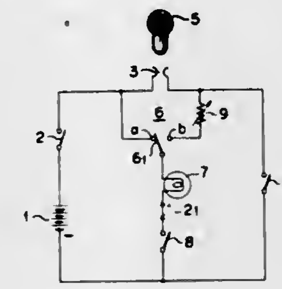
Mitsutoshi Ogiso, Kawasaki, Japan, assignor to Canon Camera Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed June 14, 1967, Ser. No. 645,935

Claims priority, application Japan, June 20, 1966, 41/58,183; Oct. 13, 1966, 41/95,575 and 41/95,576

Int. Cl. G03b *9/70*

U.S. Cl. 95—11.5 **4 Claims**



A camera having an indicator device for carrying out a plurality of inspections for a photographic flash unit with a single indicator lamp. The camera has a built-in flash unit including a detection circuit with an indicator switch, an indicator lamp, and a selector switch which may be set for daylight or flash photography. The indicator lamp is connected in series with the selector switch and will indicate whether or not the selector switch has been properly set for flash illumination when the indicator switch is actuated. The flash unit also has an impedance element which may be selectively connected into the circuit with the indicator lamp by a third switch member to indicate whether or not the flash bulb has been properly placed into the socket for flash illumination. The indicator switch may be interconnected with the shutter release of the camera and is actuated in response to initial movement of the shutter release.

3,526,180
PHOTOGRAPHIC CAMERA WITH INTERCHANGEABLE SHUTTER

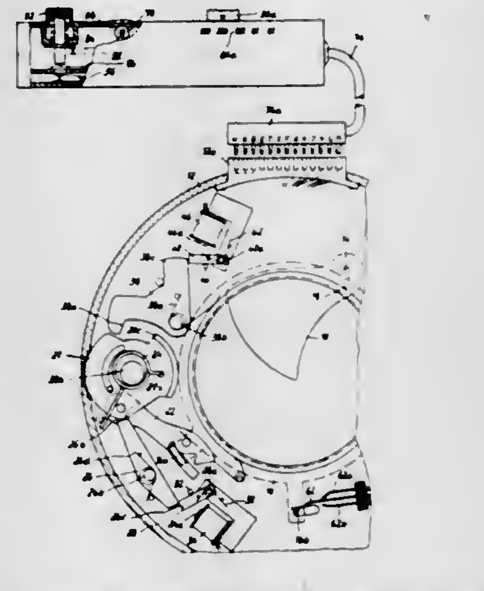
Paul Fahlenberg, Baierbrunn, near Munich, Germany and Rudolf Lang, Grafing-Bahnhof, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany a firm of Germany

Filed June 25, 1968, Ser. No. 739,776

Claims priority, application Germany, July 4, 1967, 1,597,147

Int. Cl. G03b *9/08*

U.S. Cl. 95—53 **11 Claims**



A photographic camera has an interchangeable shutter, at least one variable factor or value of which is settable by electronic control means mounted externally of the shutter and adapted to be used with any one of the various interchangeable shutters. Different shutters adapted for interchangeable use with the camera may have different ranges of whatever value or factor (e.g., shutter speed or diaphragm aperture) is settable by the electronic control arrangement. The electronic control should be capable of setting throughout the entire settable range of every interchangeable shutter which may be used with the camera, which range may be greater than that of certain individual shutters which may be used with the camera. To avoid faulty operation resulting from an attempt to set a variable factor which is within the range of the electronic control unit but not within the range of the particular shutter connected thereto at the moment, means is provided for producing a warning signal or a locking action, or both, when the operator attempts to set a value which is not within the permissible range of the particular interchangeable shutter then being used.

3,526,181
PHOTOGRAPHIC SHUTTER WITH IMPULSE CONTROL

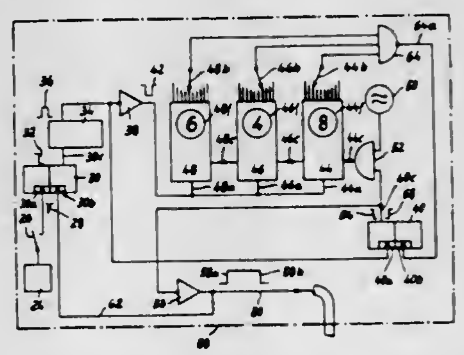
Paul Fahlenberg, Baierbrunn, near Munich, Germany and Heinrich Wildfeuer, Munich-Aubing, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany a firm of Germany

Filed July 11, 1968, Ser. No. 744,207

Claims priority, application Germany, July 21, 1967, 1,597,150

Int. Cl. G03b *9/58*

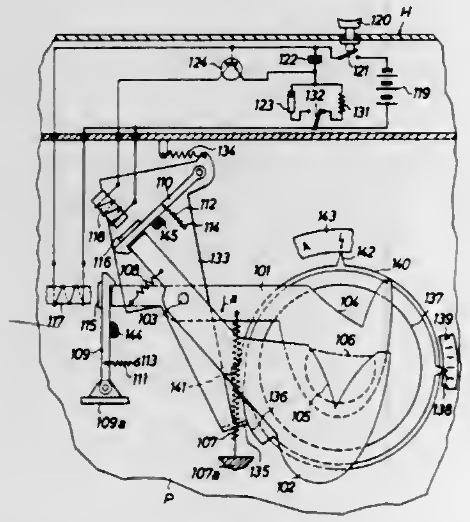
U.S. Cl. 95—53 **10 Claims**



The blades of a photographic shutter are operated by an electromagnet. A counting impulse generator produces pulses which are fed to a series of impulse counters which can be pre-set to the required count depending upon the desired length of photographic exposure. The impulse counters are set into operation simultaneously with a first control impulse which activates the electromagnet to open the shutter, and when the pre-set number of impulses have been counted, the impulse counters produce a second control pulse which terminates the exposure.

3,526,182
ELECTROMAGNETICALLY OPERATED SHUTTER FOR PHOTOGRAPHIC CAMERA

Dieter Engelsmann, Unterhaching, near Munich, Germany and Hubert Hackenberg, Munich-Solln, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed March 6, 1968, Ser. No. 710,867
Claims priority, application Germany, March 9, 1967, A 55,106
Int. Cl. G03b *9/26*
U.S. Cl. 95—60 **12 Claims**

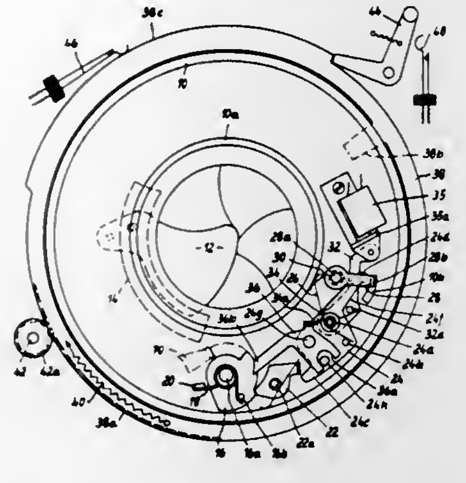


A shutter for photographic cameras which comprises a leading blade which covers the exposure aperture in cocked position and a trailing blade which exposes different areas of the aperture in cocked position. The cocked position of the trailing blade can be changed by the focussing mechanism when the camera is set for operation in artificial light. When the camera is set for operation in daylight, the trailing blade fully exposes the aperture in response to movement to cocked position. The exposure values are then selected as a function of scene brightness.

3,526,183
VARIABLE TIME DELAY MECHANISM FOR CONTROLLING RELEASE OF A COCKED PHOTOGRAPHIC SHUTTER

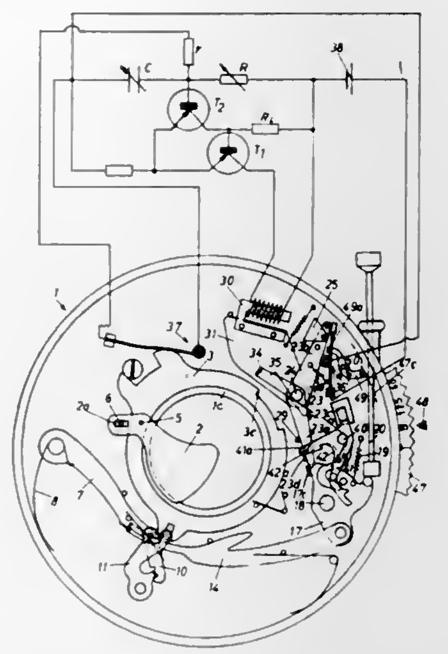
Karl Hartl, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany a firm of Germany
Filed March 19, 1968, Ser. No. 714,237
Claims priority, application Germany, March 22, 1967, C 41,827
Int. Cl. G03b *9/14*
U.S. Cl. 95—63 **13 Claims**

A photographic shutter with an electronically controlled mechanism operatively interposed between the trip or trigger which initiates operation of the shutter, and the latch which releases the tensioned or cocked master member for starting its running down movement to open and close the shutter blades. This mechanism can be set for various periods of delay, e.g., a relatively long delay of about 10 seconds, to give time for the operator to place himself in front of the camera after he has actuated the trigger, or a relatively short delay of about 20 milliseconds to compensate for the illumination peak lag of certain types of flash bulbs. This delay mechanism, which is independent of other delay mechanism optionally used for determining the speed or duration of the exposure, comprises a main lever with two supplementary levers pivoted for limited lost motion with respect to the main lever. When the main lever is moved, under the influence of a spring, from a tensioned position to an actuated position, it engages the latch of the master member and releases the latch so that the master member can start its running down movement. The first supplementary lever has an armature held by an electromagnet so long as current is flowing through the electromagnet, in a position preventing the main lever from moving to its actuated position to release the master member latch. The second supplementary lever is engaged by the master member during its tensioning movement from rundown position to tensioned position, and serves to restore the main lever to its tensioned position. An electronic circuit including a Schmitt trigger causes current to flow through the electromagnet at the appropriate time and to cut off the flow of current at the desired interval after the trigger is actuated, so that the armature can then pull away from the electromagnet and the main lever can release the latch of the master member. The parts are so arranged that they are very small and compact, to fit within the limited space available in a small photographic shutter, and so that current flows through the electromagnet only during a portion of the running down movement of the shutter parts, thus avoiding drain on the electric battery at other times.



3,526,184
PHOTOGRAPHIC SELF-COCKING SHUTTER WITH RECIPROCABLE SHUTTER BLADES AND DRIVING DEVICE

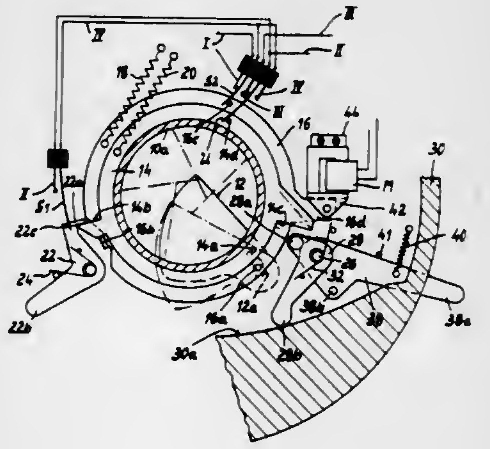
Fritz Carl Richter, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 509,866, Nov. 26, 1965. This application June 28, 1966, Ser. No. 561,175
Claims priority, application Germany, June 29, 1965, P 37,159
Int. Cl. G03b *9/62*
U.S. Cl. 95—63 **8 Claims**



A photographic self-cocking shutter is provided that has reciprocal shutter blades and a driving device with a driving member for driving the shutter blades. An escapement acts on the driving device in the open position of the shutter blades in order to obtain different exposure times. An operating lever and a cocking release member acting on the lever is provided for operating the shutter. A locking lever is coupled with the operating lever and acts upon the driving member when required. A lever arrangement is associated with the operating lever and is transferable into an operative position for taking B and/or T pictures. A lever arrangement cooperates with the cocking and release member to retain the operating lever in a position in which the locking lever blocks the driving member in the open position of the shutter blades.

3,526,185
PHOTOGRAPHIC SHUTTER HAVING TWO BLADE DRIVING MEMBERS

Gerhard Schwarz, Munich, Germany, assignor to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany
Filed June 23, 1967, Ser. No. 648,279
Claims priority, application Germany, July 20, 1966, C 39,654
Int. Cl. G03b *9/24*
U.S. Cl. 95—63 **2 Claims**

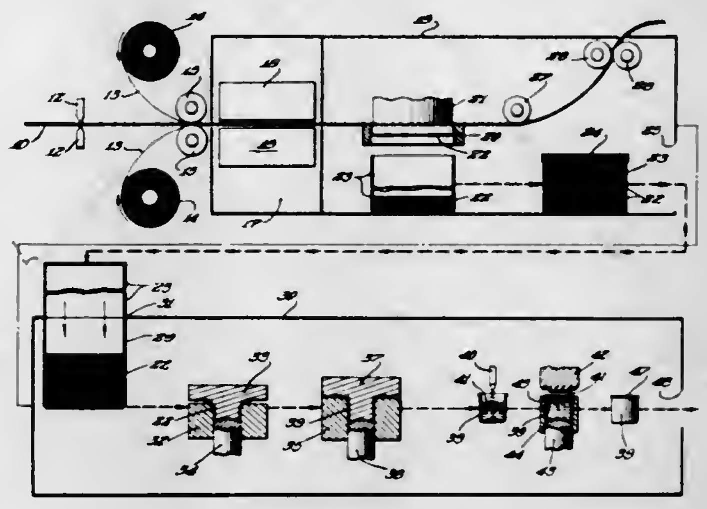


A photographic shutter having blades for covering a light aperture and two spring loaded blade driving members, whereby rundown movement of the first driving member effects opening of the light aperture and rundown movement of the second driving member, after an electronically adjustable delay period, effects closing of the aperture, the two rundown movements proceeding at approximately the same rate of speed. A double-armed abutment lever, pivotally mounted in the shutter, limits the distance of the rundown movement of the two blade driving members and is movable under the influence of a cocking lever to cock the two driving members. An adjustable setting ring mounted on the outside of the shutter is connected to a cam to determine the distance of rundown movement permitted by the abutment lever.

3,526,186
METHOD OF AND MEANS FOR MAKING AND FILLING CONTAINERS WITH BEVERAGE

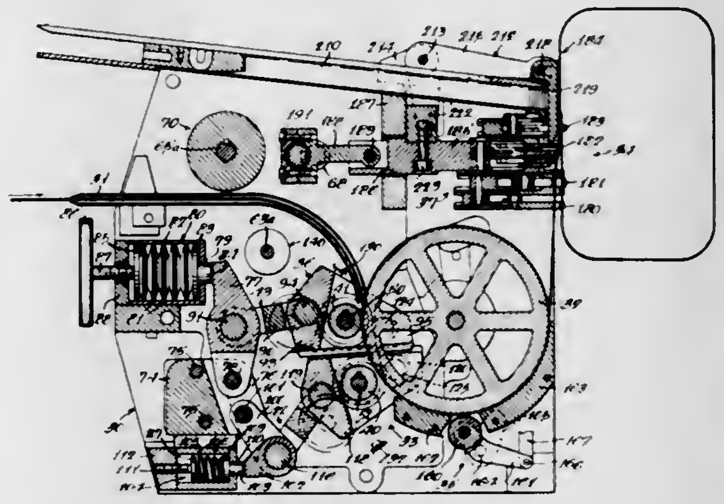
Richard T. Cornelius, Minneapolis, Minnesota, assignor to The Cornelius Company, Anoka, Minnesota a corporation of Minnesota
Continuation of application Ser. No. 533,566, March 11, 1966. This application Apr. 21, 1969, Ser. No. 818,189
Int. Cl. B65b *55/06*
U.S. Cl. 99—181 **12 Claims**

Making and filling of beverage containers wherein a film of nylon-type plastic is bonded by heat to sheet metal, said heat serving to sterilize the coated metal, blanks are cut from the sterilized coated metal and the sterile blanks are shaped into open-top containers which are then filled, capped and hermetically sealed. The shaping, filling, capping and sealing are carried out in a common sterile working space.



3,526,187
TOGGLE CONTROLLED STRAPPING APPARATUS AND METHOD

Allen F. Gilliard, Western Springs, Illinois, assignor to Signode Corporation, a corporation of Delaware
Filed Oct. 2, 1968, Ser. No. 764,456
Int. Cl. B65b *13/02*
U.S. Cl. 100—2 **25 Claims**

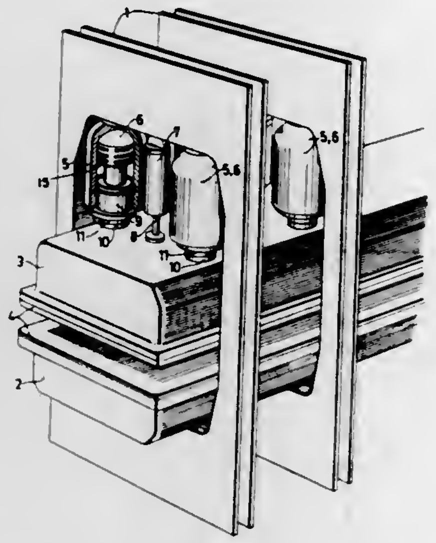


Strapping apparatus including a continuously rotating feed wheel on a first toggle linkage and a continuously rotating tension wheel on a second toggle linkage. The toggle linkages are connected together for simultaneous movement over center to an operative tensioning position in response to the completion of a strap loop, and to an operative feeding position in response to the drawing of a preselected amount of tension in the strap. The toggle linkages are controlled by eccentric drive structures for moving the feed wheel into an active strap engaging position when the toggle linkages are at the operative feeding position, and for moving the tension wheel into active strap engaging position when the toggle linkages are in operative tensioning position. The eccentric means also control the toggle linkages to move the feed wheel to an inactive position so that the toggle linkages can move from the tensioning position to the feeding position without the feed wheel engaging the strap, and to move the tension wheel to an inactive position so the toggle linkages can move from the feeding position to the tensioning position without the tension wheel engaging the strap.

The sealing head structure is actuated by a crank controlled reciprocating crosshead, and the crank is rotated in response to the toggle linkages moving over center after tension is drawn in the strap.

3,526,188
ARRANGEMENT IN SINGLE STOREY PRESSES FOR CHIPBOARD, FIBREBOARD OR THE LIKE

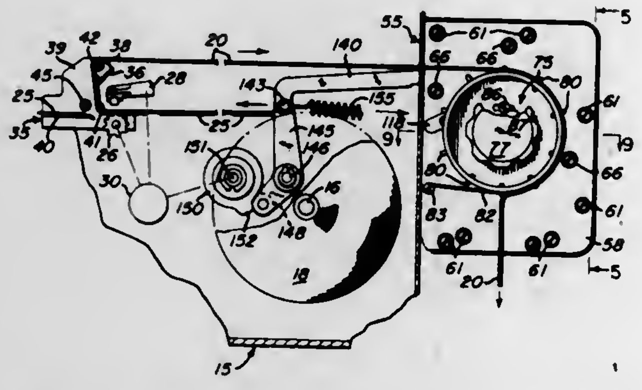
Bengt Carlsson, Motala, Sweden, assignor to AB Motala Verkstad, Motala, Sweden a corporation of Sweden
Filed March 15, 1968, Ser. No. 713,512
Claims priority, application Sweden, March 17, 1967, 3,711/67
Int. Cl. B30b *5/00*
U.S. Cl. 100—257 **5 Claims**



A mechanism for regulating the stroke of a single opening press of the type which includes a plurality of piston and cylinder devices for moving a movable press table toward a stationary press table. Each of the piston and cylinder devices includes a bushing fixedly mounted in the cylinder for restricting the movement of the piston in the direction of movement of the movable table toward the stationary table to thereby limit the minimum separation between the opposing surfaces of the tables. The regulating mechanism includes a pair of spacers interposed between each of the pistons and the movable table, one of which insures the parallelism of the tables at the minimum separation, and the other of which controls the distance of the minimum separation.

3,526,189
LABEL PRINTING AND ISSUING APPARATUS

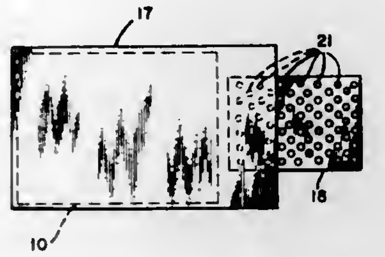
Kenneth C. Allen, Dayton, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio a corporation of Ohio
Filed Sept. 19, 1967, Ser. No. 668,762
Int. Cl. B41f *1/08*
U.S. Cl. 101—288 **7 Claims**



Apparatus for successively printing pressure sensitive labels carried on a backup tape and for successively removing the printed labels from the tape includes a spindle supporting a removable drum receiving the tape from which the labels have been removed and, the spindle is driven by an electric motor through a gear drive having a friction clutch. A detent wheel is adjustably attached to the drum and has peripherally spaced notches which correspond to the angular displacement of successive labels on the tape and are successively engaged by a pivotal pawl, and the pawl and motor are operated by the printer drive to provide for precise advancement of the tape immediately following each printing operation.

3,526,190
METHOD OF MAKING ELECTROTYPE PRINTING PLATES

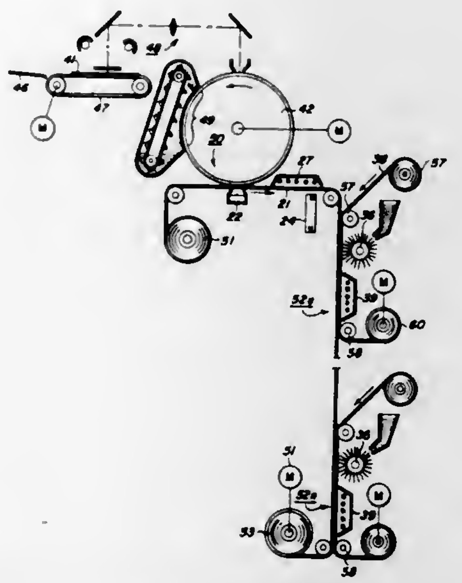
Robert E. Anderson, Kalamazoo, Michigan, assignor to Mueller Color Plate Company, Battle Creek, Michigan a corporation of Wisconsin
Filed July 25, 1968, Ser. No. 747,599
Int. Cl. B41n *3/00*
U.S. Cl. 101—401.1 **4 Claims**



The method of manufacturing an electrotype printing plate comprising the steps of electroforming a shell, having raised characters on a front face and corresponding recesses on its back face, covering the back of the shell with nylon particles and placing a perforated draw member adjacent one edge of the plate. The nylon is fused to the back of the plate by heat and pressure, and a quantity is caused to flow over the one edge and to adhere to the screenlike member and fill a portion of the perforations therein. The draw member is attached to a carrier for pulling the plate through a shaving machine so that the nylon backing may be reduced to a uniform thickness and the draw member is then trimmed away.

3,526,191
DUPLICATING PROCESS EMPLOYING MAGNETIC DEVELOPER MATERIAL

Morton Silverberg, Rochester, New York and Matthew P. Tubinis, Rochester, New York, assignors to Xerox Corporation, Rochester, New York a corporation of New York
Filed Oct. 24, 1966, Ser. No. 589,097
Int. Cl. G03g *19/00*
U.S. Cl. 101—426 **7 Claims**



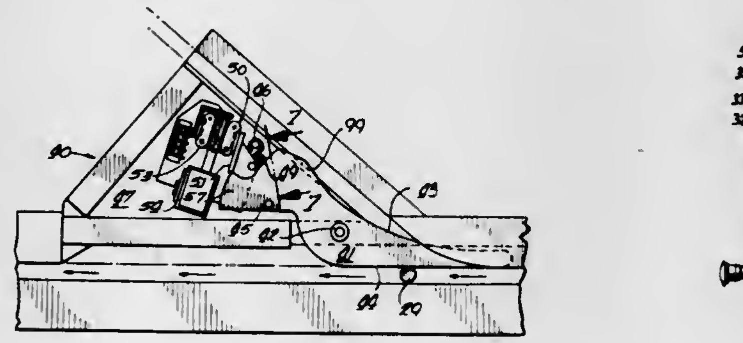
A duplicating process wherein magnetic images of copy to be reproduced are created and used to attract magnetically attractable powder to form subsequent reproductions of the original copy. The magnetic images are deposited and fused to a sheet to form a master. The magnetic field extending from the master can be used to either attract magnetic toner directly to the fused image on the master with subsequent transfer to a copy sheet or the field can extend through a copy sheet placed over the master to attract magnetic toner to the copy sheet in the pattern of the master image. These toner images are then fused to the copy sheet. Mirror images can be avoided by transferring the toner images to intermediate surfaces or by producing the master in a reverse reading form.

ERRATUM

For Class 101—473 see:
Ptent No. 3,526,262

3,526,192
TOW TRUCK SWITCHING SYSTEM

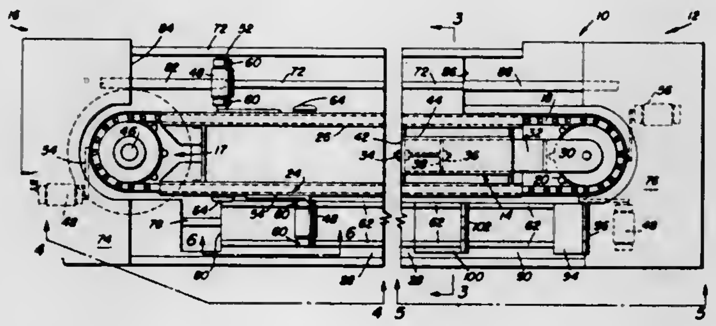
Bert B. Parshall, Wood Dale, Illinois, assignor to FMC Corporation, a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,778
Int. Cl. B61j *3/00*
U.S. Cl. 104—88 **11 Claims**



A tow truck system having an electrically actuated switching means including a switch plate movable between an operative and an inoperative position, said switch plate in its operative position presenting an abutment surface in the main slot of the tow truck system for contact with a tow pin mounted on a tow truck travelling along the main slot to guide the tow pin into the shunt slot associated with the switching means. The switch plate is spring biased to its operative position and provided with a latch for normally retaining the switch in its inoperative position. The latch is released in response to an approaching tow truck closing a reed switch to complete an electrical circuit which energizes a solenoid connected by means of a toggle linkage to the latch in a manner to release the latter. As the tow pin of the tow truck enters the shunt slot it cams the switch plate into its inoperative position allowing the latch to re-engage and thus resetting the switch for the next properly coded truck.

3,526,193
VEHICLE MOVING CONVEYOR APPARATUS

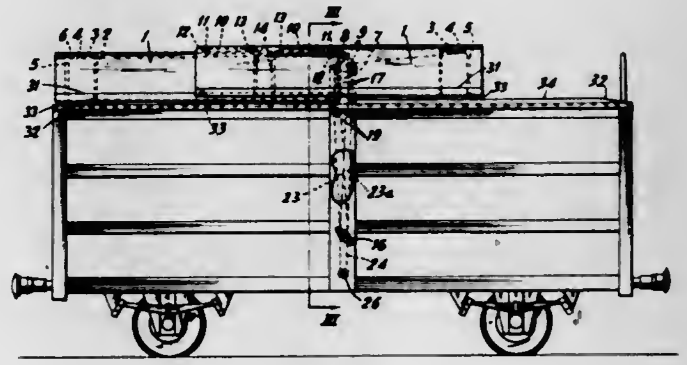
James Vani, 3930 Oak St., Fairfax, Virginia
Filed Jan. 22, 1969, Ser. No. 793,027
Int. Cl. B65g *39/20, 23/04*
U.S. Cl. 104—173 **9 Claims**



This is an apparatus for moving a vehicle, such as an automobile or car, through an automobile washing station or a car assembly line, a vehicular tunnel, or any place that a series of cars have to be moved without using the car engines, the apparatus comprising a power driven endless chain having laterally projecting axles carrying tire periphery engaging pusher rollers and, spaced forwardly of each pusher wheel, a side thrust compensator journaled on an axle supported on the chain preventing the pushed tire from gashing itself on a guide rail and particularly, in the case of a soft side wall tire such as a radial tire, preventing the wheel from climbing up a guide rail and out of the proper path.

3,526,194
APPARATUS FOR OPENING AND CLOSING SLIDABLE ROOF SECTIONS, PARTICULARLY ON FREIGHT CARS

Felix Schneider, Eckmannshausen, Kreis Siegen, Germany; Paul-Werner Wagener, Netphen (Sieg), Germany; and Karl Raab, Wiesbaden, Germany, assignors to Rheinstahl Siegener Eisenbahnbedarf G.m.b.H., Dreis-Tiefenbach, Germany
Filed Dec. 28, 1967, Ser. No. 694,287
Claims priority, application Germany, June 3, 1967, R 46,177
Int. Cl. B61d *39/00*
U.S. Cl. 105—377 **5 Claims**



Apparatus for opening and closing slidable roof sections of a freight car or other container includes cable sections having outer ends secured to opposite ends of a roof section and inner ends secured to a cable drum rotatably mounted on a cross connection intermediate the ends of the container. Mechanism, including transmission means operatively connected to the drum, is provided to rotate the drum to wind one cable section thereon while unwinding the other cable section therefrom to move the roof section longitudinally of the container between open and closed positions. The operating mechanism may include a crank rotatably mounted on a side wall of the container and connectible through selectively operable clutch means to either one of a pair of transmission means each operating the drum for a respective roof section of a pair of sections. The cable drum is provided with cam means operable to initially lift the inner end of a roof section for movement over the other roof section and, when the thus opened roof section is returned to its closed position, to lock the roof section in the closed position. The cable section ends are connected to the roof section ends through springs to allow some play for the lifting and locking of the inner end of the associated roof section.

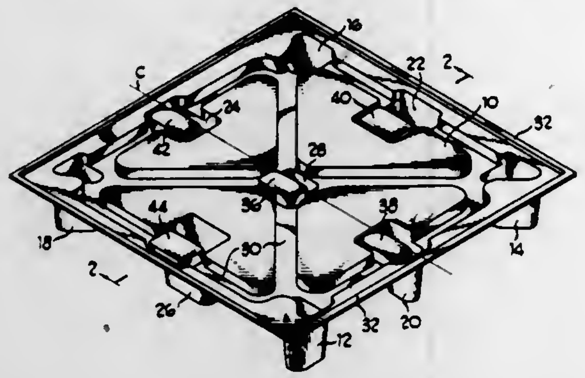
ERRATUM

For Class 107—57 see:
Patent No. 3,526,472

3,526,195
PALLET

Michael C. Maryonovich, Detroit, Michigan, assignor to Borg-Warner Corporation, Chicago, Illinois a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,294
Int. Cl. B65d *19/38*
U.S. Cl. 108—53 **2 Claims**

A pallet suitable for use in supporting parts and/or material during processing, or for storing or shipping the same. In a preferred embodiment, the pallet is constructed from a single sheet of thermoplastic material and is capable of being nested or stacked, depending on the orientation of adjacent pallets. The pallet includes a generally planar deck having a plurality of tapered, hollow legs extending away from the plane of the deck to permit nesting of at least two pallets. The legs are arranged asymmetrically with respect to the center line of the pallet and adjacent each leg is a socket which generally conforms to the end surface of each leg to receive the same when they are stacked, thereby preventing lateral shifting of one pallet with respect to another.



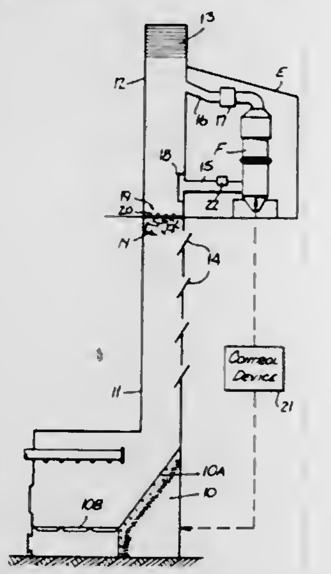
3,526,196
AUXILIARY BURNER ASSEMBLY FOR INCINERATOR SYSTEMS

Alexander P. De Seversky, Northport, New York, assignor to Seversky Electronatom Corporation, New York, New York a corporation of New York

Filed Nov. 21, 1968, Ser. No. 777,844

Int. Cl. F23g *3/02*

U.S. Cl. 110—8 **12 Claims**



An auxiliary burner assembly for an incinerator system, in which garbage is fed into a furnace through hoppers providing access to a flue extending from the furnace upwardly through the building and terminating in a chimney. Papers and other light-weight, floatable waste matter tend to be carried up the flue by the chimney draft rather than to be burned in the furnace, thereby clogging the upper reaches of the flue. The auxiliary burner assembly is in the form of a grid including heating elements, which grid is disposed above the highest hopper in the flue and acts to entrap and burn the floatable waste matter to maintain flue clearance, means being provided to render the assembly heating elements operative at appropriate intervals.

3,526,197
STITCHING MACHINE

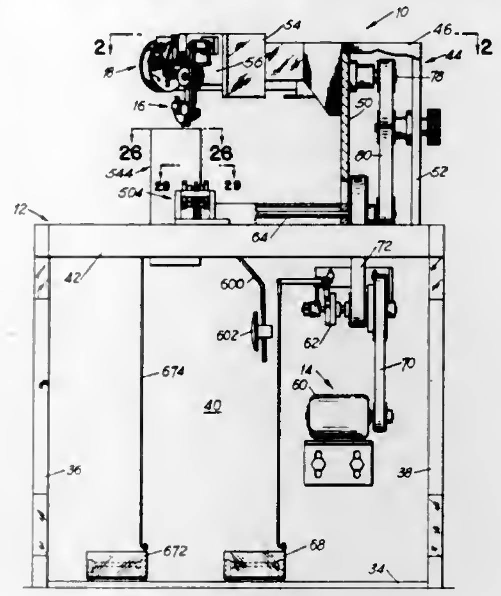
John E. Hinckle, Richmond, Virginia, assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Sept. 7, 1967, Ser. No. 666,035

Int. Cl. D05b *1/00, 1/24*

U.S. Cl. 112—170 **26 Claims**

A stitching machine including a needle bar system, a thread handling system and a work handling system; in which the needle bar system comprises a first needle bar for passing a curved floating needle having an eye between its ends through which passes a short thread having a fixed end and a loose end through the work in a curved path of travel, e.g. to sew two pieces of work together with a blind stitch, and an opposed second needle bar for pulling the needle and returning the needle above the work to the first needle bar in a repetitive cycle; and in which the thread handling system comprises a looper for supporting the loose end of the thread and a thread puller traveling in a uni-directional path for pulling the loose end of the thread through the work, and disposing it on a thread receiver during each cycle of the machine.



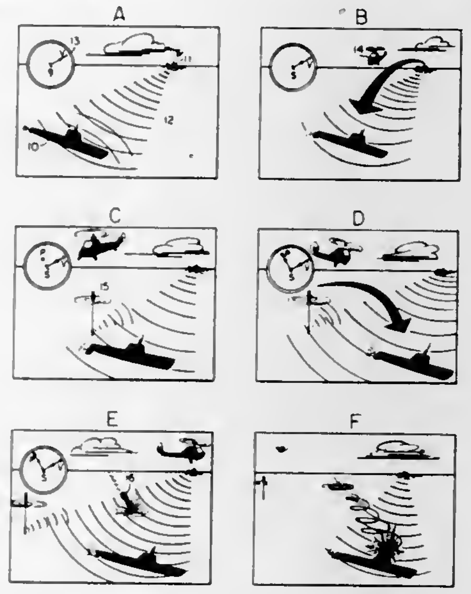
3,526,198
ANTISUBMARINE ATTACK METHOD

Robert H. Mathes, Hillcrest Heights, Maryland and Lauro C. Ricalzone, Forest Heights, Maryland, assignors to the United States of America as represented by the Secretary of the Navy

Filed April 12, 1962, Ser. No. 188,006

Int. Cl. F42b *19/00;* **G01s** *9/66;* **H01i** *29/34*

U.S. Cl. 114—20 **5 Claims**



The invention is directed to a method of utilizing long range sonar equipment for locating and classifying a distant underwater object, dispatching a high speed vehicle carrying a small sonar transponder and weapon to the immediate vicinity of the underwater object, transmitting relative range and bearing intelligence as derived from received sonar from said transponder, by electromagnetic waves to the vehicle for accurate delivery of a weapon to the object.

3,526,199
INFLATABLE STRUCTURE

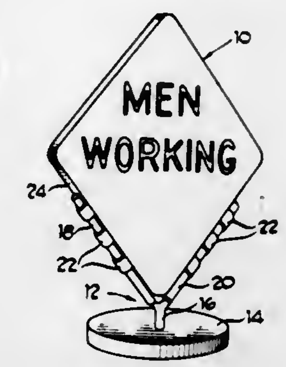
John B. Keats, Marietta,,Ohio, assignor to Borg-Warner Corporation, Chicago, Illinois a corporation of Delaware

Filed Dec. 22, 1967, Ser. No. 692,821

Int. Cl. G01f *9/10*

U.S. Cl. 116—63 **1 Claim**

An inflatable structure including fabric material formed to define a hollow body having a front and a back wall connected by a plurality of spaced apart threads of predetermined length extending between the walls to prevent ballooning upon inflation of the structure.



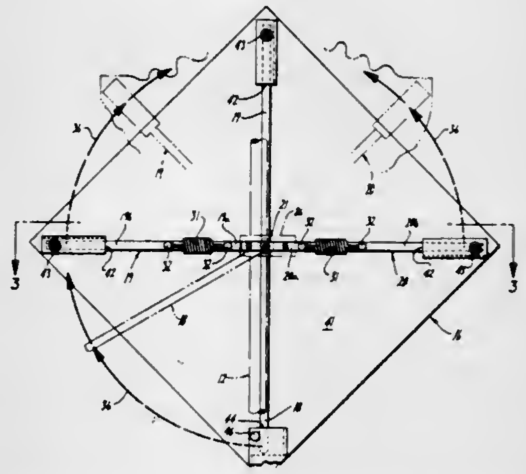
3,526,200
COLLAPSIBLE SIGN

Robert L. Doyle, Palo Alto, California, assignor to Western Progress, Inc., Mountain View, California a corporation of Nevada

Filed April 1, 1968, Ser. No. 717,589

Int. Cl. E01f *9/10*

U.S. Cl. 116—63 **4 Claims**



Collapsible sign having a plurality of arms greater in number than three which are pivotally interconnected at one end of each arm so that the arms can be folded over each other into a compact package and a four-sided flexible sheet-like member having portions thereof releasably secured to said arms to retain said sheet-like member in a relatively taut condition.

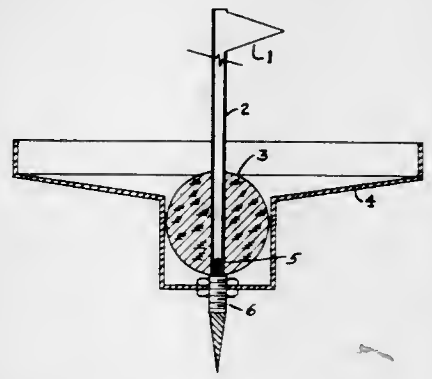
3,526,201
PRECIPITATION RATE GAGE FOR SPRINKLER IRRIGATION SYSTEMS

Glenn F. Larson, 1042 Arbolado, Santa Barbara, California

Filed May 19, 1969, Ser. No. 825,616

Int. Cl. G01f *23/06*

U.S. Cl. 116—114 **1 Claim**



A sprinkler irrigation signaling gage to determine the precipitation rate at a specific point or, when many gages are used, to determine the uniformity of sprinkler distribution of an installed system. The gage consists of a collection cup and signal float rod adjustably guided vertically for a predetermined distance for indicating to a remote observer when a predetermined amount of water has been collected in the gage.

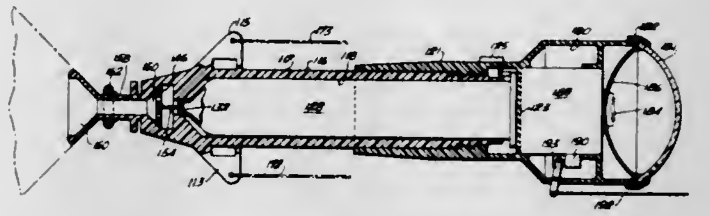
3,526,202
EMERGENCY SIGNAL ASSEMBLY

Hubert Graulich, 6801 Brighton Place, Coral Gables, Florida and Peter Graulich, 6801 Brighton Place, Coral Gables, Florida

Filed May 22, 1969, Ser. No. 826,899

Int. Cl. G09f *9/00*

U.S. Cl. 116—124 **8 Claims**



A carrier assembly for attachment to a signal balloon preferably of luminescent, International orange color in which the balloon when inflated with a gas such as helium, hydrogen etc. will suspend the carrier, and in which the carrier includes a gas reservoir communicable with a discharge nozzle to which the balloon is sealingly connected, and in which a manually operable firing pin is engageable with a frangible seal, of the reservoir and in which an electrically operated supplemental signal assembly is controlled by an operating cord beneath the assembly when aloft whereby a repetitive signal can be transmitted.

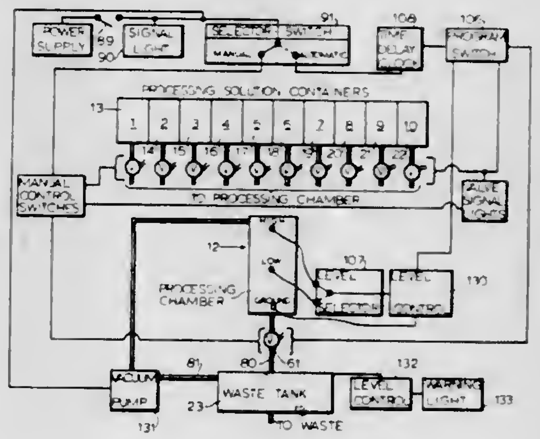
3,526,203
ELECTRON MICROSCOPY TISSUE PROCESSOR

Thomas D. Kinney, 3120 Devon Road, Durham, North Carolina and John E. P. Pickett, 2323 Pinafore Drive, Durham, North Carolina

Filed April 8, 1968, Ser. No. 719,434

Int. Cl. B05c *11/10, 3/02*

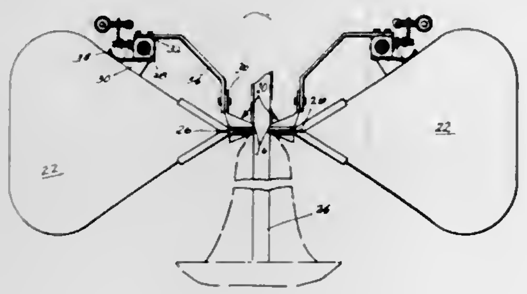
U.S. Cl. 118—7 **5 Claims**



A tissue processor for fixation, dehydration and clearing of minute, i.e. electron microscopy size, particles of tissue utilizes a porous receptacle for each particle of tissue and a processing chamber adapted to contain a plurality of the porous receptacles. The processing chamber is connected to various tanks which contain the usual aqueous and organic non-aqueous processing solutions. Fluid controls are provided so that a predetermined volume of each solution is successively brought to, retained in and drained from the chamber. The receptacle pores are such that each aqueous and non-aqueous solution is permeable through at least some of the pores thus allowing the particles to be bathed in the various solutions in any of several programmed time sequences and while residing within their respective porous receptacles throughout whatever time is required to complete the particular program.

3,526,204
EDGE THICKNESS CONTROL FOR LIQUID COATING OPERATION

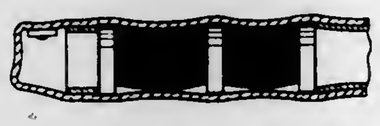
Paul E. Schnedler, Middletown, Ohio and James C. Young, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio a corporation of Ohio
Filed Sept. 13, 1967, Ser. No. 667,451
Int. Cl. B05c *11/06*
U.S. Cl. 118—8 **12 Claims**



A method and apparatus for continuously coating a web of material and controlling coating thickness at the edges of the web by providing a fluid jet transversely of the web and increasing the jet wiping action in a narrow zone adjacent the edges of the web.

3,526,205
PROCESS AND APPARATUS FOR HEAT TREATMENT OF DISC-SHAPED SEMICONDUCTOR BODIES

René Rosenheinrich, Ebermannstadt, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany a corporation of Germany
Filed Oct. 19, 1966, Ser. No. 587,713
Claims priority, application Germany, Oct. 22, 1965, S 100,151
Int. Cl. C23c *11/00*
U.S. Cl. 118—49 **4 Claims**

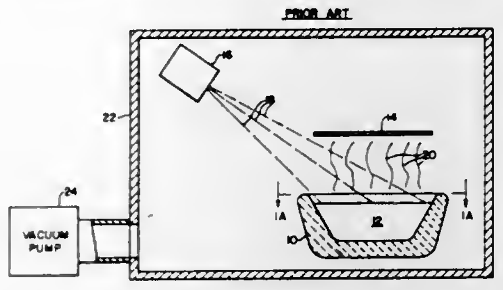


In order to prevent the collapse of an evacuable quartz tube containing semiconductor wafers during the heat treatment of said wafers, supporting discs larger than the semiconductor wafers are inserted into the evacuable quartz tube.

3,526,206
COATING APPARATUS INCLUDING ELECTRON BEAM EVAPORATING MEANS

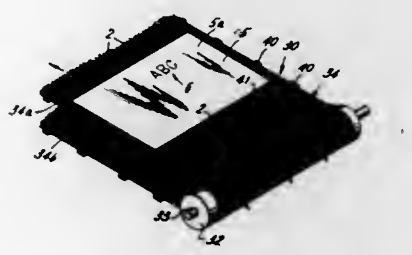
Charles H. Jones, Murrysville, Pennsylvania, assignor to Westinghouse Electric Corporation, Pittsburgh, Pennsylvania a corporation of Pennsylvania
Filed July 31, 1968, Ser. No. 749,086
Int. Cl. C23c *13/08*
U.S. Cl. 118—49.1 **6 Claims**

A system for applying a coating material on a substrate by vapor deposition wherein the surface of a body of a coating material is bombarded by a beam of electrons from an electron beam source comprising one or more electron guns. The parameters of each gun, its location at about 270° to the coating surface, and a magnetic field are specifically established to provide a beam having a cross-sectional impingement area that achieves a substantially uniform beam pattern and current distribution at the surface of the molten coating material to provide a high coating efficiency. The gun cathode is generally concave and formed of spaced apart sheet-like segments. Each segment is combined with a separate heater means whereby to produce a composite beam of varying intensity.



3,526,207
ENDLESS CONVEYOR

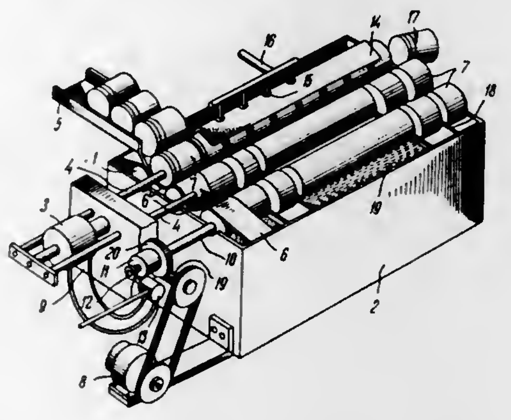
Samuel Nadelson, 1 Washington Square Village, New York, New York
Filed July 23, 1965, Ser. No. 474,362
Int. Cl. B05c *11/12*
U.S. Cl. 118—50 **2 Claims**



An improved automatic raised printing machine wherein the wire mesh endless belt of the conveyor adapted to carry the sheets to be printed past the heating station is provided with a plurality of pins extending outwardly from the upper run thereof and spaced so as to be adapted to receive the lower faces of said sheets supportedly thereon in parallel spaced relation to said belt upper run.

3,526,208
APPLIANCE FOR FORMATION OF COATINGS ON LATERAL SURFACES OF METAL PARTS

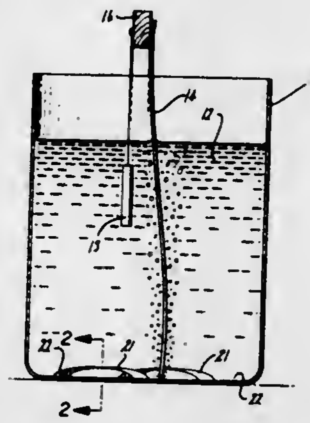
Nikolai Ivanovich Solomin, ul. Avtomekhanicheskaya, 10, kv. 48, Gorky, U.S.S.R.; Alexandr Konstantinovich Basharin, pos. Dpskino, 4-tupik, 13, Gorky, U.S.S.R.; Vasily Fedorovich Sadulin, ul. Vatutina, 8, kv.8, Gorky, U.S.S.R.; and Boris Maximilianovich Zakharov, ul. Naberezhnaya, 27, kv.1, Gorky, U.S.S.R.
Filed Jan. 9, 1968, Ser. No. 696,563
Int. Cl. B05b *13/02;* **B05c** *1/02*
U.S. Cl. 118—73 **4 Claims**



Internal combustion engine pistons to be coated are fed successively from a guide where they are supported in side-by-side relation into a trough where they are fed endwise so as to form an alignment of the pistons in end-to-end relation on the surfaces of two rotating adjacent rolls. The rolls are partially immersed in a treatment fluid in a tank for application of the fluid onto the pistons as they travel along the rolls. Nozzles are positioned above the rolls for supplying the treatment fluid onto the pistons, for entry into the grooves thereof.

3,526,209
METHOD AND APPARATUS FOR GROWING FREE OYSTER SPAT

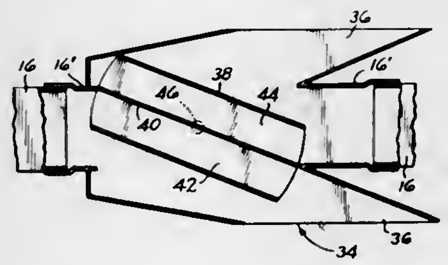
William W. Budge, Hillsborough, California and George Walter Freeborn, Woodside, California, assignors to Pacific Mariculture, Inc., Pescadero, California a corporation of California
Filed Nov. 30, 1967, Ser. No. 687,069
Int. Cl. A01k *61/00*
U.S. Cl. 119—4 **21 Claims**



Method and apparatus for growing free oyster spat by removing the spat from the cultch within a period less than thirty days after adherence to the cultch, and thereafter growing the spat free of a cultch.

3,526,210
FISHFOOD DISTRIBUTOR FOR HATCHERY RACEWAYS

Boye H. Burton, 321 NE. Russet St., Portland, Oregon
Filed March 8, 1968, Ser. No. 711,707
Int. Cl. A01k *5/00*
U.S. Cl. 119—51 **3 Claims**

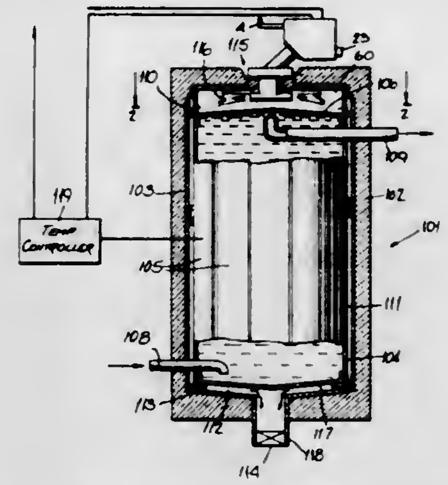


A fishfood dispenser delivers food to an elongated delivery tube located between a pair of separated raceways, and the food is moved through the tube by entrainment in an air stream supplied to the tube by an air fan. At spaced intervals the tube is provided with oppositely directed lateral outlets which communicate with the tube selectively by means of an adjustable valve, whereby to distribute the food selectively to each raceway.

3,526,211
DIRECT FIRE HEATING DEVICE

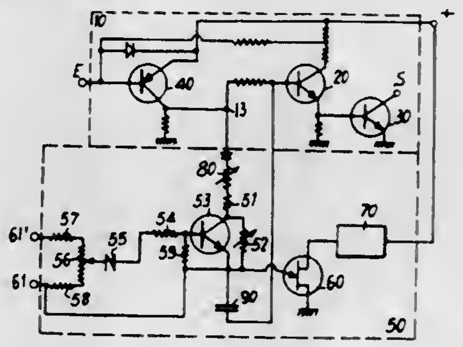
Ronald D. Corey, R.D. 1, Chenango Forks, New York
Filed July 30, 1968, Ser. No. 748,729
Int. Cl. F22b *5/00*
U.S. Cl. 122—14 **7 Claims**

A heating system is now provided comprising the disposition of the heat source above the reservoir of fluid to be heated, which reservoir is contained within a spaced insulated casing from which the hot fluid is evacuated by a reduced pressure produced at the bottom of the system thereby producing a counterflow between the hot and heated fluids. In the preferred embodiment the fluid to be heated such as water is contained in a reservoir or tank having an inlet at the bottom and an outlet at the top. This tank is contained within a hollow insulated chamber at sub-atmospheric pressure having a sealed burner unit disposed at its top and an exhaust outlet at its bottom through which the heated gases from the burner are evacuated by the production of an induced draft. This arrangement produces a counterflow effect between the downwardly drawn heated gases and the rising water being heated within the tank resulting in a more efficient heat exchange system insensitive to ambient conditions and capable of more rapid heating. Valve control of the induced draft permits temperature control of the residual exhaust gases.



3,526,212
ELECTRONIC CONTROL SYSTEM FOR CONTROLLING THE DIRECT OR INDIRECT FUEL INJECTION IN MOTORS AS A FUNCTION OF MOTOR SPEED

Jacques Bassot, Paris, France, and Louis Monpetit, Etang-la-Ville, France, assignors to Societe des Procedes Modernes d'Injection Sopomi, Les Mureaux, Yvelines, France
Filed Jan. 2, 1968, Ser. No. 695,281
Int. Cl. F02d *5/02*
U.S. Cl. 123—32 **25 Claims**

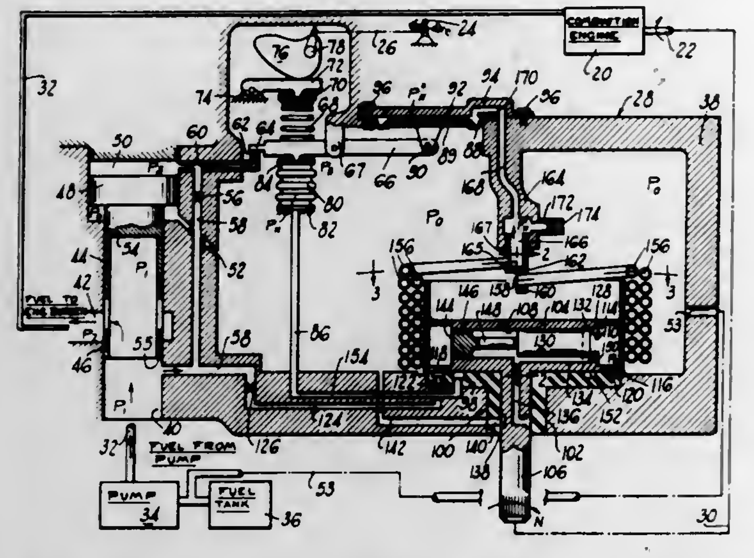


The pulses which control the fuel injection by injectors in a motor are used to generate a voltage which varies as a function of motor speed by means of a circuit which consists of a pulse transformer, rectifiers and a resistor-capacitor connected across said rectifier, the voltage across said capacitor thus varying as a function of motor speed. The injection is stopped when the emitter voltage and voltage at the bases of a unijunction transistor reach a predetermined relationship. Thus circuits are shown for varying the charging current of a capacitor in the emitter circuit as a function of motor speed voltage and/or for varying the voltage at base of the unijunction transistor.

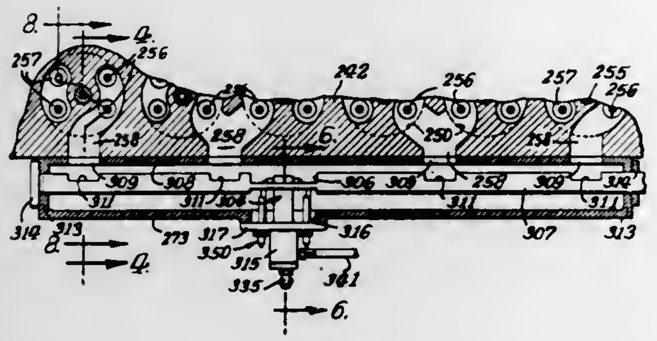
3,526,213
HYDRAULIC GOVERNOR HAVING ACCELERATION SENSING MEANS

Samuel E. Arnett, South Bend, Indiana, assignor to The Bendix Corporation, South Bend, Indiana a corporation of Delaware
Filed July 24, 1968, Ser. No. 747,346
Int. Cl. F02d *11/08*
U.S. Cl. 123—103 **7 Claims**

A variable speed engine governor wherein a first fluid pressure output signal as a function of engine speed is generated by an engine rotated weight which controls the fluid pressure as necessary to balance the centrifugal force of the weight. A second fluid pressure output signal as a function of rate change of engine speed or engine acceleration is generated by a fluid filled coiled tube which rotates with the engine rotated weight about a common axis of rotation thereby developing a fluid pressure which varies as a result of accelerating the fluid through said control tube.



3,526,214
COMPRESSION IGNITION ENGINE WITH COMBUSTION AID
Roy Kamo, Columbus, Indiana, assignor to Cummins Engine Company, Inc., Columbus, Indiana a corporation of Indiana
Continuation-in-part of application Ser. No. 685,103, Nov. 22, 1967, and Ser. No. 685,106, Nov. 22, 1967. This application Feb. 24, 1969, Ser. No. 801,710
Int. Cl. F02m *31/00*
U.S. Cl. 123—122 **11 Claims**



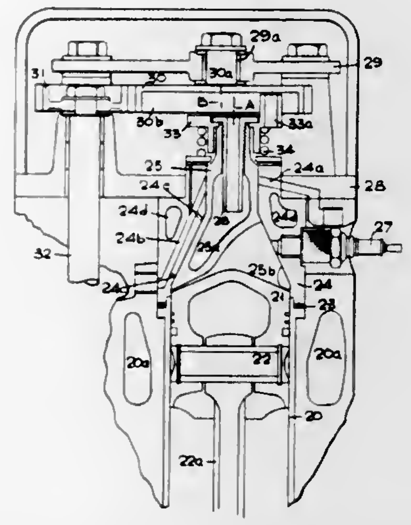
This disclosure deals with a low compression ratio internal combustion engine of the compression-ignition type, including an improved combustion aid for facilitating starting of the engine and for reducing white smoke (unburned fuel in the exhaust) during starting and operation.

The improved combustion aid includes a fuel burner located in the engine air intake. It also includes distributing means to allocate the products of combustion from the fuel burner to the inlet ports of the cylinders, where these products of combustion mix with and heat the primary combustion air passing through the air intake. Such preheating and distributing combined with the temperature increase resulting from compression at the low ratio insures rapid ignition and complete combustion of the injected fuel to effect prompt starting of the engine and early elimination of white smoke.

For starting and operation, the burner may be started and stopped automatically under the control of a thermostat responsive to the temperature of the circulating engine coolant at a point near the engine block.

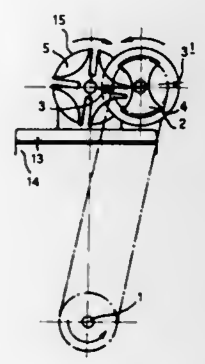
This disclosure also relates to an improved fuel burner that may be used to start either low compression ratio engines or conventional high compression ratio engines.

3,526,215
ROTARY VALVES FOR INTERNAL COMBUSTION ENGINES
Frank Metcalf Aspin, Bexton, Knutsford, Cheshire, England
Filed April 10, 1968, Ser. No. 720,167
Claims priority, application Great Britain, April 13, 1967, 16,948/67
Int. Cl. F01l *7/00, 7/08*
U.S. Cl. 123—190 **3 Claims**



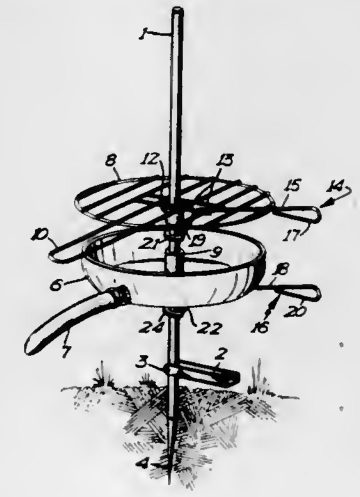
A rotary valve for an internal combustion engine having a rotor with driving means therefor, which means has a conical sealing face complementary to a corresponding face in a housing. The base end of the rotor is exposed to gas pressure in the cylinder and has a combustion space open permanently to the cylinder through the base end of the rotor and to at least one port at the conical sealing face. The combustion space constitutes most of the combustion volume at maximum compression and also constitutes a passage for the combustion gases. The conical sealing face in the housing has at least one inlet and one exhaust port complementary to that in the rotor and means is provided for driving the rotor in order to provide cyclic variation of rotational speed with phases of increased and reduced speed of rotation wherein the reduced speed phase occurs during the combustion pressure axial loading of the rotor and the rotor is set for minimum velocity movement at substantially the point of maximum cylinder pressure.

3,526,216
TIMING SYSTEM FOR ENGINES
Jean Fernand Emile Ghislain Henvaux, 27, Rue des Melezes, Brussels V, Belgium
Filed June 11, 1968, Ser. No. 736,141
Claims priority, application Belgium, June 14, 1967, 699,896
Int. Cl. F01l *7/02*
U.S. Cl. 123—190 **6 Claims**



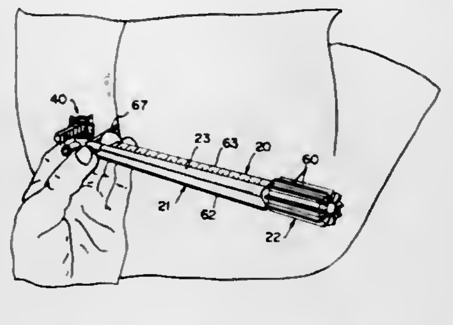
In a valveless timing system for combustion engines a timing shaft is positioned within a cylinder head and is provided with an intake port in axial spaced relationship to an exhaust port with both of the ports extending angularly about the periphery of a cylindrically shaped section of the shaft. The timing shaft is rotated intermittently by the combination of a plate member and a Maltese cross driving device arranged in operative engagement so that the plate member is driven by the drive shaft of the engine and, in turn, drives the Maltese cross driving device and the timing shaft. The part driven by the drive shaft of the engine rotates at the same speed as the drive shaft, and due to the arrangement of the plate member and the Maltese cross driving device the timing shaft rotates intermittently so that the intake port and exhaust port are moved alternately into and out of communication with the engine cylinder for conveying intake and exhaust through intake and exhaust pipes, respectively, in the cylinder head.

3,526,217
POST MOUNTED COOKING UNIT
Theodore J. Garske, 1029 Churchill St., St. Paul, Minnesota and Walter A. Swanson, 2545 Edgerton St., St. Paul, Minnesota
Filed Oct. 8, 1968, Ser. No. 765,935
Int. Cl. A47j *37/00;* **F24b** *3/00*
U.S. Cl. 126—25 **6 Claims**



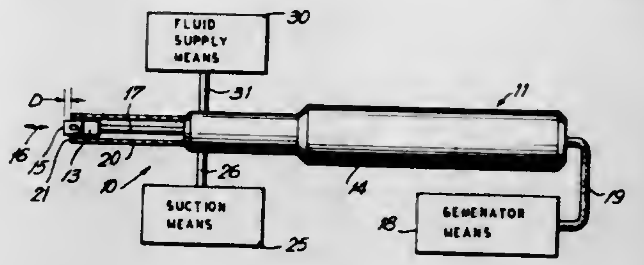
Outdoor cooking apparatus comprising a charcoal pan and a cooking utensil having centrally supported sleeve bearings by means of which they are slidably and rotatably mounted on an upright, ground-engaging post. The charcoal pan and cooking utensil are adjustably held on the post in the desired vertical position with respect to each other by friction locking devices which releasably engage the post.

3,526,218
FLUID PRESSURE MEASURING DEVICE
Robert E. Reiss, St. Louis, Missouri and Jack D. Merry, Bridgeton, Missouri, assignors to Sherwood Medical Industries Inc.
Filed June 13, 1967, Ser. No. 645,810
Int. Cl. A61b *5/02*
U.S. Cl. 128—2 **11 Claims**



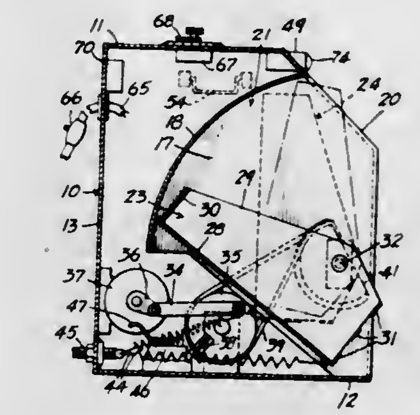
A fluid pressure measuring device of the closed end type wherein the fluid being tested flows directly into a passageway of capillary dimension and compresses air in the passageway and in an enlarged compression chamber that is aligned axially therewith. Valve means is connected with the device so that a unique method of measuring the pressure of body fluids, such as cerebrospinal fluid, can be practiced by controlling the flow of fluid into and out of the device. The device includes heat dissipating means so that the accuracy of the device will not be effected by body heat, when the device is manually handled.

3,526,219
METHOD AND APPARATUS FOR ULTRASONICALLY REMOVING TISSUE FROM A BIOLOGICAL ORGANISM
Lewis Balamuth, New York, New York, assignor to Ultrasonic Systems, Inc., Farmingdale, New York a corporation of Delaware
Filed July 21, 1967, Ser. No. 655,118
Int. Cl. A61b *17/32*
U.S. Cl. 128—2 **28 Claims**



A method and apparatus for the removal of layers of relatively high complaint material, such as tissue from biological organisms in humans, by means of hyper-accelerations of vibratory forces in the ultrasonic frequency range without causing any disruption or damage to the underlying layers of material. The ultrasonic vibratory energy is applied by a tool member having a fine edge that is vibrated at accelerations of at least 50,000g with means to control the depth of penetration of the tool into the surface as well as providing a treatment liquid to maintain the surface at a temperature below which permanent damage would occur to the surrounding tissue. Means are also provided for continuously removing the micro-chopped tissue from the surface after treatment.

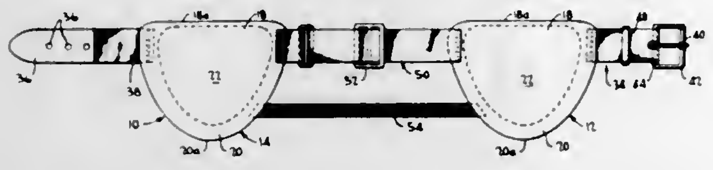
3,526,220
FOOT EXERCISER
Samuel N. Small, 920 Val Park Ave., Valley Stream, New York and Harry S. Goldsmith, 430 E. 67th St., New York, New York
Filed March 14, 1967, Ser. No. 622,947
Int. Cl. A61h *1/00*
U.S. Cl. 128—25 **9 Claims**



A foot exercising device having foot holders or pedals pivotably secured within a housing, the pivotal axis of the pedals being in substantial alignment with the natural pivot point of the ankles of an individual's feet. The device is further provided with means for positively driving the pedals in a passive phase, means for terminating the positive drive so that the pedals can be actuated by the patient in an active phase, and means for automatically timing the passive phase.

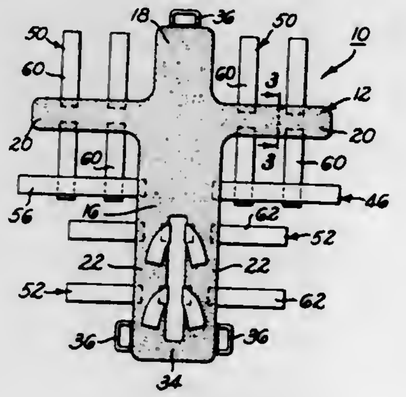
3,526,221
HIP JOINT PROTECTIVE APPLIANCE
Richard D. Garber, Osseo, Wisconsin
Filed Dec. 13, 1968, Ser. No. 783,580
Int. Cl. A61f *5/28*
U.S. Cl. 128—95 **6 Claims**

A protective body-worn appliance for the prevention of hip joint fractures and dislocations composed of substantially triangular pads shaped to overlie conformingly the hip bone of the pelvic girdle and the trochanters of the femur at the acetabulum of the hip bones and held in direct contact with



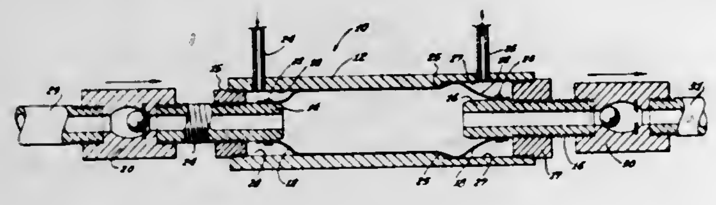
such hip prominences by a frontal belt buckle type connection having ends joined to the upper major end portions of the pads and by a posterior adjustable elastic strap connected between such major end portions with the lower minor end portions of the pads being joined by an inferior-posterior elastic band which assumes a position under the curvature of the buttocks, each pad including a pocket having its major end open to receive a removable insert composed of a concavo-convex vinyl plate having a resilient inner facing.

3,526,222
PEDIATRIC RESTRAINING APPARATUS
Robert E. Dreibelbis, 17451 Village Drive, Tustin, California
Filed May 24, 1968, Ser. No. 731,865
Int. Cl. A61f *5/56*
U.S. Cl. 128—134 **7 Claims**



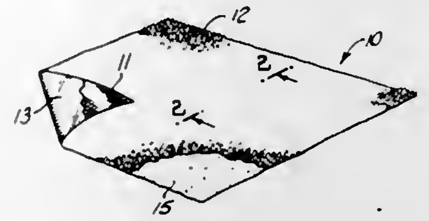
A pediatric restraining device for immobilizing children to prevent them from struggling during diagnosis, treatment, and the like. The device comprises a support having torso, head, arm and leg supporting members and having straps for securing the patient's arms and legs to the corresponding supporting members on both sides of the patient's elbows and knees, at points spaced from the elbow and knee joints. A torso strap secures the patient's torso to the corresponding supporting member. Strapping the arms and legs on opposite sides of the elbows and knees prevents angulation of these joints, thus reducing the danger of injury, and preventing movement of the patient's arms and legs. The end result is a tendency to achieve relaxation of the patient within a relatively few seconds.

3,526,223
SPACE SUIT AND MEMBRANE PUMP SYSTEM THEREFOR
Daniel Lee Curtis, Manhattan Beach, California, assignor to Litton Systems, Inc., Beverly Hills, California
Filed Sept. 20, 1965, Ser. No. 488,367
Int. Cl. A62b *7/14*
U.S. Cl. 128—142.5 **18 Claims**



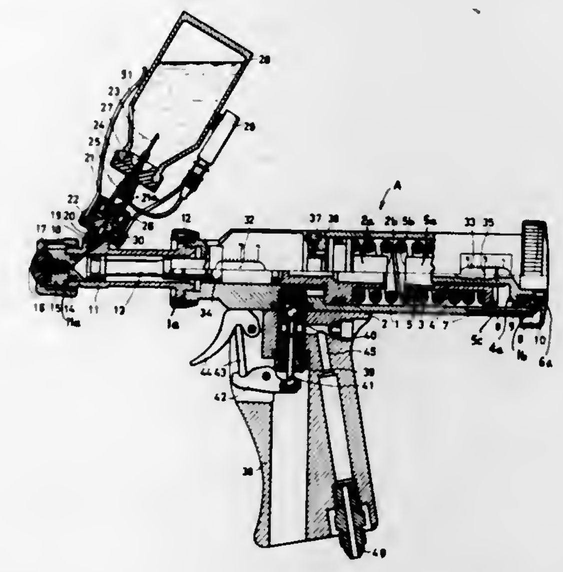
A fluid pump comprising an outer casing having two internal diameters to provide an annular step and a flexible tubular membrane positioned within said outer casing. A passive fluid flows within the flexible tubular membrane and a pumping fluid passes between the inner wall of the outer casing and the flexible tubular membrane. The flexible tubular membrane in its expanded position provides a fluid seal for the pumping fluid along the inner wall of the casing and the annular step. Compression and the expansion of the flexible tubular membrane, due to the pressure differential between the two aforementioned fluids, allows the passive fluid and the pumping fluid to be successively expelled from the pump upon the closing and opening of the fluid seal, respectively.

3,526,224
DRESSING
Richard M. Potts, East Brunswick, New Jersey, assignor to Johnson & Johnson, a corporation of New Jersey
Filed June 8, 1967, Ser. No. 644,583
Int. Cl. A61f *15/00*
U.S. Cl. 128—156 **4 Claims**



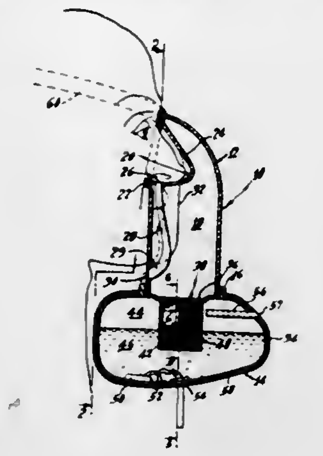
An occlusive dressing designed to act as a synthetic skin, the dressing comprising a laminate of an elastomeric polyurethane film having a water vapor transmission rate within the range of **150** to **500** g/m² /24 hours and a sheet of knitted velour fabric. The sheet of velour fabric has a surface of looped pile which is adapted to contact the surface of the wound and into which body tissue will grow during the healing process. The dressing is flexible and the fiber loop surface when placed in intimate contact or engagement with the wound surface eliminates pockets or voids between the dressing surface and the substrate tissue.

3,526,225
JET-TYPE HYPODERMIC INJECTION DEVICE
Masahide Isobe, Hayamamachi, Miura-gun, Japan, assignor to Tokyo Sokuhan Co. Ltd., Kawagawa-ken, Japan
Filed Jan. 31, 1968, Ser. No. 702,110
Claims priority, application Japan, March 31, 1967, 42/20,498
Int. Cl. A61m *5/30*
U.S. Cl. 128—173 **3 Claims**



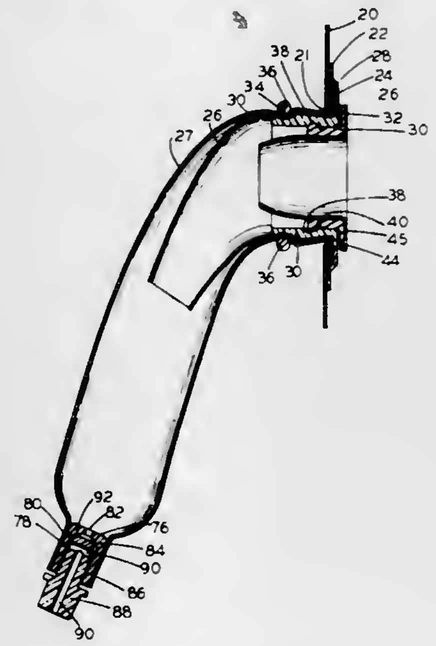
An exit injector for administering hypodermic injections without the use of a hypodermic needle, is formed of a hydraulic cylinder containing a movable, spring actuated piston positionable between a loaded and a discharged position. A second cylinder containing another piston is arranged in the injector to receive and discharge the fluid to be injected and it is filled when the piston in the hydraulic chamber is moved to its loaded position. When the hydraulic cylinder piston is moved to its discharged position, at the same time the other piston discharges the fluid to be injected from the second cylinder.

3,526,226
THERAPEUTIC INHALING DEVICE
Mortimer E. Stern, 530 Park Ave., New York, New York
Filed March 4, 1968, Ser. No. 709,976
Int. Cl. A61m *15/00*
U.S. Cl. 128—192 **8 Claims**



A therapeutic inhaling device comprising a housing having upper and lower sections detachably secured to each other. Each of the upper and lower sections is hollow to define, respectively, upper and lower chambers. The upper chamber has an inwardly extending projection to define a nose pocket exteriorly of the upper section. One-way valve means permit air passage into said nose pocket only from the upper chamber, and out of said pocket only to the outside atmosphere. The lower chamber is adapted to contain a body of water and means for heating said body of water to a predetermined temperature. Air filtering means are provided between the upper and lower chambers so that all of the air entering the lower chamber through air inlet means, must pass through the heated and humidified atmosphere in the lower chamber as well as through the air filtering means disposed between the two chambers before being inhaled by the wearer.

3,526,227
URINAL BAG
Louis Appelbaum, 51 Margaret Ave., Lawrence, New York
Filed Jan. 2, 1970, Ser. No. 91
Int. Cl. A61f *5/44*
U.S. Cl. 128—295 **2 Claims**

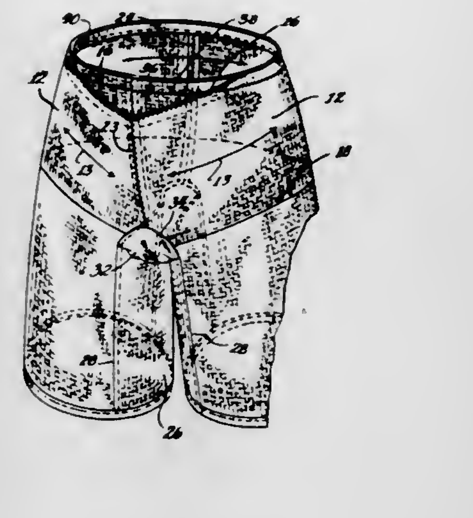


Urinal pouch having a resilient support of sheet surgical rubber with a central aperture, a pouch having a manual lower valve with its upper open end annularly bonded around the support aperture, a tubular conical resilient open ended sheath extending from the open end of the pouch and part way thereinto, said sheath being annularly bonded about the aperture, a rigid insert having a short sleeve portion extend into and slightly distending the pouch and sheath, and a flange disposed behind the peripheral area, the sleeve having an external groove, a resilient sealing band disposed around the pouch and conical sheath and annularly compressing the pouch and conical sheath into the groove, the short rigid sleeve having an internal groove, an insert of resilient material having a short sleeve with an annular bead adapted to seat in the internal groove, and a flange adapted to bear against the flange of the rigid insert, the resilient insert having a second tapered tubular resilient sheath extending through the resilient insert, and having a flange portion bonded to the resilient insert flange, and the support having right and left upwardly inclined extensions detachably connected by a resilient back strap, and right and left downwardly inclined extensions of a length to extend around a leg, and buckle means on the first extensions to receive the ends of the downwardly extending extensions.

3,526,228
COLLAGEN LAMINA DURAL PROSTHESIS
Ralph S. Lyng, Martinsville, New Jersey, assignor to Ethicon, Inc., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 408,663, Nov. 3, 1964. This application Mar. 24, 1969, Ser. No. 810,919
Int. Cl. A61b *17/04;* **A61l** *17/00*
U.S. Cl. 128—334 **3 Claims**

A tanned collagen fabric is impregnated with collagen fibrils to form a collagen-film laminate that finds use as a surgical prosthesis.

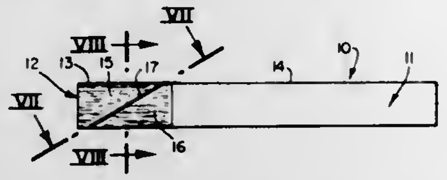
3,526,229
UNDERGARMENTS
Ronald L. Blair, 2650 W. Belden Ave., Chicago, Illinois
Filed Aug. 5, 1968, Ser. No. 750,273
Int. Cl. A41c *1/00*
U.S. Cl. 128—542 **10 Claims**



An undergarment in which each of the panels or sections forming the main body of the undergarment is formed of two different deniers, with the upper portions of the panels which extend around the abdomen and upper back portion of the wearer being of a greater denier than the lower portion of the panels which extend around the lower portion of the body of the wearer, and with the panels cut and secured so that the upper portion of the front of the panels extends on a bias or on an inclined angle towards the mesial front.

3,526,230
CIGARETTE FILTER

William E. Rosen, Montgomery County, Pennsylvania, assignor to Ultrasciences, Inc., Philadelphia, Pennsylvania a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 721,708, April 16, 1968. This application Feb. 7, 1969, Ser. No. 797,405
Int. Cl. A24f *7/04;* **A24d** *1/04;* **A24c** *5/50*
U.S. Cl. 131—10.5 **9 Claims**



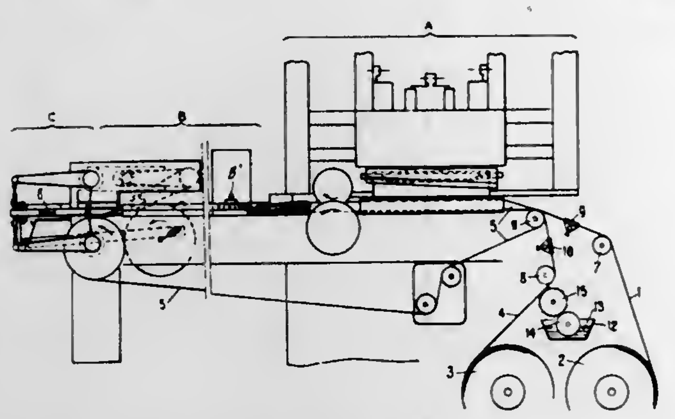
A tobacco smoke filter is described as containing a first filter section composed of conventional tobacco filter material, a second separate filter section composed of conventional tobacco filter material and in longitudinal alignment with said first filter section, both sections being substantially cylindrical, a non-circular, substantially planar, coherent foraminous covering adhered to the end of not more than one of said first and second filter sections throughout the smoke filtering cross-section of said end, said first and second filter sections being abutted along a complementally configured end surface of each section, and a circumferential wrapper sealed about said tobacco filter material.

ERRATUM

For Class 131–15 see:
Patent No. 3,526,904

3,526,231
METHODS AND MACHINES FOR THE MANUFACTURE OF CIGARS

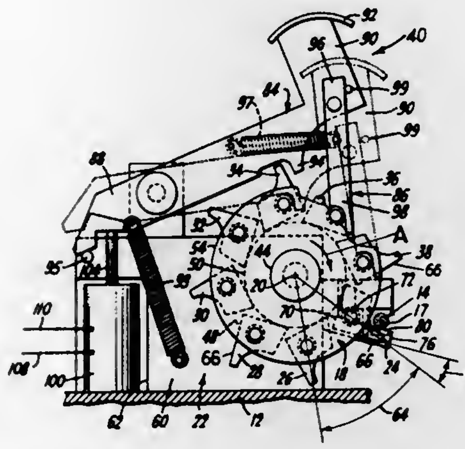
Martinus Verbakel, Eindhoven, Netherlands, assignor to Patent Machine Bouw N.V., Kanaaldijk, Best, Netherlands a corporation of the Netherlands
Filed May 6, 1968, Ser. No. 726,746
Claims priority, application Netherlands, May 11, 1967, 6,706,579
Int. Cl. A24c *1/02, 1/30, 3/00*
U.S. Cl. 131—20 **3 Claims**



First and second supply means are provided for feeding lengths of binder strip tobacco and wrapper strip tobacco. Conveyor means simultaneously transports the strips in flatwise superimposed relationship. Guide means is provided for adjusting the lateral overlap of each of the strips with respect to one another. The guide means are adjustably mounted for movement in the direction of the width of each strip. First glueing means is provided for glueing the strips together along the interface thereof. Means is provided for depositing plugs of scrap tobacco on the binder strip and means is provided for simultaneously wrapping the superimposed strips transversely around such plugs to overlap opposite marginal edges of the strips. Second gluing means is provided for gluing an overlapping marginal zone of the wrapper strip to the overlap marginal zone of one of the wrapped strips to form a substantially cylindrical rod of tobacco product. Means is provided for then cutting this product into predetermined lengths.

3,526,232
ROD CUTTER

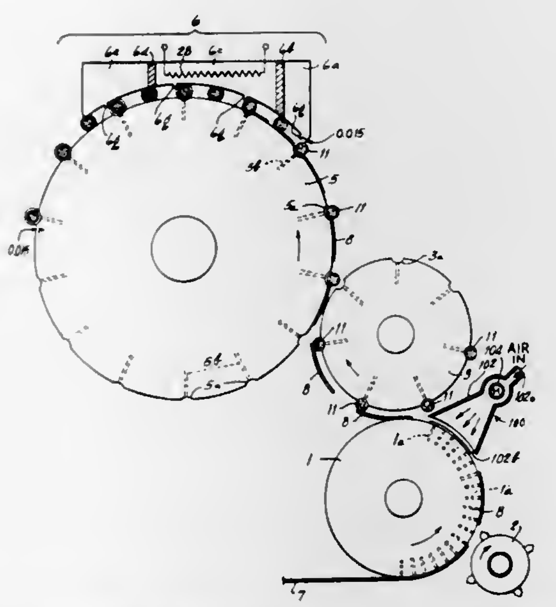
George Dearsley, Williamsburg, Virginia, assignor to American Machine & Foundry Company, a corporation of New Jersey
Continuation of application Ser. No. 582,561, Sept. 28, 1966. This application May 23, 1969, Ser. No. 827,284
Int. Cl. A24c *5/25, 5/31*
U.S. Cl. 131—21 **9 Claims**



A cigarette making machine rod cutter for severing defective lengths of rod comprising a rotating member having a plurality of knives fixed to its periphery, said member being mounted to rotate about an axis parallel to the rod formed in the machine and arranged to be rotated in angular steps or increments by a pivotable lever having a handle at one end, as well as a hook for engaging one end of a bolt used to mount each of the knives, and a latch adjacent to the handle for engaging a blunt portion of a succeeding knife thereby limiting the stroke of the lever to a single cut for each stroke. A sensing device is placed adjacent to the rod to provide a signal which is used to operate a solenoid having a plunger for pivoting the opposite end of the lever for cutting the rod in a similar fashion.

3,526,233
HEAT SEALING MEANS FOR FILTER TIPPING OF CIGARETTES

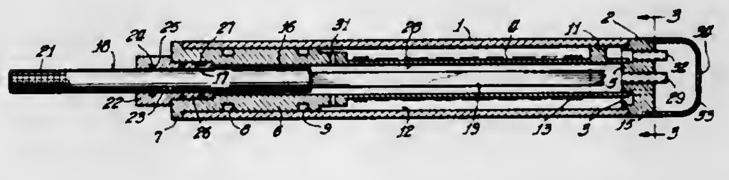
Colin S. McArthur, Winston-Salem, North Carolina, assignor to R.J. Reynolds Tobacco Company, Winston-Salem, North Carolina, a corporation of New Jersey
Filed Aug. 15, 1968, Ser. No. 752,876
Int. Cl. A24c *5/52, 5/58*
U.S. Cl. 131—94 **5 Claims**



Apparatus for the sealing and securing of tipping material to a filter cigarette. The tipping material, fed as a continuous web, is cut into the form of individual patches by a cutting means, the web being coated with heat-activatable adhesive. The cut patches are then heated only downstream of the cutting means by a hot-air heating means. A heated patch has its leading edge applied to the periphery of an assembled cigarette unit so as to span the abutting ends of the tobacco rod and filter sections that comprise the unit. The heating means has an outlet directing a stream of hot air onto each patch at a point immediately preceding its application to the unit. Extremely simple equipment is required and no unnecessary heating is supplied.

3,526,234
METHOD AND APPARATUS FOR TREATING HAIR WITH SONIC VIBRATIONS

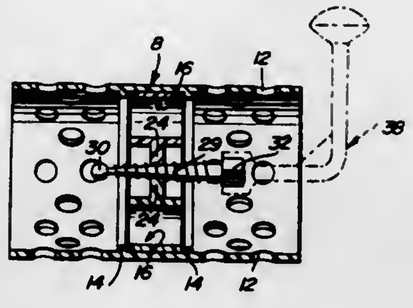
Marshall Herbert Chrablow, Mundelein, Illinois, assignor to Helene Curtis Industries, Inc., Chicago, Illinois a corporation of Illinois
Filed June 25, 1965, Ser. No. 466,977
Int. Cl. A45d *7/00*
U.S. Cl. 132—7 **14 Claims**



Method and apparatus for treating hair on the head by ultrasonic vibrations on a circular mandrel provided with circumferential grooves spaced about one-sixteenth inch apart. Treatment may include permanent waving fluids, neutralizers, hair bleaches, hair dyes and solidifying compositions. The mandrel may be of nylon and may be spool shaped.

3,526,235
HAIR STRAIGHTENING ROLLER WITH EXPANSION MEANS

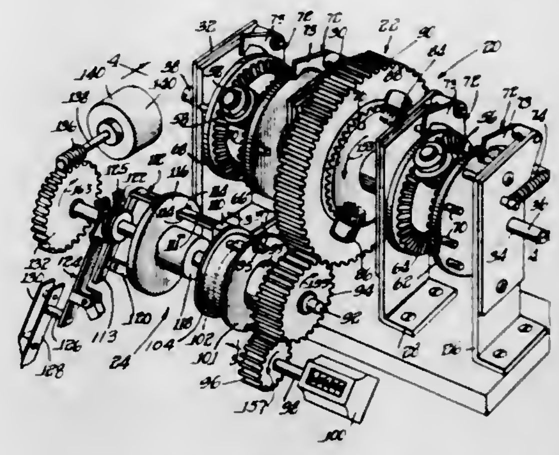
William Garrett, 86–11 Whitney Ave., Elmhurst, New York
Filed June 25, 1968, Ser. No. 739,783
Int. Cl. A45d *2/10*
U.S. Cl. 132—31 **5 Claims**



A roller which stretches each shaft of hair wound from tip to root, utilizing the elastic property embodied therein. The roller is a relatively large longitudinally split expansible tube. It functions and safety in lieu of currently employed continuous combing procedure in conjunction with dangerous chemicals. The hair is washed with warm water or an equivalent mild solution, then rinsed with a weak alkali solution. A selected lock of hair is wound around the roller prior to bringing the radial expansion hub into play. After stretching in keeping with the hair's texture the desired state of stress is maintained through (1) the evaporation of all moisture using a dryer or (2) spraying an appropriate solution on the stressed hair and (3) then drying, removing the roller, and allowing the hair to cool naturally in its desirably straightened state.

3,526,236
CASH VALUE ACCUMULATOR

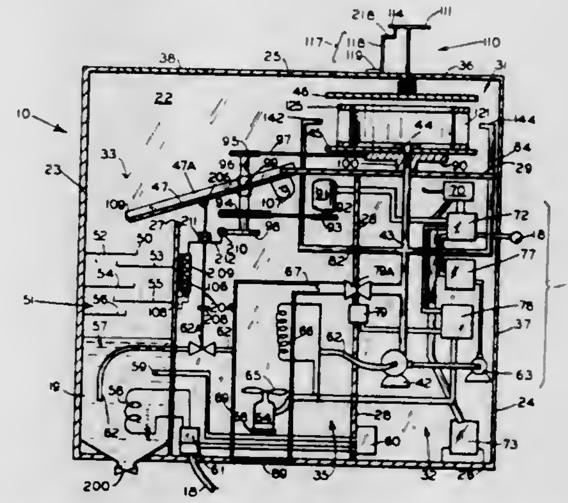
Fred H. Osborne, Williamsville, New York, assignor to The Wurlitzer Company, Chicago, Illinois a corporation of Ohio
Filed March 1, 1968, Ser. No. 709,628
Int. Cl. G07d *9/00*
U.S. Cl. 133—8 **17 Claims**



Currency counting apparatus including a pair of independently rotatable shafts mounted in axial alignment with first ends thereof being adjacent, and each including a pair of gear elements rotatably mounted thereon. Each pair of gear elements is in meshing engagement with a pinion fixedly mounted to a respective shaft. Gear members mounted at the first ends of each of the shafts are in meshing engagement with pinions attached at the inner perimeter of a ring gear member. The ring gear member is mounted between and is coaxial with the gear members, and is connected to a register for totaling the deposit of currency received in a currency receiving mechanism. The ring gear member constantly has a driving force imposed thereon. For each deposit of a particular denomination of currency, a corresponding gear element is permitted to rotate a corresponding predetermined number of degrees on a respective shaft. The rotation thereof allows a corresponding pinion to rotate, thereby permitting rotation of the corresponding shaft, all under the influence of the driving force on the ring gear member, which causes the operation of the register. Each gear element is operated by a pawl and solenoid arrangement and is stepped according to the deposit of currency. A self-restoring rewind mechanism, connected to the ring gear member is provided to keep the counter operable at all times.

3,526,237
FILTER CLEANER

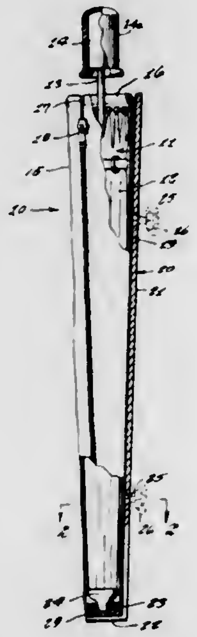
Scott E. Neill, Jr., Amarillo, Texas (1147 H. St., Salida, Colorado)
Filed May 8, 1968, Ser. No. 727,594
Int. Cl. B08b *3/02, 11/00*
U.S. Cl. 134—58 **3 Claims**



A machine organized to successively apply a jet of cleansing liquid to the exterior surface of each successive portion of a complex shaped thin-walled dirty air-permeable air filter while the interior surface of that thin-walled portion is concurrently supported from collapse by the mechanical action of said jet, and is constructed to permit sufficient ready insertion of the filter into its treatment position and removal therefrom to permit public commerical coin operation thereof and is organized to provide for re-use of the treating liquid.

3,526,238
SAFETY ZIPBOOT AND UMBRELLA

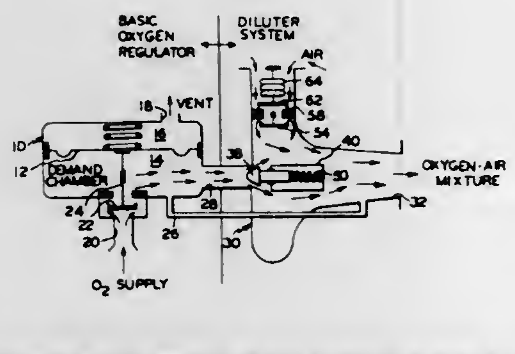
Peter H. Brayton, 1301 W. Augusta Ave., Phoenix, Arizona
Filed Nov. 13, 1968, Ser. No. 775,462
Int. Cl. A45b *25/18*
U.S. Cl. 135—33 **2 Claims**



An enclosure for an umbrella, the enclosure including an outer cover and an aluminum rack which may be selectively attached in different places within an automotive vehicle so that the umbrella is out of the way and remains clean until needed.

3,526,239
OXYGEN DILUTER SYSTEM

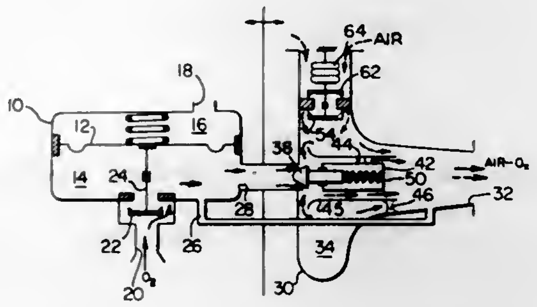
August Oroza, Tustin, California, assignor to Robertshaw Controls Company, Richmond, Virginia a corporation of Delaware
Filed Nov. 25, 1964, Ser. No. 413,801
Int. Cl. A62b *9/02*
U.S. Cl. 137—81 **10 Claims**



An oxygen diluter system for breathing apparatus including a demand type regulator for the oxygen flow, valve means controlling the air flow, a mixture chamber for the oxygen and air flows, and a variable nozzle controlling the flow of oxygen into the mixture chamber so as to effect a jet velocity resulting in a corresponding variable pressure condition in the mixture chamber to actuate the air flow valve means.

3,526,240
OXYGEN DILUTER WITH MIXTURE NOZZLE

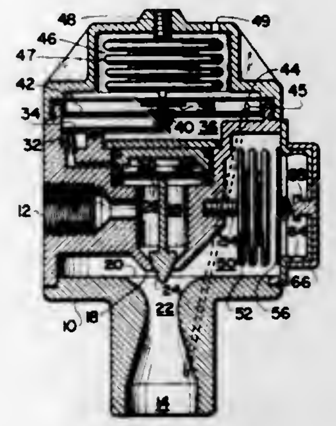
August Oroza, Santa Ana, California, assignor to Robertshaw Controls Company, Richmond, Virginia a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,318
Int. Cl. A62b *9/00*
U.S. Cl. 137—81 **6 Claims**



An oxygen-air diluter for breathing apparatus wherein a demand type regulator delivers a flow of oxygen to an air chamber under the control of a variable nozzle for inducing a primary flow of air therethrough, and a secondary stage nozzle responsive to the velocity of the oxygen flow from the variable nozzle induces a secondary flow of air from the air chamber for delivery to the breathing apparatus.

3,526,241
OXYGEN-AIR DILUTER FOR BREATHING APPARATUS

Herbert F. Veit, Fullerton, California, assignor to Robertshaw Controls Company, Richmond, Virginia a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,657
Int. Cl. A62b *9/00*
U.S. Cl. 137—81 **7 Claims**

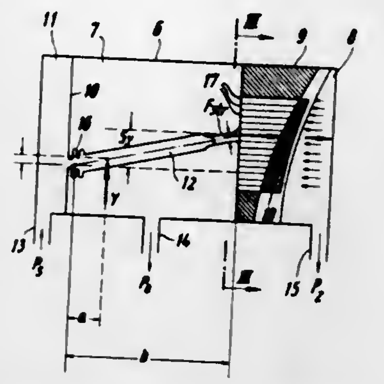


An oxygen-air diluter for breathing apparatus wherein a single valve member controls the inlet oxygen flow and the outlet oxygen flow to the air diluter portion of the system.

3,526,242
FUNCTION GENERATOR FOR PRODUCING AN OUTPUT WHICH VARIES IN CONFORMITY WITH TWO INPUTS

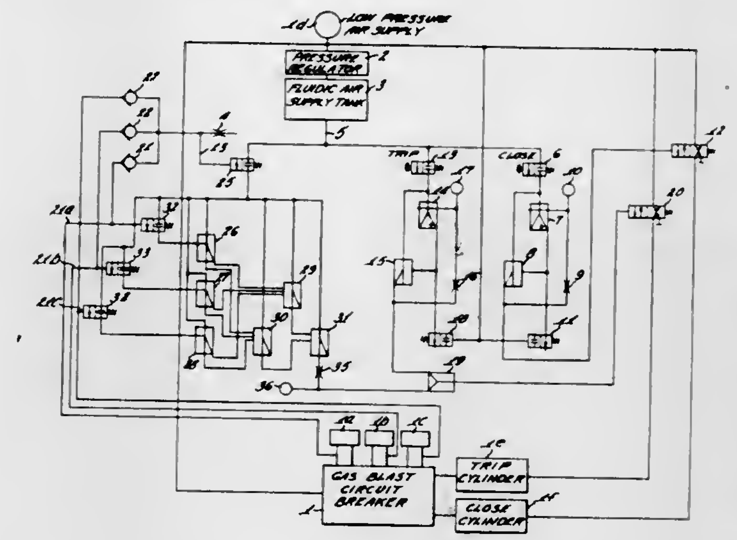
Reinhold Werner, Oberstedten, Germany, assognor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany
Filed Oct. 21, 1968, Ser. No. 769,107
Claims priority, application Germany, Oct. 25, 1967, 1,650,067
Int. Cl. F15c *1/14, 3/12*
U.S. Cl. 137—81.5 **9 Claims**

The invention pertains to a function generator having an output in the form of a variable pressure which is generated by a constant pressure jet which impacts against a limited area of one end of a bundle of passages which vary in length across the passage bundle in two angularly related directions. The end of the passage bundle opposite the jet opens into a closed chamber and the end of the passage bundle not impacted by the jet is maintained at a constant pressure so the pressure in the chamber varies in accordance with the length of the passages against which the jet impacts. The point of impacting of the jet against the passage bundle is varied by control devices responsive to two inputs.



3,526,243
FLUIDIC CONTROL CIRCUIT FOR OPERATING GAS BLAST CIRCUIT BREAKER

Joseph T. Warnemuende, Milwaukee, Wisconsin and Ralph O. Turnquist, Manhattan, Kansas, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin
Filed Dec. 3, 1968, Ser. No. 780,794
Int. Cl. F15c *3/02, 1/12*
U.S. Cl. 137—81.5 **8 Claims**

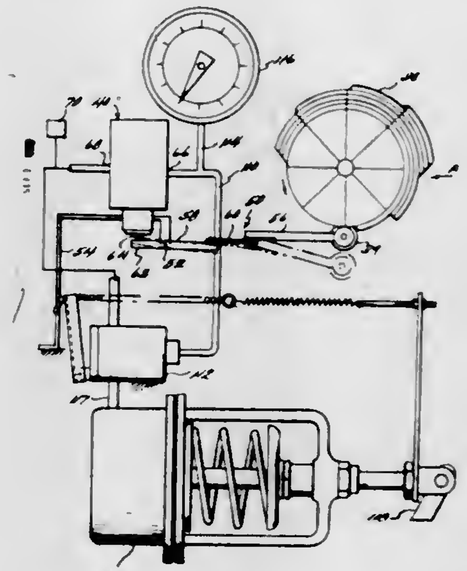


A fluidic circuit for controlling a multiphase gas blast circuit breaker which is operated by pressurized gas comprises fluidic components for actuating the circuit breaker trip mechanism and closing mechanism with pressurized gas upon operator commands in the fluidic circuit, means for ignoring either command if gas supply pressure is below predetermined levels, and means for detecting whether or not the circuit breaker phases are all open or all closed and for actuating the trip mechanism in the event that all breaker phases do not operate together.

3,526,244
CARD PROGRAMMING AND CONTROL SYSTEM

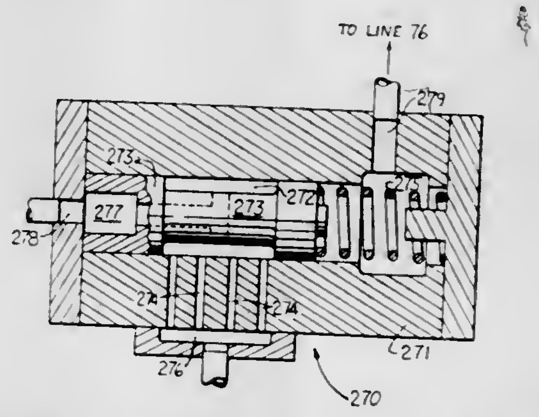
Raymond D. Joy, Clarksville, Virginia, assignor to Burlington Industries, Inc., Greensboro, North Carolina a corporation of Delaware
Filed April 18, 1968, Ser. No. 722,417
Int. Cl. D01h *13/00;* **G05d** *16/16;* **F15b** *5/00*
U.S. Cl. 137—86 **7 Claims**

A system for programming a parameter of desired functions into an operation to effect the condition of the operation in accordance with the parameter programmed, the system including utilizing a transducer to sense the state of the operation at a particular time and to translate the sensed state into rotary motion, a program card rotatable by the rotary motion of the transducer, the program card having its peripheral profile so shaped as to provide a parameter of functions for an operation at a particular state of the operation, the profile of the card determining magnitude of the condition at a particular state and rate of change of magnitude between different states of the operation. Further, the system includes a programming and controlling means responsive to the changes in profile of the program card for emitting a pressure control signal directly proportional in magnitude to the signals provided by the profile of the program card. Such a system enables programming a complete operation to provide, in any combination, the functions of the parameter such as starting magnitude, magnitude of rate increase to reach a particular increased magnitude, magnitude of rate decrease to reach any particular decrease magnitude, maximum magnitude, minimum magnitude, and any intermediate magnitude.



3,526,245
VALVE FOR HYDROSTATIC TRANSMISSION CONTROL SYSTEM

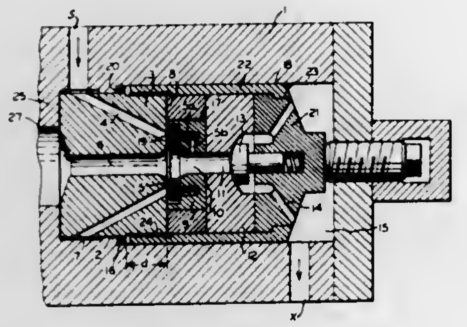
John R. Cryder, Joliet, Illinois; Willard J. Hoak, Peoria, Illinois; John L. Hufeld, Peoria, Illinois; Lionel L. Kinney, Peoria, Illinois; Kenneth R. Lohbauer, Joliet, Illinois; Howard A. Marsden, Pekin, Illinois; Ralph W. Matthews, Franklin, Wisconsin; William B. Norick, Joliet, Illinois; Glen E. Stewart, Springfield, Illinois; Rollin W. Vanzandt, Peoria, Illinois; and Frank H. Winters, Joliet, Illinois, assignors to Caterpillar Tractor Co., Peoria, Illinois a corporation of California
Original application June 14, 1967, Ser. No. 645,912, now Patent No. 3,477,225 dated Nov. 11, 1969. Divided and this application Aug. 1, 1968, Ser. No. 763,459
Int. Cl. F16k *15/02*
U.S. Cl. 137—505.13 **1 Claim**



The valve of the present invention responds to a variable differential pressure. The body of the valve has a hollow bore with a piston type spool slidably mounted therein biased at one end by inlet pressure and at the other by both a spring and a variable differential pressure signal. The difference in pressures moves the piston to serially close a plurality of radial outlet passageways communicating with the bore.

3,526,246
CONCENTRIC SUCTION AND DELIVERY VALVE FOR HIGH PRESSURE COMPRESSORS AND PUMPS

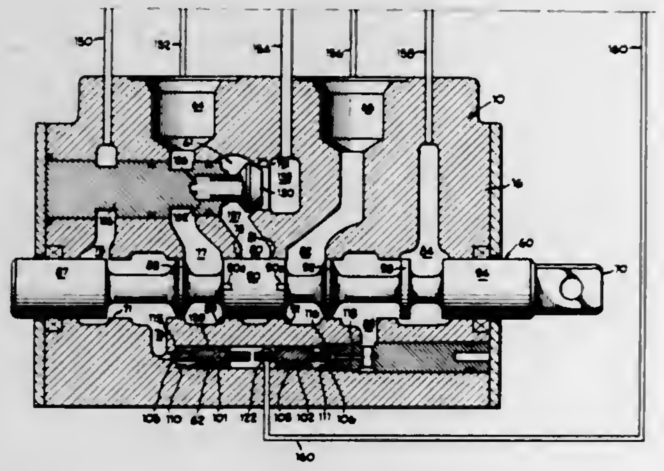
Anton Leitgeb, Aesch, Switzerland, assignor to Maschinenfabrik Burckhardt AG, Basel, Switzerland a Swiss company
Filed Feb. 26, 1968, Ser. No. 708,291
Int. Cl. F16k *15/08;* **F04b** *39/10*
U.S. Cl. 137—512.3 **7 Claims**



A concentric suction and delivery valve for high pressure compressors and pumps wherein a valve-body in a housing has oblique suction channels and a central delivery channel. A suction valve lift-limiting member has an obturating member cooperating with the suction channels. A delivery valve seat is provided in the housing with an obturating member cooperating with the delivery valve seat. An intermediate ring is located between the valve body and the delivery valve seat having a through bore of a form for high flow efficiency receiving the lift-limiting member. There is a delivery valve lift-limiting member. The valve body with the intermediate ring, the suction valve lift-limiting member, the delivery valve seat and the delivery valve lift-limiting member form a unit which can be inserted in and removed from the housing. The unit on its external surface is exposed to the action of the delivery pressure at least in the zone corresponding to the region of outflow of the suction channels.

3,526,247
VALVE MECHANISM

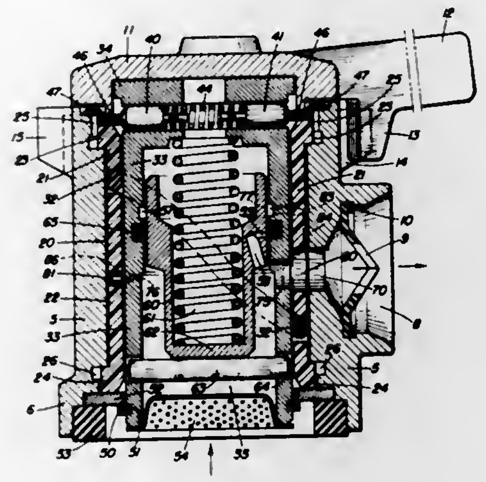
Kenneth G. McMillen, Wolcottville, Indiana, assignor to Borg-Warner Corporation, Chicago, Illinois a corporation of Delaware
Filed May 1, 1968, Ser. No. 725,766
Int. Cl. F16k *11/10*
U.S. Cl. 137—596.13 **18 Claims**



A manual control valve mechanism having a variable orifice established by movement of the valve, the variable orifice being connected between a source of fluid pressure and a fluid actuated device, means controlling the flow through said orifice so that movement of said valve will control said fluid actuated device and said means being connected to the fluid supplied to said device and to the output of said fluid pressure source.

3,526,248
RETAINER VALVE

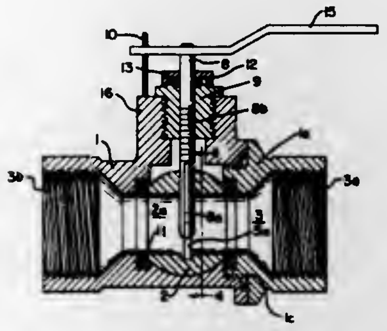
Henry R. Billeter, Deerfield, Illinois, assignor to Sloan Valve Company, Chicago, Illinois, a corporation of Illinois
Filed Dec. 27, 1967, Ser. No. 693,801
Int. Cl. F16k *11/00;* **B60t** *15/54*
U.S. Cl. 137—599.2 **16 Claims**



This retainer valve has a sleeve valve rotated by a handle to three different positions. A tubular bushing around the sleeve valve has three air ports each of different capacity which are adapted to communicate with air ports in the sleeve valve and these with an exhaust opening in the valve body. A piston in the sleeve valve controls one of the air ports. An oblique O-ring seal in the tubular bushing seals the different ports from the exhaust passage in the different handle positions. In one position full air exhaust is provided from the air brake pipe. In the second position 20 PSI is retained by the piston control; while in the third position a slow restricted exhaust is provided.

3,526,249
BALANCING VALVE

Gordon N. Baustian, Sioux City, Iowa, assignor to American Air Filter Company, Inc., Louisville, Kentucky a corporation of Delaware
Filed Oct. 27, 1967, Ser. No. 678,686
Int. Cl. F16k *5/10*
U.S. Cl. 137—614.11 **4 Claims**

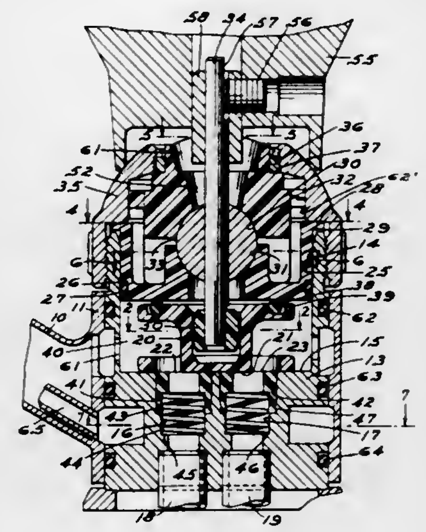


A quick opening plug type valve which includes a selectively adjustable vane to close a portion of the opening through the plug member to control the maximum flow through the valve when the valve is in open position.

3,526,250
SINGLE HANDLE FAUCET VALVE

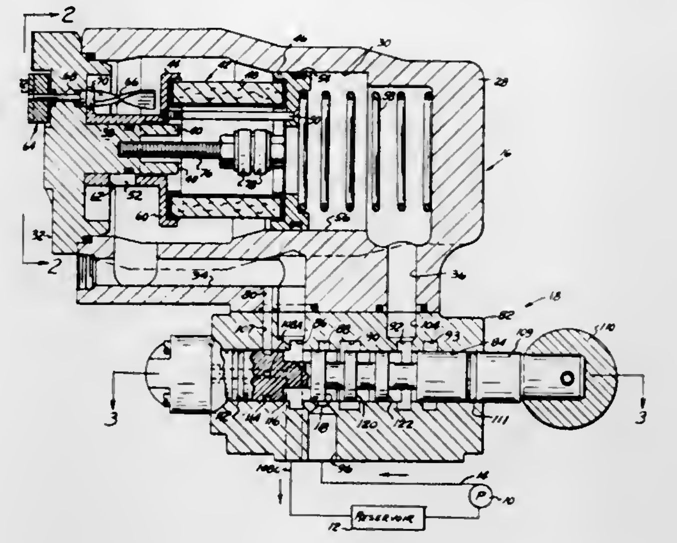
Larry J. Miller, 3810 Shoals, Drayton Plains, Michigan
Original application Aug. 19, 1966, Ser. No. 573,601. Divided and this application June 2, 1969, Ser. No. 829,495
Int. Cl. F16k *11/06*
U.S. Cl. 137—625.4 **4 Claims**

A single handle faucet valve comprising a body defining a chamber having a flat wall surface with hot and cold water inlets extending through the surface. A control disc with a complementary flat surface is provided in contact with the flat wall surface of the chamber and has spaced openings movable into and out of registry with the inlet openings. A sealing member is provided adjacent the control member and engages the control member. A retainer overlies the sealing member. A lever is journalled for rotation between the retainer and the sealing member and has an end thereof interconnected with the control member.



3,526,251
FLUID FILTER WITH SHUTOFF VALVES

Borje O. Rosaen, Ann Arbor, Michigan, assignor, by mesne assignments, to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 15, 1968, Ser. No. 697,855
Int. Cl. F16k *11/00*
U.S. Cl. 137—625.29 **6 Claims**

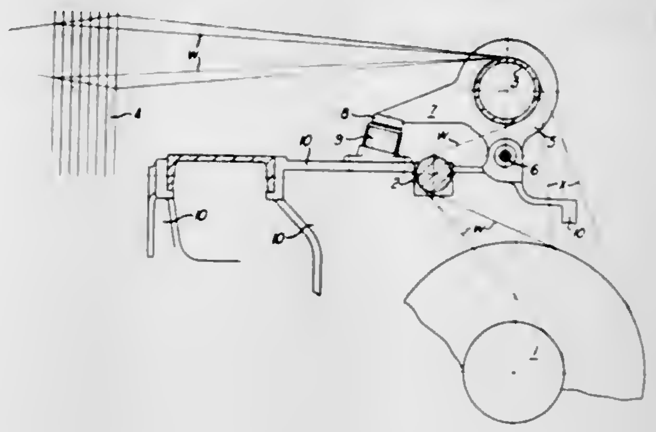


A filter device in a fluid system having a valve with a spool element shiftable in a bore between a first position permitting the delivery of unfiltered fluid through the filter inlet and discharge of filtered fluid through the filter outlet and a second position where the valve opens a bypass and a pressure relief passage in the filter housing so that the filter can be serviced without interrupting the operation of the fluid pump means in the system.

3,526,252
LOOM WARP LETTING-OFF MECHANISM

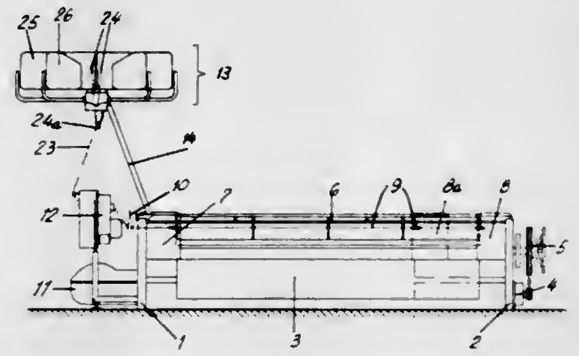
Thomas Hindle, Blackburn, England and Vincent Pinder Banks, Blackburn, England, assignors to Hindle, Son & Company Limited, Blackburn, Lancashire, England
Filed Sept. 4, 1968, Ser. No. 757,382
Int. Cl. D03c *49/06;* **D03d** *49/00*
U.S. Cl. 139—110 **5 Claims**

An automatic let-off mechanism for looms wherein a part, at least, of the loom backrest is movably sensitive to tension in the warp sheet, the displacement not being appreciable, and the tension applied to such part by the warp yarn is detected by a force transducer and after suitable amplification, the signal is used to control the feed of warp yarn in either the forward of reverse sense.



3,526,253
WEFT BOBBIN CREEL

Erwin Pfarrwaller, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland a Swiss Company
Filed Aug. 14, 1968, Ser. No. 752,714
Claims priority, application Switzerland, Aug. 17, 1967, 11,605/67
Int. Cl. D03d *47/00*
U.S. Cl. 139—122 **4 Claims**

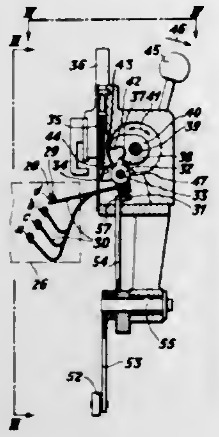


There is disclosed a creel in which a plurality of weft bobbins are disposed in a common plane and in a circular array, the bobbins being engaged on radially inwardly pointing stub shafts hingedly supported at the ends of spokes or arms radiating from a hub which is rotatable about a vertical axis between angular limits set by stops to prevent tangling of the threads. The threads are led from the bobbins through eyes at the hub of the creel and then through a hollow stationary bearing for the hub, down out of the creel.

3,526,254
METHOD AND APPARATUS FOR MONITORING PLURAL WEFT THREADS IN A LOOM

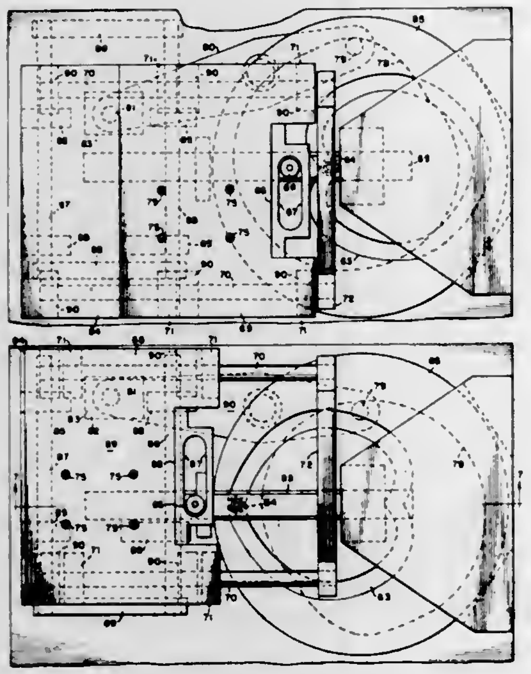
Gerd Schmitz, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland a Swiss company
Filed Sept. 24, 1968, Ser. No. 761,960
Claims priority, application Switzerland, Sept. 26, 1967, 13,443/67
Int. Cl. D03d *47/34*
U.S. Cl. 139—370 **7 Claims**

A loom having plural weft supplies remaining outside the shed includes on the picking side thereof and for each weft two stationary eyes and a movable eye on a weft sensing lever between the stationary eyes. The levers are pivoted on a common shaft to rotate under the influence of individual springs. A rocker on an adjacent parallel shaft is rocked between one angular position in which it lines up the levers with their stationary eyes and another angular position indicative of no broken wefts among those tested. A comb is movable to different positions in which its teeth restrain different combinations of levers from rotating under influence of their springs when permitted by broken weft threads and by rotation of the rocker from its first angular position toward its other angular position. Any lever which is freed by the comb and which is additionally free to rotate by virtue of a broken or loose weft thread between its stationary eyes arrests motion of the rocker toward its other angular position, thereby initiating a stopping of the loom.



3,526,255
FILLING MACHINE

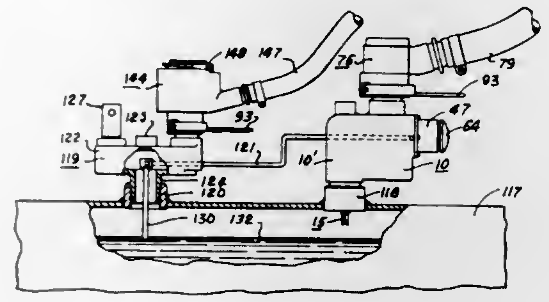
Paul H. Carter, Baltimore, Maryland and Richard D. Collins, Baltimore, Maryland, assignors to Maryland Cup Corp., Owings Mills, Maryland a corporation of Maryland
Filed Jan. 30, 1969, Ser. No. 795,264
Int. Cl. B65b *43/42*
U.S. Cl. 141—183 **11 Claims**



The invention provides a machine for filling ice cream cones with an overflow of semi-fluid ice cream in the manufacture of ice cream novelty items. A conveyor is provided for receiving and carrying the empty cones past an ice cream filling station. The filling station comprises an ice cream valve with a discharge nozzle downwardly directed in line with the cones on the conveyor. Means are provided for reciprocating the valve cyclically both horizontally and vertically. During a portion of the cycle, the valve moves horizontally in unison with the conveyor and also vertically upward from a lowermost position under the control of specially designed cams. During this period of the cycle, the valve is actuated to its open position which causes a cone on the conveyor to first fill and then overfill in accordance with a desired pattern, such as, hemispherical, for example, depending on the vertically controlled movement of the valve.

3,526,256
PRESSURE FILLER VALVES AND VAPOR VENTING VALVES

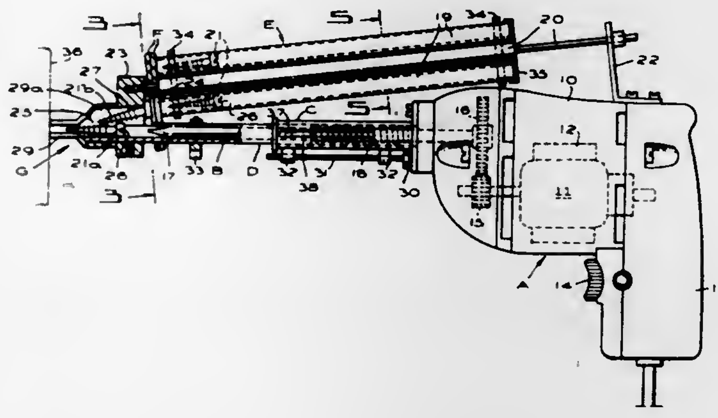
James S. Jones, P.O. Box 5323, Dallas, Texas
Filed Nov. 27, 1967, Ser. No. 685,749
Int. Cl. B67d *5/373*
U.S. Cl. 141—207 **6 Claims**



Pressure filler valves and vapor venting valves utilizing Bernoulli's principle for distinguishing between the flow of gas and the flow of liquid to prevent the overfilling of liquefied vapor vessels such as ammonia and propane tanks with consequent hazard and injury to operating personnel due to the discharge of such gases in liquid form.

3,526,257
MECHANISM FOR FEEDING AND DRIVING SCREWS

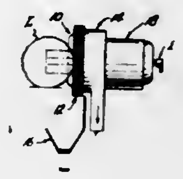
Joseph T. Kirkland, 145 N. Kingston St., San Mateo, California
Filed Nov. 14, 1968, Ser. No. 775,865
Int. Cl. B25b *23/00*
U.S. Cl. 144—32 **7 Claims**



A mechanism for feeding and driving screws in which an electric motor is used for rotating a screw driver, and a turret-type magazine is provided for holding screws in tubes, the housing of the motor having front and rear guide sleeves supported thereby that surround the screw driver, and gates are provided for feeding screws from a selected tube of the magazine into the front sleeve in a position forwardly of the kerf-engaging tip of the screw driver, the rear sleeve being movable forwardly over the front sleeve when the motor housing is pushed toward a selected member into which the screw is to be driven, thereby advancing the screw driver and rotating the latter.

3,526,258
METHOD AND MEANS FOR IMPROVED PRODUCTION OF WOOD FLAKES

Donald L. Johnson, 1816 N. Lenore Drive, Tacoma, Washington
Continuation-in-part of application Ser. No. 456,625, May 18, 1965. This application April 12, 1967, Ser. No. 630,396
Int. Cl. B27c *1/00*
U.S. Cl. 144—162 **21 Claims**

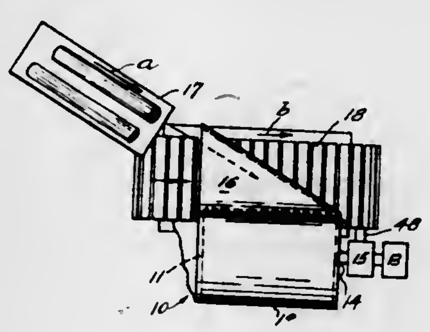


Method for combined hogging away of protuberances, slicing of wood flakes to thickness and length, jet breaking away to range of width and fluid conveying of wood flakes from; and in the producing of a flat face upon; the side of a log or cant employing a cutterhead assembly comprising a closure and optional hogging head on the face of which is detachably mounted a flaking and surfacing runner supporting preloaded holders of disposable blades in blade blocks, including jet breakers and fluid conveying of flakes through passageways, supported by fir tree anchorages and axial locks on the periphery of the runner along a helical-spiral bladeline.

A hogging, flaking and surfacing cutterhead assembly for use in the reduction of logs to wood flakes and rectangular lumber products.

3,526,259
IN-FEED FOR CHIPPERS

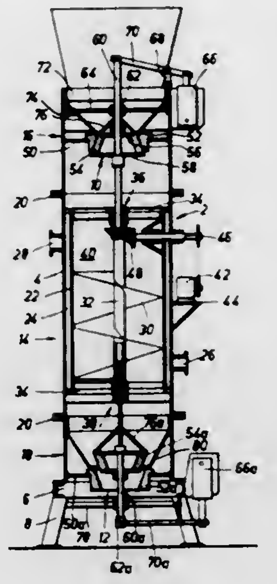
Joseph Andrew Lapointe, Pointe Claire, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada
Filed Feb. 12, 1968, Ser. No. 704,656
Claims priority, application Canada, March 2, 1967, 984,223
Int. Cl. B27c *1/12;* **B02c** *23/02*
U.S. Cl. 144—172 **3 Claims**



The present invention relates to an in-feed mechanism for chippers wherein a guide directs the wood at the proper angle to the chipper and wherein a conveyor traverses the guide to force and hold the wood against the guide and move the wood along the guide to deliver wood at the proper angle into the chipper head.

3,526,260
HIGH-PRESSURE STEAM PEELING MACHINES

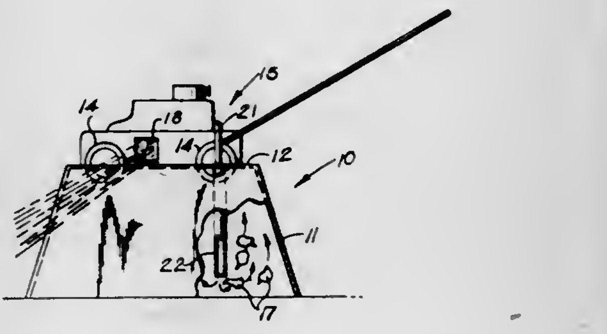
Günter Weiberg, Wolfenbuttel, Germany, assignor to Konservenfabrik Thiede G.m.b.H., Salzgitter-Thiede, Germany
Filed July 5, 1968, Ser. No. 742,942
Claims pririty, application Germany, July 5, 1967, K 62,730
Int. Cl. A23n *7/00*
U.S. Cl. 146—47 **16 Claims**



An improved high-pressure steam peeling machine, comprising a pressure chamber or vessel with a steam inlet, a steam outlet and equipment for introducing and removing the materials to be peeled, wherein the improvement comprises a reversible screw arranged to revolve in an upright cylinder forming the pressure chamber, material inlet orifices in the cover and outlet orifices in the base of the cylinder and closing elements with conical metal seals, the tapering parts of which face outwardly from the pressure chamber.

3,526,261
LEAF PULVERIZING DEVICE

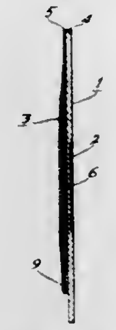
Alphonso Lynn Ivey, Jr., 111 Tuckahoe Blvd., Richmond, Virginia
Filed Aug. 5, 1968, Ser. No. 750,299
Int. Cl. B02c *18/10*
U.S. Cl. 146—107 **3 Claims**



A device in which tree leaves are placed so that they may be drawn upwards by a differential in pressure to a lawn mower blade of a lawn mower placed on the top of the device, the lawn mower blade serving to pulverize and expel the leaves in a pile alongside the device.

3,526,262
ADDRESS MASTER CARD

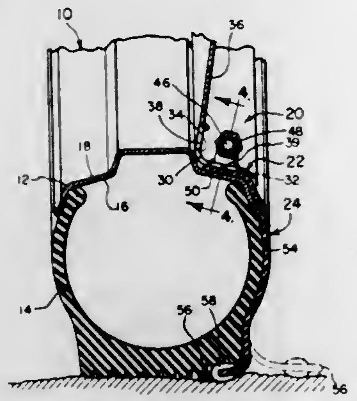
Hajime Yoshida, Tokyo, Japan, assignor to Scriptomatic, Inc., Philadelphia, Pa., a corporation of Delaware
Filed May 3, 1968, Ser. No. 726,515
Claims priority, application Japan, May 5, 1967, 42/37,538
Int. Cl. B41m *5/10*
U.S. Cl. 101—473 **1 Claim**



A master card for use in addressing machines using the hectograph process and similar processes in which the carbon paper for the card is attached to one edge of the card in a position overlying the imprint face and has one marginal edge folded inwardly to cover the carbon-coated portion of the carbon paper to avoid smudging of the master card while in storage and prior to use.

3,526,263
VEHICLE TRACTION DEVICE

George Sever, 4435 S. Kedvale, and Frank C. Skupien, 4852 S. Harding, both of Chicago, Ill. 60632
Filed May 15, 1968, Ser. No. 729,308
Int. Cl. B60c *27/02, 27/20, 27/10*
U.S. Cl. 152—221 **10 Claims**

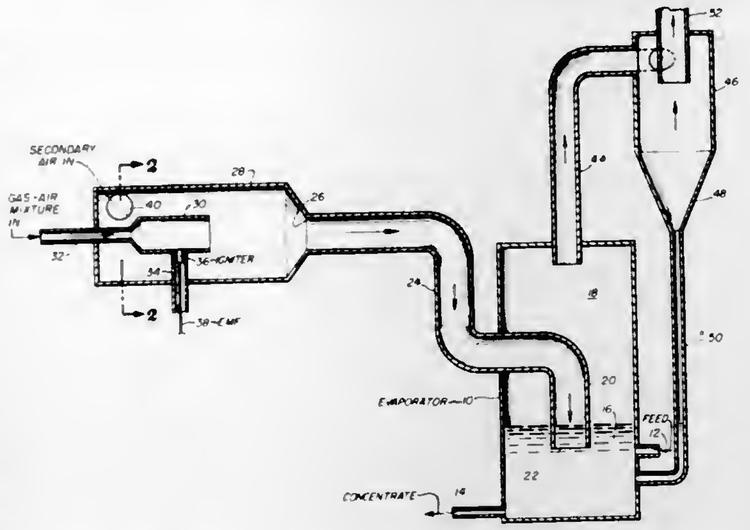


A device for increasing the traction of a vehicle such as an automobile or truck during its initial period of movement on slippery surfaces, comprising a mounting member adapted for removable attachment to the wheel and having secured thereto a flexible member adapted to cover a portion of the wheel tire tread when the wheel is turning slowly to provide increased traction for the wheel tire and adapted to come off of the wheel tire tread when the rotational movement of the wheel reaches a predetermined velocity.

3,526,264
METHOD OF CONCENTRATING A MAGNESIUM CHLORIDE SOLUTION WITHOUT PRODUCING AN EXHAUST GAS PLUME

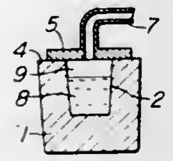
Walter L. Young and Clarence J. Douglas, Tulsa, Okla., assignors, by mesne assignments, to American Magnesium Company, Tulsa, Okla., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,415
Int. Cl. B01d *1/14*
U.S. Cl. 159—47 **3 Claims**

This invention relates to a method of efficiently concentrating a solution producing an exhaust gas plume. More particularly, the invention relates, in an exemplary application, to a method of efficiently concentrating a magnesium chloride solution without producing an exhaust gas plume including the steps of burning an air and gas mixture to produce hot combustion gases, controllably intermixing secondary air with said hot combustion gases to provide hot drying gases having a maximum temperature less than that at which, under the given environmental pressure the magnesium chloride has a vapor pressure of less than $1/_{10,000}$ of an atmosphere, and injecting said hot drying gases directly into said magnesium chloride solution.



3,526,265
METHOD OF CASTING COPPER BARS HAVING MINIMUM SURFACE OXIDE

Hiroshi Nomura, Michio Minakawa, and Takeshi Seya, Hitachi-shi, Japan, assignors to Hitachi Cable Ltd., Tokyo, Japan
Filed May 1, 1968, Ser. No. 725,715
Claims priority, application Japan, May 15, 1967, 42/30,372
Int. Cl. B22d *21/04*
U.S. Cl. 164—66 **8 Claims**

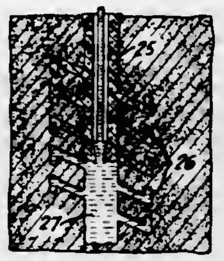


The present disclosure is directed to a method of casting a copper bar in a horizontal vessel-type casting mold, said method comprising pouring molten copper into said mold to a predetermined level relatively near the open top of said mold, closing the open top of said mold with a removable lid after completion of said pouring but before a copper-copper oxide eutectic is formed in the surface layer of said molten copper, disposing the inner surface of said lid spaced from the level of molten copper in said mold at such a distance that splashing molten copper will not be excessively attached to said surface and convection of air above said surface is substantially completely prevented, allowing the molten copper to cool and solidify, removing said lid and removing the solidified copper bar from said mold.

3,526,266
MOLD FOR THE CASTING OF METALS

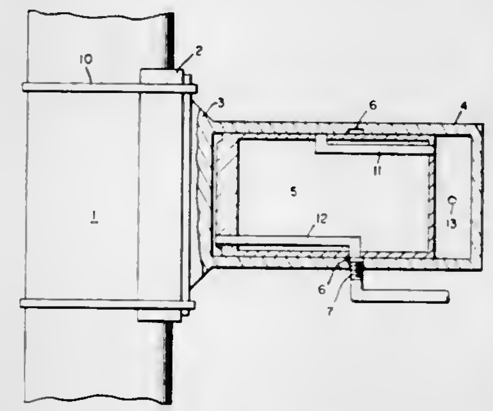
Thomas E. Snelling, Rte. 2, Box 792,
Boring, Oreg. 97009
Original application July 13, 1965, Ser. No. 471,679, now Patent No. 3,374,824. Divided and this application Mar. 13, 1968, Ser. No. 726,631
Int. Cl. B22c *9/04*
U.S. Cl. 164—349 **5 Claims**

A combination is provided of a sand mold and a pattern of porous plastic material thermally capable of forming vapor without substantially leaving a residue confined within a body of sand, the porous pattern having an entry portion adapted for receiving molten metal, the entry portion communicating with a hollow portion of the pattern that extends to one end of the pattern confined within the body of sand.



3,526,267
PROCESS FOR COOLING SUSPENDED TiO_2 PARTICLES

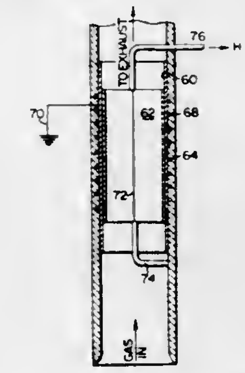
Willard E. Kruse, Dickson, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 12, 1968, Ser. No. 720,875
Int. Cl. F28d *11/06;* **F28g** *7/00*
U.S. Cl. 165—1 **1 Claim**



In the cooling of a hot suspension of fine titanium dioxide in a gas there is formed a layer of the titanium dioxide particles on the cooling duct wall. A vibrator is provided upstream of the cooling duct wall to loosen the deposits forming the layer so that the deposits will act as scrub solids on the downstream layer.

3,526,268
CORONA DISCHARGE HEAT TRANSFER

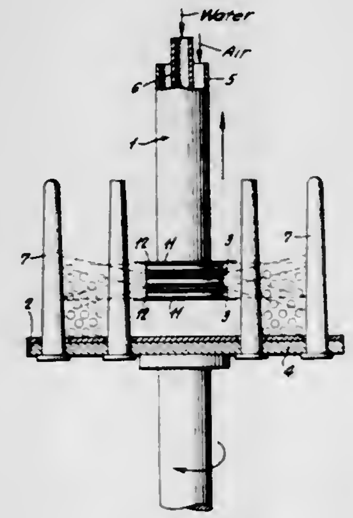
Myron Robinson, Highland Park, N.J., assignor to Research-Cottrell, Inc., a corporation of New Jersey
Filed July 18, 1968, Ser. No. 745,906
Int. Cl. F28f *13/16;* **H05b** *7/16*
U.S. Cl. 165—1 **4 Claims**



A corona discharge established on a heated wire immersed in a cooler gas disrupts the boundary layer about the wire, thereby enhancing convective heat transfer from the wire to the gas. Under circumstances of otherwise natural convection from a 500° F. wire, for example, corona is observed to raise the heat-transfer rate fourfold. In forced flow at velocities up to at least 90 ft./sec., heat-transfer enhancement due to corona is less marked, but still significant.

3,526,269
METHOD FOR COOLING WIRE DURING THE COILING OR REELING THEREOF

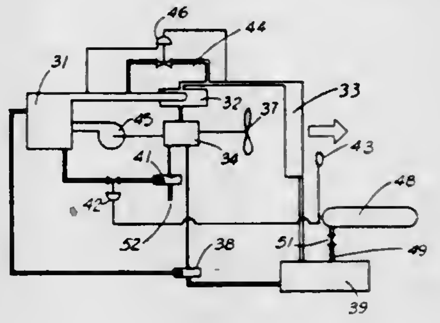
Hans Eberhard Mobius, Nordring 72,
Volklingen, Germany
Continuation-in-part of application Ser. No. 604,045, Dec. 22, 1966. This application July 29, 1968, Ser. No. 748,379
Claims priority, application Germany, Dec. 22, 1965, R 42,275
Int. Cl. F28f *5/00*
U.S. Cl. 165—1 **3 Claims**



The cooling of wire during the reeling operation in which separate streams of a coolant and air are discharged in the direction of the wire convolutions during the rotation of the reel from a double tube assembly inserted into the reel. The tube is withdrawn from the reel during the discharge of the coolant and air as the height of the convolutions increase.

3,526,270
CONDENSER PRESSURE CONTROL MEANS AND METHOD

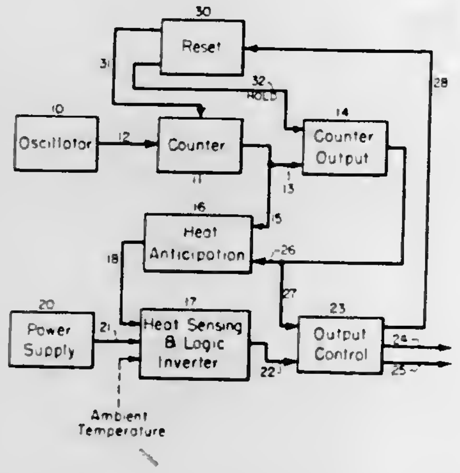
John P. Norton, St. Louis, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 8, 1966, Ser. No. 592,914
Int. Cl. F25b *13/00*
U.S. Cl. 165—2 **9 Claims**



The present invention relates to heat exchange circuits where an expandable-condensable working fluid is circulated through a closed heat exchange fluid flow circuit which includes means to vaporize the fluid and condenser means to condense a portion of the vaporized working fluid, and, more particularly, relates to method and apparatus for advantageously and selectively distributing a noncondensable gas through said circuits in response to the condition of the circulating working fluid to regulate the operation and control the pressure within such circuits.

3,526,271
HEATING-COOLING CONTROL SYSTEM WITH EXTENDED TIME DELAY

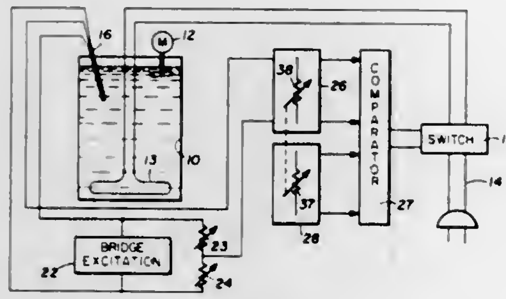
Thomas C. Jednacz and Alwin B. Newton, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 13, 1968, Ser. No. 783,479
Int. Cl. F25b *29/00*
U.S. Cl. 165—26 6 Claims



An oscillator provides spaced apart timing pulses to a divide-by-16 counter circuit which issues an output pulse, when full, to a flip-flop memory circuit. In turn the memory circuit passes a signal to an output control circuit, which also receives an input signal from a heat sensing and logic inverter stage. The output control circuit provides regulating signals to call for heating or cooling, and also passes a signal to a reset circuit which resets the counter circuit. A heat anticipation circuit operates, responsive to indications both that the counter circuit is full and that the system is calling for cooling, to pass a signal to the heat sensing and logic inverter stage which increases the amount of heat anticipation provided to the thermostat.

3,526,272
SERVO TEMPERATURE CONTROL

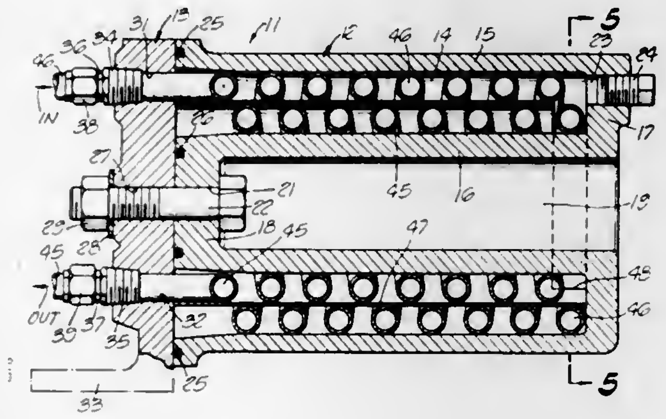
Paul J. Watts and Malcolm D. Crawford, Orem, Utah, assignors to Tronac, Inc., Orem, Utah, a corporation of Utah
Filed July 29, 1968, Ser. No. 748,342
Int. Cl. B60h *1/00*
U.S. Cl. 165—39 7 Claims



The temperature of a body is maintained other than at ambient by generating an error signal proportional to deviation of the temperature of the body from a reference temperature. This proportional error signal is then amplified and integrated with respect to time, giving an integrated error signal. A reference signal cyclically varies from a level below to a level above the range of the integrated error signal at cycle intervals which are small compared with the time response characteristics of the body. The heat in the body is then changed in a sense in order to reduce the error signal only during that portion of each cycle of the reference signal when the reference signal is greater than the error signal. A type 1 servo is employed in the control loop.

3,526,273
HEAT EXCHANGER

Robert S. Wentworth, Jr., Wilmington, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed July 31, 1968, Ser. No. 749,120
Int. Cl. F28d *1/06*
U.S. Cl. 165—74 4 Claims

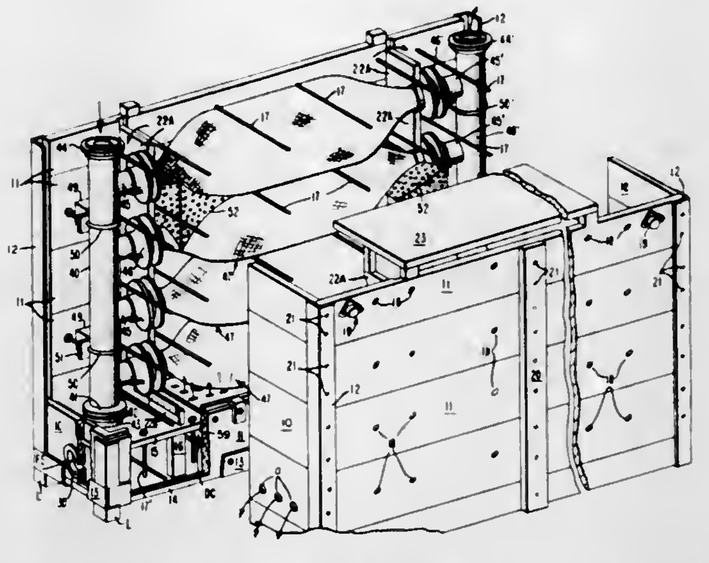


A heat exchanger having a case with spaced cylindrical concentric walls and an end wall joining said cylindrical walls at the outer end thereof thus forming an annulus, a cover, a blind bore formed by a web across the inner end of the bore of the inner cylinder, fastening means releasably attaching the web, and thus the case, to the cover, and multiple layers of concentric helical coils supported by the cover independently of the case. Each layer of helical coils is separated by a spacer from each other layer, which spacer has an opening at one end through which a portion of the end convolution of the layer extends and is continued back in a reverse axial direction forming the next concentric layer of helical coils. Said coils of all layers are preferably of a single continuous tube with fluid inlet and outlet connections. The cover has fluid inlet and outlet ports for admitting and exhausting coolant fluid from said annulus. The helical coils form with the spacer and case, or spacers, a helical flow path for coolant flow preferably opposite to the direction of flow of fluid in the helical coil.

3,526,274
CROSS FLOW BOX COOLER UNIT

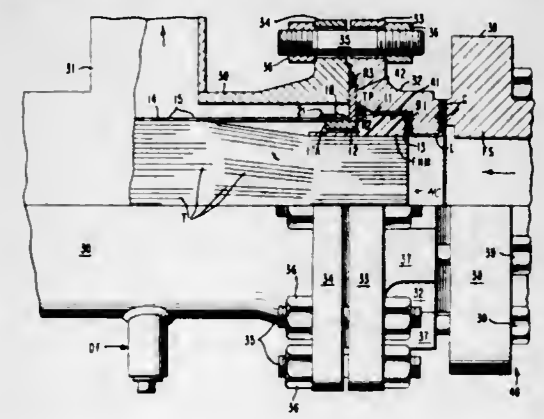
Robert John Gardner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 4, 1968, Ser. No. 734,393
Int. Cl. F28f *9/00, 9/22*
U.S. Cl. 165—145 11 Claims

An easily transportable and demountable heat transfer apparatus combination in which a low pressure fluid stream is directed across a braided array of flexible plastic tubes mounted transversely of a substantially unpressurized fluid conduit the transverse cross section of which corresponds to the dimensions of the braided array so that the action of the fluid stream causes uniform distribution of the flexible tubes across the conduit and causes cooperation of the tubes with the conduit walls to substantially eliminate bypassing and localized compaction of tubes.



3,526,275
TUBE BUNDLE ASSEMBLY HAVING BAFFLE AND HEADER SEAL FEATURES FOR USE IN PLASTIC TUBE HEAT TRANSFER APPARATUS COMBINATIONS

Henry Joseph Vance, Wilmington, Del., and Edward Bruno Eirikis, Morton, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 27, 1968, Ser. No. 732,213
Int. Cl. F28f *9/02;* **F16l** *41/00*
U.S. Cl. 165—158 11 Claims

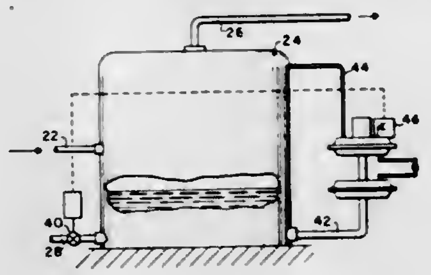


A heat transfer apparatus having a rigid integrated tube bundle assembly wherein flexible plastic tubes are maintained in a rigid perforated sleeve unit, said assembly further comprising an elastically deformable annular baffle structure to control shell-side flow and special sealing and supporting features for cooperation with a casing member and header members in which the tube bundle assembly and its sleeve unit are positioned.

3,526,276
FLUID SEPARATOR WITH DELAYED RESPONSE LIQUID LEVEL CONTROL DEVICE

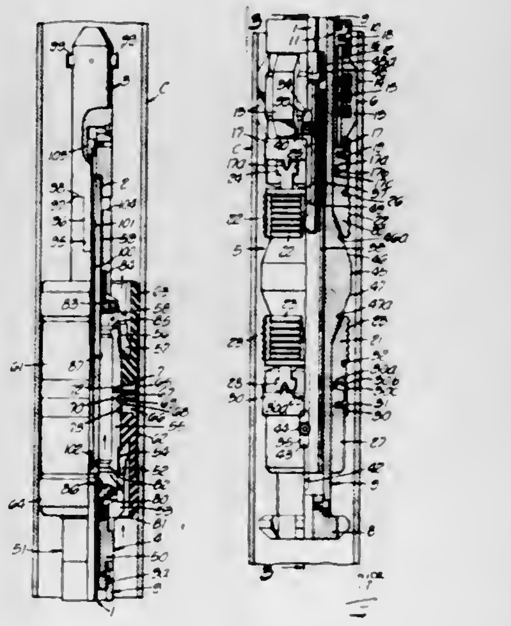
John D. Bennett, Richardson, and Charles R. Haberthur, Sweetwater, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Nov. 15, 1968, Ser. No. 776,106
Int. Cl. B01d *19/00;* **F04f** *1/20;* **F16k** *31/165*
U.S. Cl. 166—52 7 Claims

A dampening device is used in a mechanism for controlling the liquid level in a tank. The tank comprises a portion of a fluid separation system. The liquid level in the tank often pulsates erratically in response to pressure fluctuations, vibrations, flashing, et cetera, in the separator system. The dampening of the control mechanism provides stability to the mechanism for opening a valve in the system to dump liquids therefrom. The tank may be a second stage separator for fluids produced from a plurality of wells. The gas output line of the second stage separator may be connected to compressors, from which the compressed gas may be used to gas lift fluids from the wells.



3,526,277
WELL PACKER AND ANCHOR MEANS THEREFOR

Lyle B. Scott, South Gate, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed June 10, 1968, Ser. No. 735,887
Int. Cl. E21b *23/00, 33/12*
U.S. Cl. 166—121 15 Claims

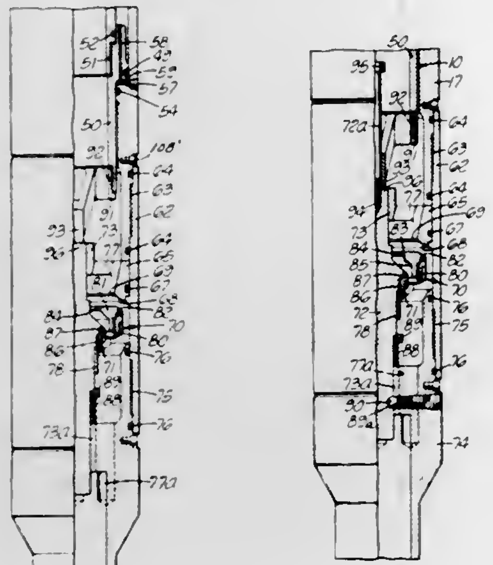


Anchoring mean for well bore tools, in which an expander has oppositely facing conical surfaces which cooperate with a pair of spaced apart sets of slip elements which are independently outwardly movable into anchoring engagement with the well wall, the expander being on a mandrel which slidably supports the slip elements, and a tie member being disposed within the mandrel and spanning the expander to hold the slip elements against relative movement longitudinally of the mandrel, the mandrel being longitudinally shiftable relative to the tie member to effect anchoring engagement with the slip elements of one set or the other depending upon the direction of movement of the mandrel.

Such an anchoring means in a retrievable well packer having control means for running and retrieving the packer with said expander centralized between the sets of slip elements, the control means being operable to allow movement of the mandrel of the well packer in either longitudinal direction to anchor the packer against movement in either direction alternately.

3,526,278
HIGH VOLUME MAIN VALVE FOR FORMATION TESTERS

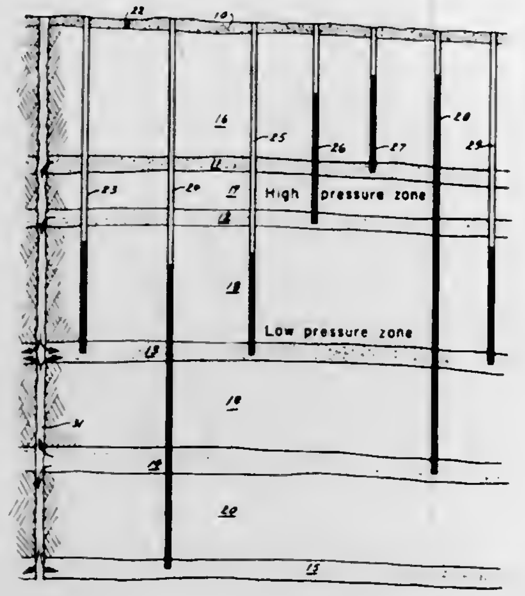
Lyle B. Scott, South Gate, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,649
Int. Cl. E21b *33/00*
U.S. Cl. 166—152 **6 Claims**



A subsurface earth formation tester having a large flow passage closed by a compound valve having major and minor valve seating areas, the valve being opened by a hydraulic delayed acting mechanism which causes the preliminary closure of an unloader valve and setting of a packer below the valve mechanism, the valve being closable by positive coengagement of abutting parts or by a spring and the tester having a latch mechanism for securing the assembly in conditions with the valve open or closed.

3,526,279
METHOD OF STORING TOXIC FLUIDS AND THE LIKE

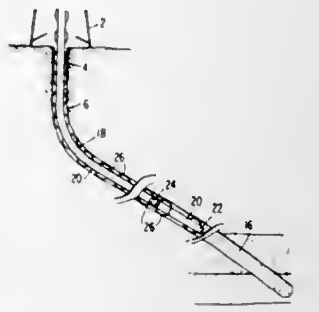
William A. Colburn, Denver, Colo., assignor to Atomic Storage Corporation, Denver, Colo., a corporation of Colorado
Filed Dec. 8, 1966, Ser. No. 600,152
Int. Cl. B65g *5/00;* **E21b** *47/10*
U.S. Cl. 166—250 **20 Claims**



A method for permanently storing toxic fluid wastes in the earth comprises the utilizing of a geologic section having a plurality of relatively permeable zones separated by layers of low permeability and in which one of the zones intermediate two others is of lower datum pressure than the others, providing a well into the zone below the lower pressure zone and injecting thereinto the fluid to be stored.

3,526,280
METHOD FOR FLOTATION COMPLETION FOR HIGHLY DEVIATED WELLS

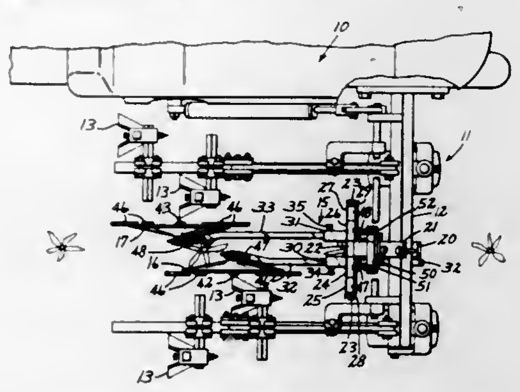
Burton W. Aulick, Midland, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Oct. 17, 1967, Ser. No. 675,808
Int. Cl. E21b *17/10, 33/14*
U.S. Cl. 166—285 **11 Claims**



Well completion method and apparatus for highly deviated wells. Cement slurry is placed in the bore hole before the casing string is run. The cement is a delayed setting type cement. The casing contains fluid having a substantially lower density than that of the slurry. The fluid in the casing provides a buoyancy effect on the casing for floating the casing through the deviated zone. In a modified form of the invention, a buoyancy chamber is provided adjacent the lower end of the string in which the buoyancy fluid is contained. Centralizers are provided on the exterior of the casing and are spaced longitudinally from each other. The centralizers along the buoyancy chamber are spaced apart at greater intervals than the centralizers above the buoyancy chamber. An improved casing-cement bond is achieved due to a pressure differential between the exterior and the interior of the casing when the casing is run in the cement slurry. The hydrostatic pressure of the slurry urges the casing radially inward, but after the cement hardens, the pressure in the casing increases, thereby urging the casing outwardly against the hardened cement.

3,526,281
MOUNTING APPARATUS FOR CULTIVATOR SHIELDS

James B. Meaden, 3009 Norwood Ave., and Ronald S. Conway, 2759 Linden Ave., both of Slayton, Minn. 56172
Filed Nov. 22, 1967, Ser. No. 685,205
Int. Cl. A01b *17/00*
U.S. Cl. 172—510 **3 Claims**

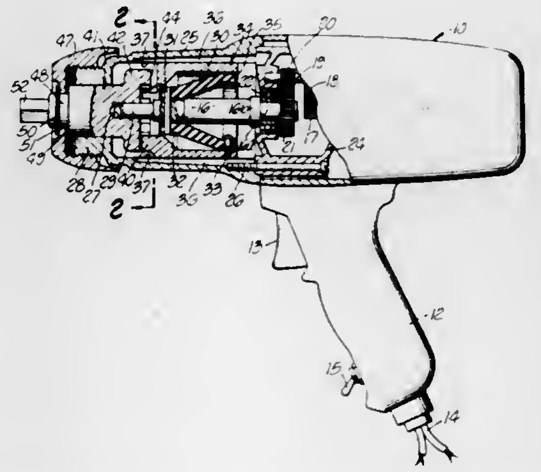


A spindle attached to the frame of a cultivator so the longitudinal axis thereof is perpendicular to the direction of movement with two parts individually rotatably

mounted on the spindle so that two shafts slidably engaged therein extend in a direction generally parallel to the movement of the cultivator. Each of the shafts has a rotary cultivator shield affixed thereto. The two parts are adjustable along the length of the spindle, the position of the spindle relative to the cultivator is adjustable in a direction transverse to the movement of the cultivator, and the two shafts are individually adjustable so they can be placed on either side of a crop row at the position most in need of shielding.

3,526,282
IMPACT WRENCH

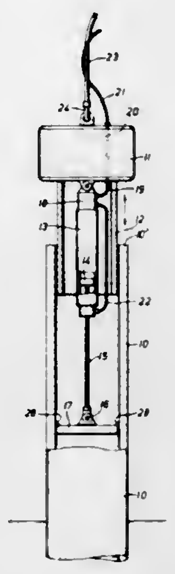
John P. Newman, P.O. Box 1147, San Jacinto, Calif. 92383
Filed Nov. 1, 1968, Ser. No. 772,494
Int. Cl. B25d *15/02*
U.S. Cl. 173—93.6 **6 Claims**



An improved power driven impact wrench having a hammer and an anvil member, tightens a threaded member by a series of impacts between the hammer and anvil member. A resilient rubber-like sleeve connects the hammer to a drive shaft and the hammer is accelerated between impacts by the resilient sleeve and the drive shaft.

3,526,283
PILE DRIVER

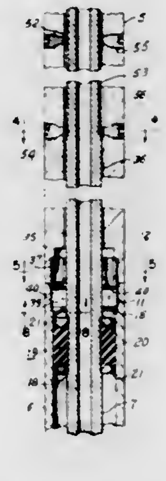
Eugene A. Horstketter and Elmer C. Gardner, Houston, Tex., assignors to S.O.G. Research and Development Corporation, Houston, Tex., a corporation of Texas
Filed July 23, 1968, Ser. No. 746,808
Int. Cl. B25d *9/00*
U.S. Cl. 173—126 **19 Claims**



A pile driver used for pipelike piles, including a hammer with a cylindrical guide member or sleeve attached to its lower side. The hammer strikes the upper rim of the pipe as it reciprocates in a path determined by the guide sleeve which slides into or over the upper end of the pipe. The hammer is driven from below by an air or hydraulic cylinder or the like, with one side of the power mechanism being permanently or releasably coupled to the inside of the pile.

3,526,284
DRILL STRING SHOCK ABSORBER

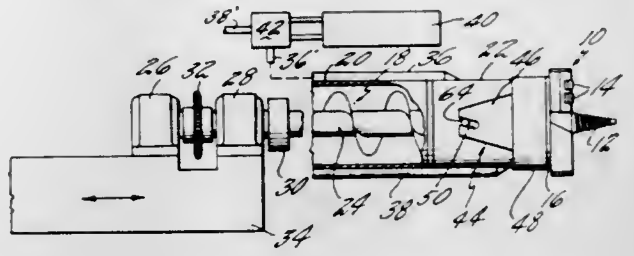
Edward V. Burge, Corpus Christi, Tex., assignor to Bossco, Inc., Corpus Christi, Tex., a corporation of Texas
Filed Jan. 13, 1969, Ser. No. 790,518
Int. Cl. E21b *17/00*
U.S. Cl. 175—318 **6 Claims**



A drill string shock absorber having a tubular mandrel slidably connected in a tubular housing and depending therefrom for connection with a drill bit. A closed chamber, containing a noncompressible fluid, is formed in the housing around the mandrel by seal elements fixed to and movable with said mandrel on opposite sides of check valve means which controls the flow of the fluid upon reciprocation of said mandrel relative to said housing and which permits faster downward reciprocation.

3,526,285
ANGULARLY ADJUSTABLE AUGER HEAD

David E. Adkins and Ronald L. Legue, Columbus, Ohio, assignors to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed Nov. 5, 1968, Ser. No. 773,615
Int. Cl. E21b *7/04*
U.S. Cl. 175—73 **10 Claims**



Directionally controllable horizontal earth boring apparatus including an auger, an auger head which carries a pilot bit, a casing which is fed into the bore with the auger, and a mechanism for tilting the head relative to the auger axis. The tilting mechanism comprises a universal joint, which couples the auger to the head assembly, and a position plate-bearing assembly, which causes angular head movement in response to energization of a hydraulic actuator.

3,526,286

MEANS FOR POSITIONING THE PRESSURE-TRANSMITTING JOURNALLING ELEMENTS IN WEIGHING MEANS

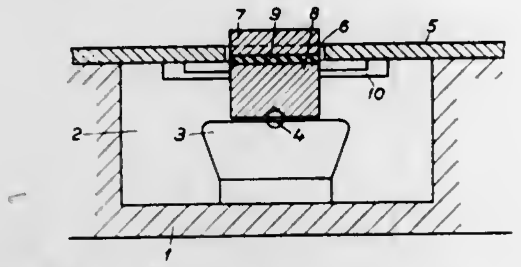
Rune Flinth, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Dec. 5, 1968, Ser. No. 781,370

Claims priority, application Sweden, Dec. 14, 1967, 17,150/67

Int. Cl. G01g *5/04, 7/00, 21/10*

U.S. Cl. 177—201 **1 Claim**



A load cell is positioned in a recess in a supporting member. A ball transmits force to be measured from a pressure transmitting block to the ball. The block is formed of two metal plates with a layer of rubber therebetween. A flange extends across the mouth of the recess, the block extending through an opening in the flange slightly larger than the block. A membrane yieldable in the vertical direction holds the block in position in the opening.

3,526,287

SCALES HAVING A TRANSDUCER AND A PLATFORM MOUNTED FOR LIMITED LATERAL MOVEMENT

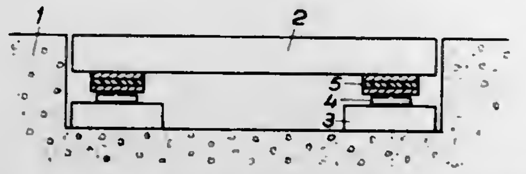
Rune Flinth, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Feb. 13, 1968, Ser. No. 705,139

Claims priority, application Sweden, Feb. 27, 1967, 2,654/67

Int. Cl. G01g *3/14*

U.S. Cl. 177—211 **3 Claims**



A scale platform or load carrying member is supported on a transducer through metal plates between which is sandwiched a rubber plate to allow lateral movement. Stops are provided at the sides of the platform for limiting the lateral movement.

3,526,288

HYDROSTATIC TRANSMISSION CONTROL SYSTEM

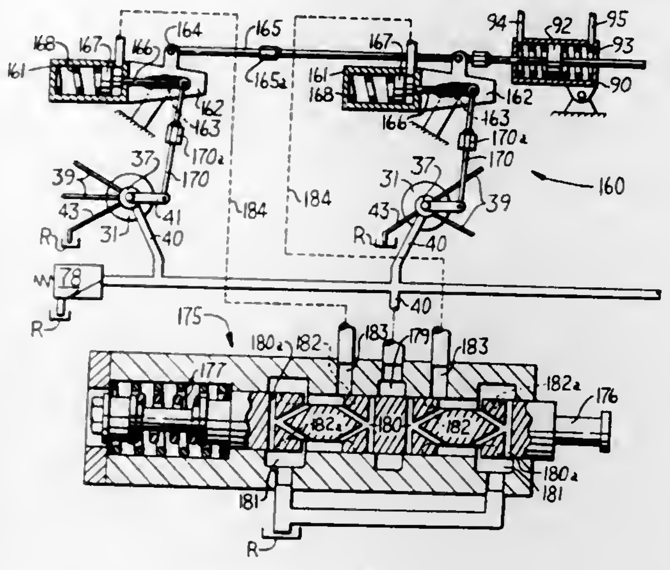
John R. Cryder, Joliet, Willard J. Haak, John L. Hufeld, and Lionel L. Kinney, Peoria, Kenneth R. Lohbauer, Joliet, and Howard A. Marsden, Pekin, Ill., Ralph W. Matthews, Franklin, Wis., and William B. Norick, Joliet, Glen E. Stewart, Springfield, Rollin P. Vanzandt, Peoria, and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Original application June 14, 1967, Ser. No. 645,912, now Patent No. 3,477,225, dated Nov. 20, 1969. Divided and this application Aug. 2, 1968, Ser. No. 763,462

Int. Cl. B62d *11/04*

U.S. Cl. 180—6.48 **3 Claims**

Hydrostatic transmission systems, which transmit torque via fluid pressure circulating between a pump and motor, are now sufficiently perfected for use in work vehicles. Infinitely variable input to output ratios are available in such transmissions which make them especially useful in tractor type vehicles. However, for high efficiency the transmission ratio must be properly and continuously adjusted for maximum performance. Such control is accomplished in this invention by employing a separate control pump geared to the transmission power source, a valve controlled differential pressure stack connected to receive the output of the control pump wherein changes in its valve position will effect changes in pressure differential ocurring within the stack, pressure responsive means having elements displaceable by pressure differential connected to the stack so that pressure differentials occurring therein are communicated to the elements and linkages connecting the elements with control means in the transmission for changing its ratio. Also included is a flow sensitive system which is connected across the differential pressure stack to reduce the pressure differential if the output of the control pump drops due to a decrease in engine speed. The basic control system can be employed with a variety of subsystems to provide steering in track-type vehicles, reversing and the like.



3,526,289

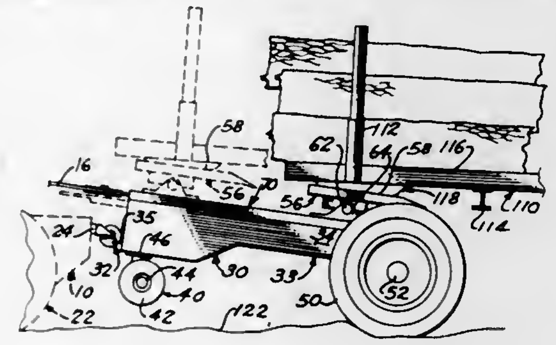
LOAD ADJUSTING VEHICLE FOR TOWED TRAILERS

Clark A. Rodgers, 2624 Garden Lakes Blvd., Rome, Ga. 30161

Filed Jan. 5, 1968, Ser. No. 696,025

Int. Cl. B62d *57/00, 53/00*

U.S. Cl. 180—7 **10 Claims**



A shorter vehicle having an caster wheel on the front and dual wheels mounted on an axle on the rear of a shorter frame than the usual towed trailer. A conventional tractor-trailer fifth wheel is movably mounted on the frame to be winched by a pulley cable arrangement between the towing vehicle and the fifth wheel on the present vehicle to slide the fifth wheel on which there may be positioned the front end of a heavily loaded logging trailer or the like so as to be able to power winch the heavily loaded trailer across a difficult terrain area anytime the towing vehicle is unable to move the loaded

trailer. The present device may be used in logging areas and operations to bring a heavily loaded trailer of logs out of the difficult terrain and onto a better road at which time the present load adjusting vehicle may be removed and the usual tractor-trailer combination continued for transporting the trailer.

3,526,290

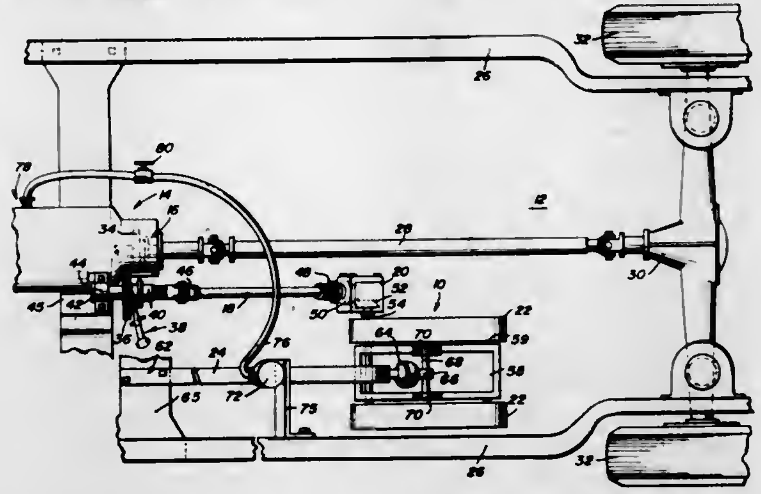
TRACTION DEVICE FOR VEHICLES

Syer S. Caudill, Roanoke, Va., assignor of five percent to George W. Draper, Salem, Va.

Filed Apr. 23, 1968, Ser. No. 723,382

Int. Cl. B60k *25/06;* **B60b** *15/00*

U.S. Cl. 180—15 **6 Claims**



A pivotal drive shaft is mounted coaxially with a rotary gear which selectably engages the power take-off gear of a vehicle transmission. The drive shaft is linked to an endless traction belt device for rotational actuation thereof. A leaf spring assembly is attached at one end thereof to the vehicle frame while the opposite leaf spring end is attached to the belt device. Thus, the leaf spring assembly provides means for delivering thrust to the vehicle during operation of the belt device. Hydraulic means are provided for lowering the endless belt device to the ground when traction thrust is required. When starting speed is developed by the vehicle, means are actuated for retracting and ceasing operation of the endless belt device.

3,526,291

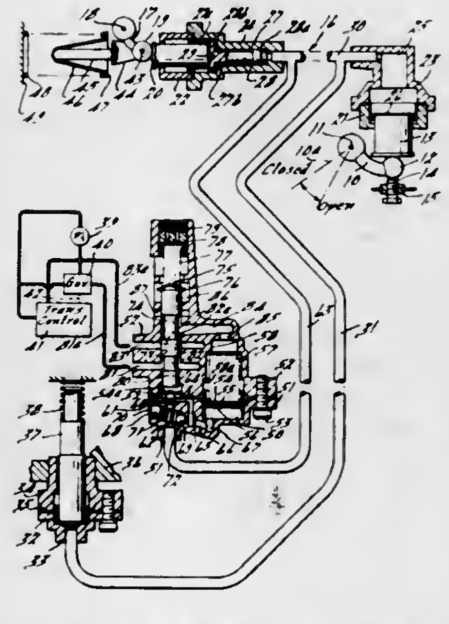
VEHICLE TOP SPEED LIMITER

Leonard E. Froslie, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Sept. 5, 1968, Ser. No. 757,654

Int. Cl. B60k *31/00*

U.S. Cl. 180—108 **9 Claims**



A fluid coupling between the customary throttle pedal and throttle valve of an automotive vehicle and containing a fixed volume of incompressible fluid normally opens the throttle valve against the reaction of a throttle return spring in accordance with pedal movement. An accumulator connected with the coupling is expanded in response to a predetermined vehicle upper speed limit to bleed fluid from the coupling and thereby decrease the throttle opening.

3,526,292

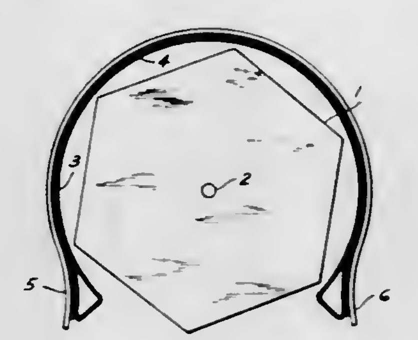
DEVICE FOR DAMPING ACOUSTIC VIBRATIONS GENERATED BY THE ROTATION OF A PRISMATIC BODY WITHIN A DRUM

Hans Arne Edgar Franzén, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a company of Sweden

Filed June 11, 1969, Ser. No. 832,323

Int. Cl. G02f *1/34;* **G10k** *11/00*

U.S. Cl. 181—33 **4 Claims**



A rotating mirror prism within a cylindrical drum having an opening for allowing radiation from the outside to strike the prism. The drum is made of felt carried by a wire net. The edges bounding the opening in the drum are curved outwards.

3,526,293

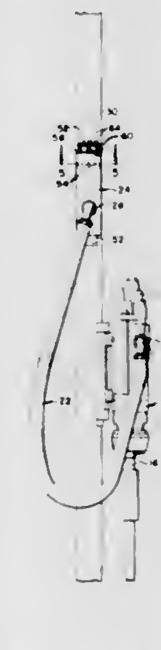
MUFFLER FOR FLUID ACTUATED TOOL

Roy J. Hayes and Arnold E. Rapp, Denver, Colo., assignors to Gardner-Denver Company, Quincy, Ill., a corporation of Delaware

Filed June 13, 1968, Ser. No. 736,743

Int. Cl. F01n *1/02, 1/10*

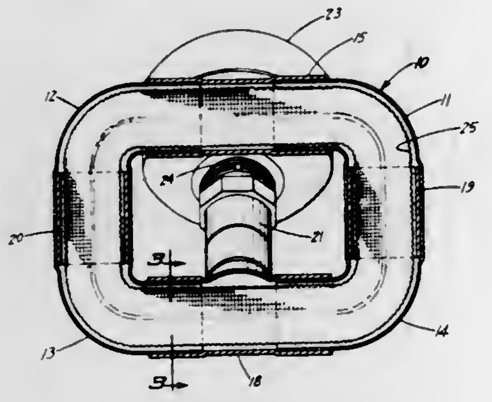
U.S. Cl. 181—36 **9 Claims**



A muffler system for a fluid actuated tool including inner and outer flexible conduits arranged in telescoped relation with the upstream end of the inner conduit connected to the exhaust port of the tool. The outer conduit is in surrounding relation with the inner conduit and the downstream end of the inner conduit is closed. Longitudinally spaced perforations in the inner conduit communicate exhaust fluid from the interior of the inner conduit to the interior of the outer conduit; however, a substantial longitudinal segment of the downstream end of the inner conduit is imperforate and functions as an acoustical filter. The downstream end of the outer hose is connected to another acoustical filter which opens to the atmosphere.

3,526,294
POLLUTION REDUCING MUFFLER

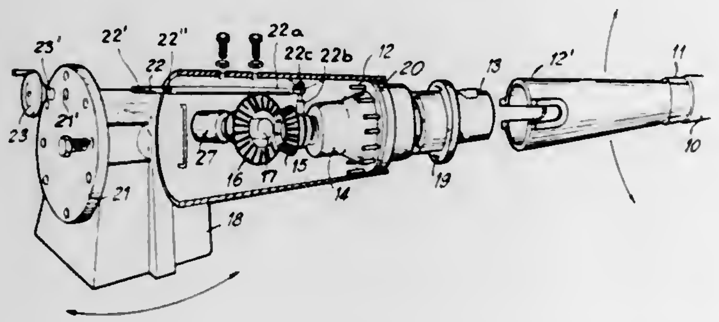
Gust H. Bjork, Robbinsdale, Minn., assignor to Pure Air Mufflers, Inc., St. Paul, Minn., a corporation of Minnesota
Filed June 24, 1968, Ser. No. 739,285
Int. Cl. F01n *1/06, 3/14, 7/02*
U.S. Cl. 181—40 **6 Claims**



A pollution reducing muffler for internal combustion engines having a hollow tubular body in the form of a closed loop ring with an exhaust gas inlet into one side and a discharge from the other. The tubular body is lined with foraminous material, such as metal screening. A noise reducing muffler is preferably attached to the discharge end. The muffler reduces pollution by promoting further combustion of combustible constituents of the exhaust gases.

3,526,295
STABILIZER FOR ELEVATABLE WORKING STATION

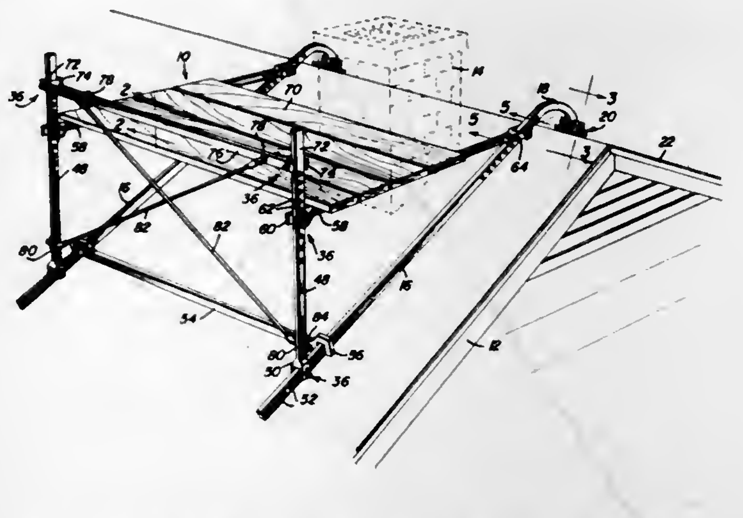
Roland Cornet, Charleville-Mezieres, France, assignor to Société Anonyme dite: l'Entreprise Generale d'Installations Electriques (E.G.I.E.), Charleville-Mezieres, France
Filed Dec. 2, 1968, Ser. No. 780,457
Claims priority, application France, Dec. 1, 1967, 130,583
Int. Cl. B66f *9/06;* **E04g** *1/15*
U.S. Cl. 182—2 **10 Claims**



A vehicle-borne working station, pivotally mounted at the end of a tiltable mast for swinging in a vertical plane, carries a pendulum controlling a pair of limit switches which energize a motor, in response to deviation by more than a few degrees from a level position, for restoring the working station to that position.

3,526,296
PORTABLE STAGING

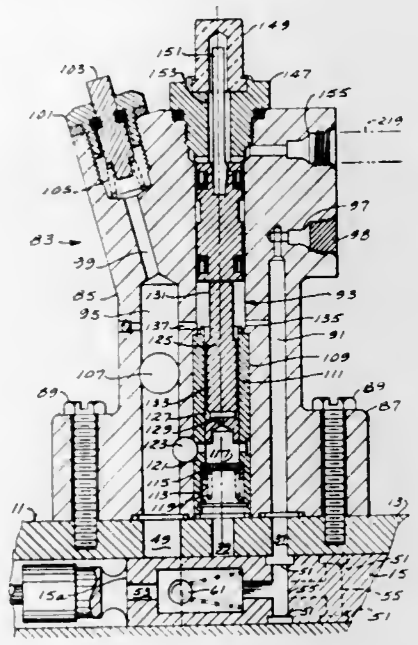
Daniel R. Stevens, 17 College Ave., Waterville, Maine 04901
Filed Mar. 26, 1969, Ser. No. 810,472
Int. Cl. E04g *3/12*
U.S. Cl. 182—45 **1 Claim**



Portable staging fabricated from lightweight metal including brace components removably assembled by swivel lockpins. Non-slip pads are provided for frictionally contacting a building structure to increase the safety factor of the device.

3,526,297
LUBRICATION PUMP FAILURE DETECTOR

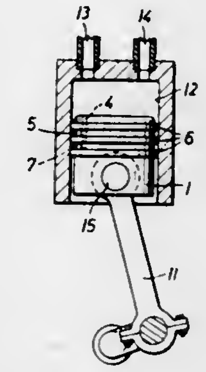
Lutwin C. Rotter, Ladue, and Jerome B. Wegmann, Florissant, Mo., assignors to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed June 18, 1968, Ser. No. 738,040
Int. Cl. F16n *29/04*
U.S. Cl. 184—1 **12 Claims**



Apparatus for detecting failure of operation of an intermittently acting lubricant pump or injector of a type having a plunger working in a cylinder to meter out small quantities of lubricant through each of a series of outlet ports on a pressure stroke of the plunger. The apparatus comprises a signal controlled by an air pressure switch supplied with air under pressure from a sensing line, and means for venting the sensing line to effect operation of the signal in response to failure of delivery of lubricant through the last outlet port of the series of a plurality of cycles of the pump or injector, for signalling prolonged failure without signalling a temporary failure.

3,526,298
PISTON-CYLINDER ASSEMBLY FOR HYDRAULIC PUMP/MOTOR APPARATUS

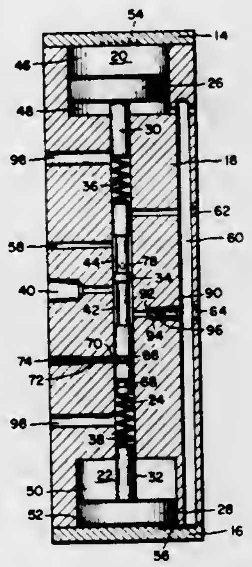
Bernhard Sann, Aachen, Germany, assignor to Gewerkschaft Eisenhuette Westfalia, a corporation of Germany
Filed Feb. 26, 1968, Ser. No. 708,138
Claims priority, application Germany, May 23, 1967, G 50,160
Int. Cl. F01m *1/04*
U.S. Cl. 184—6 **5 Claims**



An improved piston-cylinder-connecting rod assembly for an hydraulic actuator having bore means in the piston communicating between the piston rings and a source of lubricant therefor, preferably between the piston rings and the working face of the piston.

3,526,299
AUTOMATIC LUBRICATOR

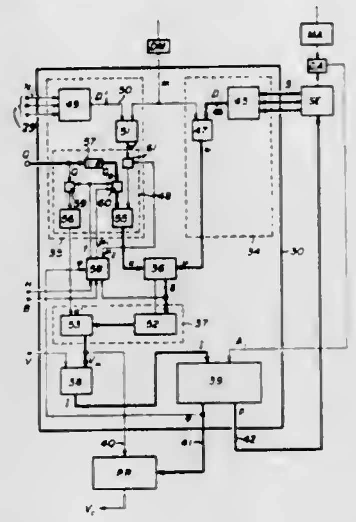
William J. Kiefer, Addison, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 19, 1968, Ser. No. 776,912
Int. Cl. F16n *25/02*
U.S. Cl. 184—7 **14 Claims**



A lubricator having a first chamber therein for receiving pressured lubricant. The chamber has first and second compartments divided by a piston which is spring-loaded toward one end of the chamber. The piston responds to lubricant pressure in the first chamber to move against the spring to enlarge the first compartment. Associated valving moves in response to the piston movement, after subsequently overcoming a detent mechanism, to close a lubricant outlet port, and to admit lubricant to the second compartment. The pressured lubricant, on admittance to the second compartment, cooperates with the piston spring to return the piston to the port open, chamber-end position. The piston continuously and automatically reciprocates toward, and away from said position under the influences of constantly-supplied pressured lubricant, causing the valving cyclically to release pressure lubricant from the outlet port.

3,526,300
METHOD AND APPARATUS FOR CONTROL OF HIGH SPEED ELEVATOR

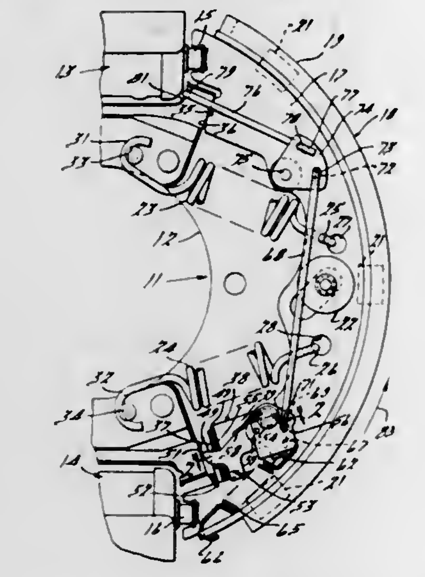
Roger Ferrot, Geneva, Switzerland, assignor to Inventio Aktiengesellschaft, Hergiswil, Nidwalden, Switzerland
Filed Aug. 6, 1968, Ser. No. 750,581
Claims priority, application Switzerland, Aug. 8, 1967, 11,182/67
Int. Cl. B66b *1/28*
U.S. Cl. 187—29 **14 Claims**



A high speed elevator, operated along a shaft by a winch whose motor is controlled by a servoregulator, has a predetermined constant maximum speed and predetermined acceleration and deceleration characteristics. The servoregulator receives variable speed order signals from a control apparatus having various signal inputs including a continuous signal of the instantaneous position of the elevator cabin, a signal respective to the calling floor, a continuous signal of the instantaneous speed of the elevator cabin, a signal representing the direction of movement of the cabin, a signal from a call selector associated with a call memory, and signals respective to the cabin approaching the level of each floor. When the elevator is at a starting floor and receives a call from a calling floor spaced by one or more floors from the starting floor, the elevator is accelerated toward its maximum constant speed following an acceleration curve. At the same time, a deceleration curve for the next succeeding floor in the direction of elevator movement is plotted as a continuous signal. The two characteristic curves intersect at a point before the elevator reaches the next succeeding floor. If a call from the next succeeding floor is received before the elevator passes this intersection point, the elevator is decelerated along a respective deceleration characteristic which will bring it to a stop at the next succeeding floor, after which the elevator will again start to move toward the calling floor. If no call is received from the next succeeding floor before the elevator reaches the intersection point just mentioned, another acceleration characteristic is developed respective to the following succeeding floor, and the procedure is repeated. If no call is received before the elevator reaches the intersection point of the characteristics corresponding to the following succeeding floor, the elevator continues to accelerate until it reaches its maximum constant speed. As the elevator passes the floor immediately preceding the calling floor, a deceleration characteristic correlated to the calling floor is developed as a control signal and intersects the characteristic representing the maximum constant speed of the elevator at a point in advance of the calling floor such that the elevator will come to rest at the level of the calling floor.

3,526,301
DRUM BRAKE WITH AUTOMATIC ADJUSTER

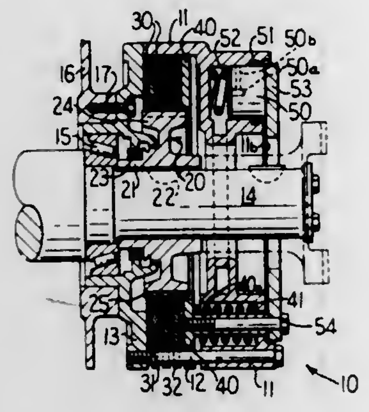
David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed Mar. 13, 1968, Ser. No. 712,847
Int. Cl. F16d *51/52, 65/56*
U.S. Cl. 188—79.5 **18 Claims**



Several embodiments of two leading shoe, two trailing shoe type internal shoe brakes embodying automatic adjusting mechanisms that are carried by the respective brake shoes. In each embodiment, the automatic adjusting device includes an extensible member carried at one end of the web of the respective brake shoe and means responsive to relative movement between the other end of the web and a fixed abutment member carried by the backing plate for adjusting the extensible mechanism.

3,526,302
DRIVE TRAIN BRAKE

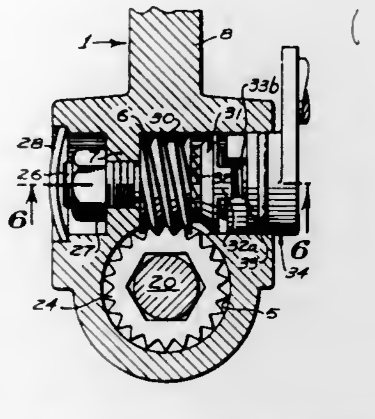
Gerald E. Grant, East Peoria, and Eugene M. Poplawski and George E. Schubert, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 654,544, July 19, 1967. This application July 24, 1969, Ser. No. 847,800
Int. Cl. F16d *65/24*
U.S. Cl. 188—170 **1 Claim**



An auxiliary and safety brake mechanism which has a housing with an internal rotatable shaft connected to be driven by a vehicle drive train, includes a plurality of friction faced discs non-rotatably mounted on the shaft, a plurality of contact plates interspaced between the friction discs and non-rotatably secured to the housing, biasing elements urging the discs and plates into engagement with one another and fluid release servo means for overcoming the biasing elements so the mechanism may function as an auxiliary brake and an automatically actuated parking brake.

3,526,303
AUTOMATIC BRAKE SLACK ADJUSTER

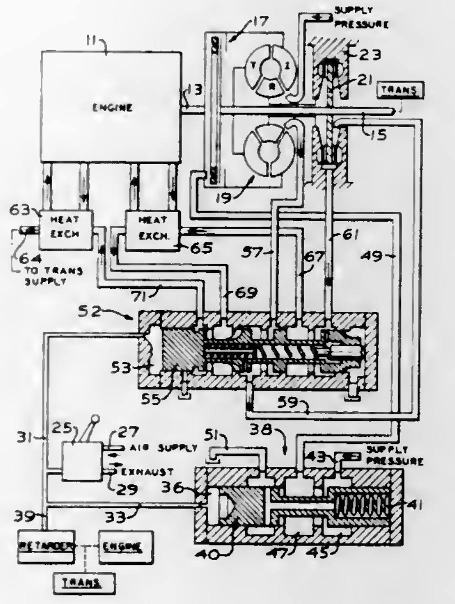
Carl L. Lodjic, Long Beach, and Donald T. McGregor, La Crescenta, Calif., assignors to Autoset Corporation, Cerritos, Calif., a corporation of California
Continuation-in-part of application Ser. No. 623,504, Mar. 9, 1967. This application Feb. 12, 1969, Ser. No. 812,942
Int. Cl. F16d *51/48, 65/60*
U.S. Cl. 188—196 **14 Claims**



An automatic brake slack adjuster incorporated in a lever structure interposed between the brake cam shaft and an operating lever; one embodiment of the adjuster having tandem related worm and worm gear drives actuated by a ratchet which advances the brake cam shaft by very small increments as the brake shoe is worn; and a second embodiment adapted to convert a conventional manual brake adjuster into an automatic brake adjuster both adjusters incorporating a coupling having limited free movement and a ratchet clutch arranged in tandem, one part being common to the coupling and the ratchet.

3,526,304
CONTROL SYSTEM FOR CONVERTER LOCK-UP CLUTCH AND RETARDERS

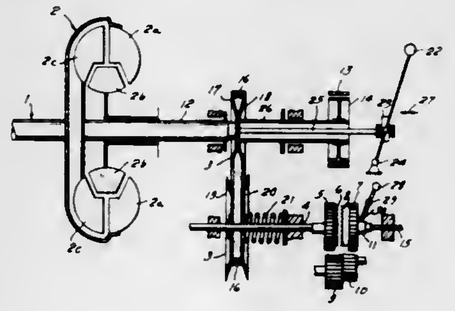
Shairyl l. Pearce, East Peoria, and Glen S. Comer, Jr., Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Nov. 29, 1968, Ser. No. 779,751
Int. Cl. F16d *67/00*
U.S. Cl. 192—3.23 **8 Claims**



A converter-retarder lock-up system for a vehicle having front and rear drive engines wherein the front transmission is directly connected to the front engine and the rear transmission is directly connected through a locked-up torque converter to the rear engine during retarding of the vehicle. The lock-up system, which includes a clutch for locking up the rear torque converter, creates an increased coolant flow through the rear engine by raising the speed of the engine to a practical value such that the fluid passing through the retarder of the rear engine is sufficiently cooled so as to eliminate the possibility of damage to the rear transmission. Pneumatically actuated valves pass hydraulic fluid from a source of supply to the lock-up clutch and also, modulatably, through the rear retarder, heat exchangers associated with the rear engine, and a front engine retarder.

3,526,305
TRANSMISSION

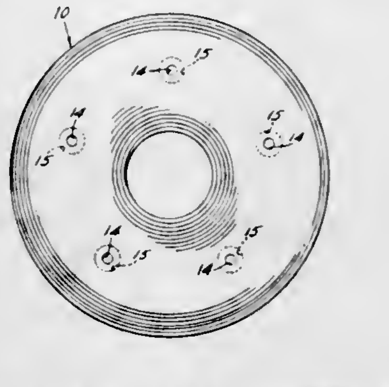
Paul August, Capellades, Barcelona, Spain
Filed Feb. 9, 1968, Ser. No. 704,311
Claims priority, application Germany, Feb. 11, 1967, P 41,396
Int. Cl. F16h *47/00, 57/10*
U.S. Cl. 192—4 **3 Claims**



A drive transmission including a fluid torque converter and a toothed mechanical drive coupling in the drive shaft train following the torque converter. A brake is used to slow or stop the rotating portion of the coupling so as to match its speed to that of the remainder of the coupling and allow engagement of the coupling parts without undue clashing of the coupling teeth.

3,526,306
CLUTCH FACING

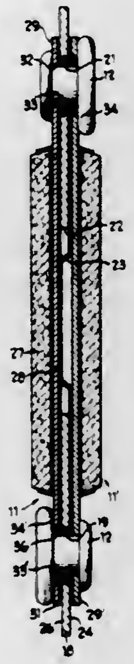
Lloyd Oscar Bentz, Lancaster, and Harold Clifford Hilton, Manheim, Pa., assignors to Raybestos-Manhattan, Inc., Manheim, Pa., a corporation of New Jersey
Filed Feb. 8, 1968, Ser. No. 704,035
Int. Cl. F16d *13/60, 65/02*
U.S. Cl. 192—107 **7 Claims**



A clutch facing formed of a compressed spiral coil of fabric of V-shaped cross section with the projecting portions of the fabric nesting within recessed portions of adjacent convolutions, the fabric being impregnated with a heat-hardening cement containing an elastomer, the clutch facing being reinforced by a spiral coil of an assembly of substantially parallel continuous glass filaments in which the individual convolutions lie between adjacent convolutions of the fabric at the apex of the recessed portions thereof, the glass fibers having a surface capable of forming a strong bond with an elastomer, and the assembly of glass fibers being impregnated with an elastomer which is vulcanizably compatible with the elastomer in the fabric cement.

3,526,307
FRICTION MEMBER

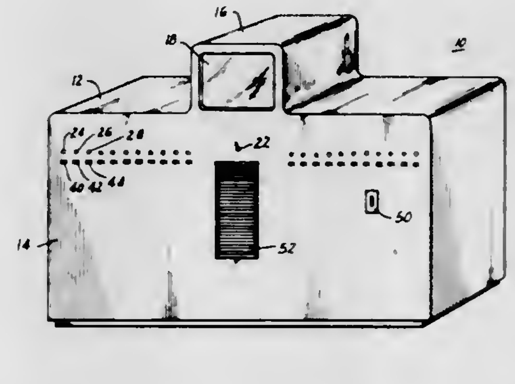
Raymond C. Falzone, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,293
Int. Cl. F16d *13/60*
U.S. Cl. 192—107 **4 Claims**



A friction member has right and left hand mounting ears, one ear is arranged to be secured to a stud-like mounting member and the other ear is arranged to slide over a similar mounting member, such that a pair of identical friction members mounted back to back provide an interlocking assembly permitting movement of the friction members toward and from each other.

3,526,308
CHECK CONTROLLED DISPENSING MACHINE WITH ARTICLE SELECTION INDICATOR

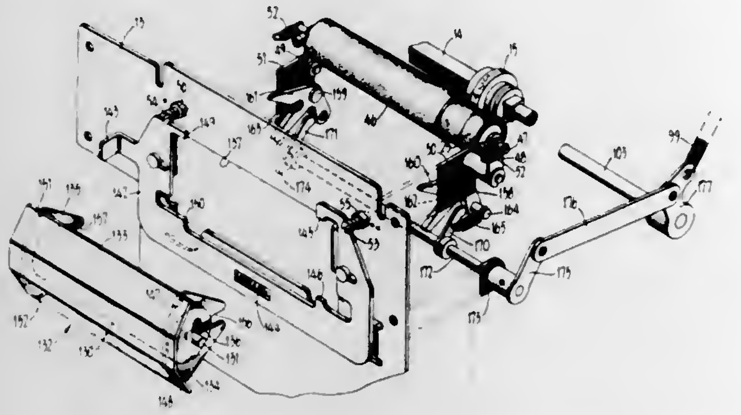
Robert O. Thomas, 1022 Alamo,
San Marcos, Tex. 78666
Continuation of application Ser. No. 570,003, Aug. 3, 1966. This application Mar. 26, 1968, Ser. No. 716,231
Int. Cl. G07f *11/00*
U.S. Cl. 194—10 **32 Claims**



A dispensing system having an advertising mode, a selecting mode, and buying mode. The advertising mode is utilized when the machine is not being operated by a prospective buyer. The selecting mode is utilized when a customer is selecting an item for delivery from the machine. The buying mode is utilized when the dispensing machine is delivering an item of merchandise.

3,526,309
INK TRANSFER ROLLER WITH INK SUPPLY INTERRUPTER FOR A TYPE WHEEL

Andre F. Marion, Berkeley, Leland D. Chamness, Castro Valley, and Kenneth H. Steward, San Lorenzo, Calif., assignors to The Singer Company, a corporation of New Jersey
Filed June 30, 1967, Ser. No. 650,501
Int. Cl. B41j *27/10;* **B41f** *31/30*
U.S. Cl. 197—150 **5 Claims**



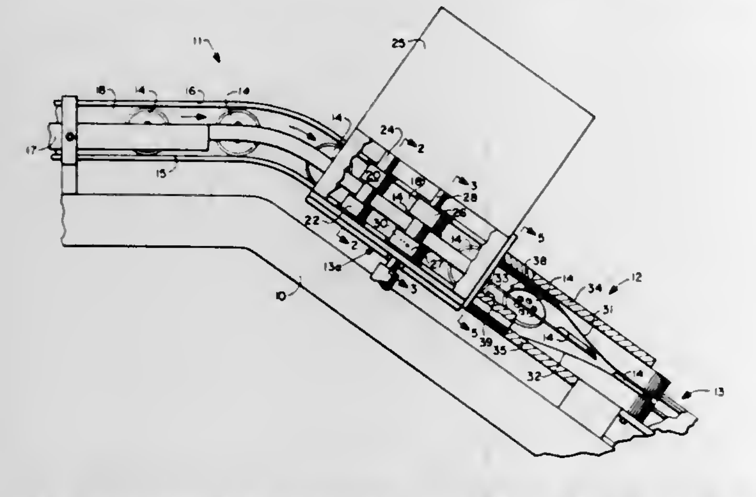
The mechanism of the invention serves as a means for intermittently supply ink to an ink transfer roller which is in constant rolling contact with the rotary printing device of a high-speed printer. Following one revolution or a plurality of revolutions of the printing device to complete a line of printed characters, a disposable self-contained ink supply roller is rocked into surface engagement with the transfer roller. Such engagement is maintained for approximately one revolution of the transfer roller.

ERRATUM

For Class 198—33 See:
Patent No. 3,526,905

3,526,310
CAP ARRANGER

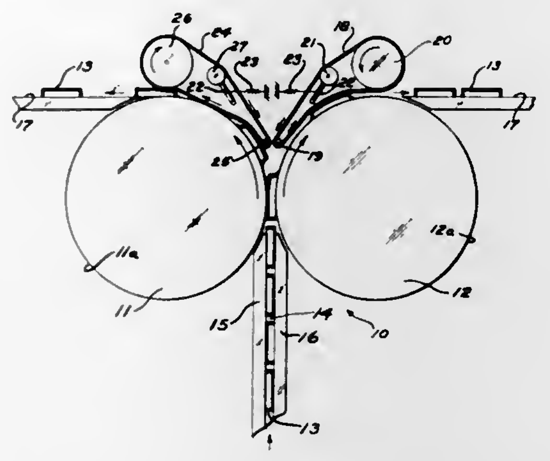
Raymond G. Tessmer, Jr., Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 6, 1968, Ser. No. 758,072
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **10 Claims**



An apparatus for arranging caps being fed through a chute at high rates so that each cap is discharged with the same orientation. A sensing device is provided to determine the initial orientation of each cap at the inlet chute and for feeding a signal to a suitable control mechanism. The control mechanism operates one of two turning jets in a turning chamber located downstream of the inlet chute such that each successive cap is rotated into the same orientation as it is fed to an exit chute.

3,526,311
APPARATUS FOR ORIENTING CLOSURE CAPS AND THE LIKE

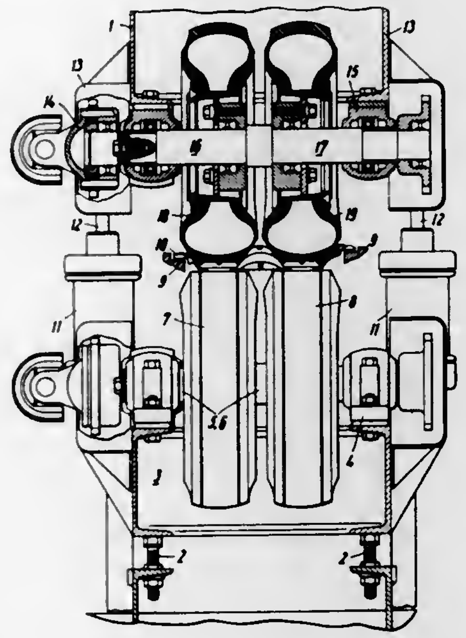
William H. Robinson, New Vienna, Ohio 45159
Continuation-in-part of application Ser. No. 778,441, Nov. 25, 1968, which is a continuation-in-part of application Ser. No. 483,252, Aug. 27, 1965. This application July 3, 1969, Ser. No. 838,748
Int. Cl. B65g *15/14, 47/24*
U.S. Cl. 198—33 **10 Claims**



From an initial position in which the open sides of dished articles may be facing in either one of opposite directions, the articles are fed successively between two moving surfaces. One of the surfaces urges the articles toward the other surface which moves the individual articles along a preselected path by frictional engagement at two discrete locations spaced apart along the edge of the open side of each article. As the articles are thus moved along said path they are simultaneously turned from their initial position to a desired position in which the open sides of all articles face in a desired direction.

3,526,312
ARTICLE CONVEYING DEVICE

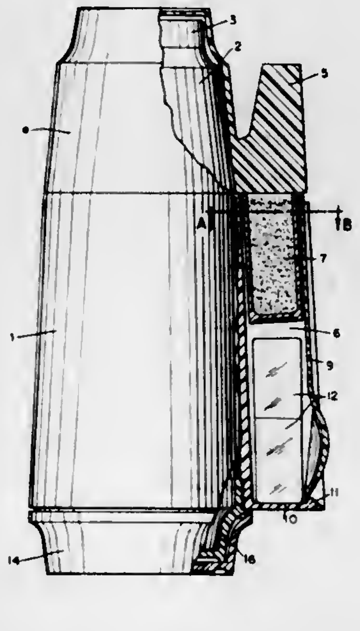
Rudolf Heinrich Braas, Bad Homburg, Germany, assignor to Redland Tiles Limited, Reigate, Surrey, England, a British company
Filed Sept. 23, 1968, Ser. No. 761,746
Claims priority, application Germany, Sept. 23, 1967, 1,531,827
Int. Cl. B65g *13/02*
U.S. Cl. 198—167 **11 Claims**



The invention provides a device for the continuous conveying of moulds, particularly roofing tile bottom half moulds, having a frame provided with a guideway for the moulds, upper and lower subframes mounted on the frame for movement towards and away from the plane of the guideway, means to effect such movement of the subframes and at least one pair of wheels with resilient tyres mounted with one wheel on each of the subframes respectively, and means to drive at least one wheel of the pair to effect movement of moulds along the guideway.

3,526,313
FOOD CONTAINER AND SERVING ACCESSORIES

Eberhard Kull, Halle, Bernhard Wetzke, Ilmenau, and Walter Griebel, Karl-Heinz Breite, and Heinrich Wiesmair, Dermbach, Germany, assignors to VEB Rhonglaswerk Dermbach, Dermbach, Germany
Filed Nov. 26, 1968, Ser. No. 778,958
Int. Cl. A45c *11/20*
U.S. Cl. 206—4 **9 Claims**

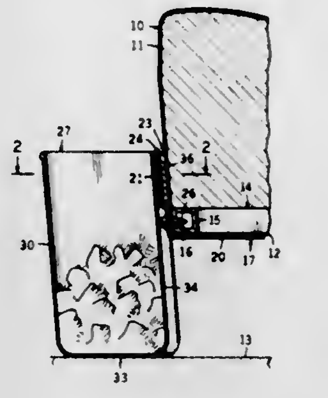


A container for food has an opening with a stopper, an elongated handle, having two sidewalls forming an elongated space therebetween, is disposed on one side of the container, a drinking cup, having a handle with a flat end, is designed to cover the opening with the stopper located therein while the flat end of the cup handle covers the upper open end of the elongated space, a separate milk container is slidably movable into said elongated space, said milk container being designed to occupy only part of the elongated space leaving additional space for storage of sugar or the like, an eating utensil like a spoon is slidably movable between the two sidewalls, said milk container, said stored sugar and said eating utensil are restrained from moving out of their position in the elongated space of the elongated handle when the flat end of the cup handle covers the upper end of the elongated space.

3,526,314
LITTER DISPOSAL UNIT FOR AUTOMOBILES

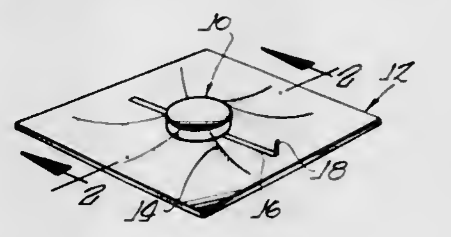
Earl M. Trammell, Jr., 39 Salem Estates, Ladue, Mo. 63124
Filed July 12, 1968, Ser. No. 744,482
Int. Cl. B65d *25/24;* **A47c** *7/62;* **B60n** *3/08*
U.S. Cl. 206—19.5 **12 Claims**

A litter disposal unit having an attachment means that secures a container to a frame member at the front side of an automobile seat, whereby to fasten and position the container against the front seat side. The attachment means includes a bracket provided with a top-open socket that is selectively interfitted by a flange on the rear side of the container. The frame member is located at the base of the front seat side, and is provided with holes at predetermined locations which are usually covered by the seat fabric, but which are selectively utilized in conjunction with fastening elements upon installation of the bracket to the seat. In one embodiment, the bracket is substantially L-shaped having one arm underlying the seat and the other arm overlapping the front seat side to provide the bracket socket. The flange, received in the socket, extends across a recessed rear wall portion of the container. In another embodiment, the bracket has a substantially U-shaped portion that forms the socket, while the container flange depends over and is spaced from the recessed rear wall portion of the container.



3,526,315
PACKAGE AND PROCESS

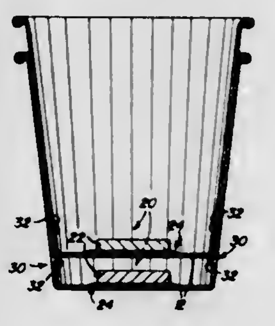
William N. Killian, Cincinnati, Ohio, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,744
Int. Cl. B65d *5/54, 85/00;* **B65b** *61/00*
U.S. Cl. 206—46 **13 Claims**



A relatively rigid tear strip is attached at one end to an article to be packaged in a film and the other end is turned outward so that upon shrinking or drawing in of the film about the article the upwardly projecting end will penetrate the film, thereby providing an exposed tab for the tear strip.

3,526,316
HYDRATABLE SUBSTANCE-CONTAINING SINGLE SERVICE DRINKING RECEPTACLE

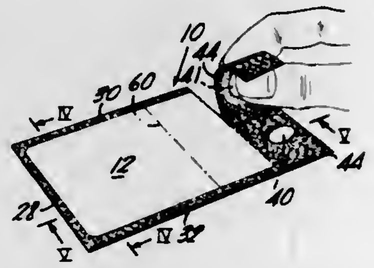
Theodore P. Kalogris, P.O. Box 30025, Bethesda, Md. 20014
Filed Aug. 8, 1968, Ser. No. 751,225
Int. Cl. B65d *85/70*
U.S. Cl. 206—47 **4 Claims**



A single service container containing a premeasured amount of hydratable concentrate for the preparation of a dentifrice solution, coffee, cocoa, etc., upon introduction of water into the drinking receptacle. The sidewall of the receptacle, adjacent the lower portion thereof, is provided with inwardly struck portions which maintain the bottoms of the nested cups spaced sufficiently, in a positive manner, whereby contact of the underside of one cup against the hydratable dentifrice, etc., in the cup immediately beneath is precluded.

3,526,317
COMBINATION DRINKING-CUP WRAPPED PRODUCT PACKAGE

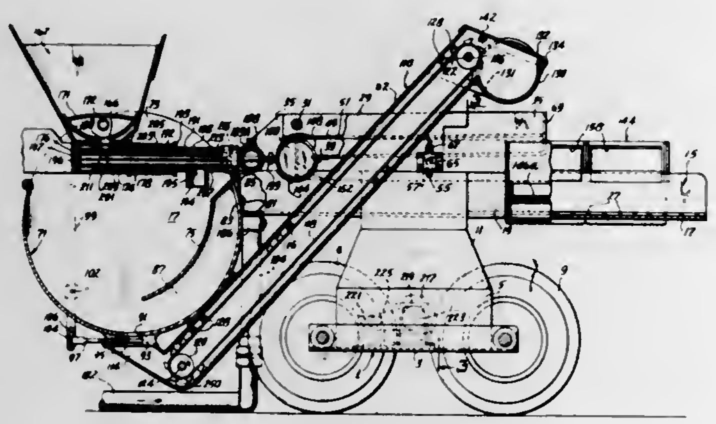
Paul Vanders, 345 58th St., Apt. 3J,
New York, N.Y. 10019
Filed Jan. 15, 1969, Ser. No. 791,464
Int. Cl. B65d *79/00*
U.S. Cl. 206—47 **10 Claims**



A combined drinking-cup wrapped product package is disclosed. The package includes a drinking-cup section made integral with a wrapped product section, the latter having hermetically wrapped therein a product, as for example, an aspirin, which normally is consumed by the user in accompaniment with taking a drink of water. The wrapped product section of the package is joined in frangible juncture with the drinking-cup section at a tear line along which tearing action can be applied to separate the wrapped product section from the drinking-cup section.

3,526,318
MOBILE SYSTEM FOR SEPARATING SOLIDS

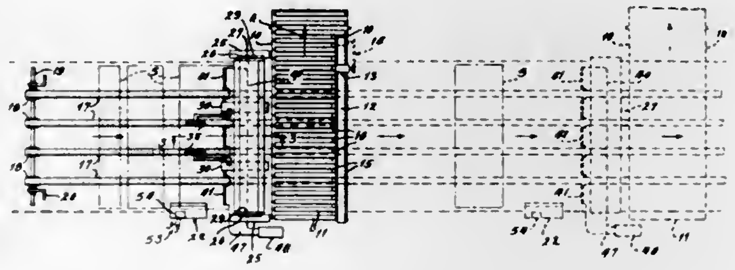
Walter A. Erickson, Box 623,
Anchorage, Alaska 99501
Filed Dec. 23, 1969, Ser. No. 887,594
Int. Cl. B03b *7/00*
U.S. Cl. 209—13 **13 Claims**



Mobile apparatus for separating solids comprising a loader bucket in which the ore is washed and very large particles removed, a receptacle wherein the ore is flushed with water removing some of the lighter particles, a screen wherein the ore is further sized, a jig wherein the final separation of heavy values occurs, and a riffled flume onto which the wastes from the receptacle, the screen, and the jig are discharged.

3,526,319
ARTICLE HANDLING APPARATUS AND CONTROL MEANS THEREFOR

Charles W. Werntz, Ferguson, Mo., assignor to Alvey, Inc., St. Louis, Mo., a corporation of Missouri
Filed Mar. 15, 1968, Ser. No. 713,365
Int. Cl. B07c *5/08*
U.S. Cl. 209—73 **9 Claims**



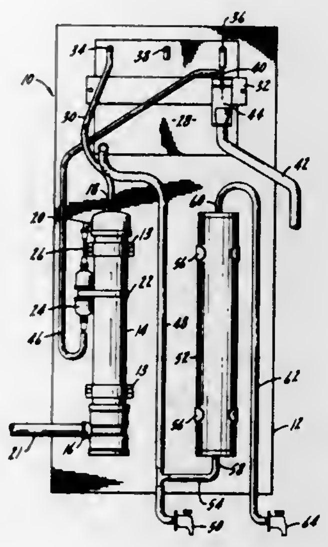
Article handling apparatus in which control means is embodied for sensing the presence of articles or material and for controlling the movement thereof such as accepting or rejecting certain of the articles or materials, as well as sensing the continuity or discontinuity of the movement of the articles or materials, or sensing the number of articles or quantity of material passing a reference station.

ERRATUM

For Class 210—77 see:
Patent No. 3,526,589

3,526,320
REVERSE OSMOSIS-ION EXCHANGE WATER PURIFICATION

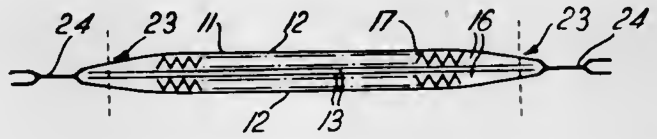
Benjamin H. Kryzer, St. Paul, Minn., assignor, by mesne assignments, to Union Tank Car Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 18, 1968, Ser. No. 698,783
Int. Cl. B01d *31/00*
U.S. Cl. 210—254 **5 Claims**



Water is purified by conducting it through a semipermeable membrane to remove impurities by reverse osmosis, storing the water, and selectively utilizing the stored water or conducting it through an ion exchange resin module. Water that has passed through the ion exchange resin will be more pure than that which has passed only through the semi-permeable membrane. The invention also provides apparatus including suitable reverse osmosis means, a water storage tank, and ion exchange resin means, connected in series by suitable pipe means. Means are provided for withdrawing water directly from the storage tank, optionally bypassing the ion exchange resin, and avoiding unnecessary exhaustion.

3,526,321
DISPOSABLE ARTIFICIAL KIDNEY

John Richard Flower, Leeds, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Oct. 10, 1967, Ser. No. 674,276
Claims priority, application Great Britain, Oct. 10, 1966, 45,258/66
Int. Cl. B01d *13/00, 31/00*
U.S. Cl. 210—321 **18 Claims**



A disposable haemodialysis pack comprising four flexible sheets laid in a stack and sealed together around their edges, the inner two sheets constituting dialysis membranes and the outer two sheets being impermeable, with inlet and outlet connections for blood communicating with the center chamber formed between the two inner sheets; and inlet and outlet connections for dialysis fluid communicating with the two chambers formed between the inner and outer sheets. A pattern of projections is moulded onto the inner surface of each outer sheet to serve as spacing means between the inner and outer sheets, and also to limit separation of the two inner sheets from one another.

ERRATUM

For Class 210—439 see:
Patent No. 3,526,590

3,526,322
FILTER BODIES

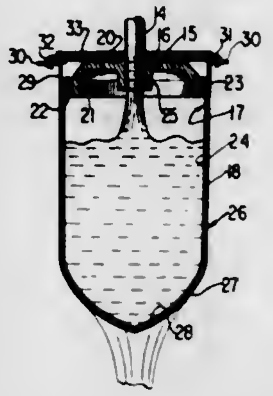
Francis H. Burroughs, deceased, late of Mercer County, N.J., by Francis H. Burroughs, Jr., and Theodora M. Burroughs, coexecutors, Barrington, N.J., and Richard N. Zebrowski, Old Bridge, N.J., assignors to Star Porcelain Company, Trenton, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 10, 1966, Ser. No. 527,398
Int. Cl. B01d *15/00, 39/20*
U.S. Cl. 210—502 **7 Claims**

Absorbent filter bodies are provided containing molecular sieves and two additional absorbents chosen from the group of silica gel, activated alumina and attapulgus clay, the body being bonded by a glass frit.

3,526,323
FILTER BAG RESTRAINER

Edward A. Smith, Glenville, Conn., assignor to GAF Corporation, Glenville, Conn., a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,157
Int. Cl. B01d *29/30*
U.S. Cl. 210—460 **2 Claims**

A restrainer for a felt filter bag or the like positioned on an adapter head containing an inlet for material to be filtered comprising an open top foraminous metallic receptacle contoured closely to surround the filter bag, and provided with resilient members extending across the top of the adapter head permitting the restrainer to yield to excessive pressure in the filter bag while precluding slippage of the bag from the adapter head.

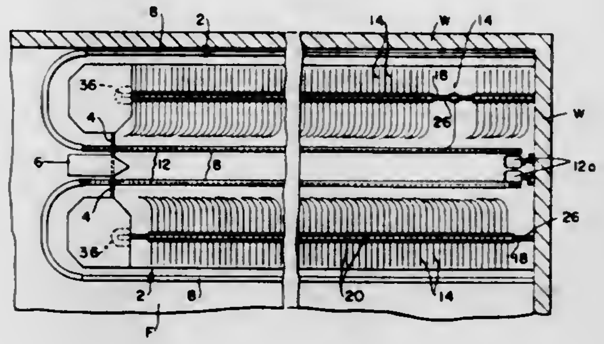


ERRATUM

For Class 210—525 see:
Patent No. 3,526,591

3,526,324
CLOTHING STORAGE AND CONVEYOR SYSTEM

Pentti I. Outinen, Viljapellontie 4C 25,
Koivistonkyla, Finland
Filed May 24, 1968, Ser. No. 731,882
Claims priority, application Finland, May 24, 1967, 1,469/67
Int. Cl. B65g *1/00*
U.S. Cl. 214—16 **17 Claims**

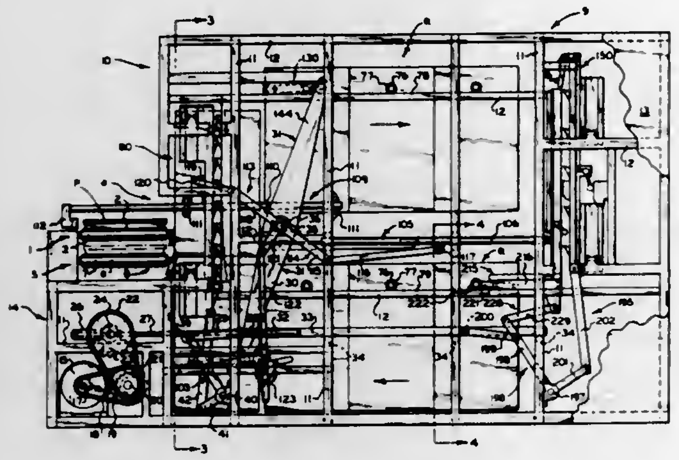


Clothing storage and conveyor system for temporarily storing articles of clothing, such as overcoats, hats and the like, e.g. in restaurants, theaters and other public places. Handling of the clothing is considerably accelerated, and under certain circumstances no attendant is needed for handling the clothing articles.

Basically the installation comprises a substantially horizontal track mechanism including one or two rails and storage means adjoining the rail or rails on one or both sides; hangers adapted for receiving the clothing are slidable along the rail; means for moving the hangers along the rail; and means for transferring the hangers from said rail to the storage means and vice versa. A pivotable arm is preferably provided along which the hanger may slide by gravitational action when transferred to the storage means and when removed therefrom.

3,526,325
APPARATUS FOR HANDLING BAKERY PRODUCTS

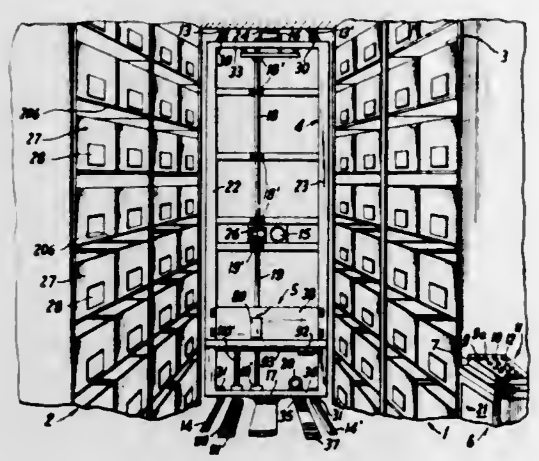
Hiram E. Temple, Saginaw, Mich., assignor to Baker Perkins Inc., Saginaw, Mich., a corporation of New York
Original application Dec. 23, 1963, Ser. No. 332,813, now Patent No. 3,319,806, dated May 16, 1967. Divided and this application Nov. 14, 1966, Ser. No. 593,777
The portion of the term of the patent subsequent to May 16, 1984, has been disclaimed
Int. Cl. B65g *65/02*
U.S. Cl. 214—16.4 **12 Claims**



An apparatus such as bakery proofers, coolers, and the like which are adapted to transport bakery products along a path from a loading station to an unloading station. More specifically, the invention relates to apparatus of this character which is adapted to facilitate the loading of racks with bakery products, the conducting of the racks containing the products along the path through a treating zone, and the unloading of the bakery products after they have been conducted through the zone.

3,526,326
STORAGE RETRIEVAL APPARATUS WITH POSITIONAL CONTROL MEANS

John A. Castaldi, Brooklyn, N.Y., assignor to Supreme Equipment & Systems Corporation
Filed Mar. 4, 1968, Ser. No. 710,290
Int. Cl. B65g *1/00*
U.S. Cl. 214—16.4 **12 Claims**

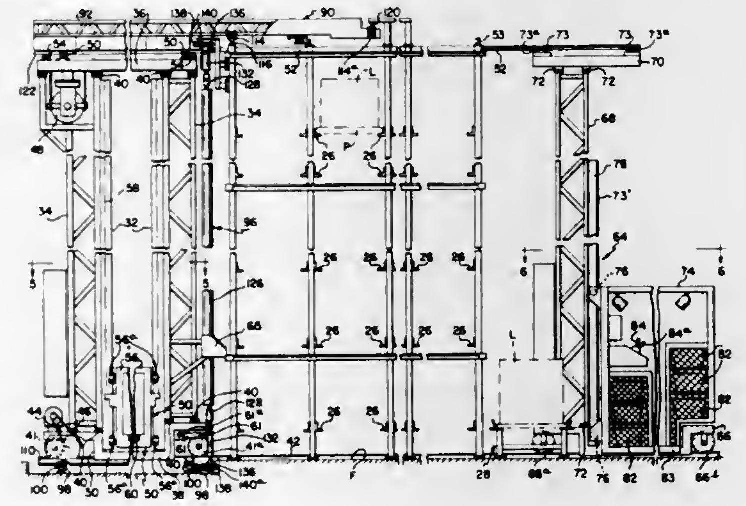


A search and retrieval system for locating objects accessible from a vertical plane, and delivering the same to a designated location. A motor driven carriage moving horizontally carries a retrieving platform, which moves vertically upon the carriage. Electro-optical scanners detect digital characters, sequentially arranged and associated with each storage bin, and relay the positions of the carriage and platform to command comparators, where an arithmetic comparison is made with digital destination signals supplied through a keyboard. Signals from the comparators actuate drive motors which move the platform opposite a desired position in a vertical X–Y plane. Digital "Slow" characters bracket each position and cause the carriage and platform to slow upon approaching a selected bin. Digital "Stop" characters cause the carriage and platform to stop at the selected position.

A magnetic extractor mechanism, automatically actuated when the platform has reached its destination, places the object upon the platform. The completion of the extractor cycle signals the carriage to move to a predetermined delivery point.

3,526,327
STORAGE AND ORDER PICKING SYSTEM

Wayne G. Atwater, Willoughby, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 26, 1968, Ser. No. 700,787
Int. Cl. B65g *1/00*
U.S. Cl. 214—16.4 **20 Claims**

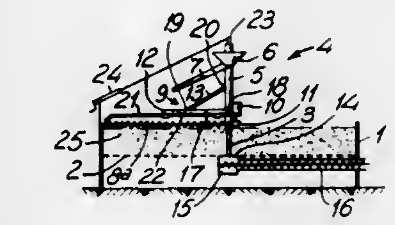


An automatic warehousing system having a plurality of generally parallel-extending aisles or travel zones with storage bays disposed on one or both sides of each of the aisles, and with there being provided at least one automatic load carrier for servicing the storage bays of the aisles. There is also provided a manually controlled order-picking unit which is adapted to move in the aisles enabling a workman riding on the order-picking unit to selectively pick small amounts of the stock from the storage bins in the storage bays. A transfer mechanism is movable on tracks extending along an end of the aisles and associated storage bays, with the transfer mechanism being adapted to receive the main load carrier or the order-picking unit thereon and shift such load carrier or the order-picking unit from one aisle to another selected aisle, thus providing for servicing by the load carrier or by the order-picking unit, of a plurality of the aisles.

3,526,328
DEVICE FOR HANDLING BULK MATERIALS, NOTABLY CEREALS

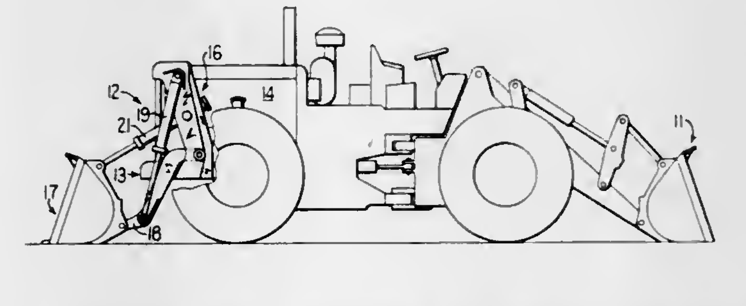
Jean-Claude Edgard Marie Garret, Saint-Nicolas d'Acy, and René Charles Pelletier, Senlis, France, assignors to Etablissements Law, Senlis, Oise, France
Filed Feb. 28, 1968, Ser. No. 709,102
Claims priority, application France, Mar. 3, 1967, 97,363; Feb. 20, 1968, 140,458
Int. Cl. B65g *65/46*
U.S. Cl. 214—17 **19 Claims**

A bulk material handling device comprises a bin having a feed device for the supply of material, and two parallel, helicoidal screws in the bin driven in rotation for displacing the material linearly, either in the same direction or in opposite directions, the screws being mounted on a support for revolving in the bin under the action of the engagement of the screws with the material, the bin also having a means for emptying material therefrom.



3,526,329
BUCKET ATTACHMENT FOR WHEEL LOADERS

Norman L. Anderson, Peoria, Howard B. Austin, East Peoria, and Dorrance Oldenburg and Jacob E. Staab, Peoria, and Robert N. Stedman, Chillicothe, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 26, 1967, Ser. No. 670,676
Int. Cl. E02f *3/70*
U.S. Cl. 214—140 **2 Claims**

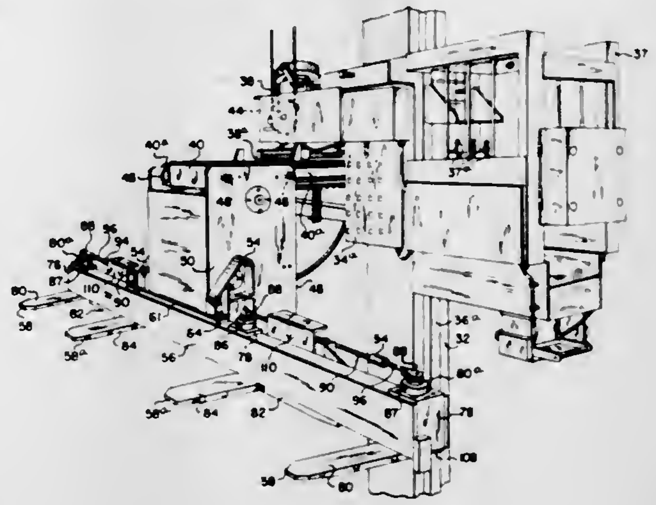


A bucket loader attachment for rearward mounting on a standard wheel loader vehicle of a type which is normally free to oscillate on its rear axle and which has a standard forward bucket. A frame pivotally supporting a bucket on lift arms is connected to the rearward framework of the vehicle. Hydraulic jacks are interposed between the frame and the lift arms and between the frame and the bucket to respectively control elevation and tilting of the bucket. Stabilizing means are provided which are operable to prevent undesirable oscillation of the vehicle caused by the rear bucket loader.

3,526,330
LOAD CARRIER WITH HORIZONTALLY PIVOTED TINE MEANS

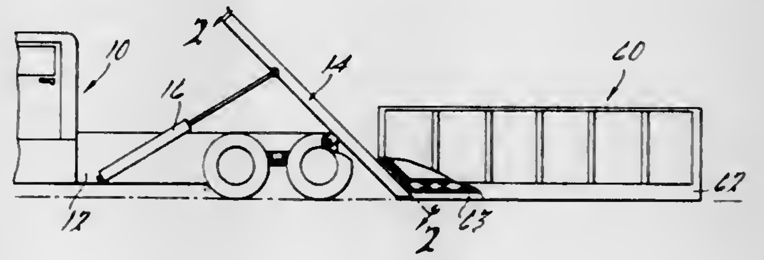
George E. Armington, Austinburg, and Charles B. Boytz, Garretsville, Ohio, assignors to The Euclid Crane and Hoist Company, Cleveland, Ohio, a corporation of Ohio
Original application July 19, 1966, Ser. No. 566,290. Divided and this application Mar. 28, 1969, Ser. No. 811,317
Int. Cl. B65g *47/00*
U.S. Cl. 214—731 **3 Claims**

A tine member for use in a load transfer and storage mechanism comprising a storage frame for receiving loads therein and a powered load carrier having an extractor portion for handling the loads. The load carrier is movable along a travel zone disposed adjacent the storage frame for depositing loads into and removing loads from the storage frame. The extractor comprises a support having a plurality of tine members spaced in lateral relation along the support, with the tine members being adapted to support a load thereon. At least some of the tine members are movably mounted on the support for pivotal movement in a generally horizontal plane about vertical axis. At least certain of the horizontally swingable tine members are of generally L-shaped configuration in plan view, comprising a pair of arms projecting generally perpendicularly with respect to one another. When an arm of the L-shaped tine member is in operative position, it is adapted to project generally perpendicularly outwardly from the support while the other arm of the respective pair is disposed adjacent the support. One of the arms is longer than the other arm so that the amount that the operative arm is projecting outwardly from the support can be varied by the pivoting by the tine member.



3,526,331
VEHICLE LOADING AND UNLOADING APPARATUS

John T. Marshall, 2484 Worcester Road, Orchard Lake, Mich. 48033; Lawrence L. Arntz, 5100 Drayton Road, and Charles V. Arntz, 8040 Reese Road, both of Clarkston, Mich. 48016
Filed May 28, 1968, Ser. No. 732,569
Int. Cl. B60p *1/64*
U.S. Cl. 214—505 **3 Claims**

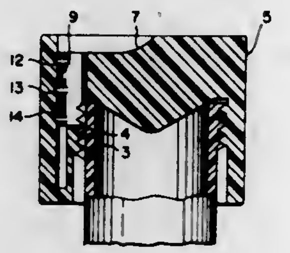


A tiltable truck platform having a longitudinally movable carriage carrying a rotatable hook to pick up or unload demountable containers.

3,526,332
LOCKING TAMPER-RESISTANT VIAL

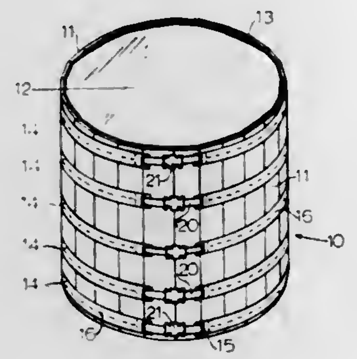
William H. Adelberger, 3823 Shannon Road, Cleveland Heights, Ohio 44118
Filed Mar. 24, 1969, Ser. No. 809,832
Int. Cl. A61t *1/00;* **B65d** *55/12*
U.S. Cl. 215—9 **6 Claims**

A container is provided with a closure member which is difficult for a child to remove, the open neck portion of the container and the closure member being threaded. The threads of the container are interrupted along a line parallel with the axis of the open neck portion and the closure member is fitted with a vertical pin within the internal periphery of the closure member. This pin serves to prevent rotation of the closure member, thus locking it. To remove the closure cap, one must first adjust the pin so that it no longer prevents rotation of the closure member, then unscrew the closure member.



3,526,333
KNOCK-DOWN TOBACCO HOGSHEAD BANDING STRUCTURE

Arnold L. Formo, 309 Lillian Road, and Arnold L. Formo, Jr., 1711 Hillcrest Drive, both of Wilson, N.C. 27893
Filed Aug. 5, 1968, Ser. No. 750,127
Int. Cl. B65d *9/02, 11/06, 9/38*
U.S. Cl. 217—44 **1 Claim**

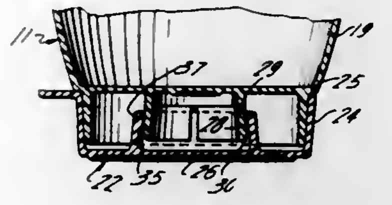


The staves of a knock-down tobacco hogshead half-section or "mat" are secured to banding straps formed of low carbon steel penetrated by securing staples or nails. The banding straps ends are formed integrally with reinforcing steel plates through which openings are punched and which allow the hogshead half-sections to be drawn together by tie straps which loop through the banding strap end openings and, while the banding straps are stressed, are clinched to provide a temporary pilfer-proof but knock-down structure.

3,526,334
DEVICE FOR STORING AND SERVING FOODSTUFFS

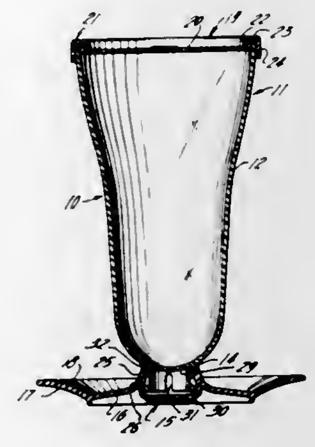
Harold P. Ashton, Providence, and James B. Swett, Barrington, R.I., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 751,989
Int. Cl. A47g *23/02;* **B65d** *21/02*
U.S. Cl. 220—23.83 **4 Claims**

A device having a plurality of containers and a handle member supporting them from the bottom. The individual containers are capable of being sealed to permit the device to be stored in a refrigerator without loss of moisture from the contents. The containers are removable so that they can be individually stored in a refrigerator without the handle member. A connecting coupling arrangement is provided between the containers and the ends of the arm on the handle member whereby the containers can be demountably interfitted in such a manner that the contour of the outside wall of the container and the outside of the arms is tightly fitted and the joint between the two parts is minimized.



3,526,335
STORAGE AND SERVING CONTAINER FOR FOODSTUFFS SUCH AS CHILLED DESSERTS AND THE LIKE

James B. Swett, Barrington, R.I., and Thomas E. Brown, Birmingham, Mich., assignors to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 752,067
Int. Cl. B65d *7/42*
U.S. Cl. 220—69 **4 Claims**



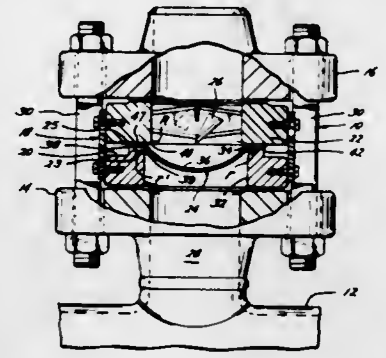
A storage and serving container in the form of a parfait dish having a sealable closure for refrigerator storage. A removable base is provided so that the container portion of the dish may be more easily handled and stored.

The base is formed as an upwardly turned saucer for serving of complementary foodstuffs such as cookies, wafers, etc. with a chilled dessert. The height and diameter relationship of various parts of the saucer portion and the container portion of the parfait dish are such that the dish can be positioned in close relationship with two or more similar dishes to minimize refrigerator storage space.

3,526,336
PRESSURE VESSEL SAFETY DEVICE

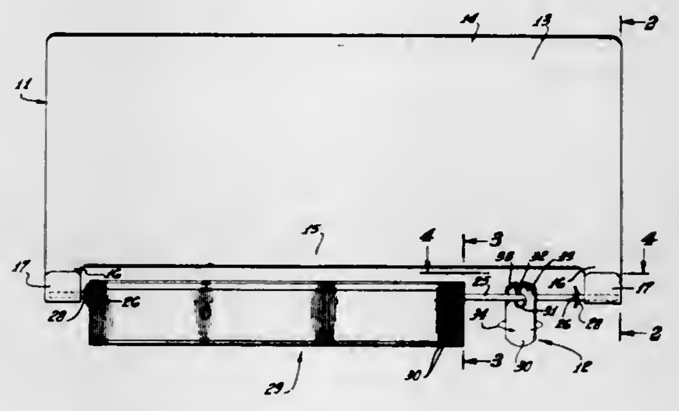
Loren E. Wood, Kansas City, Mo., assignor to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 601,440, Dec. 13, 1966. This application Jan. 2, 1969, Ser. No. 788,548
Int. Cl. B65d *25/00, 47/36*
U.S. Cl. 220—89 **14 Claims**

A reversing rupture disk type of safety device for relieving excess pressure built up within a pressure vessel, the disk being compressively supported between inlet and outlet support members wherein the inlet member is provided with a protruding annulet to permit over-bolting of the device without altering disk reversal pressure. A support ring may be positioned between the disk and outlet member to increase disk reversal pressure a predetermined amount.



3,526,337
BAG CLOSURE DISPENSER AND REFILL THEREFOR

Jerre H. Paxton, P.O. Box 2098, Yakima, Wash. 98902
Filed May 3, 1968, Ser. No. 726,304
Int. Cl. B65d *83/00;* **B65h** *3/58;* **G09f** *3/18*
U.S. Cl. 221—26 **4 Claims**

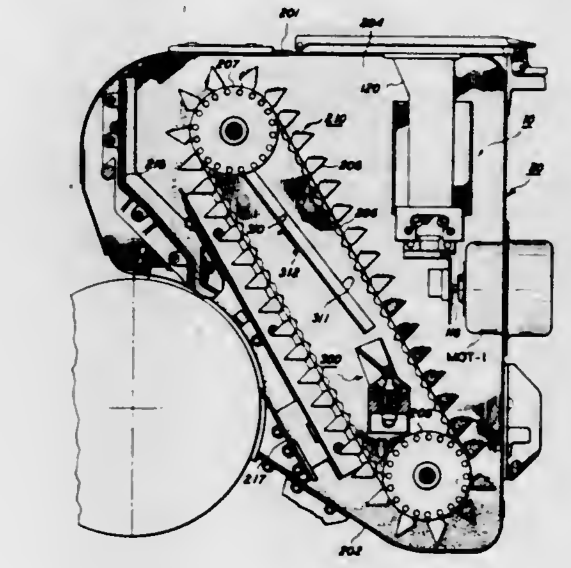


A column of stiff, flexible, flat clips, each having a bag neck confining aperture accessible through a narrow edge opening, said column being suspended horizontally by a rod extending through said apertures and supported at its opposite ends by a wall bracket, said column being confined on said rod by collars spaced apart on said rod a distance greater than the length of said column by enough space to accommodate twisting, relative to said rod, a single one of said clips, to enlarge the opening of said clip and thereby release said clip for use.

3,526,338
METHOD AND CONTROLLER FOR DISPENSING ELECTROSCOPIC MATERIAL

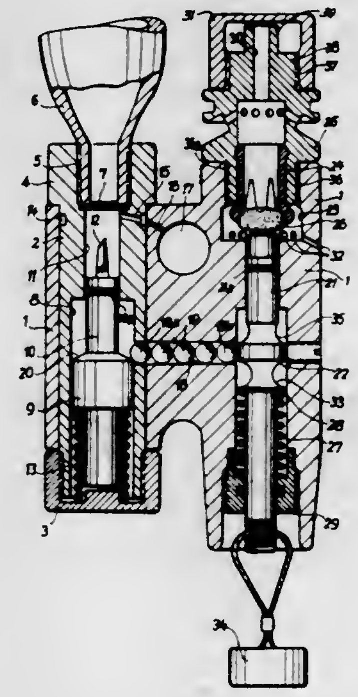
Ward R. Goodrich, Webster, and Francis D. Witinski, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 695,244
Int. Cl. B67d *5/08*
U.S. Cl. 222—1 **11 Claims**

Apparatus for controlling the density of xerographic toner powder images created on a support surface comprising transparent electrically conductive electrodes positioned in cooperative relation to flowing xerographic developer material and including a pulse generator and switching circuit to alternate the polarity of the electrodes for attracting and repelling xerographic toner powder from the electrode surface. A pair of photoelectric sensors connected into an appropriate bridge circuit are positioned adjacent the electrodes in the light path from a suitable source of light. The unbalanced output from this bridge circuit is connected to a threshold detector for controlling the actuation of a dispensing motor for driving a toner dispensing apparatus. The electrodes, pulse generator, switching circuit, and threshold detector are connected into a control circuit to determine and control the concentration of xerographic toner powder in the developing mixture and to ensure the proper polarity of the electrodes to prevent false triggering of the threshold detector.



3,526,339
DEVICE FOR INFLATING FLOATING BODIES OF LIFE-SAVING EQUIPMENT

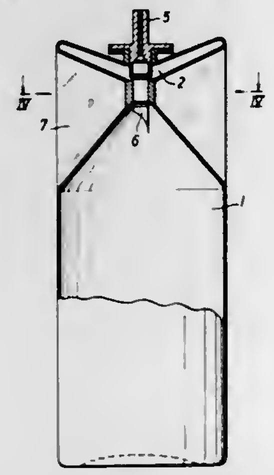
Jost Bernhardt, Hamburg, and Georg Hase, Wedel, Holst, Germany, assignors to Bernhardt Apparatebau G.m.b.H. & Co., Hamburg, Germany
Filed Dec. 11, 1968, Ser. No. 782,812
Claims priority, application Germany, Dec. 12, 1968, 1,531,673; Nov. 7, 1968, 1,807,384
Int. Cl. B67b *7/24*
U.S. Cl. 222—5 **11 Claims**



An apparatus for connection with a source of fluid pressure and with inflatable life-saving equipment for controlling the inflation of the latter in which a piercing member operable to pierce the closure member of a compressed air containing container is controlled by a spring-loaded displaceable spindle so as in one position of said spindle to prevent said piercing member from moving into its piercing position and in response to another position of said control spindle to cause said piercing member under the influence of a spring to move into piercing position.

3,526,340
INFUSION BOTTLE WITH PERMANENTLY ATTACHED DRIP CHAMBER

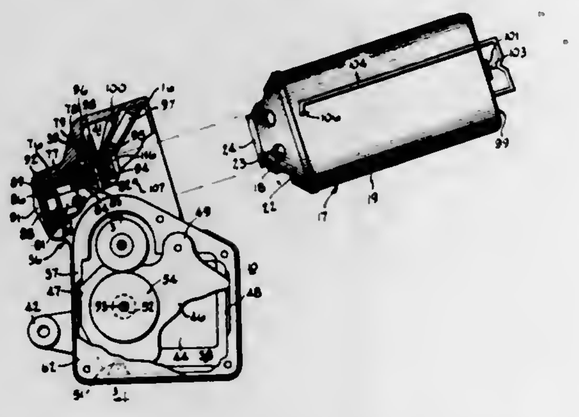
Robert Heinz, Dreieichenhain, Germany, assignor to Biotest-Serum-Institut GmbH., Frankfurt am Main, Germany, a corporation of Germany
Filed May 22, 1968, Ser. No. 731,223
Claims priority, application Germany, May 30, 1967, B 92,768
Int. Cl. B67b *7/24*
U.S. Cl. 222—80 5 Claims



Infusion bottle having an integral drip chamber, which drip chamber has elastically deformable walls and is capable of being temporarily collapsed; a neck portion between the drip chamber and the remainder of the bottle; a puncturable sealing diaphragm; and means adapted to puncture said diaphragm which means is insertible in said neck wherein such acts as a dripper.

3,526,341
POWDER DISPENSER AND CANISTER

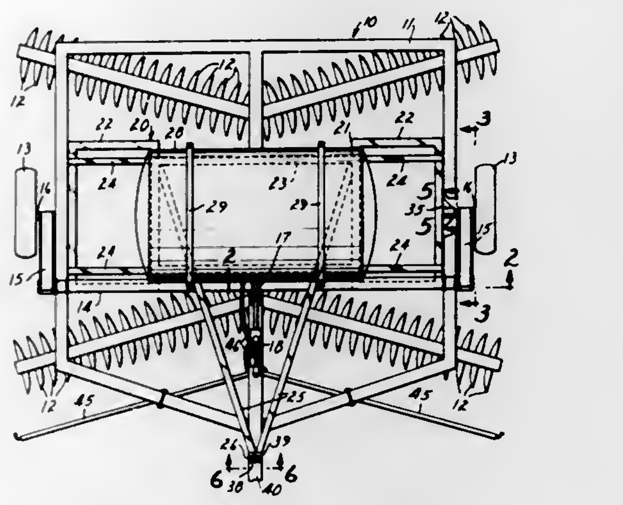
Bevan H. Johnston, La Mesa, Calif., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,097
Int. Cl. G01f *13/00*
U.S. Cl. 222—167 7 Claims



Apparatus is described for dispensing very fine powder, such as toner for an electrostatic printer. The apparatus utilizes a powder canister removably held in a rotary support. The rotary support rotates the canister to cause powder to pass out of the canister through apertures at one end.

3,526,342
APPLICATOR APPARATUS ATTACHABLE TO A WHEELED AGRICULTURAL IMPLEMENT

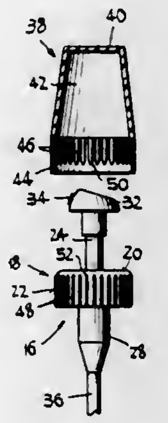
Joseph H. Pechacek, Ulen, Minn. 56585
Filed July 10, 1968, Ser. No. 743,715
Int. Cl. A01c *15/00*
U.S. Cl. 222—176 1 Claim



A frame having stub axles affixed thereto for suspending the frame on the wheels of an agricultural implement so that the frame extends above the instrument and supports a material container thereabove, for various tasks such as spraying weeds, fertilizing, etc., while adding very little, if any, weight to the frame of the agricultural implement.

3,526,343
DISPENSER SCREW CAP AND OVERCAP

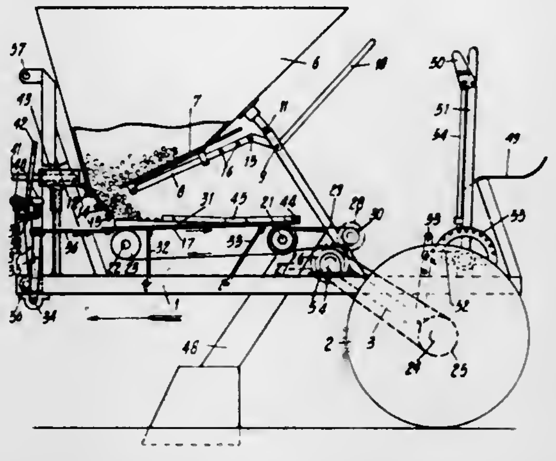
William R. O'Donnell, Trumbull, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,433
Int. Cl. B65d *83/14*
U.S. Cl. 222—182 8 Claims



A protected-type dispenser screw cap comprising an inverted cup with internal screw threads, said cup carrying a dispensing pump assemblage having a reciprocable plunger projecting above the cup. An overcap comprising an inverted cup is at its bottom rim portion frictionally held by the screw cap and encloses the projecting plunger. The screw cap and the rim portion of the overcap have cooperable ribs and grooves whereby the overcap can function as a wrench to screw the screw cap onto the threaded neck of a container. This eliminates a later assembly operation, and creates a new method of initial assembly.

3,526,344
PLANTER

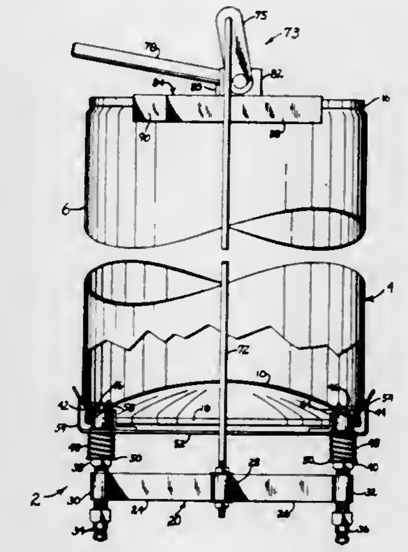
Nicolaas Petrus Koning, Hobbemalaan 64, Alkmaar, Netherlands
Filed Sept. 11, 1968, Ser. No. 758,948
Claims priority, application Netherlands, Sept. 4, 1967, 6712610
Int. Cl. B65g *47/19*
U.S. Cl. 222—196 4 Claims



For accurately regulating the feed of seed tubers such as potatoes or bulbs into a planting base a lying plate is disposed, adjacent the top of a conveyor belt, is borne on springs, performs a vibrating movement in the longitudinal direction and extends a short distance below the front wall of the storage tank, whereby on both longitudinal edges of the conveyor belt guides are disposed which so bend the top of the belt into a trough outline that at the rear end of the belt, the sides of the trough are disposed at the same height as the vibrating plate or higher.

3,526,345
CANISTER TAP

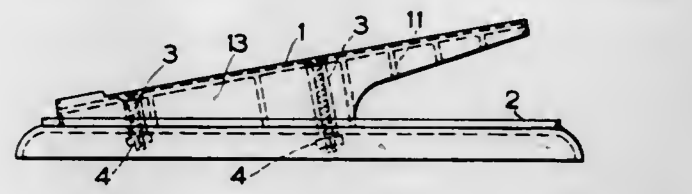
Joseph Carl Dawson, Jay B. Brown, and Enel C. Pryor, all of 93 Ford Lane, Hazelwood, Mo. 63042
Filed Dec. 21, 1967, Ser. No. 692,461
Int. Cl. B67b *7/24*
U.S. Cl. 222—83.5 12 Claims



A canister tap having a pair of upwardly projecting pipes provided with beveled cutting edges adapted to engage the bottom wall of a canister. A lever-operated drive assembly forces the canister downwardly against the pipes so that the cutting edges cut through the canister's bottom wall. Spring-loaded elastomeric bushings encircle the upper ends of the pipes and sealingwise engage the bottom wall in surrounding relation to the punctures. A nondeformable sleeve embraces each bushing to prevent deformation of the bushing under elevated pressure conditions within the canister.

3,526,346
BOOT PULLER

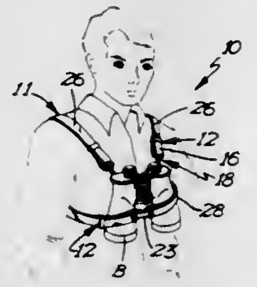
Leonard Drouillard, 530 Mill St., and Anthony Zanette, 2450 Curry St., both of Windsor, Ontario, Canada
Filed June 11, 1968, Ser. No. 736,057
Int. Cl. A41j *51/02*
U.S. Cl. 223—114 1 Claim



A device for removing boots and overshoes consisting of a forked platform bolted to a pan-shaped base in which a boot can be wedged and held while the foot contained therein is being pulled out.

3,526,347
HARNESS FOR SUPPORTING BINOCULARS AND THE LIKE

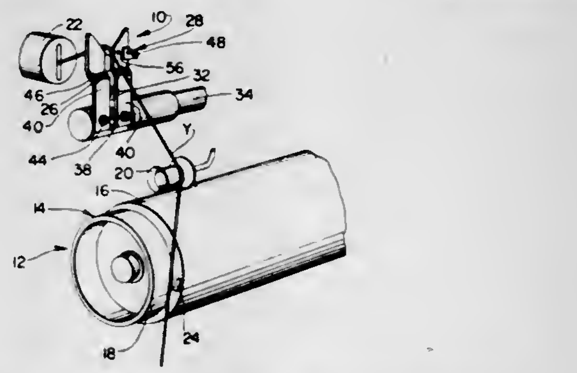
William G. Kuban, 2125 Rainer Pass, Minneapolis, Minn. 55421
Filed July 17, 1968, Ser. No. 745,570
Int. Cl. A45f *5/00*
U.S. Cl. 224—5 4 Claims



A harness device for supporting binoculars and the like, including a pair of elongate flexible straps connected to the conventional coupling elements on binoculars, and encircling the thoracic area of the user so that the binoculars are suspended against the chest of the user. One portion of the harness straps extending transversely across the body thereof along the drainage edge of the layers. The reinforcing members extend in a direction parallel to the mutually parallel layers. These reinforcing members have a greater mechanical strength than the layers to protect the layers from deformation.

3,526,348
YARN CUTTER ASSEMBLY

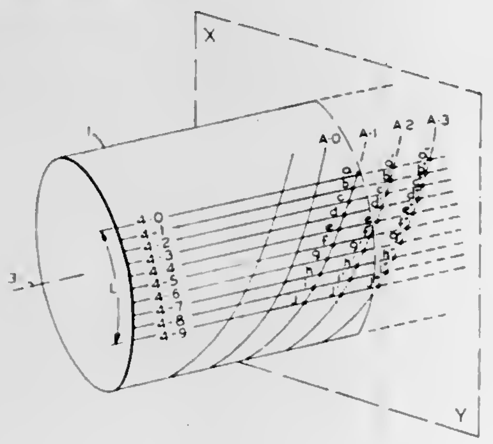
Joseph J. Morrocco III, Cranston, and Hans H. Richter, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Apr. 30, 1968, Ser. No. 725,385
Int. Cl. B26f *3/00*
U.S. Cl. 225—93 6 Claims



A yarn cutter which receives an advancing strand of yarn and holds the strand out of contact with a cutting edge by means of a retaining member. When sufficient pressure is applied by the yarn to the retaining member, the yarn is released and cut. The cutter is illustrated in combination with a take-up machine including an aspirator for advancing the yarn until it is secured to the take-up spindle when starting a new package, at which time the yarn is cut.

3,526,349
NEEDLE-BLADE ROLLER FOR MANUFACTURING NET-LIKE SPLIT FABRICS

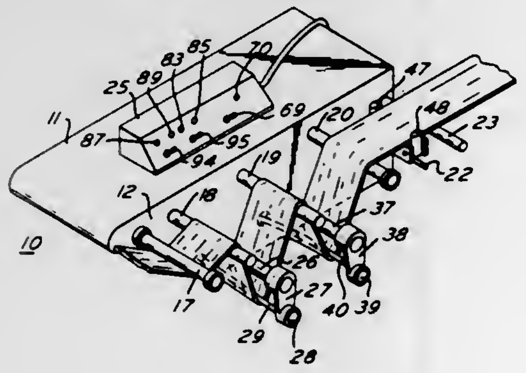
Toshio Moro, Odawara, Japan, assignor, by direct and mesne assignments, of one-half each to Ikegai Tekko Kabushiki Kaisha, and Showa Denko Kabushiki Kaisha, both of Tokyo, Japan
Filed Aug. 23, 1968, Ser. No. 754,924
Claims priority, application Japan, Oct. 3, 1967, 42/84,349
Int. Cl. B26f *3/00*
U.S. Cl. 225—97 **1 Claim**



A needle-blade roller for manufacturing a net-like fabric from a synthetic resin film has a plurality of needle-blades secured on its periphery, whereby the needles are arranged on the periphery of the roller at each intersection point of even-numbered multi start spiral lines thereon with lines parallel to the axis of the roller dividing the circumferential length between every other spiral lines into odd-numbered regular intervals.

3,526,350
TOW DIRECTOR

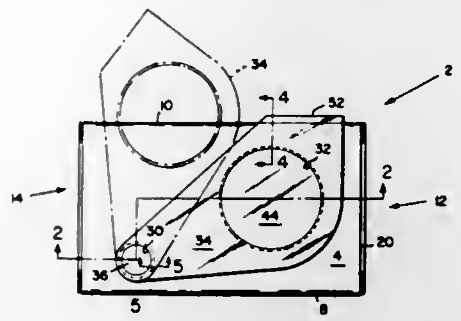
George E. Tradewell, Hatfield, and James L. Lohrke, Birmingham Township, Chester County, Pa., assignors to R. H. Hood Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 3, 1968, Ser. No. 726,401
Int. Cl. B65h *25/06, 25/26*
U.S. Cl. 226—18 **10 Claims**



A tow director having detector and control elements for returning a tow band to a centered position, and for narrowing or widening the tow band to confrom to a predetermined standard, the control elements being accessible at free ends thereof for mounting or removal of the tow band.

3,526,351
CONTAINER

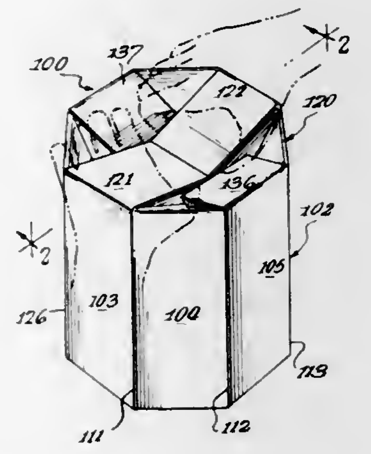
Mark Goldstein, Haddonfield, N.J., assignor, by mesne assignments, to Logistics Industries Corporation, Philadelphia, Pa., a corporation of New York
Filed Apr. 25, 1968, Ser. No. 724,066
Int. Cl. B65d *5/72*
U.S. Cl. 229—7 **1 Claim**



A container formed by a plurality of walls has one wall with a plurality of spaced openings. A resilient strip has a pair of spaced undercut bosses, one of which is anchored in one of the openings, and the other of which is removably secured in the other opening to provide a readily removable closure therefor.

3,526,352
POLYGONAL CARTON WITH SNAP-ACTION SELF-LOCKING END CLOSURE

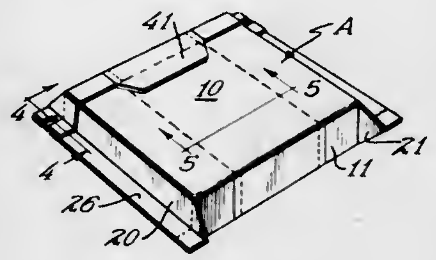
Duncan F. Swett, Camp Hill, Pa., assignor to Stone Container Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 13, 1968, Ser. No. 775,304
Int. Cl. B65d *5/08*
U.S. Cl. 229—39 **10 Claims**



A dispensing carton of generally rectangular polygonal shape formed from a unitary blank of foldable material. The carton has a collapsible self-locking end closure provided by a plurality of hingedly interconnected flap elements joined to the side panels of the carton and arranged to be manually folded inwardly in a snap-action to releasably lock the end closure in a closed position. The end closure can be opened and closed repeatedly without requiring additional securing means for holding the end closure in a closed position. The end closure has hand-grip formations provided by certain of the flap elements for manually manipulating said end closure between its closed position and its extended open condition to permit access to the contents of the carton. The contents of the carton may be packaged in a separate sleeve or bag carried inside the carton. A plurality of embodiments for the carton and modifications in the unitary blank from which the cartons can be erected are contemplated.

3,526,353
STERILE PACK CARTON

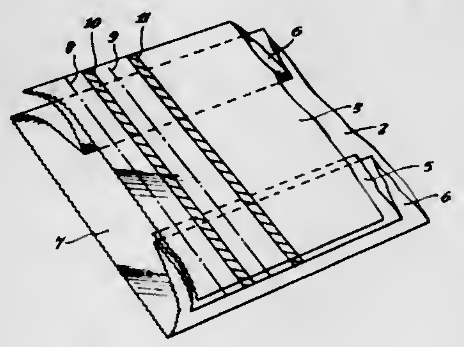
Harold R. Jaeschke, Milwaukee, Wis., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Apr. 9, 1968, Ser. No. 719,978
Int. Cl. B65d *5/54*
U.S. Cl. 229—51 **10 Claims**



The invention discloses a tubular sleeve having end closures including closure flanges and sealing flanges. The closure flanges on the top and bottom panels are folded into end abutting relation, and the sealing flanges are sealed in face contact. The closure flanges on the side walls are diagonally creased so that the sealing flanges may be folded flat to provide double thickness struts which project from the carton ends and extend beyond that carton side walls. Opening means are provided which are so arranged that the sterile contents may be removed without becoming contaminated.

3,526,354
PAPER OR LIKE BAG

Gilbert Leslie Gibbs, Frampton Cotterell, near Bristol, England, assignor to E S & A Robinson Limited, Bristol, England, a company of Great Britain and Northern Ireland
Filed Sept. 18, 1968, Ser. No. 760,627
Claims priority, application Great Britain, Sept. 19, 1967, 42,618/67
Int. Cl. B65d *33/16*
U.S. Cl. 229—57 **1 Claim**

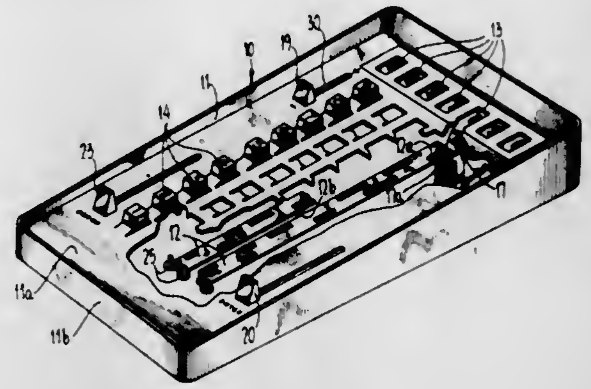


Paper or like bag with a double turned up bottom having a lip at its bottom edge to provide an improved sift proof bag.

3,526,355
CALCULATOR

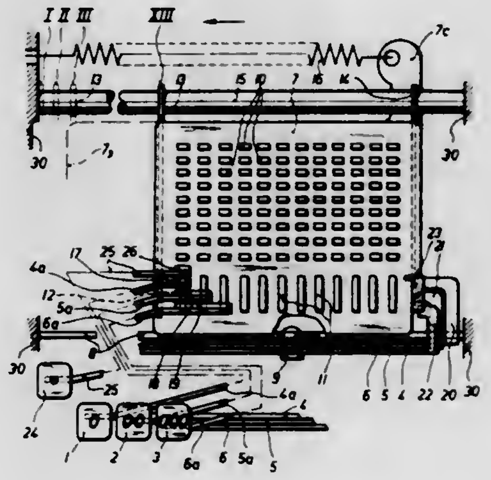
Maynard E. Anderson, Pleasanton, Calif., assignor to Alyn-Dale, Inc., a corporation of California
Filed May 1, 1968, Ser. No. 725,747
Int. Cl. G06c *29/00*
U.S. Cl. 235—59 **24 Claims**

A low-cost calculator having slide bars or equivalent means for actuating a plurality of numbered dials and including keys which remain in actuated position to permit verification of entry or trial entries, means for resetting or restoring the operated keys to a home position while simultaneously resetting the numbered dials to the original count shown thereon before key actuation, a keyboard and cover which supports and provides necessary guides for the operating mechanism, means for manually setting the machine to selectively add or subtract numbers, and a novel mechanism for affecting the carry-over of a number from one dial to the higher order dial and which allows the numbers to be entered in any order of key actuation.



3,526,356
ZERO KEY LOCKING ARRANGEMENT FOR A TEN KEY CALCULATOR

Alfred Hesse, Wilhelmshaven, and Gebhardt Braun, Froschhausen, near Hanau, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed Aug. 20, 1968, Ser. No. 754,076
Claims priority, application Germany, Aug. 23, 1967, 1,549,340
Int. Cl. G06c *7/02, 25/00*
U.S. Cl. 235—60.28 **10 Claims**

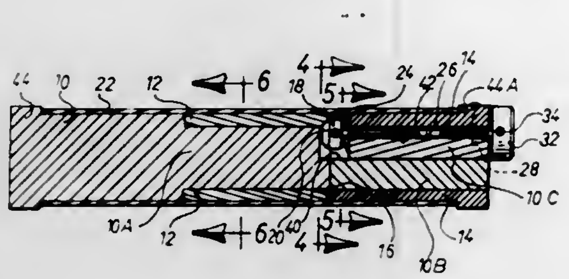


The zero keys of a ten key calculator are blocked in an initial position of the pin carriage, and also in the ordinal positions of the pin carriage associated with the lowest orders, in order to prevent a reduction of the capacity of the calculator by operation of the zero key in the respective positions of the pin carriage.

3,526,357
CIRCULAR SLIDE RULE

Joseph Bernard Rosaire Lefebvre, 75 Ste. Anne Appt. 11, Quebec, Quebec, Canada
Filed July 16, 1968, Ser. No. 745,188
Int. Cl. G06c *27/00;* **G06g** *1/02*
U.S. Cl. 235—79.5 **3 Claims**

A circular slide rule consisting of a cylindrical body having an axial extension of smaller diameter, on which are mounted in end-to-end relation two cylinders: the one at the end of the extension being secured to said extension and the other one being free to rotate around the extension, and including means to rotate said last-named cylinder operable from the free end of the extension, so as to angularly adjust the position of the intermediate cylinder relative to the cylindrical body and endmost cylinder, so as to properly align circularly disposed scales inscribed on the cylindrical body and two cylinders.



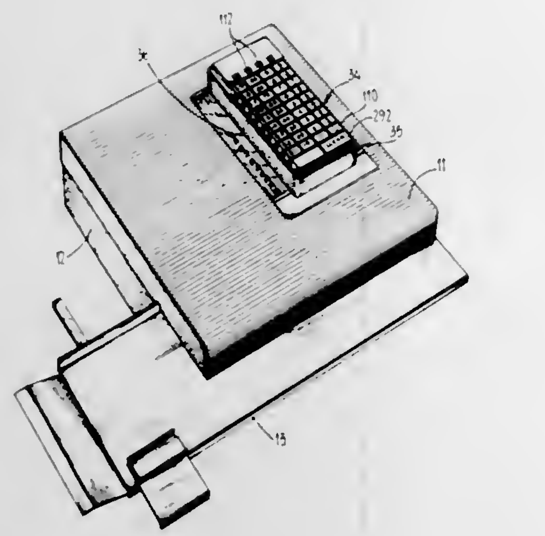
3,526,358
VALUE ENTERING MECHANISM

John F. Reus, Hayward, George C. Wu, Newark, and Nathaniel F. Hawthorne, Alameda, Calif., assignors to The Singer Company, a corporation of New Jersey

Filed Apr. 29, 1968, Ser. No. 725,006

Int. Cl. G07g *1/00;* **G06c** *7/02*

U.S. Cl. 235—101 **15 Claims**



A full-key keyboard for a postage meter with ordinally arranged rows of value keys, the keys in each row representative of values "1" to "9" in the tenths of cents order, "1" to "9" in the units of cents order and the hundredths or dollar order and "10" to "90" in the tens of cents order of the keyboard. A selected value key in each ordinal row, upon depression, is latched in depressed position and thereafter prevents depression of any other key in the corresponding row. Upon operation of the latching mechanism for each depressed key, a normally latched value selection slide is released for differential adjustment in accordance with the value represented by the depressed key. With the adjustment of the selection slide, the value is visually indicated on selection setup wheels and mechanism is adjusted for entry of the value in an ascending and descending register. When a change of value, or values, is desired, a "CLEAR" key is operated to effect release of previously depressed keys, return the selection slides to latched position and restore the setup wheels to "0" registration.

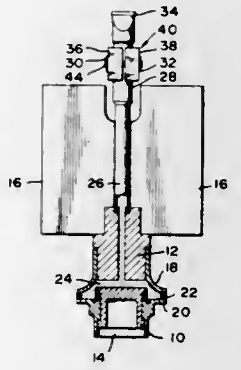
3,526,359
MOUNT FOR THERMAL CONTROL SYSTEM

T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, in respect to an invention of William J. Kearns, Arcadia, Calif.

Filed Sept. 12, 1968, Ser. No. 759,457

Int. Cl. H05b *1/00*

U.S. Cl. 236—1 **5 Claims**



Apparatus for controlling the temperature of a component, comprising a mounting block of high thermal conductivity clamped to the component, a heating element mounted on one side of the block to heat it, and a temperature sensing element mounted on the other side of the block to measure the mounting block temperature.

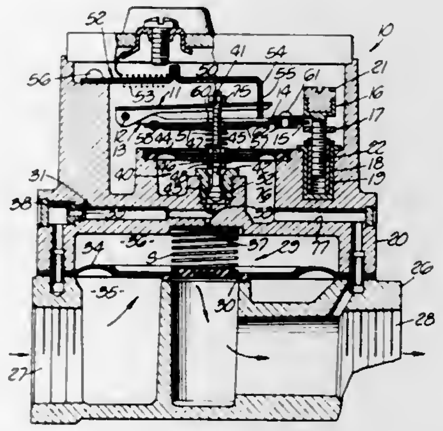
3,526,360
MAIN LINE VALVE WITH PILOT REGULATOR

William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 18, 1968, Ser. No. 768,732

Int. Cl. F16k *31/02, 31/165*

U.S. Cl. 236—68 **11 Claims**



The invention includes a diaphragm type main line gas valve for a gas furnace which is controlled by a pilot. The pilot is a diaphragm type pressure regulator. However, a bimetallic strip with a heater is employed to overcome the regulator action to cause the main valve to open or to close. A control circuit is also provided in combination with the regulator, strip, and heater to cause regulating action selectively at two different regulated pressures in the outlet of the main valve to provide for a low fire and a high fire.

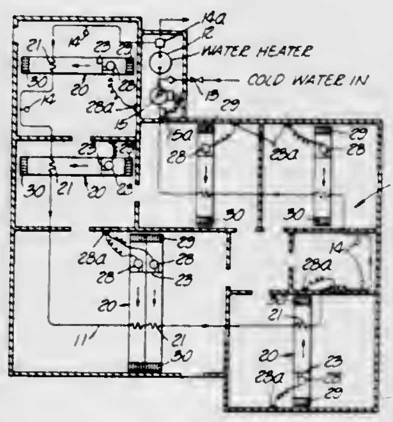
3,526,361
HEATING SYSTEM

James R. Piper, Palos Verdes, Calif., assignor to Balance-Flo, Inc., Newport Beach, Calif., a corporation of California

Filed Jan. 10, 1968, Ser. No. 709,518

Int. Cl. F24d *3/02, 3/08*

U.S. Cl. 237—8 **12 Claims**



A heating system, using a potable hot water supply normally associated with today's homes and apartments, which continually circulates hot water in a closed circuit through a series of heat exchange coils through which air is passed by means of a thermostatically controlled fan to provide heat to the rooms of a building. Structurally members already essential to the construction of the building are utilized to conveniently form the plenum as an integral part of the heat exchanger apparatus used in the heating system.

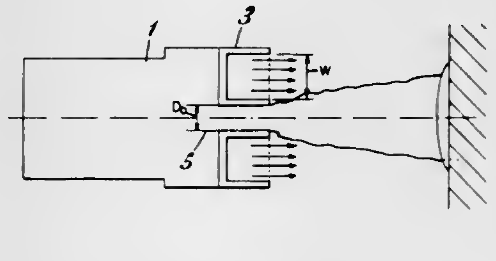
3,526,362
METHOD FOR SHIELDING A GAS EFFLUENT

John E. Jackson, Indianapolis, Ind., assignor to Union Carbide Corporation, a corporation of New York

Original application Jan. 16, 1968, Ser. No. 698,268, now Patent No. 3,470,347, dated Sept. 22, 1969. Divided and this application May 28, 1969, Ser. No. 842,072

Int. Cl. B44d *1/08*

U.S. Cl. 239—1 **4 Claims**



A method wherein a gaseous effluent such as an arc effluent is protected from contamination by its surrounding environment by surrounding such effluent with a coaxial annular stream of gas having a width which is in the range of from 0.25 to about 4.0 times the square root of the diameter of the orifice, measured in inches, in the nozzle, and which has a value for the square root of the momentum flux of greater than 2.0 lb.$^{1/2}$/sec. ft.$^{1/2}$.

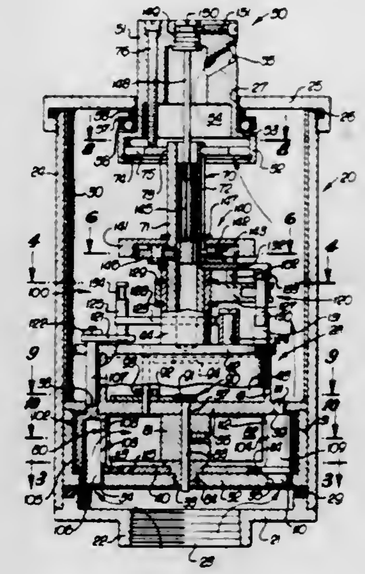
3,526,363
SPRINKLER

Fred Hauser, 1544 Midvale Ave.,
Los Angeles, Calif. 90024

Continuation of application Ser. No. 759,479, Sept. 12, 1968. This application Aug. 19, 1969, Ser. No. 852,978

Int. Cl. B05b *3/00*

U.S. Cl. 239—206 **9 Claims**



A pop-up type of water sprinkler in which a water operable motor drives a rotatable sprinkler head, in an oscillating part-cycle motion discharging water over a particular arcuate sector. The size of such sector may be manually adjusted during operation of the sprinkler.

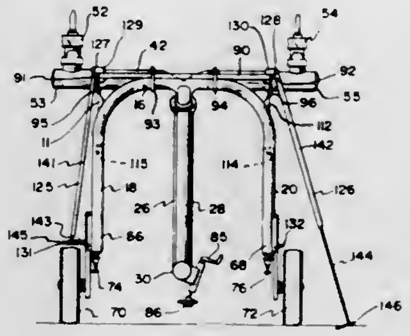
3,526,364
LIGHTWEIGHT MOBILE SPRINKLER UNIT

Morley M. Hattis, Chicago, Ill., assignor, by mesne assignments, to White Farm Equipment Company, Chicago, Ill., a corporation of Delaware

Filed Sept. 18, 1968, Ser. No. 763,051

Int. Cl. B05b *15/06*

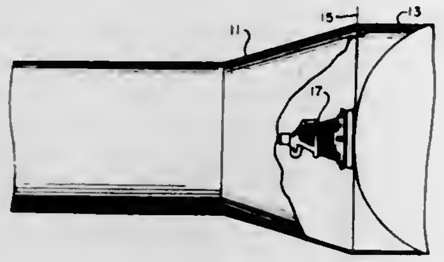
U.S. Cl. 239—212 **16 Claims**



A lightweight mobile sprinkler unit for irrigating crops and the like, comprising lightweight tubular members which are detachable for shipping and which are hollow so that they can be filled with water at the sprinkling site to provide ballast weight for stabilizing the sprinkler unit when it is in operation. The tubular members may be constructed and arranged so that the unit can be used to irrigate crops of appreciable height such as corn with minimal damage to the crop. Preferably, the unit includes two detachable frame sections, the first section being in the form of an upwardly extending generally inverted, U-shaped frame section and the second section being in the form of a generally vertical frame section which is connected to and extends from the bight portion of the U-shaped frame section. One or more sprinklers are connected to the upper end of the second frame section.

3,526,365
COLLAPSIBLE NOZZLE EXTENSION FOR ROCKET ENGINES

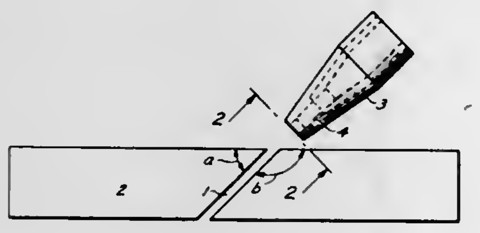
T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Warren E. Darrow, Jr., Huntsville, Ala., and Billy C. Ursery, Guntersville, Ala.
Filed May 21, 1968, Ser. No. 730,733
Int. Cl. B64c *15/06*
U.S. Cl. 239—265.43 **5 Claims**



A collapsible nozzle extension for a rocket engine comprising a set of conical extension sections that are telescoped in the collapsed position and mate end to end in the extended position. The conical sections and existing engine nozzle are interconnected by a plurality of folding and extending linkage arms, each comprising a series of pivotally connected links, circumferentially spaced around the nozzle. The links incorporate springs that urge the folded linkage arms and thus the conical extension sections toward the extended position, and the arms are latched in the folded position by a mechanism that releases the arms for nozzle extension.

3,526,366
OXYGEN-JET CUTTING TIP

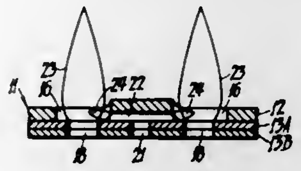
William F. Rothrock, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed May 7, 1968, Ser. No. 727,185
Int. Cl. B05b *7/06*
U.S. Cl. 239—424 **2 Claims**



A tip for an oxygen-jet cutting torch makes a bevel cut in a metal workpiece wherein conduits delivering preheating gas are asymmetrically spaced around a conduit delivering the cutting jet of oxygen. These preheating conduits are positioned so that fewer deliver gas onto the acute angle side of the bevel cut than onto the obtuse angle side, and thereby avoid overheating of the acute angle. To supplement this asymmetrical spacing, those conduits heating the acute angle side may be sized smaller than those heating the obtuse angle side. In addition, a tip containing a removable insert member having a bore forming the oxygen-delivering conduit, having grooves in its outer surface through which the preheating gas passes, and which is closely surrounded by a sleeve, may be used for either perpendicular or bevel cuts by selecting an insert member having either symmetrically or asymmetrically spaced grooves.

3,526,367
GAS BURNER

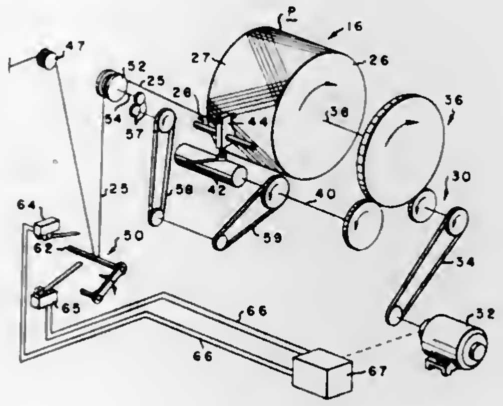
John Massey Tribey, Burwood, Victoria, Australia, assignor to Vulcan Australia Limited, Burwood, Victoria, Australia, a corporation of Australia
Filed May 9, 1968, Ser. No. 727,883
Claims priority, application Australia, May 12, 1967, 21,656/67
Int. Cl. B05b *1/14*
U.S. Cl. 239—556 **6 Claims**



A gas burner in which a combustible gas and air mixture issues from a chamber through openings in the chamber wall as a plurality of jets. The wall comprises inner and outer sheet members disposed face to face and the inner sheet member is perforated by a plurality of holes which communicate with said openings via passages defined between the sheet members whereby small jets are formed at the bases of the main jets.

3,526,368
METHOD AND APPARATUS FOR WINDING THREAD

Grady H. Sanders, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed June 10, 1968, Ser. No. 735,922
Int. Cl. B65h *54/06*
U.S. Cl. 242—18 **8 Claims**

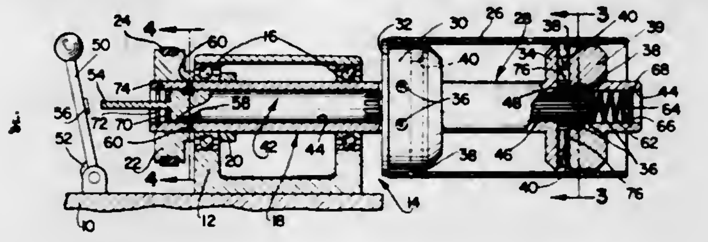


Method and apparatus for winding a continuous thread onto a rotating support surface in a desired pattern wherein the tensional forces tending to displace the thread from the path in which it is laid on the support surface are minimized by imparting feeding force to the thread during abrupt changes in the direction of the thread lay path and by reducing the force resisting linear movement of the thread onto the surface.

3,526,369
CHUCK SPINDLE

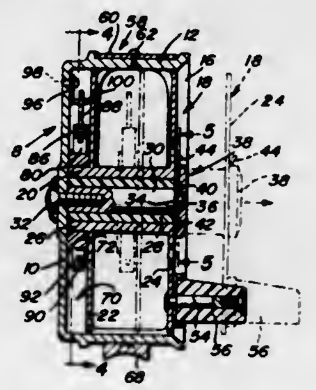
Walter L. Beckwith, Jr., Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Nov. 9, 1967, Ser. No. 681,847
Int. Cl. B65h *75/30;* **B23b** *31/12*
U.S. Cl. 242—46.4 **14 Claims**

A spindle including a chuck for mounting a yarn package tube. The chuck is so constructed that chuck members are resiliently urged into gripping engagement with the tube and maintain substantially the same force against the tube regardless of centrifugal force developed upon rotation of the spindle.



3,526,370
FISHING REEL WITH AUTOMATIC DRAG BRAKE

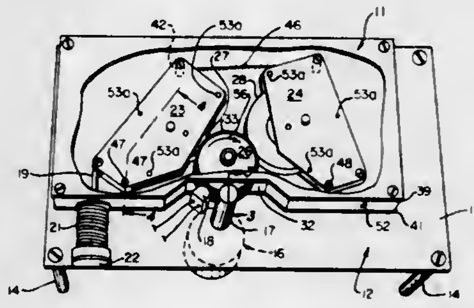
Alyre L. Arsenault, 14 Trueman Ave., Moncton, New Brunswick, Canada
Filed Mar. 19, 1968, Ser. No. 714,174
Int. Cl. A01k *89/02;* **F16d** *69/00*
U.S. Cl. 242—84.5 **6 Claims**



A cup-like housing provides a receiver for an insertable and removable line reeling and storing spool. The hub of the spool is rotatable on an axial spindle carried by the cheek plate of the housing. The outward or forward end of the spindle has a reduced headed neck providing detent means for a spring-biased spool assembling and retaining latch accessibly pivoted on a cap-like adapter fastened on the outward disk or head of the spool. The extended inner end of the spool's hub abuts the cheek plate and is encircled by an isolated brake drum surrounded by a stainless spring steel split brake band. The split terminal ends carry a pivoted latch which is trippable by a forked retaining bracket fixed on the cheek plate.

3,526,371
TAPE TRANSPORT APPARATUS AND INTERCHANGEABLE CARTRIDGE THEREFOR

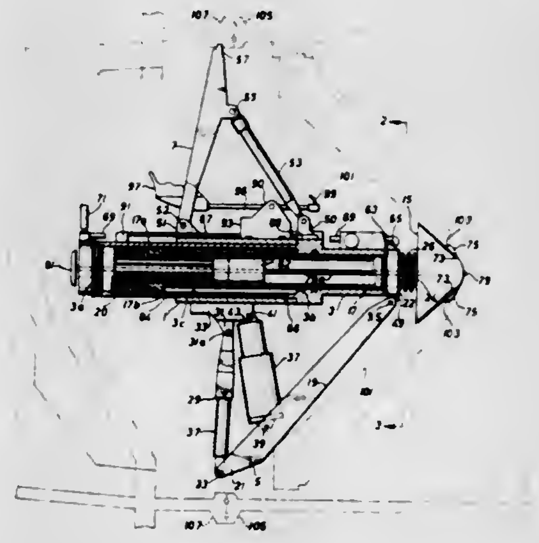
James W. F. Blackie, Sunnyvale, Ashley J. Hollingsworth, Atherton, and Chester W. Newell, San Jose, Calif., assignors to Newell Industries, Inc., Sunnyvale, Calif., a corporation of California
Filed Apr. 29, 1968, Ser. No. 725,113
Int. Cl. G11b *15/32*
U.S. Cl. 242—192 **10 Claims**



A tape transport apparatus of a type employing a motor and drive spindle or capstan cooperates with a removable cartridge containing supply and take-up rolls of tape arranged to advance and retreat relative to an idler carried by the cartridge. The drive capstan cooperates with the idler and thereby advances tape from one roll to the other.

3,526,372
EXPANDING CENTER PROBE AND DROGUE

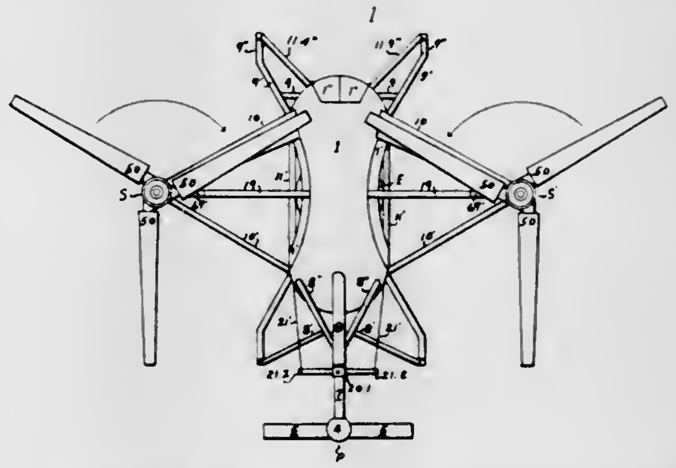
T. O. Paine, Acting Administrator of the National Aeronautics and Space Administration, in respect to an invention of Crosby E. Fentress, Santa Monica, Calif.
Filed Feb. 27, 1969, Ser. No. 802,816
Int. Cl. B64g *1/00*
U.S. Cl. 244—1 **7 Claims**



A cooperating probe and drogue assembly for mechanically linking respective space vehicles upon completion of rendezvous maneuvers. The probe, which is mounted at an end of one of the vehicles, is characterized by a telescoping boom which is extended or retracted by a plurality of arms mounted thereon. The end of the boom carries a contact head having capture latches which are adapted to engage an cooperating drogue mechanism on the rear of a target vehicle. Subsequent to initial coupling of the vehicles the boom is retracted so as to bring the vehicles into full abutting contact whereupon they are structurally locked to one another.

3,526,373
ROTARY WINGED AIRCRAFT

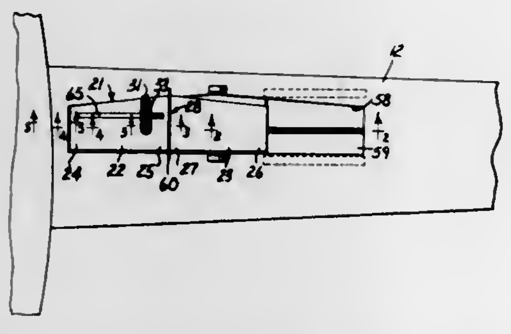
Frank W. McLarty, 337 S. Edgefield Ave., Dallas, Tex. 75208
Original application Oct. 4, 1957, Ser. No. 688,318, now Patent No. 3,273,653, dated Sept. 20, 1966. Divided and this application June 29, 1966, Ser. No. 562,935
Int. Cl. B64g *27/48, 27/54*
U.S. Cl. 244—17.27 **7 Claims**



This invention relates to a rotary wing-type aircraft having paired sustaining rotors mounted side-by-side with respect to a fuselage, each rotor being flexibly mounted by a hub connected to a vertical shaft with means being provided for limiting relative movement between the blades of each rotor.

3,526,374
COMBINATION HYDROFOIL AND WHEEL APPARATUS FOR AMPHIBIOUS AIRCRAFT

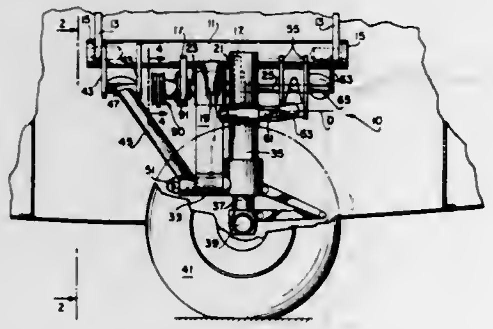
William B. Risken, 4004 N. Herald St.,
Spokane, Wash. 99206
Filed Aug. 12, 1968, Ser. No. 752,006
Int. Cl. B64c *25/66*
U.S. Cl. 244—101 **11 Claims**



A combination hydrofoil and wheel apparatus is described for enabling an amphibious aircraft to land on water or on the ground. The hydrofoil is foldable from a flat cruising position housed in a well underneath the wing section to a landing V-shaped position projecting downward beneath the wing section. A lead screw is connected to one end of the hydrofoil. A wheel is mounted on the hydrofoil for movement along one leg of the hydrofoil from a raised position adjacent the wing section to a landing position with the wheel projecting below the hydrofoil.

3,526,375
RETRACTABLE LANDING GEAR ARRANGEMENT

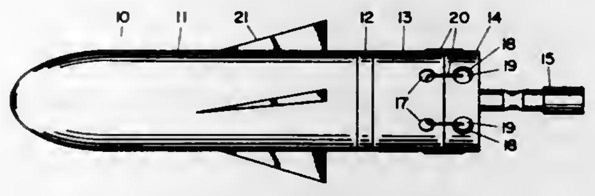
Lloyd C. Stearman, Northridge, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 29, 1968, Ser. No. 701,181
Int. Cl. B64c *25/12, 25/26*
U.S. Cl. 244—102 **12 Claims**



A retractable landing gear assembly for an aircraft, which, upon retraction, is so oriented as to place the wheel and its main load carrying member into parallel relationship in shallow depth in the aircraft fuselage, and when utilized in combination with a like gear assembly, such orientation includes a tandem relationship in the fuselage of the retracted wheels. A lateral strut is so linked to such carrying member so as to provide for effecting the parallel relationship, and a drag strut linked to the carrying member provides for effecting the tandem relationship for the wheels of a pair of such gear assembly. The gear has all of its elements supported by a detachable single support member. An auxiliary trip mechanism is further provided to ensure the sequential retracting and lowering operation of a pair of these gears on the aircraft in order to avoid interference between the wheels during such retraction or lowering.

3,526,376
AIR DROPPABLE APPARATUS

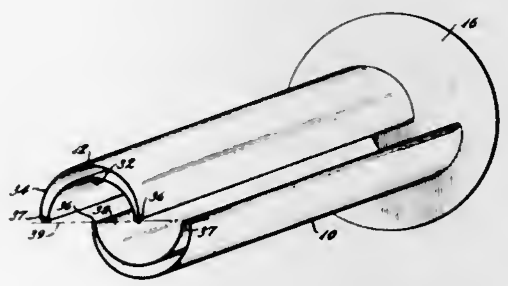
Blanchard Cain, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 12, 1969, Ser. No. 806,581
Int. Cl. B64d *1/02*
U.S. Cl. 244—138 **8 Claims**



An air drop radio beacon wherein the housing is provided with auto-rotation means and contains a series of weights attached to elastic lines. During the travel of the radio beacon through the atmosphere, the weights are centrifugally deployed about the beacon and contribute to the stability thereof as well as providing tree top retention by entanglement with the ground cover.

3,526,377
AUTOROTATOR KITE

Abraham Flatau, Joppa, Md.
(P.O. Box 657, Edgewood, Md. 21040)
Filed May 22, 1967, Ser. No. 640,243
Int. Cl. B64c *31/06;* **A63h** *27/08*
U.S. Cl. 244—153 **5 Claims**



This invention relates to an improved autorotator which comprises in cross section a high efficiency lift airfoil rotationally transformed. A pair of airfoil members based on the rotationally transformed airfoil are positioned with their undersides generally face to face with the trailing edge of each airfoil member positioned at about the center line of the undersurface of the other airfoil member An improved kite is formed with these airfoil members and oversized end plates having central bearing members for attachment of stationary tethering members.

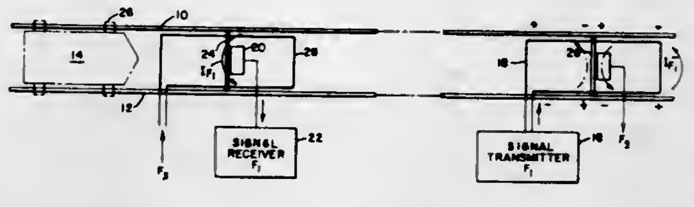
3,526,378
SIGNALING SYSTEM FOR DETERMINING THE PRESENCE OF A TRAIN VEHICLE

George M. Thorne-Booth, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1967, Ser. No. 662,711
Int. Cl. B61l *21/00*
U.S. Cl. 246—34 **12 Claims**

Audio frequency signals, operative with track circuits for the purpose of sensing the presence of a train vehicle in any signaling block circuit, are modulated for fail-safe speed control of train vehicles and for train operation information transmission.

The train track is divided into signaling blocks of predetermined length, with a very low impedance short circuit connection placed across the track rails at the ends

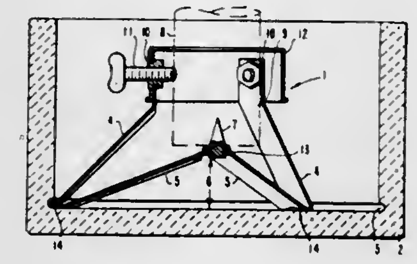
of each such block. A signal transmitter operating at one of several audio carrier frequencies, with its output modulated at a subaudio rate, is coupled to the rails across the short circuit connection at one end of each block.



One or more cooperative signal receivers are coupled to the short circuit connection at the remote end of each block; intermediate receivers are coupled to the rails as required for desired train control.

3,526,379
CHRISTMAS TREE STAND

Kurt Schwaderlapp, Baumbach, Westerwald, and Anton Schoplocher, Ransbach-Baumbach, Germany, assignors to Jasba-Keramikfabriken, Jakob Schwaderlapp K.G., Baumbach, Germany, a corporation of Germany
Filed Dec. 13, 1967, Ser. No. 690,283
Int. Cl. A47g *33/12*
U.S. Cl. 248—44 **10 Claims**

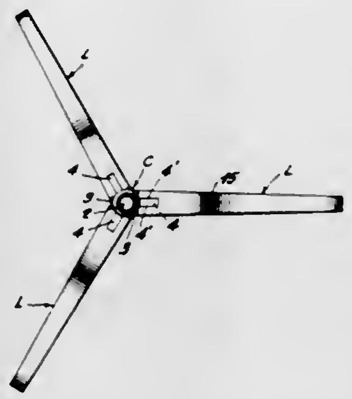


A Christmas tree stand comprises a holder ring with radial set screws for fastening the tree trunk in the ring, and a container or pot to be filled with water into which the trunk end is to be submerged. Radially protruding arm structures are attached to the ring and have their outer ends engage the container wall, preferably by catching into one or more recesses. In one type of stand, the arm structures are elastic and extend from the ring in a downwardly inclined direction so that the weight of the tree tends to spread the arm ends outwardly into reliable engagement with the container. In another type of stand, the arm structures are substantially rigid and engage respective helical recesses which extend downwardly from the rim of the container.

3,526,380
COLLAPSIBLE STAND FOR CHRISTMAS TREES AND THE LIKE

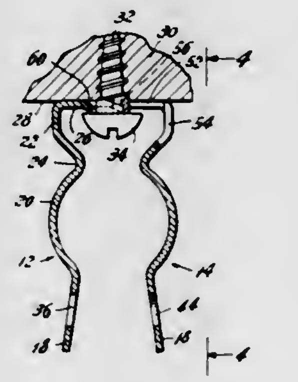
Duncan Tong, 23C Robinson Road,
Victoria, Hong Kong
Filed Feb. 21, 1968, Ser. No. 707,110
Int. Cl. A47g *33/12*
U.S. Cl. 248—46 **5 Claims**

A collapsible tree stand which is preferably molded of plastic material and which comprises an upstanding hollow central core member of substantial depth, provided with a plurality of equidistantly spaced abutments extending from the external surface thereof, to each of which is pivotally mounted a molded plastic leg having a bifurcated end for embracing the respective abutment for pivotal movement around an axis near the bottom of the latter, between an inoperative position of the legs extending downwardly from the lower end of the core member to an operative transversely disposed position whereat the bifurcated end abuts against the substantial height of the core member to impart stability to the latter. The legs are preferably molded in the form of a web with opposed flanges extending from the perimeter thereof, which presents outwardly extending flanges at the bifurcated end of the legs which seat against complementary surfaces molded on the exterior of the central core member.



3,526,381
PIPE HANGER

Frank W. Pepe, 637 Prospect Drive,
Lordship, Conn.
Filed Apr. 29, 1968, Ser. No. 724,970
Int. Cl. F16l *3/00*
U.S. Cl. 248—71 **10 Claims**

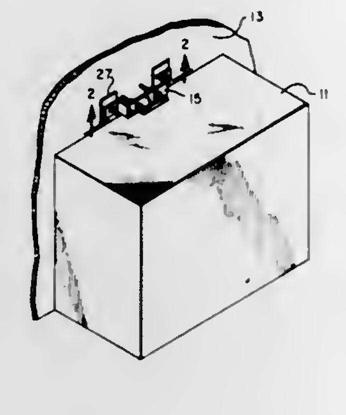


A pipe hanger of the suspended clamp type which cannot inadvertently dislodge itself from a connecting screw when initially installed and after the screw has been once tightened on the clamp, and which responds to the tightening of the screw to thereafter prevent inadvertent loosening thereof. The clamp has a bent tab construction which overlies the head of the securing screw to positively engage therewith when the hanger is initially installed and which partially closes a lateral access opening in the securing portion of the hanger during tightening of the screw, and also acts as a built in lock washer to resist turning of the screw in the non-tightening direction.

3,526,382
QUICK DISCONNECT LATCH AND HANDLE COMBINATION

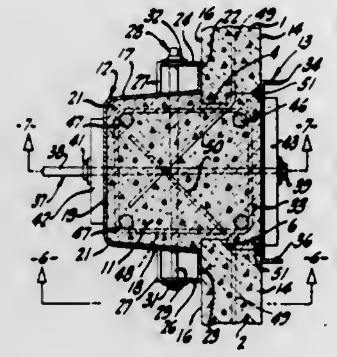
Lewis R. Coker, Madison, and Charles A. MacKay, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 15, 1968, Ser. No. 744,910
Int. Cl. B65d *25/28*
U.S. Cl. 248—360 **7 Claims**

A quick disconnect latch and handle combination for mounting an article, such as an equipment container, on a wall or other supporting base. The device attaches to the article, provides a handle for manipulating the article, and a latch that engages within holes in the supporting base to secure the article thereon. The latch mechanism is operated with the hand while gripping the handle.



3,526,383
BUILDING FORM STRUCTURE

David H. Keyston, Burlingame, Calif., assignor to Anza Pacific Corporation, Burlingame, Calif., a corporation of California
Filed Aug. 8, 1967, Ser. No. 662,265
Int. Cl. E04g *11/00, 13/02*
U.S. Cl. 249—19 **12 Claims**

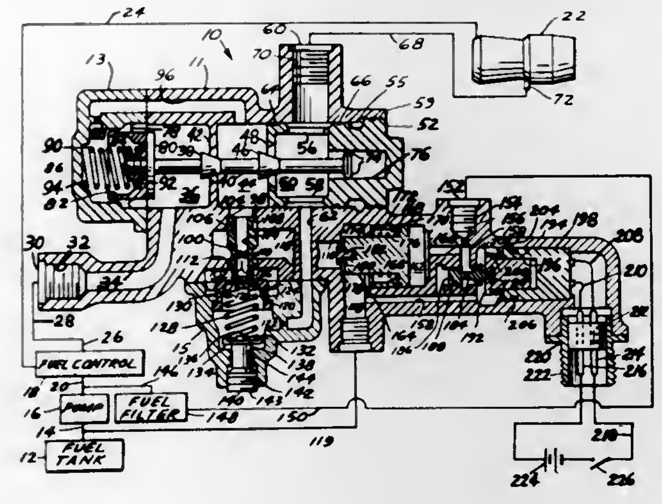


A reusable building form structure defined by two rigid, pre-formed, self-supporting form members; and a method of utilizing the same with building wall panels to bridge a space therebetween so that a settable construction material introduced into such space may be held in place while setting. At least one form member is channel shaped having tapered walls to facilitate its separation from the column formed by the settable construction material.

3,526,384
FUEL TRIMMING VALVE

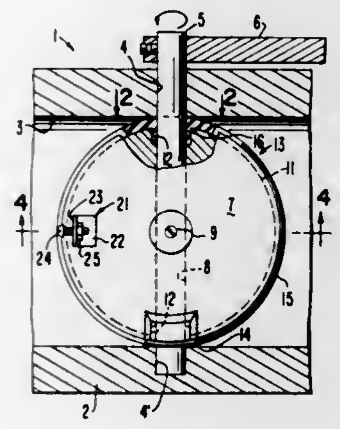
Julius Alberani, Dearborn, and Carl F. Schorn, Birmingham, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed Oct. 26, 1967, Ser. No. 678,341
Int. Cl. F16k *31/12;* **F02c** *9/10*
U.S. Cl. 251—14 **8 Claims**

This application discloses what may be termed as a fuel trimming valve adapted for, but not necessarily limited to, use in a gas turbine engine powered aircraft armed with forward firing rockets for automatically reducing, by some fixed percentage, the total fuel metered to the engine by the engine fuel control, the device being self-compensating for variations in fuel temperature and preferably actuated simultaneously with the firing of the rockets, in order to prevent overspeeding or over temperature of the engine that may otherwise result from increased compressor intake temperature due to the aircraft flying into the hot exhaust stream of the rocket.



3,526,385
O-RING WITH INTEGRAL STEM SEALING MEANS AND BUTTERFLY VALVE USING SAME

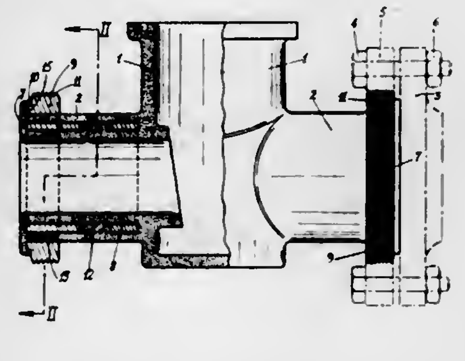
Daniel F. Rohrer, Hillsboro, Oreg., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 19, 1968, Ser. No. 706,481
Int. Cl. F16k *1/226*
U.S. Cl. 251—306 **5 Claims**



A butterfly valve assembly is disclosed. The valve assembly includes a disk-shaped valve disposed within the cylindrical bore of a valve housing. The cylindrical bore defines the fluid passageway to be valved. The housing contains a smaller transverse bore intersecting the fluid passageway at right angles to accommodate a valve stem passable therethrough. The valve stem passes diametrically into and through the midplane of the valve disk. The disk is fixedly secured to the valve stem for rotation by means of the valve stem, which extends to the outside of the valve housing. The valve disk includes a peripheral groove for containing a resilient O-ring for sealing the valve disk to the walls of the fluid passageway. The peripheral groove in the valve disk and the O-ring both include diametrically opposed annular portions surrounding the valve stem. In addition, the peripheral groove is counter-bored around the valve stem to receive a radially directed sleeve portion of the O-ring which protrudes inwardly from the annular portion for sealing the valve stem to the valve disk. In addition, the diametrically opposed annular portions of the O-ring, which surround the valve stem, continuously seal the transverse bore in the valve housing to the valve disk. The resultant butterfly valve assembly is extremely simple and inexpensive to construct, since the one integral O-ring provides both the valve seal and the stem seal and the O-ring is carried upon the valve disk.

3,526,386
VALVE OF PLASTIC MATERIAL

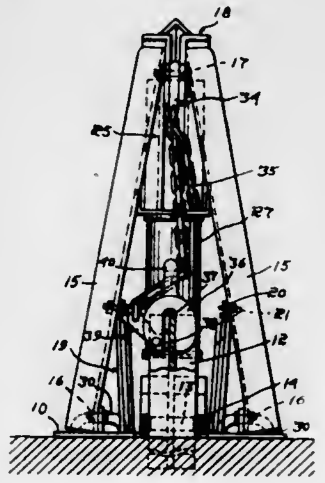
Jean Gachot, 179 Avenue de la Division Leclerc, Enghien, Val d'Oise, France
Filed June 24, 1968, Ser. No. 739,297
Claims priority, application France, June 30, 1967, 112,613
Int. Cl. F16k *27/00*
U.S. Cl. 251—366 **7 Claims**



The valve has tubular branches of plastic material which provide a connection with a piping system. A rigid strengthening core is inserted within the plastic material of each valve branch and is provided at the end remote from the valve body with a threaded ring which is adapted to project from the valve branch and on which the valve-clamping flange is intended to be mounted.

3,526,387
POST PULLERS

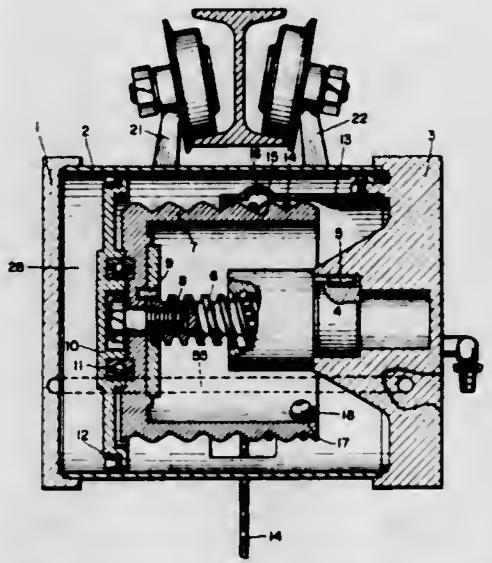
Howard B. Fleming, South Portland, Maine, assignor to Fleming Devices, Inc., South Portland, Maine, a corporation of Maine
Filed June 12, 1968, Ser. No. 736,327
Int. Cl. B66f *11/00;* **E21b** *19/00*
U.S. Cl. 254—30 **10 Claims**



Post pullers adapted to be operated by the hydraulic system of a motor vehicle that may also be used to move the puller from one post to another, the puller having a base having an opening extending rearwardly of its front edge to enable it to straddle the post to be pulled. Supporting structure adjacent the front end of the base has one end of a lever arm pivotally attached thereto with the lever arm extending rearwardly above the opening and its other end pivotally connected to a ram.

3,526,388
BALANCING HOIST

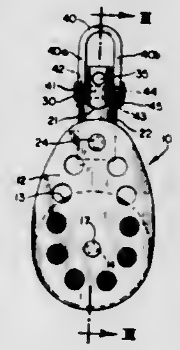
Robert Eugene Geiger, Sayre, Pa., and Otmar M. Ulbing, Berkshire, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 6, 1968, Ser. No. 734,987
Int. Cl. B66d *1/48*
U.S. Cl. 254—168 **12 Claims**



A balancing hoist having a load sensing diaphragm and a pendant control cooperative for automatically sensing the weight of the hoist-carried workload and automatically adjusting the hoist balancing system to balance the sensed weight.

3,526,389
BLOCK

William J. Horgan, Jr., Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, a firm composed of Hyman Blum, Louis Blum, Max Blum, and Harry P. Blum, Pittsburgh, Pa.
Filed Sept. 6, 1968, Ser. No. 758,066
Int. Cl. B66d *1/36*
U.S. Cl. 254—195 **5 Claims**



A multi-position, multi-functional block. The block has a lightweight shell with a sheave mounted for rotation therein. The hanger connected to the shell is rotatable about the axis of its connecting support pin. The hanger has a base portion through which the connecting support pin passes, said base portion being hollow and cylindrical with its outwardly disposed end having a radially inwardly protruding shoulder thereon. The hanger has a swivel portion which is cylindrical and which has an outwardly protruding shoulder thereon at one end. The swivel portion is disposed for rotation in the cylindrical base portion and protrudes therefrom. The sides of the cylindrical swivel portion, and its outwardly disposed shoulder are in sliding contact respectively with the inner cylindrical sides of the inwardly protruding shoulder and the inner cylindrical walls of the base portion. These interlocking shoulders provide substantial and well-defined bearing surfaces.

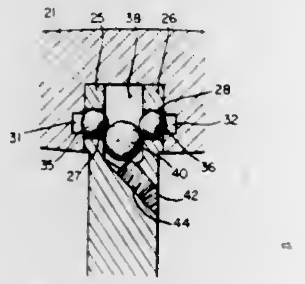
The swivel portion has a plurality of holes therein perpendicular to the axis thereof; the holes being non-intersecting. The holes are preferably two in number, and are at right angles to one another. A shackle it attached to said swivel portion by passing a shackle pin through holes in the legs of the shackle and one of the holes in the swivel portion. Means are provided for retaining the shackle pin in the hole. The shackle is free to rotate about the axis of the shackle pin.

The ends of the legs of the shackle are rounded, and mate with complementary, rounded surfaces at the outwardly disposed end of the base portion of the hanger. This mating occurs when the shackle is mounted by passing the shackle pin through the hole in the swivel portion which is closest to the base portion. However, when the shackle pin is removed and the shackle is mounted to the swivel portion by passing the shackle pin through the second hole in the swivel portion, then the rounded ends of the legs of the shackle are not in engagement with the rounded surfaces on the base portion, and the result is that the swivel portion is free to rotate about its axis within the base portion.

3,526,390

HANDRAIL FITTING

William J. Horgan, Jr., Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm of Pennsylvania
Continuation-in-part of application Ser. No. 755,236, Aug. 26, 1968. This application June 23, 1969, Ser. No. 850,683
Int. Cl. E04h *17/14*
U.S. Cl. 256—65 17 Claims



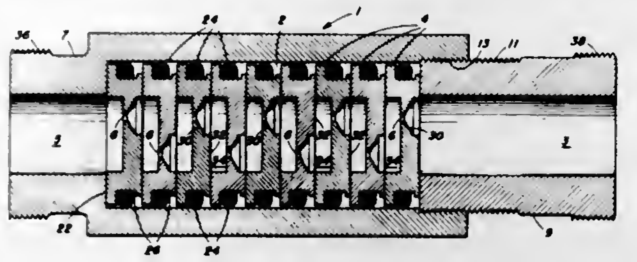
A handrail fitting fits into a slot in the underside of a handrail. The slot is in the shape of a cross and the fitting is provided with a horizontally extending hole in alignment with the horizontal portion of the slot. Means are provided in sliding engagement with the hole in the handrail fitting, which can be extended into the slot to grip the handrail. These means are preferably steel balls which are forced apart by a separate steel ball which is driven between them. The separate steel ball is disposed in a vertical hole in the fitting and is acted upon by a set screw or alternatively, by one or more other balls which are acted upon by a set screw, said set screws being disposed at an upward angle to the vertical hole to contact and move said balls and being accessible to a tool from below the handrail.

3,526,391

HOMOGENIZER

Merton W. Church, Jr., Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
Filed Jan. 3, 1967, Ser. No. 606,696
Int. Cl. B01f *13/00*
U.S. Cl. 259—4 7 Claims

This invention relates to the homogenizing of liquids and, more particularly, to an apparatus for dispersing a substance in a liquid which comprises a housing having a chamber, an inlet and an outlet defined therein, and a series of orifice plates arranged in succession in the chamber. Each plate has a sharp edge orifice extending through it with the orifice of one plate being out of alignment with the orifice of the next succeeding plate whereby a stream of fluid discharging through the orifice of one plate impinges against an impervious surface.

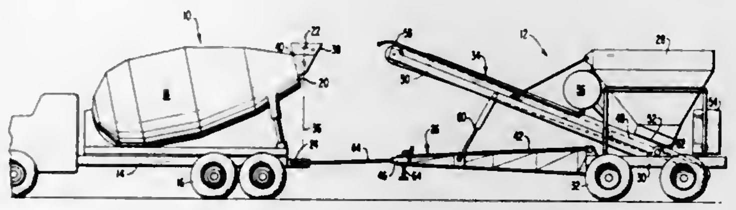


Thus, the stream of fluid is forced to change direction of travel to pass through the orifice in the next succeeding plate.

3,526,392

METHOD OF HAULING AND MIXING CONCRETE

William H. Buelow, Brookfield, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 20, 1968, Ser. No. 732,490
Int. Cl. B28c *7/02*
U.S. Cl. 259—148 1 Claim

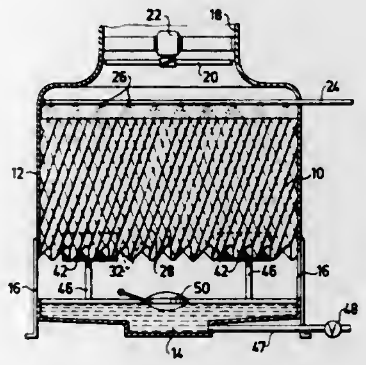


A concrete mixing truck and towed trailer have spaced wheels for hauling ingredients of concrete mix over a highway having a maximum legal load limit with some fraction of the ingredients of the concrete mix in the truck and the remaining portion of the ingredients in the trailer. At a job site where the maximum legal load limit does not apply a conveyor on the trailer transfers the trailer carried ingredients to the truck for mixing in a drum which has the capacity for the entire batch of ingredients.

3,526,393

COOLING TOWER

George W. Meek, P.O. Box 1909,
Fort Myers, Fla. 33901
Filed July 1, 1968, Ser. No. 741,609
Claims priority, application Sweden, July 7, 1967, 10,378/67
Int. Cl. F24f *3/14*
U.S. Cl. 261—102 7 Claims

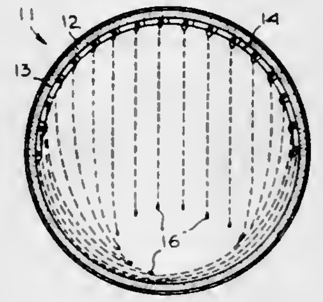


A contact body comprising a plurality of mutually parallel layers which include undulated folds to form channels from end to end is provided in a cooling tower. Reinforcing members are mounted at least at one end of the body thereof along the drainage edge of the layers. The reinforcing members extend in a direction parallel to the mutually parallel layers. These reinforcing members have a greater mechanical strength than the layers to protect the layers from deformation.

3,526,394

INSERT BEARINGS FOR KILN CHAIN BRACKETS

Harry D. Howell, Jr., Colton, Calif., assignor to Hanford Foundry Co., San Bernardino, Calif., a corporation of California
Filed Sept. 18, 1968, Ser. No. 760,425
Int. Cl. F27b *7/00*
U.S. Cl. 263—33 4 Claims

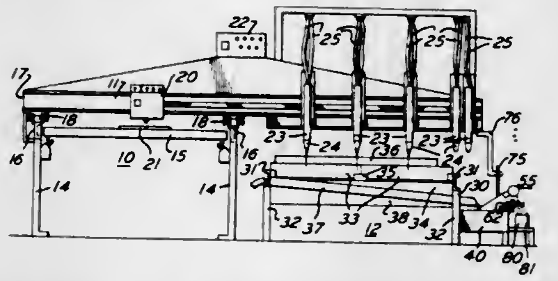


A non-rotatable easily renewable insert bushing in a supporting bracket for chain-holding shackles in a cement kiln, made of wear-resisting high temperature resisting alloy to insure long service life corresponding to the long service life of a cement kiln, or for easy renewal if the kiln is temporarily shut down for quick repair.

3,526,395

APPARATUS FOR REMOVING METALLIC SLAG FROM TORCH CUTTING OPERATIONS

Lawrence H. Brown, Prospectville, Pa., assignor to Edgcumb Steel Company, Andalusia, Pa., a corporation of Pennsylvania
Filed June 21, 1967, Ser. No. 647,859
Int. Cl. F23j *1/00*
U.S. Cl. 263—45 5 Claims

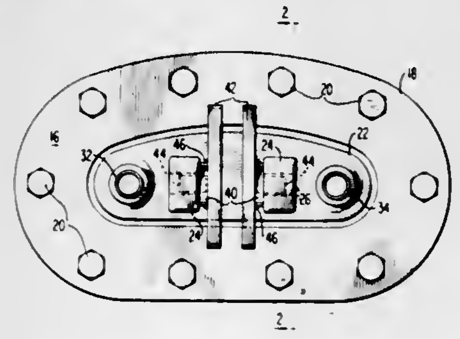


An apparatus for removing metallic slag from torch cutting operations on sheets and plates whereby the molten slag is deposited on an inclined metal plate which is washed by a continuous stream of water, the slag being carried down the plate to a conveyor for removal.

3,526,396

ASSEMBLY FOR RESTRICTING THE MOVEMENT OF A BLAST FURNACE COOLING PLATE

Leon C. Paulus, Easton, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,741
Int. Cl. C21b *7/10;* **F27b** *1/24*
U.S. Cl. 266—32 2 Claims

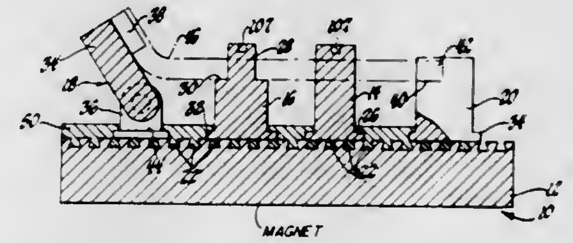


A cooling plate, having a pair of lugs at the outer end thereof, extends through a collar and is embedded in the refractory wall of a blast furnace. Movement of the cooling plate is restricted by providing, for each lug, a retainer plate having a laterally extending stud positioned in said lug and a lock plate secured to said retainer plate and to said collar.

3,526,397

TOOLING FIXTURE

Leo E. Verguson, 2333 W. Lincoln,
Birmingham, Mich.
Filed Dec. 27, 1966, Ser. No. 604,840
Int. Cl. B23p *3/22*
U.S. Cl. 269—7 5 Claims

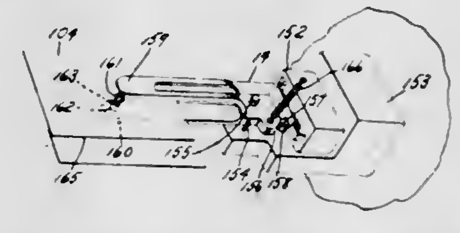


A work tool fixture, which allows relative arrangement, rearrangement, and salvage of fixture making parts thereof, and which includes a base member with a planular surface having a plurality of undercut recesses provided therein, parts that are pre-positioned as and where desired on the recessed surface, and an initially fluid bonding material, which solidifies at room temperatures, and that is received in the recesses and about the lower extremities of the fixture making parts to fix their relative location on the base member.

3,526,398

CLOTH LAYING MACHINE WITH SEAM DETECTION MEANS

Edward M. Merrill, 986 W. Shelley Road,
North Bellmore, N.Y. 11710
Original application Aug. 18, 1967, Ser. No. 665,666. Divided and this application July 18, 1969, Ser. No. 842,970
Int. Cl. B65h *29/46, 25/14*
U.S. Cl. 270—31 2 Claims



A high speed motorized cloth laying machine having a positively driven main feed roller, and including the following features:

(a) Orbitally mounted wrap roller which in one position disengages the driven roller.

(b) The wrap roller is coupled with a dancer bar for simultaneous movement to an inactive position to facilitate threading.

(c) A powered loader for semiautomatically moving fresh cloth supply rolls into position for feeding upon the carriage.

(d) Upon positioning of a fresh supply roll, braking means automatically engages the spindle of said roll.

(e) Automatic means for slowing the carriage at each end of the cloth laying table prior to engagement of cloth clamping means thereat.

(f) Automatically actuated braking of cloth supply roll by nip roller to detect material feed.

(g) Acceleration of the carriage from rest at incrementally increased acceleration rates.

(h) Means for detecting a seam extending across the web of the cloth, and for stopping the machine a short time interval after detection, by which time the seam has reached the cloth laying table, to permit the same to be cut out, and the web overlapped.

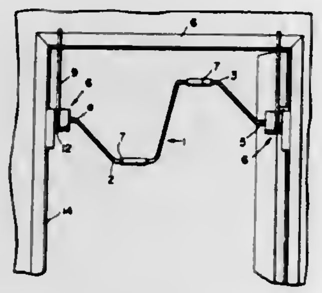
(i) Automatic transfer of machine carriage speed from low level to high level after leaving catcher to increase average rate of lay.

(j) Cloth roll supporting bar having adjustable outer diameter to permit simplified engagement with a cloth roll.

(k) Selectively extendable loading tray for dispensing cloth web supply in flattened folded condition.

3,526,399
ROTATABLY MOUNTED EXERCISING DEVICE WITH SUPPORT FRAMES

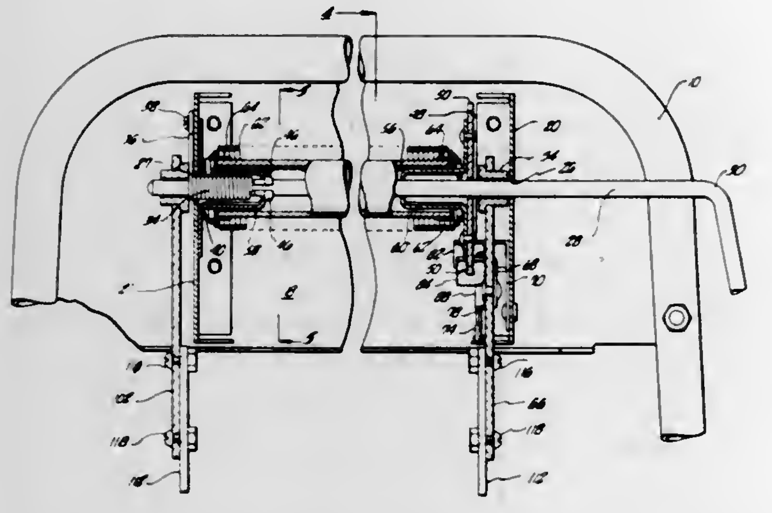
**George Hjelte, 4468 Dundee Drive,
Los Angeles, Calif. 90027
Filed Apr. 21, 1967, Ser. No. 632,759
Int. Cl. A63b** *21/00*
U.S. Cl. 272—60 3 Claims



A hand crank device supported for rotation in bushings which are easily inserted or removed from a position on a supporting member such as a door opening, with the support of the bushings comprising easily removable clamps which engage the upper trim above the door opening or on a diving board to support the load of the exercise device.

3,526,400
POWER-OPERATED SWING

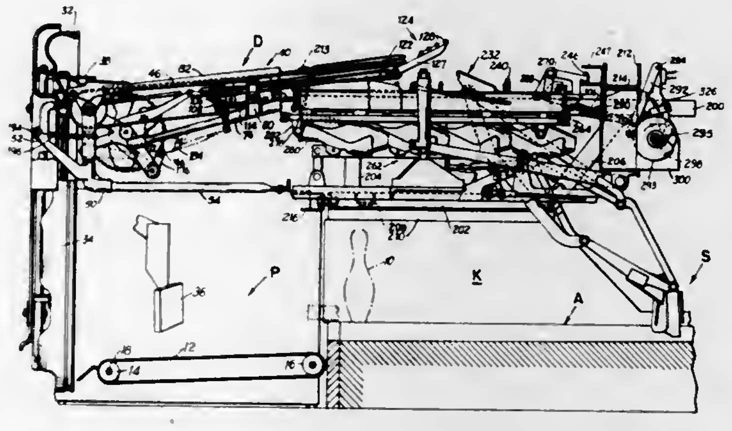
**Joseph D. Carpenter, Los Angeles, and Martin Bottjer, Panorama City, Calif., assignors to Aeon Industries, Inc., doing business as Pride Products Company, Glendale, Calif.
Filed June 7, 1967, Ser. No. 644,201
Int. Cl. A63g** *9/16*
U.S. Cl. 272—86 9 Claims



A power-operated swing having a frame, a shaft connected to the frame and a coil spring disposed around the shaft, one end of the spring being connected to the shaft and the other end to a ratchet wheel such that the spring can be wound to store energy by rotating the shaft. A pivotally mounted arm suspends a children's seat and is pivoted by the ratchet wheel and a ratchet arrangement whereby the swing is energized into an oscillating motion.

3,526,401
PIN DISTRIBUTING APPARATUS WITH CANTILEVER SUPPORTED EXTENSIBLE BELT CONVEYOR

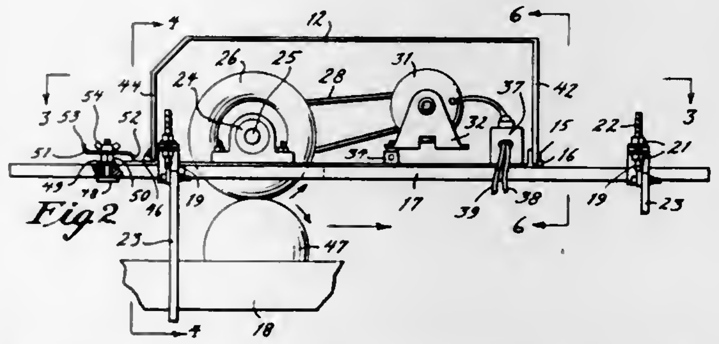
**John Zuercher, Mansfield, Ohio, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 15, 1965, Ser. No. 439,910
Int. Cl. A63d** *5/09*
U.S. Cl. 273—43 23 Claims



A bowling pin handling apparatus for use with a bowling pinspotting machine comprising an elongated, contractable-expansible, variable length distributing conveyor. A pin storage magazine is mounted beneath said conveyor. A plurality of pin receiving and storing pockets are arranged in generally triangular formation in said magazine. The conveyor is pivotally mounted at one end only whereby the other end thereof can swing freely back and forth above said pockets. The conveyor is moved across said magazine to deliver bowling pins into said pockets and its length is varied to effect the successive delivery of pins from the end of said conveyor into selected pockets. A frame is provided with a plurality of pin supports conforming in arrangement with the arrangement of said pockets in said magazine. The frame is mounted for movement beneath said magazine in a substantially horizontal plane beneath said magazine to effect the discharge of a single pin from each of said pockets.

3,526,402
BOWLING BALL RETURN DEVICE

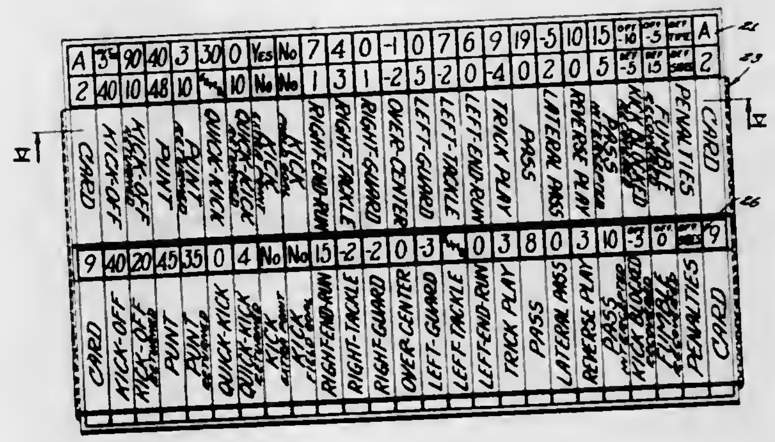
**George W. Hibbs, 631 Clearview Ave.,
Trevose, Pa. 19047
Filed Mar. 22, 1968, Ser. No. 715,341
Int. Cl. A63d** *5/02*
U.S. Cl. 273—49 3 Claims



A motor driven tire carried on a frame supported on the catwalk board above the bowling ball return track, the tire traction surface extending downward to normally engage the upper surface of the bowling ball as the latter returns along the track from the pit end to the head end of the alley to accelerate the return speed. Combination hold down and jacking means selectively lock the frame down to the catwalk board for ball driving engagement or elevate the frame to prevent engagement of the tire with the bowling balls, and leveling means adjust the degree of engagement between the tire and ball.

3,526,403
GAME PLAY OUTCOME CALCULATOR

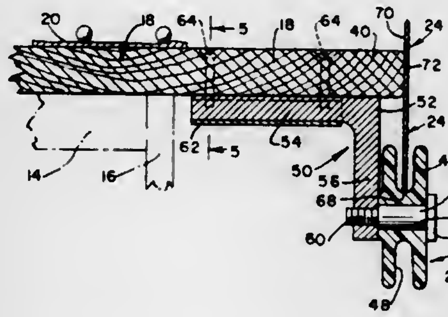
**Dalton C. Clark, 218 Stanley St., Andalusia, Ala. 36420
Filed Aug. 10, 1967, Ser. No. 659,759
Int. Cl. A63f** *7/08;* **G06c** *1/00*
U.S. Cl. 273—94 3 Claims



A game played according to the rules of the game of football with standard playing cards, a chart of possible plays, a chart of play results, and a miniature football field-board and a marker whereby a player chooses his play, draws a card and on the basis of the card drawn determines the results of his play and spots the marker on the miniature field in accordance with the results. The chart of play results is printed in a different color on each side, and the side used to determine the outcome of a particular play is that which matches the color of a card drawn from the standard deck of playing cards.

3,526,404
PORTABLE GAME TABLE WITH ROTATABLE RIM

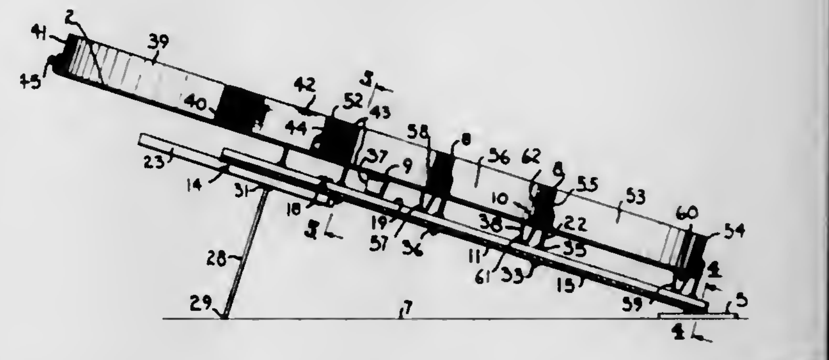
**Kenneth Wiggins, 9425 S. Vernon Ave.,
Chicago, Ill. 60619
Filed Jan. 29, 1968, Ser. No. 701,210
Int. Cl. A63d** *3/00*
U.S. Cl. 273—118 10 Claims



A portable game table comprising a disc carrying a playing surface and having a rotatable rim mounted on roller means which are removably coupled to the disc and positioned below and extending outwardly of the peripheral edge of the disc, said rim being demountable from the roller means without handling of the disc and said rim having a removed portion so that limited access is provided to portions of the playing surface enclosed by the rim at the level of the said surface; the rim being formed of pin and hinge connected arcuate segments: the demountability of the rim and roller means permitting use of the playing surface for many and varied other games and purposes.

3,526,405
GOLFING TARGET INCLUDING SCORE AREA DEFINING RINGS ENCASED IN FLEXIBLE SLEEVES

**George H. Morris, 2952 N. 35th St.,
Kansas City, Kans. 66104
Filed July 26, 1968, Ser. No. 747,991
Int. Cl. A63b** *69/36*
U.S. Cl. 273—181 5 Claims

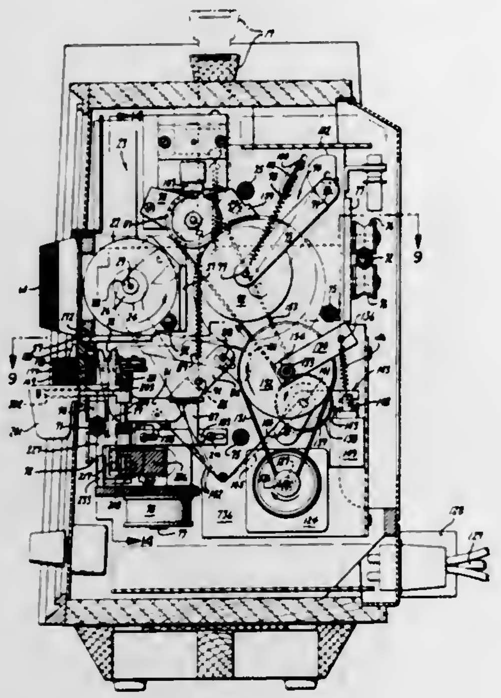


A golf game and practice apparatus has a target member of fabric, mesh or other suitable flexible material presenting a surface facing a player position, the surface being tilted or inclined upwardly away from the player position and has a plurality of outstanding target area defining and scoring rings encased in fabric sleeves radially spaced from a central opening in said target member. A plurality of drop out openings are radially spaced from the central opening and are positioned at a low point within the innermost ring and within each scoring area formed between adjacent rings. The fabric material and the rings are supported on spaced mounts which have retainers for engaging the rings and fabric. The fabric material is secured in an elongated way in the outermost scoring ring by retaining clips. A golf ball hit or pitched onto the target member will enter the central opening or one of the drop out openings and drop into a separate groove in an elongate inclined ball receiving and delivering member and roll therealong onto a putting surface toward an opening therein. The spacing of the golf ball from the opening in the putting surface being substantially proportional to the distance of the impact of the pitch shot from the center of the target member.

3,526,406
TAPE ROLL HANDLING APPARATUS AND ROLL THEREFOR

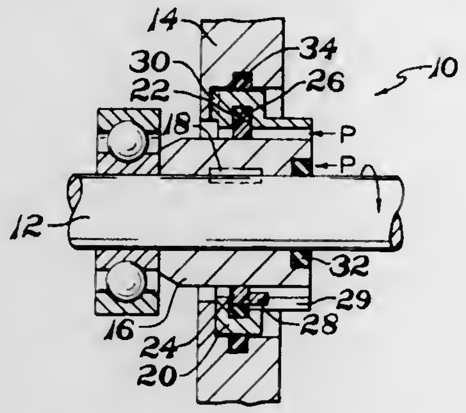
**James W. F. Blackie, Sunnyvale, Chester W. Newell, San Jose, and Charles A. Vogel, Sunnyvale, Calif., assignors, by mesne assignments, to Newell Industries, Inc., a corporation of California
Filed Nov. 3, 1967, Ser. No. 680,384
Int. Cl. G11b** *15/12, 12/32, 23/02*
U.S. Cl. 274—4 13 Claims

A tape transport system for automatically playing a number of rolls of tape of a type wherein the outermost convolution of the tape roll carries the end of the tape. A tape transport assembly is positionable to any one of several tapes for playing same. Each tape is automatically threaded onto the tape transport assembly for playing. Tapes play in each of two opposite directions whereby after the entire tape has been played, it will have been rewound. The tapes are characterized by a leader portion comprised of adherent margins and a non-adherent centrally disposed strip which cooperates with a peeling element of the transport.



3,526,407
ROTARY SEAL

Elmer J. Chattin and Louis F. Fraula, Troy, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 11, 1968, Ser. No. 711,985
Int. Cl. F16j *15/00, 9/00*
U.S. Cl. 277—22 **4 Claims**

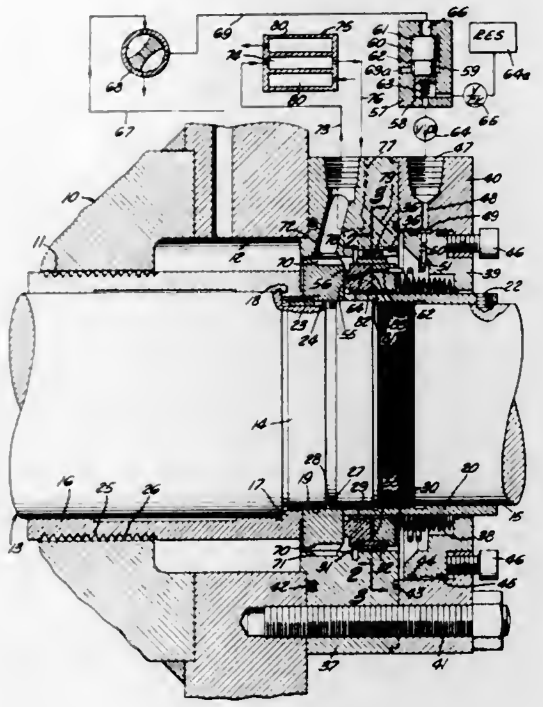


A rotary seal assembly for high speed rotary shafts featuring a thermal conductive sleeve member and an annular sealing member adapted for sealing engagement with the sleeve so that heat resulting from the engagement of sealing interfaces is dissipated by the thermal conductive sleeve to reduce heat build-up in the seal assembly.

3,526,408
MECHANICAL SEAL CONSTRUCTION

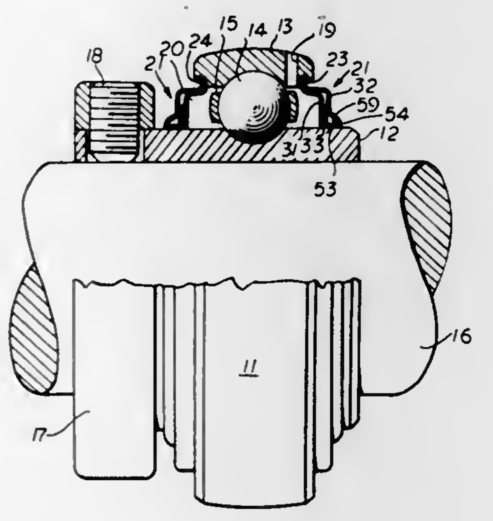
Herbert E. Tracy, Alhambra, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 469,700, July 6, 1965. This application Jan. 2, 1969, Ser. No. 791,859
Int. Cl. F16j *15/36*
U.S. Cl. 277—88 **4 Claims**

A mechanical seal for sealing a rotary shaft to a housing having a rotary sealing ring on the shaft and a complementary, axially movable, stationary sealing ring on the housing. A spring, such as a bellows, is compressed between the stationary ring and an axially adjustable adapter ring carried by the housing for urging the stationary ring towards the rotary ring. Lubricating fluid is injected between the sealing faces of the sealing rings through a fluid conduit including a flexible portion extending from the adapter ring to the stationary sealing ring.



3,526,409
SEALING DEVICE

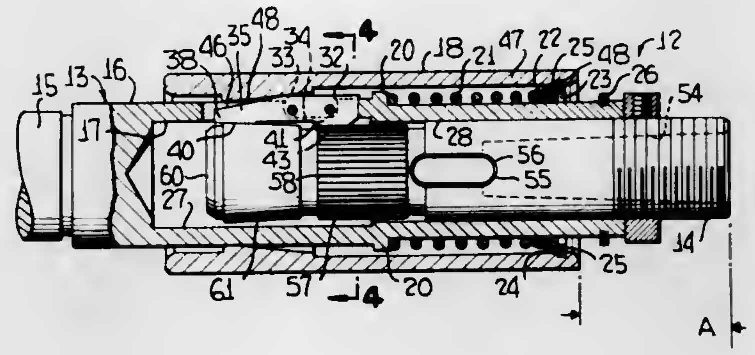
Leonard C. Heinlein, Indianapolis, Ind., assignor to FMC Corporation, a corporation of Delaware
Filed Sept. 12, 1967, Ser. No. 667,290
Int. Cl. F16j *15/16*
U.S. Cl. 277—169 **6 Claims**



A device for sealing the annular space between two concentric, relatively rotatable members such as the outer and inner race rings of an anti-friction bearing. One seal element forms an annular groove into which another seal element is disposed for limited radial movement. The second seal element has an annular surface which cooperates with a corresponding surface on one of the rotatable members to form an annular capillary-like opening for preventing the egress of lubricant and the ingress of foreign matter.

3,526,410
ADJUSTABLE ARBOR CHUCK

Robert R. Grover, Westport, N.H., assignor to Kingsbury Machine Tool Corporation, Keene, N.H., a corporation of Delaware
Filed May 19, 1967, Ser. No. 639,879
Int. Cl. B23b *31/12*
U.S. Cl. 279—57 **11 Claims**

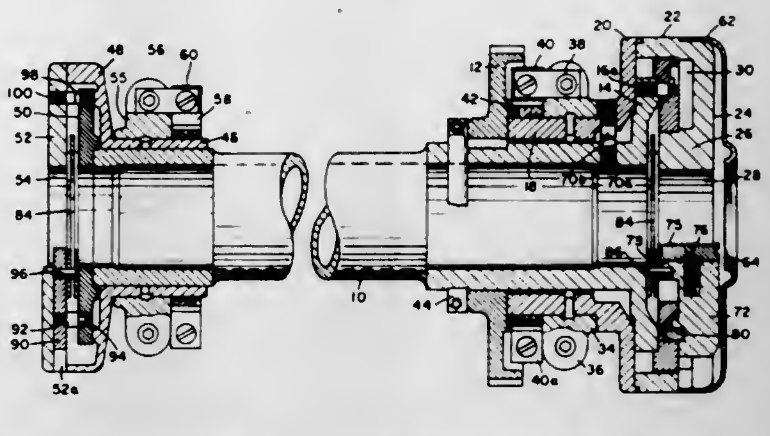


This disclosure relates to the combination of a chuck and an arbor adjustably positionable within a longitudinal socket of the chuck. The chuck is provided with three equidistantly circumferentially spaced locking members which are carried thereon in "floating" condition, each of the locking members having separate means for engaging corresponding arbor portions to lock the arbor within the chuck against both axial outward movement and rotational movement, relative to the chuck. A longitudinally movable spring-biased sleeve surrounds the chuck and has cam surfaces engageable with corresponding cam surfaces of the floating locking or clamp members. The arbor is also provided with a socket for receiving a tool and has a threaded nut member at its outer end for determining the depth of insertion of the arbor into the chuck. The arbor is provided with a tapered surface, corresponding tapered surface portions of the locking member being engageable with the arbor tapered surface to prevent axial outward movement of the arbor. The means which prevent relative rotation of the arbor comprises peripherally disposed teeth on the arbor engageable with corresponding teeth carried by the locking members. The teeth of two of the locking members are blunted, and the teeth of the other locking member is of full depth, whereby, upon radial inward movement of the locking members to engage the arbor, the teeth of the locking member which are of full depth will first engage between corresponding teeth on the arbor, thereby slightly rotating the arbor by camming action, whereby blunted apices of the other locking members are positioned for entry between full depth teeth on the arbor member.

3,526,411
SELF-CLOSING REVERSIBLE CHUCK

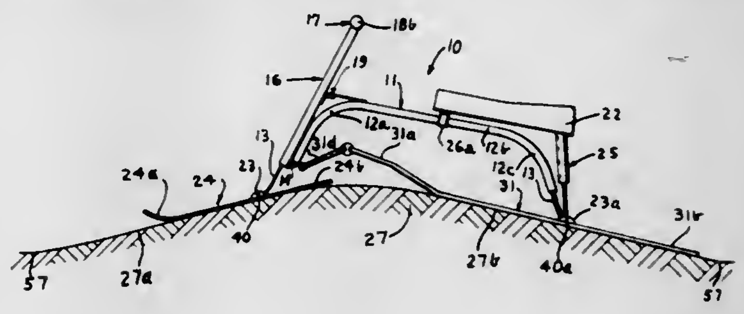
Edward J. Chalfant, Elyria, and Anton J. Janik, North Ridgeville, Ohio, assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed May 15, 1968, Ser. No. 729,236
Int. Cl. B23b *31/16, 31/10*
U.S. Cl. 279—114 **12 Claims**

A spindle is rotated by a reversible motor and is connected to and drives a scroll plate which has three eccentric grooves in its face displaced from each other by 120° and intersecting each other. A head is rotatably mounted on the spindle, its rotation being resisted by a brake shoe, the tension of which may be adjusted. The head is formed with three radial ways and a chuck jaw is disposed in each way. Each chuck jaw is interconnected to a groove in the scroll plate by an arcuate shoe. Cooperating stop means is provided on the spindle and chuck head to limit the relative rotation between the two to slightly less than 360°. Centering means for centering the stock between the chuck jaws includes three links having cam slots in their ends with the adjacent ends of the links placed in overlapping relation to each other on pins carried by the chuck jaws.



3,526,412
SKI-BOB WITH REAR SKI RUNNER FORWARDLY SUSPENDED

George E. Garcia, Houston, Tex.
(2370 Broadway St., San Francisco, Calif. 94115)
Filed July 26, 1968, Ser. No. 748,077
Int. Cl. B26b *13/04*
U.S. Cl. 280—16 **9 Claims**

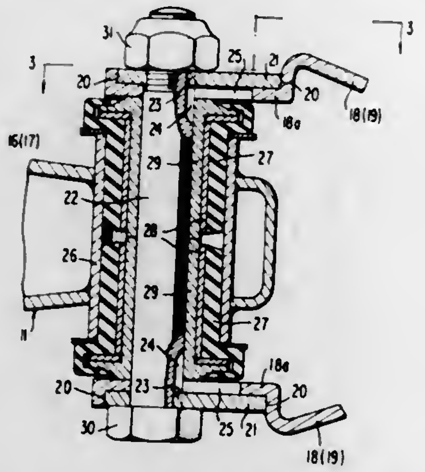


The ski-bob comprises a forward ski runner, a steering post connected thereto to pivot in an upright longitudinal plane, a rear ski runner, a frame with forward part pivotally connected to the steering post for frame to swing across direction of ski-bob travel, and with frame rear part connected to the rear ski runner to pivot in an upright longitudinal plane. Thus, with the forward, upwardly curved part of the rear ski runner yieldably connected to the frame, the ski-bob may closely follow a track undulatory in elevation and curved in plan view.

3,526,413
INSTALLATION FOR THE ADJUSTMENT OF THE CAMBER AND OF THE CASTER OF VEHICLE WHEELS

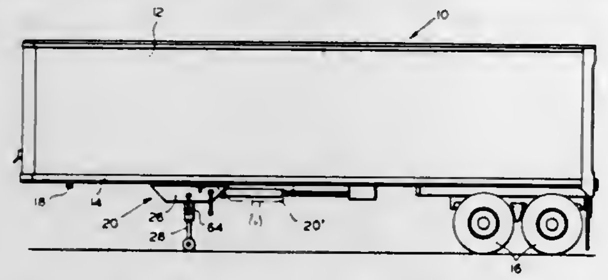
Alf John Muller, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Feb. 14, 1968, Ser. No. 705,388
Claims priority, application Germany, Feb. 14, 1967, D 52,271
Int. Cl. B62d *17/00*
U.S. Cl. 280—96.2 **37 Claims**

An installation for the adjustment of the camber and/or of the caster of wheels suspended at the vehicle superstructure by means of guide members by the use of eccentric elements arranged in the joints of the guide members, whereby one fork arm of a guide member is supported at the vehicle superstructure at least approximately in a vehicle transverse plane containing the wheel center while the other fork arm is supported in a plane displaced with respect thereto in the vehicle longitudinal direction, and preferably located closer to the wheel plane; both fork



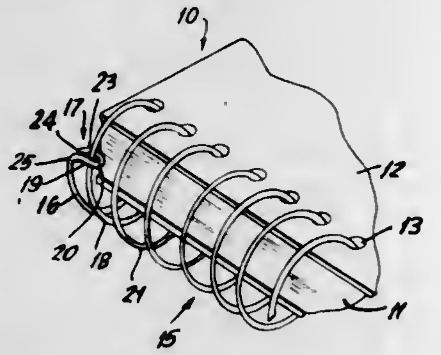
arms are also supported independently from each other by means of the adjustable eccentric elements.

3,526,414
LANDING GEAR ASSEMBLY
Richard L. Palen, New Buffalo, Mich., assignor to Clark Equipment Company, a corporation of Delaware
Filed Feb. 19, 1969, Ser. No. 800,435
Int. Cl. B60s *9/04*
U.S. Cl. 280—150.5 4 Claims



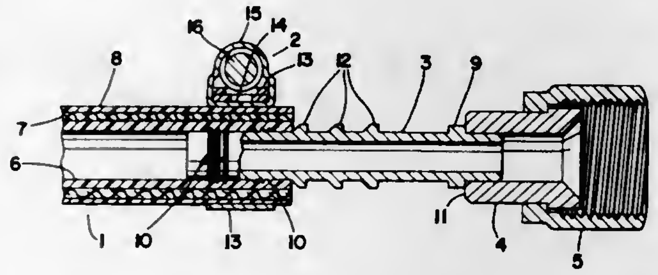
A trailer landing assembly with retractable legs. The assembly also is movable longitudinally of the trailer between a forward and a rearward position. The assembly includes an interlock mechanism so that the legs can be retracted or extended only when the assembly is in the forward position.

3,526,415
HELICAL WIRE BOUND NOTEBOOK AND HELICAL BINDING THEREFOR
Albert Freundlich, Bronx, N.Y., assignor to Freundlich-Gomez Machinery Corporation, College Point, N.Y., a corporation of New York
Filed Nov. 29, 1967, Ser. No. 686,619
Int. Cl. B42b *5/12*
U.S. Cl. 281—21 6 Claims



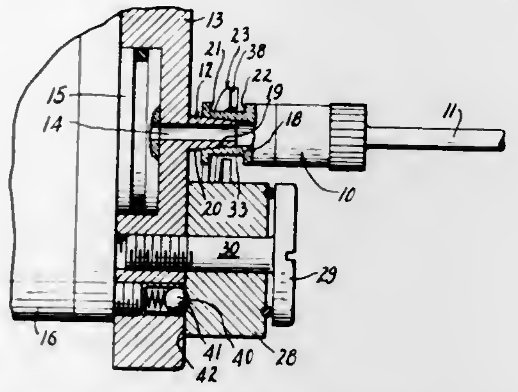
The helical coil binder for the notebook or pad has at its end convolutions, integral inturned longitudinal loops to lock said end convolutions to adjacent convolutions, against pulling out. These end loops are sufficiently closed not to allow other binders to pass into said loops. The binding is made of hard wire and will not distort during binding and yet can be made by means of automatic machinery. With this construction the end convolutions will not interhook with other bindings, and will not unwind from the notebook or pad which it binds.

3,526,416
PUSH-ON FITTING FOR USE WITH NYLON OR RUBBER HOSES
Arthur S. Kish, Lyndhurst, Ohio, assignor to Murray Corporation, Cockeysville, Md., a corporation of Maryland
Filed Dec. 6, 1968, Ser. No. 781,914
Int. Cl. F16l *33/08*
U.S. Cl. 285—12 2 Claims



A push-on fitting for use in conjunction with either nylon or rubber hoses, the fitting being characterized by the use of separate and independent sets of ribs or barbs which are especially designed for such hoses. A feature of the invention is the use of a rib of one set to locate the proper position of the hose in relation to the other set of ribs, prior to clamping of the hose to the fitting.

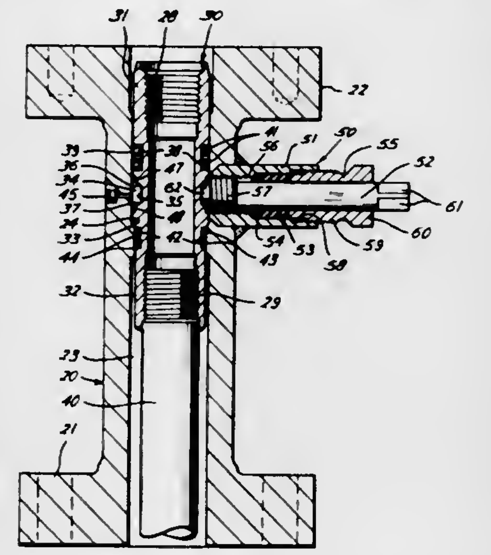
3,526,417
QUICK ACTING PIPE CONNECTOR
Clyde F. AuMiller, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Apr. 16, 1968, Ser. No. 721,837
Int. Cl. F16l *37/00*
U.S. Cl. 285—38 10 Claims



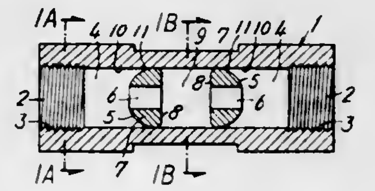
Quick seating and disconnecting of frusto-conical mating surfaces on a tubular base and the end fitting on a pipe is effected by swinging a projecting hand lever through a center position (FIG. 2) to locking unlocking positions (FIGS. 5 and 6) in which arcuate inclined cams engage opposed axially spaced shoulders on the fitting and wedge the fitting to seated or released position. The fitting may be separated from the base when the lever is centered and the shoulders are freed from the cams.

3,526,418
WELLHEAD COMPLETION APPARATUS
Robert D. Barnett, Houston, Tex., assignor to Rockwell Manufacturing Company, Houston, Tex., a corporation of Pennsylvania
Filed July 25, 1968, Ser. No. 747,708
Int. Cl. F16l *35/00*
U.S. Cl. 285—93 4 Claims

Wellhead completion apparatus comprising a tubing head with a vertical bore therethrough, a tubing hanger disposed in said bore and a lockscrew assembly affixed to the tubing head. The bore of the tubing head is defined by an upper cylindrical portion joined to a lower cylindrical portion by upwardly facing annular shoulder. The tubing hanger exterior is defined by an upper cylindrical portion and a lower cylindrical portion joined by a downwardly facing surface in contact with the tubing bore shoulder to support the hanger. An annular groove is formed on the exterior of the hanger adjacent the lockscrew assembly. The lockscrew assembly includes a lockscrew laterally movable through the tubing head wall to engage the annular hanger groove. Annular sealing rings are provided on the upper hanger portion above the groove and on the lower hanger portion below the groove. These rings are in sealing contact with the tubing head bore walls.

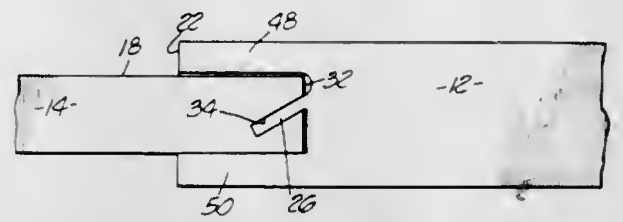


3,526,419
MANIFOLD COUPLING FOR CONNECTING PIPES TOGETHER
Nobuyoshi Saguchi, Shizuoka Prefecture, Japan, assignor to Usui Kokusai Sangyo Kabushiki Kaisha, Shimizu-cho, Sunto-gun, Shizuoka-ken, Japan
Filed Sept. 11, 1967, Ser. No. 666,588
Claims priority, application Japan, Feb. 18, 1967, 42/10,094; Apr. 22, 1967, 42/25,422
Int. Cl. F16l *25/00*
U.S. Cl. 285—334.1 2 Claims



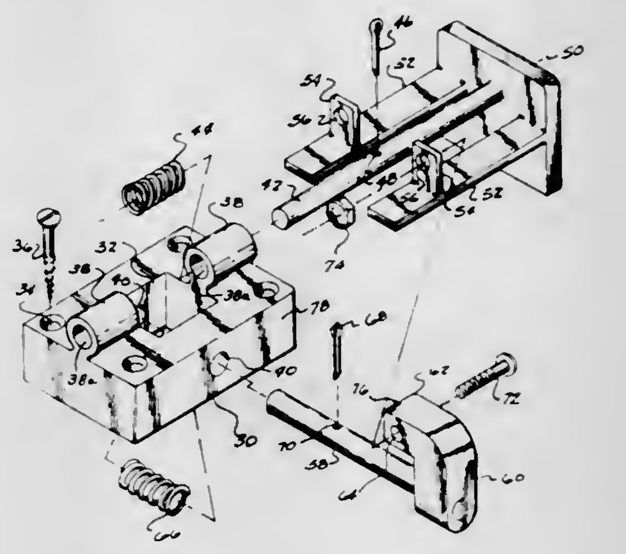
This specification discloses an invention relating to a manifold coupling for connecting pipes together which comprises a steel or iron outer member formed with a hole therethrough and threaded end portions to receive the end of corresponding pipes to be screwed thereinto, and at least a steel or iron seating member having a spherical seating surface and formed with a communicating aperture axially thereof. The seating member is fitted into said hole of said outer member and welded at a portion of its spherical seating surface to the inner side wall of the outer member by means of a bonding agent applied therebetween. Thus the outer member with the apertured seating member bonded thereto forms a manifold coupling for connecting fluid pipes together which is free from any leakage of fluid and easy and economical to manufacture.

3,526,420
SELF-LOCKING SEAM
Salvatore Thomas Brancaleone, Temple City, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed May 22, 1968, Ser. No. 731,176
Int. Cl. F16b *11/00*
U.S. Cl. 287—189.36 6 Claims



A self-locking seam for a pair of generally axially aligned members wherein opposing edges of the respective members are formed with an angled groove and an axially extending laterally deformable lip so that when the members are forced axially together the lip deforms laterally to become wedged in the angled groove and, thus, retain the members against axial separation. The seam may be embodied on both flat and tubular members which are desired to be permanently locked together.

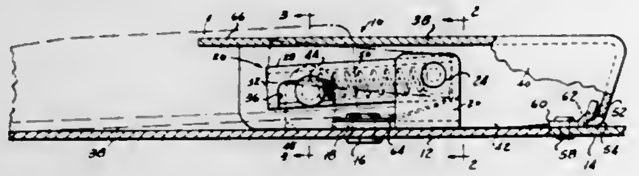
3,526,421
SAFETY LOCKING DEVICE FOR WINDOWS
Elvin F. Hirschler, San Bernardino, Calif. (27522 28th St., Highland, Calif. 92346)
Filed Aug. 31, 1967, Ser. No. 664,668
Int. Cl. E05c *1/10*
U.S. Cl. 292—42 5 Claims



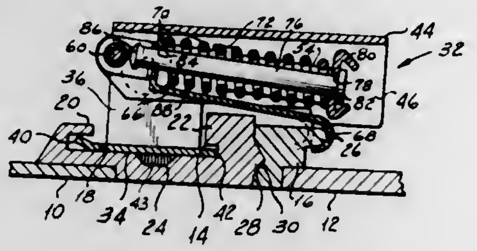
Apparatus for safely locking sliding windows and the like including a block on the lower sash having lock bolts entering the side sash and the upper window and a locking means connecting the bolts for holding the window against unauthorized entry.

3,526,422
BOX LATCH
Walter Trotter, Fair Lawn, N.J., assignor, by mesne assignments, to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of New York
Filed July 26, 1967, Ser. No. 656,276
Int. Cl. E05c *19/14*
U.S. Cl. 292—113 1 Claim

An improved box latch in which a limited lost motion toggle linkage mounts a handle on one of two members to be joined for movement between a closed position at which it houses the toggle mechanism and an open position. One form of the toggle linkage incorporates resilient means for urging the parts toward one limit of the lost motion. Another form of the toggle linkage incorporates means for adjusting the amount of lost motion provided. The assembly may be provided with auxiliary releasable means for holding the latch in either of its open or closed positions.

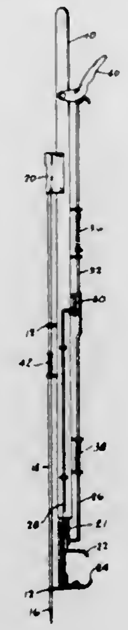


3,526,423
TOGGLE LATCH WITH PRELOADED DRAWHOOK
Jacob R. Newcomer, Wyckoff, and Leonard A. Bayer, Ridgefield Park, N.J., assignors to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed May 3, 1968, Ser. No. 726,478
Int. Cl. E05c *5/04, 19/14*
U.S. Cl. 292—113 **13 Claims**



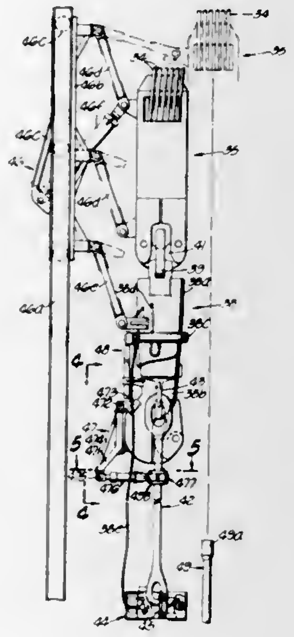
A toggle latch with a preloaded drawhook in which a handle mounted for swinging movement on one of two members to be joined pivotally supports a loading link carrying a drawhook for translatory movement relative to the link between a retracted position and an extended position. Loading springs normally bias the drawhook to its retracted position from which it is moved against the action of the springs when the drawhook is brought into engagement with a strike upon operation of the handle.

3,526,424
PAPER PICKER
Julian Torres, 430 E. 158th St., Bronx, N.Y. 10451
Filed Mar. 18, 1969, Ser. No. 808,246
Int. Cl. A47f *13/06*
U.S. Cl. 294—24 **3 Claims**



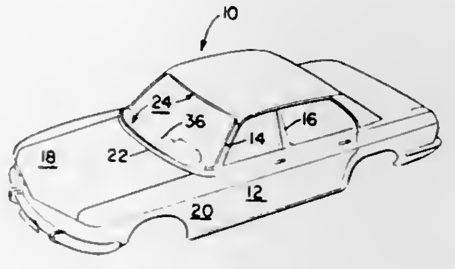
An elongated member having an elongated prong disposed therealong and jaws or clamps for detachably grasping waste paper and the like associated therewith. Manually operable means open and close the jaws at will. Thus paper can be picked up and disposed of without bending and the like.

3,526,425
LINK STABILIZER FOR WELL DRILLING RIGS
Faustyn C. Langowski and John W. Turner, Jr., Houston, Tex., assignors to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,817
Int. Cl. B64d *17/38*
U.S. Cl. 294—82 **16 Claims**



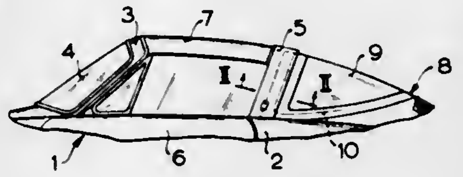
A stabilizer for the elevator links which depend from the hook of a well drilling rig in which the links are limited in their relative lateral motion and are also restrained against swinging motions to facilitate and assure engagement of a pipe joint by the elevator, the stabilizer being releasable to allow pivotal movement of the links to an out of the way position when a drilling swivel is supported by the hook.

3,526,426
VEHICLE BODY COWL-TOP AND WINDSHIELD FRAME STRUCTURE
Henry W. Wessells III, Paoli, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 11, 1968, Ser. No. 783,083
Int. Cl. B62d *25/08*
U.S. Cl. 296—28 **7 Claims**



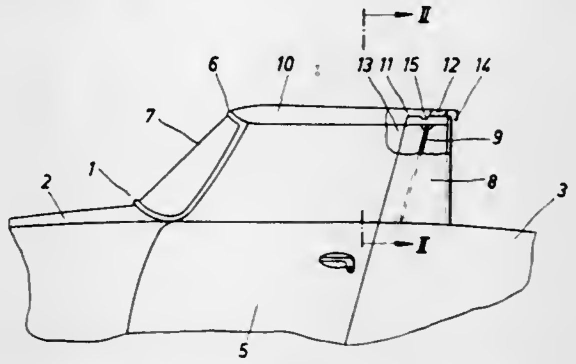
A unitized automobile body having a windshield frame forming a cowl-top and the outer surfaces of the windshield pillar post; said frame being connected to the vehicle body at the frame edges to form a reinforcement for the vehicle body.

3,526,427
MOTOR VEHICLE MULTISECTIONAL ROOF
Werner Trenkler, Asperg, Kreis Ludwigsburg, and Karl Vettel, Ludwigsburg-Hoheneck, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Sept. 18, 1967, Ser. No. 668,448
Claims priority, application Germany, Oct. 7, 1966, 1,580,560
Int. Cl. B60d *25/06*
U.S. Cl. 296—137 **12 Claims**



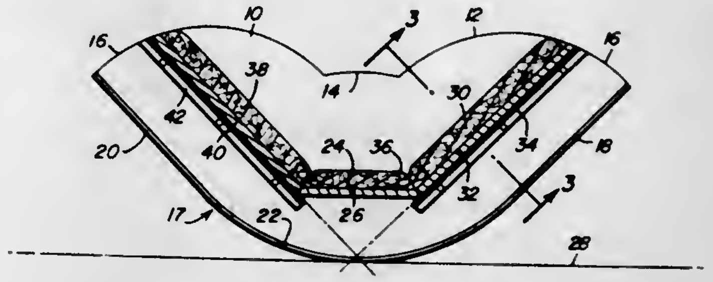
A motor vehicle multisectional roof including a roll yoke bridging the passenger compartment onto which is fastened a front cover and a pliable material rear cover, whereby the rear cover is supported along stationary portions of the vehicle body by means of tensioning locks acting upon elastic reinforcements along the edge portions of the rear cover. Preferably, the tensioning locks are mounted upon the roll yoke and cooperate with the adjacent elastic reinforcements. Stops are associated with the tensioning locks to limit the range of movement of the adjacent rear cover reinforcements toward and away from the roll yoke. These stops are preferably threaded bolts adjustable in their effective length to selectively change the range of tensioning movement.

3,526,428
VENTILATION FOR A VEHICLE WITH A ROLL FRAME
Ferdinand Anton Ernst Porsche, Stuttgart-Nord, and Wolfgang Eyb, Leonberg, Wurttemberg, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Mar. 29, 1968, Ser. No. 717,170
Claims priority, application Germany, Apr. 22, 1967, 1,630,923
Int. Cl. B62d *27/04;* **B60j** *1/18*
U.S. Cl. 296—146 **7 Claims**



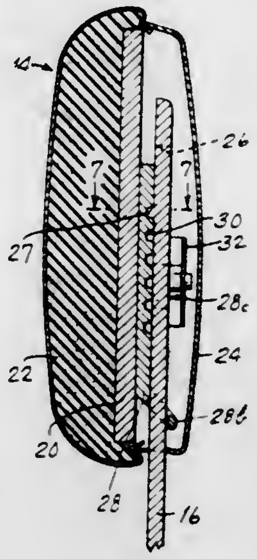
A motor vehicle with a roof rigidly secured to the windshield and resiliently secured to a roll yoke with ventilation spaces therebetween, and a generally vertically extending rear window slideably received within a downwardly opening window guide channel secured to the inside of the roll yoke and an upwardly opening window guide channel pivotally mounted about a transverse axis to the lower vehicle body. A manual lever is provided for raising the rear window to cover openings in the downwardly opening channel, to lower the rear window to provide communication between the openings for ventilation of the vehicle, and to further lower the rear window until it is withdrawn from the downwardly opening channel so that it may be pivoted downwardly and rearwardly to an angular position where it is held by an indexing lock.

3,526,429
CHAIR
Harold M. Metzger, Rte. 4, Box 3, Greenville, Ala. 36037
Filed June 5, 1968, Ser. No. 734,731
Int. Cl. A47c *3/029*
U.S. Cl. 297—258 **7 Claims**



A balanced multipurpose rocking, reclining and lounging chair which, generally speaking, cannot overturn when occupied. A pair of spaced parallel symmetrical walls provide coplanar side frames and are marginally delineated to provide the butterfly design desired. Several angularly related pallet-like panels are fixedly suspended in the space between the side frames. The relatively narrow centralized panel fixedly supports a first horizontal cushion. The oblique angled upwardly forwardly inclined panel constitutes a bed or base for a proportionately long second but removable cushion. The oblique angled upwardly rearwardly inclined panel likewise supports the removable third cushion. The upper edges are primarily ornamental. The lower longitudinal edges are unique in that the parallel portions underlying the second and third panels and cushions are straight and are at right angles to each other while the intervening central portions are arcuately curved and provide rockers beneath the first cushion and panel on which it is fixedly bedded.

3,526,430
BACK HEIGHT ADJUSTMENT MECHANISM
James Bender Eldon III, Pennsburg, Pa., assignor to Art Metal-Knoll Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,552
Int. Cl. A47c *7/40*
U.S. Cl. 297—353 **11 Claims**

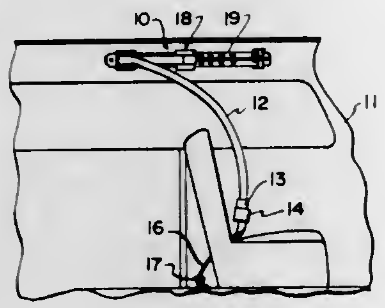


A height adjustment mechanism for adjusting the back of a chair or like article. The mechanism is completely capable of being concealed within the chair back since it requires no external adjusting elements such as a screw, lever or the like. The mechanism includes a back plate, preferably furnished with a series of spaced slots which are adapted to receive a fixed pair of projections provided on a back support. The back plate is urged against the back support by a spring mounted on a stud formed on and projecting from the back plate, the stud extending through an opening in the back support.

In the operation of the adjustment mechanism, the chair back is simply pulled forward from its top edge so as to pivot the back plate away from the back support, thereby disengaging the projections from their receiving slots and permitting vertical movement of the chair back. When the forward pressure is released the spring bias pulls the mechanism back into its new locked position.

3,526,431
LINEAR RETRACTOR

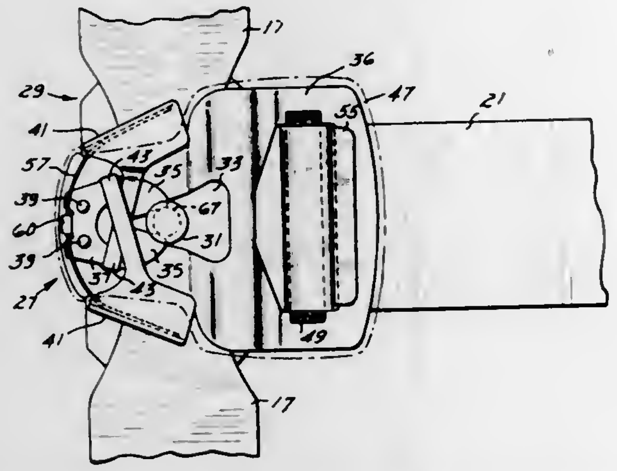
Raymond J. Boedigheimer, Chicago, and Robert J. Curran, Elmhurst, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 786,143
Int. Cl. A66b *35/02;* **B65h** *75/48*
U.S. Cl. 297—388 **9 Claims**



A linear safety belt retractor has a thin elongated configuration suitable for overhead mounting in a vehicle between the upholstery and frame, and includes locking means operable in response to a reversal in the direction of belt movement for automatically locking the belt against both extension and retraction at intermediate positions within the range of extension.

3,526,432
SWIVELLING BELT CONNECTOR

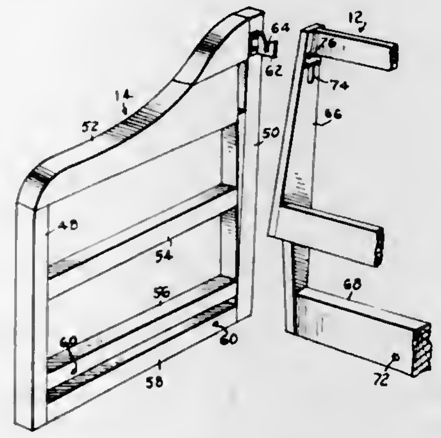
Jay Walter Jensen, Utica, David L. Lang, Rochester, and James T. Ligon, Almont, Mich., assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Mar. 13, 1968, Ser. No. 712,840
Int. Cl. A44b *17/00;* **A62b** *35/00*
U.S. Cl. 297—389 **10 Claims**



An apparatus for connecting the loose ends of at least two separable structures. There are two major assemblies, first a base with a projecting swivel post, the base being attached to at least one of the separable structures to be joined. The other assembly is a latch mechanism which is attached to another of the separable structures to be joined. This assembly includes a frame, and an elongated slot in the frame which locks over the swivel post of the base structure. Spring loaded jaws are mounted to the frame and manually opened, the swivel post being moved through the slot into the jaws which are then closed upon a circumferential groove on the swivel post, to hold the swivel post in one end of the slot. The jaws are provided with squeezable pinch grip extensions so that the jaws may be easily opened manually to quickly release the two assemblies for separation thereof. A particular sliding, free ended leaf spring is disclosed as resilient means to maintain the jaws closed, the entire apparatus being particularly suited to the connection of a harness belt to a lap belt in automobile passenger safety apparatus.

3,526,433
CHAIR CONSTRUCTION

Richard H. Miller, 4723 Crestwood Way, Sacramento, Calif. 95822
Filed Mar. 7, 1968, Ser. No. 711,259
Int. Cl. A47c *4/02, 4/08*
U.S. Cl. 297—440 **2 Claims**

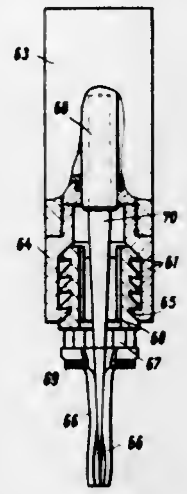


A seat, such as an upholstered chair, sofa or love seat, is so constructed that it can be shipped in a flat package, knocked down, and assembled by the purchaser in very few minutes. The seat has a back, two arms and seat which are assembled by connecting the back to the seat and then by ingenious means connecting the two arms to the back and seat. The upper ends of the arms have hook engagement with cooperating means on the edges of the back, whereupon the seat is bolted to the arms to complete the assembly. The seat construction employs conventional sinuous springs extending from front to back and the seat deck construction is such that longer springs may be used, connected in close proximity to the front and back of the seat deck and at relatively low points to improve the comfort of the seat by spring action. Tension means connected to the springs prevents the "bucketing" of the springs, the tensioning means being variable to control such action.

3,526,434
PRESSURE BREAKER

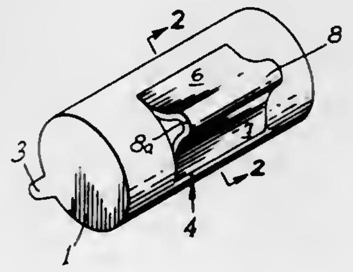
Helmut Darda, Nordwerk, Blumberg, Baden, Germany
Original application June 21, 1967, Ser. No. 648,537, now Patent No. 3,439,954, dated Apr. 22, 1969. Divided and this application Feb. 6, 1969, Ser. No. 797,022
Claims priority, application Germany, Dec. 8, 1966, D 51,738; Mar. 8, 1967, D 52,469
Int. Cl. E21c *37/02*
U.S. Cl. 299—22 **28 Claims**

A pressure breaker which comprises an elongated expander insertable into the drill hole of a rocky formation and coupled to the cylinder of a hydraulic operating means by a first connecting device, and a spreader received between the pressure bars of the expander and connected to the piston of the operating means by a second connecting device. At least one of the two connecting devices permits separation of the spreader or expander from the corresponding part of the operating means. When the spreader is caused to penetrate deeper into the expander, the pressure bars move apart and stress the material around the drill hole.



3,526,435
RESILIENT RETAINING MEANS AND COMBINATION

Claude B. Krekeler, Hamilton County, Ohio, assignor to The Cincinnati Mine Machinery Co., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 20, 1967, Ser. No. 692,170
Int. Cl. E21c *25/46*
U.S. Cl. 299—92 **19 Claims**

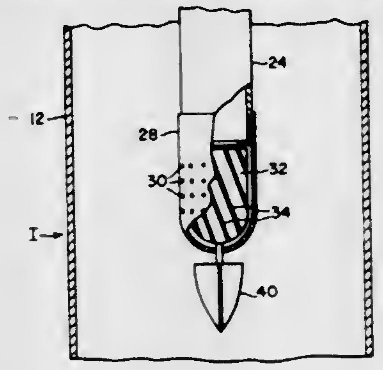


A resilient retaining means for maintaining the shank of a cutter bit, for a mining machine and the like, in the shank receiving perforation of a socket member or lug. The retaining means comprises a body of resilient substance and an engagement element affixed to the body. The engagement element has an engagement nose adapted to cooperate with a notch in the cutter bit shank. The retaining means is located in a transverse hole in the lug, the transverse hole and the shank receiving perforation being interconnected. The engagement nose is of a width less than the width of the shank receiving perforation and extends thereinto.

3,526,436
MATERIAL LIFT SYSTEM

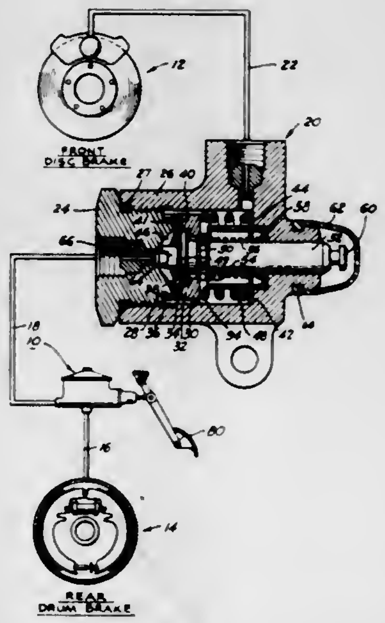
Melvin W. Smith, Edgewater, and Charles S. Kluth, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 11, 1968, Ser. No. 736,036
Int. Cl. B65g *53/30*
U.S. Cl. 302—14 **8 Claims**

An air lift for an underwater mining system wherein aggregates collected by a bottom collector are propelled through a conduit to a surface vessel by means of an air injection system wherein an air pipe supplying compressed air is situated within the conduit carrying the aggregates. The compressed air pipe is disposed within the conduit to maximize clearance between the air pipe and conduit. Connected to the bottom opening of the compressed air pipe is a member containing a plurality of small apertures behind which is a rotating turbine operable by air pressure. A tool means is connected to the end of the compressed air pipe and rotatable with the turbine to remedy any possible clogging of the conduit.



3,526,437
HOLD-OFF VALVE

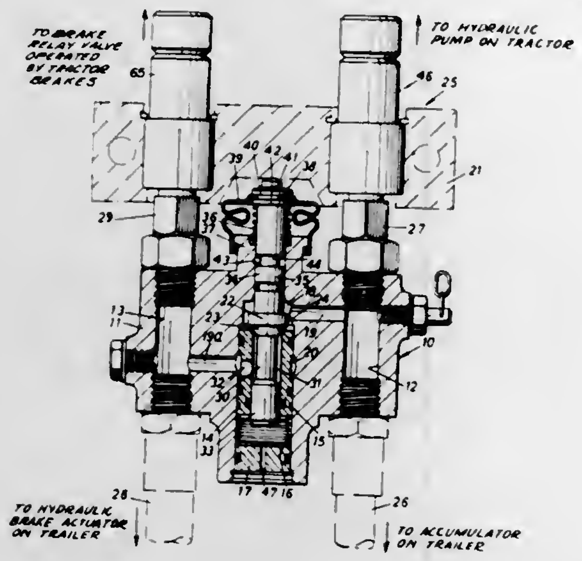
Richard L. Lewis, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 557,142, June 13, 1966. This application May 12, 1969, Ser. No. 827,091
Int. Cl. B06t *13/00*
U.S. Cl. 303—6 **15 Claims**



A pressure hold-off valve includes a housing having an inlet port and an outlet port communicating with an interior bore. An annular poppet valve is mounted for axial movement within the bore, and a valve head and stem projects from the annular poppet. The valve head is provided with a series of axially extending openings. The poppet carries a resilient member which interconnects the poppet and the openings in the valve head and is adapted to alternately cover and uncover the openings in the head so that fluid communication from the inlet to the outlet is permitted up to a predetermined inlet pressure and then terminated until a higher inlet pressure is reached. The higher pressure will cause the annular poppet to move downwardly in the bore to uncover a series of openings to meter fluid flow between the chambers up to a still higher inlet pressure. At the still higher inlet pressure, the annular poppet and valve head move further in the bore whereupon the fluid pressure flows freely through the hold-off device.

3,526,438
COUPLINGS FOR BRAKE SYSTEM

Michael J. England, Sutton, Derrick Donnell, Coventry, and Eric C. Hales, Studley, England, assignors to Girling Limited, Birmingham, England
Filed Jan. 29, 1969, Ser. No. 795,085
Claims priority, application Great Britain, Feb. 1, 1968, 5,210/68; July 18, 1968, 34,148/68
Int. Cl. B60t *17/04, 17/18*
U.S. Cl. 303—18 **17 Claims**


TO BRAKE RELAY VALVE OPERATED BY TRACTOR BRAKES
TO HYDRAULIC PUMP ON TRACTOR
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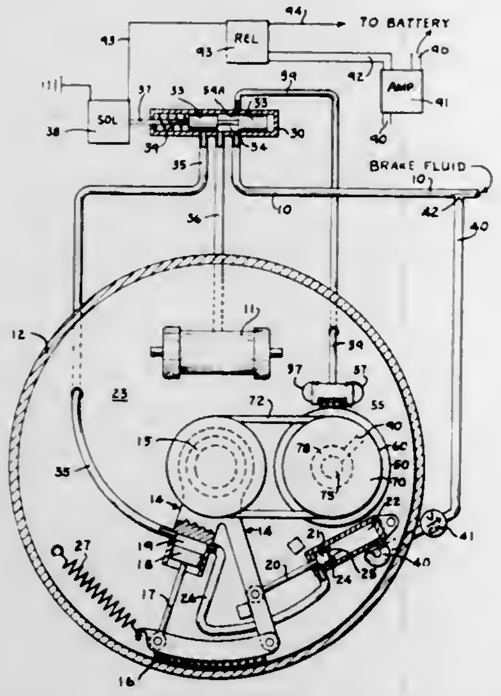
28
26
TO HYDRAULIC BRAKE ACTUATOR ON TRAILER
TO ACCUMULATOR ON TRAILER

A twin-line self-sealing hydraulic coupling for a trailer brake system, in which an accumulator and hydraulic brakes are fitted to the trailer, is fitted with a safety device for hydraulically operating the brakes in the event of trailer breakaway. The safety device comprises a valve on the trailer for automatically interconnecting the accumulator and brake lines immediately the coupling heads are separated from one another.

3,526,439
NON-SKID BRAKING SYSTEM

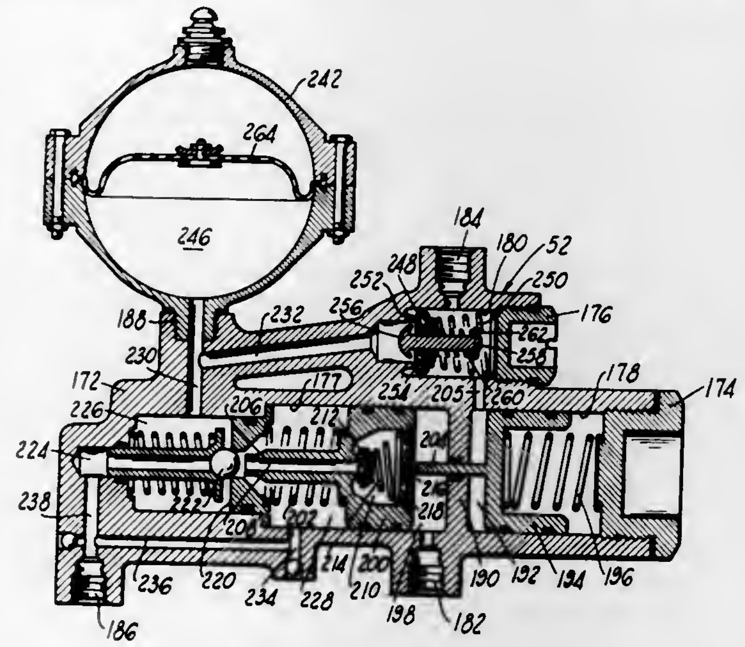
Fred C. Stevens, 1 Garrett Place, Bronxville, N.Y. 10708
Filed Nov. 29, 1968, Ser. No. 779,723
Int. Cl. B60t *8/16, 8/08*
U.S. Cl. 303—21 **8 Claims**



A non-skid braking system for vehicles including an inertia wheel adapted to measure wheel slippage, valve means actuated when incipient slippage occurs to cut off brake fluid pressure to the brake cylinder and to remove a portion of the fluid from such cylinder and a pump cylinder adapted to return such fluid to the system after each such actuation.

3,526,440
RELAY VALVE

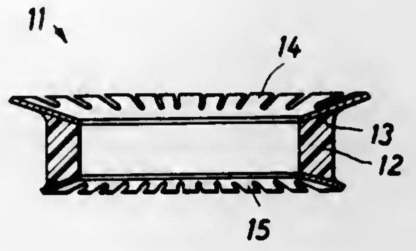
John W. Blair, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Continuation of application Ser. No. 788,698, Dec. 27, 1968, which is a continuation of application Ser. No. 694,339, Dec. 28, 1967. This application June 2, 1969, Ser. No. 831,269
Int. Cl. B60t *7/12, 13/14*
U.S. Cl. 303—40 **10 Claims**



A pressure operated relay valve for controlling fluid pressure delivered to the individual wheel brakes of a vehicle. An accumulator storage chamber is connected to the control chamber by a check valve in the relay valve. When the fluid pressure to the control chamber is raised, a piston contained therein will move causing the valve plunger to unseat the ball valve allowing pressure in the accumulator access to the control chamber. If the fluid pressure from the source upon brake application is below a predetermined value, a spring biased actuator mechanically allows the accumulator fluid pressure availability to the control chamber. From the control chamber the fluid pressure is directed to the wheel brakes to stop the vehicle.

3,526,441
AXIAL SEAL

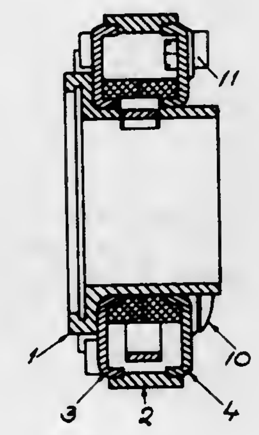
Horst Schulz, Stossdorf, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany
Filed July 24, 1967, Ser. No. 655,519
Claims priority, application Germany, July 23, 1966, K 59,865
Int. Cl. F16j *15/38*
U.S. Cl. 305—11 **6 Claims**



An axial seal between two members rotatable relative to each other to a limited extent only, especially for the bearing eyes of coupled chain links of a track laying vehicle, according to which an annular member of elastic material is arranged in the recesses of two adjacent bearing eyes of two adjacent chain link side walls. One side of said elastic annular member being by means of a disc non-rotatably arranged in one of said bearing eyes whereas the other side of said elastic annular member is by means of a disc non-rotatably arranged in the other one of said bearing eyes. The invention is characterized primarily in that the discs are formed by elements with a radial spring effect, preferably by conical disc springs engaging said bearing eyes under preload.

3,526,442
RING BEARING

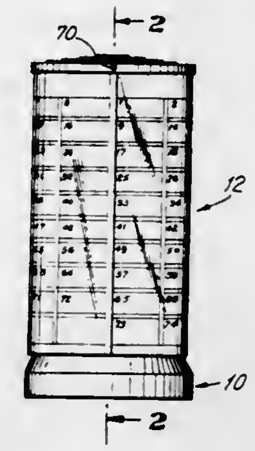
Gerdt Winlöf, 18A von Boijgatan, Laxa, Sweden
Filed Sept. 17, 1968, Ser. No. 760,147
Int. Cl. F16c *1/24*
U.S. Cl. 308—128 **5 Claims**



A sleeve bearing defined by a sleeve and holder with a U-shaped profile providing an endless annular chamber between the sleeve and holder containing means for lubricating the sleeve surface and a space for lubricant with inspecting windows.

3,526,443
DISPLAY STAND

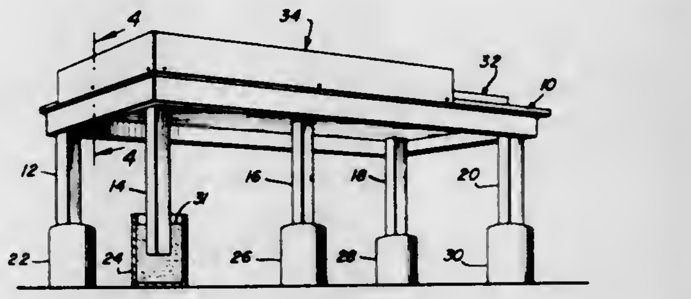
Leslie Charles Smith, Winchmore Hill, London, England, assignor to Lesney Products & Co. Limited, London, England
Filed May 1, 1967, Ser. No. 635,061
Int. Cl. A47f *3/06, 3/10*
U.S. Cl. 312—125 **12 Claims**



According to one embodiment, an easily assembled rotatable display stand is provided for objects which are accommodated in separate receptacles. The display stand is formed from a flat sheet which is rolled into a cylinder which is encircled by a rolled transparent sheet the ends of which are held together, the display portion being rotatably mounted on a support and driven by a motor. According to another embodiment, the display portion is manually rotatable.

3,526,444
LIGHTWEIGHT STABILIZED SUPPORT FOR A HOLOGRAPHIC SYSTEM

Joseph T. Carcel, Levittown, and Alfred H. Rodemann, Port Washington, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 13, 1967, Ser. No. 616,434
Int. Cl. G02b; F16f *15/00*
U.S. Cl. 350—3.5 **1 Claim**



Apparatus including a support platform for supporting thereon equipment critically sensitive to variation in environmental conditions, depending support means fixed to said platform and floatingly positioned in a quantity of commercially dry sand, and housing means for said equipment to provide a local, clean and stabilized environment, together with the method of testing experimental environment sensitive equipment by inexpensive means before expending funds on elaborate stabilization means.

3,526,445
SIGNAL LIGHT LENS

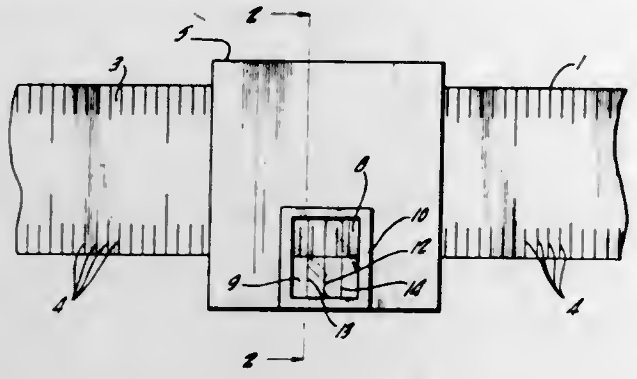
Marion W. Evans, 2610 Washington Ave., Evansville, Ind. 47714, and John R. Miles, 830 Glenayre Drive, Glenview, Ill. 60025
Filed Mar. 4, 1968, Ser. No. 710,101
Int. Cl. G02b *17/02*
U.S. Cl. 350—100 **1 Claim**

A signal light lens having a centrally disposed "bullseye" portion for transmitting a narrow beam of light at a far distance. An outer annular band is provided for transmitting a beam of light at an intermediate distance. An inner annular band is provided for transmitting a beam of light at a close distance. Raised segments are provided on the annular bands for transmitting a beam of light vertically.

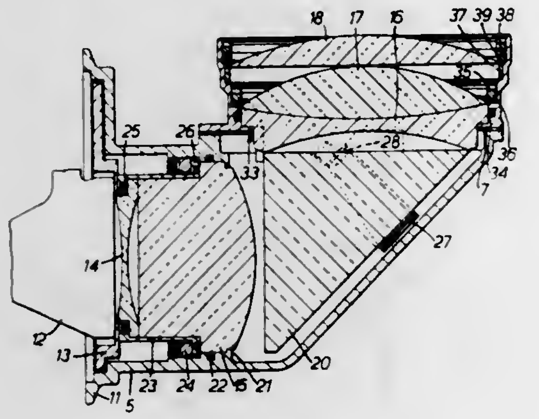
3,526,446
OPTICAL SYSTEM

Walter Griffin Paige, Pasadena, and Samuel J. Saklem, Monrovia, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 31, 1967, Ser. No. 664,827
Int. Cl. G02b *27/02, 5/14*
U.S. Cl. 350—110 **7 Claims**

Parallax between lines on surfaces lying in different planes is eliminated by utilizing a mass of optical fibers to transmit light so the light from both surfaces effectively emanates from a common plane. In a slider for a ruler, two masses of optical fibers are employed. The ruler rests on the plane in which the lines to be measured lie. One mass extends from the top of the ruler to a plane above the ruler and the other mass extends from the bottom of the ruler to the same plane above the ruler. A hair line is etched in the end of the masses lying in the plane above the ruler.



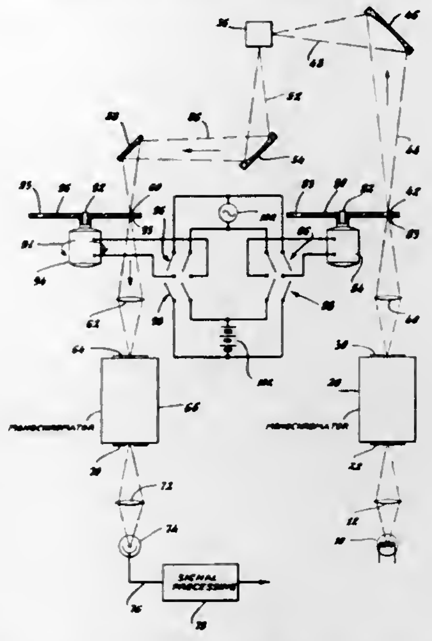
3,526,447
OPTICAL SYSTEMS
Charles Gorrie Wynne, Beckenham, England, assignor to Specto Avionics Limited
Filed June 15, 1966, Ser. No. 557,832
Claims priority, application Great Britain, June 16, 1965, 25,435/65
Int. Cl. G02b *27/14*
U.S. Cl. 350—174 **1 Claim**



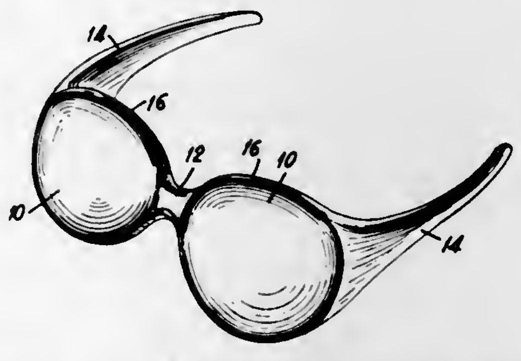
A head-up display unit for projecting a collimated image of a cathode-ray-tube display onto an inclined partly-transparent reflector in the line of sight of an aircraft-pilot, use being made of a prism for displacing the optical axis through a right angle. The prism is part of a collimating system that consists, in succession from the cathode-ray tube to the reflector, of a diverging lens, a converging lens, the prism, a converging lens doublet and a further converging lens.

3,526,448
SYNCHRONOUS OPTICAL CHOPPING SYSTEM
George T. Senseney, New York, N.Y., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Feb. 14, 1967, Ser. No. 616,085
Int. Cl. G01d *5/36;* **G02f** *1/30*
U.S. Cl. 350—272 **10 Claims**

A pair of rotating optical choppers may be operated synchronously (with any desired phase relationship therebetween or separately with the stopped chopper in a known predetermined position. Each of the choppers is rotated by its own individual two-pole polarized hysteresis synchronous motor, one of which may be rotatively adjusted to obtain any desired phase relationship between the choppers. Each motor is energized by the same A.C. line voltage for synchronous operation; one pole winding of either of the polarized synchronous motors is supplied with a D.C. voltage to stop the chopper in a desired known position.

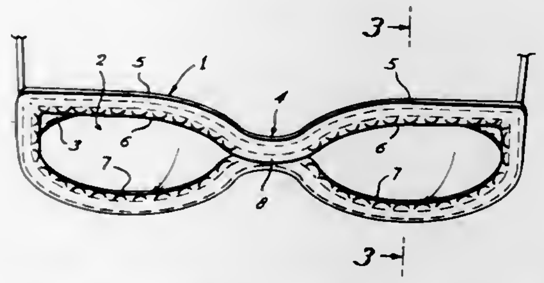


3,526,449
ONE-PIECE SUNGLASSES
Maurice Bollé and Robert Bollé, Oyonnax, France, and Ritchard Salvage, Brooklyn, N.Y., assignors to Ritchard Salvage
Filed Nov. 9, 1967, Ser. No. 681,762
Int. Cl. G02c *7/10*
U.S. Cl. 351—41 **1 Claim**



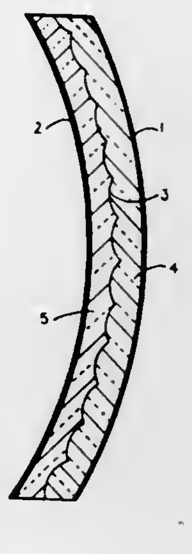
Sunglasses are of one-piece molded construction and have temple portions which are concavo-convex where they join the lens portions, thereby conforming to the optical curve of the lenses. An inwardly projecting lip is provided along the upper and lower edges of the lenses and bridge portions and is most pronounced along the underside of the bridge.

3,526,450
ORNAMENTAL COVERING FOR EYEGLASSES
Margaret P. Berry, 616 S. 28th St., Waco, Tex. 76711
Filed May 6, 1969, Ser. No. 822,168
Int. Cl. G02c *11/02*
U.S. Cl. 351—52 **1 Claim**



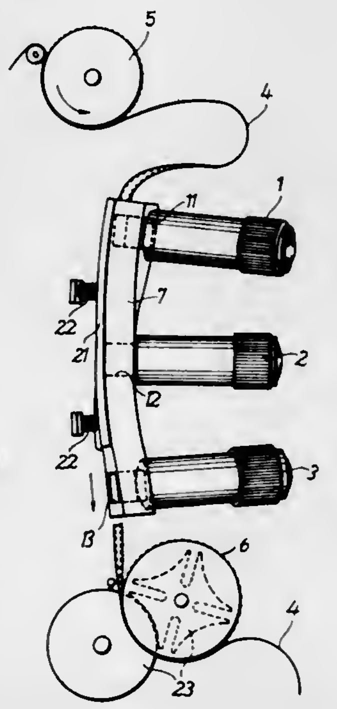
An ornamental covering, formed of ribbon or the like, which resembles a garter and which is applied to the frame of a pair of eyeglasses, exclusive of its earpieces, including the rims and the connecting bridge.

3,526,451
TRANSPARENT OCCLUDER CONTACT LENS
Charles W. Neefe, Box 361, Big Spring, Tex. 79720
Filed May 10, 1968, Ser. No. 728,260
Int. Cl. G02c *7/04*
U.S. Cl. 351—160 **1 Claim**



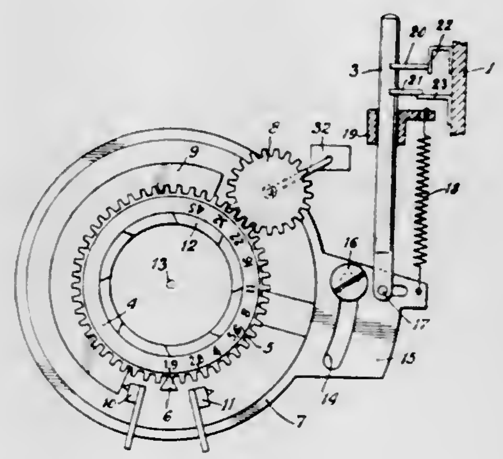
An occluder contact lens which by refraction reduces the wearer's visual acuity to below 20/400 and is cosmetically invisible on the eye.

3,526,452
OPTICAL APPARATUS
Wolfgang Dorn, Wedel, Holstein, Germany, assignor to Paul Lazare, Hamburg, Germany
Filed June 27, 1966, Ser. No. 560,650
Int. Cl. G03b *37/04*
U.S. Cl. 352—70 **4 Claims**



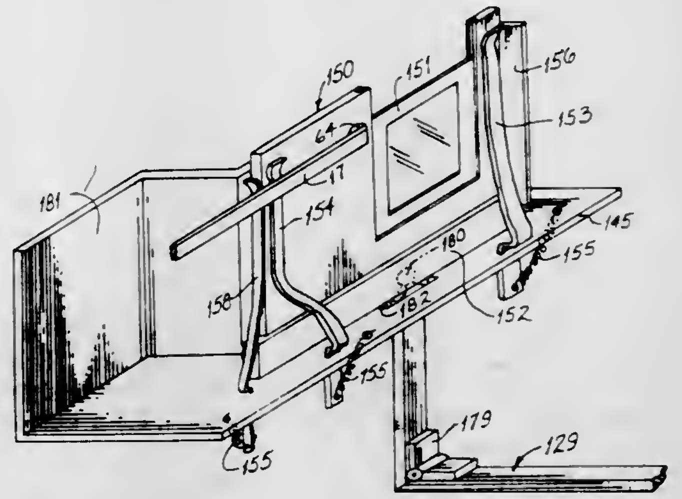
A method and apparatus for producing wide screen motion pictures by imparting to the film a controlled twisting into a plurality of different planes. A plurality of lens elements is provided, one for each of the different planes of the film. Each lens element has an optical axis which is perpendicular to its corresponding plane of film such that unitary source light rays pass simultaneously in each of the differing angular directions of optical axes to the differing planes of film in twisted sequence. A twisted film gate member imparts the twisting to the film in differing angular window locations.

3,526,453
MOTION PICTURE CAMERA WITH EXPOSURE CONTROL
Hans Rühle, Stuttgart, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany
Filed Mar. 27, 1968, Ser. No. 716,548
Claims priority, application Germany, Mar. 31, 1967, Z 12,778
Int. Cl. G03b *7/08, 19/18*
U.S. Cl. 352—141 **4 Claims**



A motion picture camera with an exposure control device in which the camera release upon actuation first closes the electric circuit of the exposure control device and then closes the electric circuit for the camera drive which also operates the picture window shutter. The camera release also adjusts the rotary cage of the camera objective diaphragm for compensating the illumination of a photoelectric element of the exposure control device when the picture window shutter is stationary and no longer illuminates the photoelectric element with intermittent light.

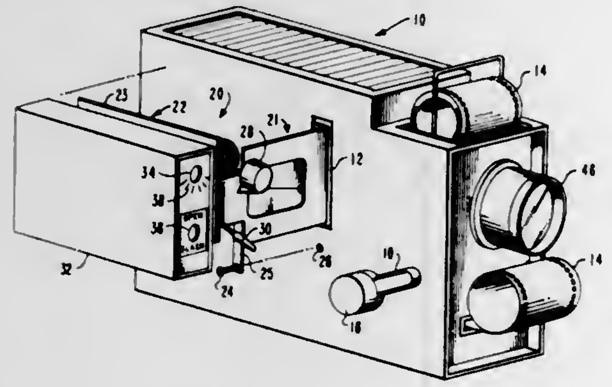
3,526,454
SOUND SYNCHRONIZED SLIDE PROJECTOR
Martin E. Gerry, F179 Devon Strafford Apartments, Devon, Pa. 19333
Continuation-in-part of application Ser. No. 528,707, Feb. 21, 1966. This application May 28, 1968, Ser. No. 736,542
Int. Cl. G03b *31/06*
U.S. Cl. 353—19 **10 Claims**



A slide projector that optically projects any of a number of slides containing visual information retained in compartments of a slide magazine. The slides are automatically transferred from the slide magazine and positioned one slide at a time with respect to an optical system of the projector for projecting the visual information on the slides and subsequently returning the slides to their respective compartments in the slide magazine. The projector has sequencing capability for providing proper positioning of the slide magazine for effecting slide transfer and return. An individual audio information record is secured to each of the slides. A sound track scanner provides a generally zig-zag sound track on a surface of the audio information record and a record-reproduce head is secured to the sound track scanner for recording sound along the sound track or for reproducing the sound from the sound track.

3,526,455
TACHISTOSCOPIC APPARATUS

Gaspar Cisneros Barnette, 7138 Samoa Place,
Tujunga, Calif. 91042
Filed July 17, 1967, Ser. No. 653,706
Int. Cl. G03b *21/14, 19/04, 9/10*
U.S. Cl. 353—91 **12 Claims**

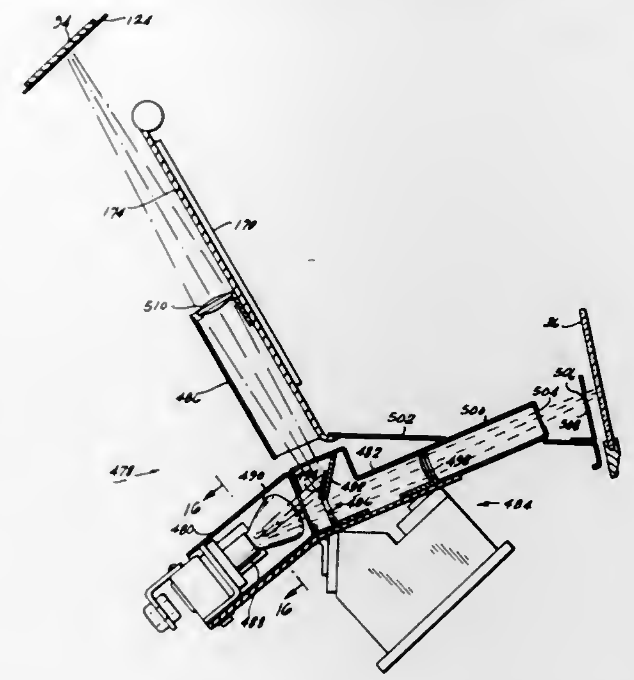


A shutter mechanism, having a scissors action and operable to open for a brief interval in response to a control signal, is positioned in the optical path extending between the light source and the viewing screen of a tachistoscopic system. The shutter mechanism has two shutter blades, pivoted about points on opposite sides of an aperture to open from the center outwardly. A link, movable by an electromagnet, and connected to the shutter blades, is used to provide opposite directions of rotation of the blades. The inner edges of the blades may be angled so that as the blades move apart, a rectangular, horizontal slit is formed which makes a central, rectangular portion of the image immediately visible on the viewing screen. Suitable control circuitry is provided and connected to the electromagnet to move the link and thereby move the shutters from the closed position to the open position for a predetermined duration. In addition, a lock is provided for holding the shutter in the open position for continuous viewing.

3,526,456
READER-COPIER SERIAL-NUMBERING DEVICE

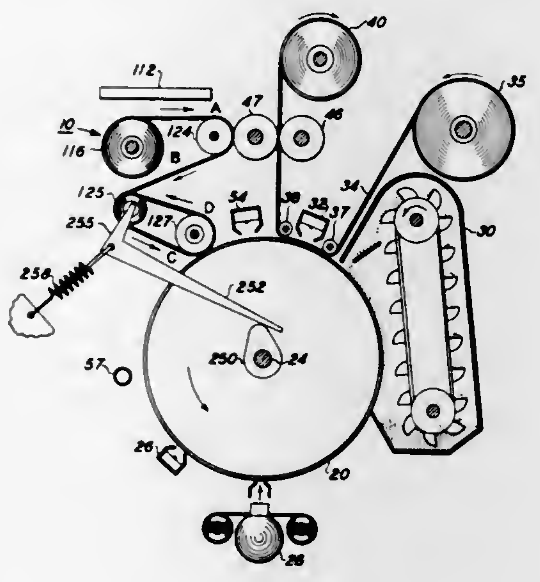
Ira M. Sage, New York, and Peter P. Pungitore, Bronx, N.Y., and Peter J. Totino, Edgewater, N.J., assignors to Old Town Corporation, Brooklyn, N.Y., a corporation of New York
Original application Nov. 20, 1964, Ser. No. 412,729, now Patent No. 3,385,161, dated May 28, 1968. Divided and this application Dec. 20, 1967, Ser. No. 716,248
Int. Cl. G03b *27/70*
U.S. Cl. 355—4 **4 Claims**

A reader-copier which enlarges microfilm images, displays them on a large viewing screen, and make electrostatic copies of the images. The device provides a serial number for each copy being made, and displays that serial number on the viewing screen while simultaneously projecting it upon the copy paper so as to provide a permanent impression of the serial number on the copy paper (see FIGS. 15 and 16).



3,526,457
CLEANING APPARATUS FOR ELECTROSTATIC COPYING MACHINES

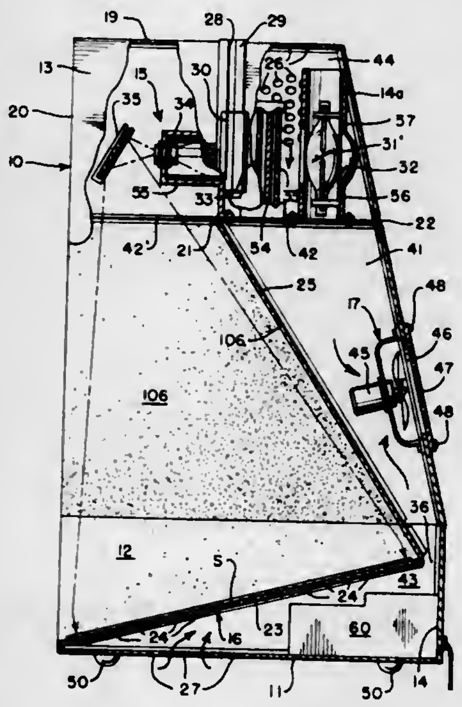
John A. Dimond, Pittsford, and Armistead Wharton, Henrietta, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 20, 1967, Ser. No. 647,411
Int. Cl. A47l *13/40;* **A46b** *15/00;* **G03c** *1/10*
U.S. Cl. 355—15 **2 Claims**



An improved cleaning apparatus for an electrostatic copying machine wherein an electrostatic latent image formed on the surface of a plate member is moved past a series of processing stations. At the development station the image is developed by an electroscopic powder. At the transfer station the powder image is transferred to support material for subsequent fixing by pressure rolls. The improved cleaning apparatus for the plate and pressure rolls comprises a frame, a first roll rotatably supported in the frame supporting a web of fibrous material which is fed in a path with at least one surface to be cleaned and a first pressure roll for urging the web against the first surface to be cleaned. There is included a second roll positioned in the web path to form a loop directing the opposite side of the web toward a second surface to be cleaned. A second pressure roll urges the web against the second surface. An oscillating drive operatively associated with the second roll imparts intermittent rotary movement there to advance the web material along its path.

3,526,458
MICROFILM READER-PRINTER

Edward F. Meyers, Roslyn Heights, and Jacob Rosenbaum, Spring Valley, N.Y., assignors to Taffet Electronics, Inc., Woodside, N.Y., a corporation of New York
Filed June 24, 1968, Ser. No. 739,403
Int. Cl. G03b *27/60, 27/70*
U.S. Cl. 355—45 **6 Claims**

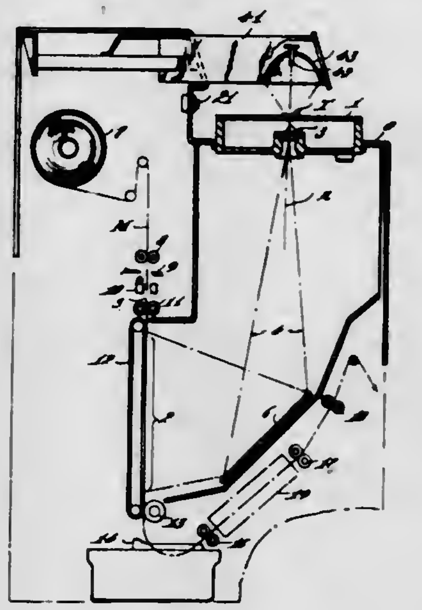


A photographic reader-printer for enlarging microfilm images by projecting them onto a viewing screen. The screen also functions simultaneously as an easel for sensitized recording paper. A high pressure, short arc mercury vapor lamp is used as a light source in the projector section, and this together with an associated high power electric supply requires a heat dissipating means. The latter is accomplished by providing a dual purpose air circulating system in the reader-printer housing consisting of a plenum chamber communicating with all of the high heat sources and with the bottom side of the screen-easel. An exhaust fan located in an outer wall of the housing simultaneously exhausts heated air from the plenum chamber and provides a partial vacuum at the easel while cooling the circuit elements and the lamp.

3,526,459
OPTICAL ILLUMINATING SYSTEM

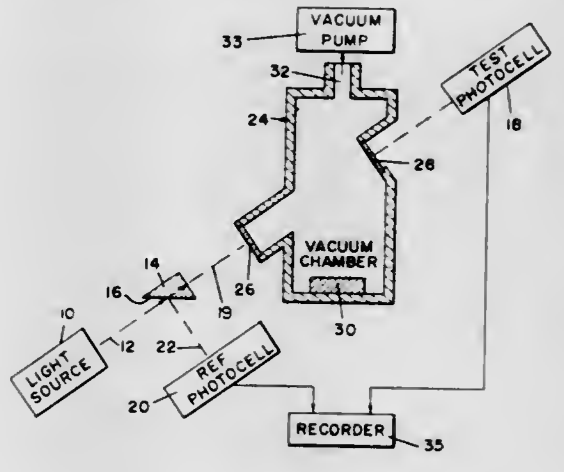
William B. Elmer, Boston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed May 20, 1968, Ser. No. 730,397
Int. Cl. G03b *27/54*
U.S. Cl. 355—67 **9 Claims**

A microfilm copier has an optical system for illuminating a transparency supported on a window and for projecting an image of the transparency on photosensitive paper. The illuminating system, which projects light through the transparency to a projection lens, includes an ellipsoidal reflector holding a quartz-halogen lamp. The reflector has an axial opening for the lamp, is generally specular and covers the solid angle defined by lines from the lens aperture through the opposite edge of the transparency frame. The solid angle subtended by the lens from the center of the transparency is substantially greater than the solid angle subtended by the reflector opening from the transparency center. As a result the tendency of the lamp opening in the reflector to cast a dark shadow area on the center of the transparency is compensated while permitting the use of a small economical lens.



3,526,460
OPTICAL CHARACTERISTICS MEASURING APPARATUS

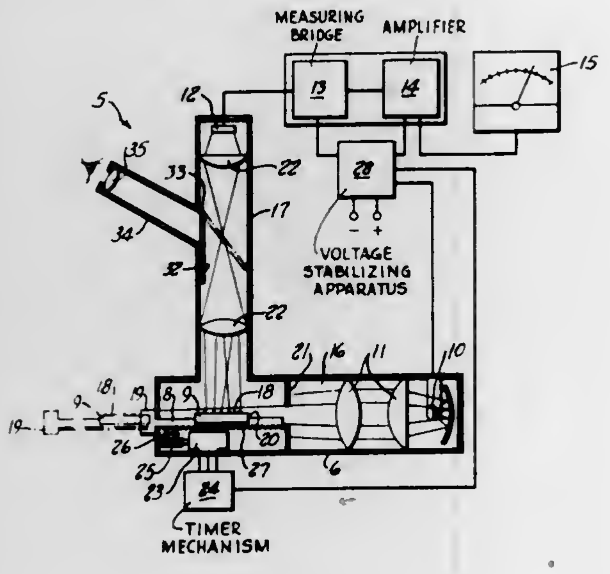
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Charles Ernest Gray, Pasadena, Calif.
Filed June 27, 1967, Ser. No. 649,360
Int. Cl. G01n *1/00, 21/00, 33/28*
U.S. Cl. 356—36 **4 Claims**



An apparatus for measuring the effect of outgassing material in vacuum on the optical characteristics of optical elements. The apparatus includes a source of light providing a beam partially directed to a first photocell to monitor changes in the light from the source. The rest of the light beam is directed to a second photocell through optical elements whose optical characteristics as affected by outgassing material is to be measured. The optical elements and the material are included in a chamber which can be evacuated. The vacuum in the chamber causes the material to outgas which results in condensation of molecules on the optical elements, affecting their light transmission or light reflectance characteristics. The changes in such optical properties are measured as a function of changes in the output of the second photocell.

3,526,461
DETERMINING CLEANNESS OF AIR IN A CONTROLLED ENVIRONMENT

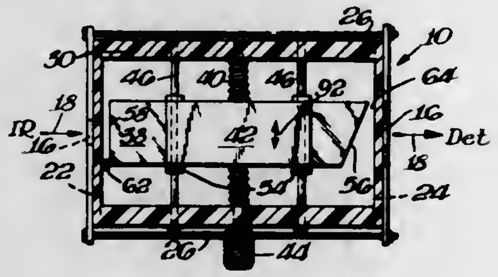
Bo Oscar Lindahl and Valentin Lamme, Jonkoping, Sweden, assignors to SAAB Aktiebolag, Linkoping, Sweden, a corporation of Sweden
Filed Apr. 24, 1967, Ser. No. 633,124
Claims priority, application Sweden, Apr. 27, 1966, 5,681/66
Int. Cl. G01n *1/00, 21/00, 33/28*
U.S. Cl. 356—38 6 Claims



A slide having a dark, accurately flat top surface is exposed to air to be sampled. A beam of light is directed across said surface, parallel thereto. Only accumulated dust particles on said surface reflect light in directions nonparallel thereto and the light they thus reflect is concentrated on a photo-responsive element. Its response affords an indication of quantity of particles on the slide.

3,526,462
RADIANT ENERGY ABSORPTION CELL WITH A TRANSVERSELY MOVABLE WEDGE-SHAPED SPACER BLOCK THEREIN

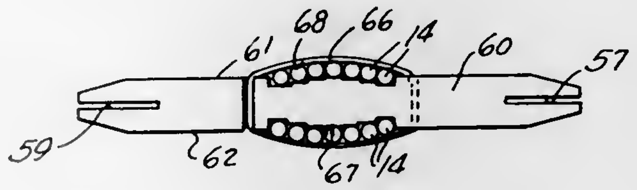
Wallace H. McCurdy, Newark, Del., and Ronald P. Upton, Stonington, Conn., assignors to University of Delaware Research Foundation, Inc., Newark, Del., a corporation of Delaware
Filed Aug. 17, 1967, Ser. No. 661,398
Int. Cl. G01n *21/26, 23/12;* **H01j** *37/00*
U.S. Cl. 356—246 9 Claims



A wedge shaped spacer block is disposed within an otherwise conventional infrared absorption cell. The spacer block is formed of a material which is transparent to infrared radiation and has two faces positioned in the path of the infrared light beam. One of these faces is perpendicular to the axis of the light beam. The remaining face is positioned at an angle with respect to the axis of the light beam. By moving the spacer block transversely with respect to the axis of the light beam, the thickness of the sample in said cell through which sample the infrared radiation passes is varied.

3,526,463
MARKING INSTRUMENT

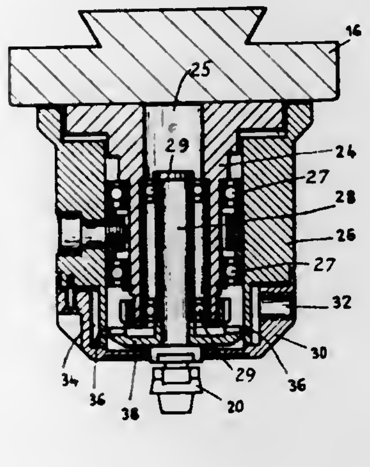
John P. Shurcliff, Box 216, Tullahoma, Tenn. 37388
Filed Jan. 16, 1969, Ser. No. 791,591
Int. Cl. B43k *23/00, 23/02*
U.S. Cl. 401—34 19 Claims



The present marking instruments have at least one storage area for a plurality of cylindrical marking elements with said marking elements detachably retained on the marking instrument or on a magazine detachably stored within the marking instrument and at least one end axial bore for detachably retaining a marking element partly therein for marking purpose, but which can be replaced by other marking elements as from said stored marking elements and can also be used to detach and replace one of said stored marking elements.

3,526,464
PNEUMATIC MOTOR UNIT FOR MACHINE TOOLS

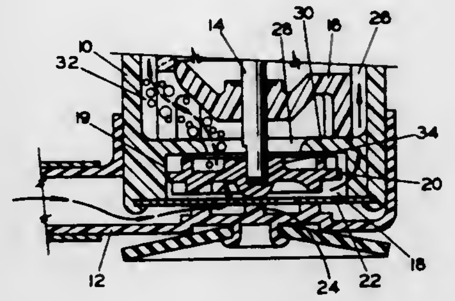
Peter Sprang, Munich, Germany, assignor to Friedrich Deckel Prazisions Mechanik und Maschinenbau, Munich, Germany, a firm of Germany
Filed July 5, 1968, Ser. No. 742,934
Claims priority, application Austria, July 19, 1967, A 6,727/67
Int. Cl. F01d *15/06, 25/16*
U.S. Cl. 415—126 9 Claims



A pneumatic motor unit, adjustable radially with respect to the axis of the spindle head on which it is mounted, comprises a hollow hub in which the tool spindle of the unit is rotatably supported. A pneumatic turbine rotor is on the spindle below the end of the hub. The hub and rotor are surrounded by a hollow housing rotatable with respect to the hub. A cap on the housing forms, in conjunction with the housing, an annular air passage surrounding the rotor, and nozzles direct compressed air from this annular passage onto the blades of the rotor.

3,526,465
IMPELLER FOR A SUBMERGED CENTRIFUGAL FUEL PUMP

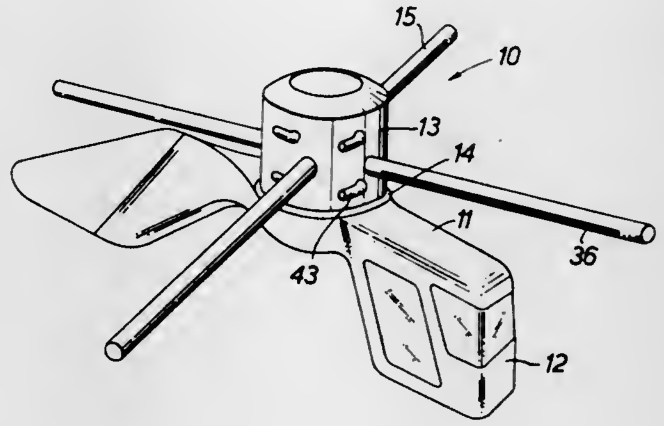
Donald R. Compton, Belleville, Ill., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 10, 1968, Ser. No. 758,848
Int. Cl. F04d *9/00, 1/00, 29/18*
U.S. Cl. 415—198 3 Claims



A centrifugal fuel pump impeller mounted on the shaft of an electric motor includes a circular plate having on its intake side a series of ridges running from inner points of the plate to its periphery to form pumping vanes. The trailing sides only of the ridges have fillets along their entire length to prevent vapor lock. On the other side of the plate there is an annular ridge and short vanes between it and the periphery of the plate for preventing pumped fuel from flowing inwardly over the top of the impeller. The chamber in which the impeller is located has a clearance space for the air and vapor in the fuel to escape over the top of the impeller.

3,526,466
ROTOR FOR USE ON A ROTARY WING AIRCRAFT

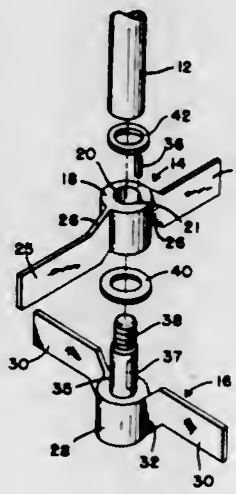
Donald Eyre, Alvaston, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed July 2, 1968, Ser. No. 741,997
Claims priority, application Great Britain, July 13, 1967, 32,379/67
Int. Cl. B64c *27/18*
U.S. Cl. 416—21 8 Claims



A rotor assembly for use on rotary wing aircraft, the rotor assembly including a rotor hub having a plurality of rotor blades mounted thereon and a plurality of gas turbine engines carried within the rotor hub, the gas turbine engines being arranged to rotate the hub in the same angular sense. The rotor blades are provided with slots, and means driven by the engines supplies compressed air to the blades and slots, and discharges the same from the slots, the slots being arranged to direct the compressed air so as to provide lift for the blades. Exhaust gases from the gas turbine engines are discharged through nozzles provide on the rotor hub and arranged to direct the exhaust gases so as to at least assist in rotation of the hub and the blades.

3,526,467
AGITATOR IMPELLER

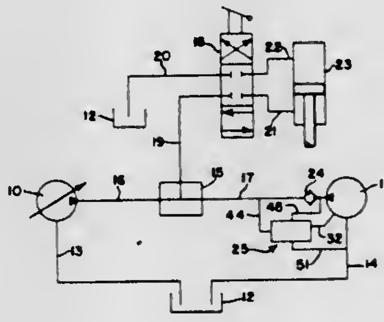
Donald L. Kime, Dayton, Ohio, assignor to Chemineer, Inc., Dayton, Ohio, a corporation of Ohio
Filed Aug. 23, 1968, Ser. No. 754,770
Int. Cl. B44d *3/06*
U.S. Cl. 416—200 4 Claims



An agitator impeller includes an upper section and a lower section each having a hub and outwardly projecting blades, and the blades of both sections are arranged to have substantially the same path. A shaft extension projects upwardly from the hub of the lower section and is threadably connected to the lower end of a drive shaft to effect a self-tightening connection of the sections to the shaft.

3,526,468
MULTIPLE PUMP POWER ON DEMAND HYDRAULIC SYSTEM

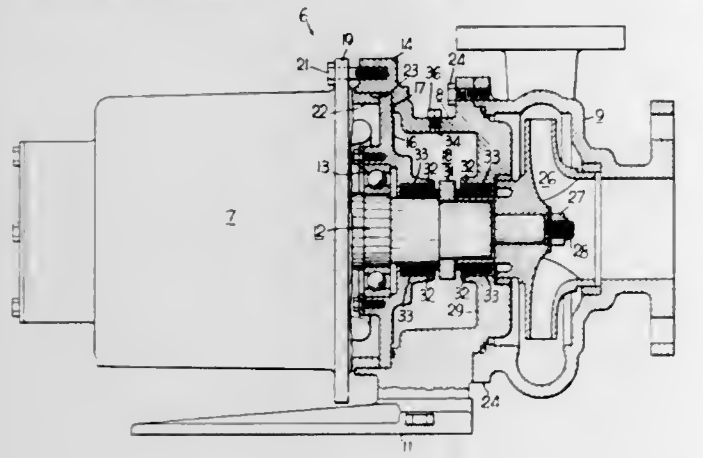
Seaton Moon, Cedar Falls, and Matthew Rudolph Olsofski and James Melvin Bahl, Waterloo, and Arvid Gayle Waschek, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Nov. 13, 1968, Ser. No. 775,287
Int. Cl. F04b *49/00*
U.S. Cl. 417—214 10 Claims



A hydraulic system having a first variable displacement pump and a second pump supplying fluid to a hydraulic function at substantially constant and variable pressures, respectively, and a pump control valve for the second pump which is responsive to the fluid pressure supplied to the function and to the discharge pressure of the second pump to stop the flow of fluid from the second pump whenever the pressure supplied to the function reaches a first predetermined value no greater than the maximum pressure which the constant pressure pump can supply until the fluid pressure supplied to the function drops below a second predetermined value below the first value and to allow full flow of fluid from the second pump when the fluid pressure supplied to the function reaches the second value until the fluid pressure supplied to the function again reaches the first value.

3,526,469
PUMP MOTOR SEAL SYSTEM

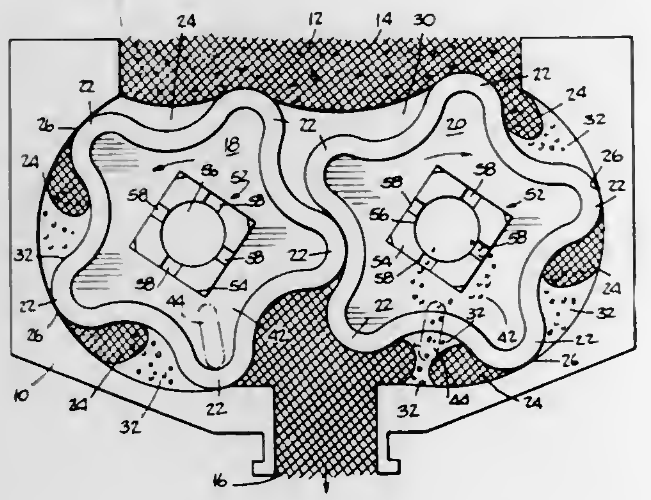
Bruce R. Lipe, Cincinnati, and Earle E. Schroeder, New Richmond, Ohio, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 10, 1968, Ser. No. 782,615
Int. Cl. F04d *29/00, 13/02;* **F16j** *9/00*
U.S. Cl. 417—360 **1 Claim**



An annular gastight chamber is provided between the pump and motor housings about the drive shaft. A mechanical spring-biased face seal is provided between the rotating shaft and the stationary housing within the gastight chamber. A lubricating liquid is provided in the seal chamber and the chamber is then pressurized with a gas and sealed at the factory. The pump housing and impeller may be removed or adjusted without destroying the pressure in the seal chamber.

3,526,470
CIRCULATING PUMPS

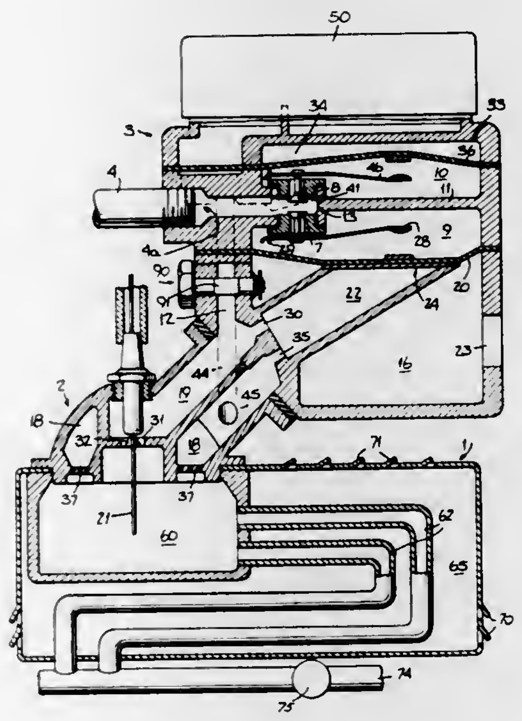
Victor Ernest Swanson, Fort Atkinson, Wis., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Sept. 11, 1968, Ser. No. 759,000
Int. Cl. F04c *1/08*
U.S. Cl. 418—15 **8 Claims**



A pump for circulating a viscous liquid product and simultaneously removing gas from the product being pumped including a pair of rotors mounted in a pump body. The rotors are provided with lobes and rotor pockets therebetween, and the rotors are rotated at a speed sufficient to create a reduced pressure area in the pump inlet to draw in the product and partially fill the rotor pocket, leaving an unfilled space in the rotor pocket. The unfilled space, being under reduced pressure, receives gas from the product while the lobes serve to increase the pressure of the product in the rotor pocket as it is propelled towards the outlet. Venting means are provided adjacent the outlet to permit the escape of gas from the unfilled space in the rotor pocket.

3,526,471
HEAT GENERATING SYSTEM

Ronald D. Corey, R.D. 1, Chenango Forks, N.Y. 13746
Filed July 30, 1968, Ser. No. 748,728
Int. Cl. F23n
U.S. Cl. 431—19 **17 Claims**

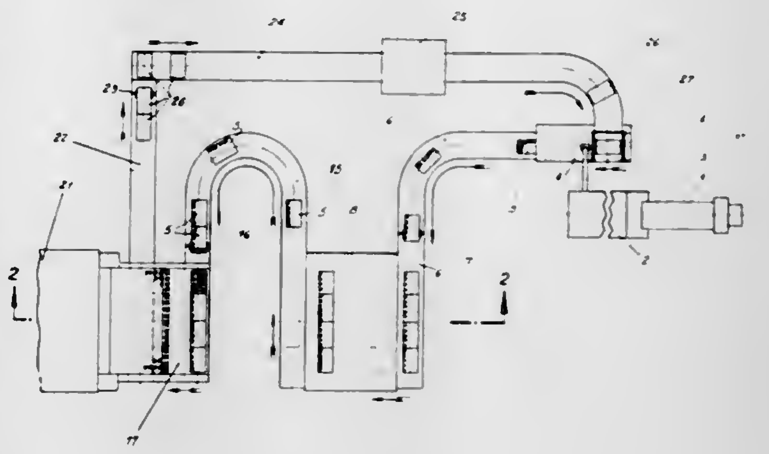


A heat generating system with an induced draft burner and control system comprising a set of fuel-mixing valves for both temperate and fast heat generation. A diaphragm valve operated by alternating pressure, above and below atmospheric pressure, is used to close the air inlet to the burner and is positioned in the wall of a fuel supply chamber. When the fuel supply chamber is placed under the sub-atmospheric pressure of the burner system initiating operation, the valve tends to collapse opening the air inlet and admitting air into the system. In addition the collapsing diaphragm opens a check valve admitting fuel to the system. Fluctuations in the fuel line and induced draft pressures will be compensated for by the action of the diaphragm and varies the regulating check valve opening so as to maintain a constant mixture of the fuel to air being supplied to the burner. The burner arrangement comprises a combustion chamber, a fuel mixing chamber and an auxiliary air chamber all evacuated to sub-atmospheric pressure by the induced draft produced at the outlet of the heat exchanger which is connected to the exit of the combustion chamber. Air and fuel are supplied to the mixing chamber, under the action of the diaphragm valve, and mixed therein and drawn into the combustion chamber and ignited for burning. The auxiliary air chamber communicates with the air inlet and has outlets communicating with the combustion chamber adjacent to the inlet of the ignited fuel mixture. Cooling air is drawn through the auxiliary chamber which has a tempering affect on the residual hot gases within the combustion chamber. A fast heating feature is optionally included by introducing fuel into the auxiliary air chamber under the control of a second diaphragm in the wall of a second fuel supply chamber.

3,526,472
APPARATUS OF MANUFACTURING BAKED PRODUCTS

Franz Remensperger, St. Georgen, and Eugen Weizmann and Walter Schnee, Villingen, Germany, assignors to Fr. Winkler KG., Villingen, Black Forest, Germany
Filed Oct. 1, 1962, Ser. No. 227,205
Claims priority, application Germany, Sept. 30, 1961, W 30,805
The portion of the term of the patent subsequent to Jan. 1, 1984, has been disclaimed
Int. Cl. A21b *7/00*
U.S. Cl. 107—57 **4 Claims**

A baking plant is provided wherein a plurality of conveyors carry carrier plate having dough thereon from a forming station to and through a proofing chamber to the baking oven. At the oven the dough pieces are removed from the carrier plates and the plates are conveyed to the forming station.



CHEMICAL

3,526,473
PROCESS FOR CONDITIONING TANNED SHARKSKIN AND ARTICLES MADE THEREFROM

Frank A. Burgett and Jerry C. Poradek, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

No Drawing. Filed June 19, 1968, Ser. No. 738,119

Int. Cl. C14c *11/00, 5/00*
U.S. Cl. 8—94.12 **1 Claim**

A process for conditioning tanned sharkskin so that it will have a high degree of abrasion resistance and pliability over extreme temperature ranges (−250° F. to 300° F.) and be substantially free of undesirable fish odor. The process includes removing the oil with a solvent, providing a thorough air drying, applying a deodorizer to the oil-free skin, providing a second thorough air drying, and a short preshrink bakeout. Articles such as boots or gloves made from such materials are abrasive resistant, durable, and pilable.

3,526,474
ABRASION-RESISTANT DURABLY-PRESSED CELLULOSIC TEXTILES

Wilson A. Reeves and Carl Hamalainen, Metairie, Hubert H. St. Mard, New Orleans, and Albert S. Cooper, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 30, 1966, Ser. No. 584,068

Int. Cl. D06m *13/38, 13/54, 15/72*
U.S. Cl. 8—116.3 **1 Claim**

A process for imparting abrasion resistance, wrinkle resistance, crease retention, and durable press properties to textiles containing at least about 25% cellulosic fibers is disclosed. The process involves treating the fabric with N-methylol or N-methoxymethyl crosslinking agents, in the presence of a polymerization catalyst, and later impregnating the treated fabric with an acid latent catalyst, and drying. The second cure can be postponed while the fabric is stored for periods of about from 0 to 12 months.

3,526,475
DIETHYLAMINOETHYLATED CELLULOSE-EPOXIDE REACTION PROCESS

Donald M. Soignet, Metairie, and Ruth R. Benerito and John B. McKelvey, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 11, 1968, Ser. No. 696,999

Int. Cl. D06m *13/10;* **C08g** *23/10, 23/12*
U.S. Cl. 8—120 **6 Claims**

The reaction of diethylaminoethylated cotton and various mono- and difunctional epoxides to produce a fabric with improved resiliency and/or resistance to wear.

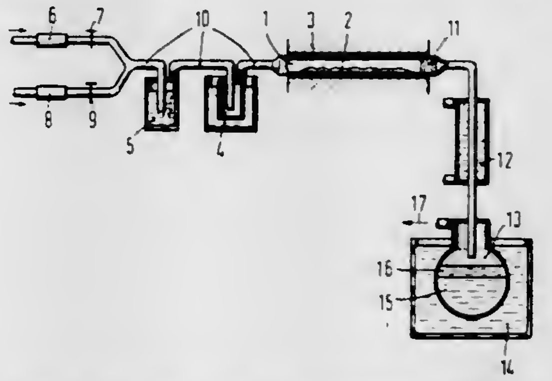
3,526,476
METHOD OF PRODUCING HIGHLY PURE ARSENIC TRICHLORIDE

Erhard Sirtl, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Feb. 19, 1968, Ser. No. 706,264

Claims priority, application Germany, Feb. 28, 1967, S 108,556

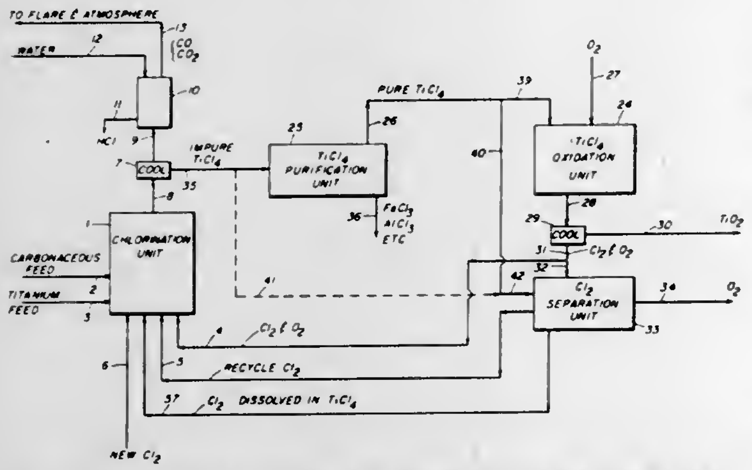
Int. Cl. C01b *27/00*
U.S. Cl. 23—98 **4 Claims**



Described is a process for producing highly purified arsenic trichloride, with a sulphur content smaller than 0.1 p.p.m. The process is characterized by passing highly pure, gaseous hydrogen chloride in the presence of elemental oxygen, across arsenic trioxide, heated in a reaction chamber. The gaseous arsenic trichloride, formed thereby, and the aqueous hydrochloric acid which contains the sulphur oxides as a distillate are received in a vessel, cooled below room temperature, so that a two-phase condensate, comprised of a solution of arsenic trichloride and aqueous hydrochloric acid, containing the sulphur oxides, forms in said receiving vessel and separating the two layers.

3,526,477
PROCESS FOR MAKING TITANIUM DIOXIDE

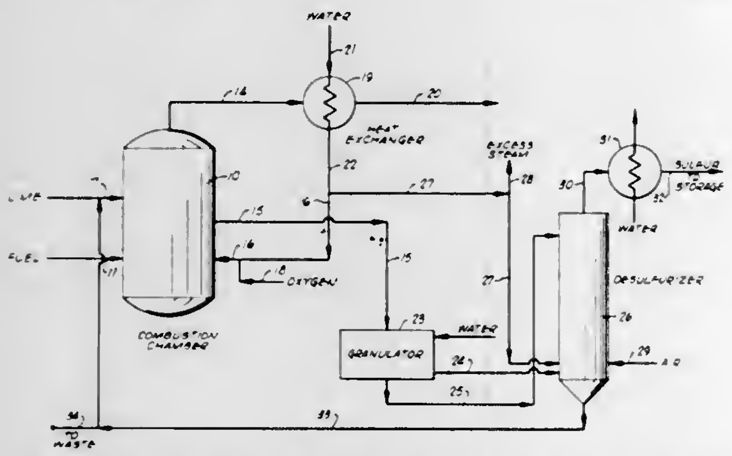
Shen Wu Wan, Wayne, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 4, 1968, Ser. No. 710,364
Int. Cl. C01g *23/02, 23/04*
U.S. Cl. 23—202 **6 Claims**



In a chlorination process for producing TiO_2 from TiO_2 ore, the temperature in the chlorination stage is maintained within the desired range by recycling thereto chlorine-enriched $TiCl_4$. A portion of a chlorine containing gas mixture obtained from an oxidation step is directed to a titanium ore chlorination step. The remainder of the gas mixture is directed to a chlorine separation step wherein a portion of the chlorine is recovered as gas and the remainder of the chlorine is absorbed in liquid titanium tetrachloride. The chlorine gas and a portion of the chlorine dissolved in titanium tetrachloride are directed to the chlorination step.

3,526,478
GENERATION OF HYDROGEN FROM SULFUR-BEARING CARBONACEOUS FUEL

Eugene A. Pelczarski, Independence, and James A. Karnavas, Kansas City, Mo., assignors to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 717,851, Apr. 1, 1968. This application Nov. 1, 1968, Ser. No. 772,791
Int. Cl. C01b *1/02;* **C01f** *11/00*
U.S. Cl. 23—212 **11 Claims**



A process for the generation of hydrogen from sulfur-bearing fuel whereby relatively pure sulfur free hydrogen is generated. The sulfur-bearing carbonaceous fuel may be coal, pyritic refuse from coal mining, or other low heat content sulfur-bearing carbonaceous fuels such as lignite and certain types of peat. By the present invention sulfur is removed from the fuel and recovered economically in the form of elemental sulfur.

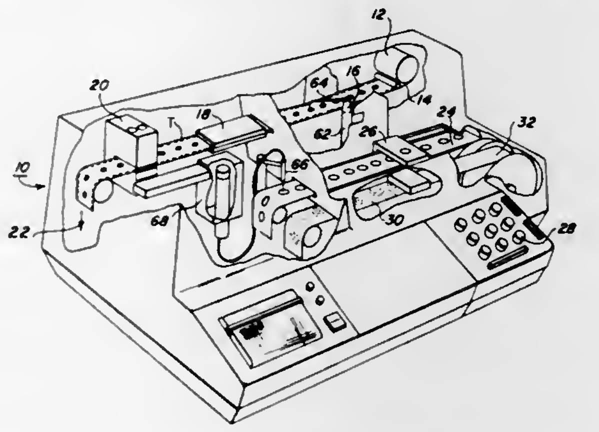
3,526,479
DIAGNOSTIC ARTICLE AND METHOD FOR DETECTION THEREWITH

Hans-Georg Rey, Mannheim-Waldhof, Hans-Rudolf Lange, Lampertheim/Hessen, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany
No Drawing. Filed Nov. 15, 1966, Ser. No. 594,362
Claims priority, application Germany, Dec. 18, 1965, B 85,039
Int. Cl. G01n *21/06, 33/16*
U.S. Cl. 23—230 **23 Claims**

Diagnostic agents for the detection of couplable components in biological fluids comprising at least one triazene derivative and a carrier therefor.

3,526,480
AUTOMATED CHEMICAL ANALYZER

Eugene Findl, Granada Hills, Douglas G. Marlow, Arcadia, Arthur T. Yahiro, West Covina, and George C. Reid, Glendora, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 15, 1966, Ser. No. 603,404
Int. Cl. G01n *33/16*
U.S. Cl. 23—253 **40 Claims**



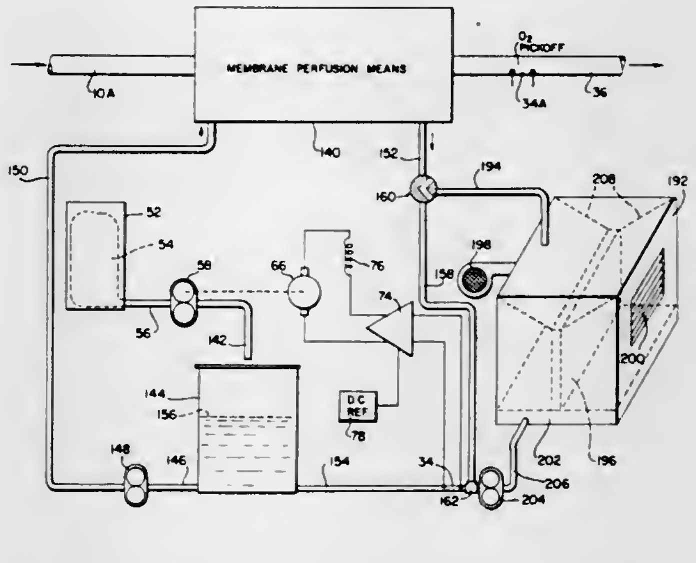
Automatic chemical analyzer wherein measured portions of sample material are transferred from a sample carrier to discrete reagent-containing sites on an analytical tape. The apparatus is particularly adapted for the transfer of a plurality of measured portions from a single storage site to a plurality of different discrete reagent-containing sites. Apertured analytical tapes are described as well as reagent-containing sites which have the reagents chemisorbed therein.

3,526,481
BLOOD OXYGENATOR

Jeanette L. Rubricius, Durham House, Durham Place, London, SW.3, England
Continuation-in-part of application Ser. No. 409,062, Nov. 5, 1964. This application Jan. 29, 1968, Ser. No. 709,520
Int. Cl. A61m *1/03*
U.S. Cl. 23—258.5 **7 Claims**

Blood oxygenating apparatus delivers oxygen in the form of hydrogen peroxide into the blood by allowing this oxygenating agent to diffuse into the blood across a membrane.

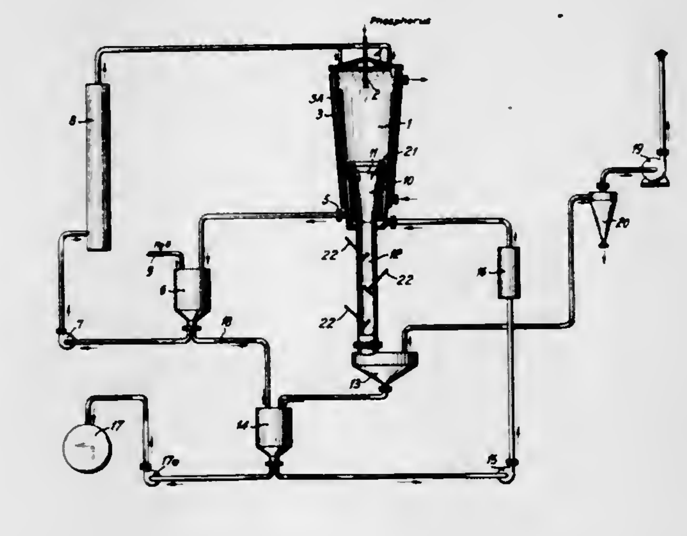
Hydrogen peroxide is introduced slowly into the blood with complete mixing in apparatus which includes a membrane means by which the blood, optionally filmed, is separated from a perfusion system; a pump for circulating the perfusate fluid in contact with the membrane means; and servo controls for metering the hydrogen peroxide into the perfusate fluid.



The servo senses the redox level in the returned perfusate fluid, and optional means are included for aerating the returned perfusate to remove carbon dioxide therefrom.

3,526,482
APPARATUS FOR PRODUCING POLYPHOSPHORIC ACID

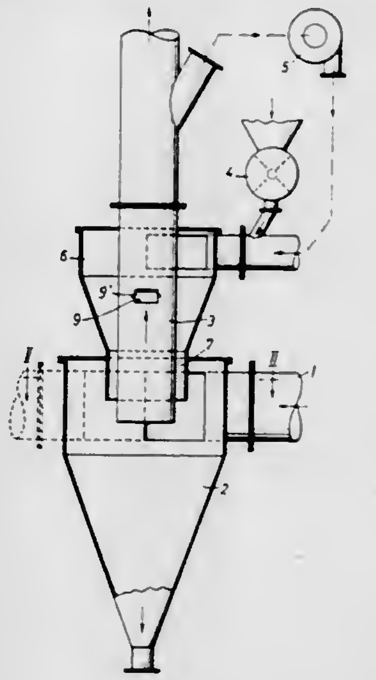
Klaus Beltz, Knapsack, near Cologne, Joseph Cremer, Hermulheim, near Cologne, Günther Müller-Schiedmayer, Knapsack, near Cologne, and Friedrich Thomas, Hermulheim, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Original application July 25, 1962, Ser. No. 212,773, now Patent No. 3,387,929, dated June 11, 1968. Divided and this application Feb. 19, 1968, Ser. No. 719,285
Claims priority, application Germany, Aug. 5, 1961, K 44,440
Int. Cl. C01b *25/20;* **B01j** *1/22*
U.S. Cl. 23—283 **5 Claims**



An apparatus for producing polyphosphoric acid whereby combustion and a coolant spray for substantial removal of heat of combustion of phosphorus are positioned at the upper end of a generally cone-shaped reactor and an absorption column with separately circulated absorbent is attached at the lower end of the reactor and positioned to be internally concentric therewith.

3,526,483
DEVICE FOR TREATING FINE-GRAIN MATERIAL BY CONTACT WITH GAS

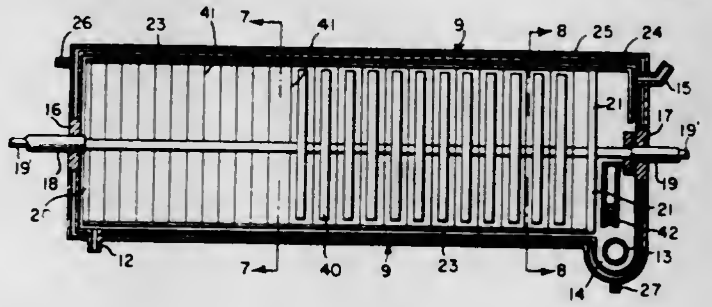
Herbert Deussner, Cologne-Dellbruck, and Rolf Jipp, Cologne-Konigsforst, Germany, assignors to Klockner-Humbolt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a corporation of Germany
Filed Nov. 4, 1966, Ser. No. 592,111
Claims priority, application Germany, Nov. 6, 1965, K 57,590
Int. Cl. B01j *2/16*
U.S. Cl. 23—284 **13 Claims**



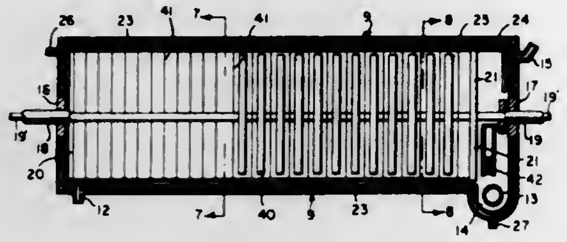
Device for treating fine-grained material by contact with gas, such as for heat treating or deacidifying cement raw material includes a treatment chamber having a supply opening, a cyclone having a discharge opening communicating through the supply opening with the treatment chamber, a spent gas channel extending substantially coaxially through the cyclone into the chamber, means for supplying material to be treated to a gas flow passing through the cyclone and into the treatment chamber, and means for circulating the gas flow and entrained material through the treatment chamber at a distance spaced from the wall of the chamber so that the entrained material at times moves in a direction following the gas flow and, under the effect of centrifugal force, in a direction transverse to the gas flow direction toward the chamber wall.

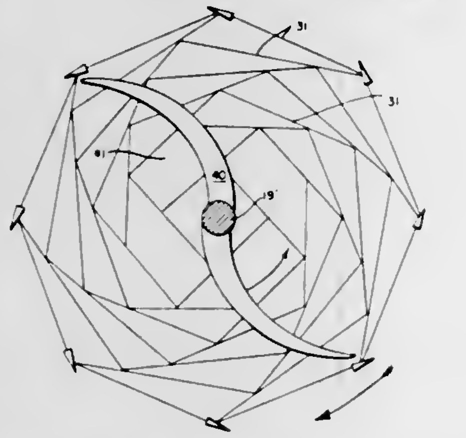
3,526,484
POLYMER FINISHING APPARATUS

Lester Louis Kilpatrick, Grifton, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,046
Int. Cl. B01j *1/00*
U.S. Cl. 23—285 **1 Claim**



Apparatus for removing volatile material from viscous liquid, as in polycondensation reactions for producing polyesters and polyamides. Liquid is fed into one end of a cylindrical vessel, is picked up on rotating screens or film-supporting wires which are wiped by rigid blades to form liquid films of greatly increased area, volatile material is evaporated and removed from the vessel, the liquid progresses along the vessel, being picked up by subsequent screens or wires for further removal of volatile material, and the product is removed from the opposite end of the vessel. Temperature and pressure are readily controlled to provide desired evaporation and reaction conditions.





3,526,485
METAL FILLED BODIES OF SINTERED REFRACTORY OXIDES

Walther Dawihl, Illingen, and Emil A. Klingler and Erhard Dorre, Plochingen, Germany, assignors to Feldmuhle Aktiengesellschaft, Dusseldorf, Germany
No Drawing. Filed Mar. 20, 1969, Ser. No. 809,044
Claims priority, application Germany, Mar. 23, 1968, 1,758,042
Int. Cl. C22c *15/00*
U.S. Cl. 29—182.5 **4 Claims**

Shaped bodies mainly consisting of a sintered polycrystalline matrix of alumina, zirconia, and/or beryllia have improved resistance to thermal shock and are practically free from pores or voids which would reduce their mechanical strength when alloys of titanium or zirconium with metals of Group *6b* of the Periodic Table of Elements are uniformly distributed in the matrix.

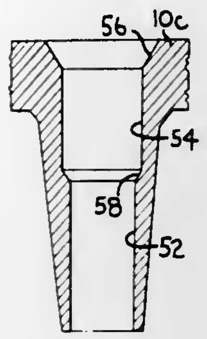
3,526,486
CORROSION RESISTANT FERROUS METAL ARTICLES AND METHOD OF PREPARING THE SAME

Edwin J. Smith, Winterville, Ohio, Louis C. Beale, Jr., Coraopolis, Pa., and Lowell W. Austin, Weirton, W. Va., assignors to National Steel Corporation, a corporation of Delaware
No Drawing. Filed Feb. 21, 1967, Ser. No. 617,513
Int. Cl. C23b *5/06;* **C23f** *7/26, 17/00*
U.S. Cl. 29—183.5 **10 Claims**

Corrosion resistant ferrous metal articles are prepared by electroplating thereon a metallic chromium coating having a thickness of 0.1–0.5 microinch, and then electrochemically treating the article as a cathode in an aqueous electrolyte containing a water soluble hexavalent chromium compound to deposit a chromium oxide containing film. The resultant surface is receptive to organic coatings and the invention is especially useful in the manufacture of thin gauge tin free strip or sheet for use as container stock.

3,526,487
APPARATUS FOR PRODUCING FIBER GLASS

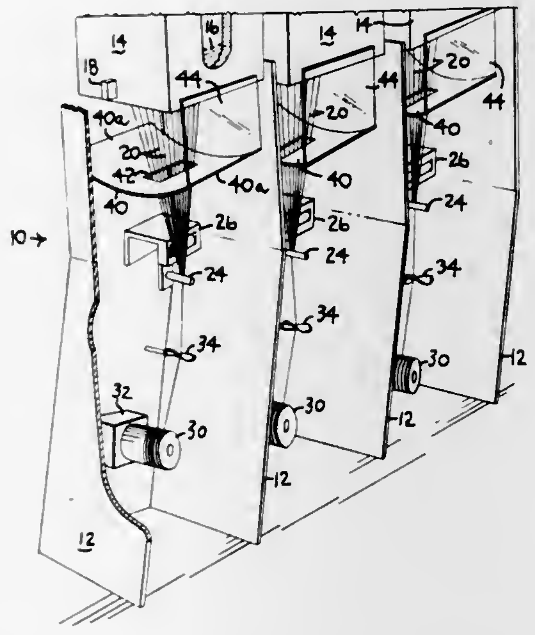
Thomas C. Bour, Allison Park, Pa., assignor to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 1, 1967, Ser. No. 619,704
Int. Cl. C03b *37/08*
U.S. Cl. 65—1 **1 Claim**



A fiber glass bushing tip is counterbored at its uppermost or inlet end.

3,526,488
GLASS FIBER FORMING APPARATUS

John V. Schweppe and Norman P. Bell, Shelby, N.C., assignors to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1967, Ser. No. 628,443
Int. Cl. C03b *37/02*
U.S. Cl. 65—11 **4 Claims**

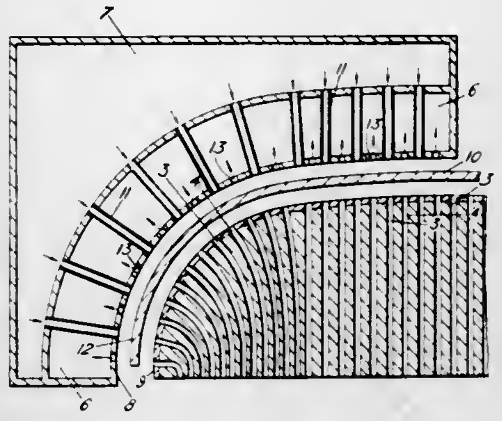


A baffle or shield member having its major portions angled with respect to the horizontal and having a centrally located opening for the passage of glass filaments or fibers being produced is disposed between the fiber forming bushing and the winder. By using this arrangement, the stability of the filament forming process is enhanced.

3,526,489
BENDING OF GLASS SHEETS

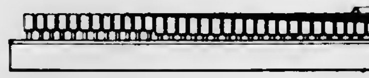
Neil McPhail, Windle, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Apr. 21, 1967, Ser. No. 632,796
Claims priority, application Great Britain, Apr. 25, 1966, 18,073/66
Int. Cl. C03b *39/00*
U.S. Cl. 65—25 **6 Claims**

A glass sheet is supported on a gaseous support as it is advanced through a heating station and during the continued advance of the sheet a greater downwardly directed pressure difference is created across the margins than across the central area of the sheet so that the margins are bent downwardly.



3,526,490
METHOD OF BENDING GLASS ON FLUID SUPPORT

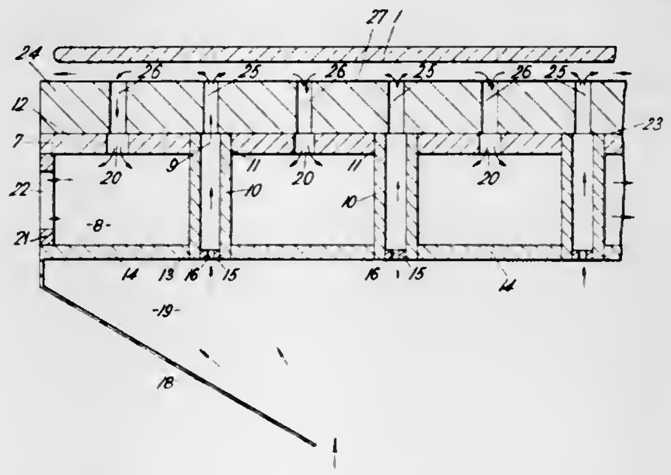
George W. Misson, Pittsburgh, Pa., assignor to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 581,078, Sept. 21, 1966. This application May 9, 1969, Ser. No. 824,753
Int. Cl. C03b *23/02*
U.S. Cl. 65—25 **3 Claims**



A glass sheet is heated to above deformation temperature and allowed to assume the contour of a support bed. It is thereafter transferred quickly to a cooling bed while the temperature of the glass is rapidly dropped below deformation temperature. The glass is moved so fast from the heating section to the quench that it only assumes partially the contour of the bed.

3,526,491
APPARATUS FOR CONVEYING AND SHAPING GLASS ON A FLUID SUPPORT BED

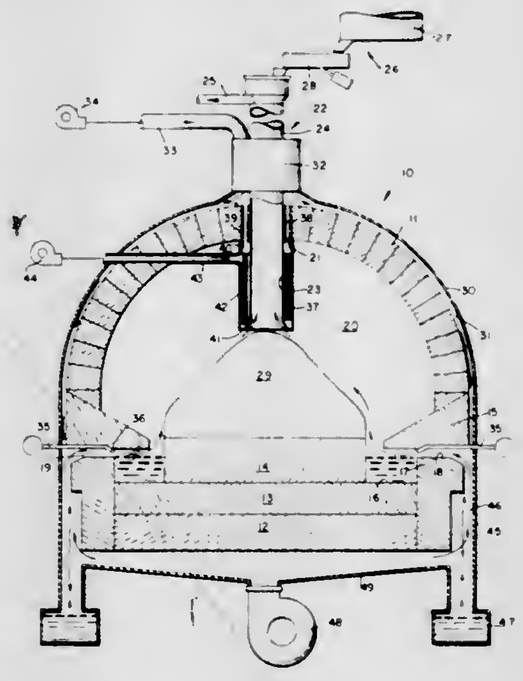
Stanley Gordon Sharrock, Wigan, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Apr. 21, 1967, Ser. No. 632,794
Claims priority, application Great Britain, Apr. 25, 1966, 18,075/66
Int. Cl. C03b *18/00*
U.S. Cl. 65—182 **7 Claims**



Apparatus for the transporting of sheets of glass including an apertured bed over which the glass sheets are supported by a cushion of gas created over the bed by the passage of the glass, gas being supplied to and evacuated from the cushion through the apertured bed, and the surface of the bed being defined by interchangeable surface elements so that a uniform gaseous support is achieved for varying shapes of glass sheets by appropriate interchange of surface elements.

3,526,492
GLASS PREMELTER

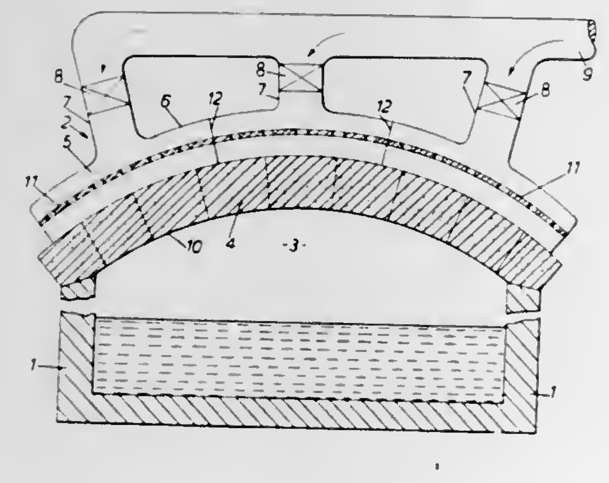
Fred R. Motsch, 715 Spencer Ave., Marion, Ind. 46952
Filed Sept. 16, 1968, Ser. No. 762,180
Int. Cl. C03b *5/16*
U.S. Cl. 65—335 **12 Claims**



A glass premelter comprising a furnace constructed primarily of refractory material defining a combustion chamber to which glass ingredients are supplied, preferably in the form of moistened particles of mixed ingredients, through a stack centrally penetrating the chamber roof, the stack having a portion disposed outside the combustion chamber and being arranged to conduct hot products of combustion upwardly, in counterflow contact with such particles, for exhaust from said chamber, the furnace being enshrouded by a jacket defining, with the external surface of said furnace, an air space through which combustion air is supplied, by blower means delivering to the upper portion of said air space, to the lower portion of said chamber where fuel is likewise supplied to said chamber, said stack further having a portion disposed within said chamber and surrounded by a baffled shell through which further combustion air is supplied, through a path in heat-exchanging relation first with the interior of said chamber and then with said last-mentioned portion of said stack, to the upper portion of said air space, the ingredient particles being delivered from said stack to pile up on a central island in the floor of said combustion chamber whence melted glass will flow to an island-circumscribing well whose outer boundary is defined by a dam, the rim of said dam being disposed at a level below that of said island so that molten glass will overflow said dam rim to fall, through a passageway, to collector means arranged at a still lower level. In a preferred form, still further combustion air is supplied, through said passageway in counterflow contact with such overflowing molten glass, over the dam rim to the combustion chamber at the level of fuel injection thereto. Thereby, the regenerator system conventionally required in glass melters is obviated.

3,526,493
GLASS MELTING FURNACE WITH INSULATING ROOF STRUCTURE

Geoffrey Allan Warren, St. Helens, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Filed Oct. 6, 1967, Ser. No. 673,346
Claims priority, application Great Britain, Nov. 21, 1966, 52,089/66
Int. Cl. C03b *9/38*
U.S. Cl. 65—356 **2 Claims**



A glass melting furnace includes a roof structure having a porous wall backed by a plenum chamber, a perforated insulated plate extending across the plenum chamber and facing the porous wall, and a conduit for supplying a gas to part of the plenum chamber separated from the porous wall by the plate. The gas flows through the perforated plate and then diffuses through the porous wall.

3,526,494
METHOD FOR INHIBITING THE NITRIFICATION OF AMMONIUM NITROGEN IN SOIL

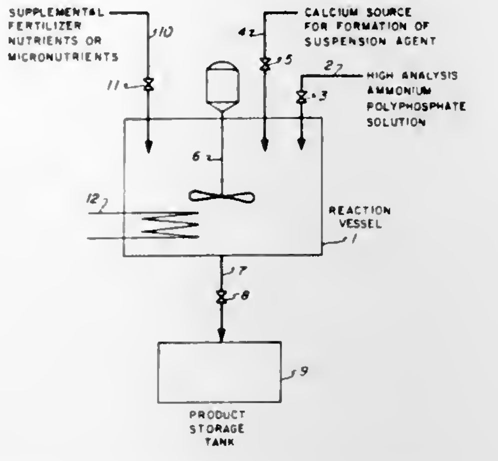
Haruo Toyoda, Chigasaki, Toshihiko Kakizaki, Fujisawa, Akira Hirose, Yokohama, and Tetsuichi Shinozawa, Chigasaki, Japan, assignors to Matsui Toatsu Chemicals Incorporated, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 15, 1967, Ser. No. 683,158
Claims priority, application Japan, Dec. 6, 1966, 41/79,556
Int. Cl. C05c *9/00*
U.S. Cl. 71—30 **5 Claims**

The nitrification of ammonium nitrogen in soil is inhibited by treating the soil in a plant growing area with a reaction product of sulfathiazole with formaldehyde.

3,526,495
$Ca(NH_4)_2P_2O_7 \cdot H_2O$—A SUSPENDING AGENT FOR LIQUID FERTILIZERS

Otis D. Philen, Jr., Tuscumbia, and Alva W. Frazier, Florence, Ala., assignors to Tennessee Valley Authority, Muscle Shoals, Ala., a corporation
Filed Aug. 1, 1967, Ser. No. 657,598
Int. Cl. C05b *7/00*
U.S. Cl. 71—34 **8 Claims**

A suspension agent for liquid fertilizers containing ammonium pyrophosphate, the suspending agent formed by the reaction of a soluble calcium source such as calcium carbonate or vitreous calcium silicate with the ammonium pyrophosphate solution. The suspension agent precipitates as small scale crystals in dendritic clusters and imparts a gel-like thixotropic property which suspends crystals already present in the liquid fertilizer and inhibits further growth of these precipitated crystals.


SUPPLEMENTAL FERTILIZER NUTRIENTS OR MICRONUTRIENTS
10
11
CALCIUM SOURCE FOR FORMATION OF SUSPENSION AGENT
4
5
2
HIGH ANALYSIS AMMONIUM POLYPHOSPHATE SOLUTION
3
6
12
REACTION VESSEL
1
7
8
9
PRODUCT STORAGE TANK

IMPROVED HIGH-ANALYSIS FERTILIZER SUSPENSIONS

3,526,496
DESICCATION AND DEFOLIATION OF PLANTS

Saburo Hashimoto, Yorba Linda, and Donald C. Young and Loren L. Neff, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Apr. 5, 1967, Ser. No. 628,566
Int. Cl. A01n *5/00, 11/00*
U.S. Cl. 71—69 **9 Claims**

The invention relates to desiccation and defoliation of plants by treatment with an aqueous solution of hydroxylamine or a salt thereof.

3,526,497
METHOD OF REGULATING PLANT GROWTH WITH TETRACYANOQUINODIMETHANES AND FORMULATIONS OF SAID COMPOUNDS

Jean B. Obreiter, Glen Ridge, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 30, 1968, Ser. No. 748,636
Int. Cl. A01n *5/00, 9/20*
U.S. Cl. 71—105 **5 Claims**

This disclosure teaches methods for preparing, formulating and applying tetracyanoquinodimethanes to plants to regulate plant growth.

3,526,498
PRODUCTION OF NICKEL-THORIA POWDERS

David J. I. Evans, North Edmonton, Alberta, and Bauke Weizenbach, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada
No Drawing. Filed Dec. 23, 1966, Ser. No. 604,129
Int. Cl. B22f *9/00*
U.S. Cl. 75—.5 **15 Claims**

A process for producing nickel powder having submicron thoria particles integrally associated therewith. Finely divided nickel containing particles formed of a reducible oxygen containing nickel compound or of elemental nickel and reducible oxygen containing compound, are suspended in a liquid medium such as water and contacted with thorium nitrate in aqueous solution to precipitate a thorium compound onto the surfaces of the suspended particles. The particles are separated from the suspending media and treated to reduce the nickel compound content thereof to elemental nickel and to convert the precipitated thorium compound to thoria.

3,526,499
NICKEL BASE ALLOY HAVING IMPROVED STRESS RUPTURE PROPERTIES

Richard J. Quigg, South Russell, and Henry E. Collins, Cleveland, Ohio, assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Aug. 22, 1967, Ser. No. 662,305
Int. Cl. C22c *19/00*
U.S. Cl. 75—171 **10 Claims**

A nickel base superalloy particularly adapted for use in turbine engine blades because of its vastly improved stress rupture properties and other physical characteristics, the alloy containing 0.05 to 0.25% carbon, from 5 to 8% chromium, from 0.5 to 4.0% molybdenum, from 0.5 to 2.0% titanium, from 4.5 to 6.5% aluminum, from 1 to 10% cobalt, from 4 to 8% tungsten, from 0 to 2% rhenium, from 0.2 to 3.0% hafnium, from 0.01 to 0.50% zirconium, from 0.005 to 0.200% boron, from 6 to 10% tantalum, from 0 to 2% columbium, from 0 to 1% vanadium, and the balance being essentially nickel, all percentages being by weight.

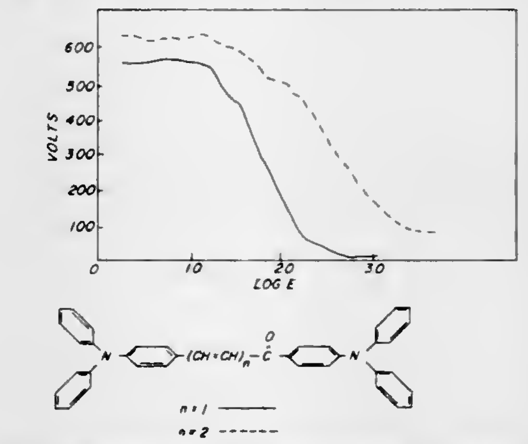
3,526,500
PROCESS OF ELECTROSTATIC PRINTING BY PROJECTING ELECTRICALLY PHOTOSENSITIVE PARTICLES THROUGH AN IMAGE-DEFINING SCREEN

George L. Opdycke and Robert F. Rywalski, Toledo, Ohio, assignors to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 5, 1966, Ser. No. 584,333
Int. Cl. G03g *13/22*
U.S. Cl. 96—1 **5 Claims**

A process is provided for electrostatically printing an image upon a surface which comprises forming a layer of photoconductive material-containing, resin based, particles on a first charged surface. This surface is then illuminated with electromagnetic radiations. By forming a first potential between the first surface and an image-defining screen and a second potential between this screen and a second surface oppositely charged from the first surface, and by providing a potential of at least 20,000 volts per linear inch of separation between the screen and each of the surfaces. The particles on said first surface are projected through the image-defining area of the screen and onto the second surface to form an image thereon. To insure good adherence of the particles on the second surface, the second surface is shielded from electromagnetic radiation during the process.

3,526,501
4-DIARYLAMINO-SUBSTITUTED CHALCONE CONTAINING PHOTOCONDUCTIVE COMPOSITIONS FOR USE IN ELECTROPHOTOGRAPHY

Charles J. Fox, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 3, 1967, Ser. No. 613,846
Int. Cl. G03g *5/06, 13/22*
U.S. Cl. 96—1.5 **13 Claims**



Organic photoconductor-containing compositions and elements are provided with high electrophotographic speeds and high regeneration capability by the use of novel 4-diarylamino-substituted chalcones.

3,526,502
ELECTROPHOTOGRAPHIC MATERIAL

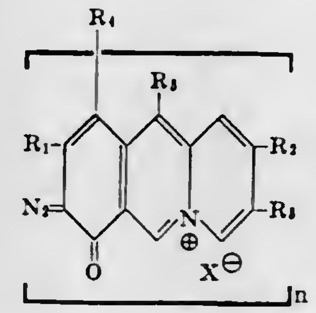
Yoshinobu Murakami and Kazuhisa Morimoto, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
Filed May 4, 1967, Ser. No. 636,172
Claims priority, application Japan, July 18, 1966, 41/47,822; Dec. 12, 1966, 41/82,325
Int. Cl. G03g *5/00*
U.S. Cl. 96—1.5 **6 Claims**

An improved electrophotographic material comprising a conductive support layer and a photoconductive insulating layer, the latter comprising a combination of a photoconductive polymeric compound and a benzopyrylium salt as a novel sensitizer, said photoconductive polymeric compound comprising at least one compound selected from the group consisting of poly-N-vinylcarbazole, poly-3,6-dibromo-N-vinylcarbazole, brominated poly-N-vinylcarbazole, polyacenaphthylene and polyvinylanthracene.

3,526,503
PHOTORESIST COMPOSITION

Kenneth R. Dunham, Donald L. Fields, Douglas G. Borden, and Jerry B. Miller, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 8, 1967, Ser. No. 621,469
Int. Cl. G03c *1/52, 1/70;* **G03f** *7/08*
U.S. Cl. 96—33 **19 Claims**

This invention concerns azonia diazo ketones having the following structure:



wherein $X^{\ominus}$ represents an anion such as a halide ion, a perchlorate ion, a tetrafluoroborate ion, or the like, n is a whole integer 1 or 2; R_1 and R_2 each represents a hydrogen atom, an alkyl (e.g. 1–8 carbon atoms), aralkyl, cycloalkyl, alkoxy or aryl group, said group optionally containing hetero atoms, or said group being optionally substituted; R_3 represents a hydrogen atom or the atoms necessary to complete an aromatic carbocyclic ring with R_2, said ring being optionally substituted; R_5 represents a hydrogen atom, alkyl groups or phenyl groups optionally substituted; and R_4, when $n=2$, represents an alkylene group or chemical bond and, when $n=1$, R_4 represents a hydrogen atom, an alkyl group (e.g. 1–8 carbon atoms), or an aryl group, and the use of these ketones in photoresist compositions and in lithography.

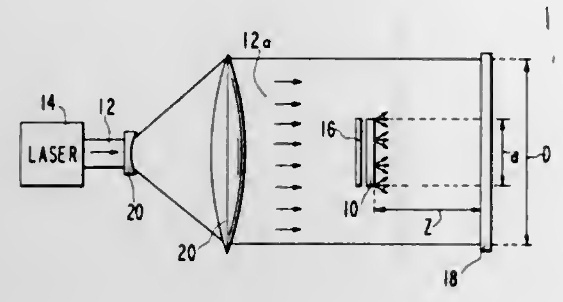
3,526,504
PHOTOCROSSLINKABLE ELEMENTS AND PROCESSES

Jack Richard Celeste, Westfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 7, 1966, Ser. No. 567,799
Int. Cl. G03c *5/00*
U.S. Cl. 96—35.1 **16 Claims**

A process which comprises (1) laminating to a solid surface a substantially dry, solid flexible layer of a uniformly photocrosslinkable organic polymer composition having low to moderate adhesion to a flexible polymer film support that is transparent to actinic radiation; (2) exposing selected areas of said layer to actinic radiation to form a crosslinked polymer image in said layer; (3) removing the support as a support from the resulting image-bearing layer laminated to said surface; and (4) removing the unexposed areas by means of a liquid to form a resist image on said surface. The process is useful for imagewise modification of glass, ceramic and metal surfaces and for making printed circuits.

3,526,505
HOLOGRAPHIC METHOD OF FORMING AND ALIGNING PATTERNS ON A PHOTOSENSITIVE WORKPIECE

Herbert Kroemer, Menlo Park, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Nov. 6, 1967, Ser. No. 680,682
Int. Cl. G03c *5/08*; **G02b** *27/00*
U.S. Cl. 96—36.2 **4 Claims**



Methods and apparatus are described for forming and reconstructing holographic images particularly for use as optical masks such as for the precise exposure of photosensitive material on workpieces such as semiconductor wafers. The method includes exposing an object transparency through a light diffuser by a parallel beam of coherent radiation that is of larger area than the diffuser. Scattered radiation strikes the object producing a diffraction light pattern which in turn produces an interference pattern with parallel radiation of the same beam passing by the diffuser. The interference pattern produces a hologram in a photosensitive medium. The image is reconstructed by exposing the hologram with a beam of coherent parallel radiation while blocking that portion that was in the area of the geometrical shadow of the diffuser producing a real image of the object in a plane at which a photosensitive workpiece is positioned. Alignment techniques are also disclosed for permitting an image to be placed in precise relationship with a previously formed pattern as is necessary, for example, in the application of successive masks during fabrication of microelectronic elements.

3,526,506
HEAT REACTIVE, LIGHT DESENSITIZING COMPOSITIONS

Wesley R. Workman, St. Paul, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed June 13, 1966, Ser. No. 556,899
Int. Cl. G03c *1/72*
U.S. Cl. 96—88 **10 Claims**

Heat-reactive light-desensitizable coatings and coated products containing visibly reactive co-reactants at least one of which is made non-reactive by exposure to light. Light-sensitivity is increased by incorporation of colorless aromatic sensitizer materials, e.g. anthracene.

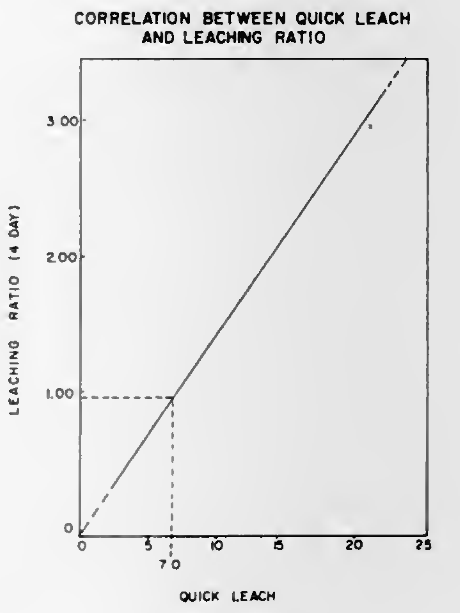
3,526,507
AUTOPOSITIVE REPRODUCTION MATERIAL

Hidehiko Ishikawa, Odawara-shi, Shuzo Ozaki, Ashigarakami-gun, and Shui Sato, Tokyo, Japan, assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
No Drawing. Filed Apr. 28, 1966, Ser. No. 545,847
Claims priority, application Japan, Apr. 28, 1965, 40/24,745
Int. Cl. G03c *1/36, 5/32*
U.S. Cl. 96—101 **9 Claims**

An autopositive photographic material having substantially improved resistance to white-light deterioration has a light-sensitive emulsion comprising a silver halide with fogging nuclei, a desensitizer compound such as Pinachryptol Yellow, and a 4-hydroxy-tetra-azaindene.

3,526,508
ANIMAL FEEDING CONTAINING PENTACALCIUM ORTHOPERIODATE

George F. Andelfinger and Eugene J. Kuhajek, Woodstock, Ill., assignors to Morton International, Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,784
Int. Cl. A23k *1/00*; **C01b** *11/22*
U.S. Cl. 99—2 **2 Claims**



The preparation and use of pentacalcium orthoperiodate, $Ca_5(IO_6)_2$, in a salt block and feeds as an assimilable source of iodine for the supplementation of the diet of animals.

3,526,509
CAPTURING AND PRESERVING FLAVOR OF ALCOHOLIC BEVERAGES

Masakazu Yamada, Hayashi Komoda, and Fumiyoshi Mano, Tokyo-to, Japan, assignors to Nisshin Sangyo Kabushiki Kaisha, Tokyo-to, Japan, Masakazu Yamada, Hayashi Komoda, and Fumiyoshi Mano, Tokyo-to, Japan
No Drawing. Filed Oct. 20, 1966, Ser. No. 587,956
Int. Cl. C12g *1/00, 3/04*
U.S. Cl. 99—30 **1 Claim**

Flavoring components in a fermentation gas comprising a large amount of carbon dioxide gas are captured by passing the gas through a solvent containing a flavor-sustaining agent. The flavor components are dissolved in the solvent and separated from the fermentation gas.

3,526,510
BEER FOAM ADHESION

Leonard Raymond, White Plains, N.Y., John B. Bockelmann, Tenafly, N.J., and William Tirado, Oceanside, N.Y., assignors to The F. M. Schaefer Brewing Company, Brooklyn, N.Y.
No Drawing. Filed Dec. 4, 1967, Ser. No. 687,437
Int. Cl. C12h *1/14*
U.S. Cl. 99—48 **12 Claims**

The "curtain" forming property of beer, which is lost when certain parabens are used as chemical "pasteurizers," i.e. bacterial growth inhibitors, is restored by the incorporation into the beer of an effective amount of one or more of sodium dioctyl sulfosuccinate, sodium dihexyl sulfosuccinate, sodium diamyl sulfosuccinate, disodium N-octadecyl-sulfosuccinamate and tetrasodium N-(1,2-dicarboxyethyl)-N - octadecyl-sulfosuccinamate.

3,526,511
PRODUCTION OF QUICK-COOKING CEREAL GRAINS

Louis B. Rockland, Pasadena, Calif., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Nov. 16, 1967, Ser. No. 683,464
Int. Cl. A23l *1/10*
U.S. Cl. 99—80 **13 Claims**

Wheat, rye, or other cereal grains are impregnated with an aqueous medium containing sodium chloride, sodium tripolyphosphate or the sodium salt of ethylenediamine tetraacetic acid, sodium carbonate, and sodium bicarbonate. The hydrated grains are then dried, for example, by contact with air at 140–160° F. Alternatively, the hydrated grains may be preserved by freezing, or by partial dehydration followed by holding at refrigeration temperatures.

3,526,512
INSTANT GRITS

James T. Collins, Palatine, and Roy G. Hyldon, Crystal Lake, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 8, 1967, Ser. No. 681,345
Int. Cl. A23l *1/10*
U.S. Cl. 99—83 **8 Claims**

An instant-type food product of the corn grits type is produced by: (A) admixing corn grits, critical amounts of water, a polysaccharide gum, and an emulsifier selected from the group polyoxyethylene sorbitan monostearate, polyoxyethylene sorbitan mono-oleate, glyceryl monostearate, and a mixture of monoglycerides and diglycerides of edible fats, oils, and fat-forming fatty acids; (B) heating the mixture to a critical temperature range; (C) drying the heated mixture by forming a thin sheet on a drum drier; and (D) comminuting the cooked, dried sheet.

3,526,513
INSTANT WHEAT FARINA

Roy G. Hyldon, Crystal Lake, Ill., assignor to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey
Filed Nov. 8, 1967, Ser. No. 681,346
Int. Cl. A23l *1/10*
U.S. Cl. 99—83 **4 Claims**

An instant wheat farina is produced by: (A) denaturing wheat farina; (B) adding the denatured farina to critical amounts of a thickening agent and water; (C) cooking the mixture on a drum drier; and (D) comminuting the cooked, dried product.

3,526,514
FLAVORED INSTANT GRAIN PRODUCTS

Bruce G. Gralak, Carpentersville, and Roy G. Hyldon, Crystal Lake, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey
No Drawing. Filed Apr. 2, 1968, Ser. No. 718,239
Int. Cl. A23l *1/10*
U.S. Cl. 99—83 **7 Claims**

A flavored instant grain product is produced by: (A) denaturing a grain such as corn, rice, barley, or wheat; (B) adding the denatured grain to critical amounts of a thickening agent, water and critical amounts of either fruit preserves, fruit juice, or pulped fruit; (C) cooking the mixture on a drum drier, and (D) comminuting the cooked dried product.

3,526,515
METHOD OF WATERPROOFING BAKED GOODS

Sanford Werbin, Dumont, N.J., and Irving H. Rubenstein, Stevenson, and David Weinstein, Baltimore, Md., assignors to Maryland Cup Corporation, Owings Mills, Md.
No Drawing. Filed Dec. 21, 1966, Ser. No. 603,436
Int. Cl. A21d *13/00*
U.S. Cl. 99—86 **8 Claims**

Crisp baked products, such as ice cream cones, cookies and biscuits are rendered moisture repellent by coating with animal or vegetable oil, natural or hydrogenated, which contains an admixture of a small amount of a higher melting solid fat, such as a stearine or a palmitin which seeds the coating so that it solidifies before soaking into the baked goods.

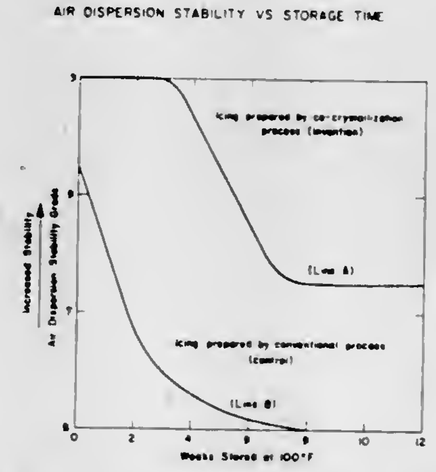
3,526,516
CULINARY COMPOSITION CONTAINING LIPOPHILIC POLYVINYL PYRROLIDONE

Norman B. Howard, Hamilton, Ohio, and Henry Schneider, Ottawa, Ontario, Canada, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 13, 1967, Ser. No. 682,531
Int. Cl. A21d *13/08, 2/00*
U.S. Cl. 99—94 **6 Claims**

Prevention of silicone caused failures in baked cakes by adding to the culinary mix about 0.05 to about 3.0% of a lipophilic polyvinyl pyrrolidone.

3,526,517
PROCESS FOR PREPARING ICING

John R. Shaffer, Cincinnati, and Gordon F. Brunner and Benjamin Lawrence, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 16, 1967, Ser. No. 661,010
Int. Cl. A23g *3/00*
U.S. Cl. 99—139 **7 Claims**



A melt of sugar and normally plastic beta-phase shortening is chilled in a scraped wall heat exchanger to form an icing comprising a co-crystallized mixture of sugar and shortening.

3,526,518

CONTROL OF APPLE STORAGE SCALD USING CERTAIN DIPHENYLAMINE COMPOSITIONS

Morton Kleiman, 2827 W. Catalpa Ave., Chicago, Ill. 60625

No Drawing. Filed July 12, 1967, Ser. No. 652,700

Int. Cl. A23b *7/14*

U.S. Cl. 99—154 **13 Claims**

Treating apple storage scald with compositions comprising diphenylamine, emulsifier, and esters of aliphatic or alicyclic mono-, di-, or tri-hydric alcohols with mono-, di- or tri-basic aliphatic or alicyclic acids or mono- or dibasic aromatic acids.

3,526,519

CONTROL OF APPLE STORAGE SCALD USING CERTAIN DIPHENYLAMINE COMPOSITIONS

Morton Kleiman, 2827 W. Catalpa Ave., Chicago, Ill. 60625

No Drawing. Filed July 12, 1967, Ser. No. 652,711

Int. Cl. A23b *7/14*

U.S. Cl. 99—154 **11 Claims**

Treatment of apple storage scald with compositions comprising diphenylamine, emulsifier, and certain mono- or di-hydric aliphatic or alicylic hydroxy-compounds such as alcohols, glycols, polyglycols, glycol ethers, and polyglycol ethers.

3,526,520

CONTROL OF APPLE STORAGE SCALD USING CERTAIN DIPHENYLAMINE COMPOSITIONS

Morton Kleiman, 2827 W. Catalpa Ave., Chicago, Ill. 60625

No Drawing. Filed July 12, 1967, Ser. No. 652,716

Int. Cl. A23b *7/14*

U.S. Cl. 99—154 **10 Claims**

Treating and controlling apple storage scald with compositions comprising diphenylamine, emulsifier, and an organic solvent in such proportions as to provide concentrate solutions having a specific gravity greater than 1.0.

3,526,521

PRODUCTION OF CURED WHOLE MEAT

Stephan L. Komarik, Coral Gables, Fla., assignor to The Griffith Laboratories, Inc., Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 1, 1966, Ser. No. 598,157

Int. Cl. A23b *1/03*

U.S. Cl. 99—159 **6 Claims**

Fresh meat in whole or sliced pieces is treated with aqueously dissolved agents consisting essentially of sodium chloride, glucono delta lactone and curing salt selected from the group consisting of alkali metal nitrite and a mixture of alkali metal nitrite and nitrate, which solution is free of gluconic acid, and which may contain ene-diol compound such as sodium erythorbate. Curing is completed by heat or in a chill room, with the whole meat in the form of packaged slices isolated from the atmosphere, while the pH of the mass is lowered by hydrolysis of the lactone. Preferably the slices are cured in vacuum-packed packages.

ERRATUM

For Class 99—181 see:
Patent No. 3,526,186

3,526,522

INK FOLLOWER COMPOSITION AND METHOD THEREFOR

Daniel W. Seregely, Los Angeles, Calif., assignor, by mesne assignments, to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 676,244

Int. Cl. C08h *9/00, 17/22, 17/28*

U.S. Cl. 106—270 **4 Claims**

Viscous compositions adopted for use as followers in contact with various types of ink in ballpoint pen ink reservoirs, said compositions being stable for a prolonged time under a wide range of temperatures and humidity, non-drying, non-reactive and immiscible with various inks and effective to prevent backleakage of ink from a cartridge, said compositions comprising essentially a liquid vehicle containing a uniformly suspended dispersion of a solid polymer in the form of microscopic, almost colloidal, particles, the amount of solid polymer being sufficient to give the viscous composition an A.S.T.M. worked penetration of 250 to 500 at 77° F.

Methods of making such viscous composition, the methods including the step of melting solid organic polymers in a liquid vehicle and rapidly chilling the molten mixture to form a dispersion of solid organic polymers in finely divided form in situ and controllably producing a composition of desired characteristics.

A large diameter ball point pen ink reservoir having a large diameter elongated tubular casing, one end of said tubular casing being open to the atmosphere, a column of viscous ink contained in said reservoir, and a plug of the above described ink follower composition in said reservoir and in contact with the end of said column of viscous ink nearest the atmosphere.

3,526,523

REFRACTORY FURNACE WALL COATING

Artemas F. Holden, 2195 S. Milford Road, Milford, Mich. 48042

No Drawing. Continuation of application Ser. No. 284,321, May 31, 1963. This application June 7, 1967, Ser. No. 644,054

Int. Cl. C04l *35/52*

U.S. Cl. 106—56 **4 Claims**

A coating composition for refractory furnace walls providing protection against spalling and cracking under conditions of repeated heating and cooling for longer furnace life as well as high "black body" emissivity values through use of graphite coated with aluminum oxide in a vehicle comprising the water reaction product of a glass phase ceramic including such materials as calcium fluoride, silica sand, lime, sodium carbonate and sodium fluoride, or sodium silico fluoride together with sodium or potassium silicate.

3,526,524

FORTIFIED PASTE ROSIN SIZE CONTAINING A DISSOLVED CONTENT OF A CATIONIC WATER-SOLUBLE POLYALKYLENEPOLYAMINE

Russell Joseph Kulick, Stockbridge, Mass., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of applications Ser. No. 372,115, June 2, 1964, and Ser. No. 546,200, Apr. 29, 1966. This application July 14, 1967, Ser. No. 653,354

Int. Cl. C08h *11/04, 11/06;* **D21h** *3/34*

U.S. Cl. 106—238 **6 Claims**

The invention provides paste rosin size of superior sizing properties resulting from the presence in the size of a dissolved content of a water-soluble cationic polyalkylenepolyamine containing at least 10 amino nitrogen atoms, the size may contain a small amount of a highly ionized water-soluble salt as an agent which decreases the viscosity of the size.

3,526,525

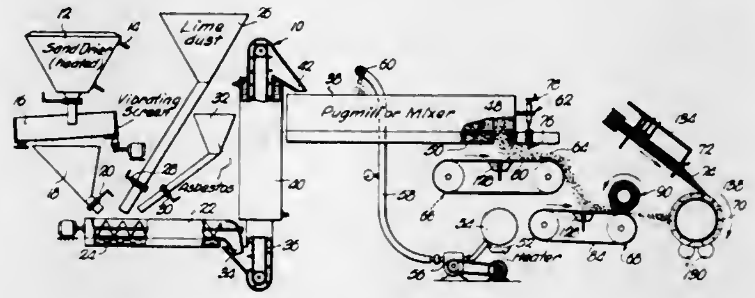
METHOD AND APPARATUS FOR COATING PIPE

Harry Nelson Versoy, New Orleans, and Robert J. Harris, Marrero, La., assignors to H. C. Price Co., Bartlesville, Okla., a corporation of California

Filed Jan. 3, 1967, Ser. No. 606,994

Int. Cl. B44d *1/14, 1/094*

U.S. Cl. 117—18 **16 Claims**



A method and apparatus for coating a rotating object with a particulate material containing a thermal responsive, liquified binder. Each particle of the material is coated with the heated, plasticized material and the material is passed between a moving and heated conveyor belt and a heated rotating brush to impart high velocity to the particles. Impingement of the particles and plasticized binder on the pipe with impactive force effects cohesive binding of the particles to one another until a relatively dense, compacted layer of the composition is bonded to the object. Cooling of the binder from its plasticized state, if desired, enhances the bond and cohesion of the coating.

3,526,526

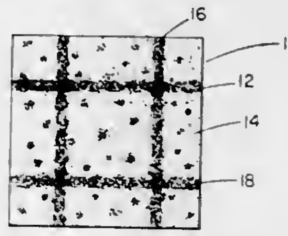
NONWOVEN FABRICS OF IMPROVED OPACITY

Nicholas S. Newman, West Newton, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Oct. 20, 1967, Ser. No. 676,955

Int. Cl. B44c *1/08*

U.S. Cl. 117—25 **13 Claims**



The opacity and light-scattering power of nonwoven fabrics is increased by adhesively bonding to the fabric surface between 200 and 1,000 aggregates of ultra-short fibers per square inch. The ultra-short fibers are between 40 and 200 microns in length, and the aggregates are randomly distributed on a planar fabric, or concentrated at the raised surface portions of a non-planar fabric.

3,526,527

PROCESS OF FORMING A CATHODOLUMINESCENT SCREEN

Anthony V. Gallaro, Auburn, and Walter F. Kazuk and Kenneth Speigel, Seneca Falls, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Apr. 28, 1967, Ser. No. 634,724

Int. Cl. H01j *31/20*

U.S. Cl. 117—33.5 **3 Claims**

A process of forming a plural color cathodoluminescent screen wherein at least two layers of light-emitting phosphors have therebetween a separation layer of electrically conductive oxide material that is substantially translucent to electromagnetic radiation and substantially opaque to the penetration of electron beams of predetermined velocity. The process of forming the screen includes a nucleation to achieve the uniform disposition of an oxidizable metal which when subsequently heated forms the metallic oxide of the separation layer.

3,526,528

MULTIPLE DOCTOR COATING PROCESS AND APPARATUS

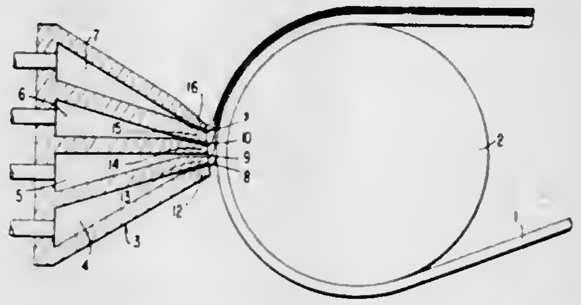
Keizo Takahashi and Mamoru Ishiwata, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan

Filed Oct. 27, 1966, Ser. No. 589,896

Claims priority, application Japan, Oct. 28, 1965, 40/66,282; Dec. 15, 1965, 40/76,868

Int. Cl. B44d *1/00*

U.S. Cl. 117—34 **8 Claims**



A coating apparatus is provided which includes a plurality of separately closed chambers, each having a discharge opening separated from each other by partitions, the ends of which are formed as doctor blades.

The process for coating a plurality of layers on a traveling web includes supplying fluid compositions to each of said chambers, applying said compositions successively to the web and metering the coatings by means of the doctor blades.

3,526,529

METHOD OF PRODUCING HIGH TENSILE STRENGTH ALUMINUM COATED FERROUS STRANDS

Marvin B. Pierson, Middletown, Ohio, and Earle L. Knapp, Kansas City, Mo., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Continuation of application Ser. No. 397,538, Sept. 18, 1964. This application Apr. 9, 1969, Ser. No. 815,529

Int. Cl. C23c *1/08*

U.S. Cl. 117—51 **4 Claims**

Process for producing high tensile strength aluminum coated steel wire, wherein the surface of the wire is thoroughly cleaned and then brought to a bath of molten aluminum coating metal at a temperature equal to or below that of the bath so that the surface of the strand is heated to a temperature not substantially greater than the melting point of the coating metal during its immersion therein.

3,526,530

SILICEOUS COATINGS

Robert H. Sams, Aldan, and Robert W. Linton, Springfield, Pa., assignors to Philadelphia Quartz Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 12, 1967, Ser. No. 630,205

Int. Cl. B44d *1/44*

U.S. Cl. 117—62 **6 Claims**

A method for coating an unactivated surface with a siliceous film without first activating the surface, which comprises contacting the unactivated surface with an aqueous solution of an alkali metal silicate so as to thereby form a film upon said unactivated surface, completely destabilizing said film of alkali metal silicate solution that surrounds said surface, draining residual liquid from said surface and washing same, and recovering a surface having a permanent, insoluble siliceous film.

3,526,531
METHOD FOR MAKING MICROPOROUS SHEET MATERIAL

Kohin Asano, Takatsuki, Kojiro Sagi, Takarazuka, Shigeru Kawase, Settsu, Tohru Kitazawa, Osaka, and Hiroo Ohba, Nishinomiya, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, a corporation of Japan
No Drawing. Filed Nov. 21, 1967, Ser. No. 684,646
Claims priority, application Japan, Dec. 1, 1966, 41/79,100
Int. Cl. B44d *1/44;* **B32b** *27/40*
U.S. Cl. 117—62.2 6 Claims

The method consists of coating a base material with a solution of film forming synthetic polymer comprising polyurethane dissolved in a water-miscible organic solvent. The coated base material is then treated with an aqueous coagulating liquid to coagulate the polymer followed by the steps of washing and drying. The aqueous coagulating liquid contains at least one water soluble salt selected from the group consisting of inorganic and organic salts of lithium, sodium, potassium, calcium, aluminum, ammonium, magnesium, copper, iron, zinc and manganese, wherein the concentration of said salt is from 10 g./l. to saturation at 30° C.

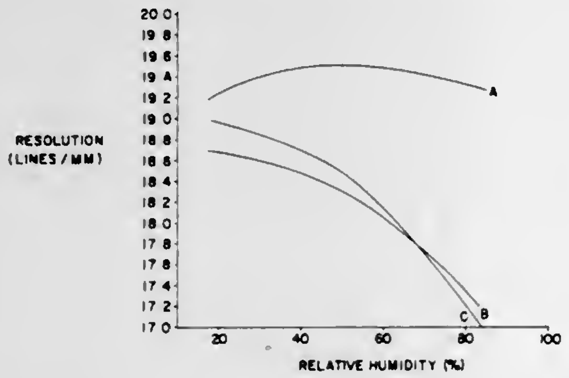
3,526,532
METAL ARTICLE COATED WITH ACRYLIC OR VINYL PRIMER AND HYDROFLUOROCARBON TOPCOAT

Philip Helberger, Philadelphia, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 406,166, Oct. 23, 1964. This application Jan. 30, 1969, Ser. No. 795,336
Int. Cl. B44d *1/14;* **B32b** *15/08*
U.S. Cl. 117—75 7 Claims

A finishing system for metals which comprises a primer coat of an acrylic- or vinyl polymer and a topcoat of a hydrofluorocarbon polymer, and the coated metal article.

3,526,533
COATED CARRIER PARTICLES

Burton B. Jacknow and Joseph H. Moriconi, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 10, 1966, Ser. No. 571,509
Int. Cl. G03g *5/10*
U.S. Cl. 117—100 6 Claims



A carrier for electrostatographic developers comprising a core surrounded by a thin coating of a solid polymeric addition reaction product of at least one polymerizable unsaturated silicon free organic composition and an organo silane, silanol or siloxane having from 1 to 3 hydrolyzable groups and an organic group attached directly to a silicon atom containing an unsaturated carbon-to-carbon linkage; the reaction product having a weight-average molecular weight of at least 5,000 and a glass transition temperature of at least 55° C. This carrier is used with smaller finely-divided toner particles to develop electrostatic latent images.

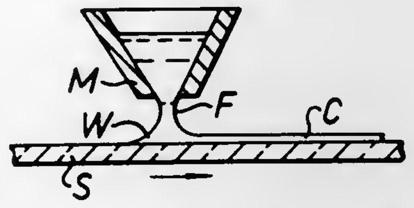
3,526,534
METHOD FOR IMPROVING THE OXIDATION RESISTANCE OF CHROMIUM CONTAINING IRON, COBALT AND NICKEL BASE ALLOYS

Henri Hatwell, Brussels, and Pierre Lonis Moentack, Saintes, Belgium, assignors, by mesne assignments, to Cabot Corporation, a corporation of Delaware
No Drawing. Filed May 15, 1968, Ser. No. 729,372
Int. Cl. C23c *13/02*
U.S. Cl. 117—107 4 Claims

Method for improving the oxidation resistance of iron, cobalt and nickel base alloys which contain chromium by vapor depositing lanthanum metal on the alloy and subjecting the thus treated alloy to elevated temperatures under vacuum conditions.

3,526,535
METHOD FOR PRODUCING SURFACE COATINGS

Emile Plumat, Gilly, Belgium, assignor to Glaverbel S.A., Watermael-Boitsfort, Belgium
Filed July 25, 1967, Ser. No. 655,785
Claims priority, application Luxembourg, Aug. 1, 1966, 51,679
Int. Cl. B05c *5/02*
U.S. Cl. 117—120 21 Claims



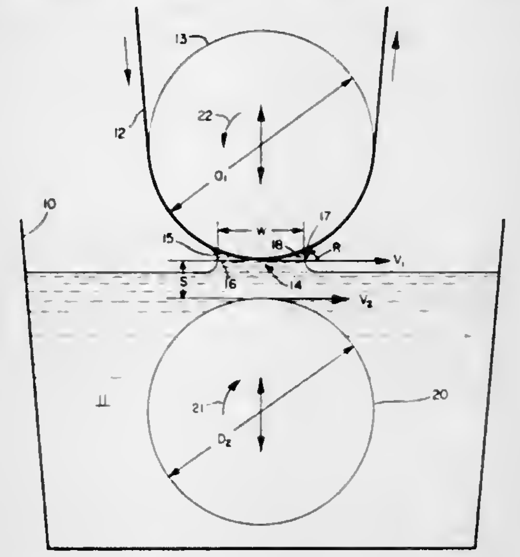
A method for producing surface coatings by applying a liquid film from a dispenser orifice to the surface being coated while producing a relative movement between the surface and the dispenser orifice and creating a relationship between the volume flow rate of liquid from the orifice and the rate of relative movement between the surface and the orifice so as to maintain, at the point where the liquid descending from the orifice contacts the work surface, a swelling of the liquid in the direction of movement of the orifice relative to the work surface, and while maintaining a spacing between the orifice and the work surface which is large enough to prevent the liquid from forming a bead which could be maintained by surface tension.

3,526,536
PROCESS AND APPARATUS FOR BEAD COATING A WEB

Aris C. Spengos, Wallingford, and Nelson L. Fegley, Ridley Park, Pa., assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Filed Aug. 28, 1967, Ser. No. 663,613
Int. Cl. B05c
U.S. Cl. 117—120 18 Claims

A method and apparatus are disclosed for applying a liquid to the surface of a web, for example, applying a light-sensitive coating to a plastic strip or film, by the dip coating and bead coating processes. Improvements are disclosed which reduce or eliminate problems experienced in bead coating in which a web to be coated is held by a guide roll in a position where it forms a bead with a liquid to be applied to the web. A moving surface element such as a rotatably mounted roll is employed generally beneath the bead and spaced from the web to be coated, the moving surface element having a direction of motion generally corresponding to the general direction of motion of the web through the liquid in the bead. This imparts motion to portions of the liquid generally beneath the bead and between the surface of the moving web and the moving surface element in a direction corresponding to the general direction of motion of the web through the liquid in the bead. In this manner, the liquid beneath the bead has a more uniform velocity profile. The method

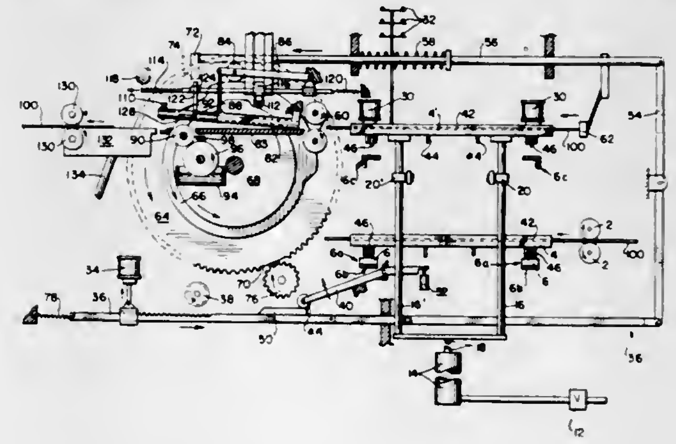
and apparatus of the invention reduce or eliminate undesirable streaking of the coating on the web which very often occurs in bead coating. Also disclosed is the incorporation of control means adjacent the web and above the surface of liquid in the reservoir which, in conjunction with the moving surface element, permits coating of a web with a liquid at considerably higher speeds without streaking. The control means is adapted to elevate the meniscus on



the trailing side of the bead to a point where it is more remotely spaced from the surface of the liquid than is the meniscus on the leading side of the bead. By regulating the height of the meniscus at the trailing side of the bead, the radius of curvature of the meniscus at the trailing side of the bead along the line of contact between the liquid and the web is controlled and, correspondingly, the thickness of the liquid coating on the web is controlled.

3,526,537
METHOD FOR WAXING LINED AND CUT LAMINATIONS FOR X-RAY ANTI-DIFFUSING SCREENS

Kurt Schumann, Radebeul, and Heinz Ehrentraut, Dresden, Germany, assignors to VEB Transformatoren- und Rontgenwerk Dresden, Dresden, Germany
Original application Aug. 19, 1965, Ser. No. 481,048, now Patent No. 3,489,123. Divided and this application Feb. 14, 1969, Ser. No. 810,440
Int. Cl. B44d *1/02*
U.S. Cl. 117—120 7 Claims



Method for waxing lined and cut laminations for X-ray anti-diffusing screens, comprising the steps of inserting a number of previously cut and lined laminations one by one into a carriage while moving the same stepwise in a direction transverse to that in which the laminations are inserted, transporting the carriage to another location spaced apart from the location where the laminations are inserted, removing the laminations simultaneously from the carriage at the other location, and subsequently waxing the laminations.

3,526,538
NONWOVEN FABRIC PRODUCT AND THE LIKE AND PREPARATION THEREOF

Martin K. Lindemann, Somerville, and Rocco P. Volpe, Newark, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 444,441, Mar. 31, 1965. This application Sept. 23, 1968, Ser. No. 768,954
Int. Cl. C08f *19/10, 45/24;* **D06n** *3/04*
U.S. Cl. 117—140 3 Claims

A latex composition comprising an aqueous medium having colloidally suspended in it an emulsion-polymerized interpolymer of vinyl acetate, ethylene and allyl glycidyl ether, the interpolymer containing 5 to 40% ethylene and at least about 0.5% allyl glycidyl ether based on the vinyl acetate, is used to make nonwoven fabrics from a loosely assembled mass of fibers, the interpolymer deposited from the latex being effective as a binder for the fibers.

3,526,539
METHOD OF FULLING KERATINOUS GOODS

Alain Guillet, Ivry, and Jean Pierre Moreau, Sevres, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Paris, France
No Drawing. Filed July 12, 1967, Ser. No. 652,720
Claims priority, application France, July 13, 1966, 69,243
Int. Cl. D06c *17/00;* **D06m** *3/14*
U.S. Cl. 117—141 5 Claims

Woolen goods with or without other keratinous or artificial fibers are fulled in a bath containing an aqueous fulling solution and a major amount of an organic liquid substantially immiscible with water, of greater density than the aqueous solution, in shorter time and with fewer steps than are customary in fulling practice.

3,526,540
COATING OF WOVEN FABRICS AND THE LIKE

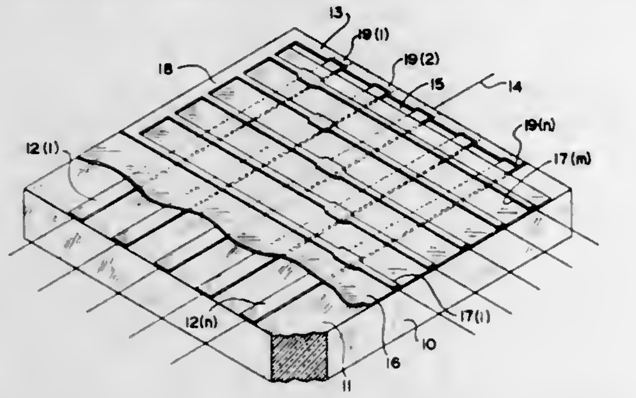
Martin K. Lindemann, Somerville, and Rocco P. Volpe, Newark, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 444,387, Mar. 31, 1965. This application Sept. 23, 1968, Ser. No. 781,657
Int. Cl. C08f *19/10, 45/24;* **C08j** *1/44*
U.S. Cl. 117—161 3 Claims

Woven fabrics are coated by means of a coating composition comprising an interpolymer of vinyl acetate, ethylene, and allyl glycidyl ether, the interpolymer containing 5 to 40% ethylene and the allyl glycidyl ether being present in an amount of at least about 0.5% based on the vinyl acetate, the coating composition being a dispersion of the interpolymer in water with the interpolymer preferably having a particle size of 0.1μ to 2μ.

3,526,541
ELECTRICALLY CONDUCTIVE THIN FILM CONTACTS

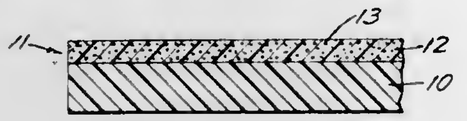
Douglas L. Peltzer, Cupertino, Calif., assignor to General Electric Company, a corporation of New York
Filed Dec. 23, 1966, Ser. No. 604,409
Int. Cl. H01v *11/12;* **H01r** *9/04*
U.S. Cl. 117—212 7 Claims

A process for making an electrically and mechanically reliable contact between a first thin film conductor which has been exposed to a contaminating atmosphere and a second, subsequentially formed, thin film conductor by intermediately forming therebetween a thin metallic film of material which has substantial solid solubility in the material of the first thin film conductor and is from the group consisting of endium and bismuth. Heat from the subsequent formation of the second thin film conductor, or from a specific heat source, causes the formation of a eutectic alloy at the contaminated interface between the first thin film conductor and the intermediate thin metallic film.



3,526,542
SHEET-LIKE STORAGE MEDIUM

Joseph A. Wiese, Jr., and William B. Barte, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,791
Int. Cl. H01f *10/02, 10/06*
U.S. Cl. 117—216 **10 Claims**



A sheet-like storage medium having an imaging layer comprising a homogeneous mixture of a halogen-containing binder and alpha ferric oxide.

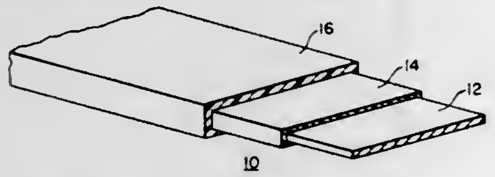
3,526,543
PHOTOCONDUCTIVE FILM

Akira Sasano, Kokubunji-shi, and Mitsuru Oikawa, Tokyo, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a Japanese corporation
Filed Jan. 31, 1967, Ser. No. 612,866
Claims priority, application Japan, Feb. 28, 1966, 41/11,678
Int. Cl. B44d *1/18*
U.S. Cl. 117—217 **7 Claims**

A photoconductive film to be used as a target of a vidicon and the like, said film being formed by laminating a film layer of metal and a photoconductive layer upon a conductive transparent layer and characterized in that the photoelectric current is increased by reducing the dark current.

3,526,544
INSULATED CONDUCTOR

Luciano C. Scala, Murrysville, Pa., and Edward J. Traynor, Stoughton, Mass., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 13, 1967, Ser. No. 690,279
Int. Cl. B44d *1/16;* **B32b** *15/08*
U.S. Cl. 117—218 **5 Claims**



An insulated conductor comprising a substrate composed of copper foil, a film on the foil composed of an amino-silane forming an intermediate layer having a thickness of from about 10 to 50 angstroms, and an outer coating of a resin resistant to high temperatures.

3,526,545
METHOD OF REMOVING MANGANESE CONTAINING DEPOSITS

Richard G. Abowd, Jr., Farmington, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed July 24, 1967, Ser. No. 655,284
Int. Cl. C23g *1/02*
U.S. Cl. 134—3 **10 Claims**

A method of removing manganese containing deposits formed on the surfaces of jet engines from burning fuel containing a cyclopentadienyl manganese tricarbonyl as a smoke reducer, by treating the deposit coated surfaces with an aqueous solution of a mono- or dicarboxylic acid having up to ten carbon atoms and being composed solely of carbon, hydrogen and oxygen. Oxalic acid is a useful acid.

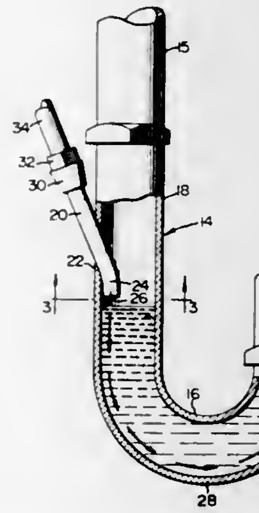
3,526,546
PROCESS FOR DEGREASING SHEET-LIKE ROLLED ALUMINUM PRODUCTS

Hans Heiss, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
No Drawing. Filed Dec. 21, 1967, Ser. No. 692,268
Claims priority, application Germany, Dec. 23, 1966, K 61,011
Int. Cl. B08b *1/00, 5/00*
U.S. Cl. 134—6 **3 Claims**

Process for degreasing a rolled aluminum product which comprises mechanically removing grease from the surface of the aluminum and blowing a stream of air having a relative humidity of at least 60 percent onto the surface.

3,526,547
METHOD AND APPARATUS FOR CLEANING OUT DRAIN TRAPS

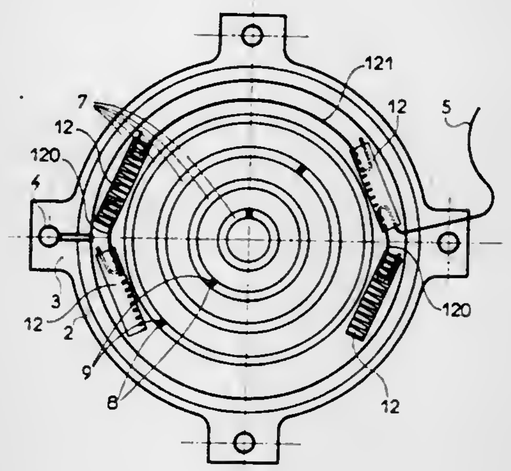
Albert F. Shock, P.O. Box 116,
Nutter Fort, W. Va. 26301
Filed Aug. 21, 1968, Ser. No. 754,354
Int. Cl. B08b *9/06*
U.S. Cl. 134—22 **10 Claims**



A drain trap clean-out method and apparatus involving the passage of a pressure fluid through a relatively small conduit extending permanently into the inlet vertical leg section of a conventional U-shaped drain trap, for a sanitary plumbing unit, above the trap so that a jet stream of fluid issuing from the downwardly projected conduit inner end sweeps the interior or the larger radius wall of the trap to undercuttingly bore through a blockage in the trap and thereby break up such blockage with a subsequent complete purging action in effecting complete dislodgement and removal of the blockage. The pressure fluid is water from the plumbing unit and a temporary passage means therefor is removably connected between an outer end of the conduit and a faucet of the plumbing unit or a valved controlled permanent passage means is connected between the piping for the plumbing unit and the conduit.

3,526,548
FUEL CELL ELECTRODES

Roland Accorsi, Cachan, Claude Hespel, Limours, René Vilhes, Viry Chatillon, Jean-Paul Pompon, Vitry-sur-Seine, and André Culand, Orsay, France, assignors to Compagnie Generale d'Electricite, Paris, France
Filed Dec. 9, 1966, Ser. No. 600,619
Claims priority, application France, Dec. 10, 1965, 41,679; Apr. 27, 1966, 50,379; July 11, 1966, 69,941; Oct. 11, 1966, 79,566
Int. Cl. H01m *27/00, 13/00*
U.S. Cl. 136—86 **28 Claims**

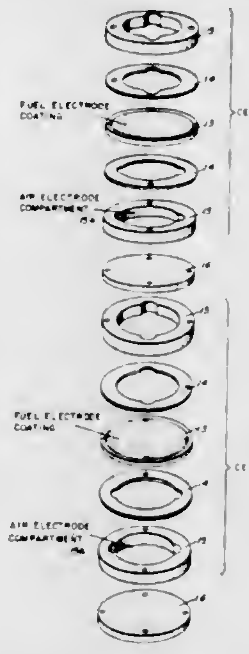


The present disclosure relates to fuel cell electrodes and fuel cells produced by the assemblage of a plurality of such electrodes. The plates of said electrodes are composed of electrically conductive porous material and elements of synthetic material which greatly facilitates the construction of the electrode and substantially reduces its weight. The electrodes are constructed such that the electrically conductive porous plates form a fluid tight chamber and when assembled together with other like electrodes forms additional fluid tight chambers.

3,526,549
SOLID ELECTROLYTE STACKED DISC FUEL CELLS

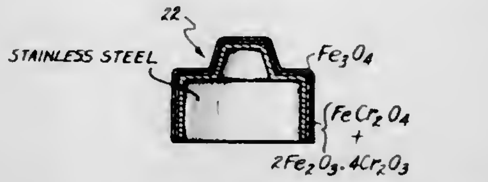
David H. Archer, Pittsburgh, and William A. English, Export, Pa., and Peter S. Merrill, San Diego, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Interior
Filed Apr. 9, 1968, Ser. No. 719,909
Int. Cl. H01m *27/16*
U.S. Cl. 136—86 **1 Claim**

Each fuel cell of a stacked, solid electrolyte battery is composed of an electrolyte disc covered on each face with an electrode coating and sandwiched between two rings each of which defines an electrode compartment. Electrically conductive discs separate one cell from another. The separator discs, electrolyte discs and rings have aligned apertures which define manifolds that provide for parallel or series flow of fuel and oxidant gas through the battery.



3,526,550
SURFACE PREPARATION OF IRON-CHROMIUM ALLOY PARTS FOR METAL-TO-GLASS SEALS

Eugene P. Larson and Edward C. Slick, Warren, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,810
Int. Cl. C23f *7/04*
U.S. Cl. 148—6.35 **13 Claims**



A new form of oxide coating on a stainless steel alloy containing a small percentage of nickel and the method of forming the oxide coating on the alloy wherein the coating is an iron chromite spinel, part of which is in a further oxidized form of a rhombohedral solid solution containing ferric oxide and chromic oxide. The method comprises treating the alloy in a high temperature oven for a prolonged period of time with a mixture of gases consisting essentially of carbon dioxide, carbon monoxide, hydrogen and water vapor in proper proportions, the mixture being obtained by cracking natural gas.

3,526,551
PROCESS FOR HEAT TREATING METALS

Herbert Sargent, 3416 Via Palomino,
Palos Verde Estates, Calif. 90274
No Drawing. Filed Jan. 17, 1968, Ser. No. 698,395
Int. Cl. C21d *1/68;* **C22f** *1/04, 1/08*
U.S. Cl. 148—13.1 **10 Claims**

A process for heat treating metals. The process comprises coating the metal articles with a layer of an organic compound having a hydroxyl function group prior to placing these articles in the heat treating oven. These compounds prevent contiguous surfaces of the articles from sticking or bonding to one another during the heat treatment. The preferred compound is propylene glycol. The process is particularly applicable to the heat treatment of aluminum alloy discs for use as computer memory discs.

3,526,552
METAL TREATING

Clark P. Church and Barry I. Pletcher, Beaver Falls, Pa., assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed June 2, 1966, Ser. No. 554,682

Int. Cl. C21d *1/70, 1/72*

U.S. Cl. 148—14 **10 Claims**

A method of treating the surface of an iron based metal article during heat treatment wherein the finished article is covered with scale interspersed with particles of a coating material which facilitates scale removal during subsequent pickling. The coating material consists of sodium chloride, barium chloride or calcium chloride applied to the article prior to or during heat treatment of the article.

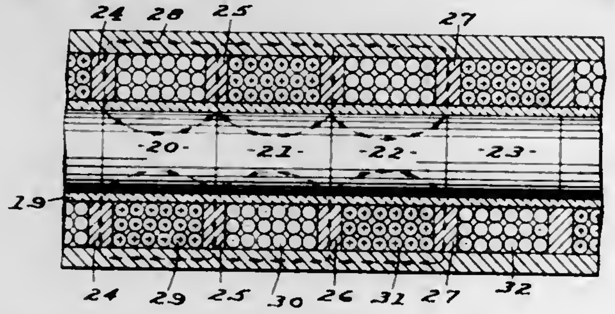
3,526,553
METHOD OF ORIENTING A SPEAKER MAGNET

Rollin J. Parker, Greenville, Mich., assignor to General Electric Company, a corporation of New York

Original application Dec. 21, 1965, Ser. No. 515,401, now Patent No. 3,440,364. Divided and this application Dec. 16, 1968, Ser. No. 798,543

Int. Cl. C21d *1/04;* **H01f** *1/04*

U.S. Cl. 148—103 **2 Claims**



Permanent magnets are oriented so as to have a preferred direction of magnetization along a curved path disposed about the axis of the magnet, with a first pole around a first portion of the side surface of the magnet and a second pole around an axially spaced second portion of the side surface of the magnet. The process comprises raising the magnet to a temperature above its Curie temperature, surrounding the magnet with a magnetic field axially aligned with the permanent magnet, and passing the magnetic field axially through the permanent magnet from one of said poles to the other of said poles, while the magnet is cooled through its Curie temperature.

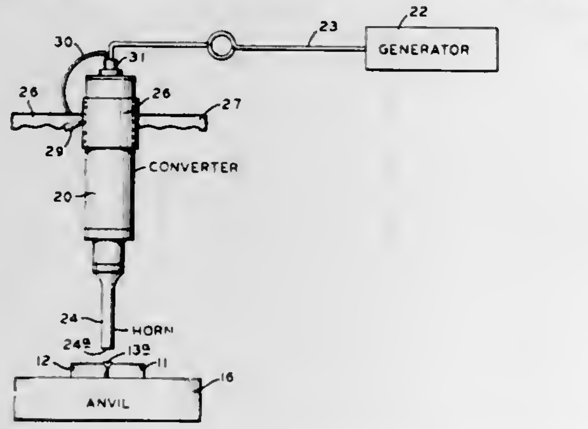
3,526,554
METHOD FOR PRODUCING A FILLET TYPE WELD ON THERMOPLASTIC MATERIAL USING ULTRASONIC ENERGY

Edward G. Obeda, Brookfield, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Filed Oct. 31, 1968, Ser. No. 772,184

Int. Cl. B29c *27/08*

U.S. Cl. 156—73 **2 Claims**



A fillet type weld on thermoplastic parts is made by disposing strip or ribbon thermoplastic filler material in the space to be filled, and applying ultrasonic energy in order to soften and fuse the filler material with the base parts.

3,526,555
METHOD OF MASKING A SEMICONDUCTOR WITH A LIFTABLE METALLIC LAYER

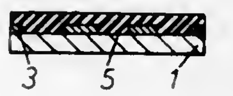
John Henry Alexander, Harlow, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

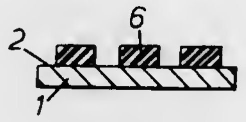
Filed May 31, 1967, Ser. No. 642,404

Claims priority, application Great Britain, July 15, 1966, 31,890/66

Int. Cl. H01l *7/00*

U.S. Cl. 156—17 **1 Claim**





A technique for selectively disposing a film on a substrate by relief deposition, wherein a liftable material is deposited in accordance with the desired pattern and the film to be masked is deposited by the glow discharge process on the entire surface of the substrate. The liftable material is separated from the substrate by ultrasonic agitation in a liquid, the liquid gaining access to said material through the relatively porous glow-discharge-deposited film; the liftable material so separated removes the overlying portions of the deposited film from the substrate. This technique is especially useful in conjunction with films of silicon nitride and silicon oxide where the liftable material may be gold, copper or silver.

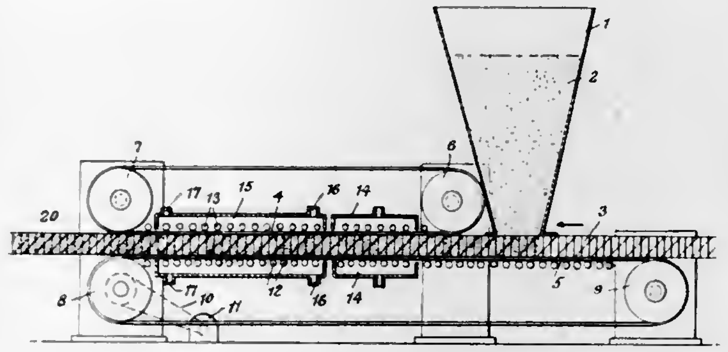
3,526,556
APPARATUS AND METHOD FOR THE CONTINUOUS PRODUCTION OF SLABS OR SHEETS COMPOSED OF FOAMED POLYMERIC MATERIAL HAVING A CELLULAR CORE

Erling Berner, New Castle, Pa., assignor to Berner Industries, Inc., New Castle, Pa., a corporation of Pennsylvania

Filed Dec. 6, 1966, Ser. No. 599,456

Int. Cl. B31f *1/00;* **B32b** *5/18*

U.S. Cl. 156—79 **7 Claims**



A method and apparatus for producing cellular or corrugated sheets containing plastic in its cells comprising forming a corrugated sheet and applying intermediate and/or facing sheets thereover; depositing plastic beads or a foaming plastic mixture in the cells or corrugations and then expanding the beads therein by the application of heat and then cooling the sheet or allowing the plastic mixture to foam through chemical reaction.

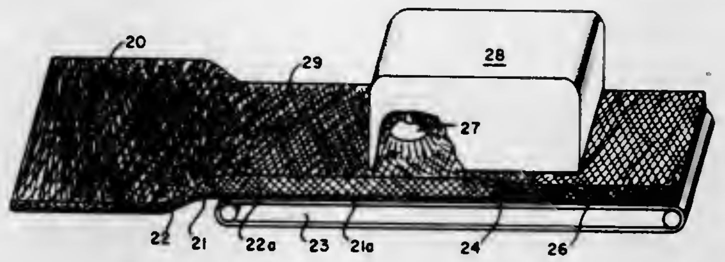
3,526,557
METHOD FOR MAKING FILAMENTOUS MATS

Harold J. Taylor, Jr., Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Nov. 18, 1966, Ser. No. 595,492

Int. Cl. D04h *3/16*

U.S. Cl. 156—167 **10 Claims**



The present invention relates to expanded filamentous mats and more particularly relates to improved methods for controlling filament concentrations in selected portions of such mats, by application of selected binder compositions to the mat and softening the binder compositions in selected portions of the mat during processing to permit reorientation of filaments in the mat.

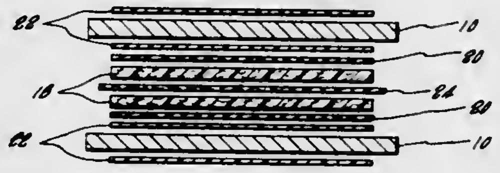
3,526,558
PROCESS FOR MAKING A DECORATIVE THERMOSETTING PLASTIC PANEL

Robert E. Beeson, Los Angeles, Calif., assignor to Mill Polishing Corporation, Huntington Park, Calif., a corporation of California

Filed June 27, 1966, Ser. No. 560,716

Int. Cl. B32b *7/06, 33/00*

U.S. Cl. 156—219 **4 Claims**



A process for making a decorative thermosetting-plastic panel having adjacent smooth and slightly roughened areas. The panel surface is formed under heat and pressure against a press plate having adjacent smooth and roughened areas, the latter zones having a surface roughness of less than about 150 microinches R.M.S. average to avoid adherence of the panel to the plate. Different reflectance values in the smooth and roughened areas of the panel create a decorative multiple-tone effect.

3,526,559
PROCESS OF PRODUCING A STYRENE-MODIFIED PHENOLIC RESIN AND IMPREGNATING FIBROUS SHEET MATERIAL WITH THE RESIN

Edward Choloner Hale, Beaconsfield, Quebec, and Peter Stephen Kerekes, Montreal, Quebec, Canada, assignors to Domtar Limited, Montreal, Quebec, Canada, a Canadian company

No Drawing. Filed Jan. 25, 1967, Ser. No. 611,560

Claims priority, application Canada, Feb. 1, 1966, 951,274

Int. Cl. C08g *5/00, 5/08*

U.S. Cl. 156—335 **5 Claims**

Resin characteristics, notably rate of cure and flow, of water-soluble phenolic resins are improved by incorporating therein styrene or a styrene derivative. By first reacting phenol with styrene or a styrene derivative in the presence of a Friedel-Crafts catalyst and thereafter reacting the addition reaction product so produced with formaldehyde in the presence of a fixed alkali catalyst a water-soluble phenolic resin is obtained which is especially suitable as a core stock resin in the manufacture of decorative laminates.

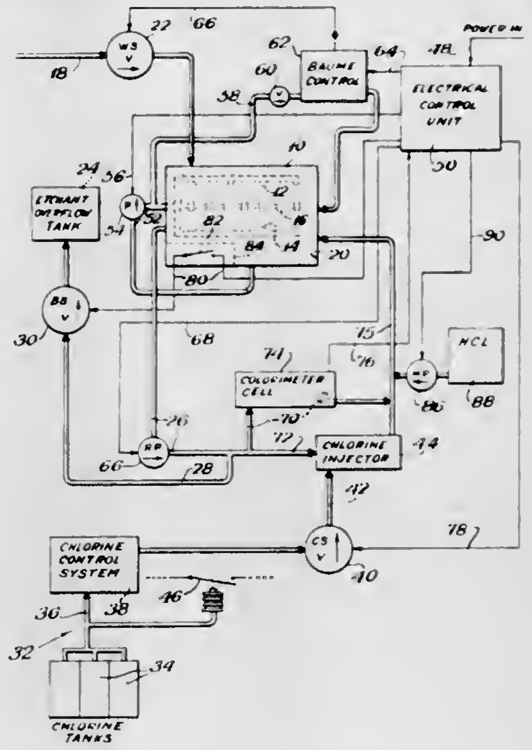
3,526,560
ETCHANT REGENERATION APPARATUS

John P. Thomas, Boalsburg, Pa., assignor to Chemcut Corporation, College, Pa., a corporation of Pennsylvania

Filed Feb. 13, 1967, Ser. No. 615,443

Int. Cl. C23b *3/00;* **C23f** *1/02*

U.S. Cl. 156—345 **6 Claims**



A fully automatic regeneration apparatus for the metal-etching etchant used in a spray etcher for industrial articles. The apparatus comprises an injector for injecting elemental halogen into the etchant to regenerate it from the oxidation state of its exhausted condition to the fully oxidized state of its fresh condition, a specific gravity float valve for introducing water into the etchant to maintain a constant etch rate, and a float-controlled overflow valve to drain off and store, as a byproduct in a storage tank, the accumulating excess of etchant which is continually being generated by the etching-regeneration process.

3,526,561
INFLATABLE BLADDER TIRE BUILDING DRUM

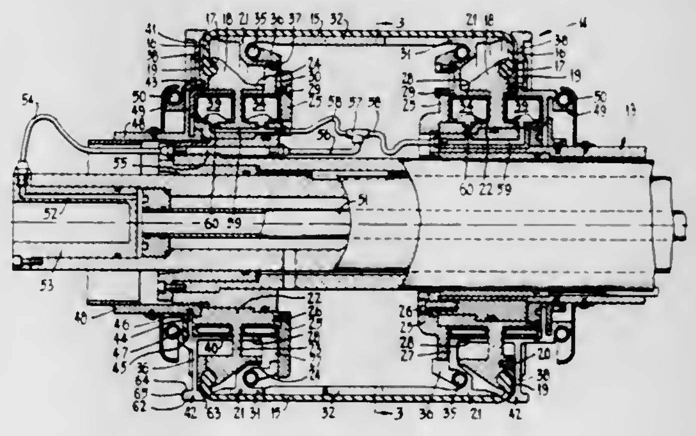
Henry E. Benns, North Brighton, Victoria, Australia, assignor to The Olympic Tyre & Rubber Company Proprietary Limited, West Footscray, Victoria, Australia

Filed Apr. 10, 1967, Ser. No. 629,550

Claims priority, application Australia, Apr. 13, 1966, 4,126/66

Int. Cl. B29h *17/16*

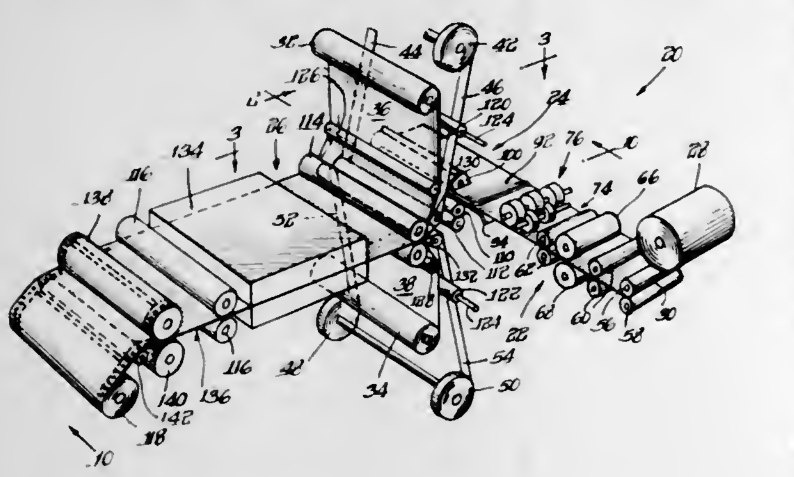
U.S. Cl. 156—416 **10 Claims**



A tire building apparatus having an inflatable cylindrical elastomeric bladder expandable under pressure to a toroidal form and mounted on a shaft assembly by clamping rings which engage integral beads on the ends of the bladder. Arcuate radially movable segments in the clamping rings support the bladder at different cylindrical diameters. Further arcuate radially movable outer segments are located beside the ends of the bladder, and tire bead support rings and breaker forming bells are movable into proximity to the bladder.

3,526,562
MAGNETICALLY ACTUATABLE BUSINESS MACHINE CARD, METHOD OF MAKING THE SAME AND APPARATUS THEREFOR

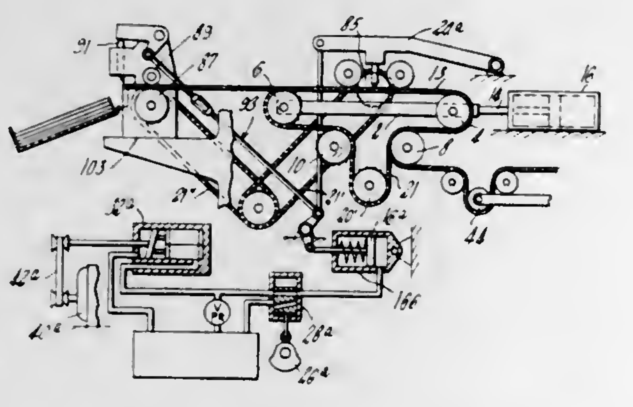
Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill. 60091
Filed Oct. 22, 1965, Ser. No. 501,794
Int. Cl. C09j *5/04;* **B32b** *31/10*
U.S. Cl. 156—519 **14 Claims**



Apparatus and method for making business machine cards provide for delivering a pair of first webs toward a laminating station with the longitudinal axes thereof disposed parallel and sandwiching a space therebetween. A sequence of discrete card elements is delivered into that space; and the webs and card elements are then bonded into a unified web. As individual business machine cards are required, they are severed from this resultant web.

3,526,563
FORMATIONS IN CONTINUOUS LENGTH MATERIALS

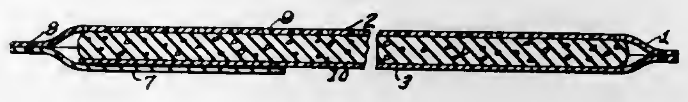
Charles M. Schott, Jr., Gloucester, Mass., assignor to Gloucester Engineering Co., Inc., Gloucester, Mass., a corporation of Massachusetts
Continuation-in-part of applications Ser. No. 251,327, Jan. 14, 1963, and Ser. No. 430,804, Feb. 8, 1965. This application Oct. 10, 1966, Ser. No. 585,623
Int. Cl. B30b *15/34*
U.S. Cl. 156—583 **19 Claims**



Machines for imparting formations to materials supplied continually featuring braking and hydraulic motor controls.

3,526,564
FOAMED PLASTIC FLOORMAT WITH PERFORATED ENVELOPE

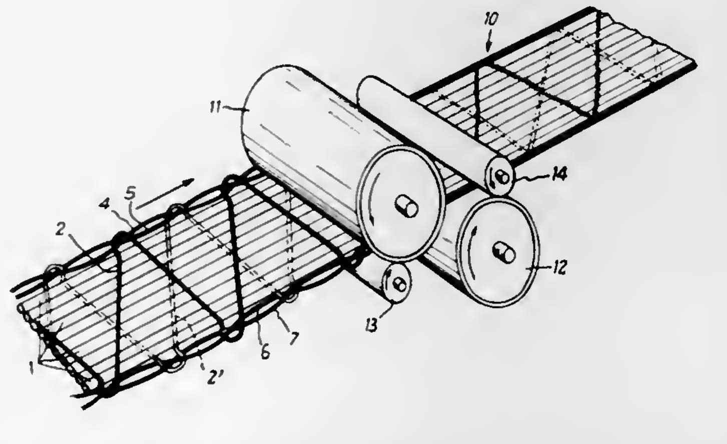
William A. Crawford, Hawthorne, Calif.
(328 35th St., Manhattan Beach, Calif. 90250)
Filed July 19, 1967, Ser. No. 654,630
Int. Cl. B32b *3/10, 3/26*
U.S. Cl. 161—43 **3 Claims**



The invention comprises an envelope adapted to hold a sheet of foamed plastic. One side of the envelope is perforated. When the mat is placed adjacent a door opening and the perforated side is walked upon, dirt from the shoes passes through the perforations onto the foamed plastic where it is collected and held until the foamed plastic is removed from the envelope, cleaned and then replaced in the envelope. The theory is that dirt particles receive an electrostatic contact charge when the foot of the person steps upon the perforated surface of the envelope which charge draws the dirt and dust through the perforations to hold the same within the envelope upon the foamed plastic sheet.

3,526,565
RIBBON OR TAPE OR THE LIKE AND PROCESS FOR MANUFACTURING THE SAME

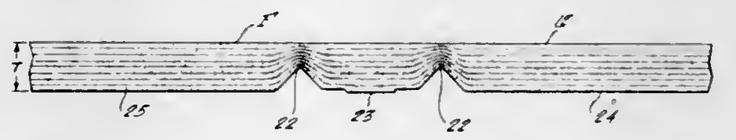
Jean-Jacques Walter, 162 Rue de Paris, Boulogne-sur-Seine, France
Filed June 7, 1966, Ser. No. 555,818
Claims priority, application France, June 9, 1965, 20,124
Int. Cl. D03d *5/00, 47/46;* **D04h** *1/04*
U.S. Cl. 161—78 **4 Claims**



A ribbon, tape, or the like is formed by a sheet of parallel warp threads and a weft thread on at least one surface of the sheet and extending sinuously from one edge of the sheet to the other. Each weft thread remains continuously on the same surface of the sheet. The weft threads comprise a heat-resistant core enveloped in a layer of thermofusible material. The warp threads are interconnected by being partially imbedded in the thermofusible layer of the weft threads. The ribbon, tape, or the like is formed by passing a sheet of parallel warp threads and two pairs of binding warp threads, one at each selvedge of the sheet, through a ribbon loom. Only the selvedge binding warp threads go through heddles to receive the conventional shedding motion, whereas the warp threads remain constantly parallel and in the same plane. A shuttle places a weft thread in sinuously extending relation on at least one of the two surfaces of the sheet and over the entire width of the sheet. The weft threads are secured to each of the edges of the sheet by the two pairs of binding warp threads which reverse their position after each passage of the shuttle. The assembly is then passed between heating rollers which temporarily fuse the coating layers of the weft threads for imbedding of the warp threads thereinto.

3,526,566
METHOD AND APPARATUS FOR SCORING PAPERBOARD AND PRODUCT PRODUCED THEREBY

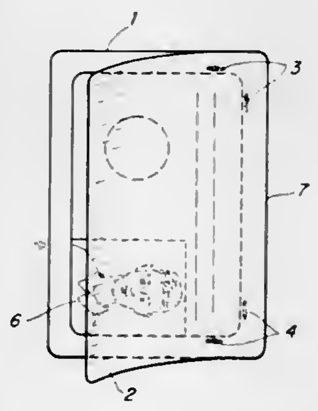
John Gibson McIlvain, Jr., West Chester, and Thomas G. Martin, Brandamore, Pa., assignors to Downingtown Paper Company, Downingtown, Pa., a corporation of Pennsylvania
Continuation-in-part of abandoned application Ser. No. 436,154, Mar. 1, 1965. This application Aug. 20, 1968, Ser. No. 757,210
Int. Cl. B32b *3/00;* **B31b** *1/14*
U.S. Cl. 161—123 **11 Claims**



A scored paperboard product and method and apparatus for forming the paperboard product in which a fold line is formed by scoring the rear face of the paperboard, without distortion of the front face, along closely spaced parallel lines equally spaced from opposite sides of the center line of the desired fold line. The parallel score lines are created in the paperboard by a pair of parallel cutting or creasing rules each of which terminates in a board-engaging edge with the board-engaging edges of the rules spaced apart a distance of approximately one to two times the thickness of the paperboard for the formation of a 90° fold and approximately two to four times the thickness of the paperboard for the formation of 180° fold.

3,526,567
LAMINATED CARD ENVELOPE

Frederick W. Macone, Carlisle, Mass., assignor to Avant Corporation, Lincoln, Mass., a corporation of Massachusetts
Filed Apr. 19, 1967, Ser. No. 632,072
Int. Cl. B32b *3/02*
U.S. Cl. 161—147 **10 Claims**



This disclosure illustrates a novel envelope for receiving and properly orienting a data card positioned within the envelope which is thereafter subjected to heat and pressure to produce a composite, multilayered laminated card.

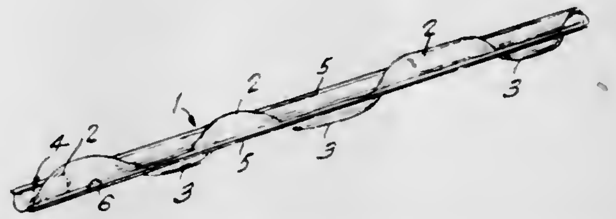
3,526,568
FLEXIBLE FOIL CLAD LAMINATES

Charles G. Kepple, Bedford, and Norman E. Martello, Turtle Creek, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 533,002, Mar. 9, 1966, now Patent No. 3,473,992. This application June 11, 1969, Ser. No. 832,098
Int. Cl. B32b *7/00;* **C09j** *5/04*
U.S. Cl. 161—165 **5 Claims**

A substrate of flexible fibrous material having at least one smooth coating of an insulating synthetic resin permeating the material. On at least one side thereof, a resinous adhesive is provided on the surface of the resin-coated substrate, the coating and/or adhesive is derived from a saturated polyhydric alcohol and a metal foil which can be processed to form a circuit is attached to the adhesive.

3,526,569
CRINKLED PLASTIC RIBBON

Sohinder Nath Chopra, 1379 Aberdeen St., Hawkesbury, Quebec, Canada, and Hilaire Marcel Turmel, 260 Garceau St., Drummondville, Quebec, Canada
Continuation-in-part of application Ser. No. 558,120, June 16, 1966. This application Apr. 10, 1969, Ser. No. 815,044
Int. Cl. D02g *3/00*
U.S. Cl. 161—173 **3 Claims**



The present invention relates to a flat-extruded yarn or ribbon of melt-extrudable thermoplastic material having a characteristic surface configuration, said yarn or ribbon having two opposed faces, substantially straight and parallel side edges and an interior crimped region between the edges in the form of a series of blister-like depressions and protrusions on both faces.

3,526,570
PARALLEL WIRE STRAND

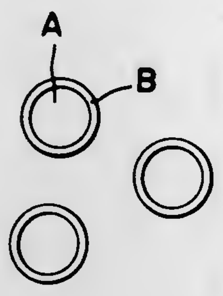
Jackson L. Durkee, Bethlehem, and Arthur F. Beighley and Donald E. Dunlap, Williamsport, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 575,038
Int. Cl. E01d *21/00*
U.S. Cl. 161—175 **5 Claims**

A prefabricated wire strand having a plurality of wires disposed in substantially parallel relation to the axis of the strand, and to each other, the cast of substantially every wire of the strand being counterbalanced by the cast of another wire, and the individual wires being secured against rotational movement at least at two longitudinally separated points.

3,526,571
HIGHLY SHRINKABLE POLYAMIDE FIBRES

Fumimaro Ogata, Nishinomiya, Japan, assignor to Kanegafuchi Boseki Kabushiki Kaisha
Filed Nov. 15, 1966, Ser. No. 594,496
Claims priority, application Japan, Dec. 1, 1965, 40/74,166
Int. Cl. D02g *3/00*
U.S. Cl. 161—175 **3 Claims**

A highly shrinkable polyamide filament having little or no stickiness and which does not loop or crimp upon heating, which comprises a copolyamide component which forms a core along the length of the unitary filament and a homopolyamide component of substantially uni-

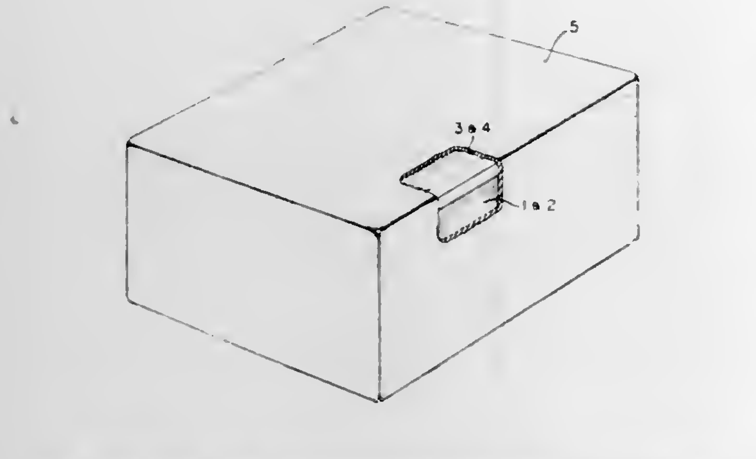


form thickness which forms a sheath completely surrounding the copolyamide component, and method of preparing same.

3,526,572

CONTAINER FOR LIQUID HYDROCARBONS HAVING A POLYURETHANE DERIVED FROM AN ALIPHATIC POLYCARBONATE THE HYDROCARBON BARRIER

Anthony F. Finelli, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 24, 1966, Ser. No. 588,886
Int. Cl. B32b *27/36, 27/40*
U.S. Cl. 161—183 7 Claims



A container for liquid hydrocarbons having a wall of cured diisocyanate reacted with linear acrylic hydroxyl terminated polycarbonate adhered to cured polyurethane, natural or synthetic rubber or plasticized vinyl resins.

3,526,573

FLEXIBLE FLAME RETARDANT FOIL-CLAD LAMINATES

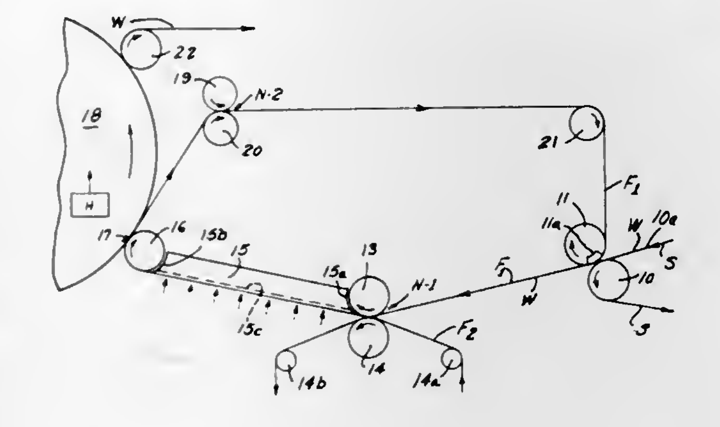
Charles G. Kepple, Bedford, Norman E. Martello, Turtle Creek, and Clarence L. Zeise, Jr., Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 533,026, Mar. 9, 1966. This application June 11, 1969, Ser. No. 832,097
Int. Cl. B32b *7/00;* **C09j** *5/04;* **C23l** *1/02*
U.S. Cl. 161—185 7 Claims

A substrate of flexible fibrous material having at least one smooth coating of a flame retardant synthetic resin permeating the material and, on at least one side thereof, a resinous adhesive on the surface of the resin-coated substrate, the coating and/or adhesive including a saturated polyhydric alcohol resinous reaction product, and a metal foil to form a circuit attached to the adhesive and embedded therein.

3,526,574

VACUUM TRANSFER DEVICE IN PAPERMAKING MACHINE

Edward D. Beachler and John W. Amend, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 27, 1967, Ser. No. 626,024
Int. Cl. D21f *2/00*
U.S. Cl. 162—205 4 Claims

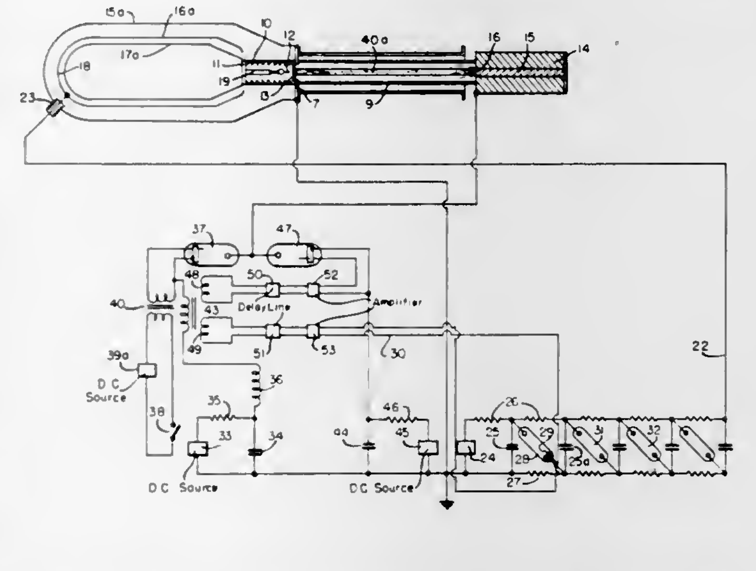


A device and method for transferring a travelling moist paper web onto the surface of a dryer drum in a paper machine. An inverted elongated suction box is trained on a felt carrying the paper web to maintain a pressure differential across the traveling felt and web thereby maintaining the web against the felt as the felt and web approach the dryer drum surface so that uniform application of the web to the dryer drum is achieved.

3,526,575

PRODUCTION AND UTILIZATION OF HIGH DENSITY PLASMA

Willard H. Bennett, 5500 N. Hills Drive, Raleigh, N.C. 27609
Filed Aug. 2, 1967, Ser. No. 657,986
Int. Cl. G21b *1/02;* **G21g** *1/02*
U.S. Cl. 176—1 15 Claims



The disclosure relates to apparatus for producing pulsed beams of relativistic electrons which, by means of linear pinch techniques, are focused down to less than 2 mm. diameter and preferably less than 1 mm., thereby making possible the generation of an extremely high power density on a selected target. The disclosure is also concerned with apparatus providing for the impingement of such beams of high power density upon targets which are adapted to make possible the production of thermonuclear fusion power and the production of transuranic elements in more than microgram quantities.

3,526,576

PRODUCTION OF STEROID COMPOUNDS BY MICROBIOLOGICAL CONVERSION

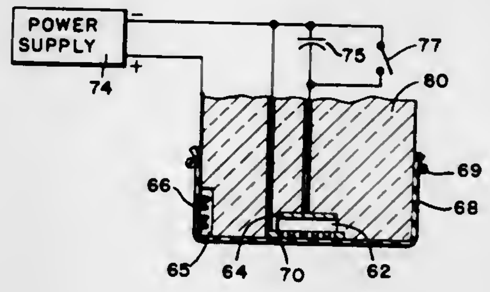
Samuel Cheng Pan, Metuchen, Joan Semar, Somerset, Pacifico Anthony Principe, South River, and Leonard Joseph Lerner, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 10, 1968, Ser. No. 728,361
Int. Cl. C07c *167/14*
U.S. Cl. 195—51 3 Claims

This invention relates to the production of 9α-hydroxyestrone, 9-keto-9,10-seco-estrone and $\Delta^{9(11)}$-estrone by microbiological conversion of 9α-hydroxy-19-norandrostenedione, the latter being derived by microbiological conversion of 19-norandrostenedione. The three products inhibit gonadotropin secretion and are useful in the control of estrus and fertility.

3,526,577

METHOD AND APPARATUS FOR GAS MEASUREMENT

Everett W. Molloy, Yellow Springs, Ohio, assignor to The Yellow Springs Instrument Company, Inc., Yellow Springs, Ohio, a corporation of Ohio
Filed Dec. 13, 1966, Ser. No. 601,404
Int. Cl. G01n *17/46*
U.S. Cl. 204—1 4 Claims



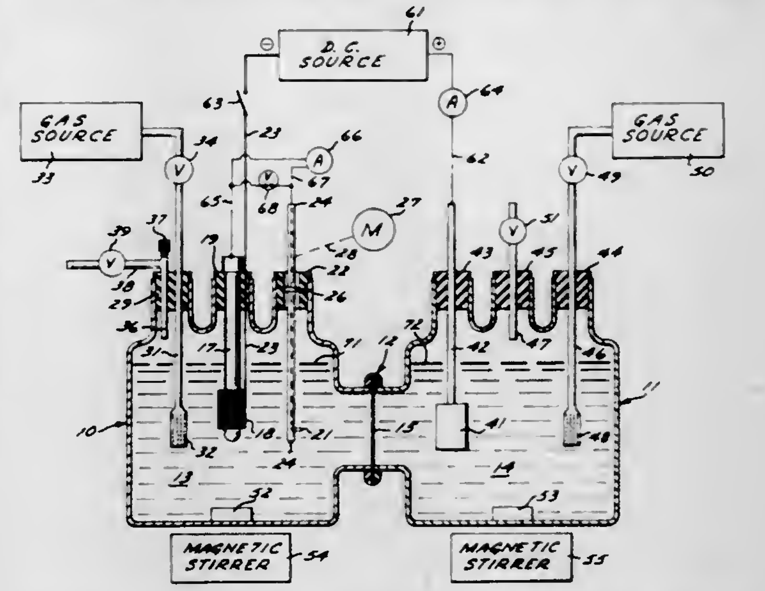
Use of a polarographic cell to measure gas concentration, wherein parameters such as membrane permeability and the mobility of the gas in its environment, both of which can vary with temperature, can be disregarded by operating with a sample of the gas containing environment which is a known quantity, and causing the cell to consume all of the gas from the sample, whereby it is possible to calculate the concentration of the gas per unit volume. The disclosure also describes novel polarographic cell devices for performing this method both continuously and repetitively.

3,526,578

METHOD OF DEOXYGENATING SOLUTIONS IN MAKING BIOLOGICAL DETERMINATIONS

Herbert P. Silverman, Orange, Calif., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 30, 1967, Ser. No. 627,090
Int. Cl. B01k *1/00;* **G01n** *27/00*
U.S. Cl. 204—1 18 Claims

A method of deoxygenating solutions and performing bioligical determinations together with apparatus for performing the same comprising the following steps: (1) providing in an oxygen-containing solution a redox couple; (2) passing an electric current through the solution by means of electrodes immersed therein until the reduced form of the redox couple removes substantially all of the oxygen from solution; (3) introducing into the solution the reactants of an enzymatic reaction; (4) following the progress of the reaction by relating the rate of change in the current flow in a sensing circuit to a characteristic of the enzyme reaction by means of a calibration factor. The calibration factor is obtained by deoxygenating the solution and correlating the amount of the redox couple

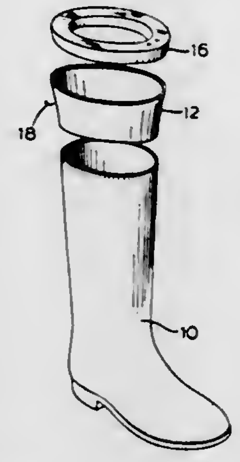


converted to the reduced form by a predetermined number of coulombs to the change in current flow in the sensing circuit.

3,526,579

METHOD OF MANUFACTURING BOOTS, SHOES AND THE LIKE

Joseph D. Carriero, 128 Sandringham Drive, Toronto, Ontario, Canada
Filed Oct. 23, 1967, Ser. No. 677,397
Int. Cl. C23b *7/02*
U.S. Cl. 204—9 10 Claims



This invention provides a method of manufacturing master molds for use in the slush casting process for the production of plastic footwear, which method is characterized by a first step of using a true prototype boot as contrasted with the usual starting mock-up. The invention also provides a method of slush casting plastic boots, including the manufacture of a master mold beginning with a true prototype boot.

3,526,580

FLEXIBLE COMPOSITE MEMBRANE

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an Invention of Stephen P. Vango, Los Angeles, and Lois L. Taylor, Pasadena, Calif.
Filed Dec. 19, 1967, Ser. No. 691,736
Int. Cl. C23b *5/60*
U.S. Cl. 204—20 5 Claims

A chemically stable, completely fluid impervious, flexible membrane is fabricated on a base layer having essentially the chemical and physical characteristics of polymerized tetrafluoroethylene by bonding to a surface of that base a flexible metallic layer, typically of lead. Pores in the metal layer are sealed by application and fusion of indium.

The composite membranes of the invention are particularly useful as expulsion membranes for rocket propellants, since they are impervious to, and chemically compatible with, even such highly reactive oxidizers as nitrogen tetroxide.

3,526,581
PREPARATION OF DIOLS AND HYDROXY ETHERS

Eddie C. French, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
No Drawing. Filed Mar. 30, 1967, Ser. No. 626,987
Int. Cl. C07c *43/04*
U.S. Cl. 204—77 **3 Claims**

α,β-Unsaturated aldehydes are simultaneously electrochemically reduced and either hydrated or alcoholated to a 1,3-diol or to a 1-hydroxy, 3-alkoxy, depending on the absence or presence of an alcohol in the catholyte; both the anolyte and the catholyte of the divided cell contain bicarbonate ions.

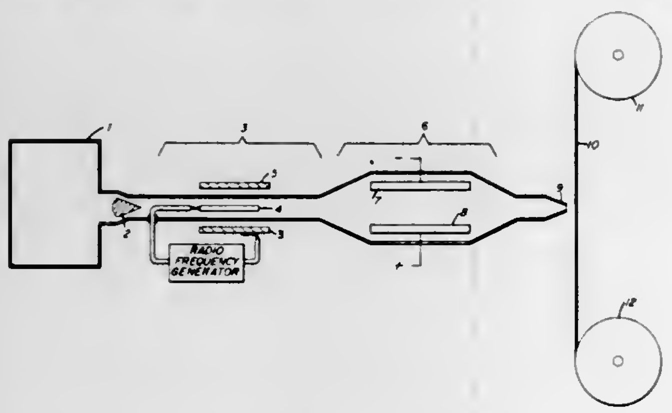
3,526,582
PROCESS FOR PRODUCING PYRIDOXAL-5-PHOSPHATE

Masao Tanaka, Kazuyuki Mineura, and Seigo Takasawa, Machida-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 27, 1967, Ser. No. 656,320
Claims priority, application Japan, July 28, 1966, 41/49,081; Sept. 14, 1966, 41/60,330; Oct. 4, 1966, 41/64,946
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 **20 Claims**

Process for producing pyridoxal-5-phosphate which comprises oxidizing pyridoxine-5-phosphate or pyridoxamine-5-phosphate in the presence of a compound which can form an electron transfer complex therewith; the latter include isoalloxadines, alloxadines, lumazines, xanthines, thiazines, acridines, porphyrins, indamines, azo compounds, azines, anthraquinones, benzoquinones, aromatic amino compounds and indoles. The yield of pyridoxal-5-phosphate can be increased by including amino compounds in the reaction mixture. Various oxidation agents may be used for the reaction, but a photooxidation with air is preferred.

3,526,583
TREATMENT FOR INCREASING THE HYDROPHILICITY OF MATERIALS

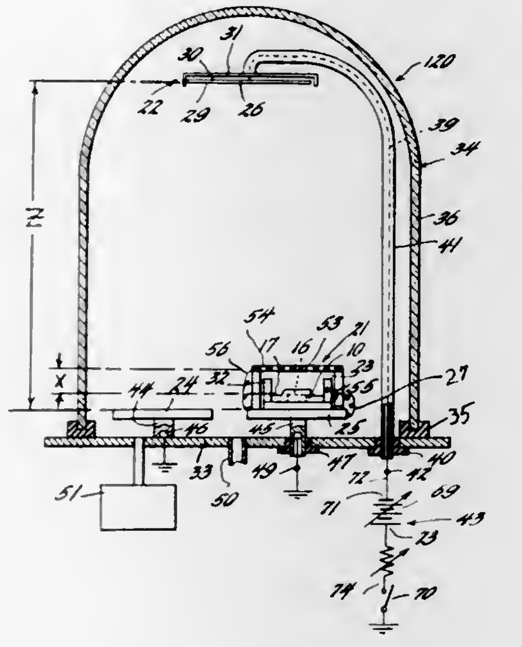
John S. Hayward, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
Filed Mar. 24, 1967, Ser. No. 625,828
Int. Cl. B44d *1/092;* **H01j** *37/00*
U.S. Cl. 204—165 **3 Claims**



Method and apparatus for rendering hydrophilic the surface of materials, including normally hydrophobic materials: a gas is electronically excited to produce an activated species which is then passed through an ion trap, to remove charged particles therefrom, and blown across the surface to be treated.

3,526,584
METHOD OF PROVIDING A FIELD FREE REGION ABOVE A SUBSTRATE DURING SPUTTER-DEPOSITING THEREON

Everett J. Shaw, Hopewell Township, Mercer County, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 25, 1964, Ser. No. 399,141
Int. Cl. C23c *15/00*
U.S. Cl. 204—192 **9 Claims**



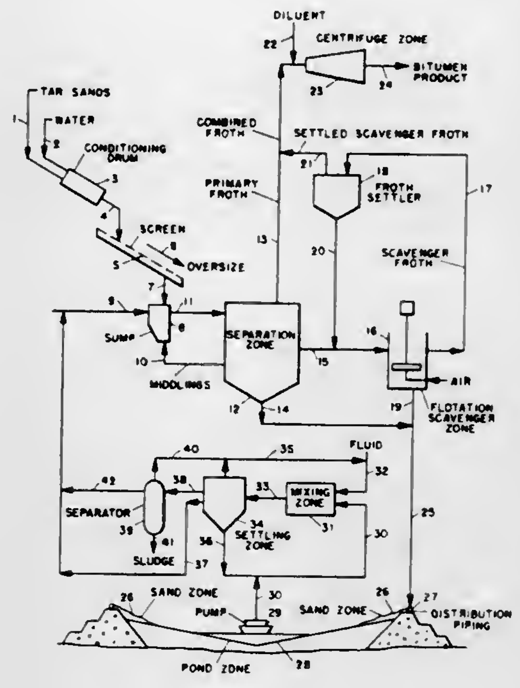
A sputtering method includes using a chamber containing a sputtering gas, a cathode of a film-forming material, an anode, and a gride positioned over an article to be coated positioned on the anode or on an article support. During application of a sputtering potential between the anode and the cathode, a voltage is applied to the grid to create an equipotential or field free zone overlying the article. Such zone extends away from the article by a distance greater (preferably, at least three times greater) than the mean free path of negative gas ions within the chamber. Sputtering, both reactive and non-reactive, takes place through this zone to coat the article with a film.

The use of the above method and apparatus precludes damage to the article and/or to films previously deposited on the article.

3,526,585
REMOVING SUSPENDED SOLIDS FROM A LIQUID

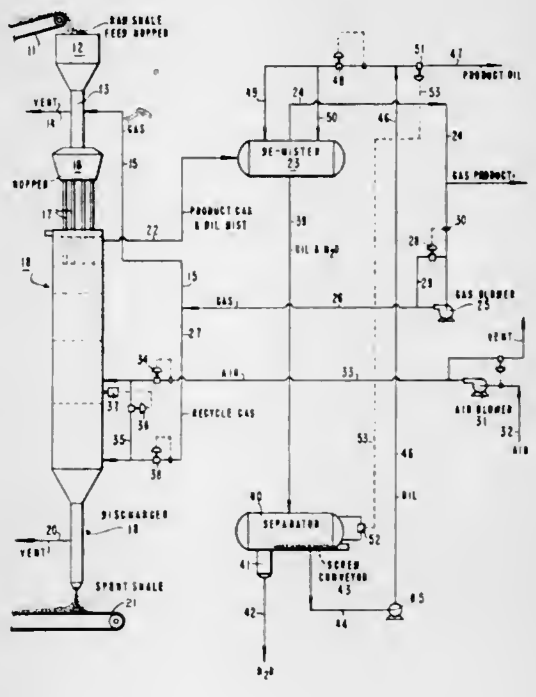
Frederick W. Camp, West Chester, Pa., assignor to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Jan. 22, 1968, Ser. No. 699,435
Int. Cl. B01d *21/01;* **C10g** *1/04*
U.S. Cl. 208—11 **11 Claims**

A process for separating suspended solids from a liquid comprising admixing the liquid with a fluid immiscible with the solids-containing liquid, settling the resulting mixture to form an interfacial zone in which the solids have concentrated, separately removing interfacial zone material from the settler, and treating the material by a conventional process to separate the solids from the liquid. The invention is particularly applicable to the clarification of water discharged from a hot water process for the separation of bitumen from tar sands.



3,526,586
RETORTING OF OIL SHALE

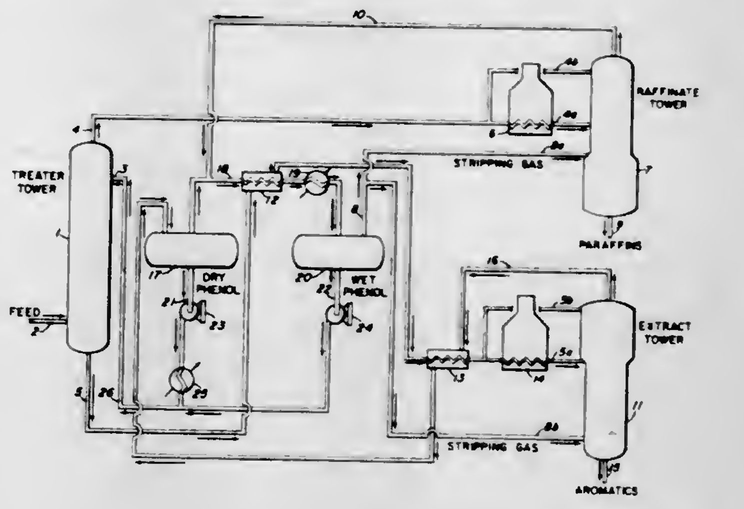
Arthur L. Saxton, 128 Mountain Ave., Warren, N.J. 07060
Filed Oct. 21, 1966, Ser. No. 588,345
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 **6 Claims**



In a single vessel oil shale retorting operation, the preheating, retorting, combustion and cooling zones are maintained under a pressure within the range of about 5 to about 100 p.s.i.g. and the gas and shale oil mist withdrawn from the retort are washed with a portion of the already recovered shale oil to improve recovery.

3,526,587
WATER CONCENTRATION CONTROL IN PHENOL PLANT SOLVENT

Richard P. O'Connor, Flanders, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 766,865
Int. Cl. C10g *21/16, 21/28*
U.S. Cl. 208—321 **4 Claims**



A phenol-water vapor mixture, obtained in a phenol extraction system for treating lubricating oil hydrocarbon fractions, is partially condensed to produce a substantially dry phenol condensate. The uncondensed phenol and water vapors are then condensed to form a wet phenol condensate. The dry and wet phenol condensates are then blended to give phenol having the desired water content for treating the hydrocarbon fraction.

3,526,588
MACROMOLECULAR FRACTIONATION PROCESS

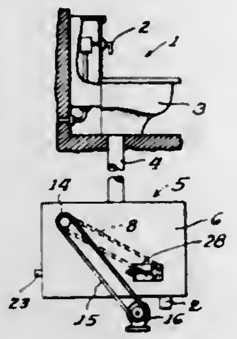
Alan S. Michaels, Lexington, and Richard W. Baker, Cambridge, Mass., assignors to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts
No Drawing. Filed Sept. 21, 1967, Ser. No. 669,385
Int. Cl. B01d *13/00*
U.S. Cl. 210—23 **8 Claims**

A process for fractionating macromolecular mixtures such as mixtures of polymers of varying molecular weight, e.g. solutions of polyvinylpyrrolidone having molecular weights extending from well below 10,000 to well above 100,000; the process comprises subjecting solutions of the macromolecular mixtures to a pressure differential, and thereby preferentially forcing a particular molecular weight fraction through a selected class of pressure-sensitive, anisotropic microporous membranes of the type described. A particularly advantageous embodiment of the invention is based on the discovery that physiologically-harmful components of polyvinylpyrrolidone can be removed from the commercially-available polymer by the process of the invention.

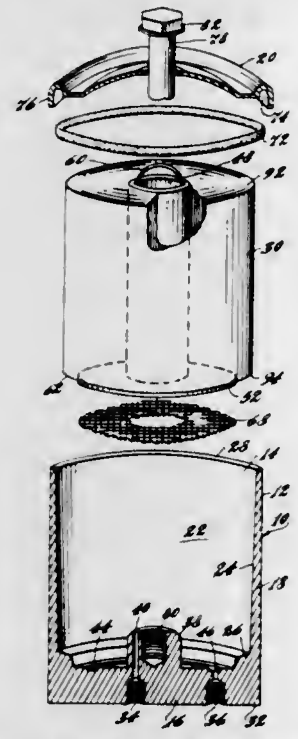
3,526,589
SOLIDS INTERCEPTION SYSTEM

Floyd H. Meller, Lexington, Mass., Pei-Tai Pan, Beloit, Wis., and Charles L. Swanson, Cincinnati, Ohio, assignors to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 535,474, Mar. 18, 1966. This application Mar. 9, 1967, Ser. No. 634,012
Int. Cl. B01d *33/04, 33/06*
U.S. Cl. 210—77 **9 Claims**

An apparatus and system for separating solid material from a transporting fluid which is particularly useful in sewage treatment systems for separating solid and liquid fractions thereof. The system utilizes a separation apparatus which is positioned, in a sewage system, between the point of origin of the sewage and the point of final treatment of the sewage. The apparatus employed can be a rotatable endless belt or drum-type interceptor which is placed directly in the path of the solid-liquid mixture. The apparatus is designed to collect the solid fraction of the mixture while permitting the liquid fraction to flow from the apparatus. The belt or drum is rotated to provide continuous separation and to carry the intercepted solid fraction of the mixture from the intercepting zone to prevent solids breakup or excessive moisture accumulation. Ultimately, the collected solids are removed from the apparatus for final disposal.



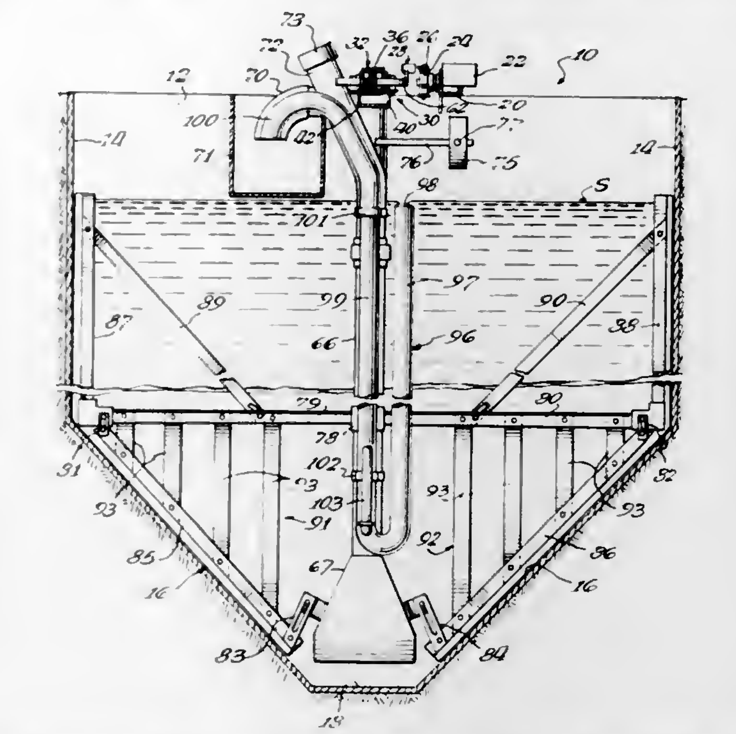
3,526,590
OIL CLEANER
Joseph J. Russo, 9191 Torresdale Ave.,
Philadelphia, Pa. 19114
Filed Oct. 10, 1968, Ser. No. 775,987
Int. Cl. B01d *27/08*
U.S. Cl. 210—439 **1 Claim**



A bypass type oil cleaner including a body designed to permit easy replacement of a low cost filter element, including a top cover, internal oil sealing means and readily accessible means designed to permit the replacement of the filter element with the least possible soil.

3,526,591
SEWAGE TREATMENT STRUCTURE
Quentin L. Hampton, Ormond Beach, Fla., assignor to FMC Corporation, a corporation of Delaware
Filed Feb. 28, 1969, Ser. No. 803,378
Int. Cl. B01d *21/12, 21/18, 21/24*
U.S. Cl. 210—525 **14 Claims**

An improved traveling air lift structure for pumping sludge from the bottom of a settling tank is disclosed, with the air lift structure including a novel trolley structure mounting the air lift for movement relative to the settling tank, a novel stirring blade structure for preventing the sludge from bridging upon itself at the bottom of the tank, and an improved scum skimming device for skimming scum from the top surface of the aerated sewage within the tank.



3,526,592
NEW COMPOUNDS AND DETERGENT COMPOSITIONS CONTAINING THEM
Oscar T. Quimby, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Original application Dec. 28, 1965, Ser. No. 517,073, now Patent No. 3,422,137, dated Jan. 14, 1969. Divided and this application May 13, 1968, Ser. No. 760,368
Int. Cl. C11d *3/66*
U.S. Cl. 252—89 **4 Claims**

A detergent composition is provided containing a water-soluble detergent and a builder which is a water soluble salt of methanehydroxydiphosphonic acid in a weight ratio of 5:1 to 1:10 respectively.

3,526,593
PIPE THREAD SEALANT CONTAINING POLYTETRAFLUOROETHYLENE
John E. Oliver, Jr., Lafayette, La., assignor to Chevron Research Corporation, a corporation of Delaware
Continuation of application Ser. No. 335,137, Jan. 2, 1964. This application Dec. 15, 1967, Ser. No. 691,062
Int. Cl. C10m *5/16, 5/02*
U.S. Cl. 252—23 **4 Claims**

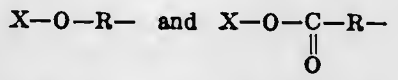
Pipe thread sealant and lubricant consisting of 33–80% of ground polytetrafluoroethylene resin, 0.5–10% calcium salt of fatty acid containing 10–22 carbon atoms, 1–10% of calcium acetate and calcium carbonate combined, 0.1–5% calcium hydroxide, and the remainder being mineral oil of lubricating viscosity.

3,526,594
GREASE COMPOSITION
Samuel Meghir, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Dec. 21, 1967, Ser. No. 692,301
Int. Cl. C10m *5/26, 7/48, 7/02*
U.S. Cl. 252—28 **5 Claims**

Lubricant greases especially suitable for use at elevated temperatures of about 400° F. to about 600° F., and higher, are made by thickening a normally liquid lubricant with a finely divided silica which has been surface-treated with a hexa(C_{1-4} alkyl) disilazane, e.g. hexamethyldisilazane, or with a fluorosilane derivative prepared by reacting dimethyldichlorosilane with a perfluoroalcohol, e.g. a C_{11}-fluoroalcohol.

3,526,595
LUBRICATING COMPOSITIONS
Serge E. Pellaton, East Orange, N.J., assignor, by mesne assignments, to Fairchild Chemical Corporation, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 610,776, Jan. 23, 1967. This application May 29, 1967, Ser. No. 642,136
Int. Cl. C10m *1/40*
U.S. Cl. 252—33.3 **9 Claims**

This invention is an improved boundary lubricant for water-base lubricating and cooling fluids having superior cooling efficiency as well as improved anti-weld, antiwear and extreme pressure lubricity. The boundary lubricants provided by this invention are broadly comprised of sulfonated oils, an alkanolamine, and a small percent by weight of a substituted cellulose, said cellulose substituted with a member selected from the group consisting of



$$X-O-R- \quad \text{and} \quad X-O-\underset{\underset{O}{\|}}{C}-R-$$

where R represents an alkyl group of from 1 to 2 carbon atoms and X represents an alkali metal.

3,526,596
LUBRICANTS FOR METALWORKING OPERATIONS
Bernard H. Kress, Lafayette Hill, and Donald E. Alexander, Wayne, Pa., assignors to Quaker Chemical Corporation, Conshohocken, Pa., a corporation of Pennsylvania
No Drawing. Filed June 5, 1968, Ser. No. 734,572
Int. Cl. C10n *3/04, 3/18*
U.S. Cl. 252—49.5 **11 Claims**

The invention relates to synthetic lubricants used at very high temperatures in the process of shaping and working metals while they are heated to temperatures at which they are malleable. The lubricants are applied as a film to the surfaces of the work elements which operate on the heated metals, for example on the working or finishing rolls of a continuous hot-roll steel mill.

The polyol esters of fatty acids having 12 to 22 carbon atoms, or mixtures thereof, are excellent lubricants for hot metal working operations. The preferred polyols have 2 to 12 hydroxy groups, including for example, pentaerythritol or polymers thereof, trimethylol ethane, trimethylol propane, and glycols containing from 2 to 40 carbon atoms. Also included in these polyols are inositol, mannitol, sorbitol, glucose, sucrose, trimethylol benzene, hexamethylol benzene, methyl glucosides, glycerol, polyglycerols and, in fact, any polyol capable of reacting with at least two selected fatty acid molecules to form a minimum of a diester.

Other lubricant compositions useful for hot working of metals are acid phosphate esters of ethylene oxide condensates. These condensates may include those with fatty alcohol, phenolic and substituted phenolic, oxo process alcohol and acetylenic alcohol hydrophobes. The hydrophilic portion may include chains of ethylene glycol moieties, propylene glycol moieties or those containing a mixture thereof.

Other lubricants for hot metal operations are fatty acid modified alkyd resins. These include condensation products of fatty acids, usually mixtures, polyol or polyols, and dicarboxylic acids. These include phthalic, isophthalic, terephthalic, maleic, fumaric, tetrahydrophthalic, succinic, adipic, azelaic, sebacic acids, and condensation products of maleic anhydride with various compositions such as rosin.

Oxyalkylene copolymers are also useful lubricants for hot metal operations. These copolymers for example are formed by interaction between ethylene oxide and propylene oxide, either as random copolymer, or as grafts. Both of these classes may be formed by reacting the oxide with a compound containing a reactive hydrogen such as butanol or similar composition.

3,526,597
PIEZOELECTRIC CERAMIC COMPOSITIONS
Seiji Ikegami, Osaka-shi, Osaka-fu, and Ichiro Ueda, Nishinomiya-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
Filed Nov. 27, 1967, Ser. No. 685,773
Claims priority, application Japan, Mar. 24, 1967, 42/18,762
Int. Cl. C04b *35/00*
U.S. Cl. 252—62.9 **5 Claims**

Piezoelectric ceramic compositions for use in high temperature applications and high frequency operations and having a high stability with time consist essentially of lead titanate and at least one of the following:

ZnO, PbO, Bi_2O_3, La_2O_3, Ce_2O_3, Sm_2O_3, Gd_2O_3, TiO_2, Nb_2O_5 and Ta_2O_5

the quantity of the latter ranging from about 0.05 to about 10.00 mole percent. A ceramic body of such composition is poled to produce a high coupling factor by subjecting the ceramic body to a polarizing voltage of 30 to 60 kv./cm. at a temperature of 150 to 250° C.

3,526,598
MANUFACTURE OF MAGNETIC RECORDING MEDIA
James U. Lemke, Sierra Madre, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 2, 1968, Ser. No. 726,063
Int. Cl. G11b *5/62*
U.S. Cl. 252—62.51 **2 Claims**

A method of improving the dispersion of particles of ferromagnetic material in a magnetic recording medium by suspending ferromagnetic properties of said particles during the manufacture of said recording medium, and magnetic recording media manufactured by employing such a method.

3,526,599
SAMARIUM OXIDE CONTAINING NICKEL-ZINC FERRITE
Tsuneo Akashi, Hideo Takamizawa, and Takashi Okada, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Minato-ku, Tokyo, Japan, a corporation of Japan
Filed May 22, 1968, Ser. No. 731,052
Claims priority, application Japan, May 25, 1967, 42/33,809
Int. Cl. C04b *35/40*
U.S. Cl. 252—62.57 **4 Claims**

A nickel-zinc ferrite is disclosed characterized by containing a small but effective amount of samarium oxide, for example about 0.005 to 0.1 mole percent.

3,526,600
PIPE STEM AND BIT CLEANER
Athar A. Shamsi, Hoboken, N.J., assignor to S. M. Frank & Co., Inc., New York, N.Y., a corporation of New York
No Drawing. Filed July 12, 1966, Ser. No. 564,551
Int. Cl. C11d *1/02, 3/10*
U.S. Cl. 252—89 **2 Claims**

This disclosure provides a pipe stem cleaner consisting essentially of a composition containing an alkali metal chloride, an alkali metal sulfite, an alkali metal carbonate, an alkali metal benzoate, a thickening agent, a water soluble polyethylene glycol and an abrasive material. This mixture of ingredients is used for cleaning and polishing bits of stems to restore their original shiny surface.

3,526,601
GROUPS Va AND VIa METAL OXIDE POLYMERIZATION CATALYSTS, CATALYST PREPARATION AND POLYMERIZATION PROCESS

Peter Fotis, Jr., Highland, Ind., and Omar O. Juveland, South Holland, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Jan. 22, 1968, Ser. No. 699,331
Int. Cl. C08d *3/04*
U.S. Cl. 252—430 **7 Claims**

Polymerization catalysts are made from Group V*a* and Group VI*a* transition metal oxides by a process which includes calcination under increased pressure of oxygen. The oxygen calcination process step causes changes in the catalysts whereby polyolefins made over such catalysts are produced in high yields with lower molecular weights than otherwise attainable under similar conditions of reaction with untreated catalysts.

3,526,602
CATALYST CARRIER AND PROCESS OF MAKING THE SAME

Hisamine Kobayashi, Nagoya, Etsuo Kajita, Tajimi, and Sadamasa Suzuki, Tsushima, Japan, assignors to Kabushiki Kaisha Shikishima Mui-BII, Aichi Prefecture, Japan
Filed Feb. 9, 1968, Ser. No. 704,324
Int. Cl. B01j *11/82*
U.S. Cl. 252—443 **20 Claims**

The disclosed porous catalyst carrier comprises an inorganic aggregate in the form of granules interconnected by a sintered, inorganic bonding material to form between them numerous micro-holes opening into its surface including relatively regular recesses and many small cave-shaped holes communicating with the micro-holes. The holes are uniformly distributed in the carrier having narrow pore size distribution of predetermined different radii. For each of the pore sizes, a predetermined amount of an organic hole-forming material having a predetermined particle size is used to form a group of grains and these groups of grains separately formed are intermixed to form the final pellets for the carriers which are, in turn, sintered.

3,526,603
PROCESS FOR INCREASING PORE VOLUME OF INTERMEDIATE DENSITY SILICA GEL

Ellsworth George Acker, Baltimore, Md., assignor to W. R. Grace & Co., a corporation of Connecticut
No Drawing. Filed Mar. 5, 1968, Ser. No. 710,629
Int. Cl. B01j *11/36;* **C01b** *33/28*
U.S. Cl. 252—451 **4 Claims**

An intermediate density silica gel is formed by washing an acid-set hydrogel with a hot ammonia solution. The neutralization of ammonia and removal of soluble impurities with mineral acid prior to drying causes an increase in the pore volume of the intermediate density gel.

3,526,604
POLYMERIZATION OF UNSATURATED MONOMERS WITH CATALYSTS FORMED FROM THE REACTION OF METALS AND DERIVATIVES OF GROUPS I–A AND II–A WITH COMPOUNDS OF GROUP III–A

Francis T. Wadsworth, Lake Charles, La., assignor to Cities Service Company, a corporation of Delaware
No Drawing. Filed Sept. 1, 1965, Ser. No. 484,451
Int. Cl. B01j *11/82*
U.S. Cl. 260—2 **10 Claims**

This disclosure is concerned with an improved method of preparing catalysts from the interaction of metals and derivatives of Groups I–A and II–A with compounds of Group III–A for the anionic polymerization of polymerizable unsaturated monomers.

3,526,605
EXPANDABLE STYRENE POLYMERS

Alvin R. Ingram, Murrysville, Pa., assignor to Sinclair-Koppers Company, a partnership
No Drawing. Filed May 13, 1968, Ser. No. 728,742
Int. Cl. C08f *47/10;* **C08j** *1/26*
U.S. Cl. 260—2.5 **5 Claims**

The production of expandable styrene polymers that have an exceptionally low molding temperature and yet retain good fusion properties is carried out by impregnating blowing agents such as n-pentane into styrene polymer particles, which are suspended in water, in the presence of 0.5–2.5 percent by weight of styrene polymer of a rosin acid derivative selected from abietic acid, hydroabietic acid or its esters, and hydroabietyl phthalate.

3,526,606
COMPOSITIONS COMPRISING A BLOCK COPOLYMER, RUBBER AND A PROCESS OIL

Saburo Minekawa, Yokohama-shi, Koretaka Yamaguchi, Kawasaki-shi, and Kazuo Toyomoto and Einosuke Fujimoto, Yokohama-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan
No Drawing. Filed Nov. 14, 1967, Ser. No. 683,025
Claims priority, application Japan, Nov. 24, 1966, 41/76,712
Int. Cl. C08c *9/04, 11/22;* **C08d** *13/22*
U.S. Cl. 260—5 **3 Claims**

A rubber composition consisting of 100 parts by weight of a rubber material containing at least 5% by weight of a butadiene/styrene copolvmeric rubber having a styrene content of 60–95% by weight and having a butadiene bonding pattern including 20–50% of cis-1,4-linkage and less than 40% of 1,2-linkage, said copolymeric rubber being obtained by polymerization using a lithium based catalyst, 2–100 parts by weight of a process oil and 10–400 parts by weight of a filler.

3,526,607
EPOXY RESIN COMPOSITION AND PROCESS

Louise H. Brown, Santa Monica, and Ronald Swidler, Pasadena, Calif., assignors to Tallow Research, Incorporated, San Francisco, Calif., a corporation of California
No Drawing. Continuation-in-part of application Ser. No. 111,496, May 22, 1961. This application Sept. 6, 1968, Ser. No. 758,147
Int. Cl. C08g *30/14*
U.S. Cl. 260—18 **10 Claims**

An epoxy resin composition useful in adhesives and in electrical potting and encapsulation applications comprising a glycidyl polyether of a polyhydric organic compound and a curing agent comprising the reaction product of a polyamine and an alkylated phenol, such as hydroxyphenylene distearic acid and/or dimethyl hydroxyphenylene distearate. The equivalent ratio of polyamine to alkylated phenol is from 1:2 to 2:1. The weight ratio of polyether to curing agent is from 1:1 to 1:3.

3,526,608
USE OF POLYAMIDES DERIVED FROM IMINODIACETIC ACID AND RELATED COMPOUNDS IN IMPROVING THE WET AND DRY STRENGTH OF PAPER

Rudolph G. Berg, Groton, and Bryce E. Tate, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 13, 1968, Ser. No. 704,997
Int. Cl. C08g *20/00;* **D21d** *3/00;* **D21h** *3/48*
U.S. Cl. 260—29.2 **10 Claims**

A polyamide, prepared by reacting either iminodiacetic acid, an ester thereof, or a related compound, with a

polyalkylene polyamine, or a mixture thereof, is condensed with epichlorohydrin to provide a water-soluble, cationic, thermosetting resin, which when incorporated into paper products and cured to a water insoluble state, enhances their wet and dry strength.

3,526,609
ADDITION OF AMINE TO AQUEOUS NYLON-DELUSTERING SLURRIES

David Lee Sharps, Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 5, 1965, Ser. No. 506,589
Int. Cl. C08g *51/04;* **C08k** *1/06*
U.S. Cl. 260—37 **4 Claims**

Delustered or pigmented polyamides may be prepared which have less filter plugging tendency by adding an aqueous slurry of a finely-divided pigment or delustering agent to the polymer during its preparation, the slurry containing a small amount of an amine such as to provide a concentration of at least 1.5 millimoles per kilogram of the slurry.

3,526,610
AROMATIC POLYIMIDES CONTAINING BOTH ACETAMIDE AND CARBOXYLIC ACID RADICALS AND CROSS-LINKED POLYMERS OF SAME

George M. Bower, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Continuation of application Ser. No. 420,820, Dec. 23, 1964. This application Feb. 19, 1968, Ser. No. 706,709
Int. Cl. C08g *20/32*
U.S. Cl. 260—65 **10 Claims**

Linear aromatic polyimide resins having acetamido and carboxylic acid groups along the polymer chain and fully cured cross-linked polymers of the above resins, said polymers being useful as laminates.

3,526,611
SYNTHESIS OF POLYMERIC SCHIFF BASES BY SCHIFF-BASE EXCHANGE REACTIONS

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Gaetano F. D'Alelio, Notre Dame, Ind.
No Drawing. Filed Nov. 9, 1966, Ser. No. 593,594
Int. Cl. C08g *9/06*
U.S. Cl. 260—72.5 **16 Claims**

Schiff-base polymers having the repeating unit

$$\left[=HCArCH=NArN= \right]$$

where Ar is an arylene moiety are prepared in tractable, high-molecular-weight form amenable to fabrication into useful articles by Schiff-base exchange reactions in which a difunctional Schiff-base is reacted with an aromatic diamine, an aromatic dialdehyde or another difunctional Schiff base, these reactions being designated "amine exchange," "carbonyl exchange" and "bis exchange," respectively. The polymerization reactions are preferably carried out by heating a mixture of the reactants in a monofunctional Schiff-base, which serves as a reaction medium and moderator. A fusible polymer is obtained by heating to 250° C. to 300° C., and further heating converts the polymer to a black, infusible material having a very high degree of thermal stability.

3,526,612
POLYANHYDRIDES, AND PROCESSES FOR THEIR PRODUCTION

Nylen L. Allphin, Jr., Pinole, Calif., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 709,514, Dec. 26, 1967, which is a division of application Ser. No. 455,952, May 14, 1965, now Patent No. 3,445,530. This application Apr. 16, 1969, Ser. No. 816,809
Int. Cl. C08g *33/00*
U.S. Cl. 260—78.4 **3 Claims**

Aromatic polyanhydrides and nitroso derivatives of aromatic polycarboxylic acids are prepared by reacting polycarboxylic acids with silver nitrate to form the corresponding silver salts of the acids, treating the silver salts with nitroso halide and heating the reaction product thus formed at 100–400° C.

3,526,613
PHOSPHORUS CONTAINING REACTION PRODUCTS

Johannes Reese, Wiesbaden-Biebrich, and Kurt A. Kraft, Wiesbaden-Dotzheim, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany
No Drawing. Filed Oct. 18, 1967, Ser. No. 676,053
Claims priority, application Germany, Oct. 20, 1966, C 40,452
Int. Cl. C08f *19/00, 41/00*
U.S. Cl. 260—78.5 **9 Claims**

Reaction products of certain organic polycarboxylic acids with certain polycyclic phosphites, polyesters containing them, products, moulding compositions or shaped bodies prepared therefrom, and a process for their manufacture.

3,526,614
PROCESS FOR POLYMERIZATION OF PERFLUOROCARBONS IN THE PRESENCE OF METAL CATIONS INERT TO THE SYSTEM

Darrel Lee Schindler, Lawrence, Kans., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 416,918, Dec. 8, 1964. This application Nov. 25, 1968, Ser. No. 780,310
Int. Cl. C08f *15/06, 1/09*
U.S. Cl. 260—87.5 **9 Claims**

The average particle size of a colloidal dispersion of a perfluorocarbon polymer is increased by the addition of 1×10^{-5} to 1×10^{-4} molar based upon the aqueous media of metallic cations, e.g. Zn^{++} which are inert to the polymerization medium and which have a valence of at least two.

3,526,615
PROCESS FOR THE COPOLYMERIZATION OF OLEFIN OXIDES WITH 1,3-DIOLEFINS

Wolfgang Oberkirch, Mariaweiler, Heinz Herlinger, Leverkusen, and Peter Gunther, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 12, 1968, Ser. No. 736,281
Claims priority, application Germany, Sept. 8, 1967, F 53,450
Int. Cl. C08d *1/14, 3/02*
U.S. Cl. 260—94.2 **9 Claims**

Copolymers from olefin oxides and 1,3-dienes are obtained by means or an organometallic mixed catalyst comprising:

(a) the addition compound of a salt of a transistion metal with a hexa-alkyl phosphoric acid triamide, and

(b) an alkyl compound of a metal of the second or third group of the Periodic Table.

3,526,616

POLYMERIZATION OF OLEFINS IN THE PRESENCE OF A CATALYST COMPRISING AN ORGANOMETALLIC COMPOUND, THE REACTION PRODUCT OF A TRANSITION METAL COMPOUND AND A HYDROXYCHLORIDE OF A BIVALENT METAL AND AN ALKOXIDE OF A METAL OF GROUP II–B

André Delbouille, Brussels, and Henri Toussaint, Schaerbeek, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a corporation of Belgium

No Drawing. Filed Nov. 2, 1966, Ser. No. 591,402

Claims priority, application France, Nov. 4, 1965, 37,254

Int. Cl. C08f *1/56, 3/06*

U.S. Cl. 260—94.9 **13 Claims**

Olefins are polymerized in the presence of a catalyst system including an alkylaluminum, a transition metal compound reacted onto a support which is a bivalent metal hydroxychloride, and an alkoxide of a transition metal of Group IV–B of the periodic table. A wide range of polyolefins may be produced, including slightly branched polyolefins. The invention is particularly applicable to ethylene. Especially notable among polymers produced according to the invention are slightly branched ethylene homopolymers.

3,526,617

WATER-SOLUBLE 2:1-CHROMIUM COMPLEX MONOAZO DYESTUFFS CONTAINING ETHIONYLAMINO OR VINYL SULFONAMIDO GROUPS

Hermann Fuchs, Kelkheim, Taunus, Fritz Meininger, Frankfurt am Main, Fritz Osterloh, Bad Soden, Taunus, and Siegfried Schiessler, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

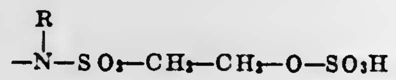
No Drawing. Filed June 22, 1967, Ser. No. 647,932

Claims priority, application Germany, June 24, 1966, F 49,546

Int. Cl. C09b *45/06, 45/16*

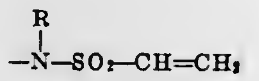
U.S. Cl. 260—145 **6 Claims**

Water-soluble fiber-reactive 1:2-chromium complex monoazo dyestuffs containing as reactive groupings one of the groupings of the formulae



$$-\underset{}{\overset{R}{\overset{|}{N}}}-SO_2-CH_2-CH_2-O-SO_3H \qquad (2)$$

and



$$-\overset{R}{\overset{|}{N}}-SO_2-CH=CH_2 \qquad (3)$$

in which R represents hydrogen, methyl or ethyl. These dyestuffs are suitable for dyeing or printing materials of native or regenerated cellulose, wool, silk, polyamide or polyurethane fibers or leather, yielding on said materials dyeings or prints of excellent fastness to light and to wetting upon washing, milling, decatizing and acid over-dyeing.

3,526,618

SYMMETRICAL AND ASYMMETRICAL DISAZO DYESTUFFS

Walter Horstmann, Cologne-Buchheim, and Edgar Siegel, Leverkusen-Steinbuechel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

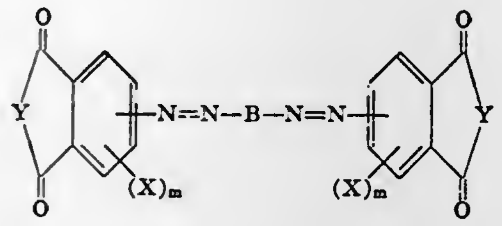
No Drawing. Filed May 15, 1967, Ser. No. 638,649

Claims priority, application Germany, May 23, 1966, F 49,253

Int. Cl. C09b *43/00*

U.S. Cl. 260—152 **8 Claims**

Azo dyestuffs which are free of sulphonic acid have the formula:



wherein B is a divalent arylene amide, Y is oxygen or >N—R, X represents a ring substituent, and *m* is 0–3. Such dyestuffs are characterized by good fastness to solvents, light and migration, and by good thermal stability, and are useful for dyeing synthetic materials and for the production of printing colors and pigment pastes.

3,526,619

2,4,5-TRICHLOROPHENYLAZO-2-PHENYLINDOLE

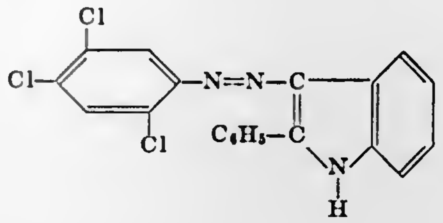
Heinz Haubrich, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,650

Int. Cl. C09b *29/36;* **D06p** *1/02, 3/04*

U.S. Cl. 260—165 **1 Claim**

An azo dyestuff especially useful for dyeing and printing of hydrophobic textiles or fibers, the dyestuff having the formula



and a process for its preparation by coupling diazotized 2,4,5-trichloroaniline with 2-phenylindole.

3,526,620

PROCESS FOR THE PREPARATION OF N-VINYL-CARBOXYLIC ACID AMIDES

Herbert Bestian, Frankfurt am Main, and Horst Schnabel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,825

Claims priority, application Germany, Aug. 26, 1966, F 50,037

Int. Cl. C07d *27/06, 29/42, 41/06, 103/48*

U.S. Cl. 260—239.3 **3 Claims**

Preparation of N-vinyl carboxylic acid amides by reaction of acetaldehyde with carboxylic acid amides and splitting the N-(α-hydroxyethyl)-compounds so obtained by heating them in the presence of acidic catalysts forming N-vinyl amides. The novel process is distinguished by the fact that the N-vinyl amides are obtained in a fast proceeding reaction and in high space-time yields.

3,526,621

SUBSTITUTED 3,1-BENZOXAZIN-2-ONE

Luigi Bernardi, Severina Coda, Lorenzo Pegrassi, and Giselbert Karl Suchowsky, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, a corporation of Italy

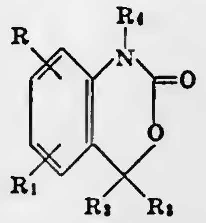
No Drawing. Filed July 25, 1967, Ser. No. 655,749

Claims priority, application Italy, Aug. 3, 1966, 18,005/66; Apr. 20, 1967, 15,166/67

Int. Cl. C07d *87/16*

U.S. Cl. 260—244 **12 Claims**

Described are substituted 3,1-benzoxazin-2-ones of the formula:



wherein R and R_1 may be the same or different and are a hydrogen atom, a halogen atom, a nitro group, an alkyl or alkoxy radical having from 1 to 4 carbon atoms; R_2 and R_3 may be the same or different and are a hydrogen atom or an alkyl radical having from 1 to 4 carbon atoms, but R_2 and R_3 are not both hydrogen atoms; and R_4 may be hydrogen or an alkyl radical having from 1 to 5 carbon atoms. The new compounds of the invention are usefully employed because of their relaxing activity or striated muscular fiber in conditions of muscular hypertonia and because of a good anticonvulsivant, tranquillizing and anti-Parkinson activity. Also described is a process for preparing the new compounds.

3,526,622

TRIS-AMINO-s-TRIAZINES

Denis Varsanyi, Arlesheim, Basel-Land, and Willy Roth, Strengelbach, Aargau, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 560,855, June 27, 1966. This application Oct. 4, 1967, Ser. No. 672,745

Claims priority, application Switzerland, June 30, 1965, 9,158/65

Int. Cl. C07d *55/24, 87/40*

U.S. Cl. 260—247.5 **6 Claims**

New tris-amino-s-triazines in which 1 or 2 of the amino groups are heterocyclic rings are useful as surface treating agents. Compositions containing certain of these new triaziens and certain N,N-bis-(bis-amino-s-triazinyl)-alkylamines and 1,4 - bis - (bis-amino-s-triazinyl)piperazines are also useful for surface treating, particularly as floor waxes and shoe polishes, and as textile softening compounds.

3,526,623

URETHANE DRYING OILS

Perry A. Argabright and Brian L. Phillips, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,721

Int. Cl. C07d *55/38;* **C08g** *22/06*

U.S. Cl. 260—248 **11 Claims**

The present invention comprises a process for the preparation of unsaturated urethane drying oils comprising the step of reacting a hydroxyl-containing ester of an unsaturated fatty acid with a dihalide, and a metal cyanate and related compositions. The new urethane drying oils have many uses including use as coatings for wood and other surfaces.

3,526,624

PRODUCTION OF URETHANE-CONTAINING COMPOSITIONS

Perry A. Argabright, Brian L. Phillips, and Vernon J. Sinkey, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 4, 1966, Ser. No. 531,772

Int. Cl. C07d *55/30;* **C07c** *101/26, 101/30*

U.S. Cl. 260—248 **19 Claims**

Urethane-containing compounds having molecular weights of at least about 200 are produced by reacting organic polyhalides with metal cyanates in the presence of monohydric alcohol and an aprotic solvent, with recovery of the polyurethanes thus formed.

3,526,625

ALKYLENEIMINE ADDUCTS OF TRIS-ACRYLYLHEXAHYDRO-s-TRIAZINE

Joseph Adrian Hoffman, Bound Brook, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

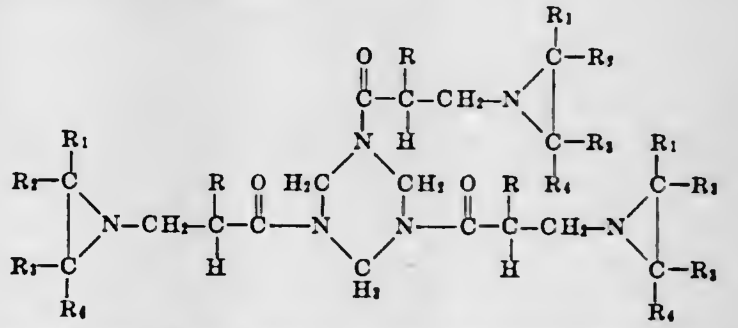
No Drawing. Filed Aug. 25, 1966, Ser. No. 574,936

The portion of the term of the patent subsequent to Dec. 17, 1985, has been disclaimed

Int. Cl. C07d *55/14*

U.S. Cl. 260—248 **1 Claim**

1,3,5 - tris(β-(alkylaziridinyl)propionyl)-hexahydro-s-triazines of the structure:



wherein the R's are individually selected from the group consisting of hydrogen and lower alkyl and at least one of R_1–R_4 is other than hydrogen, and their use as cross-linking agents, particularly for elastomers.

3,526,626

PHENYL SUBSTITUTED BICYCLIC HYDROIMIDAZOLES AND HYDROPYRIDINES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 505,968, Nov. 1, 1965. This application Dec. 18, 1968, Ser. No. 784,882

Int. Cl. C07d *51/46*

U.S. Cl. 260—251 **6 Claims**

Phenyl substituted bicyclic hydroimidazoles and hydropyridines, e.g., 8a-phenyl-1,2,3,5,6,7,8,8a-octahydro imidazo[1,2-a]pyridine, are prepared by reduction of a corresponding ketone using a hydride such as lithium aluminum hydride. These compounds are useful as anti-inflammatory agents.

3,526,627

METHOD FOR PREPARATION OF QUINAZOLONES

Houston George Brooks, Jr., Somerset, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 547,428, May 4, 1966. This application June 5, 1969, Ser. No. 830,863

Int. Cl. C07d *51/48*

U.S. Cl. 260—251 **7 Claims**

Process for the preparation of quinazolones by reaction of a 3,1-aryl-oxazine-2,4-dione with an ortho hydroxy-substituted aromatic amide in the presence of a catalytic amount of a base at a temperature high enough to insure reaction but not so high as to cause product decomposition.

3,526,628

PROCESS FOR THE PRODUCTION OF 5,6-DIHYDROCYTOSINE COMPOUNDS

Leonard Doub, Bloomfield Hills, and Uldis Krolls, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 476,694, Aug. 2, 1965. This application Mar. 4, 1968, Ser. No. 709,963

Int. Cl. C07d *51/28*

U.S. Cl. 260—256.4 **10 Claims**

Process for the production of 5,6-dihydrocytosine compounds, substituted in the 1-position by lower alkyl or benzyl, and optionally substituted in the 5-position by chlorine, and salts thereof, by the cyclization of a 1-(2-cyanoethyl)urea compound. The 5,6-dihydrocytosine products are useful as chemical intermediates in the preparation of correspondingly 1-substituted cytosines.

3,526,629

β-HYDROXYETHYLPIPERAZINOCARBOXYMETHYL - 7 - DIMETHYLAMINO - 6 - DEOXY-6-DEMETHYLTETRACYCLINE

Michael Joseph Martell, Jr., Pearl River, N.Y., and James Howard Boothe, Montvale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 632,522, Apr. 21, 1967. This application Apr. 2, 1968, Ser. No. 718,196

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **1 Claim**

This disclosure describes β-hydroxyethylpiperazinocarboxymethyl - 7 - dimethylamino-6-deoxy-6-demethyltetracycline; therapeutic compositions containing this compound; and methods of treating bacterial infections in mammals therewith.

3,526,630

ALKYL DIPIPERAZINE DERIVATIVES OF XANTHENE-9-CARBOXYLIC ACID

Lajos Toldy, István Tóth, József Borsi, and István Polgári, Budapest, Hungary, assignors to Egyesult Gyogyszer-es Tapszergyar, Budapest, Hungary, a firm

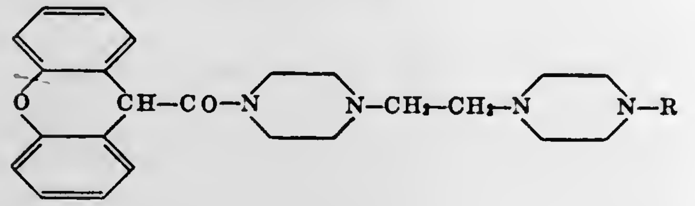
No Drawing. Continuation-in-part of application Ser. No. 560,054, June 24, 1966. This application Apr, 18, 1969, Ser. No. 817,580

Claims priority, application Hungary, July 2, 1965, GO–957

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **7 Claims**

Xanthenes having the formula



wherein R is normal or branched chain butyl, and the nontoxic acid addition salts thereof.

3,526,631

OXIMES OF DIBENZO[a,d]CYCLOHEPTEN-5-ONES

Claude Ivan Judd, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 640,351, May 22, 1967. This application Apr. 28, 1969, Ser. No. 819,942

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **8 Claims**

The compounds are aminoalkylated oximes of dibenzo[a,d]cyclohepten-5-ones which are useful as central nervous system stimulants and antidepressants. Among the compounds disclosed are O-[β-(4-methyl-1-piperazinyl) ethyl]-10,11 - dihydrodibenzo[a,d]cyclohepten-5-one and O-[β-(4-methyl-1-piperazinyl)ethyl]-3-chloro - 10,11 - dibenzo[a,d]cyclohepten-5-one oxime.

3,526,632

DERIVATIVES OF BIS-(4-BIPHENYLYLOXY) ACETIC ACID

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 743,024, July 8, 1968, which is a continuation-in-part of application Ser. No. 617,456, Feb. 21, 1967. This application Oct. 22, 1968, Ser. No. 769,705

Int. Cl. C07c *65/14, 69/76;* **C07d** *29/24*

U.S. Cl. 260—294.3 **9 Claims**

The compounds are of the class of bis-[4-(4-halo-substituted-or unsubstituted-phenyl)phenoxy]acetic acids and their alkyl esters and basic esters, e.g., bis-(4-biphenylyloxy)acetic acid 1-methyl-4-piperidyl ester. The compounds are useful as hypocholesteremic/hypolipemic agents.

3,526,633

SUBSTITUTED 2,4,5.6-TETRAHYDROPYRROLO[3,4-c]PYRAZOLES

Shreekrishna Manmohan Gadekar, Trenton, and Bernard Dean Johnson, Montvale, N.J., and Elliott Cohen, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 6, 1968, Ser. No. 710,778

Int. Cl. C07d *31/34, 31/42*

U.S. Cl. 260—295 **2 Claims**

This disclosure describes compounds of the class of substituted 2,4,5,6-tetrahydropyrrolo[3,4-c]pyrazoles useful as central nervous system depressants.

3,526,634

ALKYLBENZOYLCARBINOL ESTERS

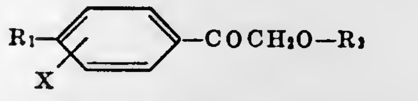
Haruhiko Adachi, Nada-ku, and Takuichi Miki, Amagasaki, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,206

Int. Cl. C07d *31/36;* **C07c** *69/14*

U.S. Cl. 260—295.5 **14 Claims**

Alkylbenzoylcarbinol esters of the formula



wherein R_1 is an alkyl radical having from 3 to 10 carbon atoms, cycloalkyl having up to 6 carbon atoms, cycloalkyl substituted alkyl having up to 10 carbon atoms wherein the cycloalkyl ring contains up to 6 carbon atoms, R_2 is

an acyl radical of an alkanecarboxylic acid having up to 10 carbon atoms, benzoic acid, furoic acid and nicotinic acid or an inorganic radical derived from an inorganic polybasic acid by the removal of OH therefrom, and X is hydrogen or halogen attached in ortho- or meta-position to the group R_1 in the benzene ring, have hypothermic or anti-inflammatory activity with low toxicity to mammals.

3,526,635

MAGNESIUM COMPLEX OF DIHYDROXYDIPHENYL-ISATIN, 4,4-DEHYDROXYDIPHENYL (2-PYRIDYL) METHANE, 4,4'-DIHYDROXYDIPHENYL-2' - (AMINOPHENYL METHANE) AND PHENOPHTHALEIN

Alfred Halpern, Great Neck, and Ernest J. Sasmor, Yonkers, N.Y., assignors to Synergistics, Yonkers, N.Y., a co-partnership consisting of Mortimer D. Sackler and Raymond R. Sackler

No Drawing. Continuation-in-part of application Ser. No. 550,636, May 17, 1966. This application Dec. 3, 1968, Ser. No. 775,754

Int. Cl. C07d *31/28, 27/56;* **C09b** *11/08*

U.S. Cl. 260—297 **9 Claims**

Magnesium compounds formed from phenolic laxative compounds, phenolphthalein, dihydroxyphenolisatin, 4,4'-dihydroxy-2'-aminotriphenylmethane, and 4,4'-(2-pyridylmethylene)dihydroxydiphenyl are described, together with a method for their preparation, and pharmaceutical compositions containing the same. Methods for achieving an increased pharmacologic response of said phenolic laxative compounds through use of the magnesium ion as well as methods for achieving an improved pharmacologic and therapeutic response with the new magnesium phenolic laxative compounds and pharmaceutical compositions containing the same are included.

3,526,636

IMIDAZOISOINDOLES

William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Filed Jan. 16, 1968, Ser. No. 698,143

Int. Cl. C07d *49/34, 49/36*

U.S. Cl. 260—309 **11 Claims**

This disclosure is directed to 5-substitutedphenylimidazo[2,1-a]isoindoles, e.g., 5 - (3,4 - dichlorophenyl) - 5H-imidazo[2,1-a]isoindole. These compounds are useful as central nervous system stimulants. Certain of the compounds may be prepared by reducing a corresponding isoindole-5-one, and treating the resulting imidazoisoindole with a lower alkanoic acid.

3,526,637

ALKYL AND ALKENYL PHENOXYALKYL AMINO COMPOUNDS

Eugene L. Wittle, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Apr. 14, 1967, Ser. No. 630,820

Int. Cl. C07d *27/04;* **C07c** *93/06*

U.S. Cl. 260—326.5 **5 Claims**

Olefinic and saturated phenoxyalkylamine compounds, such as, for example, 1-{{2-{p-[2-ethyl-1,3-bis(p-methoxyphenyl)-3-butenyl]phenoxy}ethyl}}pyrrolidine and 1-{{2-{p-[2 - ethyl - 1 - (p-methoxyphenyl) - 3 - phenylbutyl] phenoxy}ethyl}}pyrrolidine and salts thereof, useful as pharmacological agents having hypocholesteremic and anti-fertility activity, and their production by (a) dehydration of a hydroxyl-containing precursor; (b) hydrogenation of an olefinically unsaturated precursor; and (c) hydrogenation of a carbonyl-containing precursor.

3,526,638

SUBSTITUTED 3,4-DIHYDRO-1H-2,1,5-BENZOTHIADIAZOCINE-2,2-DIOXIDES

Otto Hromatka, Maximilian Knollmuller, and Dieter Binder, Vienna, Austria, assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 5, 1967, Ser. No. 673,019

Int. Cl. C07d *99/00*

U.S. Cl. 260—327 **8 Claims**

6 - phenyl - 3,4 - dihydro - 1H - 2,1,5 - benzothiadiazocine-2,2-dioxides generally prepared by ring closure of appropriate sulfonamidobenzophenones are tranquilizers. The benzo ring may be chloro or trifluoromethyl substituted, the 1-nitrogen atom may be alkylated and the 5-nitrogen atom may be oxidized with perbenzoic acid or epoxidized to the 5,6-epoxy derivative by ultraviolet irradiation of the 5-oxide.

3,526,639

ANTHRAQUINONE DYESTUFFS

Hanswilli von Brachel, Offenbach am Main, Ernst Heinrich, Frankfurt am Main-Fechenheim, Karl Hintermeier, Frankfurt am Main, and Otto Grawinger, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a German company

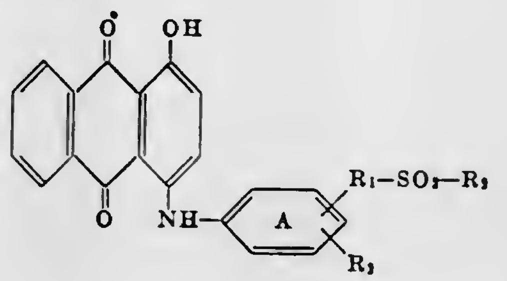
No Drawing. Filed Apr. 3, 1967, Ser. No. 627,655

Claims priority, application Germany, Apr. 6, 1966, C 38,722

Int. Cl. C07d *63/04;* **C09b** *1/50*

U.S. Cl. 260—329.2 **6 Claims**

Very stable dyes for polyamides, acetates and polyesters, have the formula



wherein R_1 signifies alkylene having 1 to 6 carbon atoms, R_2 signifies phenyl, alkyl having 1 to 6 carbon atoms, phenyl alkyl in which the alkyl has up to 6 carbons or alkyl phenyl in which the alkyl has up to 6 carbons, R_1 and R_2 may also be linked with each other to form a tetramethylene sulfone ring with the SO_2, R_3 is hydrogen or lower alkyl, and the carbons in the phenyl nucleus A as well as in R_1 and R_2 may be substituted by Cl, Br, OH or lower alkoxy.

3,526,640

3 - ACYLOXY - 4 - HALO - TETRAHYDROTHIOPHENE - 1,1 - DIOXIDES AND 3-ACYLOXY-2(H)-THIOPHENE-1,1-DIOXIDES

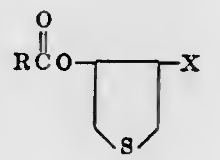
George G. King, Guilford, and Andrew J. Esposito, New Haven, Conn., assignors, by mesne assignments, to The Ansul Company, a corporation of Wisconsin

No Drawing. Filed Apr. 16, 1968, Ser. No. 721,628

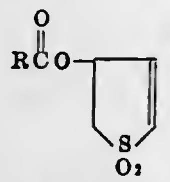
Int. Cl. A01n *9/14;* **C07d** *63/04, 63/08*

U.S. Cl. 260—332.1 **9 Claims**

A series of 3-acyloxy-4-halo-tetrahydrothiophene-1,1-dioxides have the formula



and a series of 3-acyloxy-2(H)-thiophene-1,1-dioxides having the formula



wherein X is halogen and R is aryloxyalkyl, haloaryloxyalkyl, loweralkyl substituted aryloxyalkyl, loweralkyl substituted haloaryloxyalkyl or nitroaryloxyalkyl are provided by reacting a 3-halo-4-hydroxysulfolane with an appropriate acyl halide. These compounds are particularly valuable as herbicides.

3,526,641
PROCESS FOR THE PRODUCTION OF METADIOXANES
Bengt O. Wesslen, Lindome, and Lars-Olof Ryrfors, Perstorp, Sweden, assignors to Perstorp AB, Perstorp, Sweden
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,513
Claims priority, application Sweden, Apr. 27, 1966, 5,680/66
Int. Cl. C07d *15/02*
U.S. Cl. 260—340.7 **5 Claims**

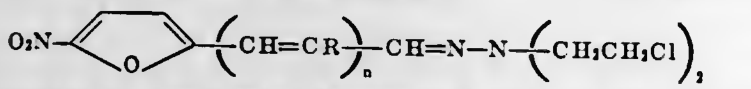
The production of metadioxanes by reacting ketones and aldehydes having an activated methylene group with formaldehyde or oligomers of formaldehyde in the presence of a catalyst. Acid catalysts are used and preferably Lewis acid catalysts.

3,526,642
2-OXA-5β-CYANOPREGNANE DERIVATIVES
Seymour D. Levine, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 19, 1968, Ser. No. 738,091
Int. Cl. C07d *7/28*
U.S. Cl. 260—343.2 **5 Claims**

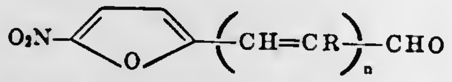
This disclosure relates to pregnanes having an oxygen atom in the 2-position and a cyano radical at the 5-position. These compounds possess anti-androgenic activity.

3,526.643
METHOD OF OBTAINING N,N-BIS-(2-CHLOROETHYL)-HYDRAZONES OF THE 5-NITROFURAN SERIES
Solomon Aronovich Giller, Ulitsa Pernavas 10, kv. 76; Marger Jurievich Lidaka, Ulitsa Zalves 74, kv. 1; Karl Karlovich Venter, Ulitsa Mezhotnes 37, kv. 1; Renata Jurievna Kalnberga, Ulitsa Engelsa 111a kv. 9; Aina Avgustovna Ziderman, Ulitsa Kr. Barona 109, kv. 22; and Anda Zhanovna Dauvarte, Ulitsa Araishu. 31, kv. 1, all of Riga, U.S.S.R.
No Drawing. Filed Aug. 23, 1967, Ser. No. 662,590
Int. Cl. C07d *5/30*
U.S. Cl. 260—347.7 **13 Claims**

Novel compounds of the formula:



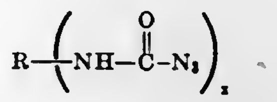
wherein *n* is an integer between 0 and 4 and when *n* is other than 0, R is hydrogen, lower alkyl or ethoxymethyl are produced by a method comprising mixing an aqueous solution of N,N-bis-(2-chloroethyl)-hydrazine hydrochloride with a water-miscible, lower alkanol solution of an aldehyde of the formula:



wherein *n* and R are as defined above, at a temperature at least 20° C. below the melting point of the desired compound.

3,526,644
POLYAZIDOFORMAMIDES
Shigeto Suzuki, San Francisco, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Apr. 27, 1967, Ser. No. 634,138
Int. Cl. C07c *117/00;* **C08f** *48/10*
U.S. Cl. 260—349 **4 Claims**

Polyazidoformamides of the formula:



$$R-\left(NH-\overset{O}{\overset{\|}{C}}-N_3\right)_x$$

in which x is an integer greater than 1 and R is a hydrocarbyl whose valence is equal to x. Polyazidoformamides of this formula, such as hexamethylene-bis (azidoformamide), are prepared by reacting a hydrocarbyl polyisocyanate with hydrazoic acid. Small amounts of these polyazidoformamides are mixed with polyolefins and heated to produce non-crosslinked foamed compositions.

3,526,645
CATALYTIC EPOXIDATION OF OLEFINIC COMPOUNDS
Erwin Vangermain, Marl, and Jürgen Wolpers, Haltern, Germany, assignors to Chemische Werke Huls A.G., Marl, Germany
No Drawing. Filed July 19, 1966, Ser. No. 566,234
Claims priority, application Germany, July 30, 1965, C 36,538
Int. Cl. C07d *1/08*
U.S. Cl. 260—348.5 **18 Claims**

Greatly increased yields are obtained in the epoxidation of olefinicially unsaturated compounds by conducting the epoxidation reaction in the presence of:

(A) a compound of a metal from sub-groups IV to VI of Mendeleev's Periodic Table; and

(B) a compound of a metal of Group VII or VIII of the Periodic Table.

In addition, compounds (A) and (B) can be combined into a single compound of both metals, e.g. cobalt molybdate and nickel tungstate.

3,526,646
5,5′-DISULFAMOYLBENZOPHENONES
Stanley C. Bell, Penn Valley, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 12, 1968, Ser. No. 704,585
Int. Cl. C07c *143/80*
U.S. Cl. 260—397.7 **3 Claims**

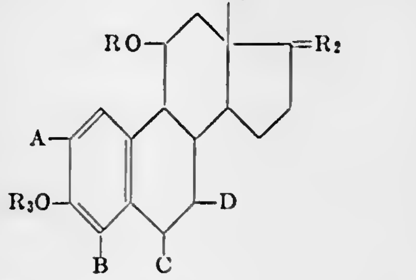
2 - amino - 2′,4-dichloro-5,5′-disulfamoylbenzophenone (I*a*) and the dichloroacetyl derivative thereof (I*b*) are prepared by treating 2-amino-2′,4-dichlorobenzophenone with chlorosulfonic acid, then with ammonia to form I*a*, then treating I*a* with a dichloroacetylating agent to form I*b*. Compounds of Formulae I*a* and I*b* are pharmacologically active as central nervous system depressants, especially as calming agents, and, in addition, are useful as intermediates.

3,526,647
PROCESS FOR PRODUCING WOOL WAX ALCOHOLS AND FATTY ACIDS
Conrad J. Sonde, Garden City, N.Y., and Thomas B. Richey, Jr., Westfield, N.J., assignors to Malmstrom Chemical Corp., Linden, N.J., a corporation of New Jersey
No Drawing. Filed July 10, 1968, Ser. No. 743,625
Int. Cl. C07c *167/42*
U.S. Cl. 260—397.25 **6 Claims**

Wool wax alcohols and fatty acids are produced by saponifying wool grease with caustic alkali in a co-solvent mixture of isopropyl alcohol and water, followed by extraction of the wool wax alcohols from the saponified grease by subjecting the saponified product to countercurrent extraction with heptane. The heptane extract is washed, first with dilute KOH solution, and then with water, using a counter-current rotary disc flow extractor. The solvent is then evaporated from the purified extract to recover the wool wax alcohols. The raffinate, which contains soaps of fatty acids, alcohol and some heptane, is acidified and then stripped free of the solvent fraction in a continuous stripper still to recover the fatty acid, the latter being then water-washed and dried.

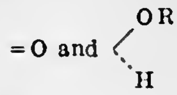
3,526,648
NOVEL 11β-ALKOXY-$\Delta^{1,3,5(10)}$-GONATRIENES
Daniel Bertin, Montrouge, and André Pierdet, Noisy-le-Sec, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed June 2, 1967, Ser. No. 643,061
Claims priority, application France, June 7, 1966, 64,481; Sept. 7, 1966, 75,528; Jan. 18, 1967, 91,611
Int. Cl. C07c *169/08, 169/10*
U.S. Cl. 260—397.45 **15 Claims**

Novel 11β-alkoxy-$\Delta^{1,3,5(10)}$-gonatrienes of the formula



(I)

wherein R and R_1 are alkyl of 1 to 4 carbon atoms, R_2 is selected from the group consisting of



R_3 and R_4 are selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms and acyl of an organic carboxylic acid of 1 to 18 carbon atoms, A is selected from the group consisting of hydrogen, halogen and methyl, B is selected from the group consisting of hydrogen and methyl, C is selected from the group consisting of hydrogen, halogen and substituted and unsubstituted lower alkyl and D is selected from the group consisting of hydrogen and lower alkyl which possess estrogenic activity and their preparations.

3,526,649
COLOR STABILIZATION OF FATTY-ACID FORERUNNINGS
Sasanka Sekhar Naskar, Witten (Ruhr), Hans Leo Hülsmann, Wengern, and Gustav Renckhoff, Witten (Ruhr), Germany, assignors to Dynamit Nobel Aktiengesellschaft, Witten (Ruhr), Germany
No Drawing. Filed June 25, 1969, Ser. No. 836,581
Claims priority, application Germany, June 26, 1968, 1,767,867
Int. Cl. C11c *1/10*
U.S. Cl. 260—419 **10 Claims**

Discoloration and subsequent darkening of fatty-acid forerunnings are prevented by heating the fatty acids with at least one alkyl ester of titanic acid and/or polytitanic acid at a temperature of approximately 180–250° C., and then distilling the resultant mixture to recover the fatty acids. The heating step is carried out for about 0.5–4 hours.

3,526,650
BIS-PI-CARBOLLYL COMPLEXES OF GROUP VIII NOBLE METALS
Donald C. Young, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed July 18, 1968, Ser. No. 745,946
Int. Cl. C07f *5/02, 15/02;* **C07d** *107/00*
U.S. Cl. 260—429 **8 Claims**

The invention comprises a new class of Group VIII noble metal complexes which are bis-carbollyl noble metal complexes. The complexes have the empirical formula:

$$M[((BX)_m(BR_1)_n(CR_2)_o(BY)_p)]$$

wherein:

M is a Group VIII noble metal;
Y is a ligand having from 2 to about 10 carbons and at least one atom that is halogen, oxygen, nitrogen, sulfur or trivalent phosphorus, bismuth, arsenic or antimony;
R_1 has from 1 to about 6 carbons and is alkyl, aryl, alkenyl or haloalkyl;
R_2 is hydrogen, halogen, and 1 to about 6 carbons containing alkyl, aryl or alkenyl;
X is hydrogen or halogen;
n is 0, 1 or 2;
o is 1 or 2;
p is 0 or 1; and
m is $11-(o+n+p)$.

The complexes are highly stable, crystalline solids that can be obtained as electro neutral complexes which are soluble in non-polar solvents. The complexes, by variation in the carbollyl group or by variation in the oxidation state of the noble metal can also be obtained as anions which form salts with ammonium and alkali metals that are soluble in polar solvents. The empirical formula for the salt form is:

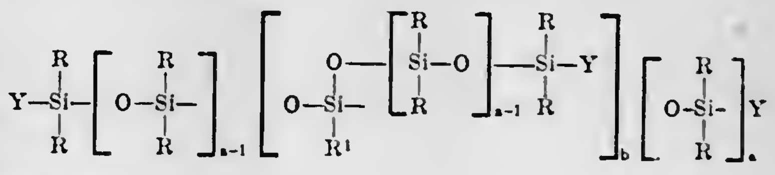
$$Z_n(M[(BX)_m(BR_1)_n(CR_2)_o(BY)_p]_2)$$

wherein: Z is an alkali metal, ammonium or C_1–C_5 alkylammonium, and the remainder of the terms are as afore-described.

The complexes are useful as catalysts for chemical conversions, e.g., for the oxidation of olefins to carbonyls such as aldehydes, ketones and acids; to esters of α,β-ethylenically unsaturated alcohols, to acetals, etc. by contacting the olefin with an aqueous, alcoholic or carboxylic acidic solution containing the complex at temperatures from 30° to 300° C.

3,526,651
POLYALKYLENEOXIDE - POLYSILOXANE BLOCK COPOLYMERS AND PROCESS FOR PREPARING SAME
Gerd Rossmy, Essen-Werden, Götz Koerner, Mulheim (Ruhr), and Jakob Wassermeyer, Essen-Bredeney, Germany, assignors to Th. Goldschmidt A.-G., Essen, Germany
No Drawing. Filed Feb. 27, 1967, Ser. No. 619,014
Claims priority, application Germany, Mar. 3, 1966, G 46,214
Int. Cl. C07f *7/04, 7/18*
U.S. Cl. 260—448.8 **14 Claims**

The invention discloses novel polyalkyleneoxide-polysiloxane block polymers of the general formula



$$Y-\overset{R}{\underset{R}{Si}}-\left[O-\overset{R}{\underset{R}{Si}}-\right]_{a-1}\left[O-\overset{O-\left[\overset{R}{\underset{R}{Si}}-O\right]_{a-1}-\overset{R}{\underset{R}{Si}}-Y}{\underset{R^1}{Si}}-\right]_b\left[O-\overset{R}{\underset{R}{Si}}-\right]_c Y$$

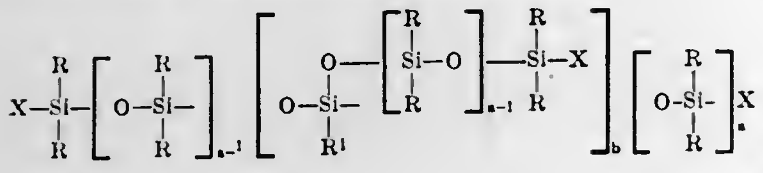
wherein:

R is lower alkyl or phenyl,
R′ is lower alkyl, vinyl or phenyl,
a has a value of between 3–10,
b has a value of between 1–14 and

Y represents a mixture composed of about between 60–95 OH-equivalent percents of (b^1) polyalkyleneglycolmonoethers, consisting of ethyleneoxide and propyleneoxide units and having a content of 40–70 percent by weight of oxypropylene units and a mole weight of about between 1000 to 3000 and about 5–40 OH-equivalent percents of (b^2) monovalent alcohols or phenols.

The novel compounds are superior foam stabilizers in the production of polyurethane foams.

A novel process for preparing the foam stabilizers is also disclosed. According to this process, chloropolysiloxanylsulfates of the average structural formula



$$X-\underset{R}{\overset{R}{Si}}-\left[O-\underset{R}{\overset{R}{Si}}-\right]_{a-1}\left[O-\underset{R^1}{\overset{O-\left[\underset{R}{\overset{R}{Si}}-O\right]_{a-1}-\underset{R}{\overset{R}{Si}}-X}{Si}}-\right]_b\left[O-\underset{R}{\overset{R}{Si}}-\right]_a X$$

wherein:

R is lower alkyl or phenyl,
R^1 is lower alkyl, vinyl or phenyl,
X is chlorine, wherein a portion of the chlorine atoms are replaced by $SO_4/2$,
a has a value of from 3–10 and
b has a value of from 1–14

are reacted with

> mixtures composed of about between 60–95 OH-equivalent percents of (b^1) polyalkyleneglycolmonoethers essentially consisting of ethyleneoxide and propyleneoxide units and having a content of about between 40–70% by weight of oxypropylene units and having a mole weight of 1000–3000 and about 5–40 OH-equivalent percents of (b^2) monovalent alcohols or phenols.

The reaction is carried out in quantities so that one acid equivalent of the chloropolysiloxanylsulfate corresponds to at the most 1.4 OH-equivalents.

3,526,652
POLYISOCYANATES-WATER REACTION PRODUCTS

Eugene L. Powers, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,416
Int. Cl. C07c *119/04;* C08g *22/44*
U.S. Cl. 260—453 2 Claims

Organic polyisocyanates are prepared by a process wherein a mixture of polyaryl polyalkylene polyisocyanates is reacted with about 0.1% to about 0.5% of water based on the weight of the mixture of isocyanates whereby the water selectively reacts with the higher functional isocyanates so that the resulting product will not have the diisocyanate content reduced by more than about 2%.

3,526,653
PHENYLACETAMIDES

Tsung-Ying Shen, Westfield, Conrad P. Dorn, Plainfield, and William V. Ruyle, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Application May 13, 1965, Ser. No. 455,360, now Patent No. 3,452,079, dated June 24, 1969, which is a continuation-in-part of application Ser. No. 375,307, June 15, 1964. Divided and this application Mar. 4, 1969, Ser. No. 804,304
Int. Cl. C07c *103/22*
U.S. Cl. 260—465 2 Claims

The invention relates to p-cycloalkyl substituted phenyl acetamides and the processes for the preparation of same. These compounds possess potent anti-inflammatory properties.

3,526,654
ISOMERIZATION OF 2-PENTENENITRILE TO 3-PENTENENITRILE

Gary Plant Hildebrand, Carrcroft Crest, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 17, 1968, Ser. No. 729,883
Int. Cl. C07c *121/30*
U.S. Cl. 260—465.9 4 Claims

Isomerization of 2-pentenenitrile to 3-pentenenitrile at from 25 to 500° C. using a catalyst selected from the class consisting of silica gel, alumina, and sodium-calcium aluminosilicates.

3,526,655
PREPARATION OF ISOCYANATE DERIVATIVES

Perry A. Argabright, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,925
Int. Cl. C07c *101/26;* C08g *22/04*
U.S. Cl. 260—471 18 Claims

The present invention comprises a process for the preparation of isocyanate-based compounds comprising reacting an organic halide with an alcohol compound and an alkali cyanate in the presence of a high dielectric aprotic solvent and novel compounds derived therefrom.

3,526,656
(1-ARYLCYCLOBUTYL)CARBONYL CARBAMIC ACID DERIVATIVES

Donald E. Butler, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 25, 1967, Ser. No. 641,159
Int. Cl. C07c *127/22*
U.S. Cl. 260—471 9 Claims

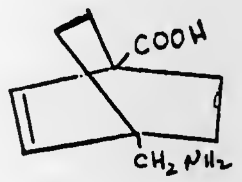
[(1 - phenylcyclobutyl)carbonyl]urea compounds and [(1-phenylcyclobutyl)carbonyl]carbamic acid lower alkyl esters, in which the phenyl groups may be substituted by chlorine, bromine, methyl, methoxyl, or trifluoromethyl, useful as pharmacological agents that exhibit central nervous system depressant activity and anticonvulsant activity and anticonvulsant activity; and their production by (a) reacting an appropriately substituted (1-phenylcyclobutyl)carbonyl isocyanate with ammonia or a lower alkanol, and (b) reacting an appropriately substituted (1-phenylcyclobutyl)carbonyl halide with urea or a carbamic acid lower alkyl ester.

3,526,657
ANTI-FIBRINOLYTIC AGENT

Larry J. Loeffler, North Wales, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 28, 1968, Ser. No. 708,769
Int. Cl. C07c *61/12, 101/04*
U.S. Cl. 260—514 1 Claim

The compound of the structural formula

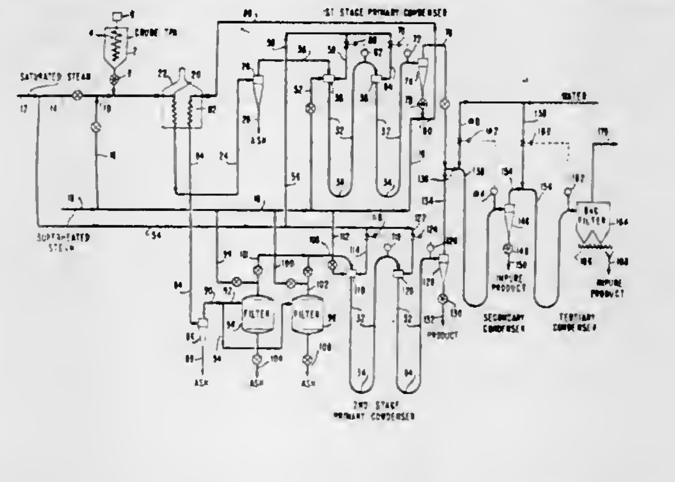


having anti-fibrinolytic properties and being capable of counteracting certain hemorrhagic conditions and other disorders resulting from a pathological fibrinolytic state in patients.

3,526,658
STEAM SUBLIMATION OF TEREPHTHALIC ACID

Howard S. Bryant, Jr., New York, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 418,482, Dec. 15, 1964. This application May 27, 1968, Ser. No. 736,925
Int. Cl. C07c *51/42*
U.S. Cl. 260—525 16 Claims



Purifying crude terephthalic acid containing more volatile contaminants (e.g., p-carboxybenzaldehyde) and ash in a sublimation process involving charging fine particles of the crude acid in nontacky condition into a conduit through which an entrainer gas containing superheated steam is flowing at transport velocity, further heating the dilute phase suspension of soild particles in the entrainer (e.g., 10–30 mols of entrainer per mol of terephthalic acid) while passing through a vaporizer coil heated to carefully controlled temperatures to completely vaporize the acid with the steam serving to inhibit anhydride formation, separating ash from the hot carrier stream in a filter and fractionally condensing the terephthalic acid in the solid state while volatile contaminants are retained in the vapor phase by direct cooling with steam and water coolants in one or more condensers having their walls heated above the dew point of the adjacent vapor stream to eliminate condensation on the walls. Superheated steam is injected around the vapor inlet of the condenser to eliminate terephthalic acid deposits there as well as to minimize shock cooling and to promote better mixing of the condensing vapor and cooling medium.

3,526,659
PROCESS FOR THE MANUFACTURE OF α,β-UNSATURATED ACID CHLORIDES

Paul Janssen, Bensberg-Refrath, and Hermann Richtzenhain, Cologne-Sulz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, a corporation of Germany

Filed Jan. 6, 1967, Ser. No. 607,797
Claims priority, application Germany, Jan. 8, 1966, D 49,098
Int. Cl. C07c *51/58, 57/04*
U.S. Cl. 260—544 10 Claims

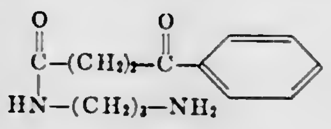
Process for preparing chlorides of α,β-unsaturated monocarboxylic acids by chlorinating α,β-unsaturated aldehydes (aldehyde: chlorine molar ratio 1:1–≦2, preferably 1:1–1.3) at a temperature of from 250–500° C. in the presence of a chlorinated or fluorinated hydrocarbon diluent.

3,526,660
N-(3-AMINOPROPYL)-3-BENZOYL OR SUBSTITUTED BENZOYL-PROPIONAMIDES

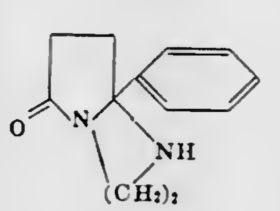
William J. Houlihan, Mountain Lakes, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Original application Mar. 31, 1965, Ser. No. 444,439, now Patent No. 3,334,099. Divided and this application Apr. 13, 1967, Ser. No. 630,525
Int. Cl. C07c *103/22, 103/82*
U.S. Cl. 260—558 8 Claims

Compounds having the basic structure:



useful as intermediates for sedatives belonging to the class having the basic structural formula:



3,526,661
OIL-SOLUBLE MULTIFUNCTIONAL DETERGENT-DISPERSANT COMPRISING AN AMIDE OF A POLYAMINE AND AN ALKARYL KETO ACID

Shih-En Hu, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 354,756, Mar. 25, 1964. This application Feb. 19, 1968, Ser. No. 706,683
Int. Cl. C07c *103/22, 103/26*
U.S. Cl. 260—558 10 Claims

An oil-soluble additive for improving the properties of a fuel oil, lubricating oil, heating oil or the like, particularly with respect to sludge dispersancy and detergency, is prepared by heating an aliphatic polyamine with an aralkyl keto acid at a temperature that causes splitting out of water to form an amide. The keto acid can be prepared by condensing an alkylated aryl compound having an alkyl group of from 12 to about 32 carbon atoms with a dibasic acid, a dibasic acid anhydride, or a dibasic acid halide, having a total of from 4 to 20 carbon atoms. For example, paraffin-wax-alkylated naphthalene is condensed with maleic anhydride, and the resulting keto acid is reacted with tetraethylene pentamine.

3,526,662
EXTRACTION AND PURIFICATION OF TETRACYCLINE FROM FERMENTATION BROTHS

Artur Pereira da Luz, Lisbon, Portugal, assignor to CIPAN—Companhia Industrial Produtora de Antibioticos S.A.R.L., Lisbon, Portugal

No Drawing. Filed July 25, 1966, Ser. No. 567,379
Claims priority, application Portugal, July 30, 1965, 44,421
Int. Cl. C07c *103/19*
U.S. Cl. 260—559 4 Claims

A process for the extraction, recovery or purification of tetracycline from fermentation broths, which comprises: acidifying the broth to pH from 1.5 to 3.0 with sulfuric acid and filtering, changing the pH to 8.8 to 9.1 with sodium hydroxide, filtering and suspending the cake in one tenth to one twelfth of the volume of the filtered broth of a water-immiscible solvent containing oxygen, adding sodium chloride and washing the organic phase several times with water at pH 10, purifying the combined washings at pH between 1.5 and 2.5 with activated carbon, oxalic acid and potassium ferrocyanide and crystallizing the tetracycline by slow increase of the pH to a value between 3.8 and 4.3.

A variation of the process is disclosed in which the step of extraction with an oxygen-containing solvent immiscible with water is not carried out but instead the filtered cake obtained at pH 8.8 to 9.1 is suspended in one tenth of the original volume of water acidified with concentrated sulfuric acid, the calcium sulfate formed separated and the purification with activated carbon, oxalic acid and potassium ferrocyanide, and the tetracycline base is crystallized by increasing the pH slowly to 3.8 to 4.3 in the presence of a salt of ethylenediaminetetracetic acid.

3,526,663
ACETOACETAMIDO COUPLING COMPOUNDS

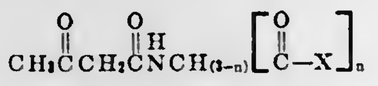
David P. Habib, 282 Forest Glen St., West Springfield, Mass. 01089, and George R. Hodgins, 666 Amherst Road, South Hadley, Mass. 01075

No Drawing. Original application Mar. 31, 1964, Ser. No. 356,024, now Patent No. 3,387,977, dated June 11, 1968. Divided and this application Apr. 10, 1968, Ser. No. 720,387

Int. Cl. C07c *103/42*

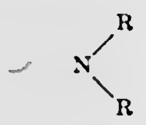
U.S. Cl. 260—561 **4 Claims**

Acetoacet derivatives of aliphatic amines of the following general structure:



$$CH_3\overset{O}{\overset{\|}{C}}CH_2\overset{O}{\overset{\|}{C}}\overset{H}{N}CH_{(3-n)}\left[\overset{O}{\overset{\|}{C}}-X\right]_n$$

in which *n* is any integer from 1 to 2 and X is



wherein R is H or an alkyl group containing 1 to 4 carbon atoms. The acetoacet compounds of the present invention which may be employed as coupling components with diazonium compounds in the manufacture of light sensitive diazo coating compositions are generally synthesized by the reaction of a selected amine with diketene or acetoacetic ester.

3,526,664
TRICHLORO AMIDINES AND PROCESS FOR PREPARING THEM

Clifford L. Coon, Fremont, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California

No Drawing. Filed May 9, 1966, Ser. No. 548,393

Int. Cl. C07c *123/00*

U.S. Cl. 260—564 **7 Claims**

N,N,N′-trichloroamidines are produced by passing fluorine gas in contact with hydrocarbyl amidine and an aqueous solution containing a stoichiometrically excess quantity of chlorine ions, e.g. potassium chloride, the reaction being continued preferably until the formation of a heavy orange liquid ceases to be formed. The compounds so produced are useful as chlorinating agents, bleaches, bactericides and the like.

3,526,665
BENZOBENZAZULENES

Albert J. Frey, Essex Fells, and Eugene E. Galantay, Morristown, N.J., assignors to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Original application Dec. 30, 1966, Ser. No. 606,007. Divided and this application Feb. 7, 1968, Ser. No. 724,654

Int. Cl. C07c *49/80, 49/82*

U.S. Cl. 260—590 **7 Claims**

The title compounds are 2-amino-1,2,6,7-tetrahydro-(11bH)-benzo-[j]benz[c,d]azulenes and are useful as antihypertensives and useful as sedative-tranquilizers. The title compounds are prepared from suitable 10,11-dihydro-5H-dibenzo[a,d]cyclohepten - 5 - ones or suitable 1,2 - diphenylethanes, e.g., by conversion thereof to the corresponding 1,2,6,7-tetrahydro - (11bH) - benzo[j]benz[c,d] azulen-2-one which is then converted to the corresponding title compound.

3,526,666
SYNTHESIS OF 2-HYDROXY-4-ALKOXYBENZOPHENONES

Fernando J. Ponder, Broadview Heights, Ohio, assignor to Ferro Corporation, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 12, 1968, Ser. No. 697,311

Int. Cl. C07c *49/82*

U.S. Cl. 260—591 **8 Claims**

The present invention relates to the synthesis of 2-hydroxy-4-alkoxybenzophenones by a condensation reaction between 2,4-dihydroxybenzophenone and an alkyl chloride, the reaction being carried out in a suitable solvent and in the presence of a catalyst.

3,526,667
PROCESS FOR ACETAL PREPARATION

Marion E. Hill, Palo Alto, Calif., and Kathryn G. Shipp, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Feb. 15, 1962, Ser. No. 173,592

Int. Cl. C07c *43/00*

U.S. Cl. 260—615 **20 Claims**

Nitroformals prepared by the reaction of nitro alcohols and formaldehyde in the presence of sulfuric acid and useful in solid propellant composition, either as an energy source or as a plasticizer.

3,526,668
ALLYL PHENOLS

William H. Starnes, Jr., and Tad L. Patton, Baytown, Tex., assignors to Esso Research and Engineering Company

No Drawing. Filed Oct. 2, 1967, Ser. No. 671,975

Int. Cl. C07c *39/18*

U.S. Cl. 260—624 **13 Claims**

An allylated phenol substantially free of allylaryl ether is obtained by contacting an alkali metal salt of a 2,6-disubstituted phenol with a primary allyl halide in a solvent.

3,526,669
PROCESS FOR THE MANUFACTURE OF ISOPRENYL ALCOHOLS HAVING 9, 11, and 12 ISOPRENE UNITS AND NEW ISOPRENYL ALCOHOLS

Hideaki Fukawa, Fukuoka-machi, Masashi Toyoda and Hiroshi Seo, Kawagoe-shi, and Toru Shimizu, Tokyo, Japan, assignors to Nisshin Flour Milling Co., Ltd., Tokyo, Japan, a corporation of Japan

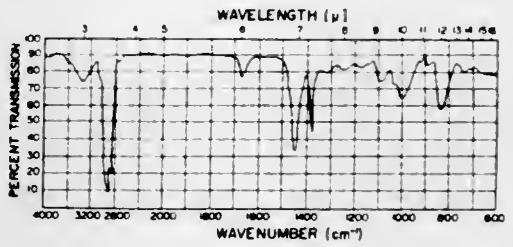
Filed Feb. 21, 1967, Ser. No. 617,654

Claims priority, application Japan, Feb. 22, 1966, 41/10,236; Dec. 9, 1966, 41/80,334

Int. Cl. C07c *29/24, 49/76*

U.S. Cl. 260—643 **5 Claims**

This invention relates to process for manufacturing and also isolating isoprenyl alcohols having 9, 11 and 12 isoprene units from the saponified matter which is contained in mulberry leaves and silkworm feces. Additionally, this invention relates to new compounds, isoprenyl alcohols having 11 and 12 isoprene units.



3,526,670
PROCESS FOR INCREASING PERMANGANATE TIME OF METHANOL

Anthony H. Conrad, Jr., Texas City, William G. Cooper, Dickinson, and Johnny L. Slate, Texas City, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 633,389, Apr. 25, 1967. This application May 23, 1969, Ser. No. 827,167

Int. Cl. C07c *29/24*

U.S. Cl. 260—643 **4 Claims**

A process for increasing the permanganate time of purified methanol by contacting the purified methanol with a lithium-sodium silicate solution either alone or in admixture with zinc powder.

3,526,671
AMINOALKYLATED OXIMES OF DIBENZO[a,d] CYCLOHEPTEN-5-ONES

Claude I. Judd, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 467,720, June 28, 1965. This application May 22, 1967, Ser. No. 640,351

Int. Cl. C07c *131/02*

U.S. Cl. 260—566 **6 Claims**

The compounds are aminoalkylated oximes of dibenzo-[a,d]cyclohepten - 5 - ones which are useful as skeletal muscle relaxants and antidepressants. Two species disclosed are O - [β-(N,N-dimethylamino)ethyl]10,11-dihydrodibenzo[a,d]cyclohepten-5 - one and O - [β-(N,N-dimethylamino)ethyl] - dibenzo[a,d]cyclohepten - 5 - one oxime.

3,526,672
PROCESS FOR THE MANUFACTURE OF 4-VINYLCYCLOHEXENE

Nicodemus E. Boyer, Parkersburg, W. Va., and Marvin P. Weaver, Belpre, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 14, 1969, Ser. No. 791,182

Int. Cl. C07c *3/10*

U.S. Cl. 260—666 **11 Claims**

A process for the dimerization of 1,3-butadiene to 4-vinylcyclohexene may be practiced to produce high yields by the use of certain catalyst systems which include (1) secondary aromatic amines, or (2) metal acetylacetonates, or (3) mixtures of (1) and (2), or (4) mixtures of (2) and triphenylphosphine.

3,526,673
INHIBITING POPCORN POLYMER FORMATION WITH TERTIARY AMINO DIALKYL PHENOL COMPOUND

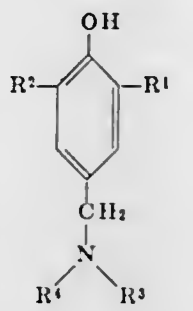
Harry Elmer Albert, Lafayette Hill, Pa., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed May 13, 1968, Ser. No. 728,772

Int. Cl. C07c *7/18, 7/100;* **C08d** *5/00*

U.S. Cl. 260—666.5 **10 Claims**

Popcorn polymer formation in processes for preparing synthetic rubber is inhibited by contacting the monomers with a tertiary amino dialkyl phenol of the structure



wherein R¹ and R² are alkyl groups having from one to eight carbon atoms, and R³ and R⁴ are selected from the group consisting of alkyl radicals having one to five carbon atoms, β-hydroxyalkyl radicals having one to five carbon atoms, or R³ and R⁴ combined can, with the nitrogen atom, form a morpholino group.

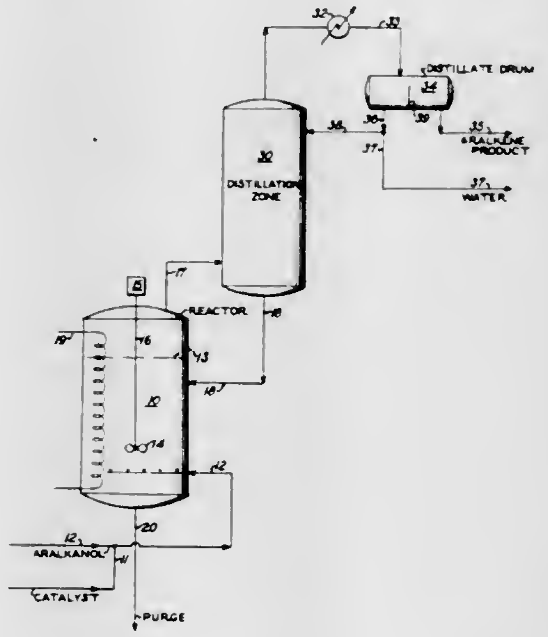
3,526,674
PROCESS FOR THE DEHYDRATION OF ARALKANOLS

Mitchell Becker, Teaneck, and Sargis Khoobiar, Clifton, N.J., assignors to Halcon International, Inc., a corporation of Delaware

Filed Aug. 5, 1968, Ser. No. 750,035

Int. Cl. C07c *5/18, 15/10*

U.S. Cl. 260—669 **10 Claims**



Aralkanols are catalytically dehydrated to form aralkenes, such as, for example, styrene or alpha-methylstyrene by conduct of the dehydration in the presence of a liquid phase reaction medium at a temperature above about 200° C. but below the decomposition temperature of the liquid phase reaction medium. High surface area aluminas are preferred catalysts for the dehydration.

3,526,675
DEHYDROGENATION OF ORGANIC COMPOUNDS

Louis J. Croce, Seabrook, Tex., and Laimonis Bajars, Princeton, N.J., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 459,878, May 28, 1965. This application Sept. 28, 1967, Ser. No. 671,227
Int. Cl. C07c *5/18*
U.S. Cl. 260—680 **9 Claims**

Oxidative dehydrogenation of organic compounds in vapor phase in the presence of a catalyst containing oxygen, iron and manganese. The preferred catalyst comprises manganese ferrite.

3,526,676
OLEFIN PREPARATION

Leonard Turner, Woking, Christopher Patrick Cadman Bradshaw, Sunbury-on-Thames, and Eric James Howman, Crowthorne, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,675
Claims priority, application Great Britain, Nov. 19, 1964, 47,053/64
Int. Cl. C07c *3/62, 15/10*
U.S. Cl. 260—683 **17 Claims**

A process for preparing olefins is provided which comprises reacting an initial mixture consisting essentially of two dissimilar acyclic olefins having the formulas $R(R_1)C{=}C(R_2)R_3$ and $R_4(R_5)C{=}C(R_6)R_7$ respectively, in the presence of an olefin disproportionation catalyst, the R substituents of the feed olefins representing hydrogen atoms or alkyl or aryl groups with the proviso that not more than two of the groupings $R(R_1)C<$,

$$R_3(R_2)C<$$

$R_4(R_5)C<$ or $R_7(R_6)C<$ are the same.

3,526,677
METAL COATING COMPOSITIONS AND METAL COATED THEREWITH

Ronald H. Dahms, Springfield, and James A. Snelgrove, Monson, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 652,738, July 12, 1967. This application Jan. 6, 1969, Ser. No. 797,319
Int. Cl. B44d *1/42;* **C08g** *37/20*
U.S. Cl. 260—839 **6 Claims**

Enamels suitable for use in coating metal to impart corrosion resistance and electrical insulation thereto. These enamel solutions employ a mixture of a resole resin made by reacting formaldehyde with a phenol which has been previously substituted with a specific C_8 through C_{13} mixture of carbocyclic compounds and at least one polyvinyl acetal. When coated onto metal, the resulting surfaces display good electrical insulation characteristics, good physical strength properties, and surprisingly low coefficients of friction.

3,526,678
METAL COATING COMPOSITIONS AND METAL COATED THEREWITH

Ronald H. Dahms, Springfield, and James A. Snelgrove, Monson, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Jan. 6, 1969, Ser. No. 789,391
Int. Cl. C08g *37/20;* **B44d** *1/42*
U.S. Cl. 260—844 **4 Claims**

Enamels suitable for use in coating metal to impart corrosion resistance and electrical insulation thereto. These enamel solutions employ a mixture of a polyvinyl acetal and a resole resin made by reacting formaldehyde with a phenol which has been previously substituted with a specific mixture of cyclopentadiene codimers. When coated onto metal and dried, the resulting coatings thermoset at surprisingly low temperatures and, when thermoset, display good electrical insulation characteristics and good physical strength properties.

3,526,679
POLYMERS STABILIZED WITH ORGANIC SULFIDES AND PHOSPHITES

Richard Strauss, Lexington, and James Bottomley, Tewksbury, Mass., assignors to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts
Continuation-in-part of applications Ser. No. 443,174, Mar. 26, 1965, and Ser. No. 462,385, June 8, 1965. This application Mar. 28, 1966, Ser. No. 538,022
Int. Cl. C08f *29/12*
U.S. Cl. 260—887 **10 Claims**

An organic polymer subject to degradation, e.g., a C_2–C_4 olefin resin, is stabilized by a composition composed of: (a) an alkylated phenol polysulfide, and (b) a phosphorus containing polymer prepared by the reaction of a phenol, an aldehyde capable of condensing with the phenol and a trivalent phosphorus compound.

3,526,680
MOULDING COMPOSITIONS FROM POLYACETALS AND COPOLYMERS OF α-OLEFINS/UNSATURATED CARBOXYLIC ACIDS CONTAINING METAL IONS

Harald Cherdron, Wiesbaden, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 30, 1968, Ser. No. 748,630
Claims priority, application Germany, Aug. 30, 1967, F 53,356
Int. Cl. C08f *37/18*
U.S. Cl. 260—897 **12 Claims**

The invention provides thermoplastic moulding compositions on the basis of polyacetals obtained by mixing homo- or copolymers of formaldehyde or trioxan with copolymers of α-olefins and α,β-unsaturated carboxylic acids containing ions of mono- to trivalent metals. The compositions are distinguished by an improved impact strength.

3,526,681
TRIS(CHLORO SULFONYLARYL) PHOSPHATES AND A METHOD FOR PREPARING SAME

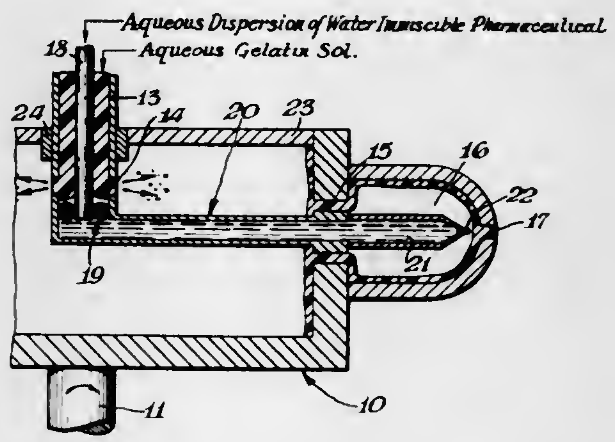
Jackson Pollard English, Princeton, and John James Hand, Trenton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 25, 1967, Ser. No. 633,387
Int. Cl. C07f *9/22;* **A01n** *9/36*
U.S. Cl. 260—949 **6 Claims**

New compounds of the class tris(substituted sulfonylaryl) phosphates are described. Their preparation from readily available starting materials is also delineated. These compounds are useful as intermediates in the preparation of compounds having anthelmintic activity. The conversion of the present compounds into anthelmintic compounds is described. Testing procedures and results on a number of the anthelmintic compounds is summarized.

3,526,682
MICROENCAPSULATION OF PHARMACEUTICALS

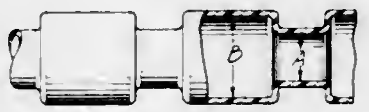
Albert E. Timreck, Rego Park, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1966, Ser. No. 574,375
Int. Cl. A61j *3/07*
U.S. Cl. 264—4 **11 Claims**

A method of preparing microcapsules of an aqueous dispersion of water-immiscible pharmaceuticals in colloid sol by centrifugally forcing minute portions of the dispersion through a gelatin sol film. The resulting droplets are coated and encapsulated by the gelatin sol which is then cooled before substantial diffusion of said dispersion into the coating. The capsules may be dried to physically change the coating to a hardened impermeable shell.



3,526,683
METHOD FOR DUAL CROSSLINKING

William R. Heslop, Atherton, and Norman Thorp, Redwood City, Calif., assignors to Raychem Corporation, Menlo Park, Calif., a corporation of California
Filed Mar. 22, 1968, Ser. No. 715,398
Int. Cl. B29c *27/20;* **B29d** *7/22*
U.S. Cl. 264—22 **29 Claims**



This invention relates to a method for forming a heat recoverable article having different degrees of heat recoverability in different parts of the article by crosslinking a portion of the article in its heat recoverable state, thereby locking in the stresses produced in forming said heat recoverable state, and distorting the article to a new heat recoverable state. The portion of the article thus treated will then tend to recover to the dimension at which the stress locking occurred rather than the first memory dimension.

3,526,684
SEPARATION OF COKES INTO NEEDLE-LIKE AND NON-NEEDLE-LIKE PARTICLES AND THE PRODUCTION OF CARBON OR GRAPHITE BODIES

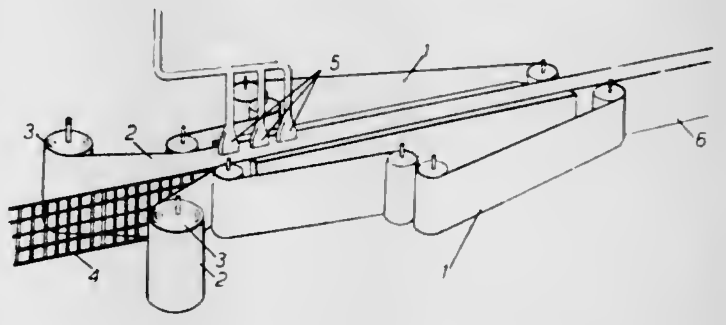
LeRoi E. Hutchings, Mount Prospect, Ill., assignor to Great Lakes Carbon Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,170
Int. Cl. C01b *31/04*
U.S. Cl. 264—29 **20 Claims**

Calcined cokes, which contain fractions of needle-like and non-needle-like particles, are separated into two fractions each of which is more valuable for certain end uses than the original material.

Special carbon or graphite bodies having a high degree of anisotropy are produced by using carbonaceous particles in their production which are predominantly or exclusively "needle-like." The "needle-like" particles are obtained by mechanical separation from a starting material consisting of calcined coke particles, some of which are "needle-like" and the remainder of which possess other shapes, such as round, or cubical etc. After the "needle-like" particles are separated from the otherwise shaped calcined coke particles, they are mixed with a carbonizable binder and extruded. They are then either baked or graphitized depending upon the end product desired. The non-needle-like particles are particularly useful in the production of some types of anodes, some mold stocks and in the production of graphite articles for nuclear applications. They also are highly useful for the preparation of a carbonaceous flour along with the separated needle-like particles to make the carbon or graphite bodies having a high degree of anisotropy, because in grinding the non-needle-like particles a large amount of needle-like flour is generated.

3,526,685
PROCESS FOR THE PRODUCTION OF FOAMED GYPSUM CASTINGS

Edward Graham Foster and Martin S. Bloom, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 22, 1967, Ser. No. 669,835
Claims priority, application Great Britain, Oct. 20, 1966, 46,921/66
Int. Cl. B29d *27/04;* **C04b** *11/02, 21/02*
U.S. Cl. 264—42 **4 Claims**

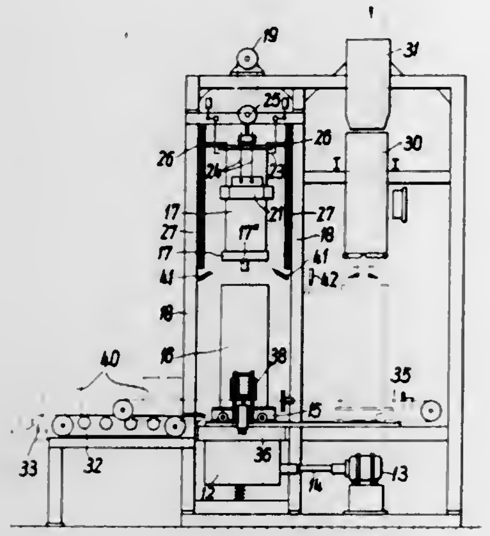


A process for producing a foamed gypsum casting by mixing with a water slurry of calcium sulphate hemihydrate, sulfuric acid and calcium carbonate to generate carbon dioxide in situ, wherein the casting mold has internal faces lined with a polyolefin-coated material, e.g. polyethylene coated on paper.

3,526,686
METHOD FOR SHAPING OF GRANULAR SUBSTANCES

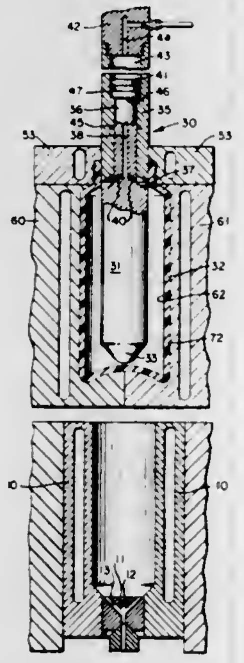
Gottfried Weinhold, Norf-Derikum, Germany, assignor to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany
Filed Oct. 13, 1967, Ser. No. 675,209
Claims priority, application Germany, Oct. 14, 1966, V 32,125; July 1, 1967, K 62,705
Int. Cl. B28b *1/08, 1/10*
U.S. Cl. 264—71 **4 Claims**

A form is adapted to accommodate a quantity of granular material and is suspended on a plurality of springs for movement in a plurality of directions, including a pair of mutually opposite directions. At least two imbalanced masses are mounted on the form for rotation in mutually opposite directions. Drive means rotates the imbalanced masses in said directions so that the vibratory stresses transmitted by the rotating masses to the form, and tending to cause movement of the same in the plurality of directions, are balanced whereby the form performs movements only on the mutually opposite directions.



3,526,687
METHOD FOR INJECTION MOLDING A PARISON

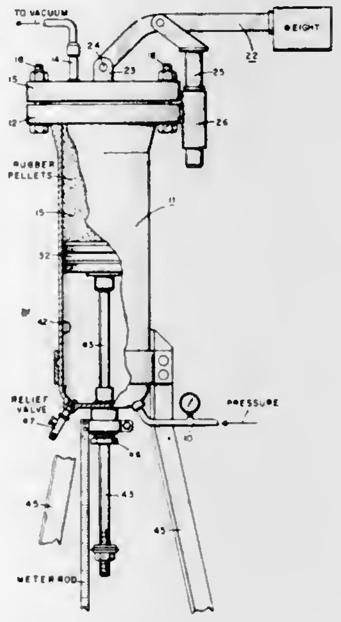
Emery I. Valyi, 5200 Sycamore Ave.,
Riverdale, Bronx, N.Y. 10471
Division of application Ser. No. 544,898, Apr. 25, 1966, now Patent No. 3,387,324, dated June 11, 1968, which is a continuation-in-part of applications Ser. No. 326,410, Nov. 27, 1963, and Ser. No. 353,004, Mar. 8, 1964. This application Aug. 28, 1967, Ser. No. 675,725
Int. Cl. B29c *17/07;* **B29d** *23/02*
U.S. Cl. 264—97 1 Claim



A method for injection molding a parison to be subsequently blow molded. A two part blow core having a blow port which is closable by relative movement of the two parts is positioned within an outer parison die member having side and end walls shaped to form the side and end walls of the parison. Holding pressure is exerted on one of the parts to cause the core to seat against the end wall of the parison die member and to close the blow port. Plastic is injected through a passage in the outer die member to form the side walls of the parison while the core remains seated against the end wall of the outer die. The injection of plastic is continued while the holding pressure on the core is reduced so as to allow the core to retract a distance necessary to form the bottom wall of the parison, the blow port being maintained closed by the pressure of the injected plastic. The finished parison with the core is removed from the outer die and placed in a blow mold where the blow port is opened and blowing air introduced therethrough in order to form the parison against the blow mold.

3,526,688
METHOD FOR BALING PARTICULATE SYNTHETIC ELASTOMER

Marcus H. Shelton, Baytown, and Ralph James, Jr., Channelview, Tex., assignors to Esso Research and Engineering Company
Filed Dec. 21, 1967, Ser. No. 692,436
Int. Cl. B29h *3/00, 31/00*
U.S. Cl. 264—102 8 Claims

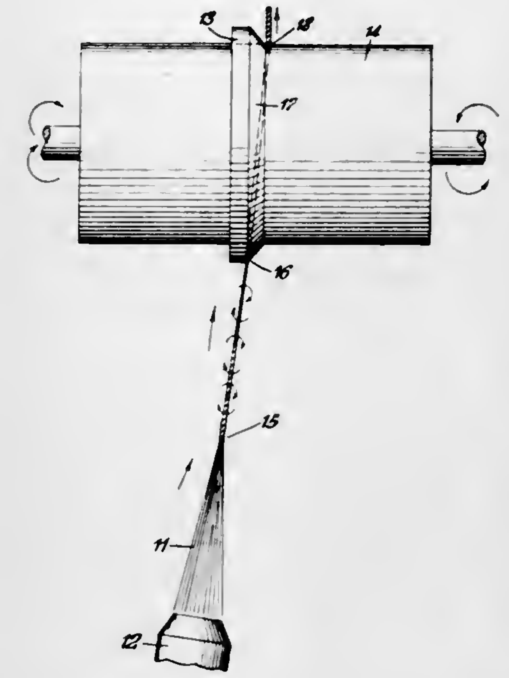


A method for baling particulate synthetic elastomers such as butyl rubber and polyisobutylene. The particulate elastomer is placed in a chamber and subjected to a reduced pressure in order to remove vaporizable material and gasiform material. The elastomer is then subjected to a relatively low mechanical pressure to achieve a high density body. Densities as high as 90 to 95 percent of the maximum achievable densities for these materials are obtained and the compressed bodies show substantially no cold flow or deformity.

3,526,689
FUSED MULTIFILAMENT ROUND SPANDEX YARN

Allen P. Jones, Jr., Charles H. Apperson, and Andrew T. Walter, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed Apr. 3, 1968, Ser. No. 718,486
Int. Cl. D02g *1/20*
U.S. Cl. 264—103 6 Claims

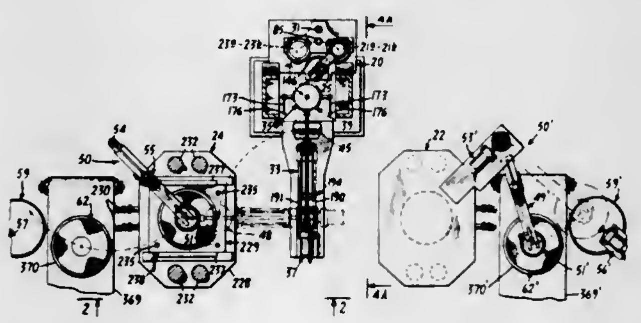
Spandex yarn having a round cross section is produced by passing the multifilament yarn onto a rotating slanted surface, such as a bevelled ring on a roller, and rolling the plurality of filaments across the rotating slanted surface.



3,526,690
METHOD AND APPARATUS FOR PRODUCING PHONOGRAPH RECORDS

William S. Bachman, Southport, Conn., assignor to Columbia Broadcasting Systems, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 391,603, Aug. 24, 1964. This application Feb. 17, 1969, Ser. No. 805,097
Int. Cl. B29d *17/00*
U.S. Cl. 264—107 26 Claims

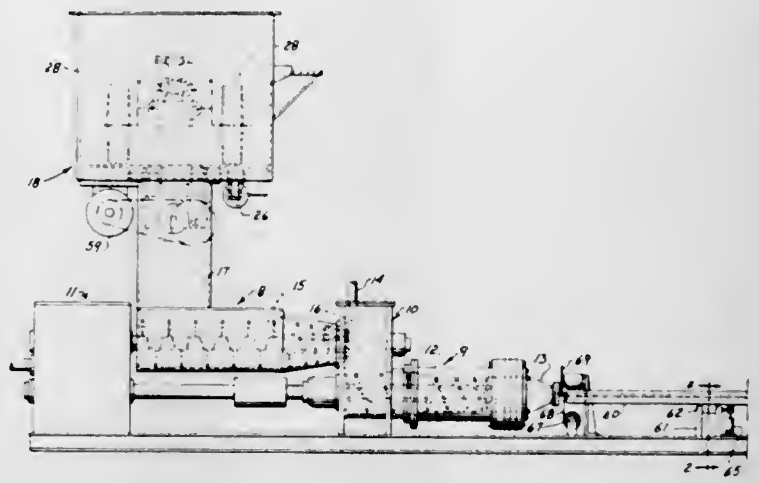
A system for producing phonograph records by extruding a charge of molding material between a pair of spaced-apart record labels, transferring the charge of molding material and the pair of labels to a record molding apparatus, and activating the molding apparatus to produce a photograph record having the pair of labels affixed to opposite sides thereof.



3,526,691
METHOD FOR MAKING ASBESTOS-CEMENT SHAPES

Frederick E. Hawkins, Montgomery, Pa., and Joseph L. Cangelosi, Caparra Heights, Puerto Rico, assignors to Certain-Teed Products Corporàtion, Ardmore, Pa., a corporation of Maryland
Continuation-in-part of application Ser. No. 511,732, Dec. 6, 1965. This application Sept. 9, 1968, Ser. No. 758,426
Int. Cl. B28b *3/26*
U.S. Cl. 264—148 5 Claims

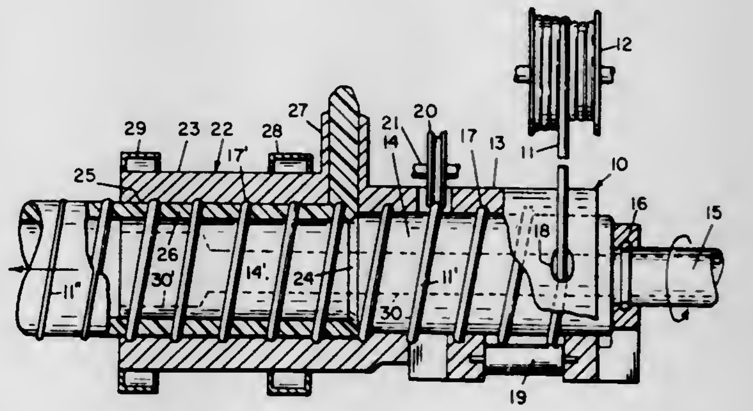
A method for use in the extrusion of asbestos-çement shapes by means of a screw extruder. Batches of a prepared mix are sequentially delivered to the extruder to maintain a substantially continuous operation. Lengths of the extruded shape are cut off and the cut lengths are straightened prior to precuring and final curing.



3,526,692
MANUFACTURE OF WIRE REINFORCED PLASTIC PIPE

Yasuyoshi Onaka, 3530–3 Izumi, Komaemachi, Kitatamagun, Tokyo, Japan
Filed May 24, 1968, Ser. No. 731,878
Claims priority, application Japan, May 26, 1967, 42/33,758; July 21, 1967, 42/46,989
Int. Cl. B29d *23/00*
U.S. Cl. 264—209 8 Claims

Mechanism for continuously coiling wire into a helix and feeding the helix axially through a plastic extruding die where a plastic pipe body is extruded so that the wire helix is embedded in but projects from the outer surface of the pipe body. The pipe body with the embedded helix is then passed through a second plastic extruding die in which a tubular plastic layer is bonded to the outer surface of the pipe body and covers the projecting helix to constitute the finished pipe.



3,526,693
PRODUCTION OF RESILIENT, HIGH DENIER, FLAME-RESISTANT FILAMENTS

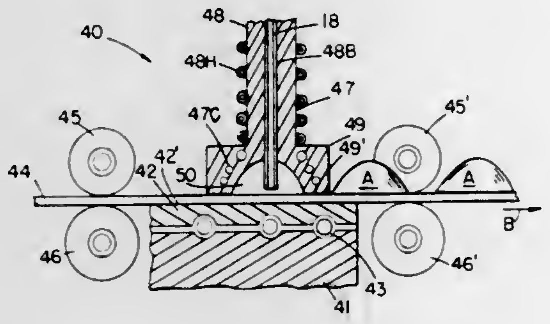
Richard N. Rulison, Gillette, and John P. Riggs, New Providence, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 24, 1967, Ser. No. 640,854
Int. Cl. D01d *5/06*
U.S. Cl. 264—210 10 Claims

Wet spinning process for manufacture of polybenzimidazole monofilaments of at least 100 denier per filament which are particularly useful as non-flammable elements for fibrous closures. The spinning solution is extruded and coagulated, then water washed to reduce the solvent level to about 5 to 35 by weight, healed at about 80 to 110° C., heated to about 120 to 200° C., re-washed to reduce the solvent level to less than 1% by weight, dried and finally hot drawn. Drawing may be followed by a hot relaxation.

3,526,694
MOLDING TECHNIQUES

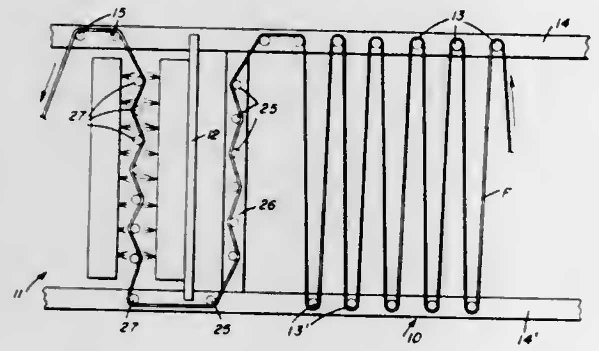
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 439,548, Mar. 15, 1965. This application Feb. 6, 1968, Ser. No. 703,289
Int. Cl. B29c *1/14, 5/06*
U.S. Cl. 264—259 8 Claims

A method for molding is provided in which molding material is disposed against a flat surface in a molding cavity defined by a mold member is temporarily abutted to said surface. In one form, separate articles are intermittently molded against a plate or conveyor by an automatic molding apparatus. In another form, surface formations are provided against the surface of a preformed member by abutting said surface with a mold member having a cavity facing the surface and disposing a low-pressure molding material in said cavity. The mold member is retained against the surface until the molding material sets or solidifies in situ thereon and becomes secured thereto during the molding process.



3,526,695
CORRUGATION CONTROL OF HEAT RELAXED THERMOPLASTIC FILMS

Arthur W. Spencer, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 27, 1967, Ser. No. 678,735
Int. Cl. B29c *25/00*
U.S. Cl. 264—346 9 Claims



In processes for manufacturing heat set, heat relaxed oriented thermoplastic films, the presence of longitudinal corrugation-type defects in the finished films is a significant problem. It has been discovered that such corrugations can be effectively minimized by passing the film over a series of closely spaced idler rolls both at the end of the final heated section of the processing apparatus and at least at the beginning of the section in which the film is cooled to below its second order transition temperature. Controlled cooling of the film while it is passed over the closely spaced idler rolls effectively irons out the corrugations.

3,526,696
SHIPPING FEVER VACCINE

Charles Gale and Earl E. Ose, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 630,529, Apr. 13, 1967, which is a continuation-in-part of application Ser. No. 565,397, July 15, 1966. This application Feb. 14, 1968, Ser. No. 705,315
The portion of the term of the patent subsequent to Mar. 17, 1987, has been disclaimed
Int. Cl. C12k *5/00*
U.S. Cl. 424—89 5 Claims

An improved shipping fever composition of inactivated *Pasteurella multocida and Pasteurella hemolytica,* an aluminum ion adjuvant, and a live, attenuated, myxovirus parainfluenza-3 virus.

3,526,697
THERAPEUTIC METHOD

William Steele Livingston, Woodland Hills, Calif., assignor to Nevada Pharmaceuticals, Inc., Van Nuys, Calif., a corporation of Nevada
Continuation-in-part of application Ser. No. 207,146, June 26, 1962, which is a continuation-in-part of applications Ser. No. 655,320, Apr. 26, 1957, and Ser. No. 660,559, May 21, 1957, which are continuations of application Ser. No. 623,711, Nov. 21, 1956, which in turn, is a continuation-in-part of application Ser. No. 256,334, Nov. 14, 1951, which also in turn, is a continuation of application Ser. No. 127,799, Nov. 16, 1949. This application Oct. 6, 1966, Ser. No. 602,434
Int. Cl. A61k *17/00*
U.S. Cl. 424—105 18 Claims

1. A method of treating a human rheumatoid arthritic or osteoarthritic subject which comprises injecting into said subject an effective dose of a liquid obtained in accordance with a procedure which comprises:

(a) placing in a pressure vessel a quantity of material comprising animal tissue selected from the group consisting of fresh human placenta or other normal or malignant animal tissues;
(b) adjusting the pH of said material to about 8;
(c) enclosing and sealing said pressure vessel;
(d) maintaining the temperature within said vessel within the range of about 35° C. to about 55° C., and the pressure within said vessel at about 35 p.s.i.g. over a period of about six weeks;
(e) opening said vessel at the conclusion of said period;
(f) recovering a liquid portion of the semi-liquid contents of said vessel; and
(g) sterilizing the said liquid portion.

3,526,698
STABILIZATION OF LEVO-3-(3,4-DIHYDROXYPHENYL)-2-METHYLALANINE WITH SODIUM BISULFITE AND SORBITOL

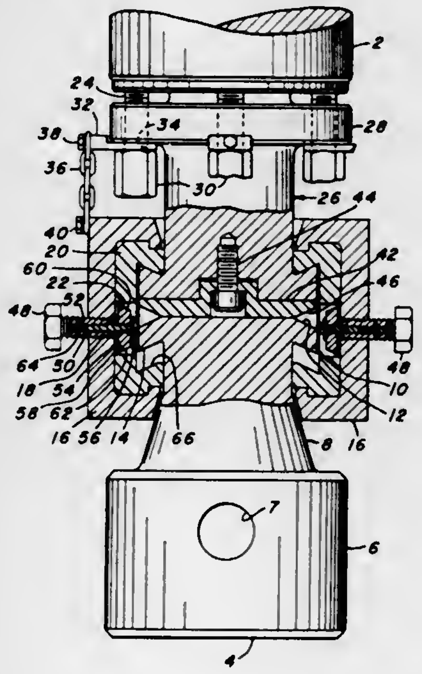
Gerald P. Polli, Norristown, Pa., Wayne M. Grim, Hertford Heath, England, and Thomas J. Macek, Jenkintown, Pa., assignors to Merck and Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 493,556, Oct. 6, 1965. This application Apr. 11, 1968, Ser. No. 720,478
Int. Cl. A61k *27/00*
U.S. Cl. 424—175 1 Claim

The therapeutic agent levo-3-(3,4-dihydroxyphenol)-2-methylalanine is made stable in oral, fluid pharmaceutical formulation by the addition of sodium bisulfite and sorbitol.

ELECTRICAL

3,526,699
APPARATUS FOR CONNECTING RAM TO ELECTRODE

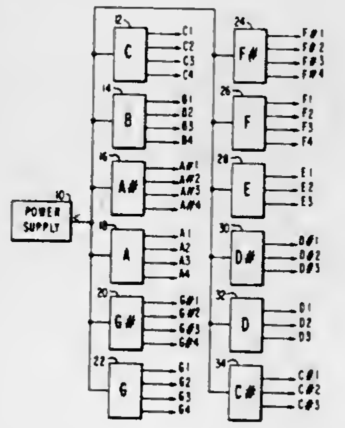
John N. Usherwood, Houston, Tex., assignor to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio
Filed Mar. 3, 1969, Ser. No. 803,755
Int. Cl. H05b *7/10, 7/06*
U.S. Cl. 13—14 3 Claims



A furnace electrode structure wherein increased electrode weight promotes the electrical and mechanical connection to the current source ram, are obtained by using an electrode stub having an undercut beveled portion and an upwardly facing beveled surface, a ram stub member having a downwardly racing beveled surface, a plurality of exterior segment members with interior liners electrically connecting the ram-stub member to the electrode stub, and a plurality of thread-bearing members, one in each segment member, urging a wedge-shaped part between said upwardly and downwardly facing beveled surfaces.

3,526,700
PORTABLE ELECTRONIC CHORD ORGAN

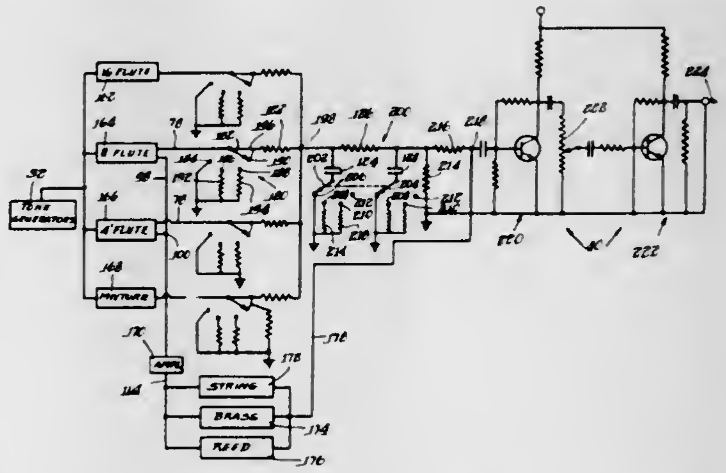
Keith D. Ruppert, Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,086
Int. Cl. G10h *1/06, 5/04, 5/12*
U.S. Cl. 84—1.01 7 Claims



A portable wide range electronic chord organ which may use printed circuits and may be battery operated. Both chords and the melody are produced by single fingered playing. Filter circuits provide for simulating the sounds of a number of different wind and string instruments. The tone generators each include a transistorized Hartley oscillator and either two (three outputs) or three (four outputs) synchronized neon tube relaxation oscillators as frequency dividers.

3,526,701
ELECTRONIC ORGAN WITH DIVERSE FILTERS AND ANTI-PLOP BIAS ARRANGEMENT

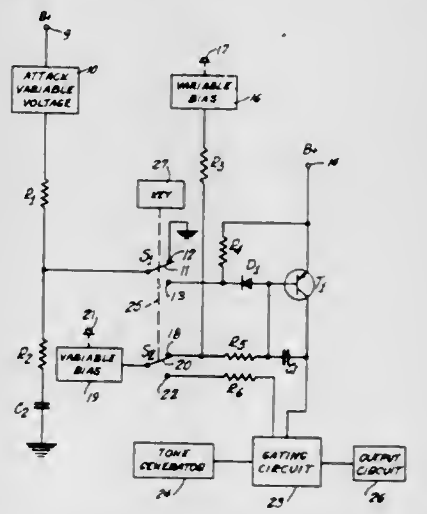
William V. Machanian, Niagara Falls, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,768
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.11 16 Claims



A portable or "Combo" electronic organ having square wave tone generators and direct contact key switching wherein keying noise or "plop" is eliminated by charging condensers in the circuit to approximately half their normal operating charge, and also by the use of wave-shaping filters.

3,526,702
DYNAMIC KEYING CIRCUIT FOR MUSICAL INSTRUMENT

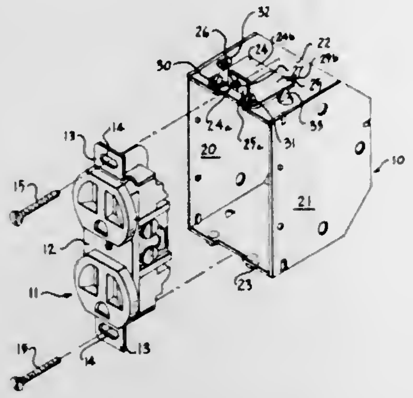
Alfred B. Freeman, Skokie, Ill., assignor to Chicago Musical Instrument Co., Lincolnwood, Ill., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,813
Int. Cl. G10h *1/02, 1/00*
U.S. Cl. 84—1.26 17 Claims



A keying circuit is provided for an organ to control coupling of a tone signal source to an output circuit, and includes key-actuated switching means and an RC timing means to produce a controlling voltage inversely proportional to the time required for a movable contact of the key actuated switching means to move from one contact to another, and thus proportional to the force with which the playing is struck.

3,526,703
MEANS FOR QUICK AND EASY MOUNTING OF AN ELECTRICAL ACCESSORY WITHIN AN OUTLET BOX

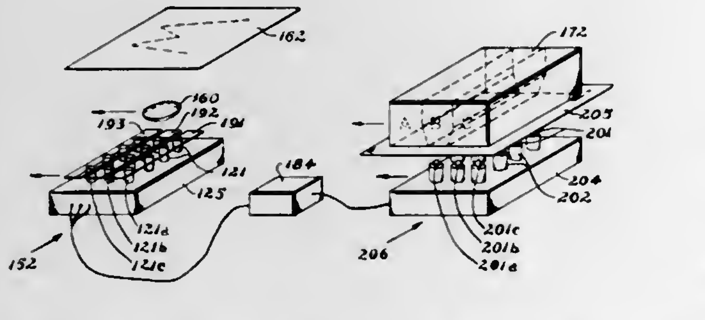
Robert L. Tucker, Rte. 3, Rome, Ga. 30161
Filed Mar. 10, 1969, Ser. No. 805,577
Int. Cl. H02g *3/08*
U.S. Cl. 174—53 7 Claims



Means for permitting the quick and easy mounting of an accessory within an outlet box including a pair of side-by-side mounting lugs mounted for pivotal movement on each of two opposing portions of the outlet box and extending outwardly therefrom, each lug having an internally threaded concavity in the side thereof adjacent the other lug with said concavities cooperating to define internally threaded openings through each pair of said mounting lugs adapted to threadably receive therein screws connected to the accessory, and the lugs being movable away from each other upon a screw being pushed through the opening defined therebetween to permit the quick and easy insertion thereinto of a screw substantially to the fully inserted position and toward each other upon rotation of the screw in a clockwise direction to permit tightening of the screw and secure locking of the accessory within said outlet box.

3,526,704
METHOD AND APPARATUS FOR COLOR PRINTING AND THE LIKE

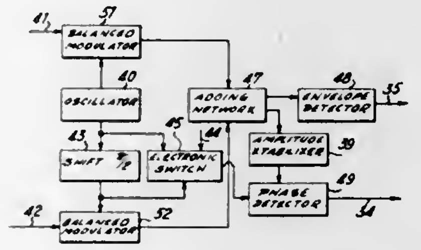
William C. Heller, Jr., 1840 N. Farwell Ave., Milwaukee, Wis. 53202
Filed Nov. 9, 1965, Ser. No. 506,991
Int. Cl. H04n *1/46;* **G01d** *15/12;* **B41m**
U.S. Cl. 178—5.2 14 Claims



1. A photo detection apparatus for producing a scanning pattern of electrical signals from an image that is to be reproduced comprising means providing an array having a plurality of sets of individual photosensitive elements wherein the photosensitive elements of each set are disposed in predetermined staggered relationship to the photosensitive elements of any other set, means for creating uni-directional relative scanning movement between said array and said image so that the elements of the first of said sets scan a first set of path regions extending the full length of said image each to produce an electrical signal scanning pattern representative thereof and so that the elements of each successive set scan a separate set of path regions extending the full length of said image and disposed at least partly between the previously scanned path regions each to produce an electrical signal scanning pattern, said sets of elements being sufficient to cumulatively scan the entire image region.

3,526,705
SUBCARRIER CIRCUITS FOR COLOUR TELEVISION APPARATUS

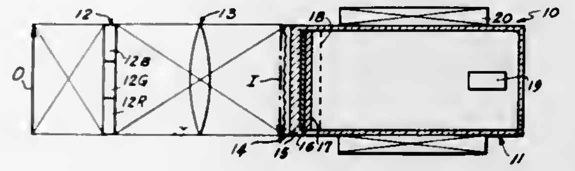
Gerard Melchior, Asnieres, France, assignor to Compagnie Francaise de Television, a corporation of France
Filed Feb. 7, 1967, Ser. No. 614,458
Claims priority, application France, Feb. 16, 1966, 49,876
Int. Cl. H04n *9/32*
U.S. Cl. 178—5.4 5 Claims



The disclosure relates to a circuit for generating a color subcarrier in colour television systems of the type in which the subcarrier is used for alternately transmitting two color signals D_1 and D_2. The subcarrier produced is amplitude modulated by a signal $D=\sqrt{D_1^2+D_2^2}$, with $D_1=D \cos \varphi$ and $D_2=D \sin \varphi$, and frequency modulated by a signal M which is alternately equal to $D_1/D=\cos \varphi$ and $D_2/D=\sin \varphi$.

3,526,706
COLOR VIDEO SIGNAL GENERATING APPARATUS

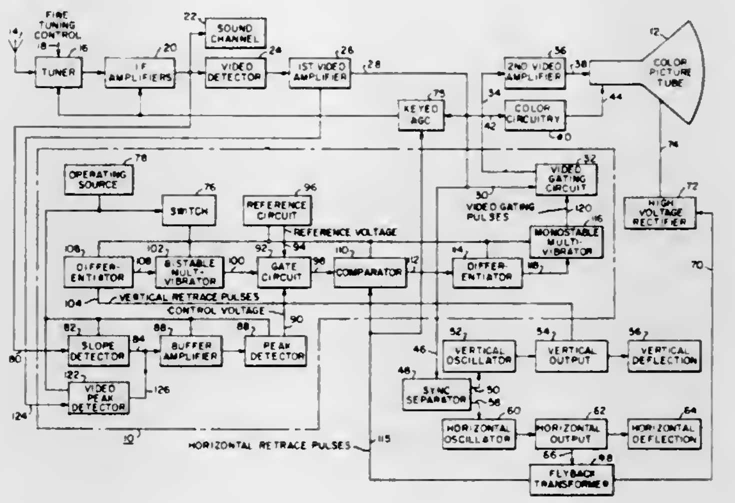
Toshiro Watanabe, Zushi-shi, Kanagawa-ken, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed June 13, 1967, Ser. No. 645,727
Claims priority, application Japan, June 15, 1966, 41/38,672
Int. Cl. H04n *9/24*
U.S. Cl. 178—5.4 13 Claims



In a color video signal generating apparatus employing a single image pickup tube, an assembly of parallel cylindrical lenses is disposed in front of the face plate of the pickup tube with the longitudinal axes of such lenses at a substantial angle, for example, perpendicular, to the scanning direction of the tube, a filter constituted by a simple pattern of filter elements having different wavelength band characteristics in the form of stripes parallel to the cylindrical lenses is disposed in front of the cylindrical lens assembly so that light from an object to be televised passes through the filter elements and is separated into a plurality of color components, and a camera or objective lens is interposed between the filter and cylindrical lens assembly to focus a real image of the object at the plane containing the focus points of the cylindrical lenses so that the portion of such image corresponding to each cylindrical lens is projected as separated color images on the photoconductive layer of the tube to obtain from the latter dot-sequential color video signals.

3,526,707
FINE TUNING INDICATOR

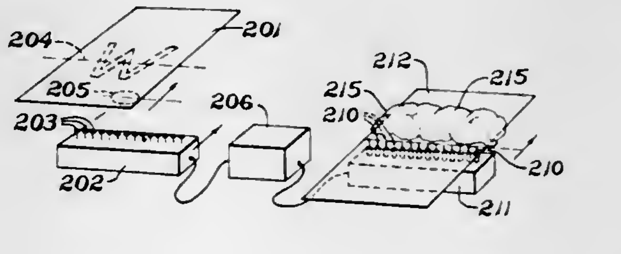
Kenneth R. Skinner, Metuchen, and Jing-Jue Young, Elizabeth, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1967, Ser. No. 629,997
Int. Cl. H04n *5/50*
U.S. Cl. 178—5.8 9 Claims



The present disclosure relates to a fine tuning indicator circuit to aid in the exact fine tuning of a television receiver, especially a color receiver. Control signals are generated in the indicator circuit and are utilized to display a control line on the picture tube indicative of the fine tuned state of the receiver. Reference signals are also generated to display a reference line on the picture tube. By adjusting the fine tuning control of the receiver, the control line may be brought into alignment with the reference line thus indicating proper fine tuning adjustment.

3,526,708
MAGNETIC THROUGH-FIELD APPARATUS AND PROCESS FOR PRINTING BY IMBEDDING PARTICLES IN A RECORD MEDIUM

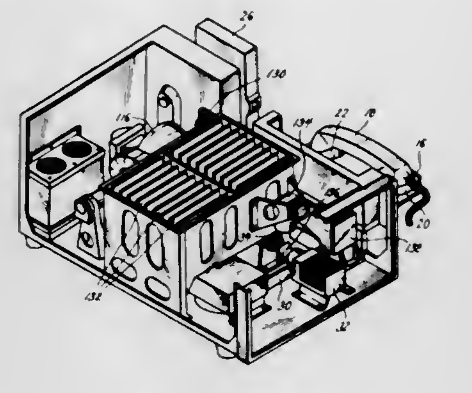
Alfred F. Leatherman, Upper Arlington, Ohio, assignor, by mesne assignments, to William C. Heller, Jr., Milwaukee, Wis.
Filed Nov. 9, 1965, Ser. No. 506,960
Int. Cl. B41m; G01d *15/12*
U.S. Cl. 178—6.6 38 Claims



A printing method and apparatus employs a high frequency magnetic through-field of high strength for effecting permanent lodging of pulverized magnetic particles on ordinary paper in a simple one step operation. The strength of the magnetic field is several times the value required for simple transfer deposit of magnetic particles. The field is concentrated by use of an edged field plate to facilitate providing the desired field strength. Numerous embodiments for practicing the invention are disclosed.

3,526,709
MEANS FOR TRANSMITTING PICTORIAL INFORMATION OVER TELEPHONE LINES

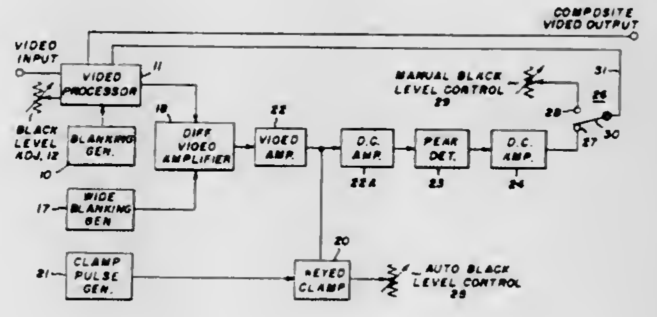
John C. Butterworth, Overland, Horace S. Allen, St. Louis, and Rynor L. Stratton, Dellwood, Mo., assignors, by mesne assignments, to McDonnell Douglas Corporation, St. Louis County, Mo., a corporation of Maryland
Filed Jan. 30, 1967, Ser. No. 612,613
Int. Cl. H04m *11/08;* **H04n** *1/02, 1/36*
U.S. Cl. 178—6.8 5 Claims



A device for use with existing telephone equipment including means for sending audible information signals representing a pictorial image to be transmitted from a telephone set over a telephone line and means for receiving such audible signals sent by other similar devices associated with other telephones including means to reproduce a transmitted pictorial image from said audible signals.

3,526,710
AUTOMATIC BLACK LEVEL CONTROL OF TELEVISION SIGNALS

Hugh H. Martin, North Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 30, 1967, Ser. No. 627,033
Int. Cl. H04n *5/18*
U.S. Cl. 178—7.2 5 Claims

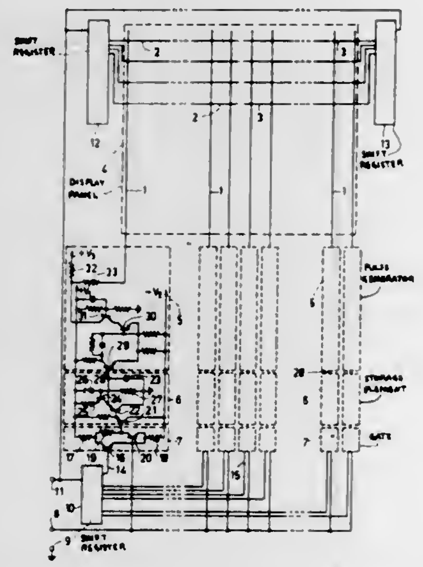


Apparatus for maintaining reference black level represented by blanking in a blanked video signal in a predetermined relationship to peaks in the video signal corresponding to black. A control voltage representing the difference between the black video peaks and reference black level is used to vary the clipping level of blanking in the banked video signal.

3,526,711
DEVICE COMPRISING A DISPLAY PANEL HAVING A PLURALITY OF CROSSED CONDUCTORS DRIVEN BY AN AMPLITUDE TO PULSE WIDTH CONVERTER

Thijs Johannes de Boer, Emmasingel, Eindhoven, Netherlands, assignor, by mesne asisgnments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 29, 1967, Ser. No. 671,879
Claims priority, application Netherlands, Sept. 30, 1966, 6613813
Int. Cl. H04n *3/10, 5/70*
U.S. Cl. 178—7.3 10 Claims

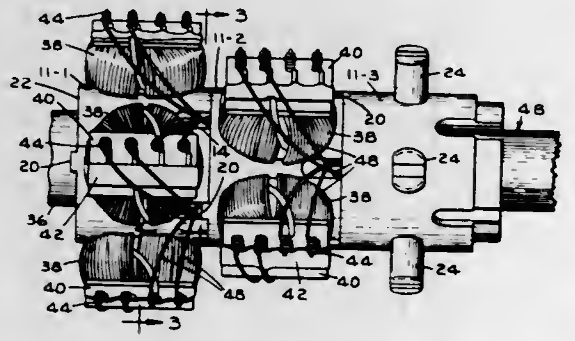


A circuit for energizing a display panel of the type having luminescent picture elements at conductor crossings. In order to improve picture contrast, the input signals are converted to constant amplitude pulses having widths corresponding to the instantaneous amplitude of the signal.

3,526,712
COIL MOUNTING ASSEMBLY

Edwin L. Drom, Glen Ellyn, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 8, 1968, Ser. No. 719,314
Int. Cl. H01f *17/08, 27/30*
U.S. Cl. 178—46 7 Claims

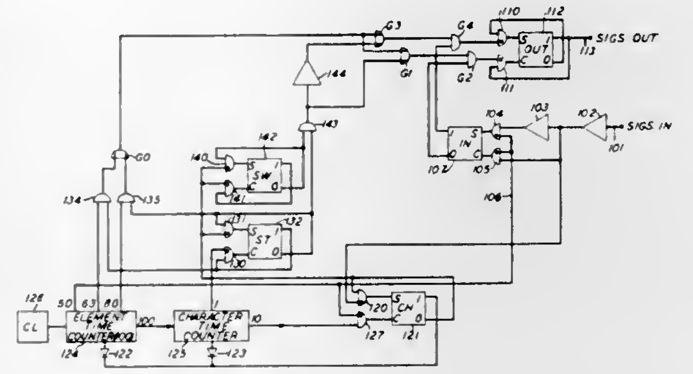


An assembly for mounting electrical coils onto a stub length of a telephone cable, comprising a cylindrically-shaped sleeve capable of fitting over the stub cable and having provisions at each end thereof for nesting with adjacent mounting assemblies along the length of the stub cable. A plurality of short coil mounts extend radially from the outside surface of the cylindrical sleeve, and a toroidal coil assembly is mounted on each coil mount with the coil mount extending through the central opening of the electrical coil and latching it to prevent its easy removal from the coil mount.

3,526,713
DATA SIGNAL DISTORTING GENERATOR

Peter Elvis, South Ozone Park, N.Y., and George P. Houcke, Tenafly, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed June 24, 1966, Ser. No. 560,135
U.S. Cl. 178—69 5 Claims

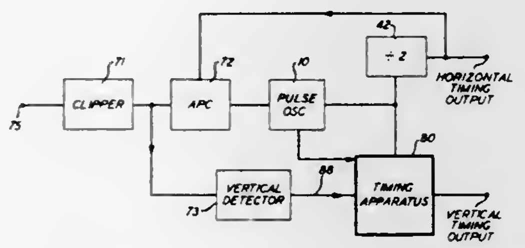


Successive transitions of the elements of a data character are alternately advanced and delayed (or delayed and advanced) with respect to the start element to thereby widen or narrow the element pulse. The distorting set repeats each start pulse transition after a one-unit increment delay and repeats each subsequent transition in the character after, alternatively, no delay or a two-unit increment delay.

3,526,714
TELEVISION RECEIVER SYNCHRONIZING APPARATUS

David C. Fisk, Laurence Harbor, and Alan M. Gordon, Matawan Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Jan. 25, 1968, Ser. No. 700,575
Int. Cl. H04n *5/04*
U.S. Cl. 178—69.5 9 Claims

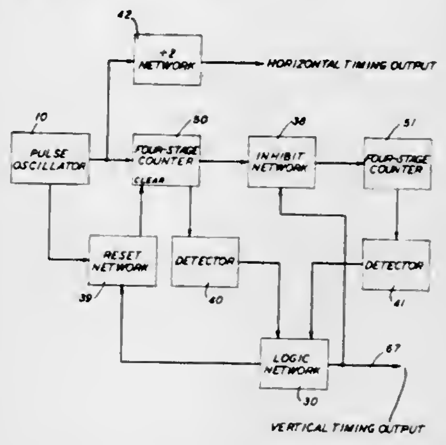


In order to generate synchronizing signals for a video receiver, a source of pulse signals, phase-locked to incoming horizontal timing signals, drives a plurality of binary counters, the number, N, of which is intimately related to the number of lines per frame in a raster display. A signal is generated upon the simultaneous occurrence of a predetermined energy state in the N counters. The generated signal inhibits a predetermined number, *i*, of the N counters and simultaneously initiates vertical retrace. A gating network prevents the application, by the source, of subsequent pulses to the uninhibited counters unless there is also present at the receiver, a received vertical timing signal. Upon the occurrence of a received vertical timing signal, pulses are again applied to the counters to complete the vertical retrace period. Simultaneously, horizontal synchronizing signals are developed by divider apparatus responsive to the signals of the driving source.

3,526,715
TELEVISION TIMING SIGNAL GENERATOR

William B. Cagle, Colts Neck, and Alan M. Gordon, Matawan Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Jan. 25, 1968, Ser. No. 700,590
Int. Cl. H04n *5/06*
U.S. Cl. 178—69.5 9 Claims

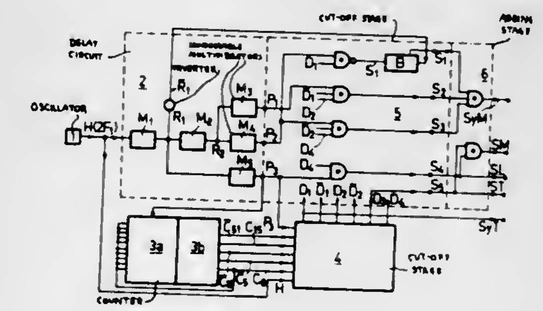


In order to generate vertical and horizontal timing signals for television transmitter apparatus, without resorting to conventional step counters, a source of pulse signals drives a number, N, of interconnected binary multivibrators. A signal is generated upon the simultaneous occurrence of a predetermined energy state in the N multivibrators. The generated signal inhibits a predetermined number, *i*, of the N multivibrators and simultaneously initiates vertical retrace. The uninhibited multivibrators, *N—i*, continue to respond to the applied pulse signals until they again attain a predetermined energy state. Inhibition is thereupon terminated and all N multivibrators returned to their initial energy state. Vertical retrace is simultaneously terminated and the apparatus is thus prepared to generate a new vertical timing signal. Horizontal timing signals are developed simultaneously by divider apparatus responsive to the signals of the driving source.

3,526,716
GENERATORS TO FORM TELEVISION SYNCHRONIZING SIGNALS

Roger Brun, Paris, France, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 12, 1968, Ser. No. 720,894
Claims priority, application France, Apr. 14, 1967, 102,836
Int. Cl. H04n *5/06*
U.S. Cl. 178—69.5 7 Claims

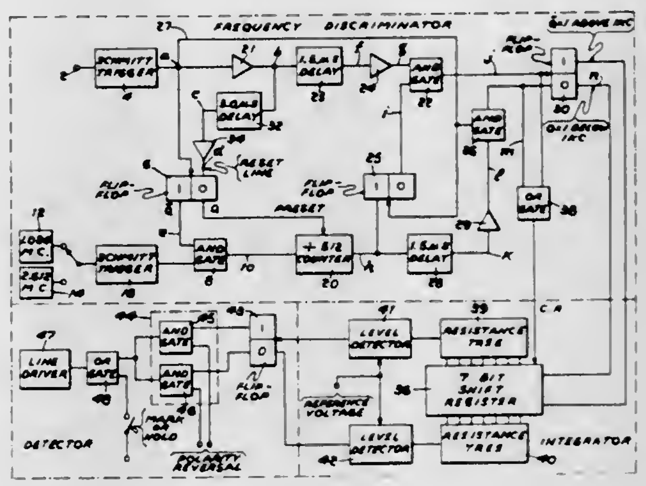


A synchronizing signal generator for a television camera is fabricated from commercially available integrated logic circuits. The signals to be combined are developed from a square wave signal by means of logic elements connected as five monostable multivibrators. These signals are combined by means of gates controlled by signals derived from a counter built up from integrated logic circuits.

3,526,717
DIGITAL FREQUENCY SHIFT CONVERTER

Don I. Himes, Falls Church, Va., and Frank V. Altamuro, Wyckoff, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Aug. 9, 1967, Ser. No. 659,409
Int. Cl. H04l *27/14*
U.S. Cl. 178—88 7 Claims

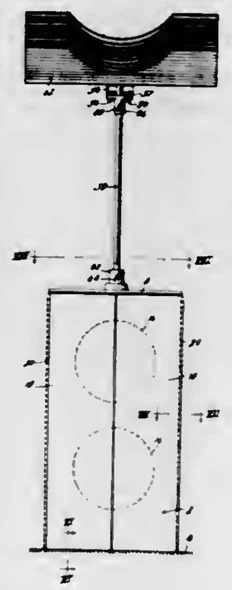


A system is described for keying a teletype line in which a frequency discriminator produces a frequency determination in the time domain while a seven bit shift register is employed for integration in order to eliminate bias distortion and a detector activates a keyer for the teletype loop.

3,526,718
PORTABLE SPEAKER ASSEMBLY FOR LARGE AREAS

David L. Beatty, 10712 E. 84th Terrace, Raytown, Mo. 64138

Filed Apr. 17, 1967, Ser. No. 631,346
Int. Cl. H04r *1/02, 27/00*
U.S. Cl. 179—1 1 Claim



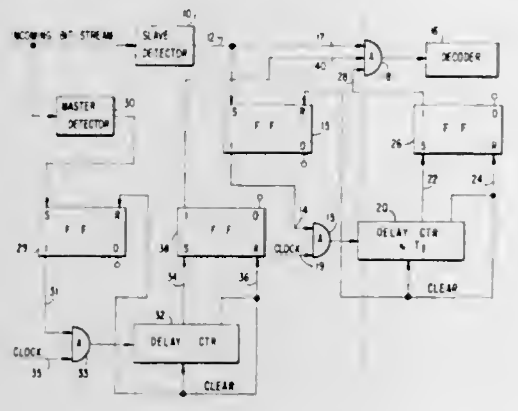
This application discloses a portable speaker assembly consisting of a floor-supported base cabinet containing "woofer" speakers particularly suited for reproducing low-frequency sounds, a "tweeter" speaker particularly suited for reproducing high-frequency sounds, means for supporting said high-frequency speaker at an adjustable distance above said base cabinet, and means for adjusting the vertical angle of sound projection of said high-frequency speaker.

3,526,719

DOUBLE APERTURE TECHNIQUE FOR DETECTING STATION IDENTIFYING SIGNAL IN A TIME DIVISION MULTIPLE ACCESS SATELLITE COMMUNICATION SYSTEM

John G. Puente, Rockville, Md., and Winfried H. Schrempp, Bailey's Crossroads, Va., assignors to Communications Satellite Corporation, a corporation of Washington, D.C.

Filed Nov. 17, 1966, Ser. No. 595,133
Int. Cl. H04j *3/06*
U.S. Cl. 179—15 9 Claims



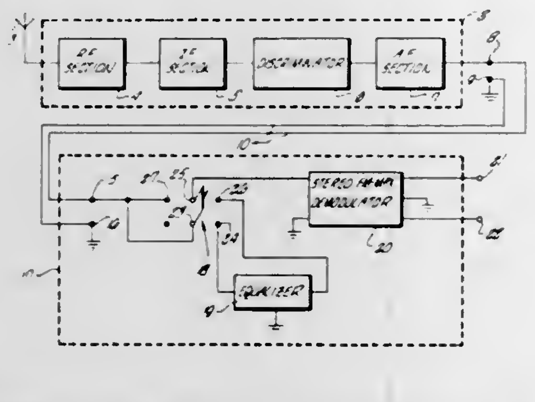
An improved method and apparatus for decreasing the likelihood of error in detecting the unique word contained in a TDM signal burst transmitted from a slave earth station to an orbital satellite and relayed back to the station. The slave station also detects the master station unique word. The first bit pattern recognized as the slave station's unique word is delayed one TDM frame time to form a gate or aperture with a suitably delayed master station unique word at the time when the next slave station unique word should be detected. The master station unique word contains more bits than the slave station in order further to increase the reliability of this double aperture technique and further reduced the likelihood of falsely detecting a slave station unique word.

3,526,720

STEREO ATTACHMENT FOR STANDARD FREQUENCY MODULATION RECEIVER

Darrell L. Gourley, 371 Maria St., Santa Clara, Calif. 95050

Filed June 22, 1967, Ser. No. 648,041
Int. Cl. H04k *5/00*
U.S. Cl. 179—15 10 Claims



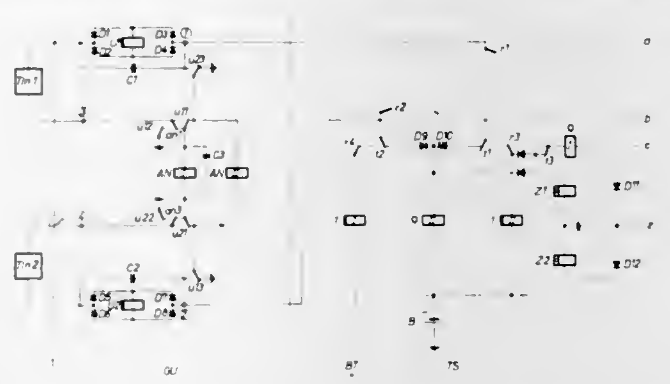
An equalizer connected to the audio output of a standard frequency modulation receiver derives a usable stereo multiplex signal. The equalizer has a frequency response that substantially complements the frequency response of the receiver at its audio output throughout the stereo multiplex range. The signal derived by the equalizer is applied to a standard stereo multiplex demodulator that produces two audio signals in stereo relationship to one another. The transfer function of the equalizer consists within the stereo multiplex range of one zero at 2.1 kilohertz plus a combination of one or more poles and/or zeros located between zero and 53 kilohertz. The transfer function of the latter combination can be alternated by changing the setting of variable components to complement the transfer function of any particular receiver.

3,526,721

REVERTIVE CALL CIRCUIT

Peter Lösch, Stuttgart-Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 2, 1967, Ser. No. 613,663
Claims priority, application Germany, Feb. 2, 1966, St 24,936
Int. Cl. H04m *13/00*
U.S. Cl. 179—17 10 Claims



An internal connection between the two subscribers of a two-party line is established by positioning the final selector, seized by the calling subscriber, onto the common party line and by cancelling the busy criterion of this party line in the final selector for the time it makes a busy-test. Thus a ringing circuit is established for the called subscriber and a series-connection of the two subscribers of the two-party line is prepared in the party-line-switch.

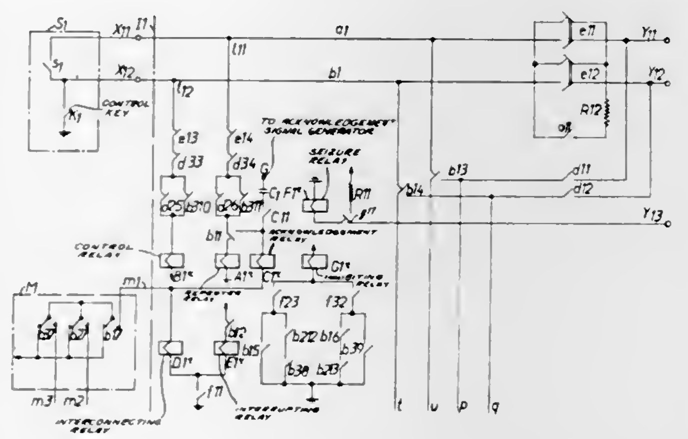
Feeding current for subscribers is provided by the final selector, the other components of the exchange, having participated in establishing the connection are held operative in local circuits.

3,526,722

SWITCHING SYSTEM TO DIVERT CALLS TO A SECOND LINE

Egide Jacob Hendrik Deraedt, Hoboken, and George Pieter Adolf Mathildis de Bruyne, Lebbeke, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 27, 1966, Ser. No. 594,326
Claims priority, application Netherlands, Nov. 11, 1965, 6514677
Int. Cl. H04m *3/54*
U.S. Cl. 179—18 9 Claims



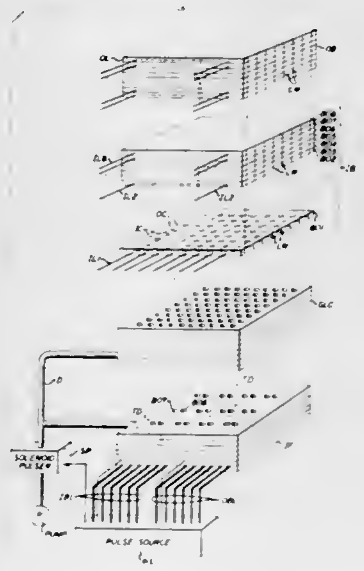
An absentee line circuit adapter is provided for telephone systems. The adapter re-routes calls to another predetermined line in the same exchange as soon as the subscriber wishing to transfer calls to this line depresses a grounding key. The subscriber may then check to see if re-routing has been established by lifting the handset, at which time a special tone will indicate that from then on calls will be transferred.

3,526,723

SWITCHING SYSTEM UTILIZING FLUID LOGIC DEVICE

David J. Thomson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 10, 1967, Ser. No. 659,794
Int. Cl. H04q *1/00;* **H04m** *3/00*
U.S. Cl. 179—18 4 Claims



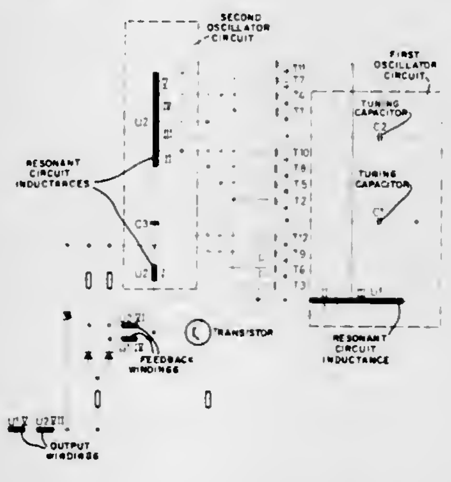
A switching system for connecting predetermined ones of incoming telephone circuits to predetermined ones of outgoing telephone circuits utilizes fluid logic devices to obtain compact low resistance switching arrays. Electrical signals are converted to fluid pressure signals by electrostatically deflecting a fluid jet thereby creating pressure pulses or fluid signals at output ports which initiate low resistance connections at appropriate cross-points in the switching matrix.

3,526,724

KEY-CONTROLLED TWO-FREQUENCY AF GENERATOR

Lorenz Gasser, Stuttgart, Germany, assignor to International Standard Electric Corporation

Filed Jan. 23, 1967, Ser. No. 610,984
Claims priority, application Germany, Jan. 28, 1966, St 24,918
Int. Cl. H04m *1/50*
U.S. Cl. 179—90 6 Claims



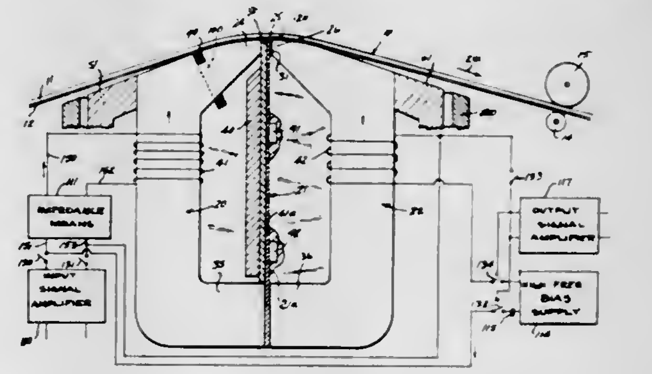
Key operated audio frequency system using a minimum of contacts to provide two tones per operated key plus safety from false signalling when keys are unintentionally operated. Two resonant circuits are provided for one active element. The frequency of one resonant circuit is determined by opening a break contact of a switchover contact chain. The other circuit frequency is determined when the contact broken makes to select an inductive tap.

3,526,725

ELECTROMAGNETIC TRANSDUCER HEAD WITH PLURAL MAGNETIC CIRCUITS, GAPS AND WINDINGS

Marvin Campas, Glencoe, Ill., assignor to Armour Research Foundation of Illinois Institute of Technology, Chicago, Ill., a corporation of Illinois

Original application July 24, 1961, Ser. No. 126,121, now Patent No. 3,334,192, dated Aug. 1, 1967. Divided and this application June 12, 1967, Ser. No. 645,114
Int. Cl. G11b *5/10, 5/20, 5/26*
U.S. Cl. 179—100.2 13 Claims



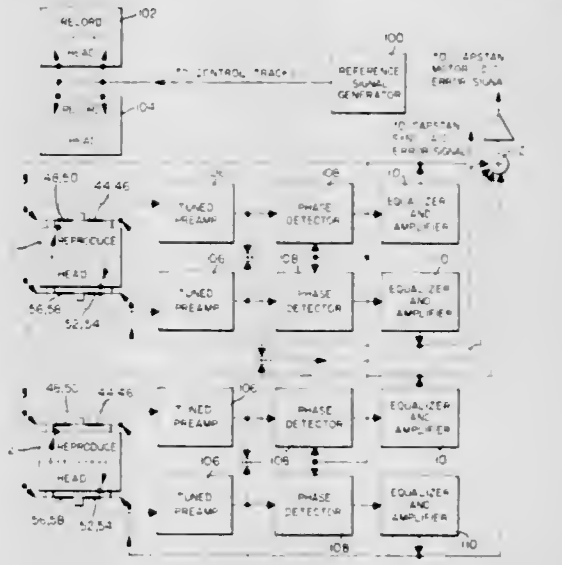
A high resolution transducer head comprises channel cross section core parts providing increased flux carrying capacity with low eddy current loss; auxiliary relatively unstressed magnetic material associated with the core parts further increases flux carrying capacity and reduces the susceptibility of the head to residual magnetization. Playback heads are shown with plural windings of different size and/or linked to different magnetic circuits of the head for improved or corrected frequency response.

3,526,726

PIEZOELECTRIC TRANSDUCER ASSEMBLY FOR POSITIONING A MAGNETIC RECORD/REPRODUCE HEAD

James P. Corbett, Palo Alto, and Giacomo Vargiu, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

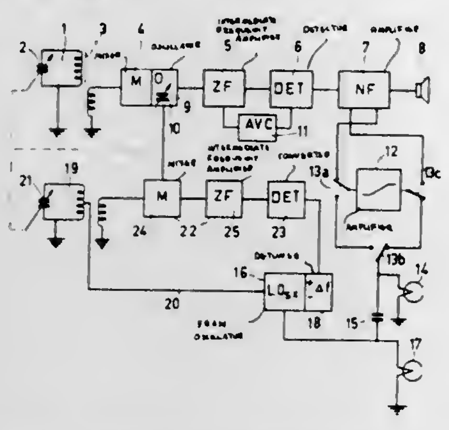
Filed Sept. 27, 1967, Ser. No. 670,883
Int. Cl. G11b *21/10;* **H01v** *7/00*
U.S. Cl. 179—100.2 7 Claims



An electrical positional control system including mounting assembly for a movable element, e.g. a magnetic head for a magnetic tape recorder/reproducer; said element being suspended about piezoelectric transducers which transducers are responsive to correcting signals for reducing relative physical displacement errors of said element, e.g. head displacement relative to the tape in a magnetic tape recorder/reproducer. Said correcting signals may be in the form of signals to correct for skew, time base error or guide errors in tape recorder/reproducers.

3,526,727
DEVICE FOR AUTOMATICALLY ELIMINATING ERASE OSCILLATOR INTERFERENCE IN A COMBINED RADIO AND MAGNETIC RECORDER

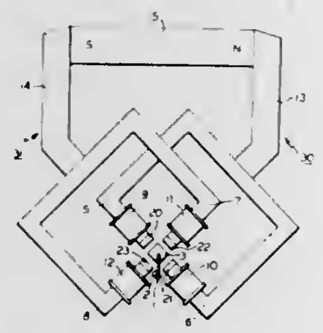
Rudolf Rainer and Rudolf Drabek, Vienna, Austria, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 22, 1967, Ser. No. 625,087
Claims priority, application Austria, Mar. 24, 1966, A 2,800/66
Int. Cl. H04b *1/14, 15/04;* **G11b** *31/00*
U.S. Cl. 179—100.11 **9 Claims**



When a radio receiver and magnetic recorder are combined, interference can result due to the presence of a harmonic of the recorder erasing oscillations within the band of a received signal. In order to shift the erase oscillator frequency to avoid such interference, the oscillations are mixed with the local oscillations of the receiver (after passing through a resonant circuit tuned synchronously with the receiver tuner). The resultant intermediate frequency signal is detected, for example by a frequency demodulator, to produce a control voltage for controlling the erase oscillator.

3,526,728
VARIABLE RELUCTANCE TYPE PICKUP CARTRIDGE

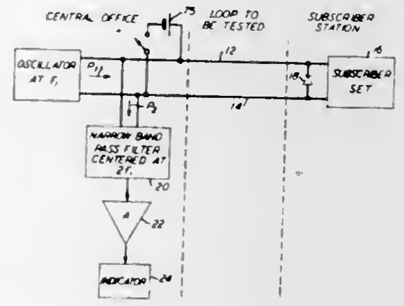
Atsushi Iga, Hirakata-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
Filed Aug. 22, 1967, Ser. No. 662,473
Claims priority, application Japan, Oct. 20, 1966, 41/69,378
Int. Cl. H04r *11/12*
U.S. Cl. 179—100.41 **7 Claims**



A magnetic stereophonic phonograph pickup comprising a pair of magnetic circuit elements connected with a magnet, each of said pair of magnetic circuit elements consisting of a pair of pole pieces opposed to each other, consisting of a yoke connected to a pole of said magnet, consisting of two cores and consisting of two coils which are wound around said two cores, respectively and which are series-connected to each other so as to act as a single coil, said pair of pole pieces of one of said pair of magnetic circuit elements being on a line which is perpendicular to the line on which the pair of pole pieces of the other of said pair of magnetic elements lies, and an armature which is composed of a magnetic material and is positioned in the space having the magnetic field from the two pairs of said pole pieces so as to move freely in accordance with the movement of a stylus which is connected to said armature through a shank made of nonmagnetic material.

3,526,729
TRANSMISSION MEASURING SYSTEM WITH HARMONIC GENERATING MEANS

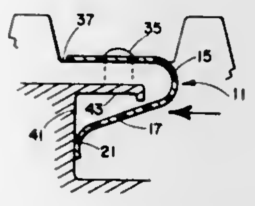
Frederick T. Andrews, Jr., Berkeley Heights, and Doren Mitchell, Martinsville, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 13, 1966, Ser. No. 542,336
Int. Cl. H04m *5/00*
U.S. Cl. 179—175.3 **8 Claims**



A system is described which utilizes a remotely located harmonic generator which gives rise to harmonic signals in response to locally applied signals of known frequency content. By measuring the harmonic content present locally, it is possible to derive an indication of conditions existing at the remote location or on the telephone subscriber's loop connecting the local and remote locations. Said harmonic generator consists of a diode placed across said subscriber's loop such that it is normally back biased by the talking battery.

3,526,730
TELEPHONE SWITCH BUTTON RETAINING DEVICE

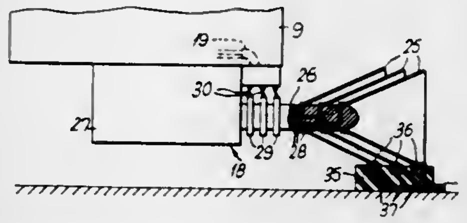
Roy E. Horton, 3097 Bayer St.,
Marina, Calif. 93933
Filed June 7, 1967, Ser. No. 644,311
Int. Cl. H04m *1/02*
U.S. Cl. 179—189 **5 Claims**



A device for maintaining telephone switch buttons in a depressed inoperative position when the handset is lifted from its cradle, comprising a spring clamp member for disposition across the cradle platform of the phone between the switch buttons, having side extensions with apertures therein for slidably moving over the switch buttons.

3,526,731
FLEXIBLE CURRENT COLLECTOR FOR VEHICLES

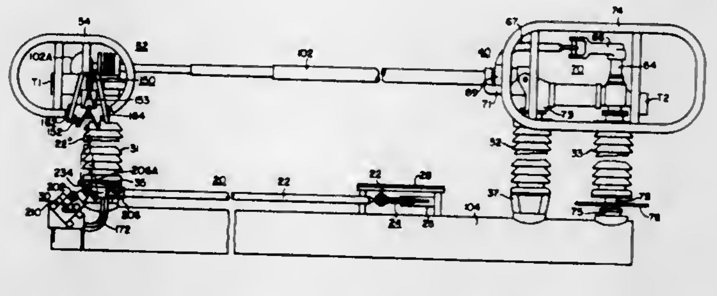
Christopher Sydney Cockerell, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Apr. 24, 1968, Ser. No. 723,722
Claims priority, application Great Britain, May 2, 1967, 20,370/67
Int. Cl. B60l *5/36*
U.S. Cl. 191—49 **15 Claims**



The invention relates to a vehicle, for travelling along a predetermined path, provided with electrical pick-up means for collecting current from a stationary conductor, the pick-up means comprising movable conductor means of flexible construction, and movable so that the part thereof which contacts the stationary conductor travels in a direction, which is opposite to the direction in which the vehicle is moving. There are means for urging the pick-up conductor against the stationary conductor so that the pick-up conductor deflects to provide substantial contact with said stationary conductor. The pick-up conductor has a form whereby, during its movement, a portion thereof is continuously maintained in contact with said stationary rail.

3,526,732
ELECTRIC SWITCH STRUCTURE

John P. McKinnon, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 673,673
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **9 Claims**

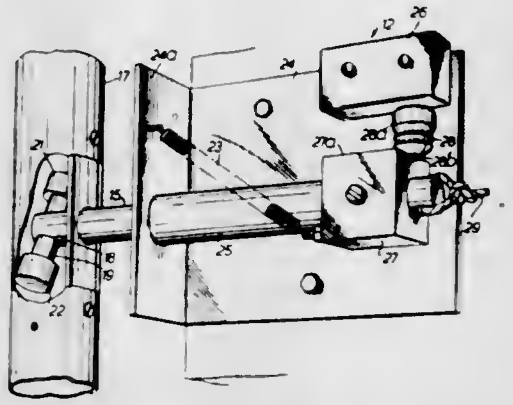


This invention relates to electric switches and more specifically to high voltage switches which are particularly suitable for use as grounding switches. A switch blade is supported on a rotatable shaft with the blade being disposed on the shaft to follow a generally conical path when the shaft is rotated between a first position which lies in substantially a predetermined plane and a second position which lies in substantially the same plane but is displaced from the first position.

3,526,733
TUBULAR CAM OPERATING SAFETY DEVICE

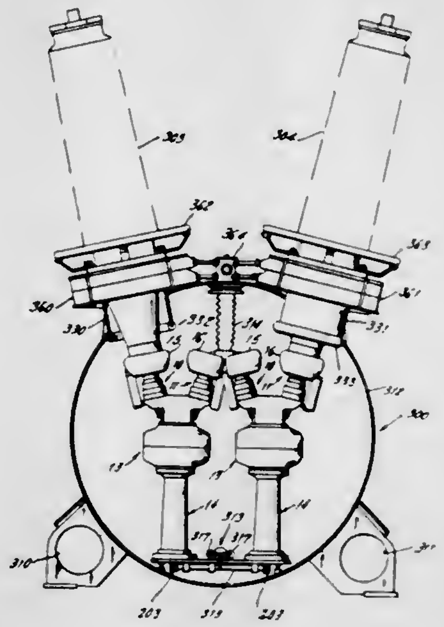
Dennis Graham Troll, The Green, Henton, Oxfordshire, England, assignor to Dewhurst & Partner Limited
Filed Oct. 3, 1968, Ser. No. 764,765
Int. Cl. E05f *15/02;* **H01h** *3/16*
U.S. Cl. 200—61.43 **3 Claims**

An elevator lift door safety device consists of a tubular member mounted extending along the door edge to engage an obstruction, an operating shaft extending laterally into the tubular member, and a cam on the operating shaft inside the tubular member. The cam consists of a cross-shaft normally skewed relative to the tubular member, carrying a pair of rollers. Movement of the tubular member in any direction aligns the cross-shaft therewith, thereby rotating the operating shaft to operate the safety device.



3,526,734
DEAD TANK GAS BLAST CIRCUIT BREAKER WITH INTERRUPTER STRUCTURE IMMERSED IN LOW PRESSURE OF DEAD TANK

Daniel H. McKeough, Pasadena, Calif., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 6, 1967, Ser. No. 680,849
Int. Cl. H01h *33/82*
U.S. Cl. 200—148 **8 Claims**



An interrupter structure comprises a stationary contact structure which is axially, laterally and angularly adjustable. A support disk threadably receives the stationary contact and has an internal groove that permits tightening of the web interior on the stationary contact external threads. The support disk also has enlarged bolt receiving openings to permit its lateral adjustment. A movable contact has a plurality of inwardly biased fingers that have a limited inward collapse and are surrounded by a movable interrupter cylinder that moves into engagement with the bottom of the stationary contact and is mounted on spring biased pins which bias the movable interrupter tube open. A mechanism having outwardly extending ears carries a blast valve assembly in a casting which mounts the interrupter tube on a high pressure tank. The outward extending ears are connected to the ends of the movable contact assembly. A main operating shaft which extends through a main support insulator for each pole is connected to the blast valve through a spring coupling and moves the blast valve and contact with the valve moving from one seat to another to permit a gas blast from the high pressure tank as the contacts and blast valve are moved. The main support insulators, which are hollow, are mounted within main support housings for each pole of a three pole breaker. Each of the main housings are mounted on grounded main pressure suply tanks along with a control housing. An operating rod extending from the control housing through a flexible bellows is connected by sealed piping to each of the operating shafts of each of the poles.

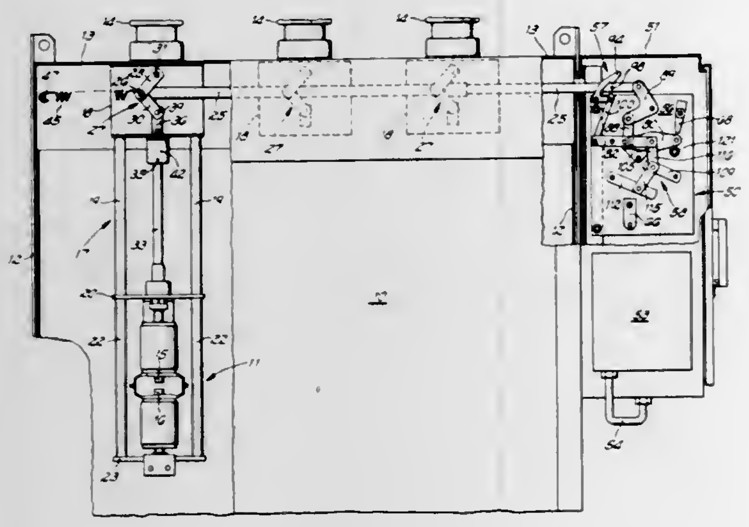
3,526,735
REPEATING CIRCUIT INTERRUPTER

Kazuo Henry Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware

Filed June 15, 1966, Ser. No. 557,660

Int. Cl. H01h *3/00*

U.S. Cl. 200—153 **7 Claims**



An operating mechanism for a vacuum circuit interrupter is provided in which an operating means moves between first and second positions in which the electrodes of the vacuum interrupter are respectively closed and open. The operating means is held in its second position by the operating mechanism to prevent reclosing of the electrodes until the operating mechanism releases the holding means. The operating mechanism and a closing means cooperate to reclose the electrodes and charge a resilient opening means through a toggle linkage means. The linkage means is connected to the resilient means and the operating means so that the mechanical lever advantage of the linkage means is utilized in charging the resilient means to thereby reduce the amount of force that must be applied to charge the resilient means.

3,526,736
SLIDING CONTACT

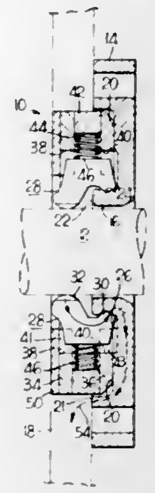
Joseph M. Ramrath, Mattapan, Mass., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 19, 1968, Ser. No. 785,227

Int. Cl. H01h *1/34;* **H01n** *1/54*

U.S. Cl. 200—166 **6 Claims**

A sliding contact for engagement with a cylindrical bayonet type contact having a central opening and a plurality of pivotal contact fingers radially disposed around the opening so that one end of each contact finger can make sliding engagement with the side of the bayonet contact when the latter enters the opening. Current flow, from the bayonet contact to the sliding contact, follows a looped path and generates a magnetic field which aids in forcing the contact fingers against the bayonet contact.



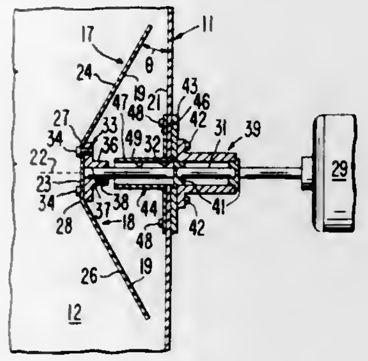
3,526,737
MICROWAVE HEATING APPARATUS

Rexford E. Black, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Mar. 20, 1967, Ser. No. 624,503

Int. Cl. H05b *9/06*

U.S. Cl. 219—10.55 **8 Claims**



The microwave heating apparatus has a rectangular microwave oven which acts as a multimode cavity resonator. The oven is provided with a door hinged at the front thereof. The oven is excited by coupling a microwave energy source to a waveguide feed centrally located in the top wall of the oven. A disc-shaped conductive member whose diameter is greater than one-half the free space wavelength of the applied energy is rotably mounted at its center to the back wall of the oven. Diametrically opposite equal segments of the disc are bent to incline towards the back wall of the oven.

3,526,738
PHASE-MATCHING DEVICE FOR ELECTRONIC OVENS

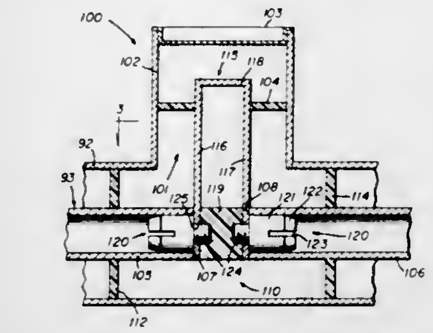
James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Oct. 17, 1968, Ser. No. 768,370

Int. Cl. H05b *9/06;* **H03h** *7/30*

U.S. Cl. 219—10.55 **12 Claims**

An electronic oven is disclosed including a cooking cavity and a source of high frequency electromangetic wave energy coupled thereto by a coaxial type transmission line of limited physical length, the inner conductor of the transmission line comprising two spaced-apart sections defining therebetween a gap of a predetermined length, and an electrically conductive U-shaped member having a pair of legs respectively connected to the inner conductor sections for bridging the gap therebetween, the distance along said U-shaped member between the inner conductor sections being greater than the predetermined length but not greater than the electrical wave length at the operating frequency of the source.



3,526,739
DIELECTRIC HEATING APPARATUS

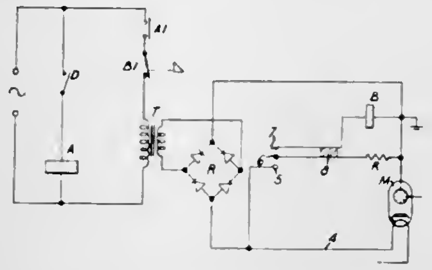
Gilbert M. Gill, Knowl Hill, Reading, England, assignor to Dysona Industries Limited, Wokingham, Berkshire, England, a British company

Filed Oct. 25, 1968, Ser. No. 770,497

Claims priority, application Great Britain, Oct. 27, 1967, 49,037/67

Int. Cl. H05b *5/00, 9/06*

U.S. Cl. 219—10.55 **5 Claims**



In dielectric heating apparatus (for example, a microwave oven) having a door or lid giving access to a heating chamber, the opening of the door enables a movable conductor having a path through an electrical connection to ground to make electrical contact with a high voltage terminal; furthermore, if there is a flow of current in the grounding connection when the door is opened, a disconnecting means responds to this flow to open a further contact to cause the removal of high voltage.

3,526,740
PROCESS FOR SUPPLYING GAS MIXTURES TO WELDING AND CUTTING APPARATUS

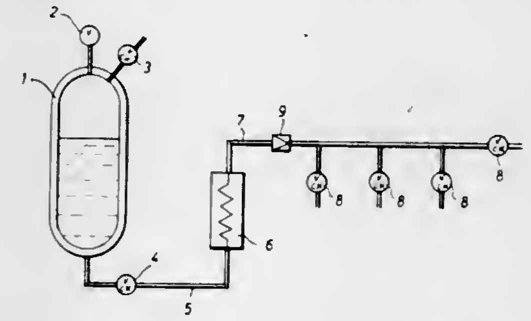
Georg Brinkmann, Hubbelrath, and Heinrich Schrader, Hochdahl, Germany, assignors to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany

Filed Feb. 10, 1969, Ser. No. 798,046

Claims priority, application Germany, Feb. 14, 1968, 1,667,199

Int. Cl. B23k *9/16, 35/38*

U.S. Cl. 219—74 **1 Claim**



Liquid oxygen and liquid argon are mixed, then vaporized and then supplied as a protective gas mixture to a welding and cutting apparatus.

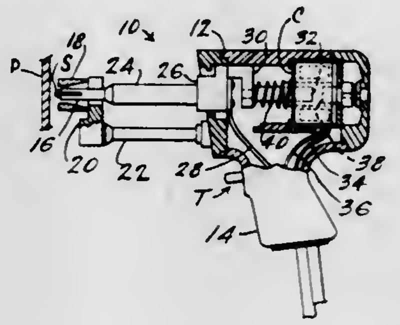
3,526,741
METHOD AND APPARATUS FOR WELDING STUDS

Paul A. Glorioso, Amherst, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 7, 1966, Ser. No. 599,950

Int. Cl. B23k *9/00*

U.S. Cl. 219—98 **8 Claims**



A stud welding tool is provided with means for automatically stripping the chuck of the tool from the welded stud. In welding studs to a workpiece, the studs are frictionally held in a chuck of the tool and after the stud is welded, the tool must be physically withdrawn to pull the chuck off the stud. While the physical effort required is not large, over a period of time, particularly when a large number of studs are continuously being welded, the effort has a noticeably tiring effect on the operator. In the new welding tool, the lifting coil of the tool is energized automatically again, after the stud is welded, to cause the chuck to retract again and strip itself from the stud while the tool is held stationary by the operator. The operator can then simply remove the tool with no extra physical effort at all.

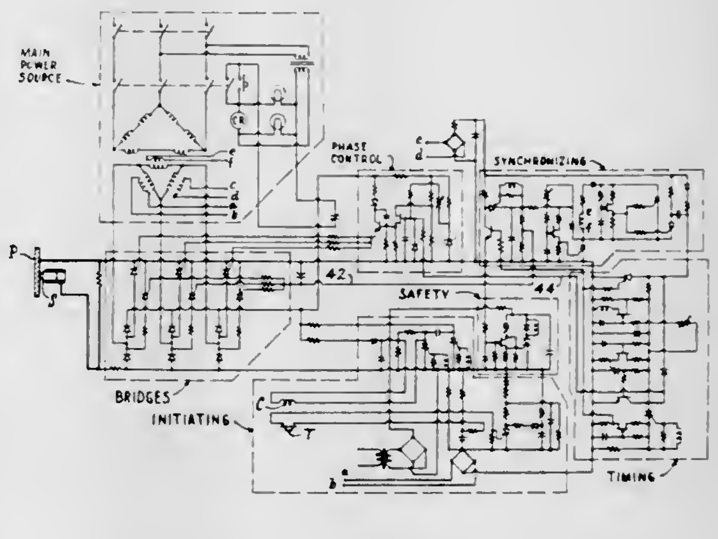
3,526,742
STUD WELDING

Arthur Hill, North Olmsted, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio

Filed Jan. 9, 1967, Ser. No. 607,960

Int. Cl. B23k *9/20*

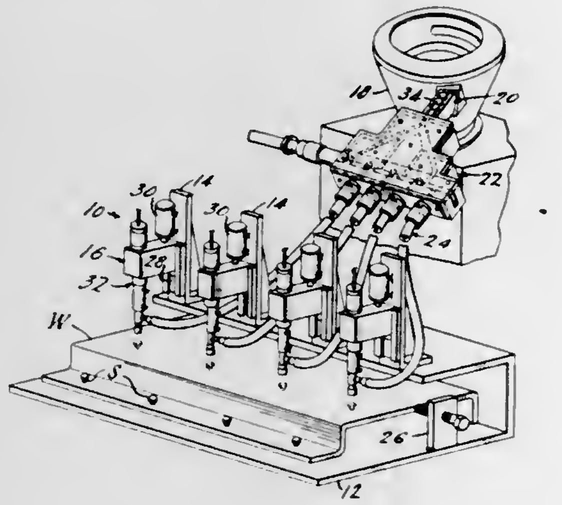
U.S. Cl. 219—98 **3 Claims**



This invention relates to stud welding apparatus and a circuit preferably utilizing a three-phase power source which enables the welding of studs over a wider range of sizes than heretofore achieved with the one circuit being suitable for welding studs ranging from small trim studs to studs one-half inch in diameter. The welding circuitry includes three bridges which employ certain diodes in common. One bridge supplies power for welding tool controls and for a phase control circuit for a main welding arc. A second bridge supplies power for a pilot arc and the third bridge supplies power for the main welding arc as regulated by the phase control circuit. The welding arc of the stud welding cycle can be closely controlled both by phase shift and by the number of cycles the welding arc is maintained to provide the close control and a wide variation in intensity and length of welding arc which enables welding of studs of a wide variation in size. The invention also contemplates a circuit for synchronizing the welding arc in relation to the power supply and also includes a unique safety circuit in case of breakdown of certain solid state components.

3,526,743
APPARATUS FOR DISPENSING STUDS TO PLURAL WELDING TOOLS

Steve Spisak, Elyria, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 26, 1967, Ser. No. 641,574
Int. Cl. B23k *9/20*
U.S. Cl. 219—98 **3 Claims**

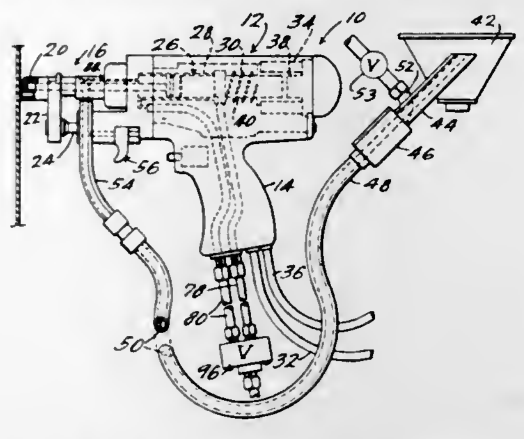


A welding system is capable of rapidly welding a plurality of studs to a workpiece simultaneously. A supply system feeds studs to welding tools which effect the welds, with the supply system including a single source of studs with a single escapement mechanism capable of feeding studs sequentially to each of several flexible feed tubes respectively connected to the tool. The escapement includes a single track communicating with the stud supply source, with this track branching into a manifold track which communicates with a plurality of additional tracks. A transfer bar is associated with the latter tracks and feeds the studs individually yet simultaneously to the feed tubes. The feed system further has an air supply for blowing the studs down the tubes to the welding tools.

3,526,744
STUD FEEDING SYSTEM FOR WELDING TOOLS

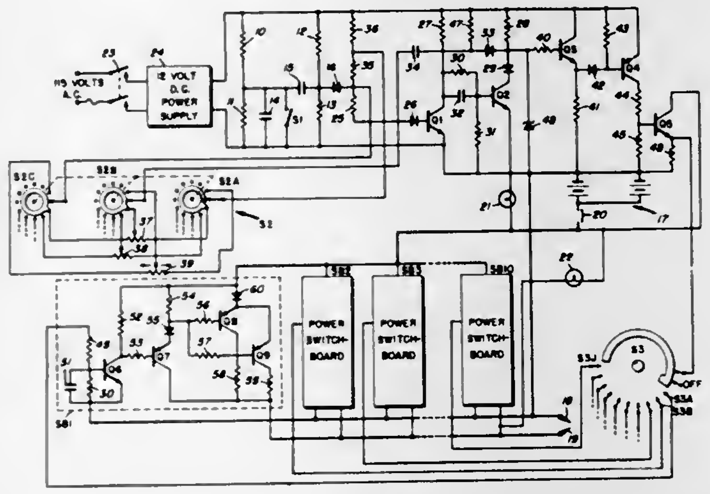
Don E. Ehrlich, Avon, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 21, 1968, Ser. No. 769,020
Int. Cl. B23k *9/00*
U.S. Cl. 219—98 **2 Claims**

Studs to be welded are blown into a loading chamber behind a chuck of a stud welding tool and then move into the front of the chuck where they are backed up by a plunger. An air nozzle communicates with the chamber and directs air rearwardly toward a stud fed into the chamber to urge the stud away from the chamber inlet in a manner to substantially eliminate stud jamming. The air preferably is supplied from an air cylinder which drives the plunger.



3,526,745
WELDING MACHINE

Algimantas A. Dargis, Laurel, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Sept. 12, 1966, Ser. No. 578,891
Int. Cl. B23k *11/24*
U.S. Cl. 219—108 **6 Claims**

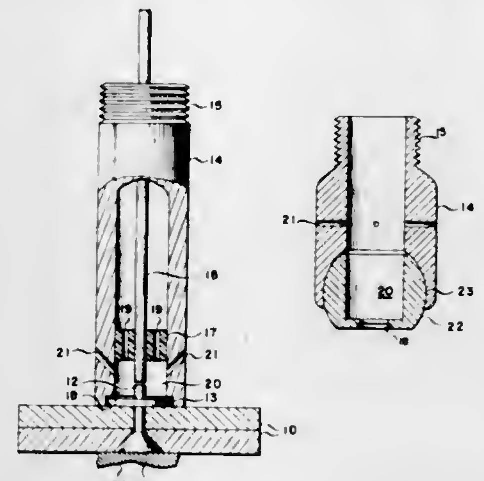


A power supply for a resistance welding machine includes a power source connected to a variable pulse control and a variable impedance device interconnecting the pulse control to a pair of electrodes in series relationship. The pulse control comprises a one-shot multivibrator with a variable resistance device for establishing a desired pulse width. The variable impedance device comprises a transistor switching board which includes parallel connected resistors with series connected transistor switches associated with each resistor. A mechanical switch selectively interconnects the pulse control with various ones of the transistor switches for establishing the desired impedance and thus controlling the amplitude of the welding pulse.

3,526,746
GAS-SHIELDED ARC-RIVETING TOOL

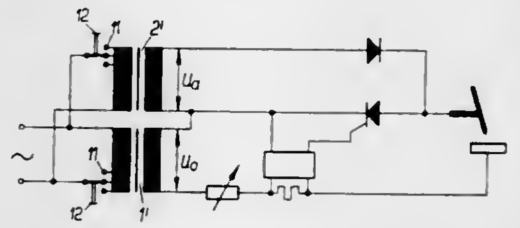
Alton D. Campbell, Kennesaw, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 6, 1966, Ser. No. 584,831
Int. Cl. B23k *9/16*
U.S. Cl. 219—127 **2 Claims**

A method and means are provided to upset and secure a rivet in lieu of the conventional bucking technique. This proposed method essentially consists of placing a washer over the rivet bucktail and fusion welding the projecting end of the bucktail to the washer. The means comprises an attachment to the end of a welding gun that is formed at its outer end with means to engage and retain the washer to facilitate its installation on the rivet bucktail, and a chamber adjacent said means and internally of the attachment including means to properly position the electrode of the welding gun relative to the bucktail. Additional means is provided to give the outer end of the attachment in which the washer engaging and retention means, the chamber and the electrode positioning means are located, universal angular adjustment.



3,526,747
ARC WELDING PROCESS AND DEVICE

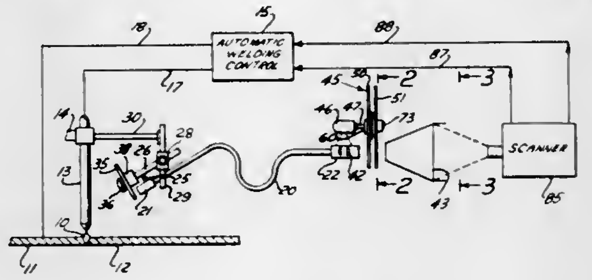
Horst Keller and Ernst Witting, Frankfurt am Main, Germany, assignors to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany
Filed Oct. 25, 1966, Ser. No. 589,416
Claims priority, application Germany, Oct. 28, 1965, M 67,078
Int. Cl. B23k *9/10*
U.S. Cl. 219—131 **6 Claims**



A process and device for the AC arc welding of light metals with a torch having a non-melting electrode and utilizing a protective gas includes the regulating of the energy supply of the torch circuit in accordance with the direction of the current by means of a diode controlled in the synchronism of the welding current.

3,526,748
OPTICAL MONITORING OF WELDING SYSTEMS

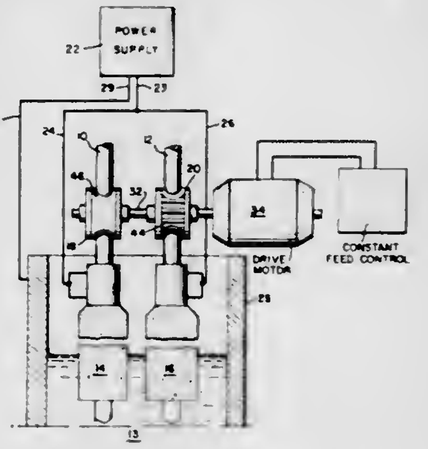
Frits Rienks, Niantic, Conn., assignor to General Dynamics Corp., New York, N.Y., a corporation of Delaware
Filed Aug. 2, 1968, Ser. No. 749,660
Int. Cl. B23k *9/10*
U.S. Cl. 219—131 **15 Claims**



A welding system in which a visual image of the weld is transmitted by a flexible fiber optics bundle to a remotely located detector. A rotating mask having adjustable apertures periodically interrupts the image at a frequency such that the image appears substantially stationary at the detector. The image may be evaluated by visual observation, or it may be scanned to produce an electrical feedback signal which is effective to control an automatic welding circuit in accordance with the parameters of the weld being formed.

3,526,749
WORK-IN-CIRCUIT CONSUMABLE METAL WELDING

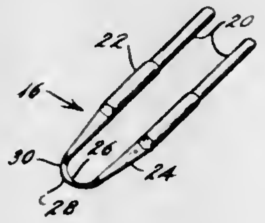
Harry I. Shrubsall, 431 Westfield Road, Scotch Plains, N.J. 07076
Filed Dec. 27, 1968, Ser. No. 787,505
Int. Cl. B23k *9/10*
U.S. Cl. 219—137 **9 Claims**



A pair of depending consumable metal electrodes are alternately driven downwardly into a slag covered bath of molten weld metal in making a submerged-melt vertical weld, so that as one electrode is fed the other is stationary, and vice-versa, whereby the heat input is reduced, and the grain structure of the resulting weld metal thereby improved.

3,526,750
THERMAL TOOL

William J. Siegel, 814 E. Franklin Ave., Silver Spring, Md. 20901
Filed June 2, 1967, Ser. No. 643,123
Int. Cl. H05b *3/00*
U.S. Cl. 219—233 **6 Claims**



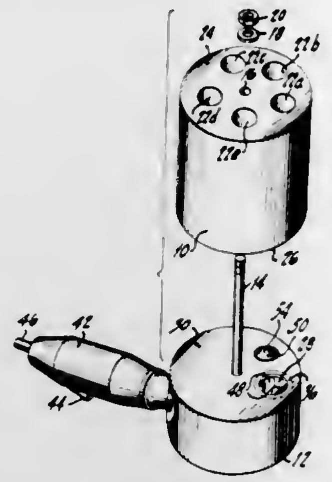
The device of the present invention is an electrically heated tool which may be used for both soldering and thermal parting, and is characterized by a specially shaped hairpin loop working tip. The tip is a thinned down flat blade-like member, the flat of the blade being at an angle to the plane of the hairpin loop as a whole.

3,526,751
CIGARETTE STORAGE AND LIGHTER DEVICE

Louis J. Climent, 45—21 220th St., Bayside, N.Y. 11361
Filed Sept. 20, 1968, Ser. No. 761,047
Int. Cl. F23q *7/22*
U.S. Cl. 219—267 **9 Claims**

A cigarette lighter device having a storage portion for housing cigarettes in a plurality of passageways therein.

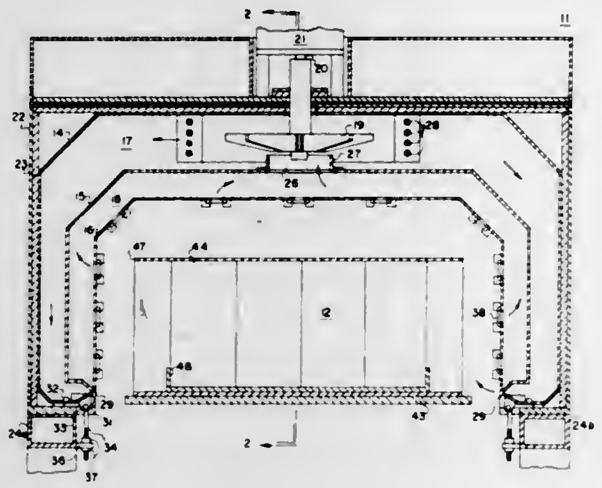
The storage portion is rotatably mounted on a base portion in a manner to provide for alignment of a selected



passageway with a lighter apparatus mounted in the base portion.

3,526,752
SHRINK TUNNEL FOR SHRINKING FILM ON ARTICLES

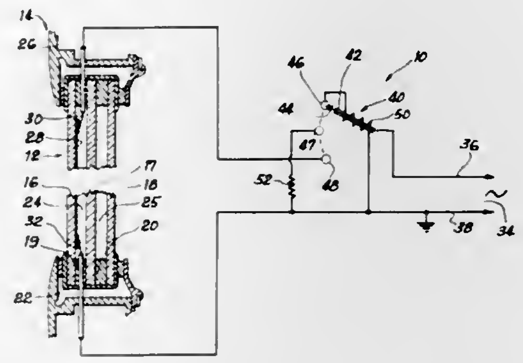
Sydney George Frederick Bell, Altona, Victoria, Australia, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Nov. 13, 1967, Ser. No. 682,306
Claims priority, application Australia, Nov. 18, 1966, A 14,135/66
Int. Cl. F27b *9/06;* **F27d** *11/02*
U.S. Cl. 219—388 **8 Claims**



A shrink tunnel for shrinking film on articles including an inverted U-shaped housing having triple walls forming an inner and an outer air flow duct with air openings for the inner duct distributed over the inner of the triple walls, a port in the intermediate of the triple walls for passage of air from the inner to the outer duct and air inlet means from the outer duct into the bottom part of the tunnel air heating means and air circulating means in the outer air flow duct and conveying means for transporting items through the inverted U-shaped housing.

3,526,753
ANTI-SHOCK CONTROL DEVICES FOR ELECTRICALLY HEATED GLASS

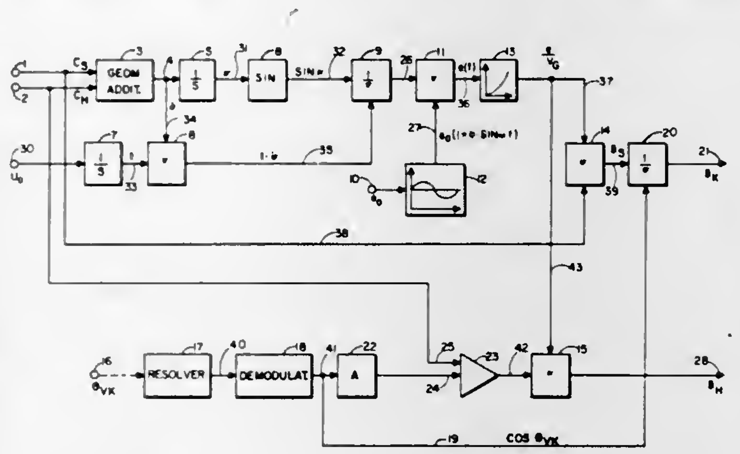
Daniel J. Aisanich and Frederic A. Richter, Chicago, Ill., assignors to Ardco, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 8, 1966, Ser. No. 600,201
Int. Cl. H05b *1/02*
U.S. Cl. 219—522 **21 Claims**



A current responsive control relay device effectively disconnects the power from electrically heated glass when breakage occurs, to obviate any shock hazard. In the first embodiment, the relay device comprises a bimetal switch which is operated from a first to a third position by a voltage responsive heater. The bimetal switch is maintained in the third position by the heat generated in the bimetal by the flow of the main load current. When breakage of the heater occurs, the bimetal switch returns to an intermediate position, in which it is maintained by a reduced current through the voltage responsive heater. In the second embodiment, the relay device comprises a normally open bimetal switch across which a high value resistor is connected. The bimetal switch is closed by the heat developed in such resistor, and is kept closed by the heat generated in the bimetal itself by the main load curent, and also the heat generated in a series connected resistor. When breakage of the electrically heated glass occurs, the bimetal switch is opened. The resistor has a high value to obviate any shock hazard. In the fourth embodiment, the series connected resistor is not needed. In the fifth embodiment, a compensating bimetal is employed to carry one of the contacts for the bimetal switch, to compensate for variations in the ambient temperature. In the third embodiment, the relay device comprises normally open contacts operable by an electromagnet having a voltage responsive coil and a current responsive coil. The voltage responsive coil is connected across the contacts so as to cause initial closure thereof. Such closure is maintained by the load current through the current responsive coil. The voltage responsive coil has a high resistance to obviate any shock hazard.

3,526,754
CONTROL APPARATUS

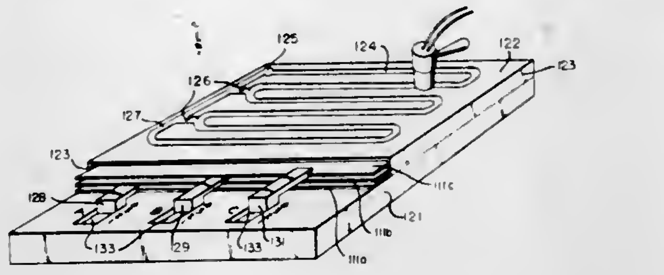
Hans Max Ingfried Graefe and Rolf Dieter Pfeiffer, Doernigheim, and Helmut Heinrich Spahn, Frankfurt, Germany, assignors to Honeywell G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed July 1, 1968, Ser. No. 741,716
Int. Cl. G06g *7/80;* **F41g** *3/14*
U.S. Cl. 235—61.5 **11 Claims**



A dynamic biaxial lead computer for the lateral and vertical lead angles of tank-mounted anti-aircraft guns.

3,526,755
INFORMATION STORAGE AND RETRIEVAL SYSTEM

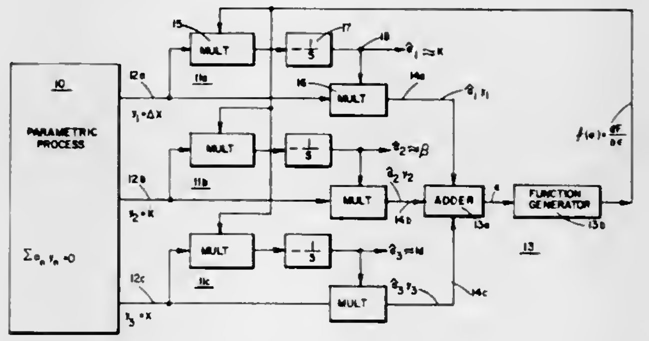
John D. Campbell, 11568 W. Hill Drive, Rockville, Md. 20852; Herbert S. Caron, 8900 Evergreen Drive, Parma, Ohio 44129; and William Grobman, Silver Spring, Md. (12400 Salem Lane, Bowie, Md. 20715)
Filed July 3, 1961, Ser. No. 121,541
Int. Cl. G06k *7/015*
U.S. Cl. 235—61.11 **21 Claims**



Apparatus is provided for simultaneously reading information entered in a plurality of record receivers. Each record receiver represents an individual dimension and is divided so that information in several categories of the dimension may be separately recorded. The same information or recording position in each category on each record receiver represents the same subject about which the information is being recorded. Several record receivers are arranged to be simultaneously read with only one category of each of the dimensions being read at one time. Counters and recording means indicate whenever there is coincidence of information in any position in the combination of categories being read. The combinations of categories being read can be changed at will to provide information of many combinations of categories.

3,526,756
PARAMETRIC CORRELATION APPARATUS

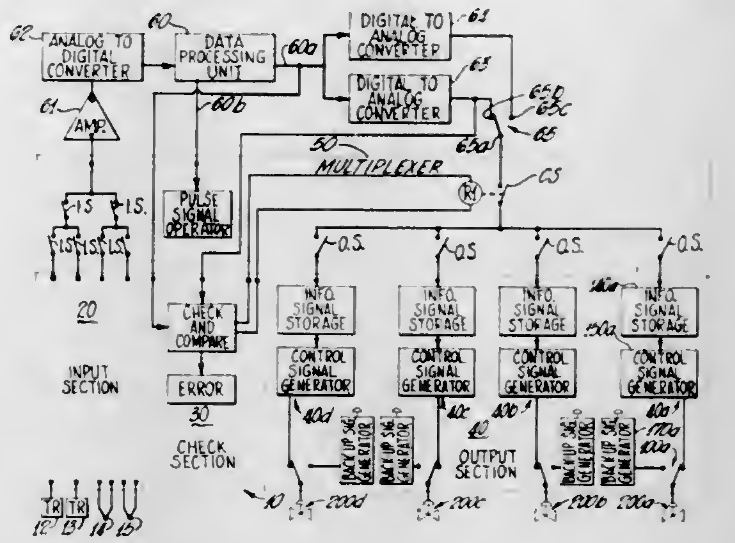
Stanley A. White, Yorba Linda, Calif., assignor to North American Rockwell Corporation
Filed Jan. 31, 1969, Ser. No. 795,417
Int. Cl. G06g *7/38;* **G05b** *13/00*
U.S. Cl. 235—151.3 **7 Claims**



Means for determining the coefficients a_n of a lumped parameter describing function, $\Sigma a_n y_n = 0$, and comprising a plurality of gain-adjustable signalling channels, each channel adapted to be responsive to a mutually exclusive one of the variables y_n of the describing function, each channel comprising a correlator having a reference input for adjusting the gain of said gain-adjustable channel as a function of the correlation of an input to said signalling channel with an applied reference input. Signalling means responsive to a gain-adjusted output of each of the signalling channels provides a reference signal indicative of a preselected function of the sum of the gain-adjusted outputs of the signalling channels, the reference inputs of the correlators being commonly responsive to said reference signal, whereby an output of each correlator is indicative of a coefficient a_n of that variable y_n correlated by such correlator.

3,526,757
CONTROL APPARATUS

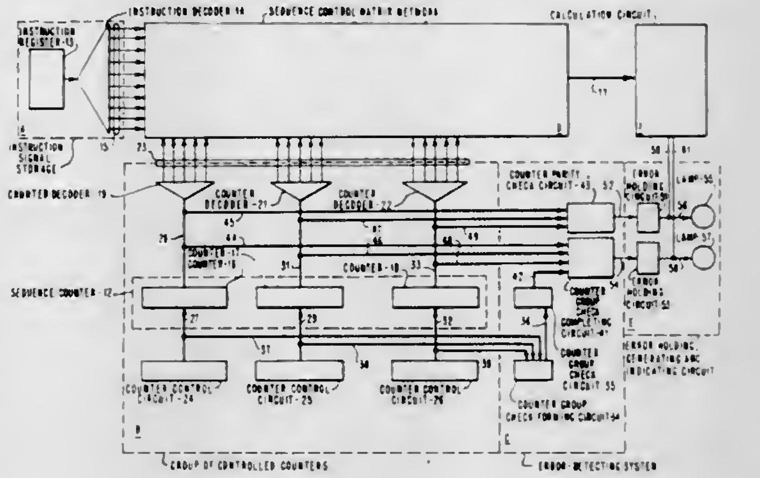
Vernon C. Rees and Paul D. Griem, Jr., Newark, John F. Maddux, Heath, and Robert R. Hudgins, Newark, Ohio, assignors to Owens-Corning Fiberglas, a corporation of Delaware
Filed July 25, 1967, Ser. No. 655,943
Int. Cl. G06f *11/00, 3/00*
U.S. Cl. 235—153 **21 Claims**



Independently powered apparatus for linking a data processing unit with one or more conditions of a process to be controlled. An input station receives process signals and converts the process signals to a data signal acceptable by the data processing unit. An output station receives and stores an information signal from the data processing unit and generates a control signal. A backup signal is generated. One of the backup or control signals is selected for application to the load apparatus controlling the process. If a plurality of input or output stations are involved multiplexer means selectively connects individual stations to transmit to or receive from the data processing unit.

3,526,758
ERROR-DETECTING SYSTEM FOR A CONTROLLED COUNTER GROUP

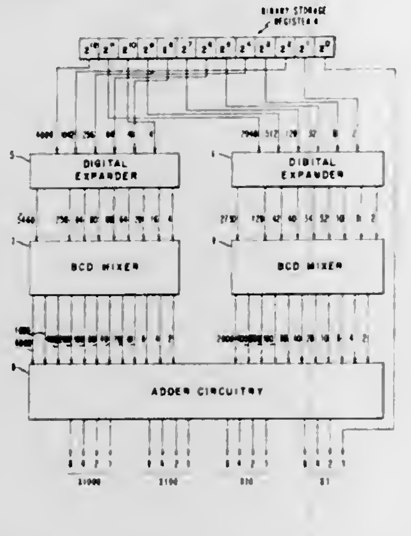
Koichi Nozawa, Kawasaki-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed May 22, 1968, Ser. No. 731,113
Claims priority, application Japan, May 23, 1967, 42/32,716
Int. Cl. G06f *11/04;* **H03k** *13/32*
U.S. Cl. 235—153 **6 Claims**



Erroneous operation of counter control circuits and errors other than parity errors of the counters of a group of controlled counters are detected by a counter group check forming circuit connected to the counter control circuits for producing check signals in accordance with control signals supplied to the counters. A counter group check circuit connected to the counter group check forming circuit stores signals produced by the counter group check forming circuit. A counter group check completing circuit connected to the counter group check circuit and to the output of each of the counters collates the contents of the group of counters with the contents of the counter group check circuit and operates when the input signals supplied to it are in a specific pattern.

3,526,759
PARALLEL BINARY TO PARALLEL BINARY CODED DECIMAL CONVERTER

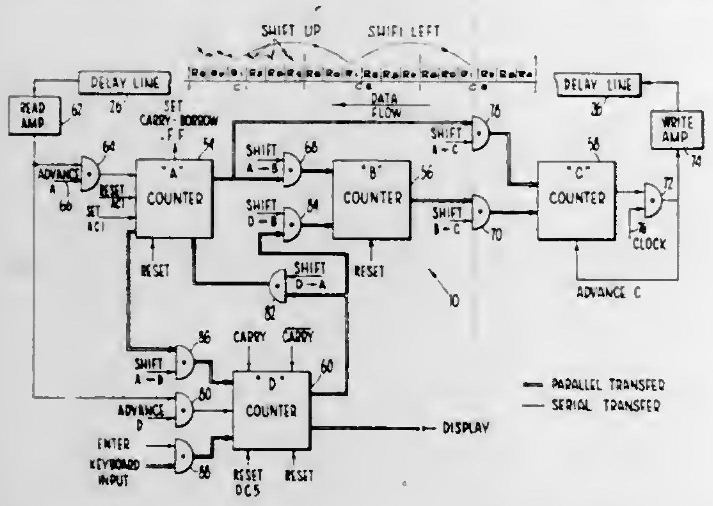
Genung L. Clapper, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 15, 1967, Ser. No. 683,367
Int. Cl. G06f *5/00*
U.S. Cl. 235—155 **7 Claims**



A parallel binary to parallel binary coded decimal (BCD) converter comprised of a binary storage register, a first distribution means, a digital expander means, a second distribution means, a BCD mixer means, and adding means. The output of the adding means being the BCD equivalent of the binary number stored in the binary storage register.

3,526,760
SQUARE ROOT CALCULATOR EMPLOYING A MODIFIED SUM OF THE ODD INTEGERS METHOD

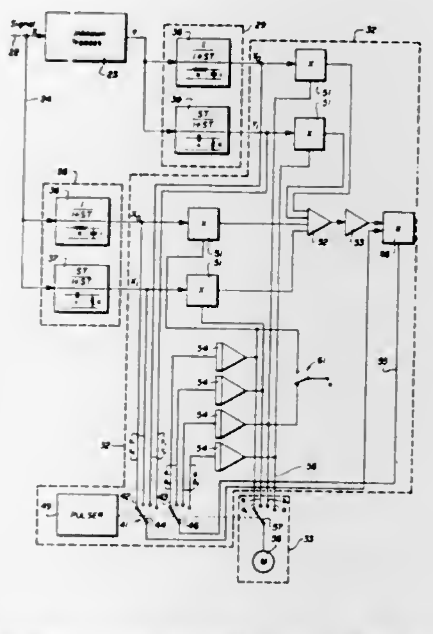
Robert A. Ragen, Hayward, Calif., assignor, by mesne assignments, to The Singer Company, a corporation of New Jersey
Filed Apr. 1, 1966, Ser. No. 539,569
Int. Cl. G06f *7/48*
U.S. Cl. 235—158 **18 Claims**



A calculator is disclosed for deriving the square root of an operand according to a modified sum of the odd integers method. The square root is obtained by arranging the operand in consecutive pairs of contiguous digits and performing a plurality of series of successive substractions on several partial operands. Each partial operand comprises a pair of digits arranged to the right of the last non-negative remainder from the previous series of subtractions. Circuitry is provided for decimally aligning the entered operand and the derived square root in accordance with the number of digits desired to the right of the decimal point.

3,526,761
METHOD, APPARATUS AND SYSTEM FOR THE IDENTIFICATION OF THE RELATIONSHIP BETWEEN TWO SIGNALS

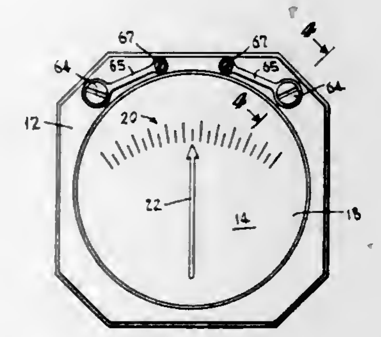
Otto J. M. Smith, 612 Euclid Ave., Berkeley, Calif. 94708
Continuation of application Ser. No. 373,650, June 9, 1964. This application May 15, 1969, Ser. No. 826,085
Int. Cl. G06g *7/19, 7/34, 7/38*
U.S. Cl. 235—181 **41 Claims**



Method, apparatus and system for the measurement of impedance and admittance functions, gain and phase, transfer functions of a process, Fourier transforms of time domain functions and power spectra using separate models of the numerator and denominator polynomials and minimizing the error in fitting the models to the process.

3,526,762
ILLUMINATED INDICATING INSTRUMENT WITH REPLACEABLE LAMPS

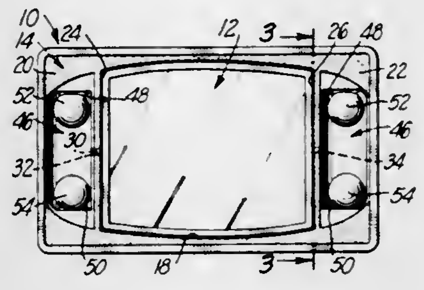
Dana J. Blackwell, Naugatuck, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut
Filed Mar. 26, 1968, Ser. No. 716,189
Int. Cl. B60q *3/04*
U.S. Cl. 240—2.1 **6 Claims**



An indicating instrument having on its casing a bezel surrounding the front window and having illuminating lamps in the casing. The bezel has one or several small removable screws or plugs which, when removed, result in the illuminating lamps being shifted and made readily accessible for replacement without requiring dismantling of the instrument casing.

3,526,763
ELECTRICALLY ILLUMINATED PORTABLE COSMETIC MIRROR

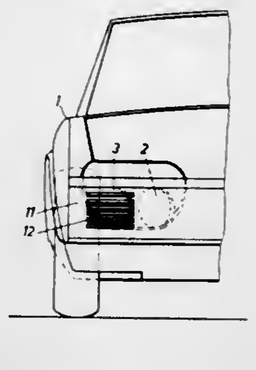
Melville Dorfman, Beverly Hills, Calif., assignor, by mesne assignments, to Hartman Products, North Hollywood, Calif., a corporation of California
Filed Feb. 15, 1968, Ser. No. 705,835
Int. Cl. F21v *33/00*
U.S. Cl. 240—4.2 **4 Claims**



A case has a somewhat rectangular mirror opening formed therethrough bordered at opposite ends by vertically elongated reflectors recessed in a forward surface thereof. The upper and lower ends of the reflectors have sockets adapted for receiving electric light bulbs projecting into the reflectors. A mirror is pivoted in the case mirror opening by pin and socket connections between mirror and case opposite ends, one of said connections being selectively pressure releasable for removing the mirror from the case.

3,526,764
RETRACTABLE MOTOR VEHICLE HEADLIGHT ARRANGEMENT

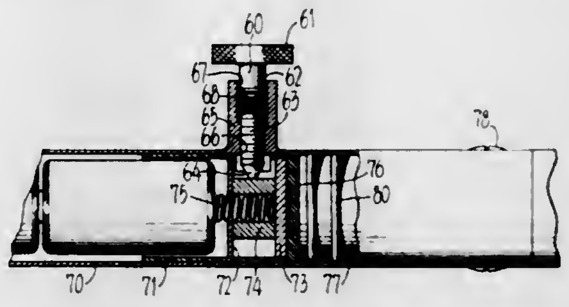
Heinrich Klie, Asperg, Wurttemberg, and Theodor Bauer, Leinfelden, Wurttemberg, Germany, assignors to Firma Dr.-Ing., h.c.F. Porsche KG, Zuffenhausen, Germany
Filed Mar. 8, 1968, Ser. No. 711,670
Claims priority, application Germany, Mar. 10, 1967, 1,630,909
Int. Cl. B60q *1/06*
U.S. Cl. 240—7.1 **13 Claims**



The headlight frame is movable between a lighting position and a retracted position into the vehicle body, with the light beams from the headlight being directed generally in the forward direction with respect to the driving direction for both positions of the headlight frame. The headlight frame is driven by an electric motor about an axis extending generally in the driving direction and locked in its positions by means of a locking bolt that is solenoid actuated and also controls the motor operation as well as the current to the headlights.

3,526,765
SEALED PORTABLE ELECTRIC LIGHT

Chester Rossi, 22322 Center St., Castro Valley, Calif. 94546
Filed Feb. 8, 1968, Ser. No. 704,139
Int. Cl. F21l *7/00;* **F41g** *1/34*
U.S. Cl. 240—10.6 **4 Claims**



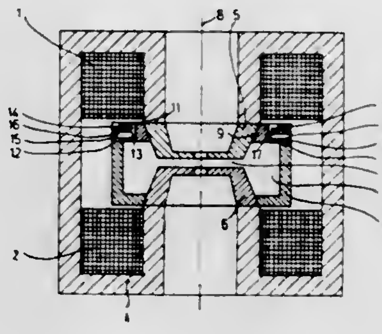
A sealed portable electric light for use in a high pressure environment such as underwater. The light includes a sealed light unit that may be connected to remotely located batteries or attached directly to a battery case. A sealed switch mounted on the battery case is provided for turning on and off the light unit; and the switch includes an electrically conductive spool insulated from the battery case and having a central opening in which is mounted a spring resiliently engaging the negative terminal of a battery to connect the spool therewith. A conductive screw threadedly carried by the battery case is selectively engageable with the spool to connect the same electrically with the battery case so as to complete the electric circuit for the portable light.

ERRATUM

For Class 246—34 see:
Patent No. 3,526,378

3,526,766
ADJUSTABLE POLE-SHOE LENS ASSEMBLY FOR CORPUSCULAR RAY DEVICES AND METHOD FOR ADJUSTING THE SAME

Wolfgang Dieter Riecke, Berlin, Germany, assignor to Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, Germany
Filed July 27, 1967, Ser. No. 656,401
Claims priority, application Germany, Feb. 24, 1967, M 72,884
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **16 Claims**

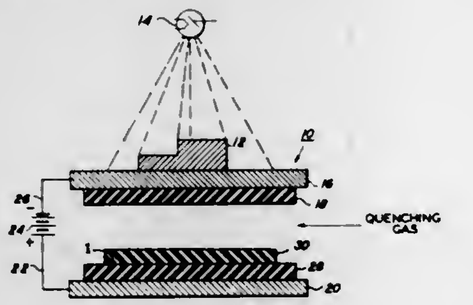


A pole-shoe lens unit adapted to be inserted into and removed from the hollow evacuated interior of a corpuscular ray device, such as an electron microscope. The unit includes a pair of pole-shoe means and a spacer means which is non-magnetic and which is situated between and connected with the pair of pole-shoe means to determine the positions thereof with respect to each other. At least one of the pole-shoe means is transversely adjustable with respect to the other and is capable of being maintained in its adjusted position by screws which extend parallel to the ray axis. The adjusted position of the one adjustable pole-shoe means is maintained exclusively by these screws, so that there are no adjusting screws which exert on the one adjustable pole-shoe means any force which extends transversely with respect to the ray axis. The pair of pole-shoe means together with the spacer means define a hollow interior space for the unit, and within this latter space is situated at least one additional component which can be removed from and inserted into the corpuscular ray device together with the pole-shoe unit. This one additional component may be a stigmator means, a diaphragm means, or a transversely adjustable object stage, and in fact all of the three latter means can be accommodated in the space within the unit. The method for adjusting the one adjustable pole-shoe means includes the taking of a test photograph while the unit is in the corpuscular ray device, so that this photograph will indicate the required adjustment, the removal of the unit from the corpuscular ray device, and then the actual adjustment of the one pole-shoe means, this adjustment being carried out manually while using an optical enlarging device which utilizes light rays.

3,526,767

IMAGE AMPLIFICATION IN IONOGRAPHY BY AVALANCHE METHOD

Walter Roth, Rochester, N.Y., and Alex E. Jvirblis, Santa Clara, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 18, 1967, Ser. No. 676,276
Int. Cl. G03b *41/16*
U.S. Cl. 250—65 37 Claims



This application relates to an ionographic imaging technique and apparatus therefor which compensates for the retarding fields established by deposited, image-defining avalanching ions by counter-balancing the deposition of a first polarity ion with the simultaneous formation or dissipation of an opposite polarity charge sufficiently adjacent said ion so that the field established thereby is substantially neutralized.

3,526,768

2-SUBSTITUTED NAPHTH(1,2)OXAZOLE SCINTILLATORS

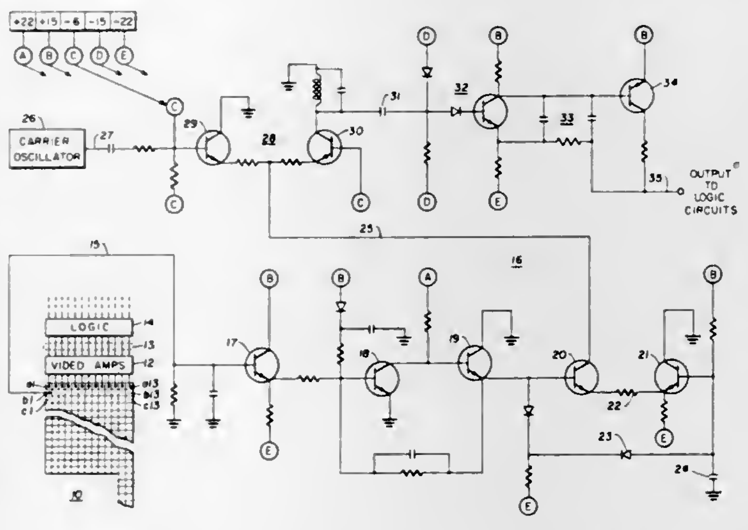
Charanjit Rai, Lucknow, Uttar Pradesh, India, and Theodore H. Szawlowski, Wonder Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 6, 1964, Ser. No. 350,079
Int. Cl. G01t *1/20*
U.S. Cl. 250—71 13 Claims

The invention covers a method of measuring the beta particle emission from a radioactive sample. The radioactive sample is contacted with a scintillator solution containing a primary and/or secondary solute of the type 2-substituted naphth(1,2)oxazole. Beta bombardment of the solute molecules cause such molecules to emit one or more primary photons. If a secondary solute is also employed, the primary photons are absorbed by the secondary solute and re-emitted. The primary and secondary photons are measured with a photomultiplier-recorder to reveal the relative beta particle emission rate.

3,526,769

VIDEO AMPLIFIER WITH COMPENSATION FOR UNWANTED VARIATIONS IN CARRIER MODULATION

Charles S. Turner, Dallas, Tex., assignor to Recognition Equipment Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 8, 1967, Ser. No. 621,652
Int. Cl. H01j *39/12*
U.S. Cl. 250—214 8 Claims

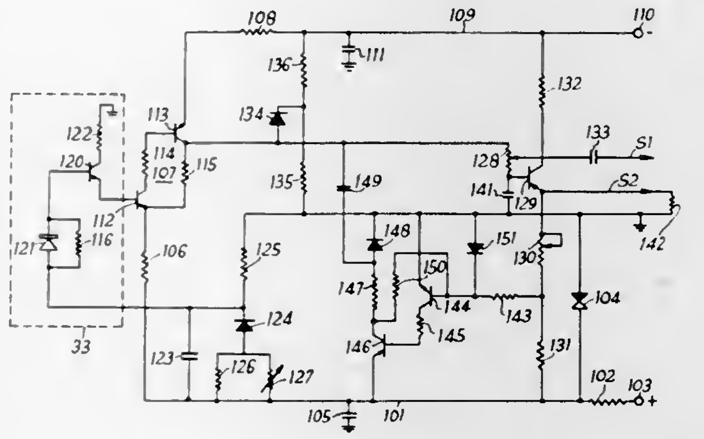


Unwanted variations in the modulation of a carrier signal are eliminated by a signal amplifier direct coupled to the carrier modulator circuit. An information signal is simultaneously applied to a current source for the signal amplifier and to the output stage of the amplifier. The current source is regulated by the information signal to eliminate any D.C. current component in the signal amplifier output which would be attributable to the information signal.

3,526,770

FLAME PHOTOMETER USING PHOTOVOLTAIC CELL HAVING LOGARITHMIC RESPONSE

Owen W. Dumpleton, North Harrow, Middlesex, England, assignor to Babcock & Wilcox Limited, London, England, a corporation of Great Britain
Filed Oct. 28, 1966, Ser. No. 590,295
Int. Cl. H01l *15/02*
U.S. Cl. 250—217 10 Claims

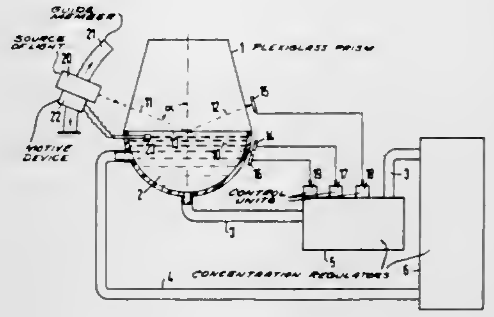


An arrangement of apparatus for monitoring a flame from a burner is provided in which a photovoltaic device having a logarithmic response characteristic is utilized in conjunction with an electrical circuit to obtain an output representative of the ratio of flame radiation flicker to average flame radiation.

3,526,771

APPARATUS FOR CONTROLLING THE CONCENTRATION OF A LIQUID SOLUTION

Hans-Joachim Henkel, Erlangen, and Friedrich Kozdon, Erlangen-Buckenhof, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed May 24, 1968, Ser. No. 731,780
Claims priority, application Germany, May 26, 1967, S 110,017
Int. Cl. G01n *21/46*
U.S. Cl. 250—218 13 Claims

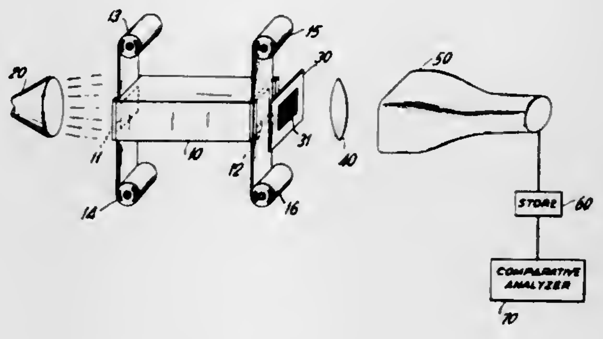


A source of light movably mounted adjacent a prism and a test solution having a common surface provides a beam of light with variable angle of incidence relative to the common surface. The source of light is positioned to direct a beam of light through the prism to the common surface. Photoelectric transducer apparatus positioned in operative proximity with the prism and the test solution controls the concentration of the test solution via a concentration regulator by supplying to the concentration regulator electrical control signals corresponding to predetermined angles of refraction of light passing through the prism and the test solution and to a determined angle of reflection of light passing through the prism.

3,526,772

FLUID ANALYZER USING FILTER MOSAIC AND VIDICON

John Troll, Ridgefield, Conn., assignor to Ovitron Corporation, Cheshire, Conn., a corporation of Delaware
Filed June 12, 1968, Ser. No. 736,447
Int. Cl. G01n *21/24*
U.S. Cl. 250—218 5 Claims

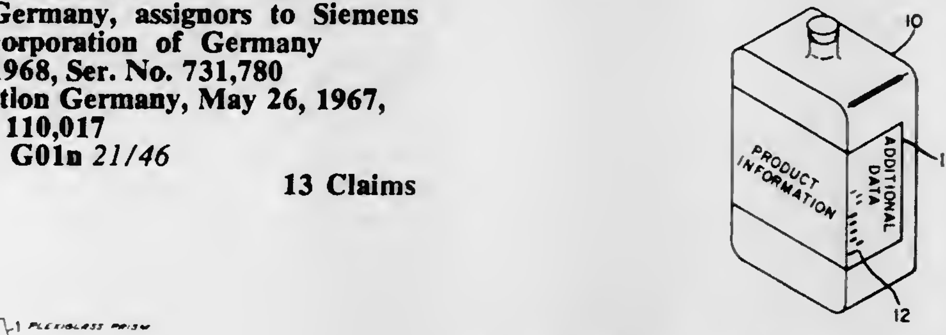


A sample of fluid is conducted between a pair of transparent windows and is illuminated by a source of light having a predetermined spectrum band. The light source is viewed by a vidicon after passing through the two windows and a filter mosaic having variable pass band characteristics over its surface. The output of the vidicon is a function of the filter characteristics and the sample fluid.

3,526,773

BAR CODE APPLYING AND SENSING METHOD

Joseph W. Davis, Chester Heights, Pa., assignor to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1966, Ser. No. 578,600
Int. Cl. G08c *9/06*
U.S. Cl. 250—219 8 Claims

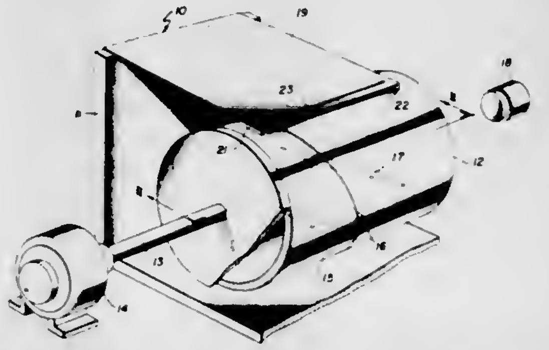


A complete bar code pattern for subsequent photoelectric scanning is applied to a container in multiple stages, one portion of the pattern being applied prior to filling of the container and an additional portion of the pattern being applied on the occasion of such filling.

3,526,774

SCANNING APPARATUS

Milton Alden, Needham, Mass., assignor to Alden Research Foundation, Brockton, Mass., a Massachusetts trust
Filed Mar. 4, 1968, Ser. No. 714,161
Int. Cl. G01n *21/16, 21/32*
U.S. Cl. 250—219 6 Claims

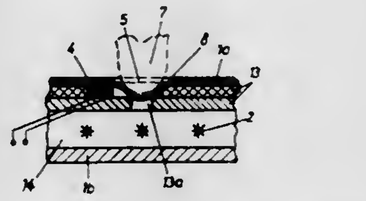


Generally speaking, the present invention comprises a drum rotatably mounted in the base and formed with a helical light-transmitting band, and a plate having a straight light-transmitting band floating on the surface of the drum with the straight band extending generally parallel to the axis of rotation of the drum.

3,526,775

CONTACTLESS TOUCH SWITCH RESPONSIVE TO INTERRUPTIONS OF INDIRECT LIGHT

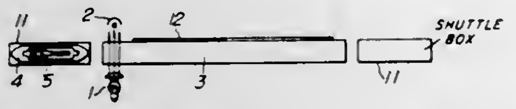
Kurt Friedrich, Neckarhausen, and Georg Straimer, Bad Godesberg, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1968, Ser. No. 782,656
Int. Cl. G06m *7/00;* H01j *39/12*
U.S. Cl. 250—221 15 Claims



A contactless switch actuated by interrupting radiation from a light source impinging on a photosensitive cell by a portion of the hand. The source and cell are arranged in the chamber of a housing such that only indirect unguided radiation from the source reaches the cell in the uninterrupted mode. The chamber is provided with an opening for inserting part of the hand to interrupt the radiation reaching the cell. This opening may be covered by an elastic depressible diaphragm or a button constructed of resilent material, which excludes ambient light and foreign particles from the chamber. In the depressed mode, the diaphragm or button provides a shield which prevents virtually all radiation from reaching the cell.

3,526,776
PHOTOELECTRIC DETECTING DEVICE FOR WEFT IN SHUTTLE UNDER OPERATION

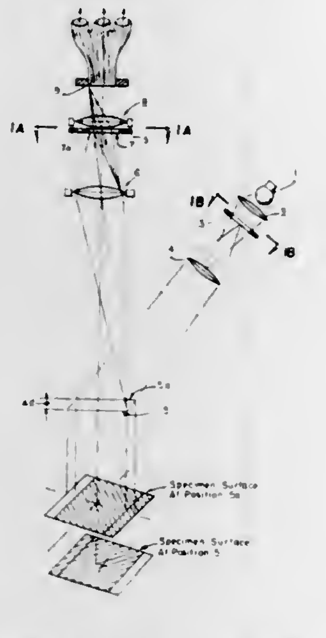
Hiroshi Mizukoshi, 15 Hamadacho-1-chome, Minami-ku, Nagoya, Japan
Filed Nov. 30, 1966, Ser. No. 597,915
Int. Cl. G06m *7/00*
U.S. Cl. 250—222 2 Claims



A photoelectric detecting device of the penetrating ray type for weft in a shuttle under operation in a loom comprising a single photoelectric sensor placed opposite to a lamp across the race of the shuttle interposed therebetween, differentiating and rectifying circuits for producing a pulsed signal whenever an input to said sensor changes from dark to light by (i) light passing through a hole in the shuttle on exhaustion of the weft and (ii) by the shuttle uncovering the sensor, a gate circuit for making an ampilfier operable for a predetermined period of time upon receipt of the first of said pulsed signals, said amplifier being adapted to produce a control signal to activate a control device for the loom when it receives a pulsed signal produced by the shuttle uncovering the sensor, provided the gate circuit previously has been triggered by a pulsed signal produced by light passing through the hole in the shuttle.

3,526,777
REFLECTANCE MEASURING APPARATUS INCLUDING A MASK FOR COMPENSATING FOR MOVEMENT OF THE SPECIMEN

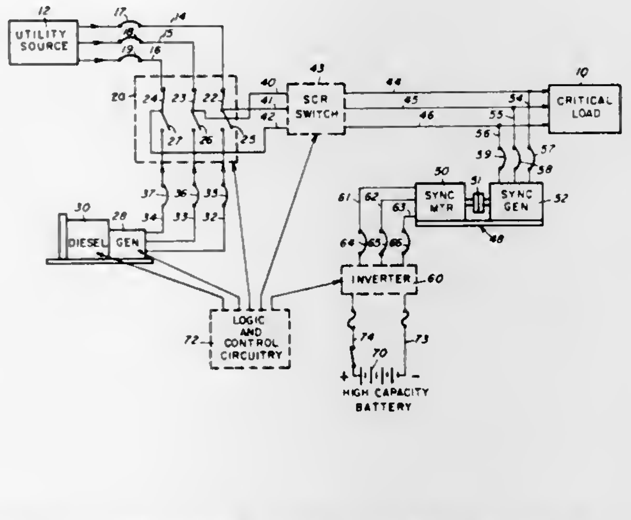
Roland D. Robinson, Springfield, Va., assignor to Hunter Associates Laboratory, Inc., a corporation of Virginia
Filed Apr. 25, 1968, Ser. No. 724,151
Int. Cl. G01n *21/18*
U.S. Cl. 250—237 5 Claims



In certain instruments such as on line reflectometers and color monitors where a product such as paper is being examined at a station in the line of the manufacturing process, it is necessary that variations in distance of the product from the sensing element (e.g. due to sag or flutter in the paper web) should not affect or influence the photometric information received at the detector. A system is presented which compensates for specified changes in distance by means of a series of lenses and apertures.

3,526,778
NO-BREAK POWER SYSTEM

Leon B. Crocker and Robert Carter, Richmond, Ralph A. Amos, Bon Aire, and E. John Le Proux and Charles A. Gregory, Jr., Richmond, Va., assignors to Power Systems and Controls, Incorporated, Richmond, Va., a corporation of Virginia
Filed Aug. 4, 1967, Ser. No. 658,398
Int. Cl. F02n *11/08*
U.S. Cl. 290—30 27 Claims

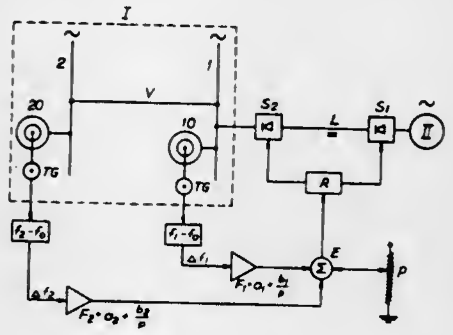


A standby power supply system wherein a load is normally connected to a utility source, and having a synchronous motor-synchronous generator set floating on the line. Upon occurrence of a fault in the utility source, the synchronous motor is instantaneously energized by an inverter which is supplied by a high capacity battery and controlled by an oscillator which is maintained in phase with the utility power. Upon energization of the stand-by motor-generator set, an auxiliary generator operated by a prime mover is energized and brought up to rated frequency and voltage. The inverter is brought in phase with the auxiliary generator and the load is shifted to the auxiliary supply. The inverter is turned off and power flows from the auxiliary source to the load, with the motor-generator set floating on the line, as before. When the utility power returns, the load is again shifted to the standby supply, the standby is brought into phase with the utility supply, and the load is shifted back to the utility.

3,526,779
DC POWER TRANSMISSION SYSTEM WITH STABILIZING EFFECT

Erich Uhlmann, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Feb. 13, 1969, Ser. No. 799,016
Claims priority, application Sweden, Feb. 15, 1968, 1,959/68
Int. Cl. H02j *3/36*
U.S. Cl. 307—20 7 Claims

Two AC networks are interconnected by a DC power transmission system controlled from a regulator with respect to a certain desired operating magnitude. An additional control order is supplied to said regulator in order to stabilize the conditions in a first of said AC networks. Said additional control order is derived from said first AC network as the sum of two signals depending on the frequency deviation at two separate points of said network. Each of said two signals is derived from the frequency deviation in the proper point according to a function

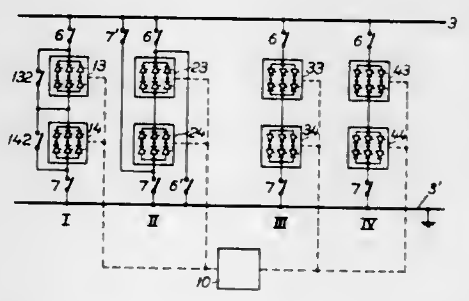


$$F=a+\frac{b}{p}+\frac{c}{p}2+\frac{d}{p}3+\cdots$$

where *a*, *b*, *c*, . . . are constants while *p* is a time operator.

3,526,780
POWER TRANSMISSION PLANT FOR HIGH VOLTAGE DIRECT CURRENT

Erich Uhlmann and Per Danfors, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Continuation-in-part of application Ser. No. 340,352, Jan. 27, 1964. This application May 25, 1967, Ser. No. 641,180
Claims priority, application Sweden, Jan. 30, 1963, 987/63; Mar. 25, 1963, 3,213/63
Int. Cl. H02m *3/32*
U.S. Cl. 307—82 12 Claims

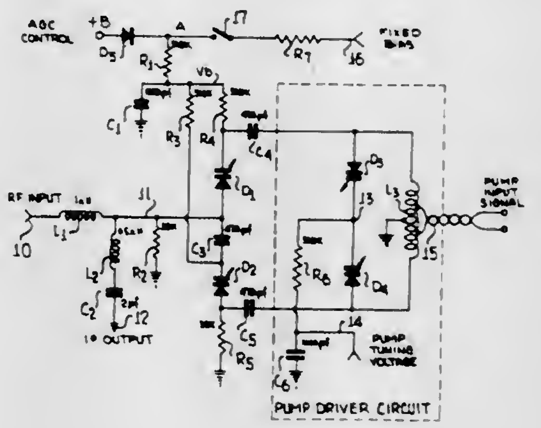


An HVDC power transmission system has at least three static converter stations connected on their A.C. sides to A.C. networks and on their D.C. sides to two D.C. conductors. The stations include an inverter station and a rectifier station reverse parallel connected. A delay angle control means in each station is controlled by a settable current regulator. The total current setting of all the parallel connected rectifier stations exceeds the total current setting of all the inverter stations.

3,526,781
PARAMETRIC AMPLIFIER

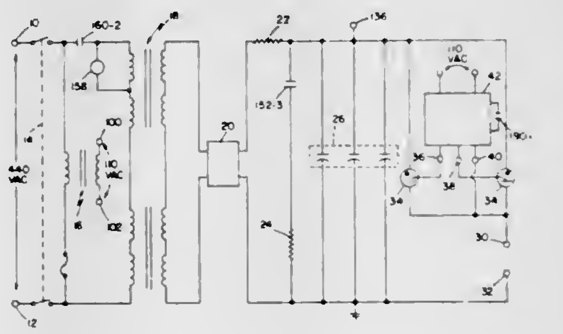
Eugene A. Janning, Jr., West Chester, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,914
Int. Cl. H03f *7/04*
U.S. Cl. 307—88.3 5 Claims

A balanced parametric amplifier having simultaneous gain reduction and enhancement of large-signal handling capability, wherein R.F. input signal is applied to and I.F. output signal is derived from the junction of two series connected similarly poled varactors, which are jointly subjected to reverse bias voltage to reduce capacitance versus voltage sensitivity of the varactors, and wherein a pump signal tank circuit comprising two further tuning varactors connected in opposition is coupled in shunt to the first mentioned varactors, pump input signal being applied in push pull to the opposed tuning varactors and pump tuning voltage being applied to their junction.



3,526,782
CONDUCTIVE SOLIDS WELDING CIRCUITRY

Peter Dominick Prevett, Melrose, and Theodore Joseph Morin, Needham, Mass., assignors to Industrial Magnetics, Inc., St. Canton, Mass., a corporation of Massachusetts
Filed Apr. 1, 1968, Ser. No. 717,804
Int. Cl. B23k *11/26*
U.S. Cl. 307—141 20 Claims

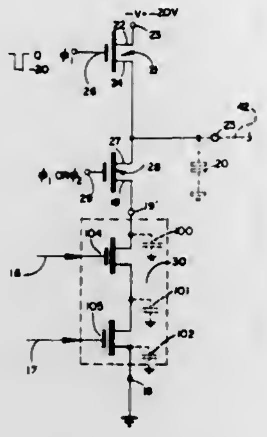


System for working conductive solids including a generator circuit, a capacitor circuit and a master control circuit which includes two subcycle control circuits and a steering circuit functioning upon completion of the first subcycle of operation to automatically initiate the second subcycle.

3,526,783
MULTIPHASE GATE USABLE IN MULTIPLE PHASE GATING SYSTEMS

Robert K. Booher, Downey, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed Jan. 28, 1966, Ser. No. 523,767
Int. Cl. H03k *19/02*
U.S. Cl. 307—205 20 Claims

An effective or discrete output capacitor is unconditionally charged during a phase one time, and is conditionally discharged during a phase two time as a function of the logic state of at least one logic device. In addition, during phase one, the voltage used in charging the output capacitor is also used to charge the inherent capacitances of the logic devices which are connected in series with the charge voltage.



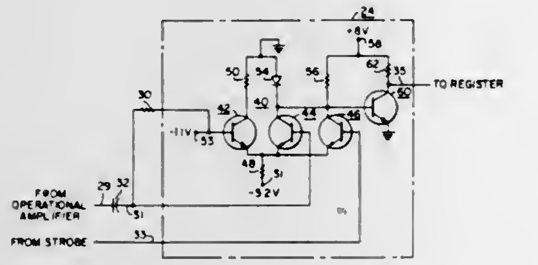
3,526,784
SENSE AMPLIFIER AND SIGNAL LEVEL TRANSLATOR

William W. Beydler, Laurel, and Edward R. Higgins, North Linthicum, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 13, 1967, Ser. No. 653,236

Int. Cl. H03k ***19/08***

U.S. Cl. 307—208 **5 Claims**



A sense amplifier for a computer memory system of the type having a bipolar output to distinguish the binary "ones" and "zeros." The memory sense amplifier includes two integrated circuits, i.e., a current mode logic gate, which will be hereinafter referred to as a CML gate, and an operational amplifier. The CML gate includes a differential amplifier having dual input gates on one side, and a biased input on the other side. The operational amplifier, which has its band-width increased by negative feedback, is connected to a sense line or winding of the memory system, and one of the dual input gates of the CML gate is capacitively coupled to the output of the operational amplifier. A strobe source is connected to the other of the dual input gates of the CML gate, and the output of the CML gate is connected to a read register. The CML gate functions as a level translator, changing the current mode logic levels to diode-transistor logic levels (DTL) required by the read register, and as an AND gate, changing its output only when a binary "one" and a strobe pulse are present simultaneously at the dual input gates of the differential amplifier. Zero lever thresholding of the binary "one" signals during a strobe pulse is obtained by biasing the dual input gate connected to the operational amplifier at substantially the same level as the biased input side of the differential amplifier, using capacitive coupling to prevent the bias voltage from affecting the operational amplifier.

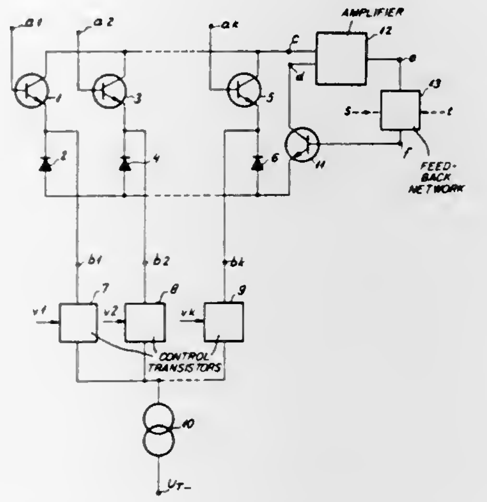
3,526,785
SAMPLING AMPLIFIER HAVING FACILITIES FOR AMPLITUDE-TO-TIME CONVERSION

Janos Biri, Budapest, Hungary, assignor to Kozponti Fizikai Kutato Intezet, Budapest, Hungary

Filed Mar. 24, 1966, Ser. No. 537,037

Int. Cl. H03k ***5/20***

U.S. Cl. 307—235 **3 Claims**



A self-contained, negative feedback emitter-follower transistor amplifier is provided with facilities for (1) sampling a test voltage applied thereto; (2) storing the sample; and (3) converting the stored sample into a pulse whose duration is proportional to the difference between the sampled voltage and a lower reference voltage. The feedback path, which is normally adjusted to have unity gain, includes a normally open diode and the base-collector path of a second transistor. When sampling is desired, a diode gate is enabled to couple the test voltage to the amplifier input through the collector-emitter path of the second transistor. A capacitor coupled to the feedback diode stores the resulting amplifier output, which is a replica of the sampled voltage. Amplitude-to-time conversion of the sample is effected by disabling the feedback path and thereafter suitably discharging the capacitor so that its voltage decreases linearly from the stored sample value to the value of the reference voltage, at which time normal feedback is restored.

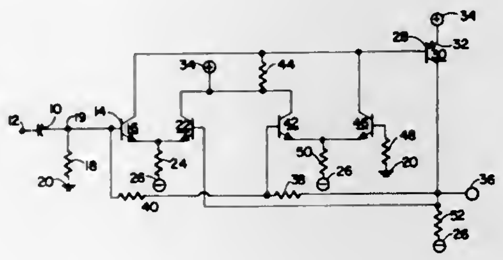
3,526,786
CONTROL APPARATUS

James H. Snyder, Battle Creek, Mich., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Sept. 19, 1967, Ser. No. 668,910

Int. Cl. G06g ***7/16***

U.S. Cl. 307—235 **7 Claims**



An absolute amplifier which in one embodiment may be used as a rectifier and in a second embodiment may be used as a multiplier.

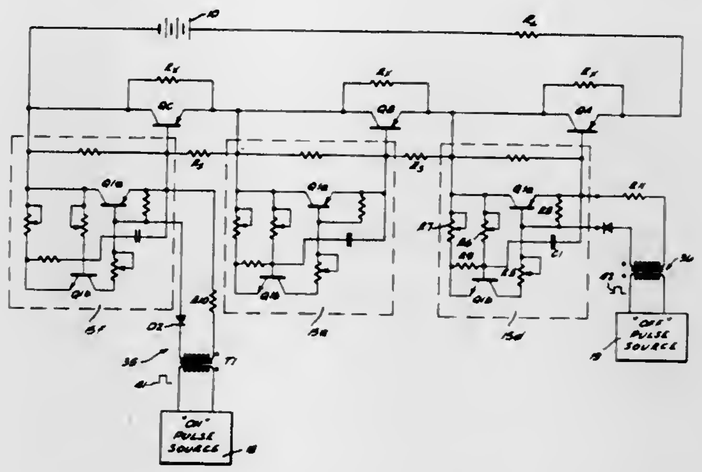
3,526,787
COMPLEMENTARY TRANSISTOR PAIR SWITCHING CIRCUIT

Joe V. Stover, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Nov. 17, 1966, Ser. No. 595,083

Int. Cl. H03k ***17/02***

U.S. Cl. 307—254 **6 Claims**



The switching circuit includes at least one main current-carrying transistor for connection to the power supply on a load. The base of the main transistor is connected to a complementary pair of transistors which comprise the main transistor control stage. The control stage is bistable and changes state upon application of appropriate pulses from a pulse source.

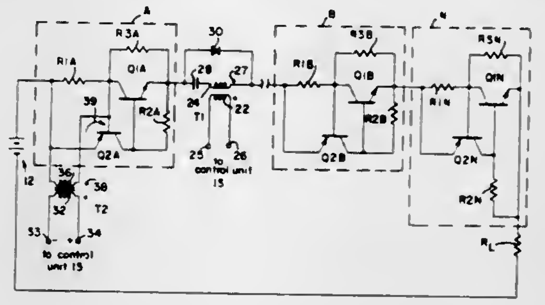
3,526,788
SERIALLY-CONNECTED COMPLEMENTARY TRANSISTOR PAIR SWITCHING CIRCUIT

Joe V. Stover, Fullerton, and George Sloan, Anaheim, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 31, 1966, Ser. No. 554,028

Int. Cl. H03k ***17/00***

U.S. Cl. 307—255 **13 Claims**



A high voltage/high power switching circuit has two or more transistor circuit stages, each of which includes a pair of transistors in a regenerative loop to provide high speed switching in which the rise and fall time of the switched voltage is independent of the load voltage pulse width. The pair of transistors in each stage is preferably a complementary pair.

3,526,789
PULSE PRODUCING SYSTEM

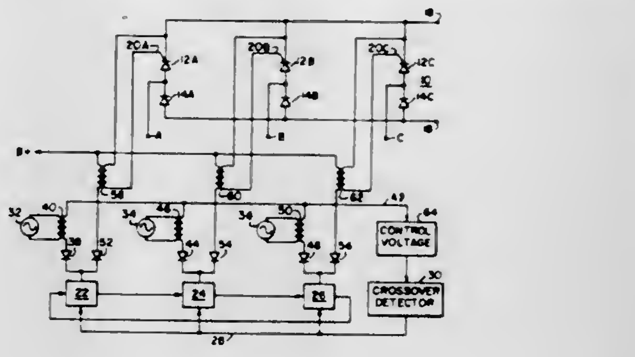
Laszlo Gyugyi, Penn Hills, Brian R. Pelly, Murrysville, and John Rosa, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 29, 1967, Ser. No. 686,407

Int. Cl. H03k ***1/12***

U.S. Cl. 307—262 **19 Claims**

Apparatus for supplying firing pulses successively to a number *n* of controllable electric valves in a cyclic predetermined sequence. The apparatus includes a detector for producing successive control pulses at the successive points in time at which *n* phased apart timing waves from *n* sources intersect a control signal. An *n*-stage ring counter responsive to the control pulses from the detector sequentially connects the *n* timing wave sources to the crossover detector one at a time without overlap, and provides firing pulses for the valves in the aforementioned predetermined sequential order. The ring counter acts to connect each timing wave to the crossover detector only during the necessary crossover sampling period of each respective timing wave.



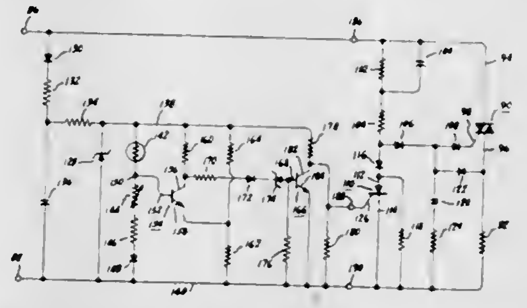
3,526,790
SYNCHRONOUS SWITCHING CIRCUITS

James L. Brookmire, Marcellus, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 23, 1967, Ser. No. 648,334

Int. Cl. H03k ***3/26***

U.S. Cl. 307—284 **13 Claims**



A circuit for synchronously switching a resistive load energized by an alternating current supply at or near zero voltage in a semiproportional manner in response to variations in the resistance of a variable resistance sensing element such as a thermistor. The variable resistance sensing element is included in a resistance voltage divider from which is derived a control voltage which is applied to the gate of a reverse blocking triode thyristor. The reverse blocking triode thyristor controls the application of a signal to the gate of a second triode thyristor, the main terminals of which are connected in series with the load.

3,526,791
LOW NOISE CONTROLLER

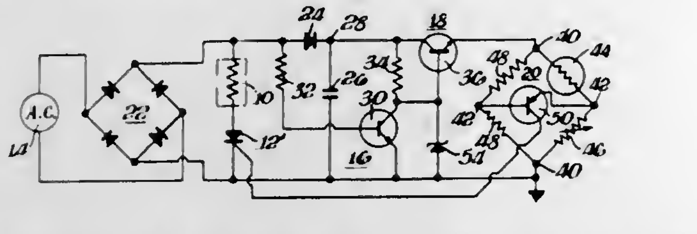
Joseph J. Codichini, Kennett Square, Pa., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed Jan. 19, 1968, Ser. No. 699,144

Int. Cl. H03k ***17/72***

U.S. Cl. 307—310 **4 Claims**

To control power passed to a load, the signal from an alternating current source of line voltage is full wave rectified and used to drive a normally saturated transistor to cutoff at the zero-crossover times of the line voltage. Upon cutoff, the output of the normally saturated transistor gates a switching transistor to apply a relatively narrow energizing pulse to the input of a bridge sensing circuit. The degree of balance of the bridge circuit depends upon variations of a sensed physical condition (temperature) in a system to be controlled. Any unbalance of the bridge, therefore, is sensed only at the zero-crossover times of line voltage. If an unbalance calling for more



power exists, the energizing pulse passes to the output of the bridge and is applied to the switching input of a controlled rectifier. The ouput of the controlled rectifier is applied to the heating element, for example, of an oven whose temperature is being controlled.

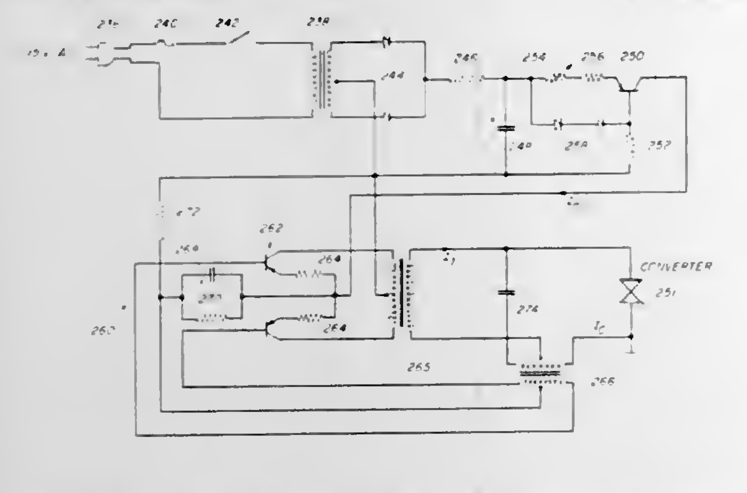
3,526,792
APPARATUS FOR CONTROLLING THE POWER SUPPLIED TO AN ULTRASONIC TRANSDUCER

Andrew Shoh, Ridgefield, Conn., assignor, by mesne assignments, to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware

Application Dec. 8, 1964, Ser. No. 416,816, now Patent No. 3,443,130, dated May 6, 1969, which is a continuation-in-part of application Ser. No. 265,751, Mar. 18, 1963. Divided and this application Apr. 26, 1968, Ser. No. 724,454

Int. Cl. H01v *7/00*

U.S. Cl. 310—8.1 **4 Claims**



The disclosed apparatus includes a constant current source supplying constant current to a piezoelectric ultrasonic transducer. This constant current supply causes the motional current through the transducer to remain likewise constant despite variations in the acoustical load to which the transducer is coupled. The magnitude of the constant supply current is established at a level which the transducer can safely dissipate when lightly loaded. As the load increases, the power coupled thereto likewise increases automatically.

3,526,793
TRANSDUCER FOR CONVERTING ELECTRICAL OSCILLATIONS INTO TORSIONAL VIBRATION AND VICE VERSA

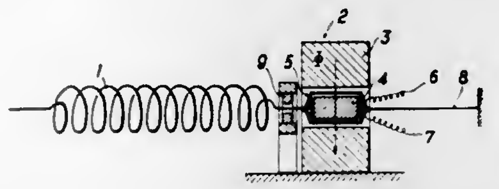
Werner Fidi, Otto Marschall, and Michael Klemencic, Vienna, Austria, assignors to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria

Filed Nov. 25, 1968, Ser. No. 778,603

Int. Cl. H02k *33/18*

U.S. Cl. 310—36 **6 Claims**

A transducer, for converting electrical oscillations into torsional vibration and vice versa, includes a rotary moving coil disposed in an air gap defined by a magnetic circuit. A helical spring, having at least one turn, has a portion coupled to the moving coil for rotation or oscillation as a unit with the coil. The moving coil and each of the turns of the spring have at least approximately the same moment of inertia. The coil has diametrically opposite portions disposed in the air gap and spaced apart by approximately two-thirds the diameter of the spring turns. The moving coil has, in the air gap, an effective length which is approximately as large as the diameter of the turns of the spring.



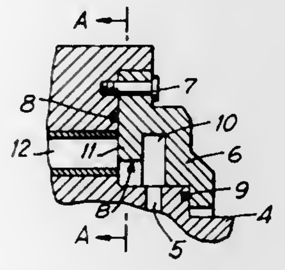
3,526,794
ROTOR OF AN ELECTRIC MACHINE WITH EVAPORATIVE COOLING

Evgeny Khaimovich Gilder, Prosp. Ordzhonikidze 18, kv. 55; Oleg Borisovich Gradov, Ulitsa Kosiora 6, kv. 1; David Bentsionovich Karpman, Ulitsa Frantisheka Krala 49, kv. 54; Boris Leonidovich Konovalov, Ulitsa 12 Aprelya 10, kv. 16; Boris Volikovich Spivak, Ulitsa Kosiora 56, kv. 55; Alexandr Abramovich Chigirinsky, Ulitsa Kuibysheva 11, kv. 8; Nikolai Grigorievich Grinchenko, Ulitsa Vatutina 16/25; Lazar Yangelevich Stanislavsky, Ulitsa Mayakovskogo 11, kv. 24; Vasily Semenovich Kildishev, Ulitsa Plekhanovskaya 41/43, kv. 55; and Vladimir Grigorievich Danko, Bulvar Ivana Karkacha 2, kv. 71, all of Kharkov, U.S.S.R.; and Valentin Fedorovich Vorobiev, Ulitsa Scherbakovskaya 40/42, kv. 252; Eduard Valentinovich Barbashev, Ulitsa Godovikova 2, kv. 103; and Ljubov Alexandrovna Juditskaya, Stoleshnikov pereulok 14, kv. 10, all of Moscow, U.S.S.R.

Filed July 2, 1968, Ser. No. 741,976

Int. Cl. H02k *9/20*

U.S. Cl. 310—54 **2 Claims**



An electric machine with an evaporative cooling system of the winding thereof comprises a rotor having a hollow shaft through which liquid coolant is supplied to a circular coolant header sealingly fitted over the shaft and having an annular space through which liquid coolant flows to axial ducts in the shaft leading to the winding of the rotor. A projection is located between the ducts and the annular space to overlap part of the cross-sectional area of the ducts to regulate flow of coolant from the space to the ducts.

3,526,795
TORQUE REACTION ATTITUDE CONTROL DEVICE

William Pecs, 610 Sherburn St., Winnipeg, Manitoba, Canada

Filed June 19, 1967, Ser. No. 646,951

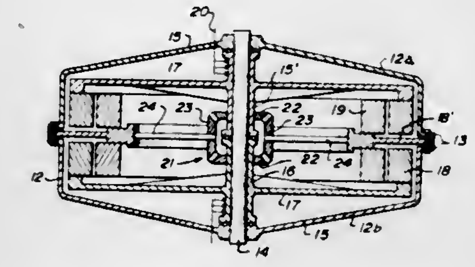
Claims priority, application Great Britain, June 20, 1966, 27,380/66

Int. Cl. H02k *7/02*

U.S. Cl. 310—74 **6 Claims**

A torque reaction attitude control device having a rotatable flywheel assembly which includes inner and outer

flywheels, each having ring-like portons of equal mass, for rotation in opposite directions, respectively, for the purpose of counteracting the gyroscopic effect within the device. The hub portions of the flywheels are operatively



connected to electrical brush connections for providing the power source thereto. A gearing system is operatively connected to the respective flywheels for maintaining substantially identical speed of rotation thereof.

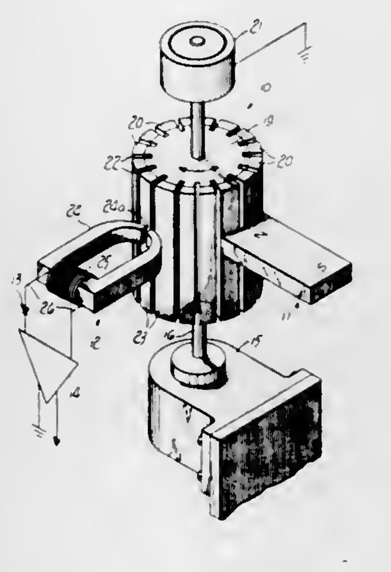
3,526,796
TIMING PULSE GENERATOR

Frank Henning Blitchington, Jr., Greensboro, and Richard Allen Harris, High Point, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 540,258, Apr. 5, 1966. This application Oct. 7, 1968, Ser. No. 765,535

Int. Cl. H02k *17/42*

U.S. Cl. 310—168 **6 Claims**



A substantially unipolar fast rise time pulse is produced when a discontinuity in a magnetic coating on a non-magnetic base is moved past a magnetic pickup head. A magnetic field established in the coating along the path of movement of the coating is interrupted by the discontinuity to produce a localized field above the surface of the coating to produce the pulse in the magnetic pickup.

3,526,797
STABILIZING SPRING ASSEMBLY FOR BRUSHHOLDER

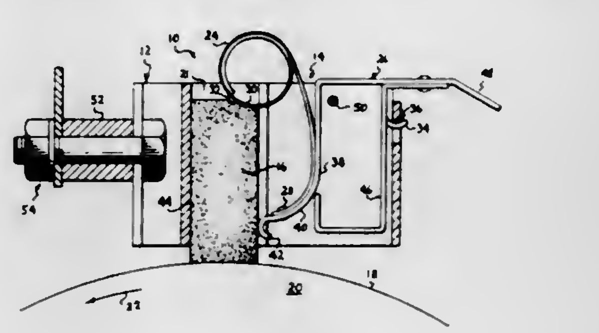
Norman F. Jueschke, Erie, Pa., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 738,998, June 21, 1968. This application Sept. 29, 1969, Ser. No. 863,678

Int. Cl. H02k *13/00*

U.S. Cl. 310—245 **14 Claims**

A brushholder for a dynamoelectric machine including a spring assembly having a backing member which is normally pivotably mounted within the brushholder and having a constant pressure spring of volute construction attached to the backing member. The force of the constant pressure spring against the top of the brush provides a moment of force about a pivot point which biases the backing member into engagement with a portion of the brush near a commutator of the motor. The backing member forces the brush against a reaction surface of the brushholder during a desired useful length of the brush to increase brush stability and improve commutation for the dynamoelectric machine.



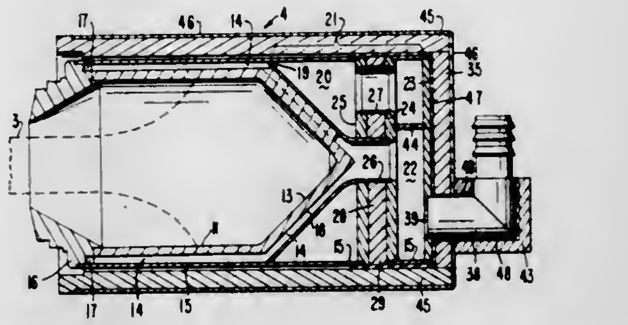
3,526,798
X-RAY SHIELD STRUCTURE FOR LIQUID COOLED ELECTRON BEAM COLLECTORS AND TUBES USING SAME

Lars H. Sandstrom, Cupertino, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed May 20, 1968, Ser. No. 730,509

Int. Cl. G21f *7/00;* **H01j** *19/36*

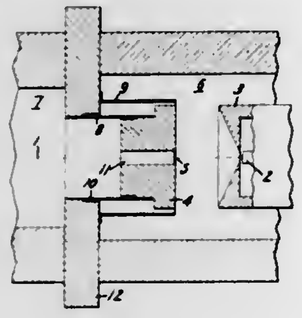
U.S. Cl. 313—22 **8 Claims**



An electron beam tube is disclosed. The tube includes an electron gun for forming and projecting a beam of electrons over an elongated beam path to a beam collector structure disposed at the terminal end of the beam. The beam collector structure includes a chamber having an opening at one end for passage of the beam into the chamber and which is closed on the other end to collect that portion of the beam which passes through the chamber to the closed end. An array of liquid coolant channels are provided along the side walls of the beam collector chamber in heat exchanging relation with the chamber walls for cooling same. A liquid coolant manifold structure is disposed over the closed end of the collector for distributing to and collecting liquid coolant from the array of coolant passageways. The liquid coolant manifold includes first and second axially spaced chambers with a pair of pipes communicating with the first chamber and a pair of pipes interconnecting the first and second chamber. An X-ray shield as of lead is provided closely surrounding the beam collector chamber and the liquid coolant channels, such shield also covering over the end of the coolant manifold and including a portion disposed intermediate the first and second axially spaced chambers thereof. The coolant pipes connected into the first chamber and interconnecting the first and second chambers of the manifold are axially offset with respect to each other such that the X-ray shield portion disposed between the two chambers blocks any line of sight passageway for X-rays from the beam collector chamber through the two sets of pipes. In the preferred embodiment, a pair of elbow-shaped X-ray shield members are provided covering elbow pipe fittings connecting into the first manifold chamber.

3,526,799
ELECTRON DISCHARGE DEVICE SUBJECT TO HYDROCARBON BACKGROUND PRESSURE AND HAVING CARBON-DISSOLVING ELECTRODES

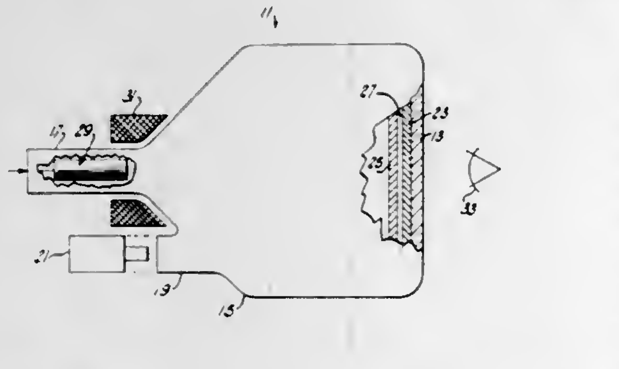
Patrick P. Coppola, Fayetteville, and Homer H. Glascock, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 421,020, Dec. 24, 1964. This application May 26, 1967, Ser. No. 641,575
Int. Cl. H01j *19/70, 29/02, 29/12*
U.S. Cl. 313—82 **5 Claims**



An electron discharge device to be operated in an evacuated system having low background pressure of hydrocarbon includes an electron gun for generating an electron beam and an anode having a narrow aperture through which a portion of the beam passes. To eliminate undesired deposition of carbon on the surface of the anode and in the aperture, which deposition tends to obstruct the passage of electrons, the anode is formed of a material capable of dissolving and diffusing carbon into the interior of the anode, vanadium being a preferred material, and is supported by a low thermal conductivity support so that the anode is heated by the electron beam to a temperature below the melting point of the material but sufficiently high that carbon deposited on the anode and in the aperture is dissolved into the anode and removed from its surface and the aperture.

3,526,800
CATHODE RAY TUBE HAVING INDEPENDENT FRONT AND REAR DISPLAYS

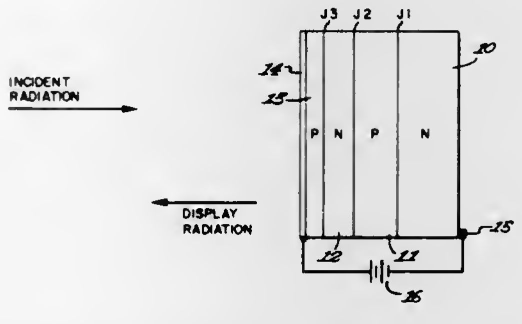
Alfred D. Johnson, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 679,002
Int. Cl. H01j *29/26, 29/28*
U.S. Cl. 313—92 **1 Claim**



A rear-view cathode ray tube having a cascade screen comprising two phosphor layers separated by an aluminum film. The forward layer of phosphor is selected to provide maximum brightness matched to the response characteristics of the frontal observer. The rear phosphor material is chosen to provide maximum brightness matched to the response characteristics of the rear port observation means, i.e., a camera. The aluminum film also acts as an excellent ambient light filter for improved rear-view observation.

3,526,801
RADIATION SENSITIVE SEMICONDUCTOR DEVICE

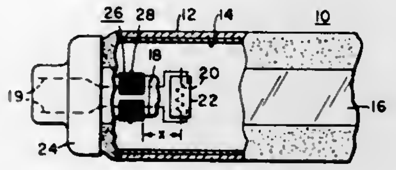
Paul W. Kruse, Edina, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,161
Int. Cl. H05b *33/16*
U.S. Cl. 313—108 **18 Claims**



A multijunction semiconductor device capable of converting and/or intensifying incident radiation. The device utilizes a heterojunction to convert the wave length of incident radiation and/or a "hook collector" arrangement to provide an internal gain mechanism for high overall quantum efficiency.

3,526,802
COMPACT HIGH-OUTPUT FLUORESCENT LAMP WITH AMALGAM TYPE MERCURY-VAPOR PRESSURE CONTROL MEANS AND A NEON-ARGON FILL GAS

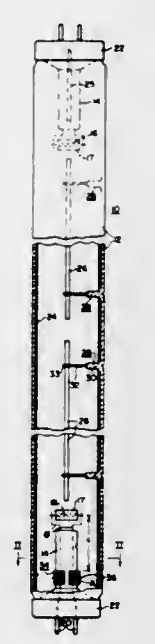
Albert W. Wainio, Livingston, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 26, 1968, Ser. No. 700,911
Int. Cl. H01j *19/70*
U.S. Cl. 313—109 **6 Claims**



The light output and power loading capability of a compact fluorescent lamp, such as an 18 inch "T8" aperture lamp adapted for use in photocopying apparatus, are increased by placing an indium-mercury amalgam that contains from 80 atom percent to 95 atom percent indium on the stem at a distance of from 20 to 40 mm. from the cathode and utilizing a fill gas consisting of a mixture of neon and argon at a total pressure of from 2.5 to 4 mm. of mercury. The fill gas composition and pressure are correlated with the cathode-amalgam spacing and the amalgam composition to provide an 18 inch T8 fluorescent lamp that reaches peak light output at loadings in excess of 20 watts per foot without forced cooling and which can be operated at loadings up to 50 watts per foot with forced cooling.

3,526,803
HIGH-OUTPUT FLUORESCENT LAMP WITH AXIAL ROD AND AMALGAM MERCURY-VAPOR CONTROL MEANS

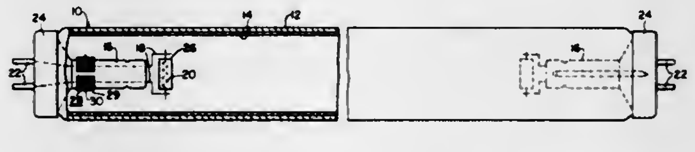
Albert W. Wainio, Livingston, and George S. Evans, Caldwell, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 30, 1968, Ser. No. 701,592
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—109 **10 Claims**



A fluorescent lamp having an axially mounted glass rod in the discharge space, an amalgam of mercury and another metal such as indium that is disposed on an interior part of the lamp structure at a location such that the amalgam controls the mercury-vapor pressure during operation, a neon-argon fill gas, and a T17 envelope (2⅛ inches O.D.) which permit the lamp to be operated efficiently at power loadings of from 25 to 50 watts per foot and at optimum output over a wide range of ambient temperatures. The fill gas pressure is varied within the range of about 1.5 to 3.5 torr and the fill gas contains from 50% to 90% by volume of neon, depending upon the power loading, and the amalgam is located on one of the lamp stems at distances of from 20 to 60 mm. from the adjacent electrode (or attached to one of the rod supports at distances of from 5 to 20 mm. from the bulb axis), depending upon the ambient temperature at which peak light output is to be achieved at the selected power loading.

3,526,804
FLUORESCENT LAMP OR SIMILAR DEVICE CONTAINING AN AMALGAM OF TIN-INDIUM-MERCURY WHICH CONTROLS THE MERCURY VAPOR PRESSURE DURING OPERATION

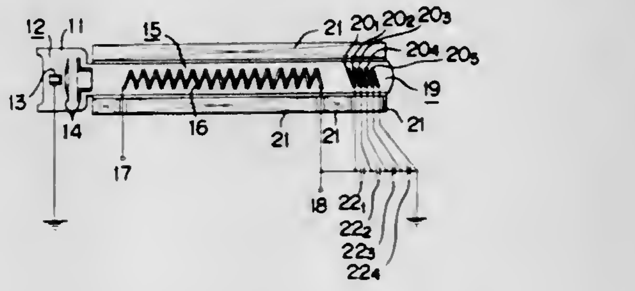
George S. Evans, Caldwell, and Chalmers Morehead, Upper Montclair, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1967, Ser. No. 678,702
Int. Cl. H01j *19/70*
U.S. Cl. 313—174 **5 Claims**



The mercury vapor pressure in a fluorescent lamp or similar low-pressure mercury-discharge device is controlled by an amalgam composed of indium, mercury and a minor amount of tin. The amalgam contains, on an atom percent basis, from 45% to 93% indium, from 5% to 30% mercury, and from 2 to 25% tin and the quantities of the aforesaid constituents are preferably so proportioned that the amalgam is in a liquid-solid (two phase) state at the temperatures which prevail within the lamp when it is operated at high power loadings or high ambient temperatures, or both.

3,526,805
MICROWAVE ELECTRON TUBE DEVICE

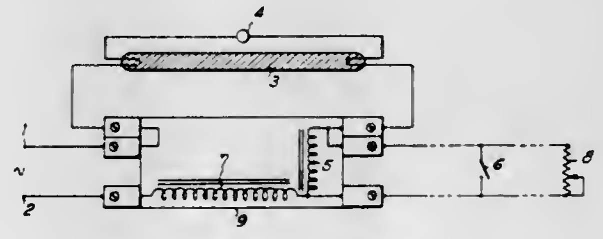
Takanori Okoshi and Enbeng Chiu, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 24, 1968, Ser. No. 723,831
Claims priority, application Japan, Apr. 27, 1967, 42/27,138
Int. Cl. H01j *23/02*
U.S. Cl. 315—5.38 **5 Claims**



A collector of a microwave electronic tube device comprises a plurality of electrodes which are disposed so as to produce a decelerating electric field which diagonally intersects with an electron beam emitted from an electron gun. The electron beam is decelerated by means of interactions with a magnetic field provided in parallel thereto and with the diagonally intersecting decelerating electric field. Electrons forming the decelerated beam are collected dependent upon their speeds at incidence into the collector by any one of said plurality of electrodes at low speeds, thereby reducing power loss.

3,526,806
GAS DISCHARGE LAMP CIRCUIT WITH RESISTIVE BALLAST AND INDUCTIVE BALLAST IN PARALLEL

Albert Gaston Joseph Huyghe, 13 Place du General de Gaulle, Hazebrouck, Nord, France
Filed Apr. 4, 1968, Ser. No. 718,875
Claims priority, application France, June 9, 1967, 109,888; Oct. 31, 1967, 126,526
Int. Cl. H05b *41/08, 41/18*
U.S. Cl. 315—100 **2 Claims**

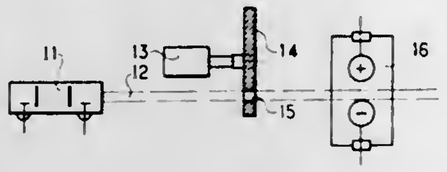


A supply device for a fluorescent tube comprises a normal starter having a power greater than that normally necessary for the tube employed and connected in parallel with the tube and a normal ballast and leakage inductance connected in series with the tube, the leakage inductance being of small output and adapted for being short-circuited by a switch connected in parallel therewith. A variable resistance may also be connected in parallel with the leakage inductance to control the light intensity.

3,526,807
LASER BEAM FOR TRIGGERING A SPARK GAP AT HIGH RATE

Spartacus Barbini, Chaville, Hauts-de-Seine, France, assignor to Compagnie Generale d'Electricite, Paris, France

Filed July 24, 1967, Ser. No. 655,658
Claims priority, application France, Aug. 8, 1966, 72,441
Int. Cl. H05b *37/02, 39/04*
U.S. Cl. 315—150 7 Claims

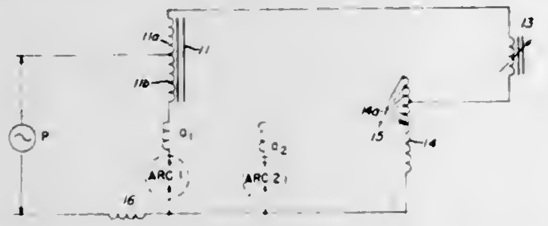


A disk comprising holes, moving in rotation on its axis, placed between a continuous high power laser and a spark gap, supplies an interrupted ionizing light beam, operating as a repetitive trigger for the spark gap at a relatively high frequency.

3,526,808
ELECTRIC ARC STABILIZING MEANS

John L. Michaelis, Pittsburgh, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 7, 1968, Ser. No. 703,601
Int. Cl. H05b *41/16*
U.S. Cl. 315—282 18 Claims



Disclosed herein are various circuits for stabilizing plasma arcs and preventing arc runaway. By using a balancing transformer in series with a power supply, two or more arcs connected in parallel, and preferably a sufficient amount of impedance to render the overall impedance of the circuit positive, any fluctuation in current within the arcs may be balanced and thus controlled. Through the use of a slightly more elaborate circuit, the intensity of the arcs may be varied and controlled without loss of stability. Such a circuit preferably includes a variable saturable core-two winding reactor connected between a balancing transformer and a control transformer which is connected in parallel with one of the arcs.

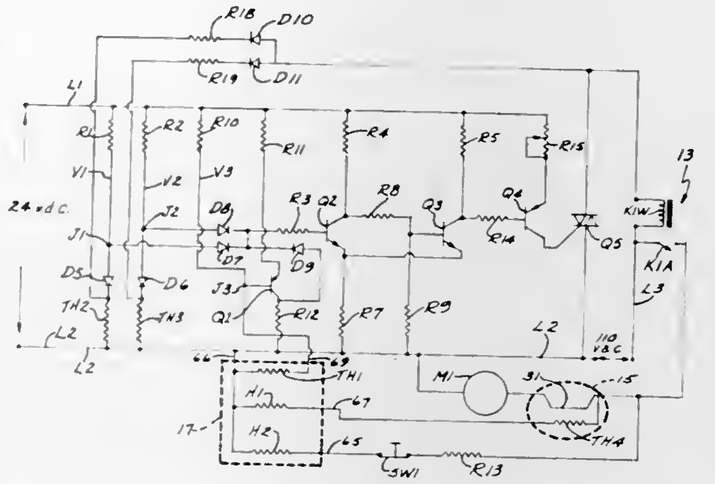
3,526,809
OVERLOAD PROTECTION APPARATUS

Robert E. Obenhaus, South Easton, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Aug. 28, 1967, Ser. No. 663,709
Int. Cl. H02h *5/04*
U.S. Cl. 317—13 4 Claims

The apparatus disclosed is operative to protect an electrical load from overload conditions. The apparatus employs a coaxial current sensor having a tubular shell and an elongate electrode concentric therewith, the space between the shell and the electrode being filled with a semiconductor material having a resistance which varies with temperature. The load current is passed longitudinally through the shell thereby to heat the sensor so that the resultant variations in the resistance of the semiconductor material provides a signal when the load draws an overload current.

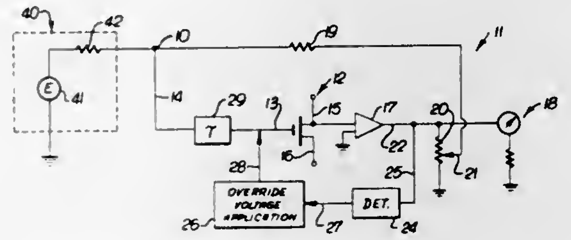
Overload signals provided by the sensor are applied to a heater in an electrothermal counter or integrator. The electrothermal counter includes also a thermistor which responds to the heat generated by the heater. The apparatus further includes switching means controlled by the electrothermal counter and responsive to the resistance of the counter thermistor for deenergizing the load each time the second heater is energized above a predetermined level by one of the signals and for reenergizing the load a preselected number of times after the sensor cools down following deenergization of the load and then deenergizing the load completely when the total number of signals exceeds a preselected level.



3,526,810
AMPLIFIER PROTECTION CIRCUIT

Wilbur R. Williams, Glendora, and Gerald Dufrenne, La Verne, Calif., assignors to Cary Instruments, Monrovia, Calif., a corporation of California

Filed Mar. 7, 1967, Ser. No. 621,265
Int. Cl. H02h *3/20, 7/20;* **G01r** *1/36*
U.S. Cl. 317—16 6 Claims



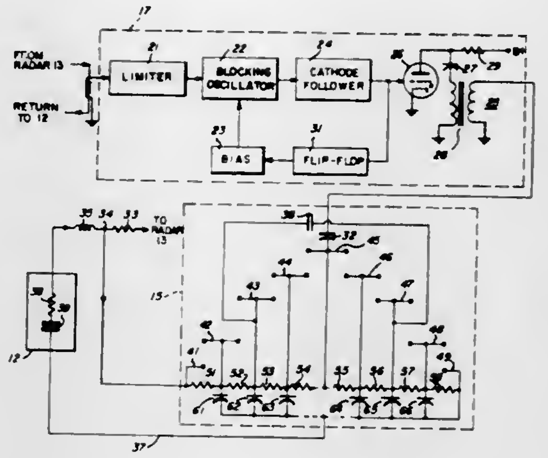
The invention concerns overload protection for field effect transistors in fast, high impedance circuits, the environment including the field effect transistor connected in an amplifying network. The improvement comprises first means operable to detect increase of network output in relation to a predetermined level, and second means responsive to operation of the first means to effect feedback application of override voltage combining with input voltage to maintain the voltage at the control terminal below destructive level.

3,526,811
ELECTRONIC CROWBAR SYSTEM

William W. Shrader, West Newton, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed Nov. 2, 1967, Ser. No. 680,077
Int. Cl. H02h *3/12*
U.S. Cl. 317—16 10 Claims

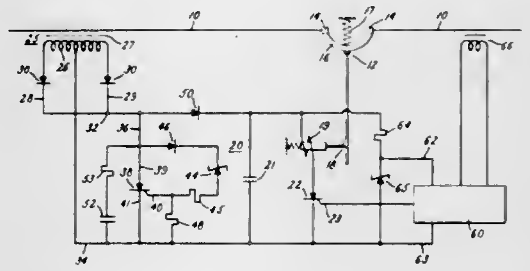
A device for selectively providing for a predetermined time a low resistance path across a high-power utilization device upon the detection of an abnormal rise in current in the utilization device comprising an improved electronic crowbar system including a plurality of spark gaps having a trigger circuit for firing the gaps upon detection of an abnormal rise in current in the utilization device and a discharge means connected across substantially all of the gaps except one or more at each end of the crowbar for insuring instantaneous firing of the gaps when an arc occurs in the utilization device operating at full or partial voltage.



3,526,812
POWER SUPPLY FOR CIRCUIT BREAKER TRIPPING

Floyd L. Steen, Lansdowne, and Charles H. Titus, Newtown Square, Pa., assignors to General Electric Company, a corporation of New York

Filed Apr. 6, 1967, Ser. No. 628,853
Int. Cl. H02h *7/16, 3/10, 7/10*
U.S. Cl. 317—33 5 Claims



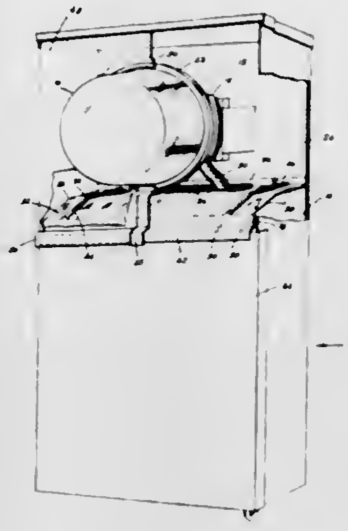
A power supply for providing tripping energy for a circuit breaker connected in a power circuit. Comprises a capacitor which is charged by unidirectional pulsating current derived from the power circuit through a current transformer and rectifying means. A low impedance path is established across the current transformer secondary by a Zener diode-controlled, shorting thyristor when the instantaneous voltage across the capacitor reaches a predetermined level, thus blocking a further increase in capacitor voltage until the next half cycle of the pulsating current.

3,526,813
WATERPROOF DOUBLE COMPARTMENT OUTDOOR ELECTRIC METER HOUSING

Herman H. Kobryner, Forest Hills, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York

Filed Jan. 3, 1969, Ser. No. 788,703
Int. Cl. H02b *1/12*
U.S. Cl. 317—107 6 Claims

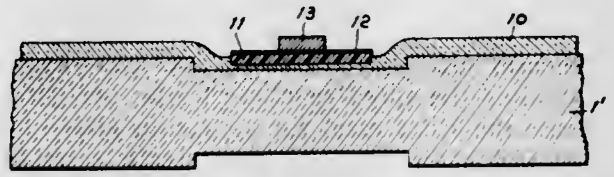
An electric meter box is described of the outdoor ringless type wherein a second lower compartment is provided which is raintight. A water guidance discharge plate is employed which cooperates with a cover to provide a simple water discharge channel to prevent water from entering the lower compartment.



3,526,814
HEAT SINK ARRANGEMENT FOR A SEMICONDUCTOR DEVICE

Amaury Piedra and Henry J. Campbell, North Palm Beach, Fla., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware

Filed Apr. 3, 1968, Ser. No. 718,524
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 11 Claims



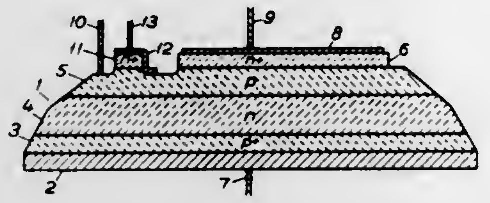
This invention provides a means of mounting high power semiconductor devices with improved means for heat dissipation. The improvement consists in embedding a dielectric heat conducting material such as beryllium oxide in glass which is layered onto a ceramic base or support.

3,526,815
CONTROLLABLE SEMI-CONDUCTOR DEVICES COMPRISING MAIN AND AUXILIARY THYRISTORS HAVING ALL EXCEPT ONE EMITTER-LAYER IN COMMON

Per Svedberg, Vallingby, and Bengt-Arne Vedin, Kungsangen, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation

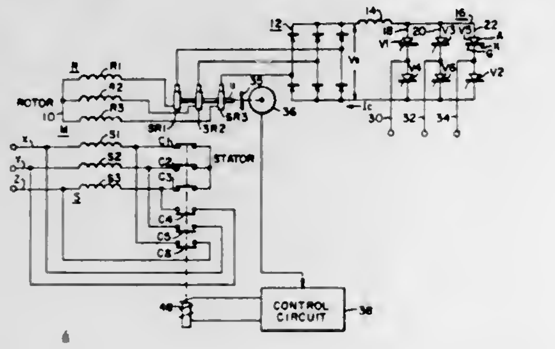
Filed July 7, 1967, Ser. No. 651,764
Claims priority, application Sweden, July 7, 1966, 9,292/66
Int. Cl. H01l *11/10*
U.S. Cl. 317—235 17 Claims

A controllable semi-conductor device comprises a main thyristor and an auxiliary thyristor; the thyristors comprise a common semi-conductor body with a first emitter-layer, a first main electrode connected to the emitter layer, base-layers and a control electrode common to both the main and auxiliary thyristors; the thyristors have separate second emitter-layers; the second emitter-layer of the auxiliary thyristor is connected to the adjacent base-layer.



3,526,816
SYSTEM FOR RECOVERING SLIPPAGE POWER IN SLIP RING INDUCTION MOTORS

Derek A. Paice, Murrysville, and John Rosa, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 7, 1967, Ser. No. 688,925
Int. Cl. H02p *1/32*
U.S. Cl. 318—226 **16 Claims**

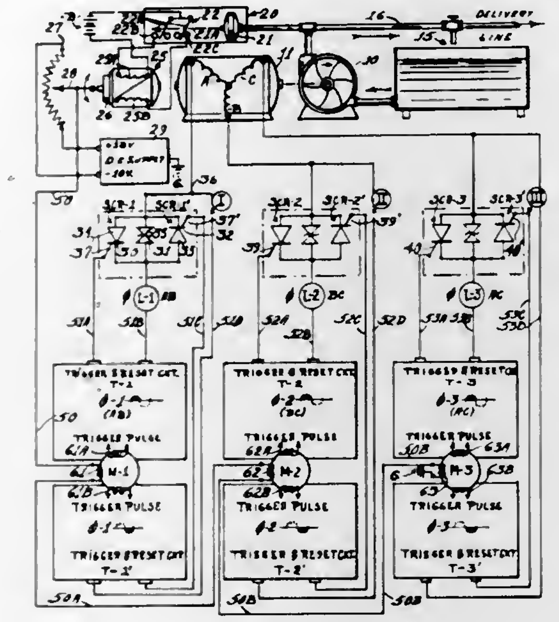


A speed control system for a wound secondary induction motor wherein a controllable DC–AC (direct current to alternating current) converter, whose DC terminals are supplied through a rectifier with rectified slip power, is employed to control speed and recover slip power. As the speed of the motor is increased, the output characteristic of the motor-rectifier arrangement is changed when the speed reaches at least one given speed to increase the *Vr/S* ratio for all speeds above the given speed at which the output characteristic is changed. V*r* is the rectified slip voltage presented by the motor to the converter, and S is the motor slip which may be expressed in slip frequency, or slip percentage, or per unit slip. By way of example the output characteristic is changed by changing the effective turns ratio between the primary and secondary circuits of the motor-rectifier arrangement. Changing the output characteristic in the manner described, materially reduces the required volt-ampere rating of the converter and improves the full load power factor of the motor system.

3,526,817
MAGNETIC AMPLIFIER BIAS FOR THREE-PHASE MOTOR CONTROL

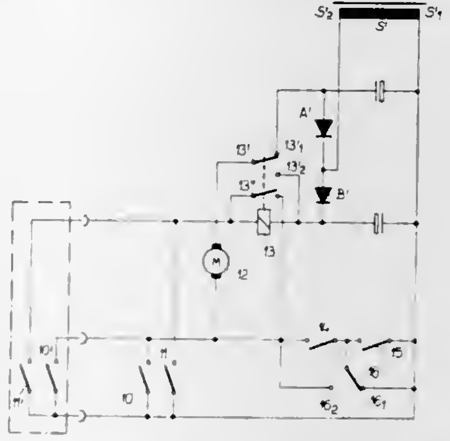
Ronald F. Plambeck, Chicago, and Richard F. Mandock, Schiller Park, Ill., assignors to Protection Controls, Inc., Skokie, Ill., a corporation of Illinois
Filed July 15, 1968, Ser. No. 744,833
Int. Cl. H02p *7/62*
U.S. Cl. 318—227 **8 Claims**

The disclosure provides a simplified and compact condition-controlled biasing system in the form of a potentiometer reversely driven at a slow rate by a servomotor which in turn is controlled by a condition-responsive (e.g. pressure-sensing) switch means which can reverse the motor or stop it for the purpose of applying a common bias current to all of the bias windings of several magnetic amplifiers which fire solid-state gating devices (e.g. silicon controlled rectifiers or triacs) in each of the phase legs of a multiphase working motor at a particular angular position in each phase of the cycle whereby to regulate the motor torque or speed in response to varying load conditions, for example pressure changes in a liquid delivery line wherein it is required to maintain a given pressure, the control system being such that each corrective operation (to slow or speed up the working motor) when completed leaves the potentiometer wiper at rest until the next corrective signal is received, so that excessive hunting and overshooting, such as is common in null type control systems, is eliminated along with rapid wearing of the potentiometer resistance elements.



3,526,818
SLIDE PROJECTOR CONTROL ARRANGEMENT

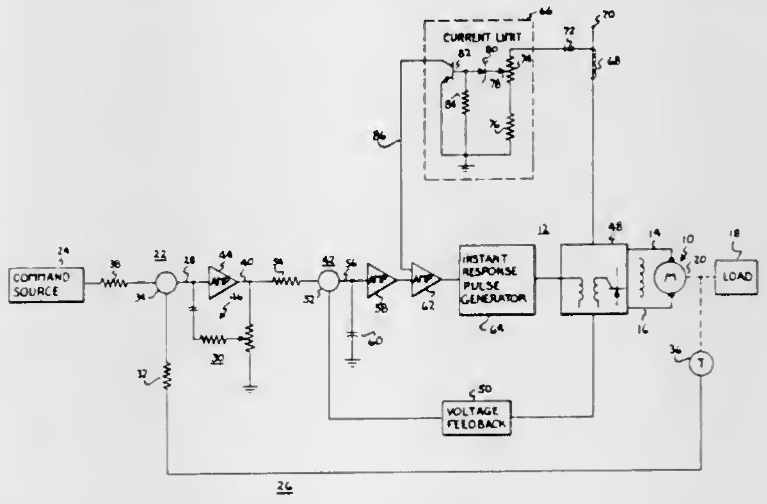
Josef Scheibel, Ober-Moerlen, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed July 10, 1967, Ser. No. 652,086
Claims priority, application Germany, July 8, 1966, B 87,917
Int. Cl. H02p *1/22*
U.S. Cl. 318—266 **11 Claims**



An electrical control arrangement for controlling the direction of motion of a slide changing mechanism in a slide projector. A direct-current motor operable in forward and reverse directions is coupled to the slide changing mechanism. A selector switch permits the preselection of the direction of motion of the motor and hence the slide changing mechanism. A push-button is provided for initiating the slide changing process or operation. Limit switches actuated by a cam surface on the slide changing mechanism bridge the push-button and maintain the circuit to the motor closed until the slide changing process has been completed. The arrangement includes provision for initiating the slide changing process from a remote location.

3,526,819
CURRENT LIMIT FOR MOTOR CONTROL SYSTEMS

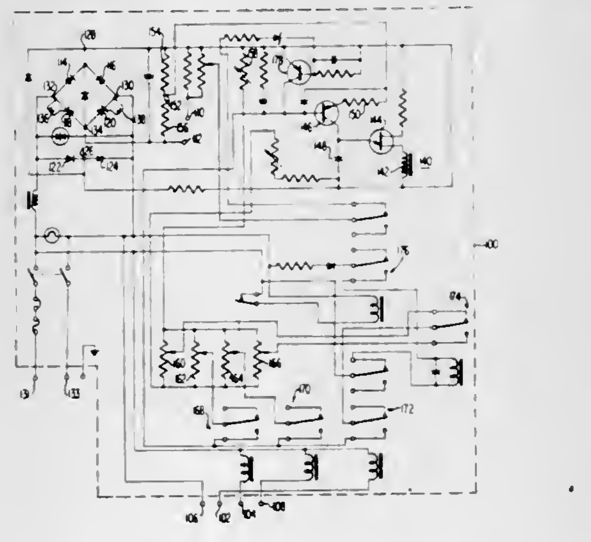
Carlton E. Graf, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,775
Int. Cl. H02p *5/06*
U.S. Cl. 318—341 **9 Claims**



A current limiting circuit for a motor control system wherein the time constant of an armature circuit aids in limiting the average armature current produced by a phase controlled power amplifier. The current limit circuit prevents controlled rectifiers in the power amplifier from being fired as long as the instantaneous value of the armature current is above a predetermined level. An amplifier within a regulating loop of the motor control system is activated as soon as the instantaneous value of the armature current decreases below the predetermined level, immediately firing a controlled rectifier which would have been fired but for the operation of a current limit circuit.

3,526,820
QUARTERLINE STOP POSITION CONTROL CIRCUIT FOR POWER DRIVEN REVOLVING DOORS UTILIZING TWO SPEEDS

Amuel E. Sheckells, Evansville, Ind., assignor to International Steel Company, Evansville, Ind., a corporation of Indiana
Filed June 14, 1968, Ser. No. 737,190
Int. Cl. G05d *3/08*
U.S. Cl. 318—467 **11 Claims**



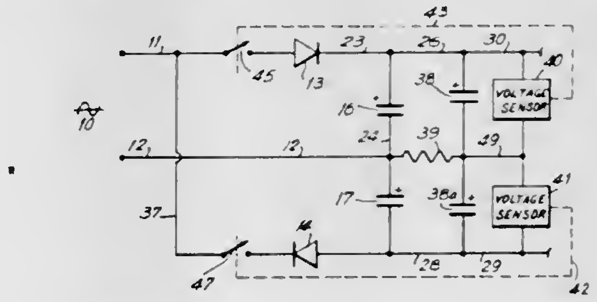
Apparatus for controlling electrically driven revolving doors to automatically stop the wings at the quarterline position when not in use. When activated by finger-tip pressure or other means from the quarterline position, the wings commence revolving, turning approximately ⅝ of a revolution past the point where the user exits. The door slows down after the user exits and comes to a stop with all four airlock strips of the four door wings touching the enclosure walls.

ERRATUM

For Class 318—561 see:
Patent No. 3,526,903

3,526,821
CONTROLLED CIRCUITRY FOR CHARGING ELECTRICAL CAPACITORS

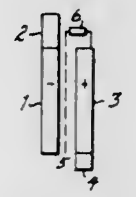
Frederick A. Thomas, 1118 1st Ave., New York, N.Y. 10021
Filed Sept. 20, 1967, Ser. No. 669,122
Int. Cl. G05f *1/44;* **H02m** *7/24;* **H05b** *41/29*
U.S. Cl. 320—1 **20 Claims**



Controlled charging circuitry for charging and recharging capacitors from a standard source of alternating current and utilizing supplementary or ancillary energy transfer capacitors, instead of energy-wasting resistors, as current limiting devices to avoid heating and losses inherent in conventional practice, while also utilizing multi-voltage power sources and multiplier circuits to achieve faster charging and recharging of capacitors, with a balancing circuit enabling the use and equalizing of storage capacitors in series even when not exactly identical in capacitance.

3,526,822
STORAGE BATTERY CELL AND STORAGE BATTERY

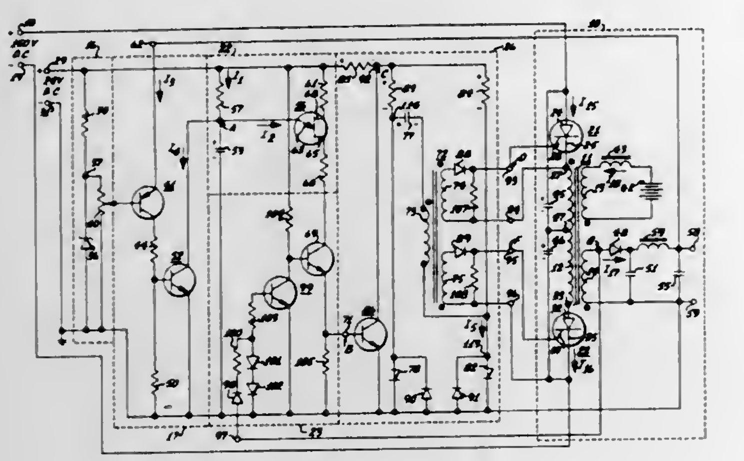
Siegfried Dickfeldt, Hagen-Haspe, Westphalia, and Freimut Peters, Hagen, Westphalia, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 6, 1966, Ser. No. 599,441
Claims priority, application Germany, Dec. 10, 1965, V 29,883
Int. Cl. H01m *45/04*
U.S. Cl. 320—14 **25 Claims**



A storage battery cell comprising in combination therewith a device for controlling the charge and discharge cycle of the battery. The device includes an inert control electrode, whose resistance is independent of the state of charge of the main electrode, which is electrically connectable in various ways to the main electrodes over electrical circuit means at which there is established a potential difference at the end of each charge and discharge cycle; this potential actuates control of the charge and discharge cycles.

3,526,823
SWITCHING REGULATOR CONTROL CIRCUIT

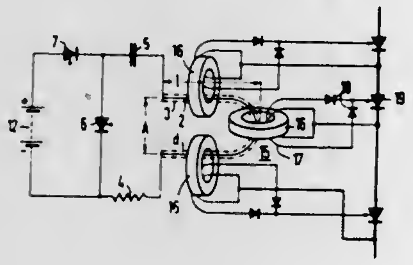
Luther L. Genuit, Scottsdale, Ariz., assignor to General Electric Company, a corporation of New York
Filed Mar. 9, 1967, Ser. No. 621,884
Int. Cl. H02m *3/32, 1/08;* **H02h** *7/14*
U.S. Cl. 321—2 **10 Claims**



A bistable multivibrator alternately supplies positive trigger pulses to first and second silicon controlled rectifiers of a switching regulator. Each trigger pulse causes the switching regulator to deliver a predetermined quantity of electrical energy to a filter capacitor. An oscillator coupled to the multivibrator provides signals which control the frequency of the positive trigger pulses from the multivibrator. A comparator circuit compares the voltage across the filter capacitor with the voltage from a constant voltage supply and controls the frequency of the signals from the oscillator so that the voltage across the filter capacitor is substantially constant.

3,526,824
CURRENT TRANSFORMER DEVICE FOR HIGH VOLTAGE

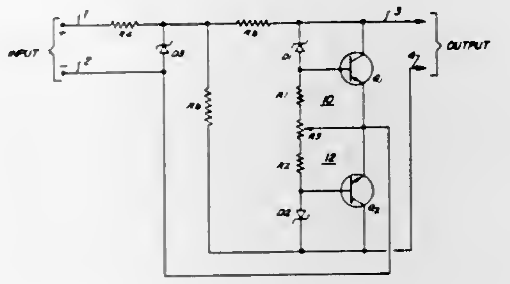
Karl-Friedrich Leowald, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 23, 1967, Ser. No. 662,694
Claims priority, application Germany, Aug. 27, 1966, S 105,559
Int. Cl. H02m *3/28*
U.S. Cl. 321—2 **2 Claims**



A current rectifier system for high voltage has a number of thyristors series connected in the load circuit. The thyristors are fired simultaneously from respective secondary windings for pulse transformers whose primary winding is constituted by a single loop of a high-voltage cable upon which the iron cores for the secondary windings are placed one beside the other. The cable is connected to a source of direct current through an inverter network which translates the direct current into alternating-current pulses so that each transformer core is alternately magnetized in opposing directions of magnetization. The secondary circuits connected to the firing electrodes of the thyristor comprise rectifier diodes to furnish each time a properly polarized firing pulse.

3,526,825
REGULATION OF SMALL ELECTRICAL POTENTIALS OVER A WIDE LOAD RANGE

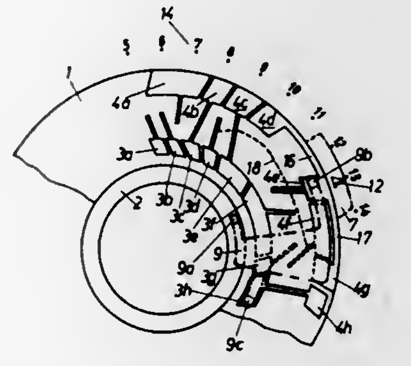
Robert M. Haines, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed June 1, 1967, Ser. No. 642,840
Int. Cl. G05f *1/46*
U.S. Cl. 323—16 **12 Claims**



A voltage regulation circuit comprising two Zener diode networks containing diodes having similar current-potential characteristics connected in opposed polarity across which a D.C. potential is applied to provide a stabilized voltage output in the millivolt range.

3,526,826
EXPOSURE CONTROL INSTRUMENT FOR PHOTOGRAPHIC CAMERAS

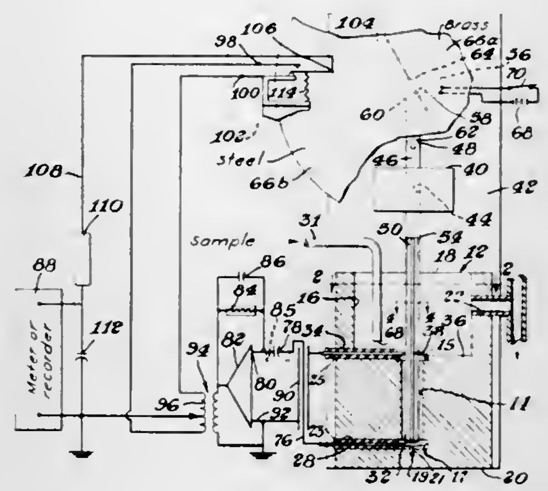
Dieter Rittmann, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany
Filed June 23, 1967, Ser. No. 648,471
Claims priority, application Germany, June 24, 1966, P 39,785
Int. Cl. G05f *5/00;* **H02m** *3/06*
U.S. Cl. 323—80 **10 Claims**



An instrument for entering exposure factors such as aperture and/or film sensitivity values into the electronic timing device of a photographic camera. The instrument has several capacitors of different capacity which are individually electrically connected to contact plates and are includable in the circuit of the timing device by a contact bridge and a slide path cooperating with the contact bridge. The contact bridge is movable by a setter and the contact plates are arranged so that capacitors individually or in various combination with other capacitors are includable in parallel in a circuit of the timing device by means of the contact bridge.

3,526,827
APPARATUS FOR MEASURING CHARGE CONDITION WITHIN A SOLUTION

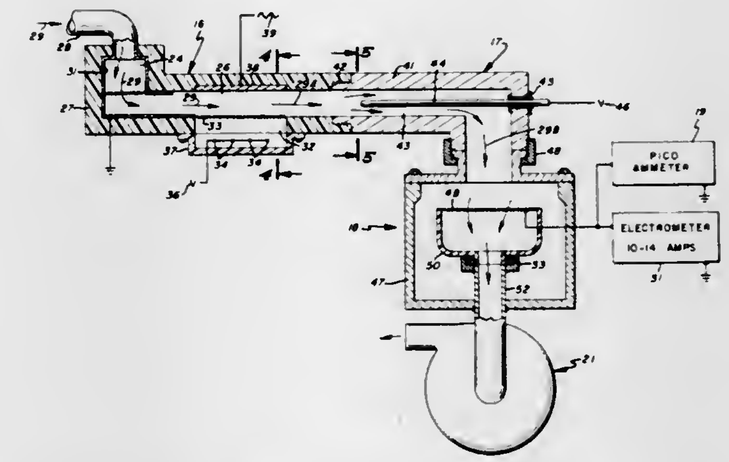
Paul H. Cardwell, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,539
Int. Cl. G01r *31/00*
U.S. Cl. 324—32 **10 Claims**



This invention relates to streaming current detecting apparatus of the type where an electrical signal is developed by flowing a sample liquid through a flow path having metal walls and which has a reciprocating piston therein. The signal is developed across electrodes spaced apart along the flow path which is tubular in shape.

3,526,828
METHOD AND APPARATUS FOR MEASURING PARTICLE CONCENTRATION

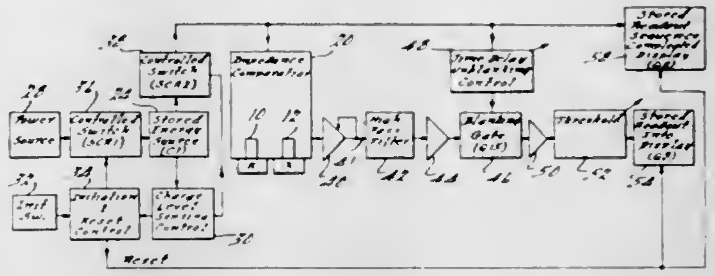
Kenneth T. Whitby, Minneapolis, Minn., assignor to Regents of The University of Minnesota, Minneapolis, Minn., a corporation of Minnesota
Filed Aug. 7, 1967, Ser. No. 658,833
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **22 Claims**



A method and instrument for electric measurement of aerosol particle mass concentrations of a self preserving aerosol size distribution. The instrument has a charger to unipolarly charge a collected sample of aerosol particles in a low electric field, a mobility separator to remove charged aerosol particles smaller than 0.05 micron radius by passing the charged particles through a weak electric field; and a current collector to collect the remaining charged large particles. The mass concentration of the large charged aerosol particles is directly proportional to the electric current gathered by the current collector.

3,526,829
PULSED EDDY CURRENT APPARATUS FOR NON-DESTRUCTIVE TESTING OF RESISTANCE TYPE WELDS

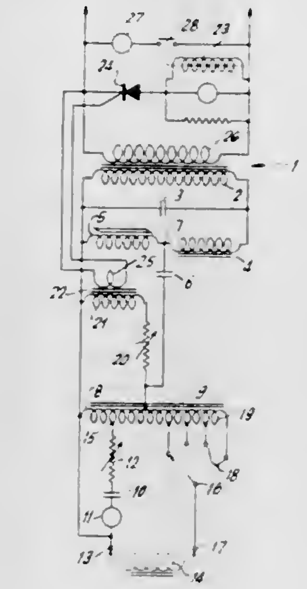
Gardiner A. Noble, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,708
Int. Cl. G01r *33/12*
U.S. Cl. 324—40 **11 Claims**



A method of and apparatus for non-destructive testing of resistance spot welds in ferro-magnetic materials by comparison of the depth of penetration of a pair of eddy current inducing, pulsed high intensity electromagnetic fields, which are locally applied to the test weld and to a reference weld, as manifested by dynamic impedance measurements of the effect of the induced eddy currents on their applied fields. An information signal varying in accordance with any difference between the measured dynamic impedance effects is applied to a time-blanked, adjustable threshold signal utilization circuit having a memory storage-read out acceptance-rejection form of display.

3,526,830
COIL WINDING TESTER INCLUDING CHOPPED WAVE OSCILLATORY CIRCUIT

Koichi Azuma, 22 Miyuki, Shikamaku, Himeji, Japan
Filed Sept. 23, 1968, Ser. No. 761,493
Int. Cl. G01r *31/02*
U.S. Cl. 324—51 **9 Claims**



A coil winding tester includes a step-up power transformer connected across a pair of A.C. input terminals. A chopped wave oscillatory circuit includes a current limiting reactor and a saturable reactor connected in series across the secondary of the power transformer, an output transformer, and a condenser connected between the junction point of the two reactors and a terminal of the primary of the output transformer. A pair of output terminals, for connection to a coil winding to be tested, are connected respectively to the other terminal of the primary winding of the output transformer and to a selector switch selectively engageable with taps of the secondary winding of the output transformer. A first detecting circuit includes a galvanometer and associated components connected across a portion of the primary winding of the output transformer. A second detecting circuit includes a third transformer connected across the primary winding of the output transformer and having its secondary winding connected to the gating circuit of an SCR. The SCR is connected across the primary winding of the power transformer in series with the operating winding of a magnetic switch. The magnetic switch includes contacts in series with a buzzer in a circuit connected across the primary winding of the power transformer.

3,526,831

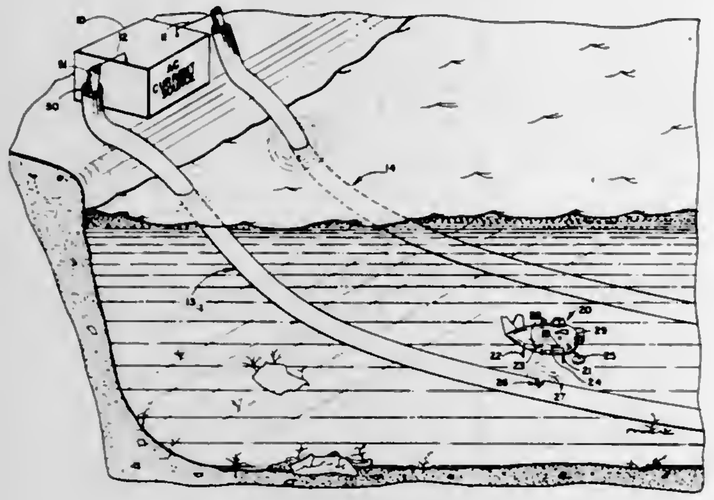
METHOD FOR TRACKING UNDERWATER PIPELINES AND DETECTING FLAWS IN THE COATING THEREOF

Donald E. Smith, Long Beach, Calif., assignor to North American Rockwell Corporation

Filed Nov. 21, 1968, Ser. No. 777,816

Int. Cl. G01r *31/00, 31/12*

U.S. Cl. 324—54 1 Claim



A method for detecting breaks in the plastic, non-corrosive coating of an undersea pipeline by producing in the pipeline an audio frequency current and detecting the leakage current from the pipeline by two space probes suspended from a submarine. The submarine is guided along the pipeline by a guiding system, that responds to the alternating magnetic field, produced by the audio frequency current in the pipeline, so that one probe does not wander further off the pipeline than the other and produce current signals indicating a false flaw in the coating. In addition, the speed and course of the submarine are monitored, and the position of the submarine is plotted on a recorder together with the leakage current signal so that the flaw or break in the plastic coating can be relocated and repaired.

3,526,832

FREQUENCY RESPONSE ANALYZER HAVING A FUNCTION GENERATOR FOR PROVIDING STIMULATING SIGNALS TO A SYSTEM UNDER TEST

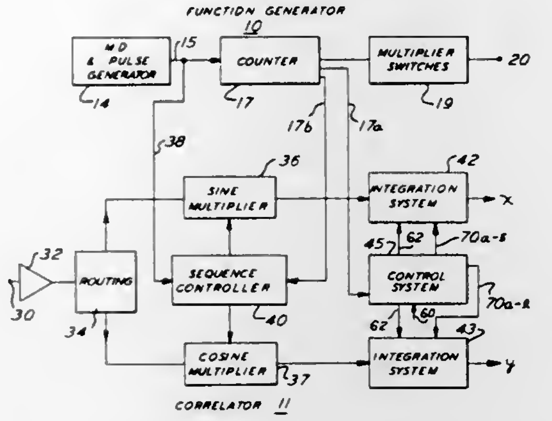
Frank E. Post, Warminster, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed Mar. 15, 1968, Ser. No. 713,461

Int. Cl. G01r *27/00;* **G06g** *7/19;* **G06f** *15/34*

U.S. Cl. 324—57 14 Claims

A frequency response analyzer for providing constant amplitude stimulating signals to a system under test. Cycle signals are generated indicating completion of each cycle of the stimulating signal. A correlator section of the analyzer compares the output of the system under test with the stimulating signal by first simultaneously applying that output to a pair of multipliers one of which is programmed for sine and the other for cosine multiplication. The output of each of the multipliers is integrated and the resultant signal stored as a DC voltage. Integration is initiated upon application of a predetermined cycle signal. After a predetermined time interval integration is terminated only upon occurrence of a cycle signal.



3,526,833

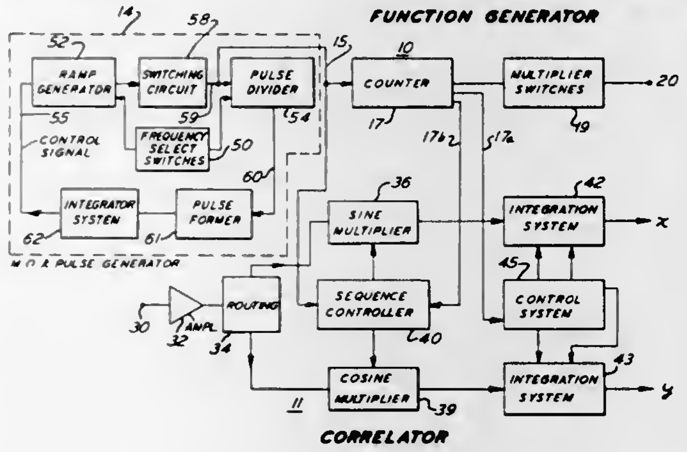
FREQUENCY RESPONSE ANALYZER INCLUDING A FUNCTION GENERATOR SECTION AND A COLLATOR SECTION

Donald Kotas, Roslyn, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed Mar. 15, 1968, Ser. No. 713,513

Int. Cl. G01r *27/00;* **G06g** *7/19;* **G06f** *15/34*

U.S. Cl. 324—57 8 Claims



A frequency response analyzer having a function generator section for providing constant amplitude stimulating signals over a frequency range to a system under test. An output of the test system is simultaneously applied to a pair of multipliers of a correlator section one of which is programed for sine and the other for cosine multiplication. The output of each of the multipliers is integrated and the timing of the correlator is controlled by the function generator. The function generator produces a first train of pulses having a PRF which may be varied over a PRF range. The PRF of the first pulse is divided by a selected decimal value for producing a second pulse train. A feedback signal is produced to control the generation of the first pulse train having a rate of change in value proportional to and in a direction related to any difference in the PRF of the second pulse train from a predetermined value.

3,526,834

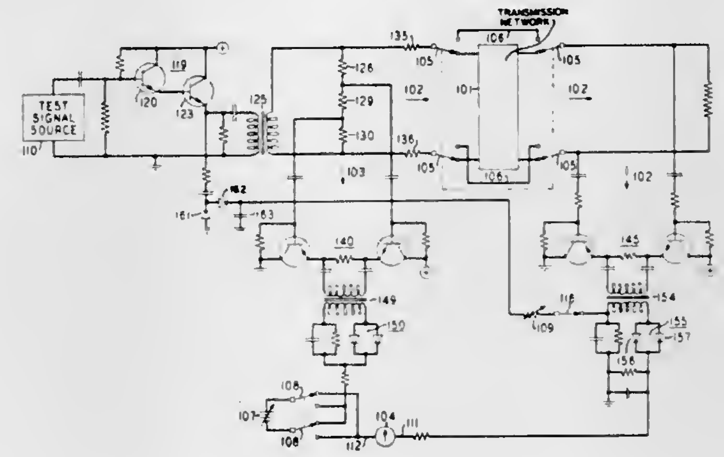
IMPEDANCE LOSS METER MEASURING VOLTAGE DIFFERENCES INDEPENDENTLY OF SIGNAL SOURCE ERROR BY COMPARING TEST AND REFERENCE VOLTAGES DERIVED FROM A COMMON SOURCE

Donald W. Brown, Glen Ellyn, Ill., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Apr. 4, 1968, Ser. No. 718,675

Int. Cl. G01n *7/00, 27/00*

U.S. Cl. 324—57 7 Claims



An insertion loss meter to measure the insertion losses of a low loss network measures the difference in the transmitted test voltages prior and subsequent to the insertion of the network. The test voltages are compared to a reference voltage derived from the same signal source as the test voltage. A voltage component derived from the test signal source is added to the test signal to null the reference voltage. This measurement technique eliminates the need for a precisely stable test signal source since the test measurements are not adversely affected by fluctuations of the test signal source.

3,526,835

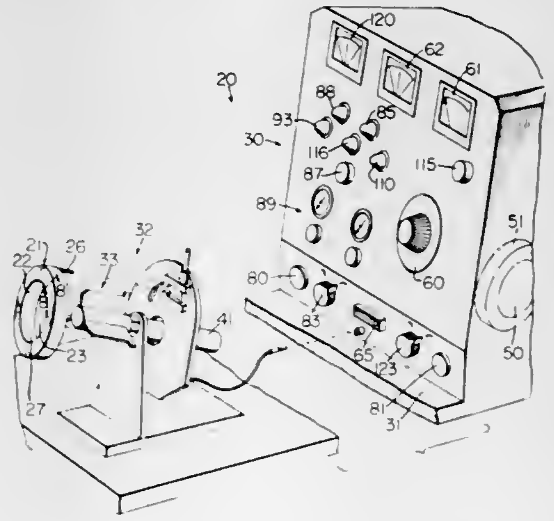
APPARATUS FOR AND METHOD OF TESTING AND THEREAFTER SIMULTANEOUSLY TESTING AND BLOCKING STRIP CONDUCTOR COILS

William Olin Jones, Jr., Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Aug. 5, 1968, Ser. No. 750,179

Int. Cl. G01r *31/02*

U.S. Cl. 324—158 21 Claims



An apparatus for and method of testing and blocking electrical coils wherein a coil is supported on a test fixture which is provided with locking means and such locking means is automatically controlled by an associated electrical system. The electrical system automatically and sequentially tests and blocks a particular coil and controls the action of the locking means so as to require separate and external actuation of the system to release a defective coil whereby the testing and blocking cycle may be started again upon placing another coil on the test fixture.

3,526,836

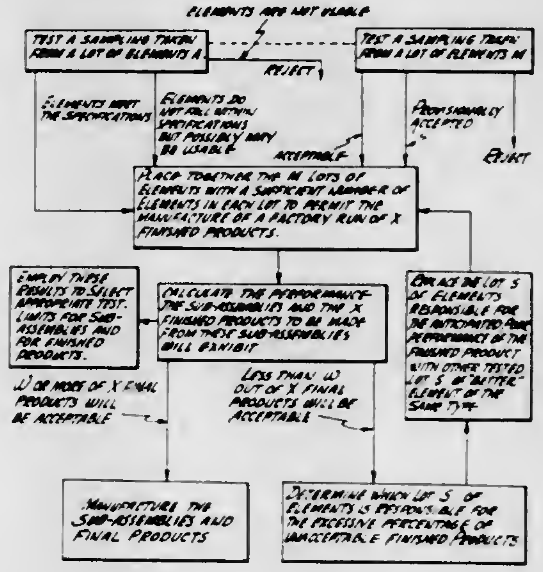
STATISTICAL METHOD, UNDER COMPUTER CONTROL, FOR THE MANUFACTURE AND TEST OF MASS PRODUCED ARTICLES

Erturk Deger, West Lafayette, and John B. Schultz, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware

Filed Jan. 23, 1968, Ser. No. 699,967

Int. Cl. G01r *31/02*

U.S. Cl. 324—158 6 Claims


TEST A SAMPLING TAKEN FROM A LOT OF ELEMENTS A
TEST A SAMPLING TAKEN FROM A LOT OF ELEMENTS M
REJECT
ELEMENTS MEET THE SPECIFICATIONS
PROVISIONALLY ACCEPTED
ACCEPTABLE
REJECT
PLACE TOGETHER THE M LOTS OF ELEMENTS WITH A SUFFICIENT NUMBER OF ELEMENTS IN EACH LOT TO PERMIT THE MANUFACTURE OF A FACTORY RUN OF X FINISHED PRODUCTS.
CALCULATE THE PERFORMANCE THE SUB-ASSEMBLIES AND THE X FINISHED PRODUCTS TO BE MADE FROM THESE SUB-ASSEMBLIES WILL EXHIBIT
OR MORE OF X FINAL PRODUCTS WILL BE ACCEPTABLE
LESS THAN OUT OF X FINAL PRODUCTS WILL BE ACCEPTABLE
MANUFACTURE THE SUB-ASSEMBLIES AND FINAL PRODUCTS
DETERMINE WHICH LOT S OF ELEMENTS IS RESPONSIBLE FOR THE EXCESSIVE PERCENTAGE OF UNACCEPTABLE FINISHED PRODUCTS

Samples of lots of the different components needed for the manufacture of mass produced articles are tested to determine the values and their statistical distribution of parameters of interest of each such lot. This information is employed to calculate the distribution of the values of parameters of products expected to be made from these components, and the test limits to be employed in checking these parameters. If the calculated parameters indicate that a relatively low percentage of the products will meet acceptable performance criteria, one or more of the lots of components must be replaced and in this case the calculations based on the statistical information are used to indicate which lot or lots to replace and which parameters of the replaced lots are unacceptable.

3,526,837

ERROR-CORRECTING INFORMATION TRANSMISSION SYSTEMS

Leo Eduard Zegers and Jan Kuilman, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

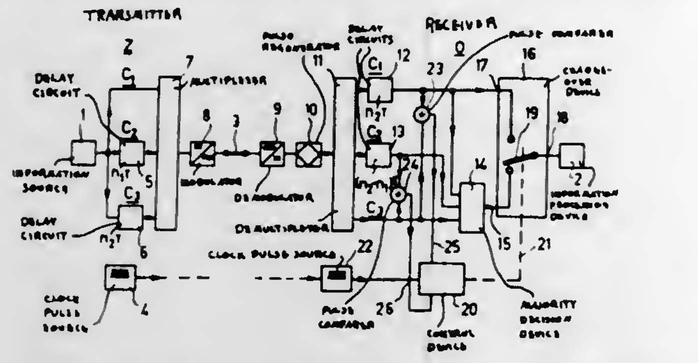
Filed Feb. 27, 1967, Ser. No. 618,982

Claims priority, application Netherlands, Feb. 26, 1966, 6602550

Int. Cl. H04l *1/00*

U.S. Cl. 325—41 4 Claims

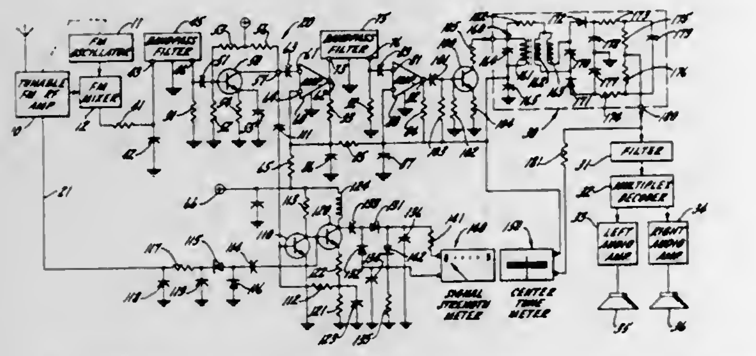
In an error correcting system for pulse transmission, coded pulses are transmitted over three channels with different delays. The receiver is provided with delay circuits to eliminate the mutual time differences. Comparison devices are provided to compare the information in the three channels, and to apply the output of one of the channels to a load device when no errors are detected. When errors are detected, the output of a majority decision device receiving information from all three channels is applied to the load device.



3,526,838
TUNING INDICATOR SYSTEM FOR FM RECEIVER

Harold G. Banick, Eau Claire, Mich., assignor to Heath Company, St. Joseph, Mich., a corporation of Delaware

Filed Dec. 20, 1967, Ser. No. 692,121
Int. Cl. H04b *1/08*
U.S. Cl. 325—455 2 Claims

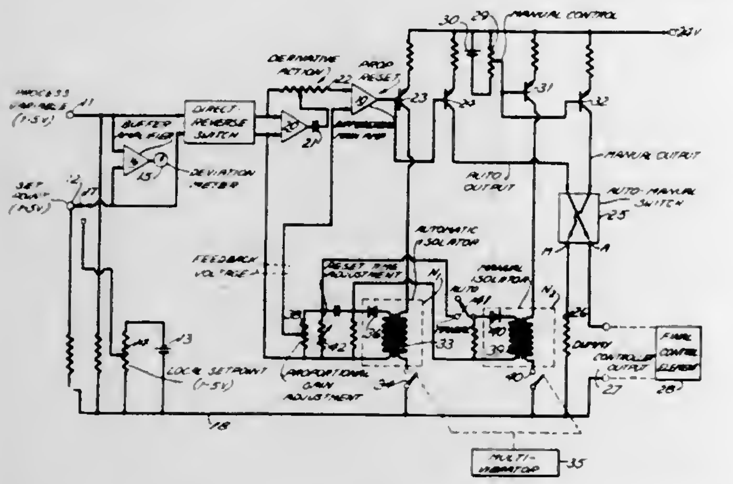


A tuning indicator for an FM receiver in which the functions of a signal strength meter and tuning meter, referred to as a center tune meter, are integrated in such a way as to facilitate tuning. The disclosure includes improved circuitry for energizing the meters.

3,526,839
ELECTRONIC CONTROLLER FOR PROCESS CONTROL SYSTEM

Roy F. Schmoock, Ivyland, Hubert A. Riester, Jr., Huntingdon Valley, Peter S. Levesque, Warminster, and Isao Asai, Hatboro, Pa., assignors to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania

Filed Mar. 3, 1967, Ser. No. 620,391
Int. Cl. G05f *1/46*
U.S. Cl. 328—1 10 Claims

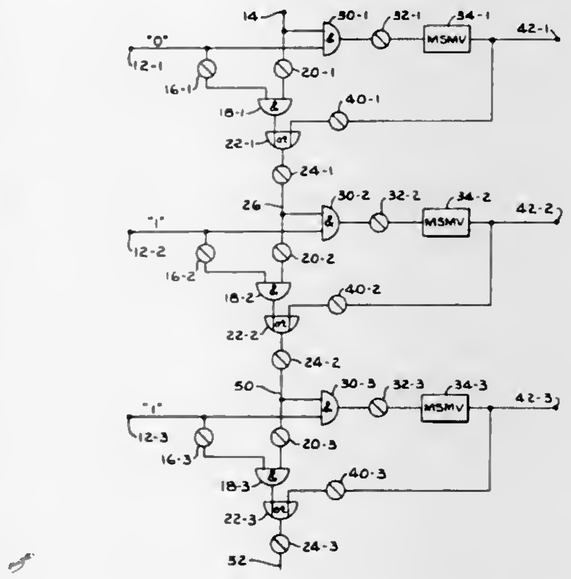


An electronic controller for a process control system provided with a final control element, the controller including a differential amplifier to which is applied input voltages representative of a process variable and a set point and which yields an output for operating the final control element. The output voltage of the amplifier is also applied through a feedback loop to the input thereof, the loop including an isolator to produce a floating feedback signal whereby the inputs and output of the controller may have a common connection.

3,526,840
STEERING AND TIMING CIRCUIT

Harry L. Wheaton, Jr., Glen Ellyn, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 29, 1968, Ser. No. 701,167
Int. Cl. H03k *17/02, 19/00*
U.S. Cl. 328—97 5 Claims

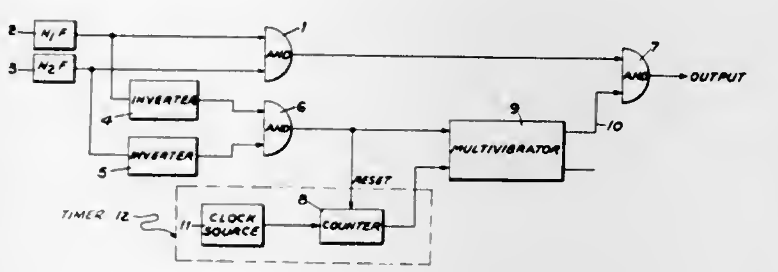


A signal steering and timing circuit for normally conducting an input signal to the next stage in a sequence of like circuits. In response to a bias signal, the normal path is disabled and the input signal is delivered to a time delay circuit which, after a predetermined delay, issues a new signal to the next stage.

3,526,841
DETECTOR FOR HARMONICALLY RELATED SIGNALS

Christian Fredrik Holmboe, Bekkestua, and Rolf Gunnar Sommerud, Strommen, Norway, and James Francis De Lorme, Irvington, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Oct. 30, 1967, Ser. No. 678,960
Int. Cl. H03b *3/04;* **H03d** *13/00*
U.S. Cl. 328—133 10 Claims

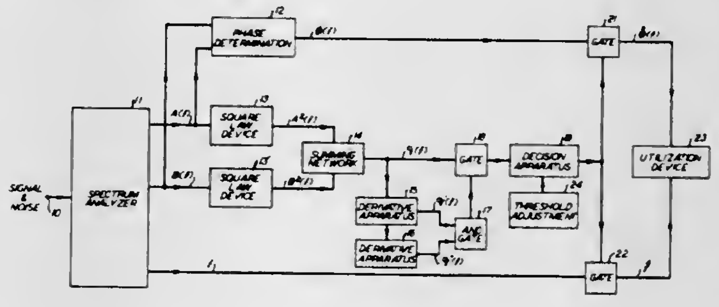


Apparatus for detecting the common subharmonic frequency of a plurality of harmonically related input signals wherein the input signals are applied to a first coincidence circuit and the inverted input signals are applied to a second coincidence circuit. An output signal is provided when a change in the state of the second coincidence circuit is followed within a predetermined time period by a change in the state of the first coincidence circuit. The repetition rate of the output signal is equal to the common subharmonic frequency.

3,526,842
APPARATUS FOR DETECTING SIGNAL IN PRESENCE OF NOISE AND FOR SIMULTANEOUSLY DETERMINING FREQUENCY AND PHASE OF DETECTED SIGNAL

Harold B. Andrew, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed May 5, 1967, Ser. No. 636,408
Int. Cl. H04b *15/00*
U.S. Cl. 328—165 5 Claims

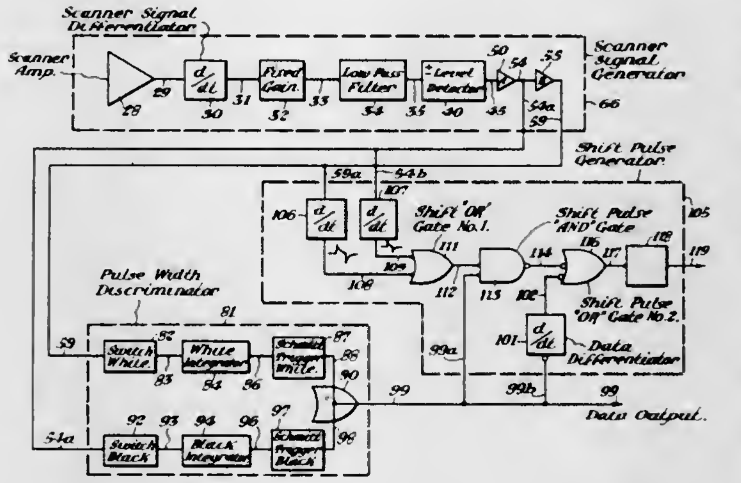


Every received intelligence signal is to some degree contaminated by noise. Not only is it important that a signal be detected in the presence of noise but, also, that the parameters of detected signals be simultaneously determined. A predetermined test function is utilized at a receiver to determine if an intelligence signal is present, and if present, to determine the phase and frequency of the received signal.

3,526,843
PULSE WIDTH DISCRIMINATOR AND SHIFT PULSE GENERATOR

Walter W. Sanville, Eastmont, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Aug. 11, 1967, Ser. No. 659,955
Int. Cl. H03k *9/00*
U.S. Cl. 329—104 4 Claims

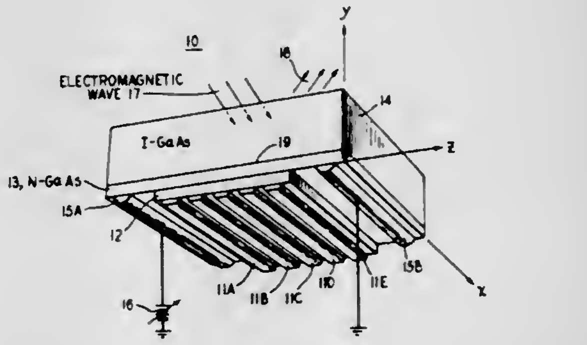


This invention relates to a pulse width discriminator and shift pulse generator system which assures flawless pulse width detection while simultaneously generating shift pulses when the system is supplied with a pulse train which has at least wide and narrow pulses indicative of coded information. The system includes a coded information pulse train source which provides a plurality of pulse trains delivered in a preselected fashion in accordance with the coding of wide and narrow pulse widths, at least one waveform of one of the pulse trains indicative of the above noted coded information. A pulse width discriminating circuit receives the plurality of pulse trains, and produces a data output signal which indicates the presence of a wide pulse in the pulse train indicative of coded information, each such indication occurring within the time length of one of the narrow pulses and the time length of one of the wide pulses. A shift pulse generator is also fed the plurality of pulse trains and is electrically coupled to the data output signal from the pulse width generator means. The shift pulse generator produces a shift pulse output each time there is a change in state in the pulse train indicative of the coded information simultaneously with the absence of wide pulse indication on the pulse width discriminator data output signal as well as everytime the pulse width discriminator data output signal begins indicating a wide pulse.

3,526,844
ELECTROMAGNETIC WAVE AMPLIFIER INCLUDING A NEGATIVE RESISTANCE SEMICONDUCTOR DIODE STRUCTURE

Dirk J. Bartelink, Morris Township, Morris County, and Basant R. Chawla, North Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Feb. 3, 1969, Ser. No. 795,849
Int. Cl. H03f *3/04*
U.S. Cl. 330—5 14 Claims



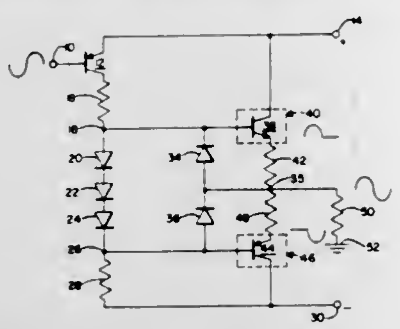
Described herein are layered structures of both M-I-S (metal-insulator-semiconductor) and D-S (high dielectric constant layer semiconductor), wherein the semiconductor is biased in a negative differential mobility state; for the purpose of amplifying electromagnetic waves incident thereon. The metal layer or the very high dielectric constant layer serves to suppress the formation of space-charge domains which would otherwise arise in the semiconductor, thereby stabilizing the semiconductor and enabling amplification of electromagnetic waves propagating in the semiconductor.

3,526,845
APPARATUS FOR OVERCURRENT PROTECTION OF A PUSH-PULL AMPLIFIER

Daniel J. Sikorra, Champlin, Minn., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

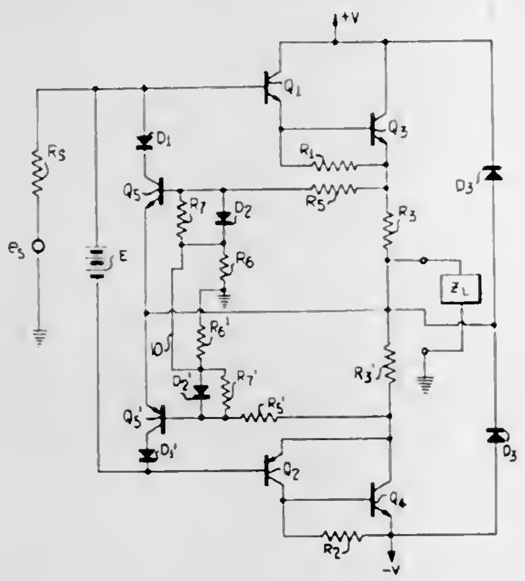
Filed Dec. 19, 1966, Ser. No. 602,828
Int. Cl. H03f *3/18, 3/30, 3/50*
U.S. Cl. 330—11 3 Claims

This disclosure relates to electronic circuitry which may be used to provide overcurrent protection to a push-pull amplifier. A pair of complementary amplifying transistors arranged in push-pull amplifier configuration are provided with voltage biasing circuits coupled to the input of each transistor and degeneration resistance means connected between each transistor and a common node output terminal. Voltage breakdown means are coupled between the common node and each input terminal of the amplifying transistors in a direction such that excess current in the degeneration resistance means associated with either amplifying transistor causes the voltage breakdown means associated with the other amplifying transistor to conduct and apply a voltage to turn off said other transistor whereby short circuit protection is provided the amplifier by the voltage breakdown means in conjunction with the biasing means.



3,526,846
PROTECTIVE CIRCUITRY FOR HIGH FIDELITY AMPLIFIER

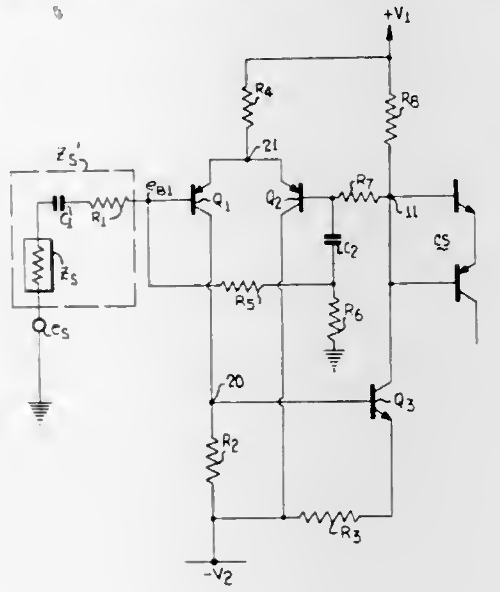
David L. Campbell, Santa Clara, Calif., assignor to McIntosh Laboratory, Inc., Binghamton, N.Y., a corporation of Delaware
Filed July 13, 1967, Ser. No. 662,242
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. H03f *3/42, 3/18, 3/26*
U.S. Cl. 330—11 **11 Claims**



A class B power amplifier employing series connected power transistors to the junction of which a load is directly connected. The power transistors are NPN, and from the emitter of one and from the collector of the other, to the load, are connected small current sensing resistors. These sense current in the load, for each polarity of the input signal. In addition, functions of the voltages across the power transistors are sensed in terms of voltages across these resistances and the load. Control transistors are connected to bypass input signal to the power transistors, respectively, instantaneously whenever the combination of voltage across either of the transistors and current therethrough exceeds a combination of values providing safe operating conditions. The desired function is accomplished by a Wheatstone bridge having a fixed current sensing resistance and the load as one arm and a voltage divider as the other, and the control transistor connected with its base-emitter junction across conjugate points of the bridge, to sense unbalance.

3,526,847
TEMPERATURE INSENSITIVE AMPLIFIER EMPLOYING A DIFFERENTIAL STAGE

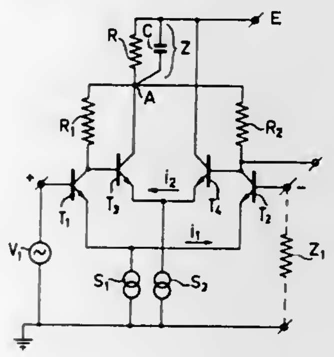
David L. Campbell, Santa Clara, Calif., assignor to McIntosh Laboratory, Inc., Binghamton, N.Y.
Filed July 13, 1967, Ser. No. 662,241
Int. Cl. H03f *1/08*
U.S. Cl. 330—25 **5 Claims**



A voltage amplifier employing differential input and single ended output, including a differential amplifier stage employing two identical transistors, of which one is driven by input signal and the other differentially to the first by negative feedback signal in a DC feedback negative path and in which the one is driven regeneratively by AC feedback signal, thus effecting temperature compensation and DC balance as well as AC drive and high AC gain, and high input impedance. Input signal as applied to the amplifier via a capacitive-resistive circuit, having circuit values selected in conjunction with the constants of the AC feedback signals, to produce very rapid roll off at low frequencies, with flat response above the roll off point.

3,526,848
OPERATIONAL AMPLIFIER

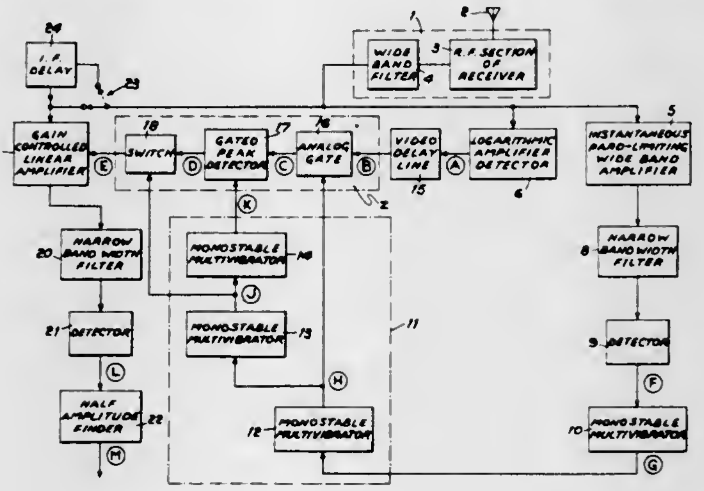
Theodorus Jozef van Kessel, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,789
Claims priority, application Netherlands, May 22, 1967, 6707080
Int. Cl. H03f *3/26*
U.S. Cl. 330—30 **10 Claims**



An operational amplifier has two cascade connected differential amplifier stages. An output of the second stage developed across an impedance is applied to the two inputs of the second stage, and an output of the first stage constitutes the amplifier output, so that the amplifier output is the sum of the outputs of the two stages. The impedance may comprise a parallel resistance-capacitance circuit.

3,526,849
AUTOMATIC GAIN CONTROL AMPLIFIER SYSTEM

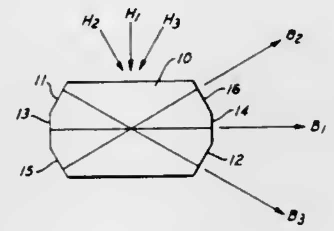
Milton Dishal, Upper Montclair, and Jesse S. Le Grand, Clifton, N.J., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,083
Int. Cl. H03g *3/20*
U.S. Cl. 330—139 **10 Claims**



In a TACAN navigation system where the received signals are pulse pairs of substantially equal amplitude but the amplitude of different pairs may vary widely, an automatic gain control system is used to control an amplifier so that its output pulses fall within a more restricted range at which subsequent components operate more efficiently. The first pulse of each pair is applied to a logarithmic amplifier to develop an AGC signal which adjusts the gain of a linear amplifier before the second pulse of the pulse pair is applied so that the latter is amplified by the proper amount. A time delay may also be provided at the input of the linear amplifier through a switch, thereby providing that the first pulse will control its own amplification.

3,526,850
SOLID STATE LASER

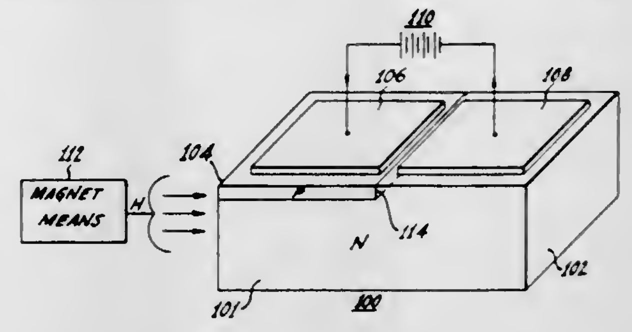
Joseph F. Dillon, Jr., Morris Township, Morris County, and Roy C. Le Craw, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 23, 1966, Ser. No. 536,803
Int. Cl. H01s *3/05, 3/10, 3/16*
U.S. Cl. 331—94.5 **1 Claim**



A laser beam is modulated within a magnetic laser host by application of a saturating magnetic field having a component in a permitted beam direction. Modulation sensed by means of a polarization analyzer may be realized as a change in amplitude, phase or beam direction.

3,526,851
FILAMENTARY STRUCTURE INJECTION LASER HAVING A VERY NARROW ACTIVE JUNCTION

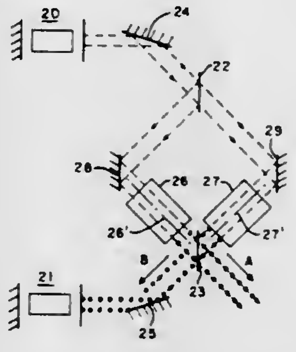
Jacques I. Pankove, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed July 10, 1967, Ser. No. 652,301
Int. Cl. H01s *3/06*
U.S. Cl. 331—94.5 **8 Claims**



A highly efficient semiconductor injection laser diode operating over a narrower frequency band than is conventionally obtainable is achieved by confining the current flow across the P-N junction of the diode to a given area having a width materially smaller than its length. This diode can operate continuously at ambient room temperature. At least one of the P-type or N-type regions of the diode is disposed in the form of a thin layer covering a portion of a single surface of the diode, while the remainder of the surface is composed of a region of opposite type conductivity to the aforesaid layer. Separate spaced electrodes are mounted on the given surface with one of the electrodes being in contact with solely the P-type region and the other of the electrodes being in contact with solely the N-type region. The electrodes are connectable across a source of voltage.

3,526,852
SPATIALLY COHERENT ARRAY OF OPTICAL ENERGY SOURCES

Robert Allen Kaplan, Huntington Station, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed Mar. 1, 1968, Ser. No. 709,549
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **10 Claims**



An optical diplexer for combining the optical energy from two optical sources having different frequency characteristics into a single, spatially coherent, beam. A beam splitting apparatus divides the energy from one source into two substantially equal components which are in quadrature phase. Each component is separately coupled to a different interferometer. The energy from the other source is similarly divided by a second beam splitting apparatus and coupled to the opposite port of the respective interferometer. The interferometers combine the respective components into two beams which are in quadrature phase. These two beams are coupled back to the first beam splitting apparatus where they are combined into a single spatially coherent beam and coaxially propagated in space. Alternative arrangements are also covered.

3,526,853

FREQUENCY STABILIZED MULTIVIBRATOR

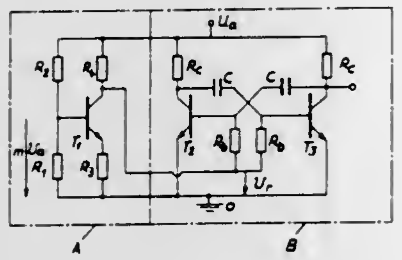
Eric André Vittoz, Hauterive, Switzerland, assignor to Centre Electronique Horloger S.A., Neuchatel, Switzerland, a Swiss company

Filed July 5, 1968, Ser. No. 742,746

Claims priority, application Switzerland, Sept. 26, 1967, 13,425/67

Int. Cl. H03k *3/282*

U.S. Cl. 331—111 **3 Claims**



A transistor circuit provides a compensating voltage to an astable multivibrator in order to stabilize its frequency, at least for variations due to temperature.

3,526,854

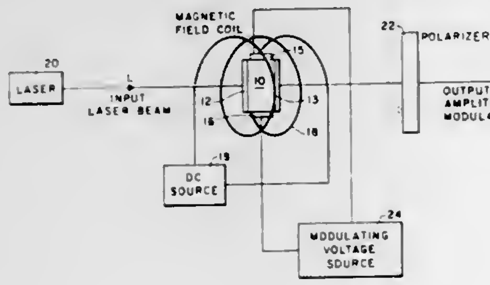
LARGE BAND-WIDTH LASER MODULATOR

Herbert Piller and David J. White, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Nov. 12, 1968, Ser. No. 775,068

Int. Cl. H01s *3/18*

U.S. Cl. 332—7.51 **1 Claim**



The modulation of laser light by controlled variation of the polarization direction of the light waves using electric field modulation.

3,526,855

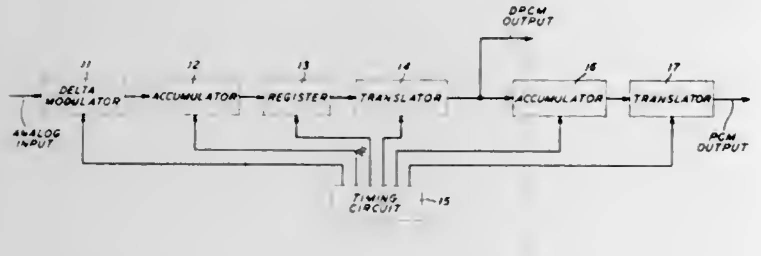
PULSE CODE MODULATION AND DIFFERENTIAL PULSE CODE MODULATION ENCODERS

Henry S. McDonald, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Mar. 18, 1968, Ser. No. 713,891

Int. Cl. H03h *13/22*

U.S. Cl. 332—11 **8 Claims**



Differential pulse code modulation (DPCM) signals are produced by first subjecting an analog input signal to a delta modulator which is operated at many times the Nyquist rate of the signal. The modulator output is applied to an accumulator, which, in turn transfers its output to a storage register. The accumulator is strobed so that its contents are transferred at a rate at least equal to the Nyquist rate. The register is similarly strobed to produce its contents as DPCM signals.

Pulse code modulated (PCM) signals are produced by accumulating the DPCM signals in a second accumulator.

3,526,856

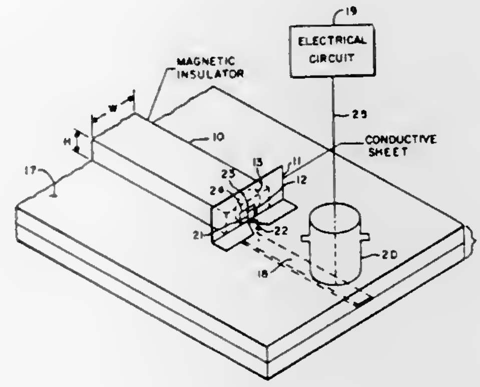
ELECTROMAGNETIC COUPLING APPARATUS

Edward F. Heldt, Rockaway Beach, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Filed Sept. 24, 1968, Ser. No. 762,062

Int. Cl. H03h *1/00*

U.S. Cl. 333—24 **11 Claims**



An electromagnetic coupling apparatus consisting of a conductive member positioned adjacent to a piece of magnetic insulator material such as an yttrium iron garnet (YIG) slab or bar. The conductive sheet has an aperture whose width is less than .03 of the free space wavelength of the energy to be coupled to or from the magnetic insulator material. A thin conductive wire traverses the aperture on the side of the conductive member opposite the magnetic insulator material. The conductive sheet serves to localize the source and the only coupling occurs through the small aperture in the conductive member. Alternative arrangements are also covered.

3,526,857

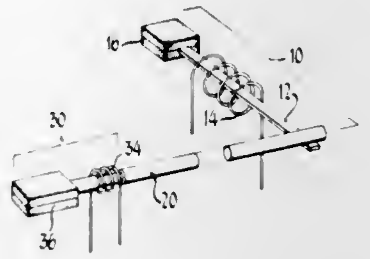
ACOUSTIC DELAY LINE EMPLOYING TORSIONAL WAVES AND TRANSDUCER FOR THE SAME

Robert V. Dickinson, San Carlos, Calif., assignor to The Singer Company, a corporation of New Jersey

Filed Aug. 21, 1968, Ser. No. 756,731

Int. Cl. H03h *9/30;* **H04r** *15/00*

U.S. Cl. 333—30 **13 Claims**



An acoustic delay line employing torsional waves is disclosed which has an input transducer comprising a single magnetostrictive tape coupled to a transmission line and an output transducer for detecting torsional waves comprising a magnetostrictive layer deposited on the surface of the transmission line and a coil disposed about the layer. The transmission line and transducers are acoustically matched to prevent reflections of propagated torsional waves at their boundary.

3,526,858

BAND FILTER OF THE N-PATH TYPE

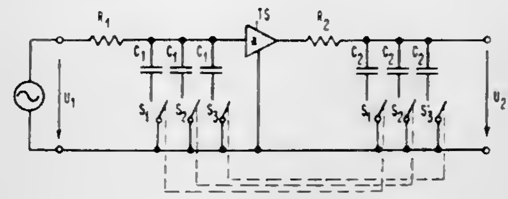
Walter Heinlein, Erik Langer, and Karl-Heinz Mohrmann, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Mar. 21, 1968, Ser. No. 714,884

Claims priority, application Germany, Mar. 22, 1967, 1,541,971

Int. Cl. H03f *21/00;* **H03h** *7/10, 7/14*

U.S. Cl. 333—70 **10 Claims**



An N-path type filter is composed of a chain network of four-pole circuits of which each has a series resistor in its longitudinal branch and is terminated by a transversely connected capacitor in series with a switch which closes and opens cyclically in accordance with a keying frequency. An isolating amplifier is interposed between each two four-pole circuits of the chain network. The mutually corresponding switches in the different four-pole circuits open and close in synchronism with each other.

3,526,859

SINGLE CONTROL MULTIBAND VARIABLE CAPACITANCE DIODE TV TUNER

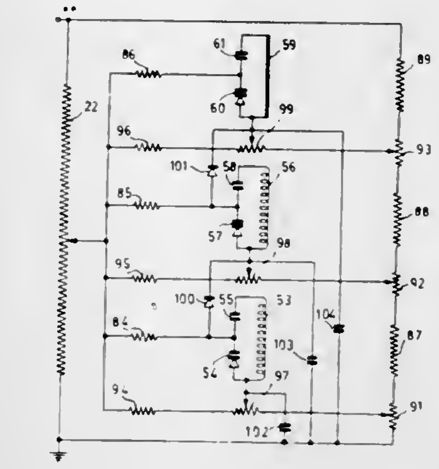
Walter Pützer, Krefeld, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1968, Ser. No. 720,304

Claims priority, application Germany, Apr. 29, 1967, P 42,041

Int. Cl. H03j *3/18, 5/24*

U.S. Cl. 334—15 **3 Claims**



A multiple band tuning circuit has a plurality of resonant circuits each tuned by a separate capacitance diode. A constant potential, or potentials, is applied to one end of each diode, and the other end of each diode is connected to a common tap of a potentiometer. The potentiometer tunes the resonant circuits sequentially through their respective tuning ranges. Switching diodes, coupled respectively to each of the resonant circuits, disable the circuits not being tuned.

3,526,860

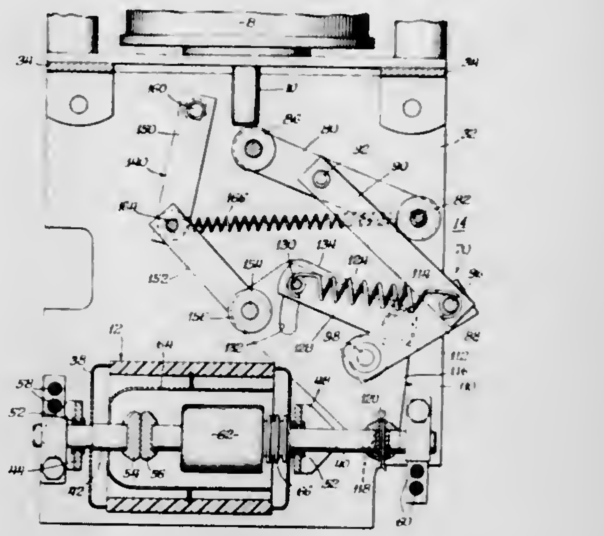
AUTOMATIC CIRCUIT INTERRUPTER

Kazuo Henry Date, South Milwaukee, Wis., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Apr. 10, 1968, Ser. No. 720,168

Int. Cl. H01h *75/04*

U.S. Cl. 335—26 **18 Claims**



An operating mechanism for opening and closing a contactor. A bell crank is secured to a spring and to the contactor and holds the contactor closed when the spring is in a first position relative to the fulcrum of the bell crank and opens the contactor upon the substantially simultaneous movement of the spring to a second position and the impacting of the bell crank by a lever arm. A linkage arrangement attached to the lever arm moves the spring between its positions.

3,526,861

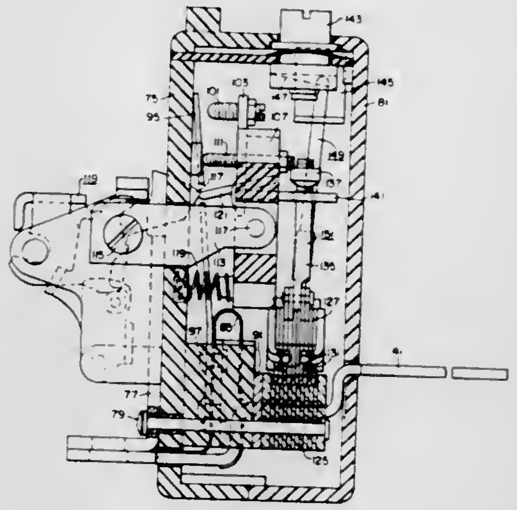
CIRCUIT BREAKER WITH IMPROVED TRIP DEVICE

Eugene J. Walker, Beaver, and Zelko J. Kruzic, New Brighton, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 3, 1968, Ser. No. 726,474

Int. Cl. H01h *75/12*

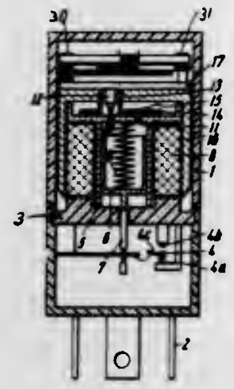
U.S. Cl. 335—35 **6 Claims**



A circuit breaker comprises an improved thermal and magnetic trip device. The breaker comprises a pair of contacts for opening and closing a circuit. The trip device comprises a main conductor in electrical series with the contacts and a shunt conductor for shunting current around a portion of the main conductor. A bimetal is connected to the shunt conductor to be heated in response to the current in the shunt conductor to thereby thermally trip the breaker. A magnetic core and armature are supported to be energized by the full current in the circuit to thereby magnetically trip the breaker. The parts are supported so that limited movement of the main conductor does not interfere with calibration or adjustment of the trip device.

3,526,862
CONTROL RELAY

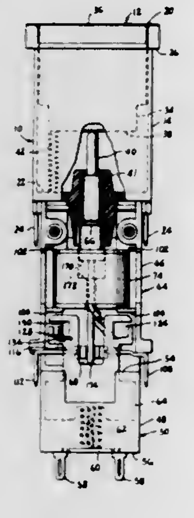
Wolfgang Priesemuth, Itzehoe, Holstein, Postkamp, Germany
Filed Dec. 19, 1968, Ser. No. 785,182
Claims priority, application Germany, Dec. 22, 1967, 1,614,353
Int. Cl. H01h *45/00*
U.S. Cl. 335—159 **8 Claims**



A switching relay for an electromagnetic signalling unit and having a plurality of magnetic cores mounted on a base and each having a yoke and at least two limbs carrying switching contacts of the relay, armatures associated with respective cores and each adapted to bridge the gap between the contacts provided by the limbs of the associated core, and a relay winding, the cores being mounted with the yokes thereof alongside one another and embraced by the winding. An E-shaped core is used for plural switching relay arrangements and a leaf spring is provided for mounting each of the armatures.

3,526,863
ELECTROMAGNETIC HOLDING MECHANISM

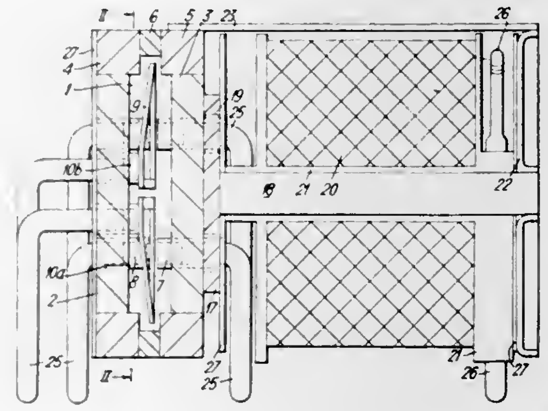
Thomas H. Vogelsang, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1967, Ser. No. 678,921
Int. Cl. H01h *3/54*
U.S. Cl. 335—186 **15 Claims**



An electromagnetic holding mechanism for use with an actuating device and a switching device to hold the switching device in its actuated position after being actuated by the actuating device. The holding mechanism includes a coil enclosed with a magnetic assembly, which assembly is supported within a housing formed of a pair of identical insulating housing halves. A magnetic plunger is received within the bore of the coil and operatively engages the actuating device at one end and is provided with an extension at the other end for operatively engaging the switching device. Actuation of the actuating device actuates the magnetic plunger, the switching device, and also closes a pair of switch contacts through which the coil is energized to maintain the magnetic plunger and the switching device in their actuated positions irrespective of the position of the actuating device.

3,526,864
MULTIPLE CONTACT DIAPHRAGM RELAY

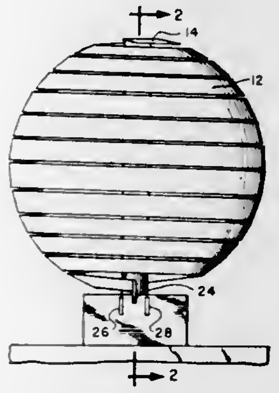
Harry Stanley Woodhead, Harlow, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 766,884
Claims priority, application Great Britain, Nov. 9, 1967, 51,067/67
Int. Cl. H01h *45/02*
U.S. Cl. 335—202 **23 Claims**



An electromagnetic change-over relay comprising two contact sets having a laminar armature for each of said contact sets and including multiple-pole polarized versions.

3,526,865
THERMAL RADIATION SENSITIVE THERMOSTAT

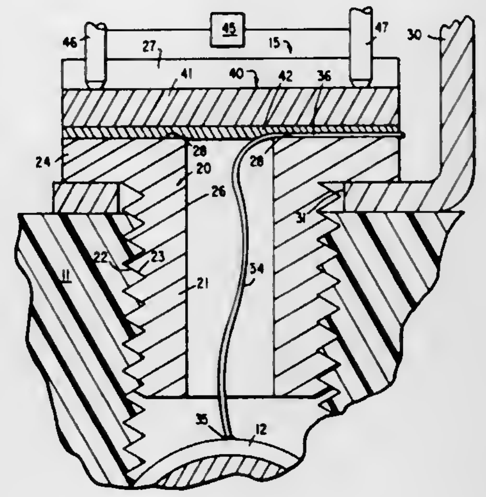
Dolphus H. Black, Rte. 4, Arab, Ala. 35016
Filed Mar. 24, 1969, Ser. No. 809,818
Int. Cl. H01h *37/32*
U.S. Cl. 337—111 **5 Claims**



A thermostat for sensing radiation heat transfer that is fabricated from a thin, flat metal strip shaped into a sphere. One end of the strip is attached to a rod mounted in a base and the other end of the strip is free and has a contact attached thereto. The contact on the strip is positioned between two contacts mounted on the base so that expansion or contraction of the metal strip will result in one contact on the other end of the metal strip contacting one of the two contacts mouned on the base. The two base mounted contacts are part of a control switch.

3,526,866
RESISTOR WITH TERMINAL IN HOUSING

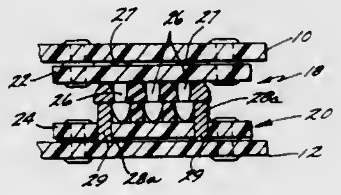
Robert J. De Long, Temple City, and Harry W. Fletcher, West Covina, Calif., assignors to Spectrol Electronics Corporation, City of Industry, Calif., a corporation of Delaware
Filed May 7, 1969, Ser. No. 822,583
Int. Cl. H01c *1/02*
U.S. Cl. 338—276 **7 Claims**



A terminal for a potentiometer having an enlarged head with a screw driver slot and a screw threaded shank threadably engaged in the housing of the potentiometer. An electrical conductor is secured to the resistance element of the potentiometer and passes outwardly from the housing through the passage in the terminal. A bimetallic brazing member having a base metal outer layer and a thin silver solder inner layer is laid in the screw driver slot on top of the conductor wire. Electric current is passed through the brazing metal layer to seal the passage in the terminal to the base metal layer and the conductor wire to provide a sealed terminal free from conductor wire embrittlement problems.

3,526,867
INTERLOCKING ELECTRICAL CONNECTOR

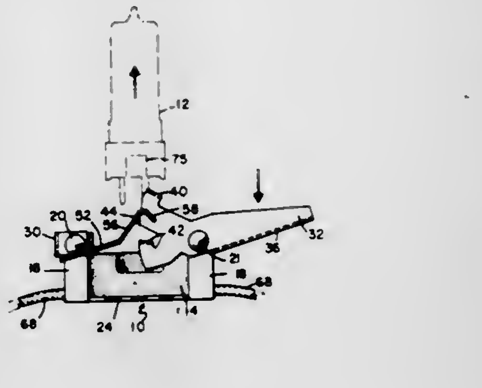
Miner S. Keeler II, Grand Rapids, Mich., assignor to Keeler Brass Company, Grand Rapids, Mich., a corporation of Michigan
Filed July 17, 1967, Ser. No. 653,702
Int. Cl. H05k *1/12;* **H01r** *13/28*
U.S. Cl. 339—17 **7 Claims**



An electrical connector which also provides a secure mechanical interlock when connected, comprised of a pair of connector elements, each of which includes a base portion and a plurality of pin members upstanding from the base portion. The pin members of the two elements interengage as the elements are pushed together, and these pin members have enlarged heads which interlock together upon mutual engagement. At least some of the pin members are electrically conductive, and the base portion of each connector element carries a contact which is electrically connected to or integral with such conductive pin members, to thus form a terminal for the respective connector element.

3,526,868
INCANDESCENT LAMP SOCKET

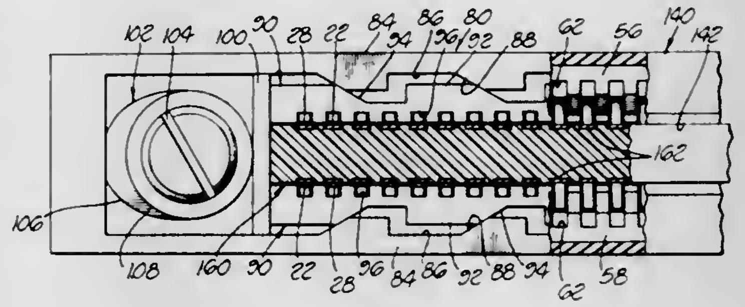
William R. Mattson, West Gloucester, and Richard J. Shea, Danvers, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 14, 1969, Ser. No. 841,499
Int. Cl. H01r *13/62*
U.S. Cl. 339—45 **3 Claims**



A socket adapted to retain a projection-type lamp in an optically fixed position within a visual projection system. The lamp is locked in place by a spring actuated lever that is thrown into this position by insertion of the lamp into the socket. This same spring actuated lever can be manipulated to eject the lamp.

3,526,869
CAM ACTUATED PRINTED CIRCUIT BOARD CONNECTOR

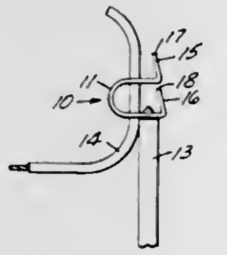
Thomas W. Conrad, Altadena, Calif., and William McIver, West Monroe, La., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 21, 1969, Ser. No. 792,585
Int. Cl. H01r *13/54*
U.S. Cl. 339—75 **6 Claims**



The disclosure relates to a cam actuated printed circuit board connector. The connector contains an opening therethrough for insertion of a printed circuit board. A cam is provided for driving a housing actuating member in a horizontal direction along its longitudinal axis, forcing actuating spacers up ramp angles in a direction perpendicular to said longitudinal axis. Movement of the spacers drives the connector contacts into intimate contact with the printed circuit board pads. The contact terminals may be alternately offset so as to allow greater working area between adjacent terminals. Moreover, polarizing keys may be provided in the connectors for properly mating the printed circuit board and the connector.

3,526,870
SPRING TENSION CONNECTOR FOR WIRE-WRAP POST

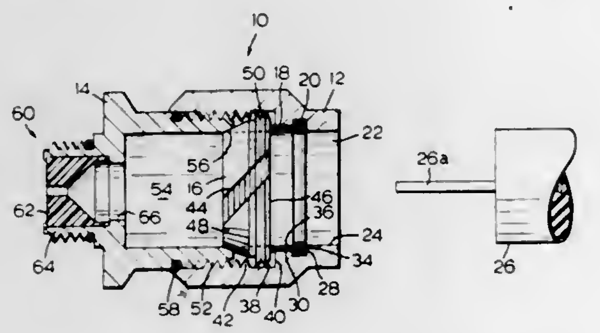
Arne H. Mayala, White Bear Lake, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 6, 1968, Ser. No. 734,966
Int. Cl. H01r *11/20*
U.S. Cl. 339—97 **2 Claims**



A U-shaped connector which provides continuous spring tension connection between a wire-wrap post and an insulated solid or stranded wire without requiring removal of insulation.

3,526,871
ELECTRICAL CONNECTOR

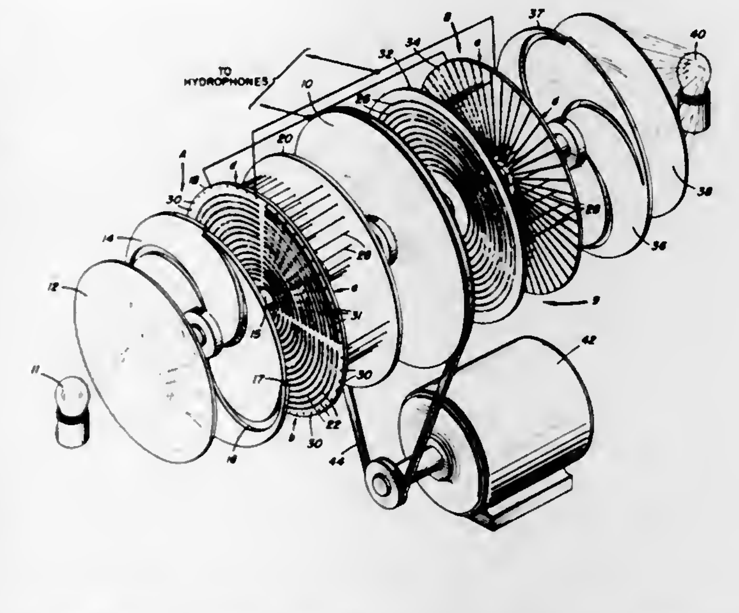
David R. Hobart, Rexdale, Ontario, Canada, assignor to Gremar Connectors (Canada) Ltd., Rexdale, Ontario, Canada, a corporation of Canada
Filed Feb. 9, 1968, Ser. No. 704,397
Int. Cl. H01r *17/16*
U.S. Cl. 339—177 **5 Claims**



This invention relates to electrical connectors of the type commonly used for securing co-axial cables in a variety of installations. Each connector consists of a sleeve, a clamping ring and a complementary coupling member. The clamping ring fits within the sleeve and in use it is compressed into clamping engagement with a co-axial cable by threading the complementary coupling member into the sleeve. A feature of the present invention is the improvement which provides means within the sleeve for retaining the clamping ring to prevent it falling out of the sleeve during the assembly and installation of the connector. The retaining means includes an internal thread cut in the sleeve and a complementary external thread cut on the clamping ring such that the clamping ring threads into the sleeve. Another feature of this invention is the improved seal which is achieved by employing an elastic sealing ring which is compressed by the relative axial movement of the sleeve and the complementary coupling member. The complementary coupling member presses against the clamping ring which in turn applies axial pressure to the sealing ring and thereby forces the sealing ring radially inwardly into contact with a cable.

3,526,872
COMPENSATING SWITCH FOR SONAR

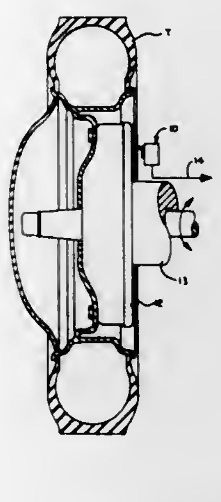
Joseph F. Gulick, Jr., Clarksville, and Harlan H. Knapp, Jr., Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 25, 1966, Ser. No. 597,136
Int. Cl. G01s *3/00*
U.S. Cl. 340—6 **8 Claims**



The present invention is an improved photoelectric switching system especially useful for sonar but which may have other applications. As used in a sonar system, the invention functions to route right and left channel hydrophone signals into linearly tapped delay lines and thence to information utilization apparatus and to a servosystem, so that the direction from which such signals emanate may be kept under constant surveillance. The invention is a substitute for the less efficient mechanical switch used up to the present time.

3,526,873
DEVICE FOR INDICATING ABNORMAL CONDITIONS IN PNEUMATIC TIRES

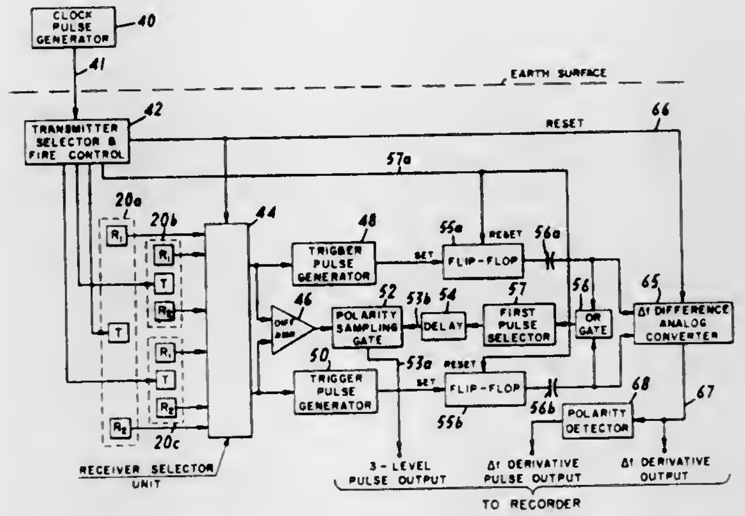
Leo E. Burt, Fern Park, Fla., assignor to LB Safety Devices, Inc., Greensboro, N.C., a corporation of North Carolina
Continuation of application Ser. No. 433,700, Feb. 18, 1965. This application Nov. 2, 1967, Ser. No. 686,364
Int. Cl. B60c *23/00*
U.S. Cl. 340—58 **3 Claims**



My invention relates generally to critical vibration level indicators and more specifically to devices for warning drivers of vehicles having pneumatic tires that an abnormal pressure condition exists as to a particular tire.

3,526,874
METHOD AND APPARATUS FOR SONIC DIP MEASUREMENT

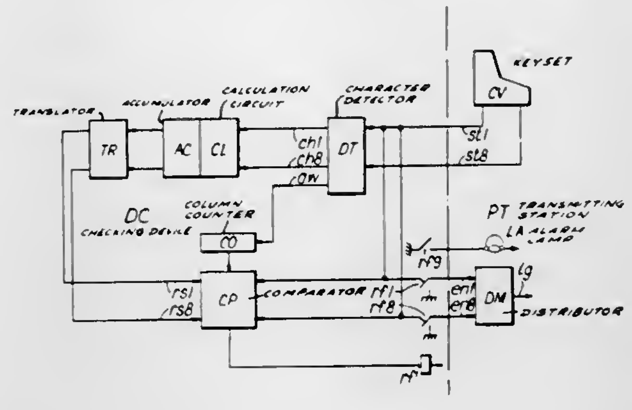
Robert J. Schwartz, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 581,572, Sept. 23, 1966. This application Sept. 18, 1968, Ser. No. 808,721
Int. Cl. G01v *1/22, 1/40*
U.S. Cl. 340—15.5 **19 Claims**



A sonic method and apparatus for determining the disposition of strata surrounding an earth borehole in which three electroacoustic devices are arranged laterally equiangularly about a well tool. Each device includes a sonic transmitter longitudinally centered between a pair of receivers. The amplitudes of the electrical signals developed by the receivers for each acoustic transmission are compared at a selected instant of time to develop an output pulse having a characteristic polarity indicating the receiver first to receive the transmitted acoustic signal.

3,526,875
DATA CHECKING DEVICE

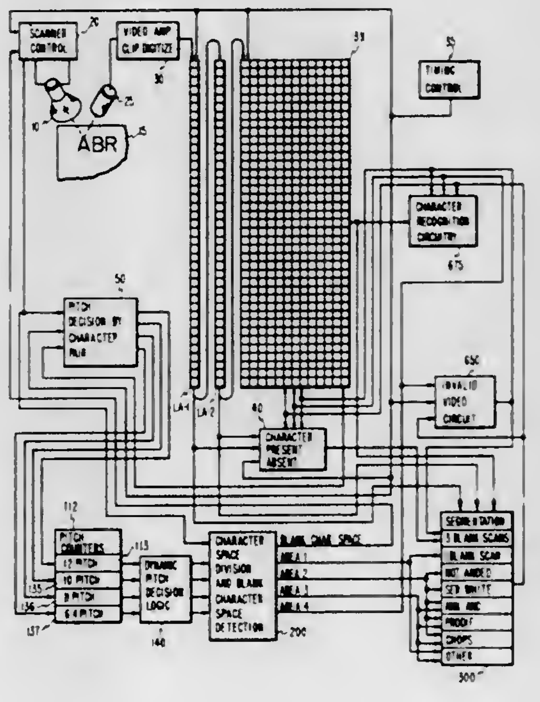
Robert Jourdan, Paris, France, assignor to International Standard Electric Corporation
Filed Oct. 27, 1966, Ser. No. 589,864
Claims priority, application France, Oct. 29, 1965, 36,640, Patent 1,463,936
Int. Cl. G06k *5/02;* **G06f** *11/10*
U.S. Cl. 340—146.1 **5 Claims**



A checking device associated with data transmitting stations for detecting and signalling the operator's errors and misoperations. The device comprises means for detecting and counting the characters of a message and calculation circuits to process the detected characters to thereby establish a corresponding checking character. A comparator checks whether the checking character that is included in the message and the corresponding calculated checking character are identical to each other or are different. If they are different, the message is cancelled and an alarm signal is given to the operator.

3,526,876
CHARACTER SEPARATION APPARATUS FOR CHARACTER RECOGNITION MACHINES

Richard J. Baumgartner and Milton F. Bond, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 24, 1965, Ser. No. 504,457
Int. Cl. G06k *9/00*
U.S. Cl. 340—146.3 **17 Claims**

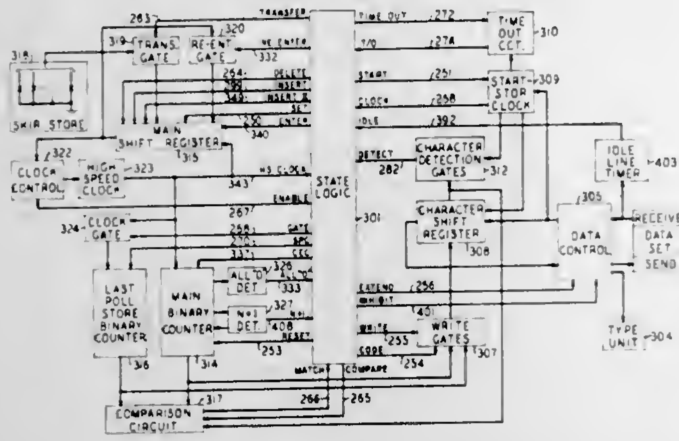


Apparatus is provided for generating end-of-character and invalid character signals for a multi-font character recognition machine. Character pitch measurements are made by character pairs. The character pitch data is utilized for partitioning each character space into areas. Logical tests are made in each area to determine when the character has been completely scanned. If any one of the tests is met, and end-character signal is generated. If all tests fail, then the end-of-character signal is developed on the basis of the pitch. A look-ahead storage register enables certain logic tests to be made for touching and/or overhanging character parts and enables the end-of-character signal to activate the character recognition circuits before confusion data can enter the main storage register which is used for recognition purposes.

3,526,877
SELECTIVE CALLING LINE CONTROLLER FOR ALTERNATIVELY TEST POLLING REMOTE STATIONS OR STARTING REMOTE STATION TRANSMITTERS

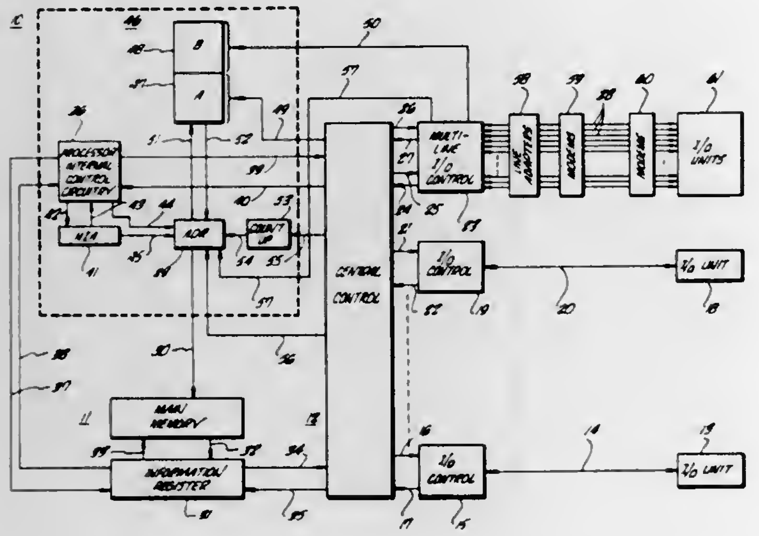
David E. Carlson, Holmdel, Stephen A. Dalyai, Old Bridge, Alfonso V. Gallina, Freehold, Edgar R. Robinson, Middletown, Clarence J. Votaw, Elberon, and Peter S. Warwick, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Feb. 16, 1968, Ser. No. 705,977
Int. Cl. H04q *3/42, 9/00*
U.S. Cl. 340—147 **10 Claims**

A controller in a selective calling line selectively starts remote station transmitters and unblinds remote station receivers. The controller provides a polling cycle for calling station transmitters which answer back by indicating the condition of the transmitter (i.e., whether a message is available) and by starting the transmitter when it contains a message. The controller stores the address signals in the heading of the message by marking individual stages of a shift register, which, in turn, controls a binary counter to retransmit the corresponding address codes back over the multistation line sequentially and repeatedly until all addressee stations respond that they are ready to receive the message. If one or more addressee stations fail to respond, the heading with the code addresses of the stations failing to respond are sent to an intercept receiver. The addressee receivers are then unblinded to record the message text. The controller also monitors the various answer-back signals and the message heading and text. In the event that the polled station fails to respond, an improper answerback or message heading is received or a message text interruption occurs, a test poll cycle is initiated wherein the stations are polled to determine conditions thereat without starting the message transmitter. Proper responses will now restore the polling cycle.



3,526,878
DIGITAL COMPUTER SYSTEM

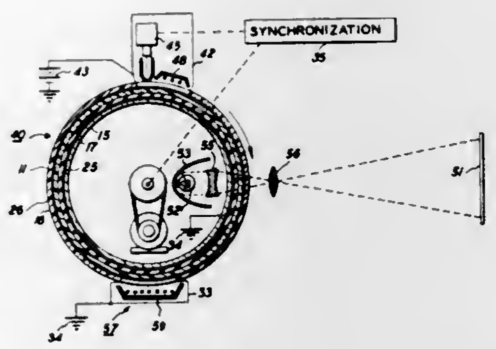
James Russell Bennett and Roger E. Packard, Glendora, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 27, 1967, Ser. No. 626,176
Int. Cl. G06f *3/04*
U.S. Cl. 340—172.5 12 Claims



A computer system in which the main memory of the computer is time-shared by one or more processing units and by a plurality of peripheral devices and having an address memory which contains address words used for addressing the main memory. The address memory has one section which is addressed by a multi-line input-output control unit with the selection being made on the basis of accesses to main memory requested by a plurality of peripheral devices all of which communicate with main memory over a single input-output channel. In one embodiment a scratchpad memory is provided within the multi-line control unit and is addressed in the same manner as is the one section of the address memory.

3,526,879
INTERNAL FROST RECORDING APPARATUS USING A DEFORMABLE PHOTOCONDUCTOR

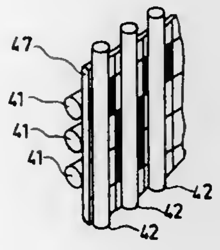
Robert W. Gundlach, Victor, and Lloyd F. Bean, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Original application May 17, 1963, Ser. No. 281,233, now Patent No. 3,317,316, dated May 2, 1967. Divided and this application Feb. 16, 1967, Ser. No. 616,678
Int. Cl. G11c *11/42*
U.S. Cl. 340—173 11 Claims



An internal Frost image recording apparatus using selective discharge of a charged web to control the deformation of a thermoplastic medium.

3,526,880
PERMANENT ELECTRO-OPTICAL MEMORY SYSTEM USING LIGHT CONDUCTING RODS OR FIBERS

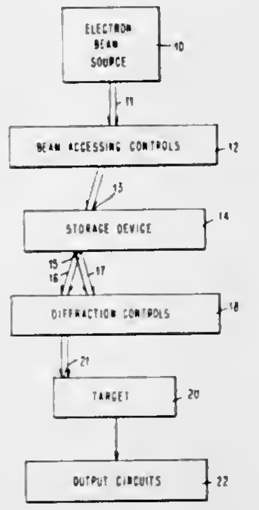
Franco Filippazzi, Milan, Italy, assignor to Olivetti-General Electric S.p.A., Caluso, Turin, Italy, a corporation of Italy
Filed Oct. 23, 1967, Ser. No. 677,166
Claims priority, application Italy, Oct. 27, 1966, 29,325/66
Int. Cl. G11c *13/04*
U.S. Cl. 340—173 8 Claims



A binary digital memory, wherein a different binary code may be stored for each of a plurality of optical fibers by means of a pattern of discrete alterations of each fiber along the length thereof, and wherein the code of a particular fiber is read by illuminating one end of the corresponding fiber and by sensing with photoelectric devices the illumination emitted from the fiber at predetermined points along the length thereof.

3,526,881
MAGNETIC INFORMATION STORAGE AND READOUT APPARATUS

John S. Judge, Syracuse, N.Y., and John R. Morrison, Broomfield, and Dennis E. Speliotis, Boulder, Colo., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation of application Ser. No. 562,593, July 5, 1966. This application July 18, 1969, Ser. No. 846,646
Int. Cl. G11c *11/42*
U.S. Cl. 340—174 7 Claims

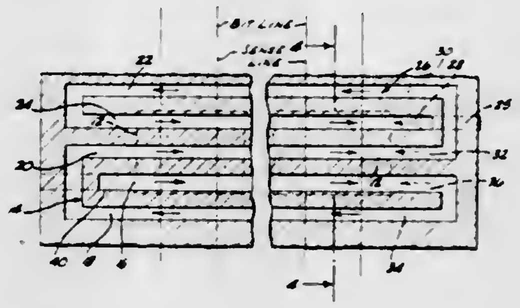


Improved readout of a magnetic storage media by an electron beam is accomplished herein by the addition of a crystalline material operative in accordance with the Bragg diffraction laws. The crystal is placed in the path of the electron beam after the beam has passed through the storage medium. When the beam passes through the storage medium, it is deflected according to the magnetization of the area in the storage medium through which the beam passes. Two different states of magnetization produce two different deflections. The crystalline material responds to an electron beam entering it at one angle to enhance the deflection of the beam. Electron beams entering the crystalline material at another angle are completely absorbed. By placing a target in the beam path after the crystalline material, it is possible to detect which type of magnetization the electron beam passed through when it intersected the storage medium. The electron beam may be a single beam which scans the storage medium, or it may be a very wide beam which floods the entire storage medium. The target may be either a semi-conductive material which detects the presence of the electron beam, or it may be a fluorescent material which is charged by the electron beam. It is also possible to put a reflective surface on the bottom of the crystalline material so that instead of passing a selected electron beam the crystalline material reflects the beam back to a detector.

3,526,882
THIN FILM DEVICE

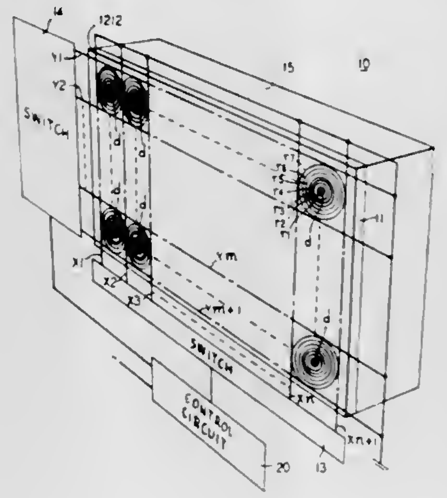
William W. Powell, Manhattan Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 493,456, Oct. 6, 1965. This application Jan. 2, 1968, Ser. No. 700,318
Int. Cl. G11c *5/06, 11/14*
U.S. Cl. 340—174 14 Claims

A magnetic device including two layers of parallel conductor members connected in series circuit so that the inner conductors generate a cumulative magnetic field in a predetermined area and the outer conductors generate an opposing and cancelling magnetic field at the fringe areas, and a thin film magnetic element sandwiched between the conductor members being magnetically coupled to the field generated inner conductor members.



3,526,883
MAGNETIC DOMAIN DISPLAY DEVICE

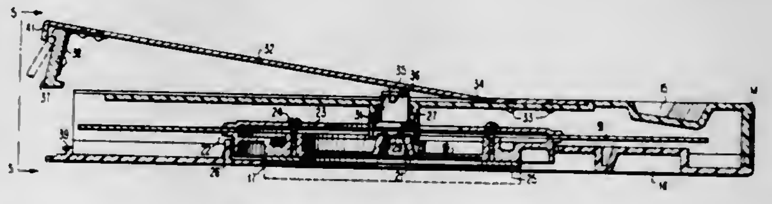
William J. Tabor, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 9, 1968, Ser. No. 766,276
Int. Cl. G11c *11/14, 11/42, 5/02*
U.S. Cl. 340—174 11 Claims



Concentric rings of magnetically soft material define stable positions for a single wall domain in a storage position in an underlying magnetic sheet. The smallest ring is covered by an opaque disk to extinguish polarized light passed by the domain when its size corresponds to that of the smallest ring. An array of such storage positions forms a simple optical display.

3,526,884
DUSTPROOF MAGNETIC DISCS HOUSING

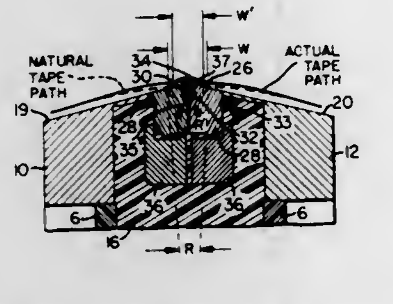
Walter S. Buslik and Marshall E. Freeman, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,783
The portion of the term of the patent subsequent to Nov. 1, 1986, has been disclaimed
Int. Cl. G11b *11/02, 17/26, 23/04*
U.S. Cl. 340—174.1 7 Claims



An interchangeable, random access disk cartridge contains a magnetic recording disk, which is assembled to a disk drive unit. The cartridge can be oriented only in one direction relative to the drive unit, and has two doors for head access and air entry, which are automatically opened when the cartridge is inserted into the drive.

3,526,885
RAISED CIRCULAR SEGMENT CONTOURED MAGNETIC HEAD ASSEMBLY

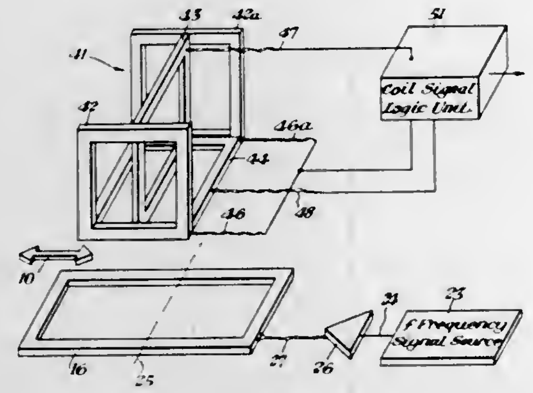
Robert L. Anderson, Palo Alto, and Avner M. Levy, Redwood City, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Aug. 24, 1967, Ser. No. 663,041
Int. Cl. G11b *5/24, 5/60*
U.S. Cl. 340—174.1 **2 Claims**



A transducer head assembly for a magnetic tape recorder/reproducer with the operating face of the head being contoured about the gap in such a manner that it produces a raised circular segment. The chord of the segment may be selected in accordance with the natural radius of tape wear.

3,526,886
PRECISION LOCATION DETECTOR

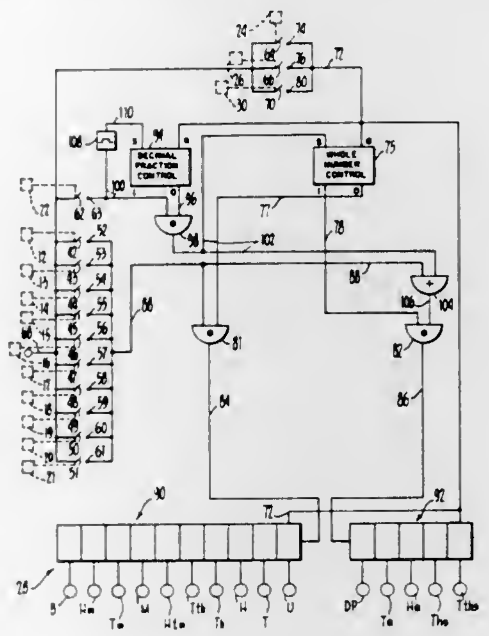
Joseph W. Lubich, Millvale, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Mar. 26, 1968, Ser. No. 716,114
Int. Cl. G08g *1/01;* **G08b** *21/00*
U.S. Cl. 340—282 **8 Claims**



This invention relates to a precision location detector which provides an indication of the presence and passage of at least first and second signal receiving coils and a signal transmitting coil which are relatively movable with respect to each other in a predetermined path. The first signal receiving coil is positioned in a plane which is at an angle to a plane containing the second signal receiving coil, while the second signal receiving coil is positioned such that the relative movement of the signal transmitting coil and signal receiving coils in a predetermined path is normal to a plane in which the second signal receiving coil is contained. A coil signal logic means is electrically coupled to the first and second signal receiving coils, and has a coil signal logic output indication whenever the first and second signal receiving coils concurrently and relatively move past the signal transmitting coil and the second signal receiving coil has no output, while simultaneously the first signal receiving coil does have an output.

3,526,887
DIGIT ORDER AND DECIMAL POINT DISPLAY SYSTEM AND CIRCUIT THEREFOR

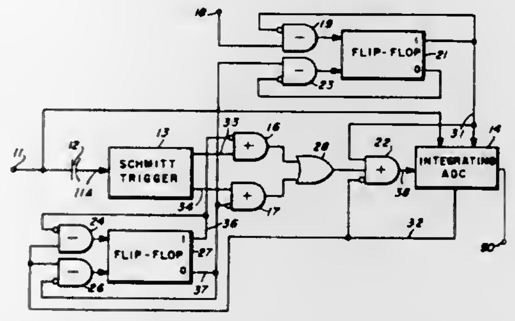
Ernst R. Erni, Redwood City, Calif., assignor to The Singer Company, a corporation of New Jersey
Filed June 30, 1967, Ser. No. 650,315
Int. Cl. G06c *19/02;* **G08b** *23/00*
U.S. Cl. 340—324 **11 Claims**



An operator's panel for manual entry and functional control of data in a data handling apparatus is provided with a horizontal row of lamps for visually indicating digit or numeral positions, both right and left of a decimal point lamp, of a number that has been entered into the apparatus by manual operation of selected ones of ten numeral keys and a decimal point key prior to operation of selected ones of function initiating keys. A logic system for controlling, in proper order, the illumination and extinguishment of the lamps is disclosed in addition to a circuit for turning on and extinguishing the lamps according to control signals generated by the logic system.

3,526,888
INTERFERENCE SIGNAL CANCELLING SYSTEM FOR AN INTEGRATING ANALOG TO DIGITAL CONVERTER

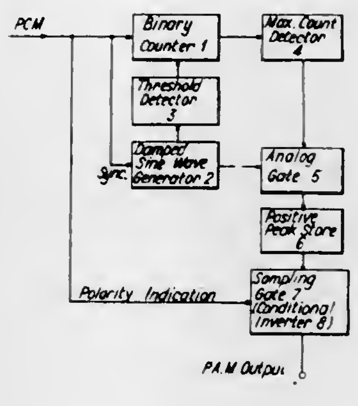
Richard L. Knox and Paul M. Haas, San Diego, Calif., assignors, by mesne assignments, to Solitron Devices, Inc., Tappan, N.Y., a corporation of New York
Filed June 22, 1965, Ser. No. 465,911
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **3 Claims**



There is disclosed a system for cancellation of AC signals which are superimposed upon a DC analog signal which is being measured by an integrator. The AC signal is cancelled by alternately integrating the AC signal in out-of-phase relationship. The alternate integration is controlled by suitable logic circuitry.

3,526,889
DECODER

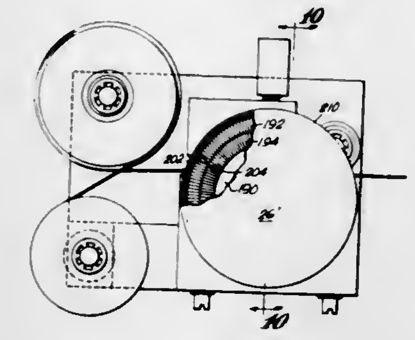
Alec Harley Reeves and Joseph Hood McNeilly, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,243
Claims priority, application Great Britain, Oct. 31, 1966, 48,615/66
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **10 Claims**



A compressed pulse code modulation signal presets a binary counter and shock excites a damped tuned circuit to produce a damped wave of fixed initial amplitude and fixed rate of decay. This wave is applied to a threshold detector which advances the counter each time the wave exceeds the threshold. A maximum count detector indicates when the counter is full whereupon the next succeeding half cycle of the wave is applied to a peak storage circuit. The storage circuit is sampled to give an expanded pulse amplitude modulated version of the pulse code modulation signal.

3,526,890
LINEAR TAPE TRANSDUCER

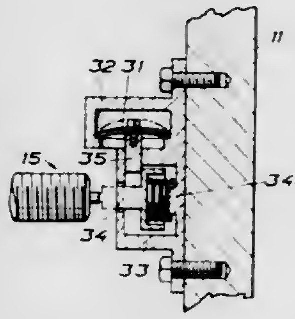
Jay Malina and Robert B. Walder, Miami Beach, Fla., assignors to Anilam Electronics Corporation, Hialeah, Fla., a corporation of Florida
Filed Aug. 8, 1968, Ser. No. 751,201
Int. Cl. H03k *13/00*
U.S. Cl. 340—347 **8 Claims**



This invention pertains to a high precision mechanical measuring device to be used in an electronic measuring system for machine tools, referred to in the trade as a digital readout system. The device consists generally of a housing enclosing a retractable measuring tape and precision guide means to prevent any distortion of the tape as it passes therethrough. The outer end of the tape extends through an opening in one end of the housing, which is fixed to a stationary part of a machine tool, and is in turn fixed to a movable part thereof such as a table or carriage, the axis of the extended portion of the tape being in substantial alignment with its axis through the guide means. The mechanical movement of the carriage or table, having the end of the tape fixed thereto, relative to the stationary housing, is converted into electric pulses which are converted into numbers illuminated on a display unit for the operator to see.

3,526,891
TEMPERATURE RESPONSIVE DEVICES FOR MOVING PARTS OF MECHANISM

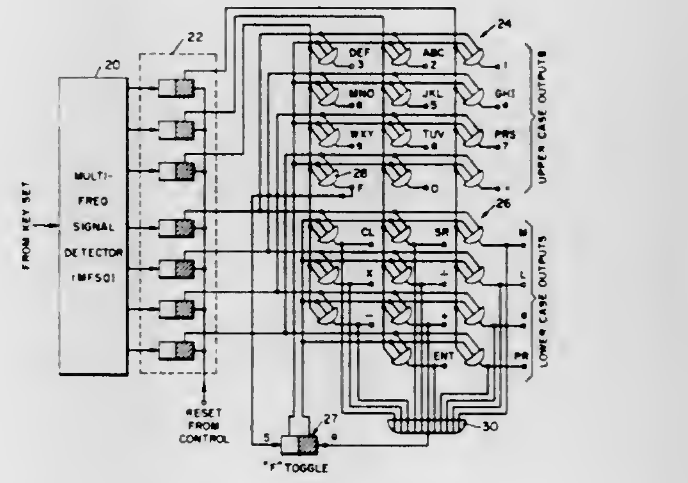
Joseph Albert Pope, Bramhall, England, assignor to Mirrlees National Limited, a corporation of Great Britain, Northern Ireland, and Isle of Man
Filed Dec. 2, 1968, Ser. No. 780,447
Claims priority, application Great Britain, Dec. 1, 1967, 54,693/67
Int. Cl. G08b *21/00*
U.S. Cl. 340—227.1 **1 Claim**



Apparatus for sensing changes in a moving member comprising a moveable element associated with the member in such a manner as to trace a defined normal path of movement therewith, the element being responsive to temperature changes in the moving member so that upon the occurrence of such changs a significant positional change in the normal path of movement is effected and sensor means located adjacent to the path of movement for sensing the change in the path.

3,526,892
SIGNALLING SYSTEM WITH UPPER AND LOWER CASE DESIGNATIONS

William F. Bartlett, Rochester, Barrie Brightman, Webster, Uno Randmere, Rochester, and Richard Scott, Pittsford, N.Y., assignors to Stromberg Carlson Corporation, Rochester, N.Y., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,870
Int. Cl. H04l *5/00, 15/04*
U.S. Cl. 340—365 **1 Claim**

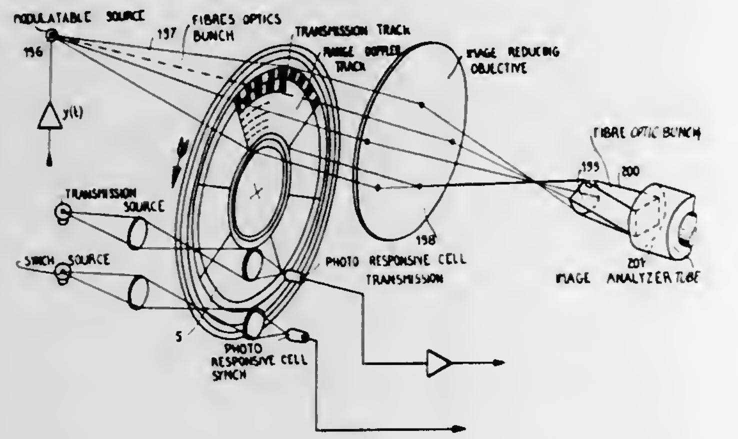


A signalling system for remote operation of a calculator which requires twenty-two distinguishable input signals. A standard twelve-key key set is used at the local station. One key is designated a shift key, and the central office equipment is arranged to direct the signal next following actuation of the shift key to a different input of the calculator from the one to which it would otherwise be directed.

3,526,893

OPTICAL CORRELATION SYSTEM FOR RECEIVED RADAR SIGNALS IN PSEUDO-RANDOMLY CODED-RADAR SYSTEMS

Claude Skenderoff, Rueil-Malmaison, Léonidas Symaniec, Sartrouville, and Jacques Marcel Darricau, Kremlin-Bicetre, France, assignors to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed Feb. 21, 1968, Ser. No. 707,122
Claims priority, application France, Feb. 22, 1967, 95,949
Int. Cl. G01s *9/44*
U.S. Cl. 343—5 **11 Claims**



A film, placed on a rotating disc, or drum, carries K similar decoding tracks, each being representative of a pseudo random function, as transformed by the Doppler effect, the film passing before a light sensitive receiver during a time T, light being transmitted on said film from a light source modulated by the received signal to be analyzed, in order to obtain distance detection of a range of KT.

3,526,894

RANDOM MODULATION RADAR

Robert Guilhem, Sceaux, Eugène Desveaux, Fontenay-sous-Bois, and Georges Nard, Clamart, France, assignors to Compagnie Francaise Thomson-Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 194,733, May 14, 1962. This application Sept. 27, 1965, Ser. No. 492,353
Claims priority, application France, May 18, 1961, 862,199
Int. Cl. G01s *9/44, 7/36*
U.S. Cl. 343—9 **8 Claims**

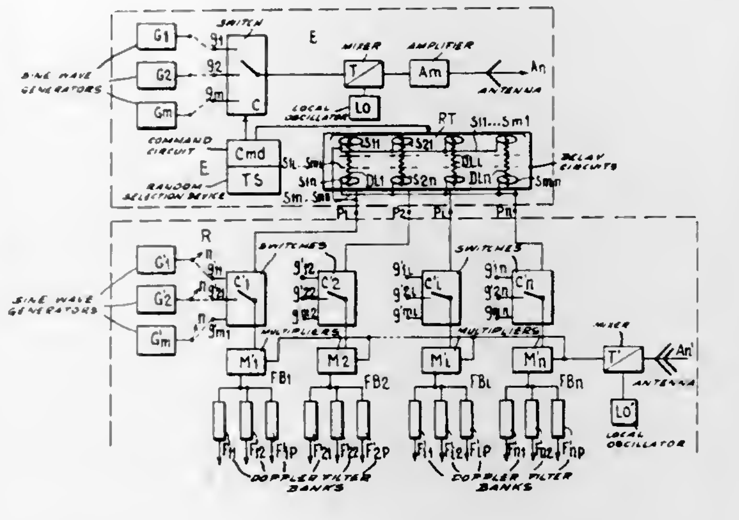
1. In a radar system of the type which includes transmitting means to transmit radar signals toward targets and receiving means to receive signals returned by said targets responsive to signals beamed thereat, the combination comprising:

means to select at regular intervals and at random, the phase angle of the transmitted radar signals so as to transmit as radar pulses a series of successive adjacent short pulses of the same duration but of different phase angles changing from one pulse to the next one or not at random, said means to select comprising at the transmitter a generator generating at least two periodic voltages of the same frequency but differing from each other by a fixed phase angle; first selector switch means;

random selection means to operate said first selector switch means, said first switch means selecting at random under the control of said random selection means between said voltages and applying the selected voltage to said transmitting means wherein the carrier frequency of the transmitter is established as a series of short radar pulses with a phase angle changing from one to the next or not at random;

means at the receiver to receive the echo pulses returned by the targets, said means including a generator generating at least two periodic voltages of the same frequency but differing from each other by a fixed phase angle related to the phase angle between the voltages generated by said generator at the transmitter;

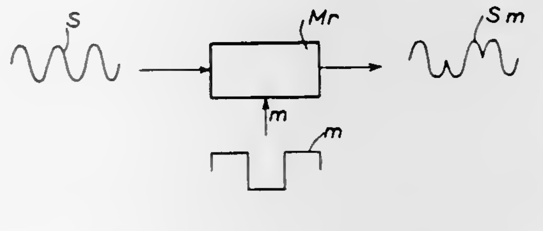
and second selector switch means controlled by said random selection means to select between said voltages whereby a correspondence is established between the voltages at the transmitter and those at the receiver.



3,526,895

OPTICAL PROCESS APPLIED TO RADIO RANGE DETECTION

Jean-Louis Henri François Guyon de Montlivault, Saint-Michel-sur-Orge, France, assignor to Centre National d'Etudes Spatiales, Paris, France, a company of France
Filed Apr. 25, 1968, Ser. No. 723,990
Claims priority, application France, Apr. 25, 1967, 104,109
Int. Cl. G01s *9/06*
U.S. Cl. 343—13 **9 Claims**

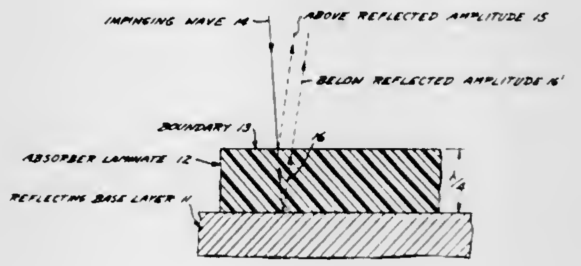


A radio range detection system of the type resorting to a subcarrier wave transmitted between two remote stations to be modulated at the transmitting end for instance by a pseudo random code and demodulated at the receiving end. A rough and a fine estimation of the delay to which the wave has been subjected are obtained by resorting at the receiver end to an optical equipment producing simultaneously a large number of correlating functions which allow synchronizing a local code generator provided for demodulation. Said optical equipment is associated with the usual means demodulating the wave received and producing a fine measurement of its phase by making use of the information thus supplied by said optical correlating equipment.

3,526,896

RESONANCE ABSORBER FOR ELECTROMAGNETIC WAVES

Ludwig Wesch, Schlosswolfsbrunnenweg 10, Heidelberg, Germany
Continuation-in-part of application Ser. No. 505,826, May 3, 1955. This application Feb. 2, 1961, Ser. No. 86,824
Int. Cl. H01q *17/00*
U.S. Cl. 343—18 **14 Claims**

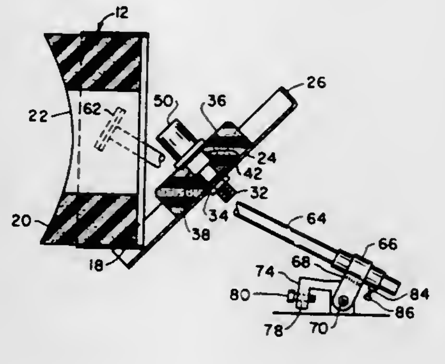


An electromagnetic wave absorber consists of a reflecting base layer and a superposed absorbing layer. The absorbing layer has a thickness which is equal to an odd number of quarter wavelengths of the energy to be absorbed divided by the geometric mean of the relative dielectric constant and the relative magnetic permeability of the absorbing layer material.

3,526,897

PARASITIC PROBE ANTENNA

Herbert E. Cribb, Satellite Beach, Fla., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 20, 1967, Ser. No. 677,505
Int. Cl. G01r; H01q *13/00, 1/42*
U.S. Cl. 343—703 **5 Claims**

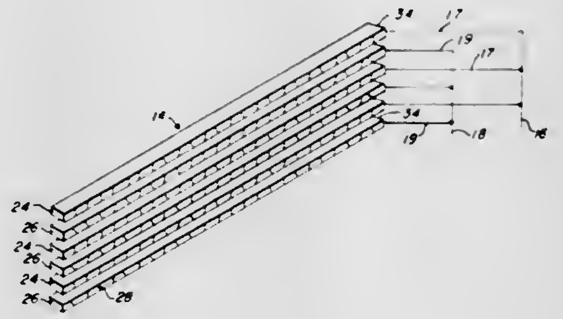


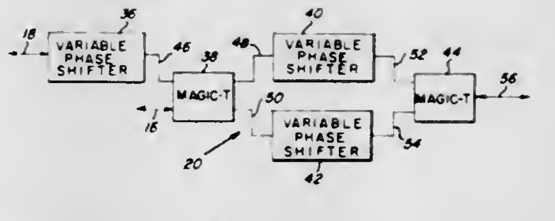
This invention relates to a parasitic probe having low insertion losses and requiring less power to be used by interrogating radar. A housing interiorly lined with RF absorbent material is adapted for mounting adjacent the spacecraft antenna. A spacecraft type helix antenna is mounted on the pivotal back plate of the housing with a conventional RF fitting to permit connection to external antennas. A polystyrene rod is affixed to the face of the helix antenna to establish a low loss path for electromagnetic waves flowing from the spacecraft antenna to the helix antenna. The housing construction and its location for operation provide a protective cover for the spacecraft antenna with the RF absorbent lining preventing stray radiation from reaching the interrogating radar.

3,526,898

ANTENNA WITH TRANSLATIONAL AND ROTATIONAL COMPENSATION

Troy E. Plunk, Bedford, and Nathan Slawsby, Canton, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,081
Int. Cl. H01q *13/10, 13/00*
U.S. Cl. 343—771 **6 Claims**



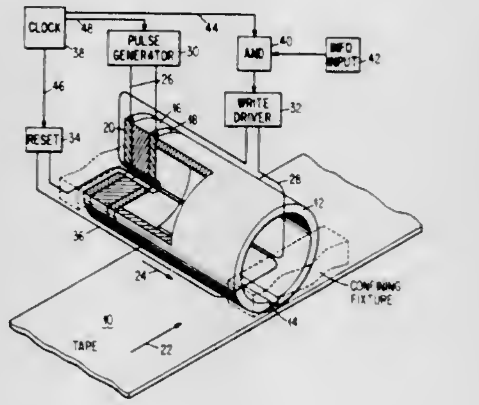


An antenna for a radar system comprising a linear phased array having two different edge slotted linear arrays which are interleaved, and a variable power divider which varies the phase and amplitude of the drive power to the arrays.

3,526,899

MAGNETO-ACOUSTIC TRANSDUCER FOR HIGH TRACK DENSITY RECORDING

Dennis E. Speliotis and John R. Morrison, Boulder, Colo., and John S. Judge, Syracuse, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 9, 1967, Ser. No. 607,967
Int. Cl. G11b *5/44, 5/00*
U.S. Cl. 346—74 **3 Claims**

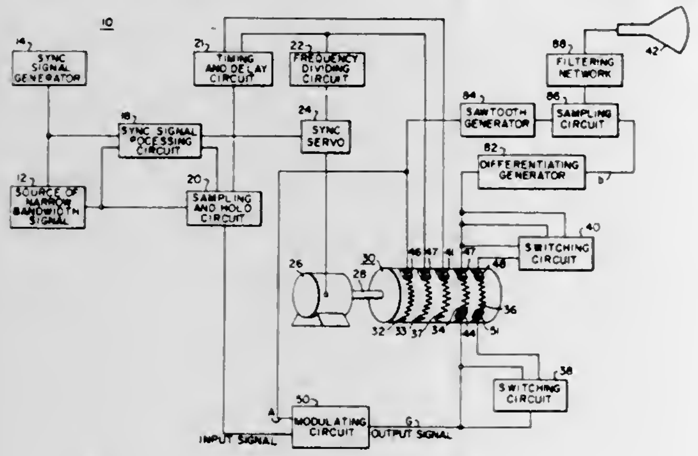


A magnetic write head in combination with a stress wave transducer for recording data on a magnetic medium in response to the coincidence of a stress wave and a current pulse. The stress wave transducer creates a traveling stress wave in the write head and narrows the hysteresis loop of the write head. The current pulse causes magnetic switching of the stressed portion of the write head. The position of the recorded pulse is determined by the position of the stress wave when the current pulse is applied.

3,526,900
METHOD AND SYSTEM FOR RECORDING SAMPLED SIGNALS ON A CONTINUOUS RECORDING MEDIUM

Reginald F. H. McCoy, Dumont, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 8, 1968, Ser. No. 711,773
Int. Cl. G11b *5/02;* **G01d** *15/12;* **H04n** *7/12*
U.S. Cl. 346—74 **12 Claims**

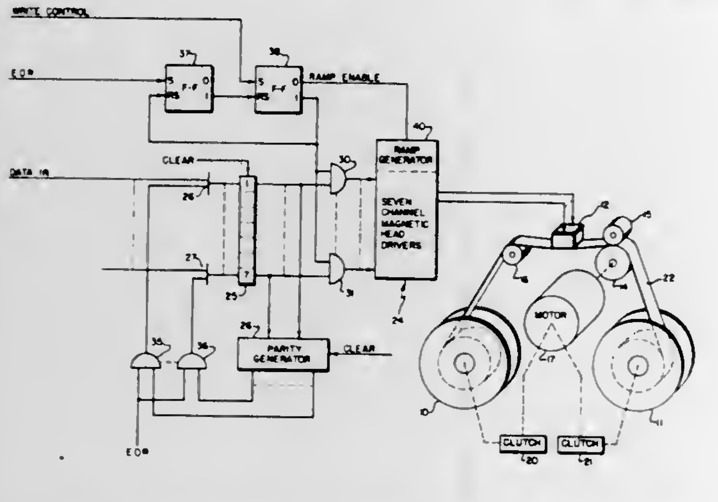


This invention relates to a method and system for recording low bandwidth signals of an analog nature onto a continuous medium such as a magnetic disk or drum. The low bandwidth signals may illustratively be derived from a source such as a telephone line or a slow scan television system and are applied to a rotating magnetic drum in a manner that the leading edges of the pulses convey the desired signal information and so the recorded pulses may be consecutively read out from the continuous media to provide the desired signal.

3,526,901
NRZ DIGITAL MAGNETIC RECORDING

Richard B. Lawrance, Winchester, and Kyriacos Joannou, Wayland, Mass., and Raymond A. Corneau, Pawtucket, R.I., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Apr. 16, 1968, Ser. No. 721,746
Int. Cl. G11b *5/02;* **G01d** *15/12;* **G06k** *5/00*
U.S. Cl. 346—74 **10 Claims**

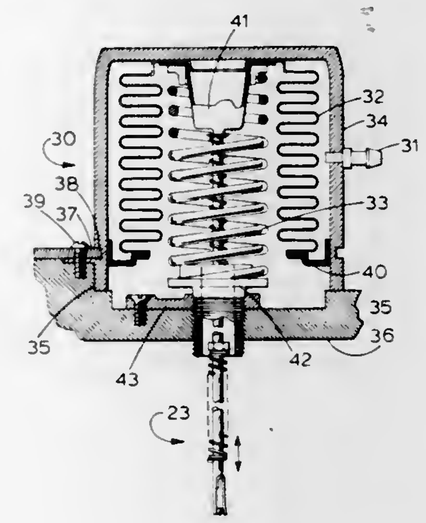


A digital magnetic recording system is described in which records of predetermined length are recorded in an NRZ (non return to zero) recording mode with an interrecord gap separating each record. In order to change individual records without leaving noise in the interrecord gap, parity bits provide that the final write current level is always the same polarity and a ramp circuit reduces the level to zero at a below threshold rate.

3,526,902
PNEUMATIC RECORDER PEN MOTOR

Joseph S. Holt, Jr., Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed Nov. 1, 1968, Ser. No. 772,594
Int. Cl. G01d *5/06*
U.S. Cl. 346—139 **3 Claims**

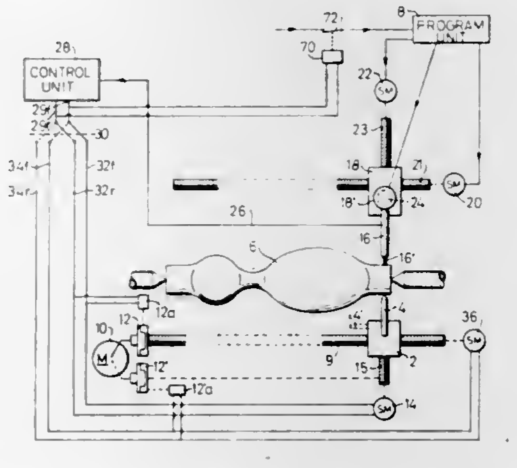


A pen motor assembly in which a bellows is directly connected to a pen movement structure with optimum power and linearity with minimal friction, and with structural duplicatability, based on free length assembly of the bellows coupled with predetermined load-length bellows return spring. Further, the method of construction and assembly of this pen motor. Further, a multiple unit of such pen motors in a multiple pen system in minimal space and with the pen motors interchangeable in the multiple unit.

3,526,903
ADAPTIVE SERVO CONTROL SYSTEM FOR MACHINE TOOLS

Miron Brenner, Rechov Hanapilim 61/9, Tel Gibborim, Holon, Israel, and Dov Tirosh, Rechov Shamgar 28, Tel Aviv, Israel

Filed Aug. 12, 1968, Ser. No. 751,849
Int. Cl. G05b *13/02*
U.S. Cl. 318—92 **7 Claims**

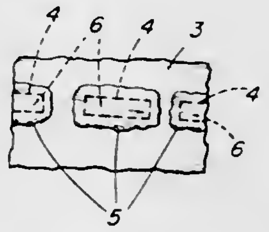


A numerical control system for controlling a machine tool comprises a program unit, a displaceable transducer adapted to sense the surface of the workpiece, means displacing the transducer in the longitudinal and transverse directions in accordance with the program of the program unit and, a control unit connected to the transducer for controlling the feed of the tool holder in accordance with the actual position of the transducer and the sensed surface of the workpiece, the arrangement being such that the transducer cross-displacement, and preferably also its longitudinal displacement, is controlled directly and solely by the program unit, while the tool cross-feed, and preferably also its longitudinal feed, is controlled directly and solely by the transducer.

3,526,904
FILM COVERED, APERTURED CIGARETTE WRAPPER

Ronald A. Tamol, Richmond, Va., assignor to Phillip Morris Incorporated, New York, N.Y., a corporation of Virginia

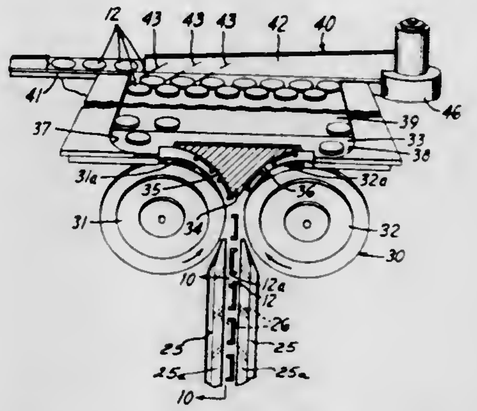
Filed May 10, 1968, Ser. No. 728,140
Int. Cl. A24d *1/02;* **D21h** *1/02*
U.S. Cl. 131—15 **4 Claims**



The disclosure relates to a cigarette wrapper which when in use is capable of affording undiluted smoke from the cigarette employing said wrapper during the early stage of smoking and an air-diluted smoke during the latter stages of smoking. This is achieved by providing the wrapper with ventilation holes which are covered by a film of a substance which is disintegrated by the action of smoke constituents, in particular moisture resulting from the burning of the tobacco. Satisfactory aperture substances include water soluble starch materials such as dextrin as well as polyethylene oxide, polyvinyl alcohol and solid polyethylene glycols.

3,526,905
CLOSING MEANS AND METHOD

William H. Robinson, New Vienna, Ohio 45159
Continuation-in-part of application Ser. No. 483,252, Aug. 27, 1965. This application Nov. 25, 1968, Ser. No. 778,441
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **8 Claims**

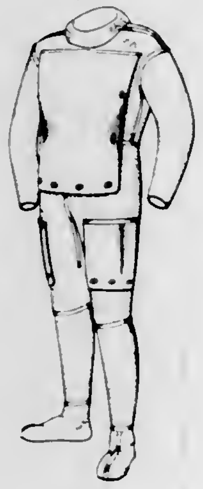


Articles which are dished or cup-like and forming an open side, for example flexible closure caps and the like, are unscrambled from a haphazard mass thereof and are positioned into a layer in which the open side of the respective closures may face in opposite directions. Articles are removed from the layer and are fed between moving surfaces which advance the articles individually and positively to a desired oriented position. Upon removal from the moving surfaces, the oriented articles are arranged in a moving layer from which they are thereafter separated and fed into registery with other articles for assembly therewith as in a container capping operation.

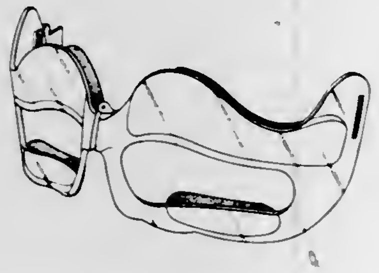
DESIGNS

SEPTEMBER 1, 1970

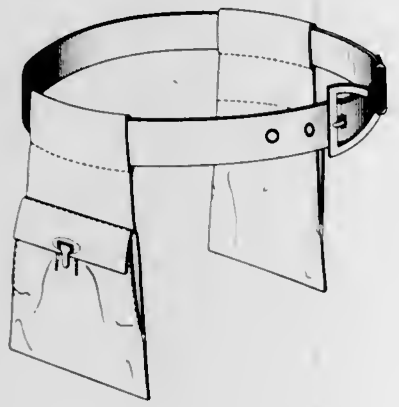
218,546
DIVING SUIT
Carl T. Rector, 2408 Meadow Lane,
Eureka, Calif. 95501
Filed Oct. 31, 1969, Ser. No. 19,868
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—40



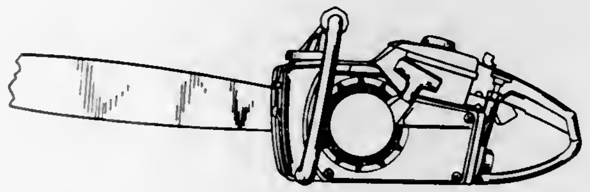
218,547
GOGGLES
Theodore C. Neward, 2066 W. 11th St.,
Upland, Calif. 91786
Filed Apr. 7, 1969, Ser. No. 16,604
Term of patent 14 years
Int. Cl. D2—*03*
U.S. Cl. D2—234



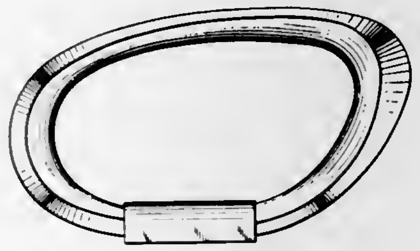
218,548
COMBINED BELT AND POCKETS
Flora Elkins, 246 West End Ave.,
New York, N.Y. 10023
Filed Nov. 15, 1968, Ser. No. 14,484
Term of patent 14 years
Int. Cl. D2—*08*
U.S. Cl. D2—383



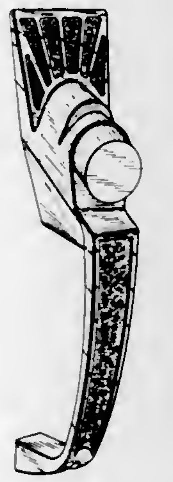
218,549
CHAIN SAW
Richard W. Condon, Frankfort, and Vernon L. Krabbe, Beecher, Ill., and Henry R. Johannes, Birmingham, Mich., assignors to Roper Corporation, Kankakee, Ill., a corporation of Delaware
Filed Aug. 11, 1969, Ser. No. 18,646
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—65



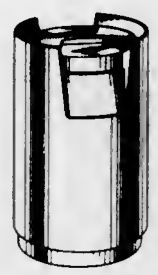
218,550
CARRYING HANDLE
Morris Friedman, Fort Lee, N.J., assignor to Blockhead, Inc., New York, N.Y., a corporation of New York
Filed Oct. 22, 1969, Ser. No. 19,671
Term of patent 7 years
Int. Cl. D8—*03*
U.S. Cl. D8—154



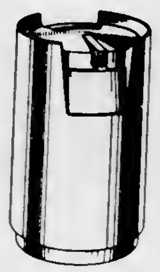
218,551
DOOR LATCH HANDLE
Henry Kartarik, White Bear Lake, Minn., assignor to Ideal Security Hardware Corporation, St. Paul, Minn., a corporation of Minnesota
Filed Aug. 15, 1969, Ser. No. 18,717
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—170



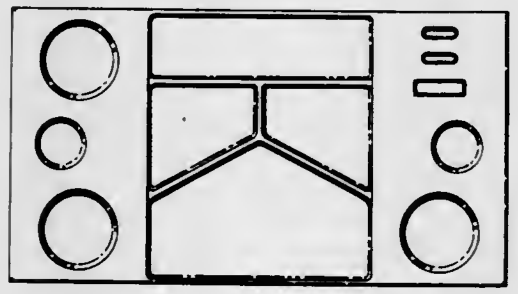
218,552
PRESSURIZED DISPENSING CONTAINER
Louis V. Nigro, Saugus, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed July 9, 1969, Ser. No. 18,127
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—9



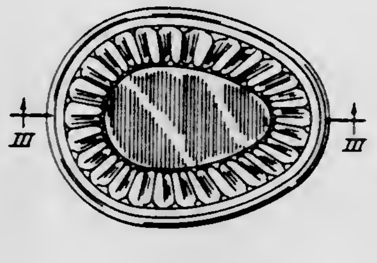
218,553
PRESSURIZED DISPENSING CONTAINER
Louis V. Nigro, Saugus, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed July 9, 1969, Ser. No. 18,128
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—9



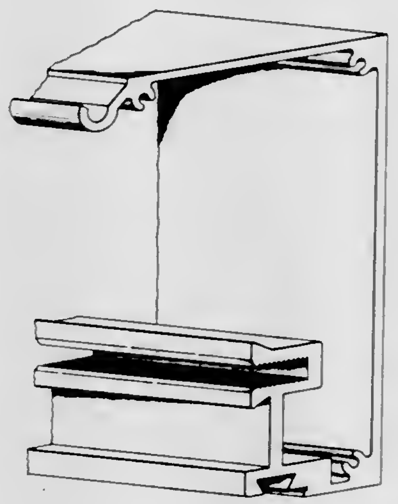
218,554
DISPOSABLE TRAY
Harford E. Goings, 5428 Center Drive,
Camp Springs, Md. 20031
Filed Sept. 3, 1969, Ser. No. 18,986
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—185



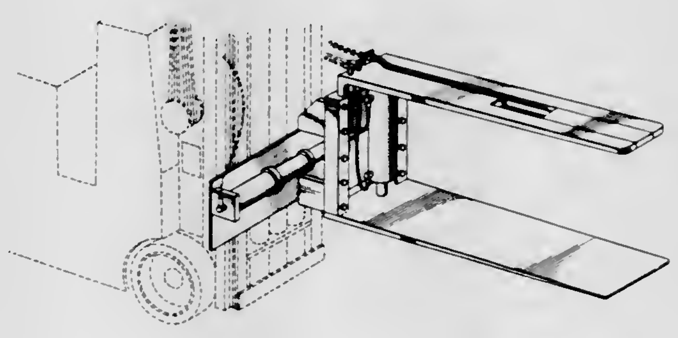
218,555
EGG-SHAPED CONTAINER FOR FOOD OR THE LIKE
James D. Smith, South Buffalo Township, Armstrong County, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 8, 1969, Ser. No. 19,469
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—219



218,556
COMBINED HEADER AND TRACK SUPPORT MEMBER FOR A SLIDING PANEL
Robert A. Miller, Plainville, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Apr. 22, 1968, Ser. No. 11,551
Term of patent 14 years
Int. Cl. D25—*03*
U.S. Cl. D13—6



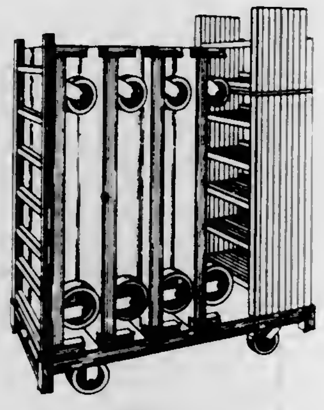
218,557
FORK LIFT ATTACHMENT
Benjamin M. Heller, Los Angeles, Calif., assignor to Heller Engineering & Management Co., Los Angeles, Calif., a corporation of California
Filed July 12, 1968, Ser. No. 12,717
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—3



218,558
CART UNIT

Richard J. Rubin, 39 Dolphin Road,
Newton, Mass. 02159
Filed Sept. 16, 1969, Ser. No. 19,168
Term of patent 14 years
Int. Cl. D12—*02*

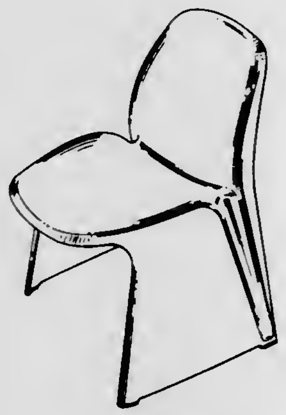
U.S. Cl. D14—3



218,559
CHAIR

Millard Fillmore Harty, Bloomfield Hills, and Arleigh C. Hitchcock, Muskegon, Mich., assignors to The Shaw-Walker Company, Muskegon, Mich., a corporation of Michigan
Filed June 16, 1969, Ser. No. 17,708
Term of patent 14 years
Int. Cl. D6—*01*

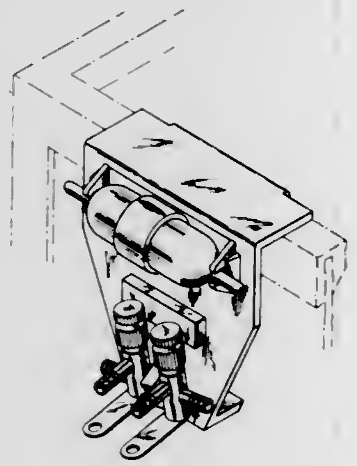
U.S. Cl. D15—1



218,560
COMBINED BRACKET, AIR FILTER AND GANG VALVE ASSEMBLY FOR HOME AQUARIUMS

David D. Lovitz, Short Hills, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey
Filed Aug. 20, 1969, Ser. No. 18,769
Term of patent 14 years
Int. Cl. D23—*01*

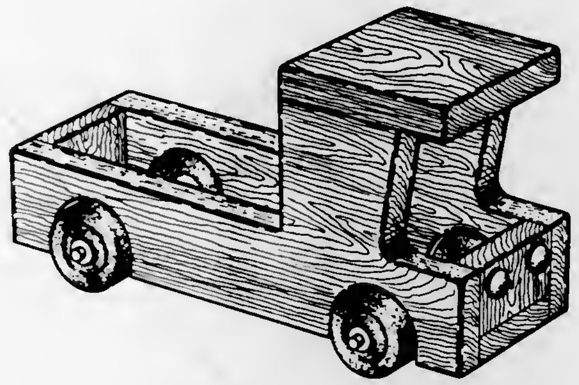
U.S. Cl. D23—4



218,561
TOY TRUCK

Richard H. Benton, Box 51, The Sea Ranch,
Calif. 95445
Filed June 2, 1969, Ser. No. 17,440
Term of patent 14 years
Int. Cl. D21—*02*

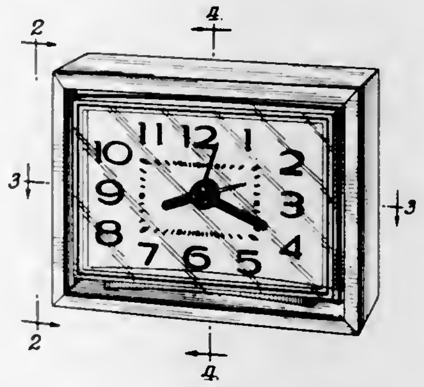
U.S. Cl. D34—15



218,562
CLOCK

Charles A. McLeod, 3600 Lake Shore Drive,
Chicago, Ill. 60613
Filed Apr. 17, 1968, Ser. No. 12,172
(Filed under Rule 47(b) and 35 U.S.C. 118)
Term of patent 14 years
Int. Cl. D10—*01*

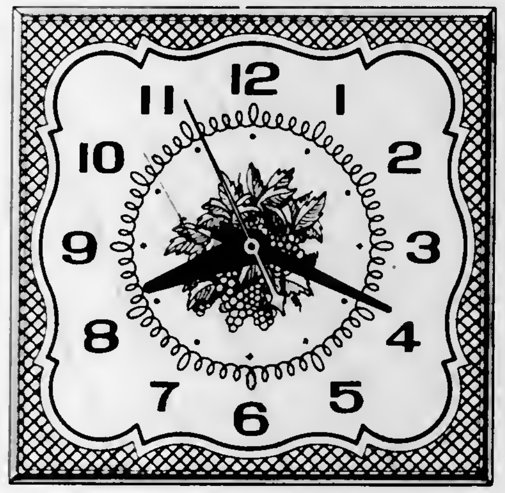
U.S. Cl. D42—7



218,563
CLOCK

John R. Wilson, Royal Oak, Mich., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 18, 1969, Ser. No. 19,198
Term of patent 14 years
Int. Cl. D10—*01*

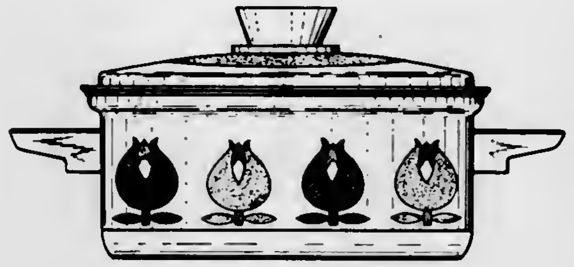
U.S. Cl. D42—7



218,564
COOKING VESSEL

Joan Stevens, New York, N.Y., assignor to Lincoln Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1970, Ser. No. 20,933
Term of patent 14 years
Int. Cl. D7—*02*

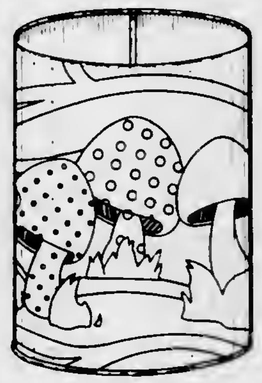
U.S. Cl. D44—1



218,565
CANISTER

Joan Stevens, New York, N.Y., assignor to Lincoln Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1970, Ser. No. 20,934
Term of patent 14 years
Int. Cl. D7—*01*

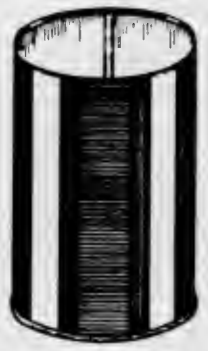
U.S. Cl. D44—6



218,566
CANISTER

Harry Schwartz, Roslyn Heights, N.Y., assignor to Lincoln Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1970, Ser. No. 20,935
Term of patent 14 years
Int. Cl. D7—*01*

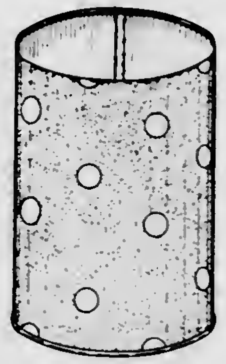
U.S. Cl. D44—6



218,567
CANISTER

Harry Schwartz, Roslyn Heights, N.Y., assignor to Lincoln Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1970, Ser. No. 20,936
Term of patent 14 years
Int. Cl. D7—*01*

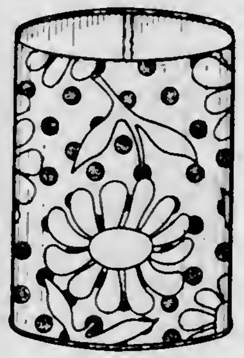
U.S. Cl. D44—6



218,568
CANISTER

Harry Schwartz, Roslyn Heights, N.Y., assignor to Lincoln Metal Products Corporation, Brooklyn, N.Y., a corporation of New York
Filed Jan. 15, 1970, Ser. No. 20,937
Term of patent 14 years
Int. Cl. D7—*01*

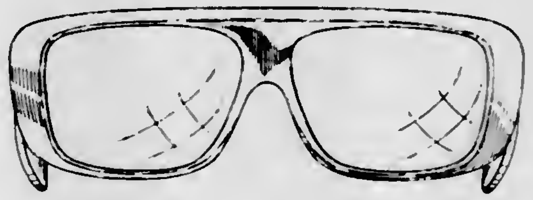
U.S. Cl. D44—6



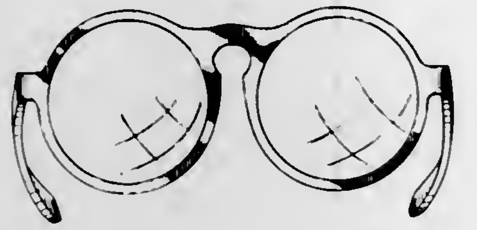
218,569
PAIR OF SUNGLASSES

Roger L. McCracken, Chili, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 2, 1969, Ser. No. 18,023
Term of patent 14 years
Int. Cl. D16—*08*

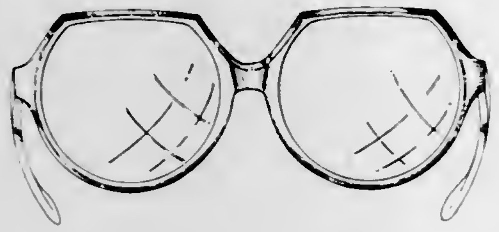
U.S. Cl. D57—1



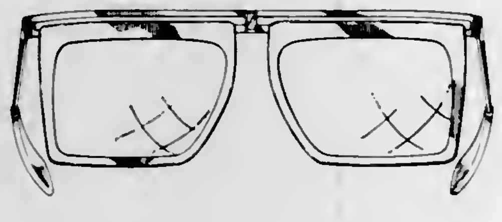
218,570
PAIR OF SUNGLASSES
Richard L. Huggins, Lima, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed July 2, 1969, Ser. No. 18,024
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



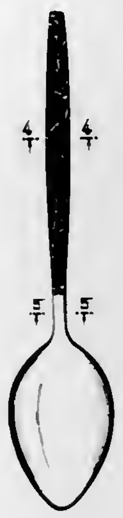
218,571
DESIGN FOR A PAIR OF SPECTACLES
Robert H. Ramp, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 23, 1969, Ser. No. 19,261
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



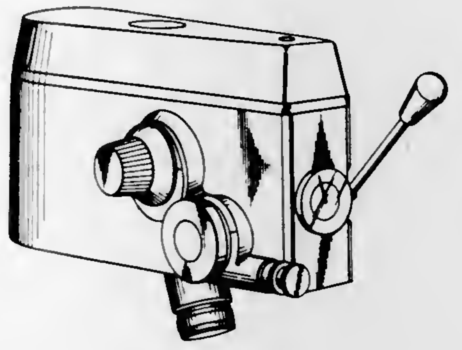
218,572
DESIGN FOR A PAIR OF SUNGLASSES
Jean R. Simon, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Sept. 23, 1969, Ser. No. 19,264
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



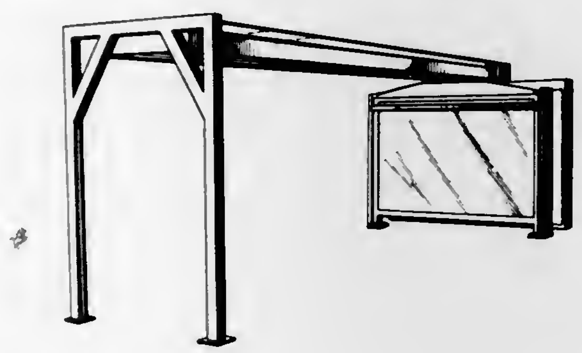
218,573
SPOON OR SIMILAR ARTICLE
Melvin A. Lea, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 25, 1969, Ser. No. 15,903
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



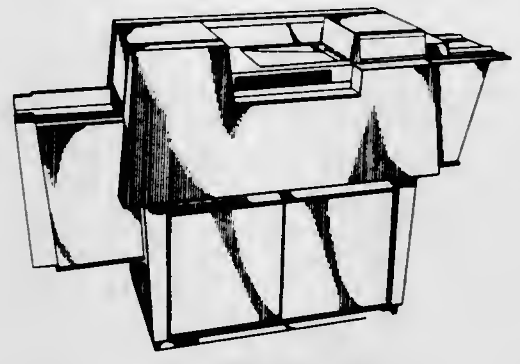
218,574
DRILL PRESS HEAD
Francis L. Moseley, Pasadena, and Glenn A. Johnson, Altadena, Calif., assignors to Servo Products Company, a corporation of California
Filed June 30, 1969, Ser. No. 17,940
Term of patent 14 years
Int. Cl. D15—*99*
U.S. Cl. D54—14



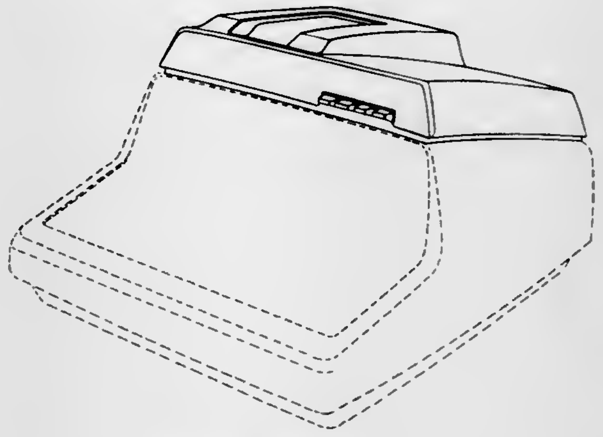
218,575
SUBJECT-HOLDER-SUPPORTED OVERHEAD TRACK FOR CAMERA-PROJECTOR HEAD OF A PHOTOREPRODUCTION UNIT OR SIMILAR ARTICLE
Joseph H. Wally, Jr., Shawnee Mission, Kans., assignor to Western Blue Print Company, Kansas City, Mo., a corporation of Missouri
Filed Dec. 13, 1968, Ser. No. 14,955
Term of patent 14 years
Int. Cl. D16—*05*
U.S. Cl. D61—1



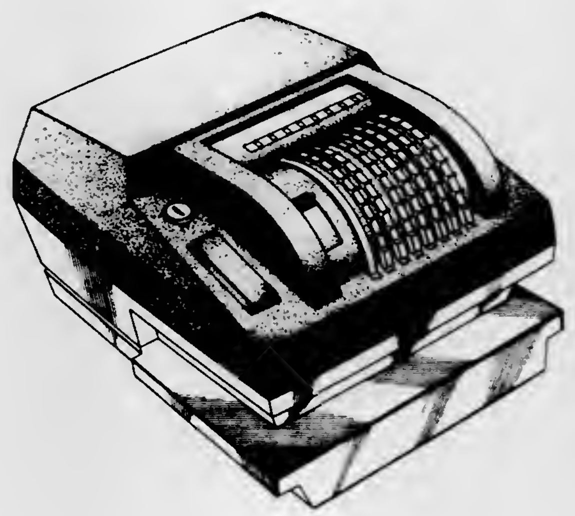
218,576
COPY-DUPLICATING MACHINE
John J. Van Acker, Geauga, and Sidney H. Bradd, Cuyahoga, Ohio, assignors to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Filed July 1, 1969, Ser. No. 18,012
Term of patent 14 years
Int. Cl. D16—*05*
U.S. Cl. D61—1



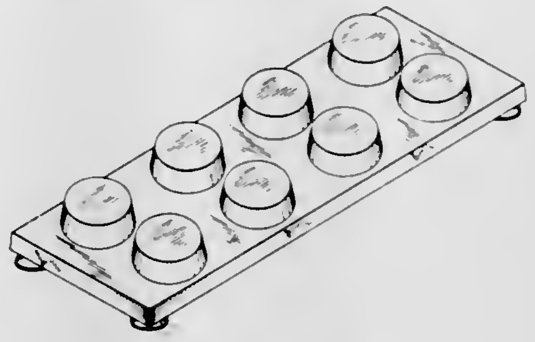
218,577
ACCESSORY CABINET FOR ELECTRONIC CALCULATOR, OR THE LIKE
Barton D. Davis, Los Altos, Calif., and Donald P. Aupperle, Loveland, Colo., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed May 28, 1969, Ser. No. 17,398
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D64—11



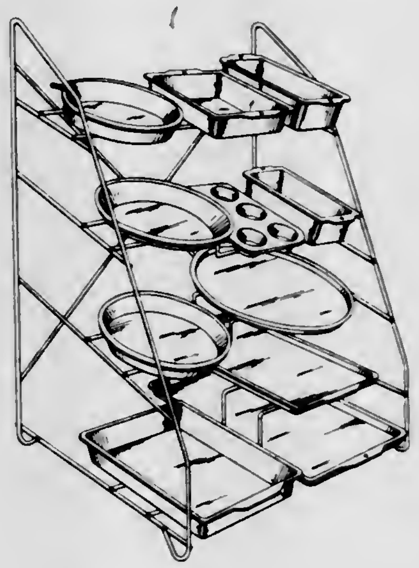
218,578
CHECKWRITER
Stephen G. Hauser, Van Nuys, Calif., assignor to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Filed July 17, 1969, Ser. No. 18,256
Term of patent 14 years
Int. Cl. D18—*02*
U.S. Cl. D64—11



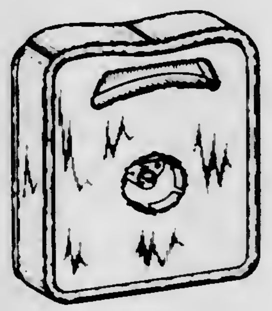
218,579
FLASHING SIGNAL UNIT
Robert D. Kahn, 24 Maple Ave., Rockville Centre, N.Y. 11570
Continuation-in-part of design application Ser. No. 9,385, Nov. 13, 1967. This application May 23, 1968, Ser. No. 12,589
Term of patent 14 years
Int. Cl. D29—*99*
U.S. Cl. D72—1



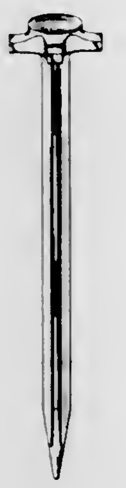
218,580
BAKEWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Spartaco Trivellini, Roselle, Ill., assignors to Market Masters, Inc., Elk Grove Village, Ill., a corporation of Illinois
Filed July 22, 1969, Ser. No. 18,308
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D80—10



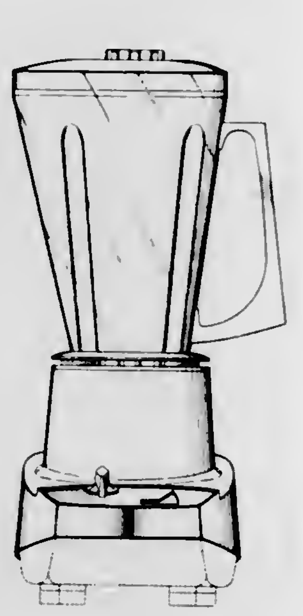
218,581
VIDEO TAPE CONTAINER
Robert Strom, Holliswood, N.Y., assignor to Protect AV Tape Co. Inc., Long Island City, N.Y., a corporation of New York
Filed Oct. 13, 1969, Ser. No. 19,533
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



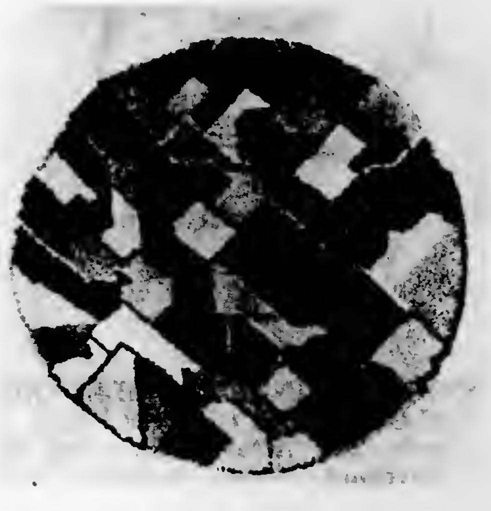
218,582
TENT STAKE
Tommie J. Kiester, Oklahoma City, Okla., assignor to Keco, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Dec. 4, 1969, Ser. No. 20,357
Term of patent 14 years
Int. Cl. D21—*05*
U.S. Cl. D88—3



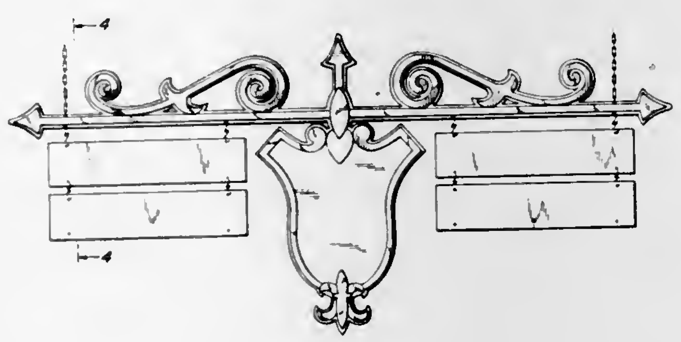
218,583
BLENDER
Channing Wallace Gilson, 5689 Holly Oak, Los Angeles County, Calif. 90028
Filed Jan. 20, 1967, Ser. No. 5,494
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D89—1



218,584
TEXTILE RUG
Ruth E. Bachrach and Marcella H. Bachrach, both of 4920 30th St. N.W., Washington, D.C. 20008
Filed Sept. 4, 1969, Ser. No. 19,011
Term of patent 14 years
Int. Cl. D6—*05*
U.S. Cl. D92—21



218,585
SIGN
Mary T. Longley, Northbrook, Ill., assignor to The Hopp Press, Inc., New York, N.Y., a corporation of New York
Filed June 6, 1969, Ser. No. 17,556
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 1st DAY OF SEPTEMBER, 1970

Note.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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  Fidi, Werner, Marschall, Otto, and Klemencic, Michael, 3,526,793.
Alberani, Julius, and Schorn, Carl F., to Holley Carburetor Company. Fuel trimming valve. 3,526,384, Cl. 251-14.
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Alexander, Donald E.: *See—*
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Anderson, Ake, to Arenco Electronics Aktiebolag. Arrangement for measuring tensile forces. 3,526,129, Cl. 73-144.
Anderson, Frank R.: *See—*
  Robinson, Joseph G. S., and Anderson, Frank R. 3,526,159.
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Anderson, Norman L., Austin, Howard B., Oldenburg, Dorrance, Staab, Jacob E., and Stedman, Robert N., to Caterpillar Tractor Company. Bucket attachment for wheel loaders. 3,526,329, Cl. 214-140.
Anderson, Robert E., to Mueller Color Plate Company. Method of making electrotype printing plates. 3,526,190, Cl. 101-401.1
Anderson, Robert L., and Levy, Avner M., to Ampex Corporation. Raised circular segment contoured magnetic head assembly. 3,526,885, Cl. 340-174.1
Andrew, Harold B., to Bell Telephone Laboratories, Incorporated. Apparatus for detecting signal in presence of noise and for simultaneously determining frequency and phase of detected signal. 3,526,842, Cl. 328-165.
Andrews, Frederick T., Jr., and Mitchell, Doren, to Bell Telephone Laboratories, Incorporated. Transmission measuring system with harmonic generating means. 3,526,729, Cl. 179-175.3
Anilam Electronics Corporation: *See—*
  Malina, Jay, and Walder, Robert B., 3,526,890.
Anstalt Fuer Patentdienst: *See—*
  Fleissner, Heinz, 3,526,009.
Ansul Company, The, : *See—*
  King, George G., and Esposito, Andrew J., 3,526,640.
Anthony, Tad B., to Maytag Company, The. Centrifugal extractor control. 3,526,105, Cl. 68-12.

- Anza Pacific Corporation: *See—*
  - Keyston, David H., 3,526,383.
- Appelbaum, Louis,. Urinal bag. 3,526,227, Cl. 128-295.
- Apperson, Charles H.: *See—*
  - Jones, Allen P., Jr., Apperson, Charles H., and Walter, Andrew T. 3,526,689.
- Applied Power Industries, Inc.: *See—*
  - Hunnicutt, Wayne E., and Rossbach, Peter G., 3,526,120.
- Archer, David H., English, William A., and Merrill, Peter S., to United States of America, Interior. Solid electrolyte stacked disc fuel cells. 3,526,549, Cl. 136-86.
- Archer, Robert L., to Fairchild Camera and Instrument Corporation. Velocity-sensing apparatus. 3,526,141, Cl. 73-503.
- Ardco, Inc.: *See—*
  - Aisanich, Daniel J., and Richter, Frederic A., 3,526,753.
- Arenco Electronics Aktiebolag: *See—*
  - Anderson, Ake, 3,526,129.
- Argabright, Perry A., to Marathon Oil Company. Preparation of isocyanate derivatives. 3,526,655, Cl. 260-471.
- Argabright, Perry A., and Phillips, Brian L., to Marathon Oil Company. Urethane drying oils. 3,526,623, Cl. 260-248.
- Argarbright, Perry A., Phillips, Brian L., and Sinkey, Vernon J., to Marathon Oil Company. Production of urethane-containing compositions. 3,526,624, Cl. 260-248.
- Armco Steel Corporation: *See—*
  - Schnedler, Paul E., and Young, James C., 3,526,204.
- Armington, George E., and Boytz, Charles B., to Euclid Crane and Hoist Company, The. Load carrier with horizontally pivoted tine means. 3,526,330, Cl. 214-731.
- Armour Research Foundation of Illinois and: *See—*
  - Campas, Marvin, 3,526,725.
- Armstrong, Brian M., and Middlemiss, Andrew, to British Iron and Steel Research Association, The. Drawing of materials through reducing dies. 3,526,115, Cl. 72-45.
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- Arnett, Samuel E., to Bendix Corporation The. Hydraulic governor having acceleration sensing means. 3,526,213, Cl. 123-103.
- Arntz, Charles V.: *See—*
  - Marshall, John T., Arntz, Lawrence L., and Arntz, Charles V. 3,526,331.
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  - Marshall, John T., Arntz, Lawrence L., and Arntz, Charles V. 3,526,331.
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- Art Metal-Knoll Corporation: *See—*
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- Asano, Kohin, Sagi, Kojiro, Kawase, Shigeru, Kitazawa, Tohur, and Ohba, Hiroo, to Kanegafuchi Boseki Kabushiki Kaisha. Method for making micro-porous sheet material. 3,526,531, Cl. 117-62.2
- Ashton, Harold P., and Swett, James B., to Dart Industries Inc. Device for storing and serving foodstuffs. 3,526,334, Cl. 220-23.83
- Aspin, Frank Metcalf. Rotary valves for internal combustion engines. 3,526,215, Cl. 123-190.
- Astrove, Reynold H.: *See—*
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- ATV, Inc.: *See—*
  - Baker, Martin T., 3,526,147.
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  - Siewerth, Gerhard, and Auerswald, Walter 3,526,076.
- August, Paul. Transmission. 3,526,305, Cl. 192-4.
- Aulick, Burton W., to Halliburton Company. Method for flotation completion for highly deviated wells. 3,526,280, Cl. 166-285.
- AuMiller, Clyde F., to Barber-Colman Company. Quick acting pipe connector. 3,526,417, Cl. 285-38.
- Austin, Howard B.: *See—*
  - Anderson, Norman L., Austin, Howard B., Oldenburg, Dorrance, Staab, Jacob E., and Stedman, Robert N. 3,526,329.
- Austin, Lowell W.: *See—*
  - Smith, Edwin J., Beale, Louis C., Jr., and Austin, Lowell W. 3,526,486.
- Automatic Sprinkle' Corporation of America:*See—*
  - Dwiggins, Boyce H., 3,526,044.
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  - Lodjic, Carl L., and McGregor, Donald T., 3,526,303.
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  - Macone, Frederick W., 3,526,567.
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  - Janning, Eugene A., Jr., 3,526,781.
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  - Church, Clark P., and Pletcher, Barry I., 3,526,552.
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  - Dumpleton, Owen W., 3,526,770.
- Bachman, William S., to Columbia Broadcasting Systems, Inc. Method and apparatus for producing phonograph records. 3,526,690, Cl. 264-107.
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- Baker, Martin T., to ATV, Inc. Power transmission. 3,526,147, Cl. 74-15.2
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Kato, Hiroshi, to Allied Chemical Corporation. Device for driving sweeper for coke oven door. 3,526,013, Cl. 15-93.

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Kepple, Charles G., Martello, Norman E., and Zeise, Clarence L., Jr., to Westinghouse Electric Corporation. Flexible flame retardant foil clad laminates. 3,526,573, Cl. 161-185.

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Kleiman, Morton. Control of apple storage scald using certain diphenylamine compositions. 3,526,519, Cl. 99-154.

Kleiman, Morton. Control of apple storage scald using certain diphenylamine compositions. 3,526,520, Cl. 99-154.

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- Martell, Michael Joseph, Jr., and Boothe, James Howard, to American Cyanamid Company. β-Hydroxyethylpiperazinocarboxymethyl-7-dimethylamino-6-deoxy-6-demethyltetracycline. 3,526,629, Cl. 260-268.
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- McCoy, Reginald F. H., to Westinghouse Electric Corporation. Method and system for recording sampled signals on a continuous recording medium. 3,526,900, Cl. 346-74.
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Paine, T. O., deputy Administrator of the, National Aeronautics and Space Administration in respect, to an invention of, and Kearns, Wiliam J. Mount for thermal control system. 3,526,359, Cl. 236-1.

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CLASSIFICATION OF PATENTS

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Design Patents

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A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 1, 1970 Volume 878 Number 1

TRADEMARKS

NOTICES

United States Adopted Names

List No. 26

March 1, 1970 to June 30, 1970

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (USAN) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the United States Pharmacopeia or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Secretary, United States Adopted Names Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

amcinafide: topical anti-inflammatory
artegraft: arterial graft of bovine origin
carmustine: antineoplastic
carperone: tranquilizer
clotrimazole: antifungal
desonide: anti-inflammatory
dextrates: pharmaceutic aid (binding aid and diluent for tablets)
letimide hydrochloride: analgesic
lorbamate: muscle relaxant
methadyl acetate: narcotic analgesic
minoxidil: antihypertensive
mitocarcin: antineoplastic
mycophenolate sodium: oncolytic
mycophenolic acid: oncolytic
naproxen: anti-inflammatory; analgesic; antipyretic
naproxol: anti-inflammatory; analgesic; antipyretic
pivampicillin hydrochloride: antibiotic
polyglycolic acid: surgical suture material
probucol: anticholesteremic
rafoxanide: anthelmintic
terbutaline sulfate: bronchodilator
tilorone hydrochloride: antiviral
tiprenolol hydrochloride: beta sympatholytic
zinc sulfanilate: antibacterial

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 525,649 (EXERCYCLE), Exercycle Corporation, Exercising machines of the bicycle type, **filed** June 19, 1969, D.C.N.J. (Newark), Doc. C-705-69, *Exercycle Corporation v. Anthony DiAntoni, etc.* Stipulation and order of dismissal, Nov. 3, 1969.

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	24, 142
Date of oldest new application	June 13, 1969
Date of oldest amended application (filing date)	September 27, 1965

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9-24-69	11-30-67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-3-69	9-27-65
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36	12-24-69	6-19-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-13-69	5-18-67
Renewals (All Classes)	5-11-70	....
Sec. 12(c) Publications (All Classes)	5-15-70	....

Applications filed during the month of June 1970—3,042

Registrations Issued	412—No. 897,609 to No. 898,020
Renewals Issued	120

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 527,589 (GRAND OLE OPRY), WSM, Incorporated, Radio program, broadcasting services, for entertainment services through the medium of radio and personal appearance performances of dramatic, musical, and dramatico-musical programs; and for the advertising of sponsors' goods through the medium of radio broadcast programs; **Reg. No. 645,898,** same, The title of entertainment services in the nature of dramatic, dramatico-musical programs and/or musical programs performed through the medium of television and personal appearances, **filed** Nov. 21, 1968, D.C., Del. (Wilmington), Doc. 3634, *WSM, Incorporated* v. *Mid-America Television Company.* Consent judgment, defendant permanently enjoined, May 11, 1970.

Reg. No. 608,298 (RCA), Radio Corporation of America, Electronic business machines, comprising single as well as various combinations of electrically operated electronic data processing apparatus to effect recording and orderly storage of information, automatic sorting, merging and/or extracting of stored information, automatic arrangement or rearrangement, calculation, routine decisions with regard to an editing of data or information processing as well as automatic presentation or display of any information in a suitable form for the operation and control of any business, as well as parts and accessories for such goods; **Reg. No. 694,707** (RCA AND DESIGN), same, Education and instruction in electronics, radio and television broadcasting, radio and television servicing, radio-telegraph operation and code; **Reg. No. 869,841,** same, Education and instruction in electronics, drafting, computer programming, radio and television broadcasting, radio and television servicing, telecommunications, and radio-telegraph operation; **Reg. No. 869,842,** same, **filed** June 19, 1970, D.C., S.D.N.Y., Doc. 70–C–2613, *RCA Corporation* v. *RACOI Corp. et ano.*

Reg. No. 627,324 (MOORE AND DESIGN), Moore Business Forms, Inc., Machines for feeding record forms in relation to recording machines such as tabulating machines, billing machines, typewriters, and parts of said feeding machines such as guides, slitters, and drives; autographic register machines; holding devices for record forms; record form spacing devices for typewriters and the like; machines for imprinting, slitting and detaching record forms; machines for decollating carbon papers from record forms; carbon paper saving devices; **Reg. No. 634,045,** same, Paper record forms for use with autographic registers and other recording machines such as tabulators, accounting machines, typewriters, teletypers, billing machines, electronic printers, addressing machines; paper record forms in books; padded forms; duplicating forms; carbon papers; **Reg. No. 645,766** (MOORE REDIREAD), same, Paper blank forms for use in typewriters, tabulators, and other forms of writing machines and more particularly for tabulating and accounting paper for use in such machines; **Reg. No. 774,141** (Moore-Fast), same, Partially printed manifold business forms interleaved with carbon paper; **Reg. No. 794,001** (MOORE AND DESIGN), same, Machines for feeding record forms in relation to recording machines such as tabulating machines, billing machines, typewriters and parts of said feeding machines such as guides, slitters, and drives; autographic register machines; holding devices for record forms; record form spacing devices for typewriters and the like; machines for imprinting, slitting and detaching record forms; machines for decollating carbon papers from record forms; and carbon paper saving devices; **Reg. No. 796,768,** same, Printed business forms, **filed** June 18, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1365, *Moore Business Forms, Inc.* v. *Herb E. Dixon.*

Reg. No. 634,045. (See Reg. No. 627,324.)

Reg. No. 645,766. (See Reg. No. 627,324.)

Reg. No. 645,898. (See Reg. No. 527,589.)

Reg. No. 652,217 (CRISTAL AND DESIGN). Nueva Fabrica de Hielo, S.A., doing business as Cerveceria La Tropical, Beer and cereal malt beverages, **filed** Mar. 27, 1970, D.C., S.D. Fla. (Miami), Doc. 70–414–C–WM, *Maltina Corp. et al.* v. *Cawy Bottling Co., Inc.*

Reg. No. 689,328 (PORTA-KAMP AND DESIGN), Porta-Kamp Manufacturing Co., Inc., Prefabricated, foldable portable buildings, **filed** Apr. 1, 1970, D.C.N.J. (Newark), Doc. 388–70, *Porta-Kamp Manufacturing Co., Inc.* v. *Bertram F. Ames and Ames International Construction Co.*

Reg. No. 694,707. (See Reg. No. 608,298.)

Reg. No. 732,312 (EA), Etienne Aigner, Inc., Handbags, handbag closure clasps, purses, comb cases, key cases, and luggage; **Reg. No. 736,463** (CONJOINED LETTERS A AND E), Etienne Aigner Shoe Co., Inc., Ladies', children's, and men's shoes; **Reg. No. 786,126** (A (DESIGN)), Etienne Aigner Parfums, Inc., Perfume and cologne, **filed** May 25, 1970, D.C., N.D. Tex. (Dallas), Doc. CA–3–3868–B, *Villager Industries, Inc.* v. *Genesco, Inc.*

Reg. No. 736,463. (See Reg. No. 732,312.)

Reg. No. 762,023 (FLOATERS), Bates Shoe Company, Men's shoes, **filed** Apr. 24, 1970, D.C.N.J. (Newark), Doc. C–508–70, *Wolverine World Wide, Inc.* v. *Frier Industries et al.*

Reg. No. 774,141. (See Reg. No. 627,324.)

Reg. No. 775,150 (INSTANT PRINTING), Christopher J. Bravos, doing business as Globe Copy Company, Reproducing multiple copies of printed matter for others; **Reg. No. 837,673,** same, **filed** Aug. 29, 1968, D.C., E.D. Ill. (Chicago), Doc. 68c1603, *Christopher J. Bravos, doing business as Glove Copy Company* v. *Goodway, Inc.* Consent decree, plaintiff owner of the mark "INSTANT PRINTING"; defendant and its subsidiaries enjoined permanently, May 15, 1970.

Reg. No. 786,126. (See Reg. No. 732,312.)

Reg. No. 794,001. (See Reg. No. 627,324.)

Reg. No. 796,768. (See Reg. No. 627,324.)

Reg. No. 799,258 ("PROTECTION . . . THE AMERICAN WAY"), American Republic Insurance Company, Underwriting and writing of hospital, surgical, and medical insurance, **filed** Apr. 13, 1970, D.C., Dist. of Col. (Washington), Doc. 1104–70, *American Republic Insurance Company* v. *State Mutual Life Assurance Company of America.*

Reg. No. 823,789 (DOLLAR A DAY RENT A CAR ETC. AND DESIGN), Dollar-A-Day Rent-A-Car, Renting and leasing passenger automobiles, **filed** June 4, 1970, D.C. Colo. (Denver), Doc. C–2328, *Dollar-A-Day Rent-A-Car Systems, Inc.* v. *Brooks Rent A Car et al.*

Reg. No. 825,460 (HOMEMAKERS), Homemakers, Inc., Nursing, companionship, visiting, housekeeping, domestic help, maids, cooks, and home maintenance, **filed** June 4, 1970, D.C., N.D. Calif. (San Francisco), Doc. C–70–1176–AJZ, *Homemakers, Inc.* v. *Homemakers Services, SF Inc.*

Reg. No. 837,673. (See Reg. No. 775,150.)

Reg. No. 852,818 (CERRUTI-CXIII), Cerruti, Incorporated, Men's clothing, comprising shirts, ties, scarfs, handkerchiefs, and sweaters, **filed** May 7, 1970, D.C., S.D.N.Y., Doc. 70–C–1858, *Cerruti, Inc.* v. *McCrory Corp.*

Reg. No. 869,841. (See Reg. No. 608,298.)

Reg. No. 869,842. (See Reg. No. 608,298.)

Reg. No. 872,969 (SENSORMATIC), General Nucleonics Inc., Sensors, such as magnetometers, used for detecting magnetic fields produced by magnetized materials attached to objects or persons to be protected against theft or mislocation, **filed** May 6, 1970, D.C., N.D. Ohio (Cleveland), Doc. C70–415, *General Nucleonics, Inc.* v. *Sensormatic Electronics Corporation.*

MARKS PUBLISHED FOR OPPOSITION

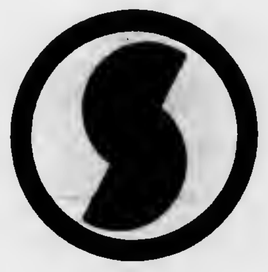
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 231,741. Dainippon Screen Manufacturing Company, Limited, Kamikyo-ku, Kyoto, Japan. Filed Oct. 28, 1965.



Priority claimed under Sec. 44(d) on Japanese application filed July 19, 1965; Reg. No. 850,007, dated Mar. 19, 1970.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electroformed Meshes for Direct View Storage Tubes, Image Orthicon, Vidicon and Other Special Purpose Vacuum Tubes and Shadow Masks (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Electronic Engraving Machines and Electronic Color Separating Machines for Use in Producing Printing Plates (Int. Cl. 9).

SN 257,170. Detexomat Limited, High Wycombe, England. Filed Oct. 25, 1966.

DETEXOMAT

Owner of British Reg. Nos. 895,197, dated May 31, 1966, and 825,324, dated Sept. 14, 1961.

Class 2—Receptacles

For Bins for Hosiery Storage (Int. Cl. 6).

Class 21—Electrical Apparatus, Machines, and Supplies

For Static Eliminators; Warp Inspector To Prevent Slub or Fluff Passing Through the Light Beam of a Warping Machine (Int. Cl. 9).

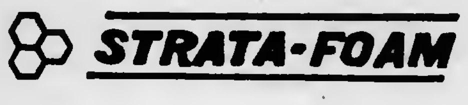
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automatic Hosiery Toe Closing Machinery; Suction Tube Conveyors for the Transportation of Hosiery; Mechanical Thread Trimmers; and Automatic Polyethylene Film Treatment Installations (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Textile Fault Detection Machinery; Thread Break Detection Machinery; and Hosiery Inspection Machinery (Int. Cl. 9).

SN 285,589. Strata-Foam Corporation, Akron, Ohio. Filed Nov. 24, 1967.



Class 1—Raw or Partly Prepared Materials

For Expanded Polystyrene Block for Uses in the Foundry and Pattern Industry (Int. Cl. 17).

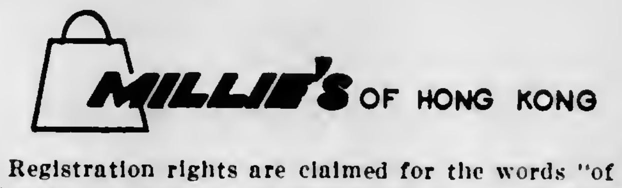
First use Feb. 9, 1965.

Class 12—Construction Materials

For Expanded Polystyrene Sheet for Uses in Residential and Commercial Building (Int. Cl. 17).

First use Oct. 1, 1964.

SN 296,999. Alan Lau of California, Incorporated, Los Angeles, Calif. Filed May 1, 1968.



No Registration rights are claimed for the words "of Hong kong" apart from the mark shown, but the applicant waives none of its common law rights in the mark shown or any feature thereof.

Class 3—Baggage, Animal Equipments, Portfolios, and

For Handbags, Billfolds, Key Cases, Card Cases, Coin Purses, Luggage, and Tote Bags (Int. Cl. 18).

Class 41—Canes, Parasols, and Umbrellas

For Parasols, Canes, Walking Sticks, Umbrella Frames and Covers (Int. Cl. 18).

First use in 1960.

SN 297,556. Gladen Enterprises, Inc., Bay City, Mich. Filed May 7, 1968.

TEXTURECONE

Class 1—Raw or Partly Prepared Materials

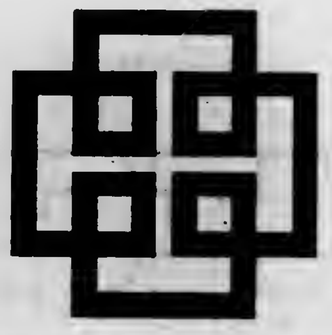
For Silicone Rubber (Int. Cl. 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hot Stamping Dies (Int. Cl. 8).

First use Oct. 11, 1967.

SN 303,716. J. A. Terteling & Sons, Boise, Idaho. Filed July 26, 1968.



The mark represents a fanciful representation of four letter "T's."

Class 100—Miscellaneous

For Rental of Construction Tools and Machines, Farming Tools and Machines, and Material Handling Tools and Machines (Int. Cl. 42).

Class 101—Advertising and Business

For Retail Construction, Farming, and Material Handling Tool and Machine Supply Outlet Services (Int. Cl. 35).

Class 103—Construction and Repair

For Servicing of Construction Tools and Machines, Farming Tools and Machines, and Materials Handling Tools and Machines (Int. Cl. 37).

First use Mar. 7, 1968.

SN 305,246. Royal London, Ltd., New York, N.Y. Filed Aug. 15, 1968.

ROYAL LONDON

Owner of Reg. Nos. 400,230, 633,228, and others.

Class 2—Receptacles

For Ice Buckets, Trays for Holding Drinks, Jewel Boxes and Trays and Jewel Chests (Int. Cls. 20 and 21).
First use September 1960.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Strainers, Metal Decanters, Metal Cups, Mugs, Tankards,, Flasks, Funnels, Tie and Belt Racks (Int. Cl. 21).
First use September 1960.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Drink Mixers and Pourers for Domestic and Bar Use (Int. Cl. 7).
First use January 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Bar Tool Sets, Bottle Openers, Can Openers, Cork-Screws, Metal Jiggers, Spoons and Stirrers (Int. Cls. 8 and 21).
First use June 1963.

Class 30—Crockery, Earthenware, and Porcelain

For Steins of Porcelain Material (Int. Cl. 21).
First use October 1965.

Class 32—Furniture and Upholstery

For Home Bars, Wall Bars, Travel Bars and Dresser Valets (Int. Cl. 20).
First use February 1963.

Class 33—Glassware

For Glass Decanters, Glasses, Glass Tumblers, Glass Jiggers and Decanter Sets Consisting of Chrome or Glass Decanters, Highball and Old Fashioned Glasses, and Serving Tray (Int. Cl. 21).
First use September 1965.

SN 307,057. Hart-Carter Company, Minneapolis, Minn. Filed Sept. 11, 1968.

HC
HART·CARTER

Owner of Reg. No. 834,651.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Crop Harvesters and Crop Harvesting Equipment—Namely, Sieves, Chaffers, Augers and Auger Flighting, Pick-Up Reels, Conveyors, Green Crop Loaders, Cutters, Floating Cutter Bars, Tomato Harvesters and Asparagus Harvesters; Agricultural and Horticultural Spraying Apparatus; Grain and Seed Treating Machinery—Namely, Grain Cleaners and Separators, Continuous Flow Horizontal, Vertical and Centrifugal Dryers, Automatic Feeders, and Parts Thereof; Vibratory Conveyors; and Mill Machinery—Namely, Grain Scalpers, Grain Aspirators, Bucket Elevators, Fans and Blowers, Pneumatic Conveyors, Dust Collectors and Air Scrubbers; Middling Purifiers, Roller Mills, and Rotary Air Sealed Feeder and Discharge Valves for Use With Vibratory Conveyors and Pneumatic Conveyor Systems (Int. Cls. 7 and 11).

Class 31—Filters and Refrigerators

For Filtration Receivers for Pneumatically Carried Bulk Materials, and Air Filters (Int. Cl. 11).

First use December 1966.

SN 307,797. Snowmass American Corporation, Aspen, Colo., assignee of Snowmass-at-Aspen, Aspen, Colo. Filed Aug. 12, 1968.

snowmass-at-aspen

Class 100—Miscellaneous

For Rental of Housing, Commercial, Social, Recreational, Entertainment, and Transportational Facilities (Int. Cl. 42).

Class 102—Insurance and Financial

For Credit Card Services—Namely, Extending Credit for Recreational and Entertainment Services to Customers Who Subscribe to Vacation Package Plan, Arranging for the Financing of the Purchase and leasing of Real Estate (Int. Cl. 36).

Class 107—Education and Entertainment

For Providing Facilities and Instruction for Recreation and Sports (Int. Cl. 41).

First use at least December 1965.

SN 312,913. Skega Aktiebolag, Ersmark, Sweden. Filed Nov. 22, 1968.

SKEGA

Priority claimed under Sec. 44(d) on Swedish application filed May 28, 1968; Reg. No. 125,047, dated Sept. 27, 1968.

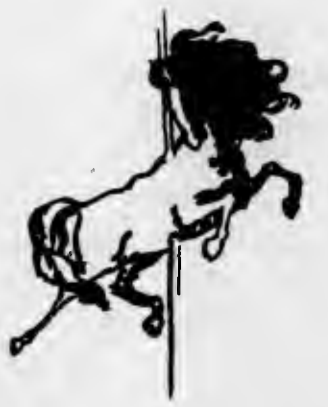
Class 1—Raw or Partly Prepared Materials

For India Rubber (Int. Cl. 17).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Rubber Screen Decks and Wear Rubber Components for Use in the Mining Industry—Namely, Hoppers, Ore Bins, Chutes, Dump Skips, and Serrated Protective Linings for Grinding Mills; Serrated Wear Plates Which Are Wear Resistant and Reduce Machine Noise, and Mechanical and Pneumatic Feeders for Distributing Ore Into the Machines (Int. Cl. 7).

SN 314,285. Horse of a Different Color, Ltd., Chicago, Ill. Filed Dec. 12, 1968.



Class 3—Baggage, Animal Equipments, Portfolios, and

For Hand Bags and Purses (Int. Cl. 18).
First use in or about November 1963.

Class 26—Measuring and Scientific Appliances

For Sunglasses (Int. Cl. 9).
First use May 1964.

Class 28—Jewelry and Precious-Metal Ware

For Rings, Bracelets, Pendants, Pins, and Necklaces (Int. Cl. 14).
First use in or about September 1963.

Class 39—Clothing

For Suits, Dresses, Sweaters, Vests, Jackets, Skirts, Blouses, Coats, Hats, Boots, Slippers, Shoes, Belts, Scarves, Feather Boas, and Sandals (Int. Cl. 25).
First use in or about September 1963.

SN 314,286. Maglieria Ragno Della Manifattura Pastore, S.p.A., Valduggia, Vercelli, Italy. Filed Dec. 12, 1968.

contrada

Priority claimed under Sec. 44(d) on Italian application filed Aug. 2, 1968; Reg. No. 234,776, dated Jan. 10, 1969.

Class 22—Games, Toys, and Sporting Goods

For Bicycles for Children, Life Belts, Swimming Floats, Water Polo Balls, Fishing Nets, Swim Fins, Swim Masks, Respirators for Supplying Air to Swimmers, Water Skis; Sports Equipment for Skiing, Tennis, Football, Skating, Fishing and Bowling, Exclusive of Wearing Apparel; and Game Equipment for Playing Card Games and Chess (Int. Cls. 9 and 28).

Class 39—Clothing

For Men's and Women's Clothing—Namely, Dresses, Dressing Gowns, Underwear, Hosiery, Shirts, Neckties, Gloves, Bathing Suits, Bathing Caps, Beach Shoes, Sun Suits, Bathrobes, Short Pants, Ski Pants, Bodices and Jackets, Sweaters, Waterproof Clothing for Sailing, Handkerchiefs, Scarves, Brassieres, Girdles, Corsets, Boots, Shoes, and Slippers (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods—Namely, Knitted and Warp and Weft Fabrics of Natural, Synthetic or Mixed Fibers, and Table Linen (Int. Cl. 24).

Class 50—Merchandise Not Otherwise Classified

For Ornaments and Decorations for Christmas Trees (Int. Cl. 28).

SN 314,960. Dyn Electronics, Inc., Hialeah, Fla., assignee of Dyn Associated Importers, Incorporated, Hialeah, Fla. Filed Dec. 20, 1968.

DYN-SONIC

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios and Radio Tuners (Int. Cl. 9).

Class 36—Musical Instruments and Supplies

For Tape Recorders (Int. Cl. 9).

First use September 1968.

SN 318,355. Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan. Filed Feb. 5, 1969.

Owner of Japanese Reg. Nos. 713,200, dated July 14, 1966 and 717,396, dated Aug. 20, 1966.

Class 22—Games, Toys, and Sporting Goods

For Snow Skis and Archery Equipment (Int. Cl. 28).
First use 1962; in commerce 1962.

Class 32—Furniture and Upholstery

For Amplifier Cabinets (Int. Cl. 20).
First use 1967; in commerce 1967.

SN 318,411. Fastener Control Corporation, Rockford, Ill. Filed Feb. 5, 1969.

TORQUE-O-MAGIC

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Ratchet-Type Tool Holders or Chucks for Use Interchangeably With Wrenches and Screwdrivers, Adjustable Length Allen-Bristol Wrenches, Shock-Proof Holders for Wrenches and Screwdrivers, and Tool Bits, Blades, and Bars Usable Interchangeably With the Foregoing (Int. Cl. 8).

Class 26—Measuring and Scientific Appliances

For Hand Tools—Namely, Torque Gauges for Use Interchangeably With Wrenches and Screwdrivers (Int. Cl. 9).

First use Oct. 10, 1968.

SN 318,479. Woodstream Corporation, Lititz, Pa. Filed Feb. 5, 1969.

OLD PAL

Owner of Reg. Nos. 613,544, 798,497, and 798,498.

Class 22—Games, Toys, and Sporting Goods

For Fishing Equipment—Namely, Fishing Rods and Reels, Tackle Boxes, Fishing Equipment Cases, Bait Buckets and Cans, Lure and Fly Boxes, Minnow Traps, and Fishing Tackle Accessories (Int. Cl. 28).

Class 32—Furniture and Upholstery

For Sporting Seats—Namely, Folding Seats and Storage Seats for Hunting, Fishing, and Like Sporting Purposes (Int. Cl. 20).

First use at least as early as Mar. 1, 1934.

SN 320,672. Magee & Company, Limited, Donegal, Ireland. Filed Mar. 4, 1969.

MAGEE

Class 39—Clothing

For Men's and Boys' Suits, Sport Coats, Overcoats, and Slacks (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Tweed Fabrics and Worsted Fabrics (Int. Cl. 24).

First use June 1880; in commerce April 1947.

SN 322,023. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed Mar. 18, 1969.

RJR

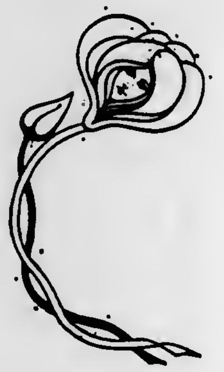
Class 45—Soft Drinks and Carbonated Waters

For Fruit Punch Containing Water; and Breakfast Drinks Made From Guava or Passionfruit Containing Water (Int. Cl. 32).
First use Jan. 10, 1968.

Class 46—Foods and Ingredients of Foods

For Table Syrups; Egg Custard Puddings; Pie Crust Mix; Puddings; Chow Mein and Chop Suey With or Without Meat or Poultry; Fried Rice With Meat, Chicken or Shrimp; Egg Foo Young; Sweet and Sour Pork; Egg Rolls; Sauces for Seasoning Meats and Vegetables; Mustard; Cookies; Bamboo Shoots, Water Chestnuts and Bean Sprouts; Chow Mein Noodles; Tomato Cocktail; Cooked Chicken; Chicken Gravy; Chicken a la King; Egg Noodles and Chicken; Egg Noodles and Beef; Chicken Broth; Beef Broth; Baking Powder; Mexican-Style Dinners Composed of Tamales and Gravy, Rice and Beans; Enchiladas and Chili; Tamales; Fried Beans; Enchiladas; Burritos; Tacos; Tortillas; Mix for Chocolate-Flavored Malted; Cake Frosting Mix; Snacks, i.e. Corn Chips, Corn Puffs and Curls, Fried Pork Rinds, Pumpkin Seeds and Caramel-Coated Popcorn; Concentrated Fruit Punch (No Water Added); and Concentrated Breakfast Drinks (No Water Added) Made from Guava or Passionfruit (Int. Cls. 29, 30, and 32).
First use June 1, 1968.

SN 324,766. Owen Laboratories, Inc., Dallas, Tex., assignee of Unique Products, Inc., Nashville, Tenn. Filed Apr. 16, 1969.



Class 51—Cosmetics and Toilet Preparations

For Hand and Body Creme and Moisturizing Creme (Int. Cl. 3).
First use Aug. 1, 1967.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use at least as early as Feb. 1, 1969.

SN 325,534. Photocircuits Corporation, Glen Cove, N.Y. Filed Apr. 25, 1969.

CC-4

Class 6—Chemicals and Chemical Compositions

For Copper Plating Solution for the Manufacture of Printed Circuits (Int. Cl. 1).

Class 21—Electrical Apparatus, Machines, and Supplies

For Printed Circuits (Int. Cl. 9).

First use at least as early as Jan. 20, 1969.

SN 327,315. Montgomery Ward & Co., Incorporated, Chicago, Ill. Filed May 15, 1969.

THE CLUB ROOM

Class 39—Clothing

For Men's Clothing—Namely, Shirts, Sweaters, Slacks, Ties, Hosiery, Coats, Suits, Jackets, Shoes, Jumpsuits, and Swimwear (Int. Cl. 25).
First use Apr. 15, 1968.

Class 101—Advertising and Business

For Retail Apparel Shop (Int. Cl. 35).
First use Aug. 10, 1968.

SN 327,976. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYCOL

Class 6—Chemicals and Chemical Compositions

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Cosmetics, Mineral and Vegetable Oil Base Formulations, Petroleum Waxes; Coupling Agents for Cosmetics; Solubilizers for Aromatic Oils; Chemicals for Treatment of and on Textiles, Namely, Fiber Lubricants, Fiber Softeners, Dyeing Assistants, and Leveling, Sizing, and Wetting Agents; Rewetting Agents for Paper Towelling (Int. Cl. 1).

Class 52—Detergents and Soaps

For Industrial Detergents for Fabrics, Industrial Dishwashing Detergents, and Industrial Degreasing Agents for Wool (Int. Cls. 1 and 3).

First use July 31, 1968.

SN 327,977. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYDET

Class 6—Chemicals and Chemical Compositions

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Mineral and Vegetable Oil Base Formulations, Pesticide Formulations, Industrial Emulsion-Type Metal Cleaners, Pine-Oil Detergent-Sanitizers; and Chemicals for Treatment of and on Textiles, Namely, Surfactants, Fiber Lubricants and Fiber Softeners, Leveling Agents, and Dyeing Assistants (Int. Cl. 1).

Class 52—Detergents and Soaps

For Industrial Detergents for Fabrics and Industrial Degreasing Agents for Wool (Int. Cl. 1).

First use Apr. 19, 1961.

SN 331,260. Pearse Leather Products Co., Inc., Salem, Mass. Filed June 30, 1969.

PEARSE of Blubber Hollow

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Personal Leather Goods—Namely, Billfolds, Wallets, Card Cases, Toilet Cases, Bottle Protectors, Jewelry Cases, and Briefcases (Int. Cl. 18).

Class 39—Clothing

For Apparel Belts (Int. Cl. 25).

First use 1928.

SN 338,005. Proctor-Silex Incorporated, Philadelphia, Pa. Filed Sept. 16, 1969.

PROCTOR-SILEX

Owner of Reg. Nos. 97,369, 803,788, and Others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Coffeemakers, Irons, Toasters, Juicers, Blenders, Drink Mixers, Cord Supporting Device for an Ironing Board Used To Conveniently Position an Electric Iron Cord (Int. Cls. 7, 9, and 11).
First use in or about March 1960.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Electric Can Openers and Ice Crushers (Int. Cl. 7).
First use in or about August 1967.

Class 31—Filters and Refrigerators

For Ice Cream Freezers and Coffee Filters (Int. Cl. 11).
First use in or about March 1960.

SN 340,867. RFM Industries Corporation, Farmingdale, N.J. Filed Oct. 16, 1969.

rfm

The mark consists of the letters "rfm."

Class 21—Electrical Apparatus, Machines, and Supplies

For Capacitors, Resistors, and Electric Burglar Alarms (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Panel Meters (Int. Cl. 9).

First use July 2, 1969.

SN 341,299. Magid Corporation, Linden, N.J. Filed Oct. 22, 1969.

SHOOT'N SHINE

The word "Shine" is disclaimed apart from the mark as shown.

Class 4—Abrasives and Polishing Materials

For Self-Shining Spray for Leather (Int. Cl. 3).

Class 6—Chemicals and Chemical Compositions

For Leather Dye Spray (Int. Cl. 2).

Class 52—Detergents and Soaps

For Leather Cleaner (Int. Cl. 3).

First use Jan. 25, 1967.

SN 343,897. Meister Brau, Inc., Chicago, Ill. Filed Nov. 19, 1969.

THE GREAT IMPOSTERS

Class 45—Soft Drinks and Carbonated Waters

For Non-Alcoholic Mixes for Cocktails (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Salad Dressing, Table Syrup, Candy, Peanut Butter, and Mustard (Int. Cls. 29 and 30).

First use Oct. 31, 1969.

SN 345,888. "Isranyl" Company Limited, Tel Aviv, Israel. Filed Dec. 11, 1969.

POLYSET

Class 39—Clothing

For Knitted Articles of Wearing Apparel—Namely, Sweaters, Skirts, Coats, Hats, Scarves, and Neckties (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted and Woven Piece Goods (Int. Cl. 24).

Class 43—Thread and Yarn

For Synthetic Threads and Yarns Made Therefrom (Int. Cl. 23).

First use in March 1969; in commerce in March 1969.

SN 348,605. Blue Haven Pools, North Hollywood, Calif. Filed Jan. 15, 1970.

BLUE HAVEN

Owner of Reg. No. 755,700.

Class 12—Construction Materials

For Swimming Pool Deck Equipment—Namely, Diving Board Supports and Standards, Diving Board Fulcrums, Diving Boards, Jump Boards, Ladders, Handrails, Grab Rails, Steps, Anchors, Expansion Joints, Ceramic and Plastic Tile (Int. Cls. 6 and 19).

First use at least as early as 1962.

Class 31—Filters and Refrigerators

For Sand and Diatomaceous Earth Filters; Separation Tanks; Strainers for Filters; Swimming Pool Filter Systems and Parts Thereof, Sold as a Unit (Int. Cl. 11).

First use about 1956.

SN 348,842. Lincoln Metal Products Corporation, Brooklyn, N.Y. Filed Jan. 19, 1970.

SAVOIR FLAIR

Class 2—Receptacles

For Canister Sets, Step-On Cans, Bread Boxes, and Paper Dispensers (Int. Cl. 6).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Pots and Pans (Int. Cl. 21).

First use Dec. 30, 1969.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[**NOTE:** For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 310,830. American Cyanamid Company, Wayne, N.J. Filed Oct. 30, 1968.

CYTAME

For Synthetic Resin (Int. Cl. 1).

First use Oct. 2, 1968.

SN 323,698. General Electric Company, Schenectady, N.Y. Filed Apr. 4, 1969.

LEXAN

Owner of Reg. No. 637,022.

For Polycarbonate Resin Sheet Material and Molding Compound (Int. Cls. 1 and 17).

First use Nov. 10, 1955.

SN 326,618. Canadian Solarfilm Distributors, Hamilton, Ontario, Canada. Filed May 7, 1969.

SOLARFILM

For Two-Layer, Heat-Shrinkable Plastic Film Intended Especially for Use in Model Aircraft Construction (Int. Cl. 17).

First use on at least Apr. 1, 1968; in commerce on at least Dec. 1, 1968.

SN 333,007. Tower Products, Inc., Wheeling, Ill., by change of name from Tower Packaging Company, Wheeling, Ill. Filed July 18, 1969.

TOWER SOF

Owner of Reg. Nos. 794,269, 855,751, and others.

For Polyethylene Film Material in Sleeve Form and in the Form of Single Sheet on a Roll (Int. Cl. 17).

First use Apr. 17, 1962.

Class 4—Abrasives and Polishing Materials

SN 342,454. R. M. Hollingshead Corporation, Camden, N.J. Filed Nov. 3, 1969.

ALL NU

For Floor Wax (Int. Cl. 3).

First use at least as early as about 1929.

Class 5—Adhesives

SN 351,452. The B. F. Goodrich Company, Akron, Ohio. Filed Feb. 16, 1970.

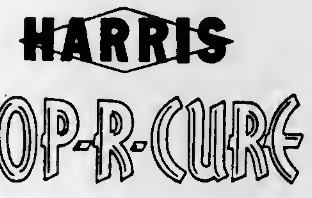
DUOLOCK

For Tire Retreading Cement (Int. Cl. 1).

First use Jan. 23, 1970.

Class 6—Chemicals and Chemical Compositions

SN 291,155. Harris Paint Company, Tampa, Fla. Filed Feb. 15, 1968.



The term "Cop-R-Cure" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 868,546, 888,113, and 888,522.

For Copper, Wood, Rope, Fish Net, and Canvas Preservative (Int. Cl. 2).

First use in or about October 1951.

SN 294,109. Albright & Wilson Limited, Oldbury, near Birmingham, England, assignee of Marchon Products Limited, London, England. Filed Mar. 26, 1968.

HALVOPON

Priority claimed under Sec. 44(d) on British Reg. No. 915,213, dated Sept. 29, 1967.

For Chemical Compositions for Use in the Processing and/or Refining of Vegetable, Animal and Marine Oils and in the Processing and/or Refining of Fatty Acids (Int. Cl. 1).

SN 301,531. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed June 27, 1968.

HOOKER TF300 LINE

Owner of Reg. Nos. 555,557, 807,994, and others.

For Synthetic Resin Compositions Useful in Treating Textiles (Int. Cl. 1).

First use Apr. 26, 1968.

SN 314,828. D. A. Stuart Oil Co., Limited, Chicago, Ill. Filed Dec. 18, 1968.

DASCO BOND

Owner of Reg. Nos. 524,061, 806,617, and others.

For Phosphate Concentrates Which Are Applied to the Surface of Metals for Rust Protection and To Prepare the Surface for the Application of Other Coatings (Int. Cl. 2).

First use March 1966.

SN 316,840. Sonoco Products Company, Hartsville, S.C. Filed Jan. 16, 1969.

NUSOL

For Lignosulfonate (Int. Cl. 1).

First use July 8, 1968.

SN 317,278. R.A. Chemical Corp., Brooklyn, N.Y. Filed Jan. 23, 1969.

TEXCRYL

For Acrylic Polymer Emulsions (Int. Cl. 1).

First use Dec. 1, 1960.

SN 318,739. Ashland Oil & Refining Company, Ashland, Ky. Filed Feb. 10, 1969.

RIDZLIK

For Dispersing and Emulsifying Agent for the Removal of Oil Slicks on Rivers, Lakes, and Oceans Without Destruction of Marine Life Therein (Int. Cl. 1).

First use Sept. 1, 1968.

SN 322,630. Sun Chemical Corporation, New York, N.Y. Filed Mar. 24, 1969.

SUNPRO

For Chemical Processing Aids To Facilitate the Production of Paper and Paperboard (Int. Cl. 1).

First use Jan. 29, 1969.

SN 322,695. Boliden Aktiebolag, Stockholm, Sweden. Filed Mar. 25, 1969.

BOLIDEN K 33

For Wood Preservatives (Int. Cl. 2).

First use June 4, 1952; in commerce July 11, 1960.

SN 327,973. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

ESTASORB

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Cosmetics, Mineral and Vegetable Oil Base Formulations, Petroleum Waxes; Chemicals for Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants and Fiber Softeners; and Rust and Corrosion Inhibitors (Int. Cl. 1).

First use Nov. 18, 1960.

SN 327,975. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

SORBINOX

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Cosmetics, Mineral and Vegetable Oil Base Formulations, Petroleum Waxes; and Chemicals for Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants and Fiber Softeners; and Solubilizers and Dispersants for Vegetable Oils (Int. Cl. 1).

First use Nov. 17, 1960.

SN 327,978. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYFAC

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Dye Carriers, Solvents and Synthetic Lubricants; Chemicals for Use in Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants, Finishing Agents, Wetting Agents, Scouring Agents, and Antistatic Agents; Wetting Agents for Industrial Cleaning Formulations—Namely, Steam Cleaner Formulations for Use on Motors and Hard Surface Cleaner Formulations for Use on Walls, Floors and Windows (Int. Cl. 1).

First use Jan. 22, 1969.

SN 327,979. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYLUBE

For Chemicals for Use in Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants, Fiber Softeners, Sizing Agents, and Antistatic Agents (Int. Cl. 1).

First use Nov. 6, 1968.

SN 327,980. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYLOX

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile Processing Formulations, Cosmetics, Mineral and Vegetable Oil Base Formulations, Urethane Foams, Carnauba Waxes, Textile, Paper and Leather Dyes, and Paints; and Chemicals for Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants and Fiber Softeners, Dyeing Assistants, and Fiber to Fiber Cohesion Promoting Agents; Rewetting and Softening Agents for Wet Strength Paper; Stabilizers for Latex Formulations; Solubilizing Agents for Masking Perfumes; Stabilizer and Pigment Dispersant in Latex Paints; Leather Dressings; Intermediate for Manufacture of Surfactants by Esterification With Fatty Acids (Int. Cl. 1).

First use Sept. 14, 1966.

SN 327,981. Trylon Chemicals, Inc., Lock Haven, Pa. Filed May 21, 1969.

TRYMEEN

For Chemicals for Use in Manufacture of Emulsions and Emulsifiable Concentrates—Namely, Textile and Cellophane Processing Formulations, Mineral and Vegetable Oil Base Formulations, Silicone Wax Furniture Polishes, Solvent Cleaners, Renewable Water Repellants, Cutting Oils, Quaternary Germicide Formulations; and Chemicals for Treatment of and on Textiles—Namely, Surfactants, Fiber Lubricants, Fiber Softeners, Wetting and Penetrating Agents, Antistatic Agents; Industrial Acid Corrosion Inhibitors; Stabilizers for Latex Formulations and Silicone Emulsion Formulations; and Dispersant for Clay in Greases (Int. Cl: 1).

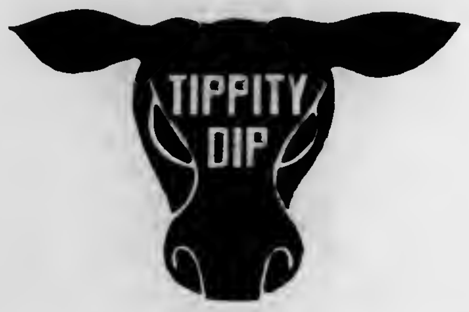
First use Dec. 5, 1968.

SN 331,749. Hercules Incorporated, Wilmington, Del. Filed July 3, 1969.

AQUAZE

For Vinyl Polymer Emulsion for Use as a Base Polymer in the Manufacture of Protective Coatings and Adhesives (Int. Cl. 1).
First use June 11, 1969.

SN 332,149. Schuyler Development Corporation, Reading, Pa. Filed July 9, 1969.



The word "Dip" is disclaimed apart from the mark as shown.
For Teat Dip and Udder Bath Compositions (Int. Cl. 5).
First use January 1968.

SN 332,150. Schuyler Development Corporation, Reading, Pa. Filed July 9, 1969.

**TIPPITY
DIP**

The word "Dip" is disclaimed apart from the mark as shown.
For Teat Dip and Udder Bath Compositions (Int. Cl. 5).
First use January 1968.

SN 332,363. Petrochemicals Company, Inc., d.b.a. Petrochemicals Co., Fort Worth, Tex. Filed July 11, 1969.

PETROSPERSE

For Anionic Surface Active Chemical Dispersing Agent, Soluble in Water (Int. Cl. 1).
First use Apr. 1, 1969.

SN 332,803. Chapman Chemical Company, Memphis, Tenn. Filed July 17, 1969.

TRAVEL-BRITE

For Chemical Non-Water Repellant Formulation To Prevent Stains and Discolorations in Lumber While in Transit (Int. Cl. 1).
First use May 23, 1969.

SN 334,171. GAF Corporation, New York, N.Y. Filed Aug. 1, 1969.

GAF-TAC

Owner of Reg. Nos. 509,124, 837,005, and others.
For Tackifier for Use in Natural and Synthetic Polymers, Especially Rubbers (Int. Cl. 1).
First use Sept. 6, 1968.

SN 349,804. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Jan. 28, 1970.

Owner of Reg. Nos. 414,603, 818,668, and others.
For Industrial Chemicals and Chemical Compositions (Int. Cl. 1).
First use May 1944.

SN 352,014. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 24, 1970.

MOTHINE

Owner of Reg. No. 265,160.
For Insecticide (Int. Cl. 5).
First use Apr. 13, 1931.

SN 352,134. Gulf Oil Corporation, Pittsburgh, Pa. Filed Feb. 24, 1970.

GULFSPRAY

Owner of Reg. Nos. 584,223, 833,540, and others.
For Insect Repellent (Int. Cl. 5).
First use on or about Feb. 3, 1970.

SN 354,831. First Mississippi Corporation, Jackson, Miss. Filed Mar. 23, 1970.

URIFIRST

For Urea for Use in the Manufacture of Fertilizers (Int. Cl. 1).
First use July 15, 1969.

SN 357,905. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Apr. 27, 1970.

CRONASCAN

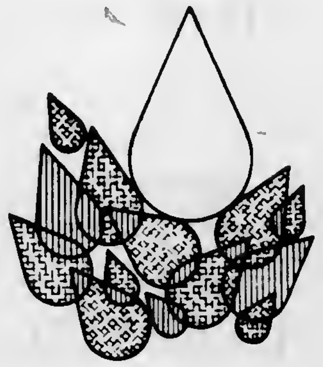
For Photographic Chemicals (Int. Cl. 1).
First use Mar. 4, 1970.

SN 358,394. Universal Oil Products Company, Des Plaines, Ill. Filed Apr. 30, 1970.

NO. 5

Owner of Reg. Nos. 783,473, 814,787, and 887,708.
For Inhibitor To Retard Deterioration of Organic Substrates (Int. Cl. 1).
First use at least as early as Mar. 1, 1970; June 10, 1958, as to numeral "5."

SN 359,302. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 11, 1970.



The drawing is lined for the colors red, yellow, and gold.
For Aqueous Film Forming Foam for Controlling and Extinguishing Fires (Int. Cl. 1).
First use Dec. 2, 1968.

SN 359,374. Lien Chemical Company, Franklin Park, Ill. Filed May 11, 1970.

The drawing is lined for the colors red and blue. Owner of Reg. Nos. 585,575, 615,466, and others.
For Hardening and Etching Solution for Concrete Floors; Bacteriostatic-Insecticides and Deodorant-Disinfectants for Toilets and Urinals; Insecticide-Repellent; Impregnated Deodorant Wicks; Chemical Preparation for Melting Ice and Snow; Rubber Renovator; Weed Killer; Fabric Softener; All-Purpose Disinfectant Spray; Dust Mop Dressing; Chemical Preparations for Liquefying Solids and Dissolving Greases in Septic Tanks, Toilets, Cesspools and the Like; Chemical Preparations for Inducing Traction Under Automotive Tires; Deodorant Concentrates for Air Conditioning; and Insecticides (Int. Cls. 1, 3, 4, and 5).
First use Apr. 11, 1953.

SN 359,788. International Dioxcide, Inc., New York, N.Y. Filed May 15, 1970.

AQUABON

For Stabilized Chlorine Dioxide for Environmental Control of Taste and Odor in Potable Water (Int. Cl. 1).
First use Apr. 29, 1970.

SN 359,956. General Mills, Inc., Minneapolis, Minn. Filed May 18, 1970.

VERSATRYME

Owner of Reg. No. 736,983.
For Polymeric Fat Acids (Int. Cl. 1).
First use on or about Apr. 13, 1966.

SN 360,527. Universal Oil Products Company, Des Plaines, Ill. Filed May 22, 1970.

UOP

Owner of Reg. Nos. 534,802, 884,111, and others.
For Algaecides and Biocides (Int. Cl. 5).
First use on or prior to Feb. 4, 1970.

SN 360,938. Purex Corporation, Ltd., d.b.a. Lanson Chemical Corporation, Lakewood, Calif. Filed May 27, 1970.

LANCURE

For Epoxy Curing Agent (Int. Cl. 1).
First use Nov. 21, 1962.

Class 7 — Cordage

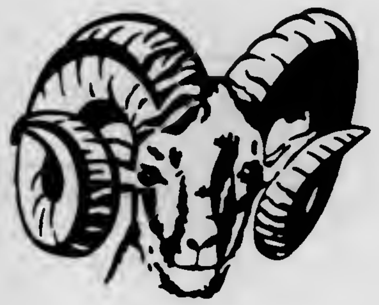
SN 337,256. Berwick Textile Products Co., Inc., Paramus, N.J. Filed Sept. 8, 1969.

FIBRA-SATIN

For Ribbons and Tapes of Synthetic Plastic Material for Use in Making Decorative Bows, Tieing Packages, and the Like (Int. Cl. 16).
First use May 2, 1969.

Class 10 — Fertilizers

SN 312,626. Wyo-Ben Products, Inc., Billings, Mont. Filed Nov. 19, 1968.



Owner of Reg. No. 734,382.
For Agricultural Gypsum (Int. Cl. 1).
First use Nov. 30, 1966.

Class 12 — Construction Materials

SN 299,998. Heinrich Oltmanns, Oldenburg, Germany, assignee, by mesne assignment, of Heinrich Oltmanns, Oldenburg, Germany. Filed June 7, 1968.

POROTON

Owner of German Reg. No. 792,277, dated Mar. 30, 1963.
For Ceramic Construction Materials—Namely, Building Blocks and Elements, Ceramic Flooring Blocks and Tiles, and Ceramic Pipes (Int. Cl. 19).

SN 324,797. Celanese Coatings Company, New York, N.Y. Filed Apr. 17, 1969.

EPI-TOP

For Surfacing Materials for Roads, Bridges, Industrial Flooring, Roadways, and the Like (Int. Cl. 19).
First use July 23, 1968.

SN 332,327. Devcon Corporation, Danvers, Mass. Filed July 11, 1969.

SILITE

For Silicone Rubber Paste for Sealing, Caulking, and Bonding (Int. Cl. 17).
First use June 19, 1969.

SN 336,358. Westvaco Corporation, New York, N.Y. Filed Aug. 26, 1969.

CEDARFRESH

For Particle Board Containing Cedar and Useful as a Closet Liner (Int. Cl. 19).
First use July 21, 1969.

SN 339,500. Conklin Company, Inc., Minneapolis, Minn. Filed Oct. 2, 1969.

DEROL SEAL

Without waiver or abandonment of applicant's common law rights or applicant's rights to the disclaimed word in combination with the other portion of the mark, applicant disclaims the word "Seal" for purposes of registration.
For Sealing Compound—Namely, a Liquid Sealant for Sealing Pipe Joints, Gaskets and Hose Connections in Oil, Water, Gasoline, Steam and Fuel Oil Systems, and Stopping Leaks in Hydraulic Equipment, Differentials, Standard Transmissions, and Hydraulic Jacks (Int. Cl. 17).
First use on or about Aug. 31, 1955.

SN 343,067. Alside, Inc., Akron, Ohio. Filed Nov. 10, 1969.

VYNASOL SATINWOOD

"Satinwood" is disclaimed apart from the mark as shown.
For Metallic Siding (Int. Cl. 6).
First use Aug. 21, 1969.

SN 348,738. Magnolia Industries, Inc., Spartanburg, S.C. Filed Jan. 16, 1970.

WEARON

For Top Sealant for Concrete (Int. Cl. 1).
First use Dec. 2, 1969.

SN 351,302. Basic Incorporated, Cleveland, Ohio. Filed Feb. 13, 1970.

ZIRCLASE

For Blends of Magnesia and Zirconium Containing Refractories, Particularly Granular Patching and Gunning Refractories, Refractory Cements, and Refractory Bricks and Shapes (Int. Cl. 19).
First use Dec. 29, 1969.

SN 353,504. Johns-Manville Corporation, New York, N.Y. Filed Mar. 9, 1970.

FLEXBESTOS

For Roofing Shingles (Int. Cl. 19).
First use at least on or about Aug. 7, 1969.

SN 353,505. Johns-Manville Corporation, New York, N.Y. Filed Mar. 9, 1970.

PIROUETTE

For Acoustical Tile and Panels (Int. Cl. 19).
First use at least on or about Oct. 7, 1969.

SN 353,507. Johns-Manville Corporation, New York, N.Y. Filed Mar. 9, 1970.

RIDGEFIELD

For Acoustical Panels (Int. Cl. 19).
First use at least on or about Dec. 29, 1969.

SN 353,510. Johns-Manville Corporation, New York, N.Y. Filed Mar. 9, 1970.

CERA FORM

Owner of Reg. No. 773,191.
For High Temperature Refractory Fiber Insulation (Int. Cl. 17).
First use at least on or about Oct. 8, 1963.

SN 353,522. MacMillan Bloedel Limited, Vancouver, British Columbia, Canada. Filed Mar. 9, 1970.

ASPENITE

Owner of Canadian Reg. No. 126,359, dated Apr. 27, 1962; and U.S. Reg. No. 838,197.
For Waferboard, Waferwood and Particle Boards, also known as Wood Composition Panels (Int. Cl. 19).

SN 353,525. Mastic Corporation, South Bend, Ind. Filed Mar. 9, 1970.

DURA-STEEL

For Building Siding Material Formed of Steel (Int. Cl. 6).
First use Feb. 17, 1970.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 324,262. Mueller Co., Decatur, Ill. Filed Apr. 11, 1969.

MUELLERPAK

Owner of Reg. Nos. 65,062, 863,810, and others.
For Water and Gas Distribution Products—Namely, Corporation Stops; Service Clamps; Curb Stops; Curb Boxes; Angle Meter Stops; Meter Yokes; Valves; Plastic T's; Meter Riser Assemblies; Meter Stops; Rigid Meter Bar With Meter Change Fitting; Welding Line Stopper Fittings; Drilling Nipples; Extension Stopper Fittings; Transition Fittings; Flanged T's; Combination Corporation Stop and Clamp; Copper-to-Copper Three Part Union; Gas Meter Reducer; Regulator; Relief Valve, Goosenecks; Stops and Drains; and Water Meter Couplings (Int. Cls. 6 and 20).
First use Mar. 19, 1969.

SN 327,790. Alside, Inc., Akron, Ohio. Filed May 20, 1969.

RIVET-SEAL

For Self-Expanding Rivets (Int. Cl. 6).
First use May 16, 1968.

SN 329,294. United States Brass Corporation, Plano, Tex. Filed June 5, 1969.

VALLEY

For Sink, Tub and Shower Valves, Faucets, and Parts and Fittings Therefor (Int. Cl. 11).
First use June 21, 1966.

SN 329,479. Emil E. Jensen, Monrovia, Calif. Filed June 9, 1969.

GARDEN MASTER

For Valve Actuators and Sprinkler Heads (Int. Cl. 11).
First use Mar. 25, 1969.

SN 333,448. Sno-Trik Company, Solon, Ohio. Filed July 24, 1969.

SNO-TRIK

Owner of Reg. No. 846,119.
For Metal Tubing (Int. Cl. 6).
First use Apr. 5, 1968.

SN 336,200. Weldbend Corporation, Chicago, Ill. Filed Aug. 25, 1969.

WELDBEND

For Metal Tubing and Pipe, Including Color Coated Metal Tubing and Pipe (Int. Cl. 6).
First use July 1, 1966.

SN 336,626. Stephen A. Young Corporation, Flora, Ind. Filed Aug. 28, 1969.

PRECIOUS STONES

For Plumbing Fixtures—Namely, Handles and Parts Therefor (Int. Cl. 11).
First use in or about June 1969.

SN 336,995. American Standard Inc., New York, N.Y. Filed Sept. 4, 1969.

ULTRA BATH

The term "Bath" is disclaimed.
For Bathing and Showering Center (Int. Cl. 11).
First use on or about Dec. 28, 1968.

SN 337,338. Modern Industries, Inc., Vista, Calif. Filed Sept. 8, 1969.

MICO

For Hinges, Pole Sockets and Spray Can Handles (Int. Cl. 6).
First use June 6, 1966.

SN 337,567. McCoy-Gold Merchandising, Inc., New York, N.Y. Filed Sept. 10, 1969.

PERMAHOLD

For Hardware and Accessories Used in Connection With Pole Banner Displays (Int. Cl. 6).
First use Oct. 3, 1968.

SN 338,740. American Standard, Inc., New York, N.Y. Filed Sept. 24, 1969.

TRI WALL

For Wall and Shower Surround (Int. Cl. 11).
First use on or about July 16, 1969.

SN 339,458. Selfix, Inc., Chicago, Ill. Filed Oct. 1, 1969.

SELFIX

Owner of Reg. Nos. 548,448, 843,700, and others.
For Shampoo and Shower Spray Attachments for Faucets (Int. Cl. 11).
First use at least as early as Feb. 28, 1968.

SN 353,482. The Grote Manufacturing Company, Madison, Ind. Filed Mar. 9, 1970.

GROTE

For Bathroom Accessories—Namely, Towel Bars, Soap Dishes, Tissue Holders, Grab Bars, Robe Hooks, Tumbler and Toothbrush Holders, Towel Rings, Lavatory Legs, and Paper Towel Holders (Int. Cl. 21).
First use in or about 1949.

SN 353,721. Beneke Corporation, Columbus, Miss. Filed Mar. 11, 1970.

MAGNOLIAWOOD

For Toilet Seats (Int. Cl. 11).
First use Jan. 14, 1970.

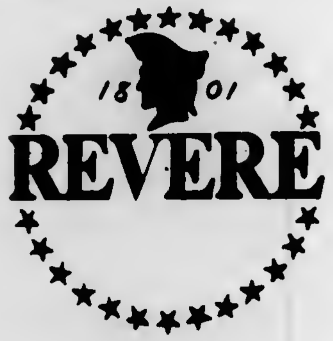
SN 362,793. Universal Oil Products Company, Des Plaines, Ill. Filed June 16, 1970.

KORODENSE

Owner of Reg. Nos. 640,900 and 846,263.
For Metallic Tubing To Be Used in Steam Condensing and Other Heat Transfer Applications (Int. Cl. 6).
First use on or prior to May 26, 1970.

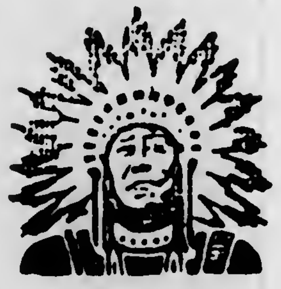
Class 14—Metals and Metal Castings and Forgings

SN 336,173. Revere Copper and Brass Incorporated, New York, N.Y. Filed Aug. 25, 1969.



Owner of Reg. Nos. 266,371, 767,424, and others.
For Aluminum Foil (Int. Cl. 6).
First use July 29, 1969.

SN 340,668. The Mapes Piano String Co., Elizabethton, Tenn. Filed Oct. 14, 1969.



For Piano Wire; Mandolin Wire Used in Making Strings for Small Musical Instruments Such as Mandolins, Guitars, Banjos and Violins; and Wire—Namely, Mechanical Spring Wires, Used for Making Mechanical Springs (Int. Cl. 6).
First use July 10, 1969.

Class 15—Oils and Greases

SN 288,599. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers, Southern Pines, N.C. Filed Jan. 11, 1968.

NONSCENTS

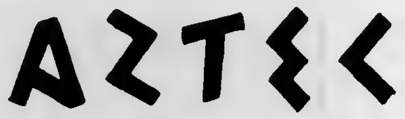
For Candles (Int. Cl. 4).
First use Nov. 21, 1967.

SN 328,454. The Standard Oil Company, Cleveland, Ohio. Filed May 27, 1969.

SOOT-GARD

For Additive Sold as a Component of Home Heating Oil Which Minimizes Soot Formation (Int. Cl. 4).
First use May 2, 1969.

SN 338,988. Aztec Oil & Gas Company, Dallas, Tex. Filed Sept. 26, 1969.



For Petroleum Products—Namely Crude Oil and Natural Gas (Int. Cl. 4).
First use Apr. 6, 1956.

SN 359,981. Standard Oil Company, Flemington, N.J. Filed May 18, 1970.

AVITAT

For Aviation Fuel (Int. Cl. 4).
First use Nov. 1, 1969.

SN 360,595. Sure Oil and Chemical Corporation, Worcester, Mass. Filed May 22, 1970.

MPG

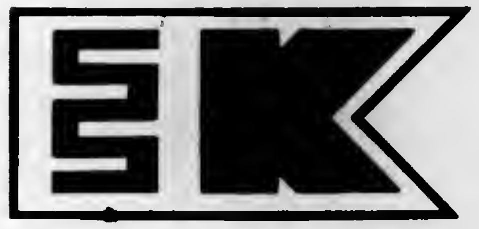
For Gasoline (Int. Cl. 4).
First use on or about Mar. 9, 1970.

SN 360,596. Sure Oil and Chemical Corporation, Worcester, Mass. Filed May 22, 1970.

SAVEWAY

For Gasoline (Int. Cl. 4).
First use on or about Oct. 1, 1959.

SN 360,766. S. S. Kresge Company, Detroit, Mich. Filed May 25, 1970.



For Motor Oil (Int. Cl. 4).
First use on or before Sept. 5, 1969.

Class 16—Protective and Decorative Coatings

SN 296,760. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

For Rust Preventing, Corrosion Inhibiting and Decorative Surface Coatings, Other Than for Use in the Automotive Specialty Trade (Int. Cl. 2).
First use Nov. 13, 1967.

SN 314,007. Zummach Paint Corp., Milwaukee, Wis. Filed Dec. 9, 1968.

CENTURION

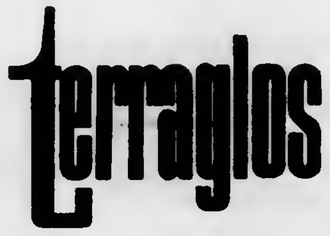
For Exterior and Interior Paints, Paint-Like Sealers, Stains, Varnishes, Enamels, Primers, and Undercoats (Int. Cl. 2).
First use Nov. 18, 1968.

SN 341,515. Forest Interiors Corporation, Seattle, Wash. Filed Oct. 23, 1969.

FI:X

Owner of Reg. No. 891,170.
For Paint-Like Touch-Up Compound (Int. Cl. 2).
First use in about May 1968.

SN 343,310. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1969.



For Vinyl Floor Finish in the Nature of a Non-Wax Protective Coating (Int. Cl. 2).
First use at least as early as 1962.

SN 343,562. Iowa Paint Manufacturing Company, Incorporated, Des Moines, Iowa. Filed Nov. 14, 1969.

FIRE PLUG

For Paint (Int. Cl. 2).
First use on or about June 4, 1969.

SN 346,376. Evr-Gard Coatings Corporation, Los Angeles, Calif. Filed Dec. 16, 1969.

CHEM-POW'R

For Waterproofing Composition for Masonry and Wood (Int. Cl. 1).
First use Nov. 19, 1969.

SN 350,012. Touraine Paints, Inc., Everett, Mass. Filed Jan. 29, 1970.

EXTING

For Latex and Resin Paints (Int. Cl. 2).
First use October 1968.

Class 17—Tobacco Products

SN 350,153. Loew's Theatres, Inc., New York, N.Y. Filed Jan. 29, 1970.

CORDOBA

For Little Cigars (Int. Cl. 34).
First use May 19, 1969.

SN 358,523. Taylor Brothers, Inc., Winston-Salem, N.C. Filed May 1, 1970.

BULL'S EYE

Owner of Reg. Nos. 515,851 and 513,600.
For Chewing Tobacco (Int. Cl. 34).
First use Mar. 23, 1970.

SN 358,669. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed May 4, 1970.

CIMARRON

For Cigarettes (Int. Cl. 34).
First use Apr. 22, 1970.

SN 359,469. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

DAVOS

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

Class 18—Medicines and Pharmaceutical Preparations

SN 286,394. The J. B. Williams Company, Inc., New York, N.Y. Filed Dec. 6, 1967.

FEMIRON

Owner of Reg. No. 654,716.
For Preparation for Use as an Iron Supplement for Women (Int. Cl. 5).
First use Oct. 31, 1967.

SN 321,530. A. Nattermann & Cie, G.m.b.H., Cologne-Braunsfeld, Germany. Filed Mar. 12, 1969.

LIPOSTABLE

Owner of German Reg. No. 751,843, dated July 5, 1961; and U.S. Reg. No. 661,842.
For Medicinal Capsules and Ampoules Containing Fluid for Hypodermic Injection Used in the Treatment of Atherogenic Lesions of the Vascular Walls and Raised Blood Lipids (Int. Cl. 5).

SN 323,324. Laboratorios Ferrer S.L., Barcelona, Spain. Filed Apr. 1, 1969.

NOVAG

Owner of Spanish Reg. No. 476,394, dated Oct. 17, 1968.
For Medical Preparation for the Treatment of Mouth and Throat Infections, Cough Remedies, Medical Preparation for Controlling Blood Pressure, Antibiotics, Cerebral Tonic, Tissue Stimulants, Regenerants for Nervous Tissue, Intestinal Worm Expellent, Sedatives, Antihemorrhagic Medical Preparations, Antidiarrhea Preparations, Medical Preparations for Tonsillitis, Antipyretics, Medical Preparations for the Treatment of Gastric Dyspepsia, Medical Preparations for the Treatment of Acetonemia, Medical Preparations for the Treatment of Gastric Ulcers, Protectives for Hepatic Cells (Int. Cl. 5).

SN 332,384. The Upjohn Company, Kalamazoo, Mich. Filed July 11, 1969.

DEPO-PROVERA CONJECTABLE

Owner of Reg. Nos. 515,760, 717,437, and others.
For Medicinal Progestational Preparation for Contraceptive Use (Int. Cl. 5).
First use Feb. 18, 1969.

SN 341,748. Hygeia Products, Inc., Riverdale, N.Y. Filed Oct. 27, 1969.

CUDDLENE

For Baby Toiletries—Namely, Baby Powder, Baby Lotion, Baby Oil and Ointment for the Prevention and Relief of Diaper and Heat Rash and Other Minor Skin Irritations (Int. Cls. 3 and 5).
First use on or before Sept. 20, 1969.
Subj. to Intf. with SN 344,785.

SN 341,840. Ocean Labs, Inc., San Pedro, Calif. Filed Oct. 27, 1969.

SEA-QUESTRA-MIN

For Sequestered Trace Minerals for Animal Feed Supplement (Int. Cl. 31).
First use Aug. 15, 1969.

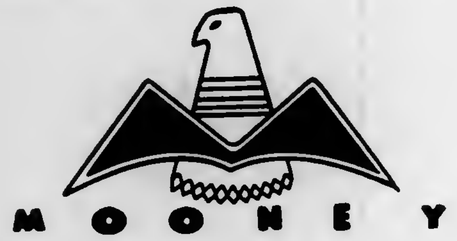
SN 358,672. Robert I. Schattner, d.b.a. The R. Schattner Company, Washington, D.C. Filed May 4, 1970.

ORADERM

Owner of Reg. No. 732,082.
For Lip Balm (Int. Cl. 5).
First use Apr. 13, 1970.

Class 19—Vehicles

SN 336,649. Mooney Aircraft Corporation, Kerrville, Tex. Filed Aug. 29, 1969.



For Aircraft and Parts Thereof (Int. Cl. 12).
First use Jan. 2, 1961.

SN 340,397. Instant Homes, Inc., Minneapolis, Minn. Filed Oct. 10, 1969.

INSTANT HOMES

Applicant disclaims the word "Homes" apart from the mark as shown.
For Mobile Homes (Int. Cl. 12).
First use at least as early as Sept. 1, 1965.

SN 346,419. W. Howard Wright, d.b.a. Hunter's Dream Mfg. Co., Verona, Miss. Filed Dec. 16, 1969.

HUNTER'S DREAM

For Compartmented Dog Trailer (Int. Cl. 12).
First use July 27, 1967.

SN 360,941. Starline, Inc., Harvard, Ill. Filed May 27, 1970.
Owner of Reg. Nos. 417,487 and 698,820.

For Camper Trailers and Utility Trailers (Int. Cl. 12).
First use May 1, 1970.

SN 360,958. Cessna Aircraft Company, Wichita, Kans. Filed May 27, 1970.

CITATION

For Aircraft (Int. Cl. 12).
First use in or about September 1969.

SN 360,984. Lilliston Corporation, Albany, Ga. Filed May 27, 1970.

HAUL-ALL

For Mobile Trailers (Int. Cl. 12).
First use on or about Jan. 16, 1969.

SN 360,987. Magic Tilt Trailer Manufacturing Company, Inc., Clearwater, Fla. Filed May 27, 1970.

Magic Tilt

Owner of Reg. No. 667,058.
For Boat Trailers (Int. Cl. 12).
First use Feb. 2, 1957.

Class 20—Linoleum and Oiled Cloth

SN 328,958. Congoleum Industries, Inc., Kearny, N.J. Filed June 3, 1969.

BARCLAY SQUARE

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Walls, Countertops, and the Like in the Form of Rolls, Rugs and Tiles (Int. Cl. 27).
First use Feb. 14, 1969.

SN 328,962. Congoleum Industries, Inc., Kearny, N.J. Filed June 3, 1969.

HEARTHSIDE

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs and Tiles (Int. Cl. 27).
First use Jan. 6, 1969.

SN 340,567. Liberty Products, Inc., Easley, S.C. Filed Oct. 13, 1969.

FLEXI-WALL

For Wall Covering—Namely, Gypsum Coated Fabric (Int. Cl. 27).
First use June 29, 1966.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 318,665. Mixo, S.A., Courbevoie, Hauts de Seine, France. Filed Feb. 7, 1969.

MIXO

Owner of French Reg. No. 494,451, dated Feb. 24, 1961 (Seine); Natl. Inst. No. 163,756.
For Electro-Magnetic and Electro-Pneumatic Horns for Automotive Vehicles and Motor Vehicles; Electro-Magnetic Bells for Automotive Vehicles; Electro-Magnetic, Electro-Pneumatic and Pneumatic Warning, Signal and Alarm Horns for Ships and Boats; Electro-Magnetic, Electro-Pneumatic and Pneumatic Warning Signal and Alarm Horns for Industrial Applications; Low Voltage Relays for Use With the Above Products and for Use With Head Lights, Fog Lights, Spot Lights, Automatic Clutches, Anti-Theft Devices and Electro-Magnetic Taps for Automative Vehicles, as Well as Water Vehicles (Int. Cls. 9 and 12).

SN 325,362. Impulsphysik G.m.b.H., Hamburg-Risson, Germany. Filed Apr. 23, 1969.

QUENCHOTRON

Owner of German Reg. No. 769,388, dated Aug. 26, 1961.
For Spark Gap (Int. Cl. 9).

SN 326,195. A. B. Chance Company, Centralia, Mo. Filed May 2, 1969.

HI-LINE-LITER

For Combination Transformer, Reactor, Mercury Vapor Lamp, Ballast, and Mounting (Int. Cl. 9).
First use June 15, 1966.

SN 326,792. Riker Video Industries, Inc., Hauppauge, N.Y. Filed May 8, 1969.

RIKER

For Television Broadcast Apparatus—Namely, Video Analysis Simulation, Switching and Control Apparatus for Selecting or Mixing Various Video Signal Sources for Transmission on the Air (Int. Cl. 9).
First use in or before August 1967.

SN 326,793. Riker Video Industries, Inc., Hauppauge, N.Y. Filed May 8, 1969.

RIKER VIDEO

Applicant disclaims the word "Video" apart from the mark as a whole, while retaining all common law rights therein.
For Television Broadcast Apparatus—Namely, Video Analysis Simulation, Switching and Control Apparatus for Selecting or Mixing Various Video Signal Sources for Transmission on the Air (Int. Cl. 9).
First use in or before April 1968.

SN 326,794. Riker Video Industries, Inc., Hauppauge, N.Y. Filed May 8, 1969.

RIKER VIDEO

Applicant disclaims the word "Video" apart from the mark as a whole, while retaining all common law rights therein.
For Television Broadcast Apparatus—Namely, Video Analysis Simulation, Switching and Control Apparatus for Selecting or Mixing Various Video Signal Sources for Transmission on the Air (Int. Cl. 9).
First use in or before February 1966.

SN 328,589. Riker Video Industries, Inc., Hauppauge, N.Y. Filed May 28, 1969.

RIKER

For Television Broadcast Apparatus—Namely, Video Analysis Simulation, Switching and Control Apparatus for Selecting or Mixing Various Video Signal Sources for Transmission on the Air (Int. Cl. 9).
First use in or before November 1962.

SN 330,058. Thomas S. Kulka, d.b.a. Protex Products Company, Cleveland, Ohio. Filed June 16, 1969.

TELEGUARD

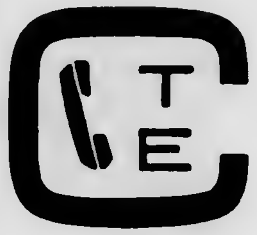
For Telephone Accessory in the Nature of a Fitted Muffler Pad Used With a Telephone Handset To Preclude Spurious Voice Transmission When the Hand Set Is Not in Use (Int. Cl. 9).
First use on or about June 5, 1969.

SN 333,182. Robroy Industries, Verona, Pa. Filed July 22, 1969.

HUGGER

For Clasp-Like Fastener Devices for Securing Wires, Conduits, and the Like (Int. Cl. 9).
First use on or about June 1, 1969.

SN 336,423. Continental Telephone Corporation, St. Louis, Mo. Filed Aug. 27, 1969.



For Telephone Call Analyzers (Electronic Devices for Continuously Recording and Periodically Printing Out the Results of Any Telephone Traffic Study), Telephone Central Office Switching Equipment, Telephone Line Usage Recorders, Telephone Call Interceptors, Telephone Pay Station Adapters, Telephone Carrier Central Office and Subscriber Equipment, and Cable Locators (Int. Cl. 9).
First use June 1969.

SN 339,964. Mitsubishi Electric Corporation, Chiyoda-ku, Tokyo, Japan. Filed Oct. 7, 1969.

DIAX

Owner of Japanese Reg. No. 612,072, dated May 13, 1963.
For Electrical Discharge Machines for Machining Workpieces (Int. Cl. 9).

SN 340,492. American Standard Inc., New York, N.Y. Filed Oct. 13, 1969.

PROXIMATIC

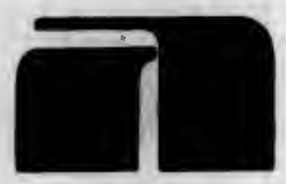
For Electric Controls for Plumbing and Fittings and Valves (Int. Cl. 9).
First use on or about Feb. 6, 1969.

SN 346,346. Electro Materials Corp. of America, Mamaroneck, N.Y. Filed Dec. 16, 1969.

ECONOFIRE

For Thick Film Conductive Resistor Pastes Applied to Ceramic Bases for Use in a Wide Variety of Microcircuitry Applications (Int. Cl. 9).
First use Nov. 11, 1969.

SN 347,052. Alarmtronics Engineering, Inc., Newton, Mass. Filed Dec. 24, 1969.



For Electronic Audio Detection Systems Indicating an Alarm Condition (Int. Cl. 9).
First use at least as early as May 15, 1969.

SN 353,149. Allen Electric and Equipment Company, Cleveland, Ohio. Filed Mar. 5, 1970.

ARMORWEAVE

For Antennas (Int. Cl. 9).
First use Feb. 19, 1970.

SN 353,790. Sprague Electric Company, North Adams, Mass. Filed Mar. 11, 1970.

BLUE JACKET

Owner of Reg. No. 549,688.
For Electrical Resistors (Int. Cl. 9).
First use Nov. 29, 1950.

SN 354,527. Sony Corporation of America, Long Island City, N.Y. Filed Mar. 18, 1970.

S

For Wiring Boards (Int. Cl. 9).
First use Dec. 10, 1969.

Class 22 — Games, Toys, and Sporting Goods

SN 297,279. Esquire, Inc., New York, N.Y. Filed May 3, 1968.

HOBBY-IN-A-BOX

For Starter Kit for Stamp Collector (Int. Cl. 28).
First use September 1967.

SN 300,007. The Saturn Corporation, Denver, Colo. Filed June 7, 1968.

INS-TENT SHELTER

No claim of Exclusive right is made to "Shelter" for the goods recited, apart from the mark.
For Tents and Temporary or Portable Shelters for Use by Sportsmen (Int. Cl. 22).
First use on or about Sept. 12, 1967.

SN 317,024. Feurer Bros., Inc., North White Plains, N.Y. Filed Jan. 21, 1969.

FLIPREEL

For Fishing Reels and Parts Therefor (Int. Cl. 28).
First use Dec. 9, 1968.

SN 324,053. Diplomat Sales Company, Incorporated, Los Angeles, Calif. Filed Apr. 9, 1969.

Strip-tac-toe

For Equipment Sold as a Unit for Playing Card and Board Games (Int. Cl. 28).
First use Feb. 3, 1969.

SN 327,580. Felice Berlin, Teaneck, N.J. Filed May 19, 1969.

HAPPY

For Carrying Bags for Tennis Rackets, and Tennis Racket Covers (Int. Cl. 28).
First use Mar. 28, 1969.

SN 331,408. Louis Marx & Co., Inc., New York, N.Y. Filed June 30, 1969.

TARGETLAND

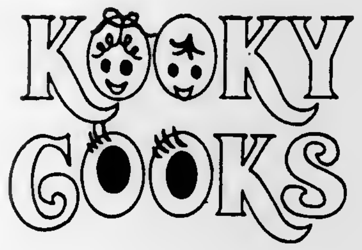
For Toy Rifle Range Set, Comprising Targets, Rifle, and Bullets (Int. Cl. 28).
First use May 15, 1968.

SN 333,305. Shakespeare Company, Kalamazoo, Mich. Filed July 23, 1969.

"ANCHOR RIVER SPECIAL"

No claim of exclusive right is made to the words "River" and "Special," apart from the mark as shown.
For Fishing Rods (Int. Cl. 28).
First use Aug. 1, 1966.

SN 333,546. Empire Plastic Corp., New York, N.Y. Filed July 25, 1969.



For Toy Plastic Pots and Pans (Int. Cl. 28).
First use Feb. 24, 1968.

SN 347,458. Parker Brothers, Inc., Salem, Mass. Filed Dec. 31, 1969.

NERF

For Lightweight Children's Play Ball (Int. Cl. 28).
First use Dec. 9, 1969.

SN 351,590. Donald K. MacDonald, d.b.a. MacDonald Controls, Puzzart Co. Division, Cupertino, Calif. Filed Feb. 17, 1970.

PUZZLEPAPER

For Equipment Comprising Interfitting Adhesive Coated Pieces for Playing Puzzle Type Games (Int. Cl. 28).
First use Dec. 18, 1969.

SN 352,583. Victor Sports, Inc., Chicago, Ill. Filed Feb. 27, 1970.

Davis CLASSIC

For Tennis Rackets (Int. Cl. 28).
First use Feb. 18, 1970.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 306,504. Oliver Corporation, Chicago, Ill. Filed Sept. 3, 1968.

OVER/UNDER HYDRAUL SHIFT

The word "Shift" is disclaimed apart from the mark as shown.
For Power Shift Auxiliary Transmission for Wheel Tractors (Int. Cl. 12).
First use Oct. 27, 1967.

SN 313,351. Sphinxworks Muller & Co. Ltd., Soleure, Switzerland. Filed Nov. 29, 1968.

SPIREC

For Small Size Pinions, Springs, Gears, Bushings and the Like, Packaged Together With Micro-Drills To Be Used Thereon for Machining Such Elements for Use in Mechanically Operated Toys, Instruments and Meters for Measuring Current, Voltage, Temperature, Humidity and Atmospheric Pressure, and for Inclusion in Watches, Clocks, and Other Instruments (Int. Cl. 7).
First use January 1931; in commerce January 1931.

SN 316,576. Aerospace Techniques, Inc., d.b.a. ATI Industries, Escondido, Calif. Filed 1–15–69.

ATI

For Aircraft Sheet Metal Fabrication Machines and Tools (Int. Cl. 7).
First use Oct. 31, 1961.
Subj. to Intf. with SN 322,255 and SN 322,256.

SN 320,706. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Mar. 4, 1969.

CINTIVERSAL

For Milling Machine (Int. Cl. 7).
First use Prior to May 10, 1968.

SN 322,255. Kaminga Manufacturing Company, Grand Rapids, Mich. Filed Mar. 20, 1969.

A.T.I.

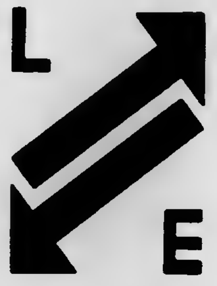
For Machine Parts Handling Equipment (Int. Cl. 7).
First use on or about July 19, 1966.
Subj. to Intf. with SN 316,576 and SN 316,577.

SN 322,256. Kaminga Manufacturing Company, Grand Rapids, Mich. Filed Mar. 20, 1969.

←A-T-I→ 500

For Machine Parts Handling Equipment (Int. Cl. 7).
First use on or about July 19, 1966.
Subj. to Intf. with SN 316,576 and SN 316,577.

SN 323,713. Lift Engineering, Inc., Olympic Valley, Calif. Filed Apr. 4, 1969.



For Recreational Personnel Conveying Equipment—Namely, Ski Lifts and Chair Lifts and Parts Therefor (Int. Cl. 7).
First use July 15, 1968.

SN 329,338. J. Collis & Sons Limited, London, England. Filed June 6, 1969.

SKATEVEYOR

Priority claimed under Sec. 44(d) on British Reg. No. 935,268, dated Dec. 12, 1968.
For Roller Conveyors (Int. Cl. 7).

SN 338,384. W. D. Electric Installation, Inc., Wood Dale, Ill. Filed Sept. 19, 1969.

POWER FULL

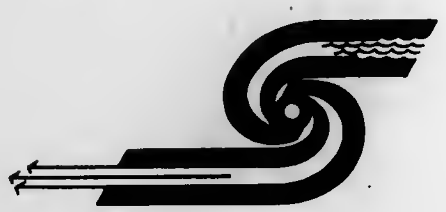
For Emergency Pump, With Alarm and Control (Int. Cl. 7).
First use Feb. 22, 1968.

SN 339,948. Sperry Rand Corporation, New York, N.Y. Filed Oct. 6, 1969.

LEKTRO BLADE

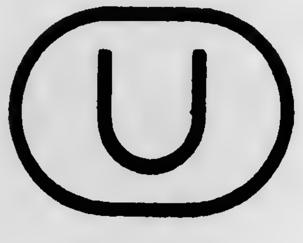
No claim is made to the exclusive right to use "Blade" apart from the mark shown, but the applicant waives none of its common law rights in the mark.
For Electric Dry Shavers, Cutters and Parts Thereof (Int. Cl. 8).
First use May 6, 1969.

SN 345,688. Sports Jet Industries, Inc., Minneapolis, Minn. Filed Dec. 8, 1969.



For Outboard Motors (Int. Cl. 7).
First use June 13, 1969.

SN 350,785. UTD Corporation, Athol, Mass. Filed Feb. 6, 1970.



Owner of Reg. No. 780,605.
For Cutting Tools—Namely, Drills, Reamers, End Mills, Spade Drills, Combination Drills and Countersinks, Counterbores, Milling Cutters, Taps, Single Point Tools, and Countersinks (Int. Cls. 7 and 8).
First use July 1, 1960.

SN 351,682. Cole Industries Incorporated, Seattle, Wash. Filed Feb. 18, 1970.

PERFECT DOT

For Offset Blankets Used in Association With Printing Presses (Int. Cl. 16).
First use Mar. 22, 1968.

SN 352,075. Joe H. Blackburn, d.b.a. J & B Distributing Company, Knoxville, Tenn. Filed Feb. 24, 1970.

THE LITTLE DOKTOR

For Vending Machines for Dispensing Nonprescription Drugs (Int. Cl. 9).
First use Feb. 10, 1970.

SN 352,848. North American Rockwell Corporation, Pittsburgh, Pa. Filed Mar. 2, 1970.

LUSTRE-GOLD

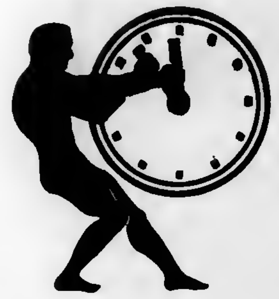
For Spinning Rings (Int. Cl. 7).
First use at least as early as 1962.

SN 361,064. Deering Milliken Research Corporation, Spartanburg, S.C. Filed May 28, 1970.

TREDLOC

Owner of Reg. No. 891,274.
For Tire Belt Winding Machines (Int. Cl. 7).
First use Nov. 26, 1969.

SN 361,661. Timesavers, Inc., d.b.a. Timesavers Sanders, Inc., Minneapolis, Minn. Filed June 4, 1970.



Owner of Reg. No. 728,240.
For Abrading, Buffing, Polishing, Surface Finishing, and Flexible Material Spreading Machines (Int. Cl. 7).
First use Sept. 25, 1954.

SN 361,663. Timesavers, Inc., d.b.a. Timesavers Sanders, Inc., Minneapolis, Minn. Filed June 4, 1970.

TIMESAVERS

Owner of Reg. No. 728,240.
For Abrading, Buffing, Polishing, Surface Finishing, and Flexible Material Spreading Machines (Int. Cl. 7).
First use Sept. 25, 1954.

SN 361,800. Water Pollution Controls, Inc., Englewood Cliffs, N.J. Filed June 5, 1970.

AQUANOX

For Sewage Treatment Plants (Int. Cl. 11).
First use Nov. 28, 1969.

Class 25 — Locks and Safes

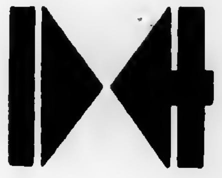
SN 333,647. The Alarm Clock Company, Inc., Los Angeles, Calif. Filed July 28, 1969.

LeKtroloK

For Timed Automatic Locking Device for Doors (Int. Cl. 6).
First use June 20, 1969.

Class 26 — Measuring and Scientific Appliances

SN 311,057. Praxis S.p.A., Milan, Italy. Filed Oct. 31, 1968.



PRAXIS

Owner of Italian Reg. No. 203,905, dated Apr. 24, 1965.
For Automatic Control and Supervisory Systems—Namely, Logic Modules and Digital Units; Sequence Programmers and Wired Logic Automation Equipment; Transistorized Alarm Systems; Digital Data Acquisition and Wired Logic Computers; Process Control Computer Systems; Encoders; Special Circuits and Accessories for Said Equipment (Int. Cl. 9).

SN 316,424. The Bin-Dicator Company, Detroit, Mich., assignee, by mesne assignment, of Fluid Data Inc., Hauppauge, N.Y. Filed Jan. 13, 1969.

LEVELDATA

For Ultrasonic Transducers and Related Control Equipment for Use in Monitoring or Detecting the Presence of an Object or Material and/or the Level of a Bulk Material in Liquid and/or Solid Form (Int. Cl. 9).
First use on or about Jan. 30, 1967.

SN 318,780. Helm Instrument Company, Toledo, Ohio. Filed Feb. 10, 1969.

HELMSMAN

For Control Instruments—Namely, Set-Point Controllers (Int. Cl. 9).
First use Apr. 16, 1962.

SN 320,853. Permanent Sign and Display Company, Inc., d.b.a. Rodan Creations, Reading, Pa. Filed Mar. 5, 1969.

BABY-TEMP

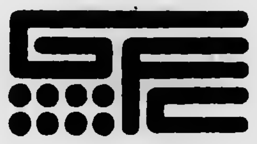
For Decorative Thermometers (Int. Cl. 9).
First use Jan. 31, 1969.

SN 321,900. Brun Sensor Systems, Inc., Columbus, Ohio. Filed Mar. 17, 1969.

BRUN

For Devices for the Measurement of: Moisture Content; the Efficiency of Drying Processes, and the Amount of Remaining Volatile Matter Remaining; the Thickness of Films, Coatings, and Tubes; of Saturation Weight, All by the Use of Infrared Radiation; Also, Devices To Differentiate the Constituent Components of a "Sandwich Film," and for the Chemical Analysis of Materials by Measuring Specific Absorption in a Limited Region of the Spectrum (Int. Cl. 9).
First use Sept. 7, 1966.

SN 323,193. General Fabrication Corporation, Forest Lake, Minn. Filed Apr. 1, 1969.



For Electric and Electronic Components for Computers—Namely, Printed Circuit Boards (Int. Cl. 9).
First use Oct. 26, 1967.

SN 325,085. Sloan Instruments Corporation, Santa Barbara, Calif. Filed Apr. 21, 1969.

DEKTAK

For Surface Measurement Instrument of the Type Wherein a Stylus Rides Over the Sample Surface and the Stylus Movement Is Amplified and Recorded (Int. Cl. 9).
First use on or about Jan. 28, 1969.

SN 325,140. RCA Corporation, New York, N.Y., by change of name from Radio Corporation of America, New York, N.Y. Filed Apr. 22, 1969.

RCA

Owner of Reg. Nos. 167,591, 310,781, and Others.
For Film Projectors; Electronic Color Scanning Devices Used To Prepare Color Separations for Use in Color Printing; Video Data Systems—Namely, Electronic Devices Which Utilize Cathode Ray Tubes and Keyboards in the Entry and Retrieval of Information Into and Out of Computers, Navigation and Weather Radar Systems; and Computer Systems Consisting of Central Processors and Peripheral Devices, Such as Tape Readers, Printers, Data Storage Units, Switching Devices, and Terminals (Int. Cl. 9).
First use at least as early as Jan. 26, 1933.

SN 325,141. RCA Corporation, New York, N.Y., by change of name from Radio Corporation of America, New York, N.Y. Filed Apr. 22, 1969.

RCA

Owner of Reg. Nos. 167,591, 310,781, and others.
For Film Projectors; Electronic Color Scanning Devices Used To Prepare Color Separations for Use in Color Printing; Video Data Systems—Namely, Electronic Devices Which Utilize Cathode Ray Tubes and Keyboards in the Entry and Retrieval of Information Into and Out of Computers, Navigation and Weather Radar Systems; and Computer Systems Consisting of Central Processors and Peripheral Devices, Such as Tape Readers, Printers, Data Storage Units, Switching Devices, and Terminals (Int. Cl. 9).
First use at least as early as Jan. 25, 1968; at least as early as Jan. 26, 1933 as to "RCA."

SN 325,627. Sperry Rand Corporation, New York, N.Y. Filed Apr. 25, 1969.

DYCOME

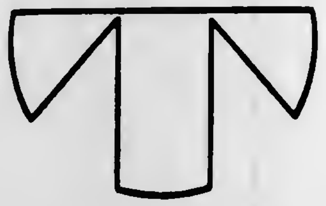
For Electronic Test Instrument Utilizing a Magnetometer Controlled Helmholtz Coil for Generating and Investigating the Effects of Magnetic Fields on Specimen Devices Subjected Thereto, and Component Parts Thereof (Int. Cl. 9).
First use May 28, 1964.

SN 329,624. Lewis Engineering Company, Naugatuck, Conn. Filed June 10, 1969.

FIRE-HYDRA

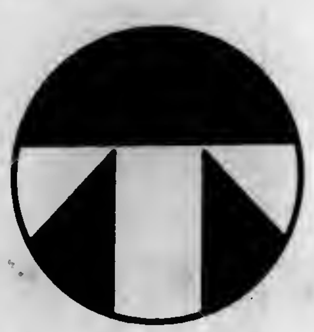
For Central Supply of Extinguishing Fluid and a Plurality of Fluid Distribution Lines Leading from the Central Supply to Remote Locations, Said Distribution Lines Including Heat-Responsive Electrical Circuits in the Distribution Lines, Which Electronically Operate Valve Means at the Central Supply, To Control the Flow of Extinguishing Fluid Selectively Through the Lines (Int. Cl. 9).
First use May 21, 1969.

SN 331,216. Master Chemical Corporation, Perrysburg, Ohio. Filed June 27, 1969.



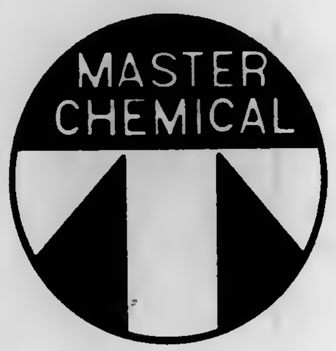
For Automatic Proportioning and Mixing Pumps for Blending Cutting and Grinding Fluid Concentrates With a Diluant, Such as Water (Int. Cl. 7).
First use Apr. 25, 1969.

SN 331,217. Master Chemical Corporation, Perrysburg, Ohio. Filed June 27, 1969.



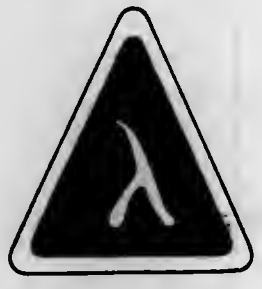
For Automatic Proportioning and Mixing Pumps for Blending Cutting and Grinding Fluid Concentrates With a Diluant, Such as Water (Int. Cl. 7).
First use Apr. 25, 1969.

SN 331,218. Master Chemical Corporation, Perrysburg, Ohio. Filed June 27, 1969.



For Automatic Proportioning and Mixing Pumps for Blending Cutting and Grinding Fluid Concentrates With a Diluant, Such as Water (Int. Cl. 7).
First use Apr. 25, 1969.

SN 335,142. Lambda Electronics Corporation, Huntington, N.Y. Filed Aug. 12, 1969.



Owner of Reg. Nos. 600,289 and 785,920.
For Electrical Measuring and Power Instruments, Components and Systems—Namely, Electrical Self-Powered Measuring Units for Measuring Electrical Parameters; Combination Voltmeter-Power Supply Units and Components Thereof; Power Supplies With Plug-In Metering Components; and Differential Voltmeters (Int. Cl. 9).
First use at least as early as June 1968.

SN 336,728. Aerojet-General Corporation, El Monte, Calif. Filed Sept. 2, 1969.

REDI-FIX

For Pre-Prepared Antigen Microscope Slides (Int. Cl. 5).
First use Oct. 11, 1968.

SN 337,155. Computer Synectics, Inc., Santa Clara, Calif. Filed Sept. 5, 1969.

COMPUTER SYNECTICS

The word "Computer" is disclaimed apart from the mark as shown.
For Isolation Probes, and System Utilization Monitors for Computer Equipment, and Components Thereof (Int. Cl. 9).
First use Aug. 5, 1969.

SN 337,310. Hy-Cal Engineering, Santa Fe Springs, Calif. Filed Sept. 8, 1969.

SENSIMETER

For Metering Unit for Manifesting the Amplitude Electrical Signals in Various Ranges, Which Unit Is Easily Calibrated for Various Quantity Measurements (Int. Cl. 9).
First use on or about Aug. 26, 1968.

SN 341,210. Sew Easy Lingerie, Inc., New York, N.Y. Filed Oct. 20, 1969.

Sew Lovely

For Garment Paper Patterns (Int. Cl. 16).
First use Sept. 10, 1969.

SN 341,311. Donaldson Company, Inc., Minneapolis, Minn. Filed Oct. 22, 1969.

DONALDSON

Owner of Reg. Nos. 514,998 and 620,305.
For Air Flow and Filtration Restriction Indicator Kits, Consisting of a Signal Device, Filter, and Instruction Sheet (Int. Cl. 9).
First use September 1959.

SN 342,471. Interpace Corporation, Parsippany, N.J. Filed Nov. 3, 1969.

PULSAFEEDER

Owner of Reg. No. 439,664.
For Metering Pumps (Int. Cl. 9).
First use Feb. 11, 1946.

SN 345,592. Block Engineering, Inc., Cambridge, Mass. Filed Dec. 8, 1969.

FTS

For Spectral Analytical Equipment—Namely, Infrared Spectrometers, Fourier Transform Spectrometers, Far-Infrared Fourier Transform Spectrometers, and Ancillary Equipment (Int. Cl. 9).
First use as early as Aug. 24, 1968.

SN 345,613. Digital Scientific Corporation, San Diego, Calif. Filed Dec. 8, 1969.

META 4

For Logical Processors Capable of Functioning as Digital Computer Systems, Communications Controllers, and Memory Controllers (Int. Cl. 9).
First use Nov. 16, 1969.

SN 347,119. Petrolite Corporation, St. Louis, Mo. Filed Dec. 24, 1969.

PETROLITE

Owner of Reg. No. 522,485.
For Corrosion Ratemeter (Int. Cl. 9).
First use Mar. 21, 1969.

SN 347,299. Harry McCune Sound Service, Inc., San Francisco, Calif. Filed Dec. 29, 1969.

TRIMEDIA

For Slide Projectors and Parts Therefor (Int. Cl. 9).
First use Nov. 20, 1969.

SN 350,357. Fedtro, Inc., Rockville Centre, N.Y. Filed Feb. 3, 1970.

DIAL-O-MATIC

Owner of Reg. No. 884,108.
For Tire Pressure Gauges, and Electric Delay Controls for Turning Automobile Headlights Off After Predetermined Intervals (Int. Cl. 9).
First use April 1968.

SN 351,651. Fuji Photo Film Co., Ltd., Minato-ku, Tokyo, Japan. Filed Feb. 18, 1970.

FUJILITH

Owner of U.S. Reg. Nos. 614,791 and 689,864.
For Photographic Sensitized Materials—Namely, Photographic Films and Unexposed Photographic Papers (Int. Cl. 1).
First use Aug. 1, 1964; in commerce Aug. 1, 1964.

SN 352,580. Torr Laboratories, Inc., Los Angeles, Calif. Filed Feb. 27, 1970.

AUTO RAD

For Automatic X-ray Exposure Control Units (Int. Cl. 9).
First use at least as early as October 1969.

SN 352,582. Torr Laboratories, Inc., Los Angeles, Calif. Filed Feb. 27, 1970.

TORR VACUUM PRODUCTS

Applicant disclaims the use of "Vacuum Products," apart from the mark as shown.
For Vacuum Products, and Specifically, Vacuum Gages, Vacuum Chambers, Vacuum Valves, Ionization Controls, and Cryogenic Controls (Int. Cl. 9).
First use on or about Sept. 9, 1969.

SN 353,409. Barber-Colman Company, Rockford, Ill. Filed Mar. 9, 1970.

TRUTRAC

For Direct Current Process Control Instruments—Namely, Universal Controllers, Condition Alarms, Variable Condition Indicators, Remote Setpoint and Auto/Manual Transfer Stations, Setpoint Stations, Square Root Extractors, Variable Condition Recorders, Highest or Lowest Signal Selectors, Input Transmitters, Output Transducers, Power Supplies, and Calibration and Test Sets Therefor (Int. Cl. 9).
First use on or before Dec. 26, 1969.

SN 354,003. Heath Consultants, Inc., Wellesley Hills, Mass. Filed Mar. 13, 1970.

DETECTO-PAK

For Portable Gas Leak Detectors (Int. Cl. 9).
First use Apr. 25, 1968.

SN 354,853. Kalinco, Inc., Lexington, Ky. Filed May 23, 1970.

Flate-a-Cator

For Tire Gauge and Filler (Int. Cl. 9).
First use Jan. 21, 1970.

SN 358,665. Paillard Incorporated, Linden, N.J. Filed May 4, 1970.

HERMES

Owner of Reg. Nos. 346,923, 551,538, and 748,758.
For Electronic Billing Machines and Electronic Printing Calculators (Int. Cl. 9).
First use Oct. 10, 1969.

Class 27 — Horological Instruments

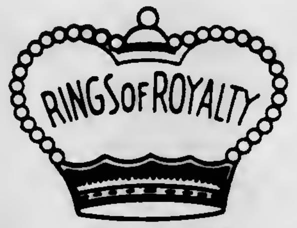
SN 349,379. The Pan-American Barter Co., Inc., New York, N.Y. Filed Jan. 22, 1970.

TIME READER

Applicant disclaims the word "Time" apart from the mark as shown.
For Watches and Clocks (Int. Cl. 14).
First use Jan. 6, 1970.

Class 28 — Jewelry and Precious-Metal Ware

SN 347,965. O. M. Resen, New York, N.Y. Filed Jan. 7, 1970.



Applicant disclaims the word "Rings" apart from the mark as shown.
For Gold and Platinum Wedding Rings (Int. Cl. 14).
First use June 1, 1934.

Class 29 — Brooms, Brushes, and Dusters

SN 348,990. Randall Falchney Corporation, Avon, Mass. Filed Jan. 19, 1970.

"QUIKPIK"

For Adhesive-Covered, Roller-Type Cleaning Aids for Removing Particles From Surfaces in Medical Facilities and the Like (Int. Cl. 21).
First use in about June 1969.

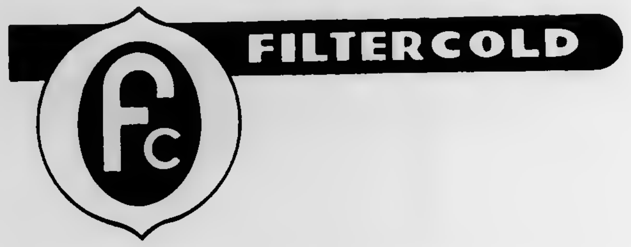
SN 358,290. Federated Foods, Inc., d.b.a. Leadway Foods, Chicago, Ill. Filed Apr. 29, 1970.

PARADE

For Brooms (Int. Cl. 21).
First use at least as early as 1946.

Class 31 — Filters and Refrigerators

SN 334,226. Filtercold Corporation, Phoenix, Ariz. Filed Aug. 1, 1969.



For Drinking Water Cooling Apparatus (Int. Cl. 11).
First use Apr. 18, 1968.

SN 348,018. Charles Edward Knight-Clarke, d.b.a. Micronyl Filter, Chard, Somerset, England. Filed Jan. 8, 1970.

MICRONYL

Owner of British Reg. No. B925,213, dated May 14, 1968.
For Filters for Aqueous Media (Int. Cl. 11).

SN 349,187. Klöchner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany. Filed Jan. 21, 1970.

SICCOPUR

Owner of German Reg. No. 860,166, dated Aug. 14, 1969.
For Air Filters for Internal Combustion Engines (Int. Cl. 7).

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 333,364. M. C. Canfield Sons, Newark, N.J. Filed July 24, 1969.

COPPER-MATE

For Soldering Flux (Int. Cl. 1).
First use June 1, 1969.

SN 334,300. Bow Solder Products Co. Inc., Newark, N.J. Filed Aug. 4, 1969.

TINSIL

For Solder (Int. Cl. 6).
First use June 10, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 349,735. The Fitzgerald Manufacturing Company, Torrington, Conn. Filed Jan. 27, 1970.

BONDED R

The word "Bonded" is disclaimed apart from the mark as shown.
For Gaskets (Int. Cl. 17).
First use Apr. 28, 1968.

SN 353,171. Durametallic Corporation, Kalamazoo, Mich. Filed Mar. 5, 1970.

DURAFITE

Owner of Reg. Nos. 183,441, 861,684, and others.
For Mechanical Packing (Int. Cl. 17).
First use Dec. 23, 1969.

SN 354,239. The Texacone Company, Dallas, Tex. Filed Mar. 16, 1970.

AUTOPAK

For Packing Materials for Hydraulic Cylinders and the Like (Int. Cl. 17).
First use Jan. 17, 1970.

SN 354,828. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Mar. 23, 1970.

BAJA RUNNER

For Resilient Vehicle Tires (Int. Cl. 12).
First use Feb. 6, 1970.

SN 361,078. Tire Warehouse, Inc., Waco, Tex. Filed May 28, 1970.

ALTO

For Tires for Automotive Vehicles (Int. Cl. 12).
First use at least as early as August 1969.

Class 36 — Musical Instruments and Supplies

SN 328,077. The Seeburg Corporation of Delaware, Chicago, Ill. Filed May 22, 1969.

DUO GRAVIS

For Brass Musical Instruments (Int. Cl. 15).
First use Sept. 24, 1968.

SN 355,478. Avedis Zildjian Company, North Quincy, Mass. Filed Mar. 30, 1970.

NEW BEAT

For Cymbals (Int. Cl. 15).
First use May 15, 1969.

Class 37 — Paper and Stationery

SN 323,152. Systems & Methods Business Forms, Los Angeles, Calif. Filed Mar. 28, 1969.

NO-CARB

For Office and Business Forms (Int. Cl. 16).
First use Sept. 7, 1962.

SN 343,349. Wilmington Blue Print Shop, Wilmington, Del. Filed Nov. 12, 1969.

RELY A VEL

For Prepared Tracing Paper, Treated With Specially Formulated Synthetic Resins on 100% Rag Stock (Int. Cl. 16).
First use July 1, 1964.

SN 343,350. Wilmington Blue Print Service, Wilmington, Del. Filed Nov. 12, 1969.

DELA VEL

For Prepared Tracing Paper, Treated With Specially Formulated Synthetic Resins on 100% Rag Stock (Int. Cl. 16).
First use July 1, 1964.

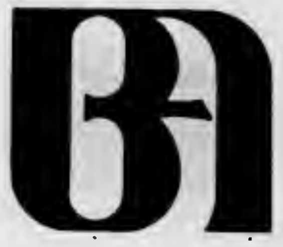
Class 38 — Prints and Publications

SN 320,242. Capital International S.A., Geneva, Switzerland. Filed Feb. 27, 1969.

CAPITAL INTERNATIONAL PERSPECTIVE

For Financial and Economic Magazine Issued Monthly With Cumulative and Expanded Quarterly Booklet (Int. Cl. 16).
First use Oct. 3, 1968; in commerce Oct. 3, 1968.

SN 335,532. Bank of America National Trust & Savings Association, San Francisco, Calif. Filed Aug. 18, 1969.



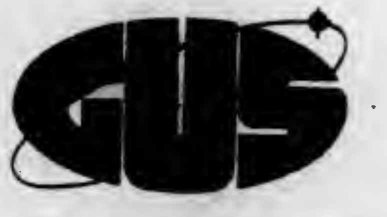
The mark consists of the stylized letters "BA." Owner of Reg. No. 847,761.
For Magazines, Newsletters and Reports Published Periodically, Informational Brochures, and Leaflets (Int. Cl. 16).
First use during April 1969.

SN 340,334. Popular Science Publishing Company, Inc., New York, N.Y. Filed Oct. 10, 1969.

THE WHAT'S NEW MAGAZINE

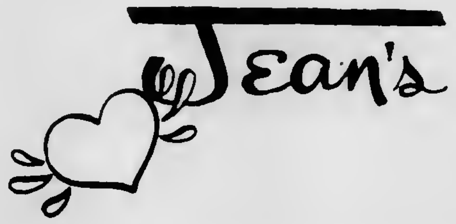
For Magazine Devoted to General Scientific Matters (Int. Cl. 16).
First use at least as early as June 7, 1969.

SN 343,910. Globe Universal Sciences, Inc., Midland, Tex. Filed Nov. 19, 1969.



The mark comprises essentially the letters "GUS" within a global design.
For Newsletter Containing Articles Related to Geophysics, Geophysical and Scientific Instruments, Telemetry and Acoustics (Int. Cl. 16).
First use at least as early as July 31, 1969.

SN 357,652. Lois Jean Wortham, Oklahoma City, Okla. Filed Apr. 22, 1970.



For Decorative and Decoupage Painting Prints and Designs (Int. Cl. 16).
First use May 1968.

SN 358,639. Zondervan Publishing House, Grand Rapids, Mich. Filed May 1, 1970.

SLIDAVERB

For Conjugation Charts (Int. Cl. 16).
First use on or about Apr. 10, 1970.

SN 360,512. Griffin Publishing Company, Inc., Boston, Mass. Filed May 22, 1970.

AD EAST

For Monthly Advertising Newspaper (Int. Cl. 16).
First use at least as early as Jan. 15, 1970.

Class 39 — Clothing

SN 279,758. Teen-Age Beachware Corporation, New York, N.Y. Filed Sept. 6, 1967.

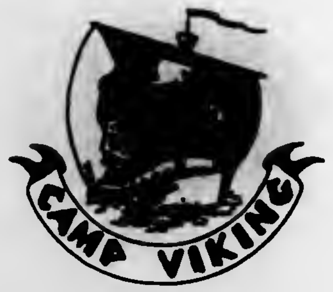
The word "Fashions" is disclaimed apart from the mark as shown.
For Swimwear (Int. Cl. 25).
First use 1950.

SN 311,943. Sox Unlimited, Inc., New York, N.Y. Filed Nov. 12, 1968.

MISS TIPPY

For Hosiery (Int. Cl. 25).
First use in or before February 1964.

SN 313,164. Paul F. De Largy, Hinesville, Ga. Filed Nov. 27, 1968.



For T-Shirts and Jackets (Int. Cl. 25).
First use Dec. 11, 1965.

SN 319,079. Saf-T-Bak, Inc., Altoona, Pa. Filed Feb. 13, 1969.

For Insulated Outerwear—Namely, Coats, Jackets, Vests, Coveralls for Hunting and Fishing (Int. Cl. 25).
First use Nov. 15, 1968.

SN 324,491. Plastic Research and Development Corporation, Fort Smith, Ark. Filed Apr. 14, 1969.

REBEL
THE REBEL
Boot

The word "Boot" is disclaimed apart from the mark as shown. The drawing is lined for the colors red and blue. Owner of Reg. No. 870,805.
For Boots (Int. Cl. 25).
First use Feb. 27, 1969.

SN 326,105. Simon Krepicki, Paris, France. Filed May 1, 1969.

RENOMA

For Woollen Suits for Gents, Trousers, Overcoats and Capes, Windcheaters, Gaberdine Raincoats, Jackets, Dressing-Gowns and Tea-Gowns, Bodices, Shirts and Blouses, Skirts, Coats, Dresses, Tailored Suits, Slacks, Woollen Scarves and Squares and Shoes (Int. Cl. 25).
First use December 1948; in commerce June 28, 1967.

SN 333,387. English Calico Limited, Manchester, England. Filed July 24, 1969.

TEDDY TINLING

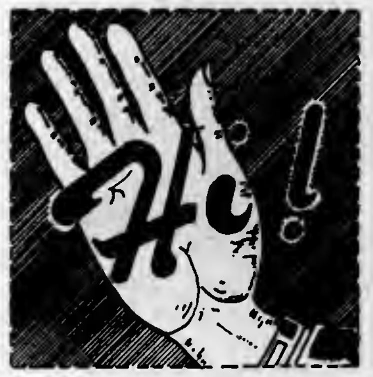
No exclusive claim is made to the term "Teddy" apart from the mark as shown. Owner of British Reg. No. B880,275, dated June 1, 1965.
For Articles of Sports Clothing—Namely, Dresses, Blouses, Shirts and Shorts; and Dresses, Overalls, Suits and Blouses, All Being Articles of Protective Clothing (Other Than Clothing for Protection Against Accident or Injury) and All for Women and Girls (Int. Cl. 25).

SN 333,558. Garland Corporation, Brockton, Mass. Filed July 25, 1969.

The
Turtle Sock

Applicant disclaims the word "Sock" apart from the mark as shown.
For Women's and Girls' Body Stockings (Int. Cl. 25).
First use at least as early as Mar. 4, 1969.

SN 336,935. Ideal Products Inc., Sykesville, Pa. Filed Sept. 3, 1969.



The drawing is lined for the colors brown and green.
For Hunting Hats and Caps (Int. Cl. 25).
First use About October 1968.

SN 337,361. Select Beauty Brands, Inc., Great Neck, N.Y. Filed Sept. 8, 1969.

FROSTEX

For Protective Sundries for Use by Professional Hairdressers in Applying Hair Color or Hair Bleach—Namely, Capes, Gloves, Caps, and Kits Consisting of Caps and Hair Hook (Int. Cl. 25).
First use Nov. 1, 1967.

SN 338,566. Joseph M. Herman Shoe Co., Millis, Mass. Filed Sept. 22, 1969.

GUN BOOT

The word "Boot" is disclaimed apart from the mark as shown.
For Men's Shoes and Boots (Int. Cl. 25).
First use Sept. 3, 1969.

SN 339,361. Societe Industrielle des Etablissements B.V.R. (Blais-Mousseron-L. Villeminot-A. Rondeau), Paris, France. Filed Sept. 30, 1969.

Owner of French Reg. No. 530,802, dated Apr. 30, 1965 (Seine); Natl. Inst. No. 247,096.
For Dress Made of Fabric With Warp and Weft and Particularly of Jersey (Int. Cl. 25).

SN 339,744. Pilgrim Industries Inc., New York, N.Y. Filed Oct. 3, 1969.

DIMENSION WELD

For Men's, Ladies' and Children's Beachwear, Headwear, Rainwear, Swimwear, Ski Clothes, Sleepwear, Underwear, Coats, Scarves, Sneakers and Shoes; Ladies' and Children's Foundation Garments, Dresses, Hosiery and Skirts; Men's and Children's Neckwear, Pants, Shirts and Shorts (Int. Cl. 25).
First use Aug. 2, 1968.

SN 340,274. H. Lubovsky, Inc., Boston, Mass. Filed Oct. 9, 1969.

Robertina

For Women's Shoes (Int. Cl. 25).
First use Aug. 1, 1969.

SN 341,744. Galerie Imports Corporation, Chicago, Ill. Filed Oct. 27, 1969.

SAUL VILLA

For Dresses (Int. Cl. 25).
First use on about Sept. 1, 1968.

SN 343,036. Berkley Shirt Co., Inc., New York, N.Y. Filed Nov. 10, 1969.

Marté

For Men's and Boys' Shirts (Int. Cl. 25).
First use October 1963.

SN 343,463. Blue Bell, Inc., Greensboro, N.C. Filed Nov. 14, 1969.

Wrangler

Owner of Reg. Nos. 414,727, 878,288, and others.
For Sweat Shirts (Int. Cl. 25).
First use Oct. 30, 1969.

SN 345,492. Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. Filed Dec. 5, 1969.

LIVELY-LEGS

For Panty Hose and Tights (Int. Cl. 25).
First use Oct. 16, 1969.

SN 345,549. Maidenform, Inc., New York, N.Y. Filed Dec. 8, 1969.

HELP-MATE

For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Nov. 17, 1969.

SN 345,551. Maidenform, Inc., New York, N.Y. Filed Dec. 8, 1969.

PLUPERFECT

For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Nov. 17, 1969.

SN 345,913. Bata Shoe Company, Inc., Bel Camp, Md. Filed Dec. 11, 1969.

BATA

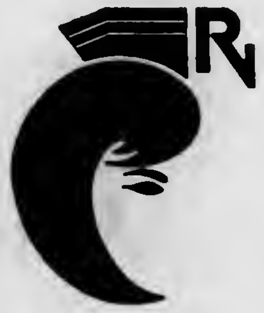
For Shoes, Slippers, Sneakers, Overshoes, Boots and Rubbers, and Hosiery (Int. Cl. 25).
First use Dec. 19, 1919.

SN 346,076. Florentina Shoes Societa a Responsabilita Limitata, Florence, Italy. Filed Dec. 12, 1969.

SILVIA of FIORENTINA

For Ladies' Shoes (Int. Cl. 25).
First use Apr. 28, 1962; in commerce Apr. 28, 1962.

SN 346,269. Bianca Louise McCroy, d.b.a. Mac-A-Bea Creations, Anaheim, Calif. Filed Dec. 15, 1969.



For Nurses' Caps (Int. Cl. 25).
First use July 28, 1969.

SN 346,719. Chadbourn Inc., Charlotte, N.C. Filed Dec. 19, 1969.

JUS-MY-SIZE

For Ladies' Hosiery and Panty-Hose (Int. Cl. 25).
First use Nov. 11, 1969.

SN 347,130. Wellco Enterprises, Inc., Waynesville, N.C. Filed Dec. 24, 1969.

SNOWBELLES

For Men's, Women's, Boys' and Girls' Boots, Shoes, Overboots, and Galoshes (Int. Cl. 25).
Filed Dec. 12, 1969.

SN 347,390. Campus Sweater & Sportswear Company, Cleveland, Ohio. Filed Dec. 30, 1969.

EXPRESSIONS
by
CAMPUS

For Men's and Boys' Outerwear Jackets, Such as Cloth and Leather Jackets, Sport Coats and Suits, Slacks, Cut and Sewn Shirts, Such as Dress and Sport Shirts, Sweaters and Sweater Shirts, Walk Shorts, Swimwear, Knit Shirts and T-Shirts, and Rainwear (Int. Cl. 25).
First use Oct. 3, 1969.

SN 347,411. William B. Kessler, Inc., Hammonton, N.J. Filed Dec. 30, 1969.

PETER BLAIR

"Peter Blair" is a fictitious name.
For Men's Clothing—Namely, Suits, Jackets, Topcoats, Trousers, and Sportcoats (Int. Cl. 25).
First use Nov. 20, 1969.

SN 347,580. The Ball Company, Inc., New York, N.Y. Filed Jan. 2, 1970.

BODY BITS

For Panty Hose (Int. Cl. 25).
First use Nov. 22, 1969.

SN 347,736. Gildafrox, Inc., Asheville, N.C. Filed Jan. 5, 1970.

GILDAFROX

For Children's Garments—Namely, Girls' Dresses (Int. Cl. 25).
First use Apr. 1, 1968.

SN 348,013. Cal-Made Manufacturing Co., Los Angeles, Calif. Filed Jan. 8, 1970.

CALMATES

For Men's Sportswear—Namely, Shirts and Slacks (Int. Cl. 25).
First use Oct. 4, 1969.

SN 349,934. Sarong, Inc., New York, N.Y. Filed Jan. 29, 1970.

STAY-FREE

For Feminine Foundation Garments (Int. Cl. 25).
First use Jan. 13, 1970.

SN 350,051. Caine's Mutiny, Inc., New York, N.Y. Filed Jan. 30, 1970.

UNI KINI

Owner of Reg. No. 811,374.
For Men's String Mesh Underwear (Int. Cl. 25).
First use Dec. 13, 1969.

SN 350,277. Jack Kreiss Hosiery, Inc., New York, N.Y. Filed Feb. 2, 1970.

LOVE-IN-BLOOM

For Panty Hose (Int. Cl. 25).
First use Sept. 25, 1969.

SN 351,604. Debutogs, Inc., New York, N.Y. Filed Feb. 17, 1970.

DEBUTOGS

For Ladies' Coats, Suits, and Raincoats (Int. Cl. 25).
First use September 1945.

SN 351,673. Atlas Underwear Corporation, Piqua, Ohio. Filed Feb. 18, 1970.

SKI SKINS DRYPLY

Owner of Reg. No. 802,304.
For Men's, Women's and Children's Hosiery (Int. Cl. 25).
First use Jan. 30, 1970.

SN 355,468. Uniroyal, Inc., New York, N.Y. Filed Mar. 30, 1970.

KEDS

Owner of Reg. Nos. 114,848 and 697,492.
For Footwear (Int. Cl. 25).
First use July 14, 1916.

SN 359,955. Food Fair Stores, Inc., Philadelphia, Pa. Filed May 18, 1970.

CUDDLE SOFT

For Disposable Diapers (Int. Cl. 25).
First use Apr. 2, 1970.

SN 360,202. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

NO-SHOW

For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,203. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

TRIC-O-WIRE

Owner of Reg. Nos. 599,108 and 783,274.
For Foundation Garments (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,204. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

TRIC-O-CHIC

Owner of Reg. Nos. 599,108 and 783,274.
For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,205. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

MINI-WIRE

Owner of Reg. Nos. 733,131 and 873,493.
For Foundation Garments (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,206. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

SEEN-LESS

For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,207. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

TRIC-O-SLEEKO

Owner of Reg. Nos. 599,108 and 783,274.
For Foundation Garments, Lingerie, Sleepwear, and Loungewear (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,208. Maidenform, Inc., New York, N.Y. Filed May 19, 1970.

LUSTRE-WIRE

For Foundation Garments (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,657. Lawrence A. Silver, Miami, Fla. Filed May 25, 1970.

THE WOODEN INDIAN

For Juniors' and Ladies' Sportswear—Namely, Pants, Shirts, and Blouses (Int. Cl. 25).
First use Feb. 4, 1970.

Class 40—Fancy Goods, Furnishings, and Notions

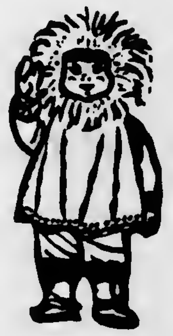
SN 359,968. Maybelline Co., Chicago, Ill. Filed May 18, 1970.

MOONSTAR

For False Eyelashes (Int. Cl. 26).
First use Feb. 19, 1970.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 330,300. Henry Pollak Inc., New York, N.Y. Filed June 17, 1969.



Owner of Reg. No. 873,102.
For Pile Fabric Piece Goods (Int. Cl. 24).
First use May 17, 1969.

SN 337,174. Johnson & Johnson, New Brunswick, N.J. Filed Sept. 5, 1969.

DRISITE

Owner of Reg. No. 745,173.
For Non-Woven Fabric Used in Disposable Surgical Drapes, Disposable Wearing Apparel, and the Like Products (Int. Cl. 24).
First use July 14, 1969.

SN 337,915. Fab Industries, Inc., New York, N.Y. Filed Sept. 15, 1969.

CLING-A-WAY

For Apparel Fabric (Int. Cl. 24).
First use May 1969.

SN 338,556. Erlee Manufacturing Corp., d.b.a. E.M.C., Passaic, N.J. Filed Sept. 22, 1969.

DORALON

For Tricot Fabric (Int. Cl. 24).
First use Aug. 29, 1969.

SN 338,761. DHJ Industries Inc., New York, N.Y. Filed Sept. 24, 1969.

MELL-O-PAQUE

For 100% Spunbonded Polyester Non-Woven Material Finished With an Opaque Finish Which Is Used in the Manufacture and Production of Disposable Sheets, Pillow Cases, Dresses, Smocks, Jackets, Trousers, Aprons, Tablecloths, etc. (Int. Cl. 24).
First use Nov. 22, 1968.

SN 342,288. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

SAN-CHU

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers, and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Jan. 5, 1945.

SN 346,702. Sacks Woolen Co. Inc., New York, N.Y. Filed Dec. 19, 1969.

LEEWARD

For Piece Goods—Namely, Knitted and Woven Fabrics for Sale in the Piece to Home Sewers (Int. Cl. 24).
First use September 1969.

SN 359,770. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 15, 1970.

SOFT STEP

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 359,951. Deering Milliken, Inc., New York, N.Y. Filed May 18, 1970.

FLEXEEN

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).
First use May 8, 1970.

SN 359,952. Deering Milliken, Inc., New York, N.Y. Filed May 18, 1970.

JAQANA

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers, and Combinations Thereof (Int. Cl. 24).
First use May 6, 1970.

SN 360,625. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 25, 1970.

LAWN PLAY

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 360,835. Herculite Protective Fabrics Corporation, New York, N.Y. Filed May 26, 1970.

PL-7

For Plastic Laminated Synthetic Fabrics (Int. Cl. 24).
First use at least as early as Mar. 24, 1969.

SN 361,065. Deering Milliken, Inc., New York, N.Y. Filed May 28, 1970.

WIND LAKE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Nov. 17, 1964.

SN 361,066. Deering Milliken, Inc., New York, N.Y. Filed May 28, 1970.

WEST HAVEN

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Apr. 9, 1965.

SN 361,067. Deering Milliken, Inc., New York, N.Y. Filed May 28, 1970.

ATHENA

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use July 5, 1965.

SN 361,645. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed June 4, 1970.

MARAUDER

For Carpets (Int. Cl. 27).
First use May 22, 1970.

SN 361,646. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed June 4, 1970.

SUMMER MORN

For Carpets (Int. Cl. 27).
First use May 22, 1970.

SN 361,647. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed June 4, 1970.

COMMANDER 43

For Carpets (Int. Cl. 27).
First use May 22, 1970.

SN 361,648. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed June 4, 1970.

MILESTONE

For Carpets (Int. Cl. 27).
First use May 22, 1970.

SN 361,649. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed June 4, 1970.

STUDIO ONE

For Carpets (Int. Cl. 27).
First use May 22, 1970.

SN 362,442. Deering Milliken, Inc., New York, N.Y. Filed June 12, 1970.

FOREVERMORE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Nov. 21, 1968.

SN 362,443. Deering Milliken, Inc., New York, N.Y. Filed June 12, 1970.

FOREFRONT

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Oct. 9, 1969.

SN 362,444. Deering Milliken, Inc., New York, N.Y. Filed June 12, 1970.

FORESIGHT

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Sept. 25, 1968.

Class 43 — Thread and Yarn

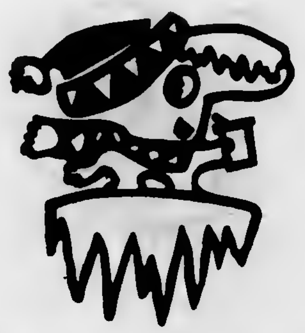
SN 331,472. Glen Raven Mills, Inc., Glen Raven, N.C. Filed June 30, 1969.

SWEATERSET

For Yarn of Natural or Synthetic Fibers or Combinations Thereof (Int. Cl. 23).
First use Apr. 25, 1969.

Class 45 — Soft Drinks and Carbonated Waters

SN 332,293. Pet Incorporated, St. Louis, Mo. Filed July 11, 1969.



For Fruit Flavored, Semi-Frozen Soft Drinks (Int. Cl. 32).
First use at least as early as May 5, 1969.

SN 346,792. The Coca-Cola Company, Atlanta, Ga. Filed Dec. 22, 1969.

CONTO

For Orange Flavored Soft Drink and Syrup for Making Same (Int. Cl. 32).
First use Dec. 8, 1969.

SN 349,135. Holiday General Corporation, d.b.a. Golden Age Beverage Co., Youngstown, Ohio. Filed Jan. 21, 1970.

Golden Age

Owner of Reg. Nos. 506,053, 766,001, and others.
For Ginger Ale (Int. Cl. 32).
First use Sept. 21, 1962.

SN 349,266. The Coca-Cola Company, Atlanta, Ga. Filed Jan. 22, 1970.

SWAT

For Orange Flavored Soft Drink and Syrup for Making Same (Int. Cl. 32).
First use Jan. 12, 1970.

SN 351,663. PepsiCo, Inc., New York, N.Y. Filed Feb. 18, 1970.

PLASTASTIC

For Plastic Bottles, Sold Only With Soft Drinks (Int. Cl. 21).
First use Jan. 22, 1970.

SN 356,548. The Coca-Cola Company, Atlanta, Ga. Filed Apr. 13, 1970.

VERVE

For Orange Soft Drink and Syrup for Making Same (Int. Cl. 32).
First use Feb. 12, 1970.

Class 46 — Foods and Ingredients of Foods

SN 242,441. Drew Foods Corp., St. Louis, Mo. Filed Apr. 1, 1966.

MARGO

Applicant claims use for the area comprising the States of Illinois and Missouri.
For Margarine (Int. Cl. 29).
First use at least as early as Jan. 1, 1912.
Subj. to Con. Use Proc. with SN 734,288.

SN 294,944. The Kimbell Corporation, d.b.a. Foodway, Fort Worth, Tex. Filed Apr. 4, 1968.

FOODWAY

Applicant claims use for the area comprising the entire United States of America with the Exception of New Mexico.
For Food Products—Namely, Fresh Eggs, Bacon, Potato Chips, Ice Cream, Fresh Dressed and Frozen Chicken, Bologna, Chopped Ham, Packaged Meats, Bread, Fluid Milk, and Fruit Punch (Int. Cls. 29, 30, and 32).
First use about Apr. 1, 1963.
Subj. to Intf. with SN 322,157; and Subj. to Con. Use Proc. with Barker's Supermarkets Inc.

SN 295,204. George Weston Limited, d.b.a. Montreal Biscuit Company, Toronto, Ontario, Canada. Filed Apr. 8, 1968.

Stoned WHEAT THINS

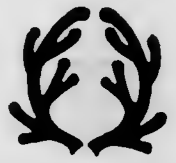
Applicant disclaims "Stoned" and "Wheat" apart from the mark as shown. The drawing is lined for the color red.
For Biscuits (Int. Cl. 30).
First use at least 1956; in commerce November 1961.

SN 306,330. Borden, Inc., New York, N.Y. Filed Aug. 30, 1968.

MELLO-ZERT

For Vegetable Fat Based Imitation Ice Cream (Int. Cl. 30).
First use June 28, 1968.

SN 311,578. Donaghys Industries Limited, Dunedin, New Zealand. Filed Nov. 7, 1968.



VITADEER

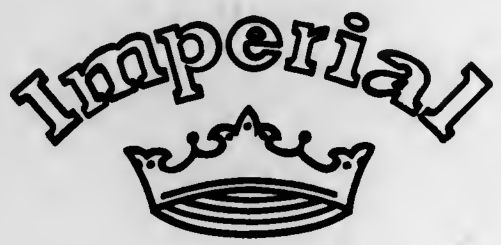
Priority claimed under Sec. 44(d) on New Zealand Reg. No. 88,339, dated Oct. 16, 1968.
For Venison and Products Made From Venison, Meat Extracts and Essences Made From Venison or Deer (Int. Cl. 29).

SN 314,253. Prince Macaroni Manufacturing Company, d.b.a. Sr. Pellegrino Macaroni Co., Lowell, Mass. Filed Dec. 11, 1968.

Sr. PelleGrino

For Macaroni and Spaghetti (Int. Cl. 30).
First use Aug. 30, 1964.

SN 319,330. Los Angeles Nut House, Los Angeles, Calif. Filed Feb. 17, 1968.



For Salted Mixed Nuts and Mixed Nuts in the Shell (Int. Cl. 29).
First use in or about July 1965.
Subj. to Intf. with SN 332,857 and SN 332,858.

SN 324,552. Wileman Bros. & Elliott, Inc., Cutler, Calif. Filed Apr. 14, 1969.

STOP

For Fresh Peaches, Nectarines, Plums, Grapes and Oranges (Int. Cl. 31).
First use 1930.

SN 324,762. Standard Fruit and Steamship Company, New Orleans, La. Filed Apr. 16, 1969.

CABANA

Owner of Reg. Nos. 704,730, 866,926, and others.
For Fresh Fruits and Fresh Vegetables (Int. Cl. 31).
First use Oct. 30, 1959, on fresh fruits.

SN 325,320. Agri-King Incorporated, Fulton, Ill. Filed Apr. 23, 1969.

SILO-KING

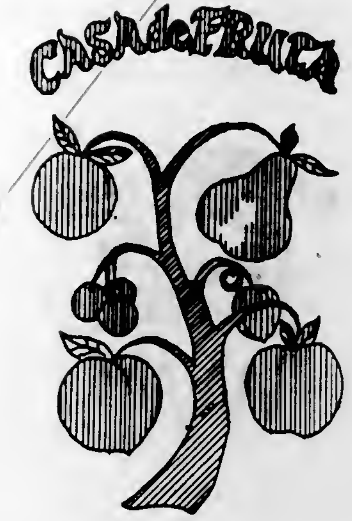
For Food-Grade Product of a Chemical Nature for Use as a Silage Preservative and in Controlling Fermentation of Silage (Int. Cl. 1).
First use July 26, 1968.

SN 326,555. Joseph E. Shafran, d.b.a. Joseph Shafran, Philadelphia, Pa. Filed May 6, 1969.

Bound Brook

For Butter (Int. Cl. 29).
First use on or about Jan. 2, 1929.

SN 327,360. Casa de Fruta, Hollister, Calif. Filed May 15, 1969.



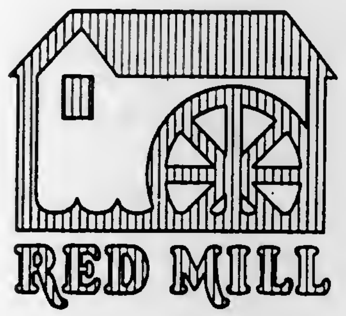
The words "Casa de Fruta" are disclaimed apart from the mark. The drawing is lined for the colors red and brown. The English meaning of "Casa de Fruta" is "house of fruit."
Owner of Reg. No. 821,769.
For Dried Fruit (Int. Cl. 29).
First use Jan. 1, 1963.

SN 327,718. Ezaki Glico Company, Limited, Nishiyodogawa-ku, Osaka, Japan. Filed Apr. 3, 1969.

Glico

Owner of Japanese Reg. No. 489,156, dated Oct. 4, 1956.
For Candy (Int. Cl. 30).

SN 328,551. Interstate Bakeries Corporation, Kansas City, Mo. Filed May 28, 1969.



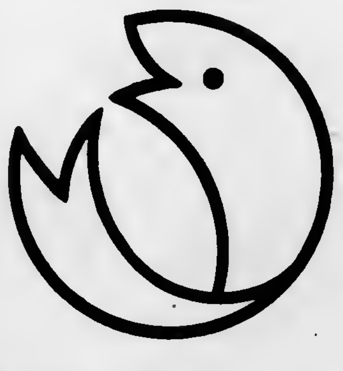
The drawing is lined for the color red.
For Coating Mix (Int. Cl. 30).
First use during January 1969.

SN 329,426. Apollo Freeze-Dried Products, Inc., Hawthorne, Calif. Filed June 9, 1969.

APOLLO

Owner of Reg. No. 815,045.
For Dried, Dehydrated and Freeze-Dried Foods—Namely, Cookies, Herb and Grain Chips, Candies, Salad Dressing, Pancake and Cake Mixes, and Soups (Int. Cls. 29 and 30).
First use Mar. 17, 1969.

SN 329,439. Consolidated Foods Corporation, d.b.a. Booth Fisheries, Chicago, Ill. Filed June 9, 1969.



For Frozen Fish and Seafood (Int. Cl. 29).
First use Feb. 11, 1969.

SN 330,133. Heublein, Inc., Hartford, Conn. Filed June 16, 1969.

SOYONARA

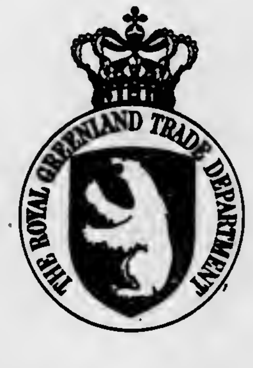
For Teriyaki Sauce (Int. Cl. 30).
First use Mar. 12, 1969.

SN 330,597. M. H. Greenebaum, Inc., New York, N.Y. Filed June 20, 1969.

DALMATIA

For Meats—Namely, Cooked Beef Cubes (Int. Cl. 29).
First use May 1, 1969.

SN 331,170. Den Kongelige Gronlandske Handel, Copenhagen, Denmark. Filed June 27, 1969.


THE ROYAL GREENLAND TRADE DEPARTMENT

Owner of U.S. Reg. No. 860,643.
For Hermetic, Frozen, Salted, Dried and Smoked Fish Products—Namely, Whale Meat, Seal Meat, Shell Fish, Shrimps, Prawns, Roe, Fish Oil, Fish Meal, and Fish Liver (Int. Cl. 29).
First use June 1, 1959; in commerce Aug. 13, 1962.

SN 332,004. Fleer Corp., Philadelphia, Pa. Filed July 8, 1969.

JoJo

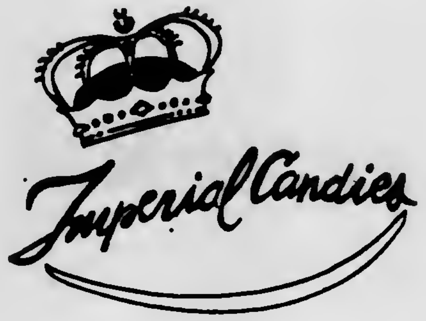
For Chewing Gum (Int. Cl. 30).
First use June 16, 1969.

SN 332,857. Shari Candies, Inc., Mankato, Minn. Filed July 17, 1969.

IMPERIAL

For Candy and Candy Containing Nuts (Int. Cl. 30).
First use on or about July 15, 1968.
Subj. to Intf. with SN 319,330.

SN 332,858. Shari Candies, Inc., Mankato, Minn. Filed July 17, 1969.



Applicant disclaims the word "Candies" apart from the mark as shown but waives none of its common law rights therein.
For Candy and Candy Containing Nuts (Int. Cl. 30).
First use on or about July 15, 1968.
Subj. to Intf. with SN 319,330.

SN 334,108. Nisshin Flour Milling Co., Ltd., Chuo-ku, Tokyo, Japan. Filed July 31, 1969.

LIVELONG-VP

For Meat Substitute Comprising Vegetable Protein (Int. Cl. 29).
First use July 11, 1969; in commerce July 21, 1969.

SN 335,514. General Mills, Inc., Minneapolis, Minn. Filed Aug. 18, 1969.

TRI-PRO

For Pet Food for Dogs and Cats (Int. Cl. 31).
First use on or about June 25, 1969.

SN 336,578. Lauhoff Grain Company, Danville, Ill. Filed Aug. 28, 1969.

THRIFTY

For Combination of Cereals and Proteinaceous Substances Forming a Complete Food for Dogs (Int. Cl. 31).
First use July 28, 1969.

SN 336,807. C. Jamin N.V., Rotterdam, Netherlands. Filed Sept. 2, 1969.

JAMIN

Owner of Dutch Reg. No. 159,774, dated May 17, 1966.
For Biscuits, Cakes, Pastry, Candies, and Ice Cream (Int. Cl. 30).
First use 1916; in commerce 1955.

SN 337,545. Helme Products, Inc., New York, N.Y. Filed Sept. 10, 1969.

mus✤tangs

For Snack Products—Namely, Pretzels Packed With an Institutional Packet of Mustard in the Package (Int. Cl. 30).
First use Apr. 22, 1969.

SN 338,237. Ezaki Glico Company, Limited, Nishiyodogawa-ku, Osaka, Japan. Filed Sept. 18, 1969.

PREM-MEL

For Candy (Int. Cl. 30).
First use in or about April 1968.

SN 340,101. Rabaul Trading Company Pty. Limited, Rabaul, Territory of Papua and New Guinea. Filed Oct. 8, 1969.

GURIA

Owner of Australian Reg. No. B167,041, dated June 1, 1961.
For Cocoa Beans for Food Manufacturing Purposes (Int. Cl. 30).
First use at least as early as 1963.

SN 341,188. North Star Dairy, St. Paul, Minn. Filed Oct. 20, 1969.

NORTH STAR GOLD

Owner of Reg. No. 854,778.
For Dehydrated Cheddar Cheese (Int. Cl. 29).
First use July 1, 1969.
Subj. to Intf. with SN 342,133.

SN 342,133. Arden-Mayfair, Inc., Anchorage, Alaska. Filed Oct. 30, 1969.

NORTH STAR

For Fluid Milk (Int. Cl. 29).
First use on or about Nov. 7, 1960.
Subj. to Intf. with SN 341,188.

SN 343,217. Holly Farms Poultry Industries, Inc., Wilkesboro, N.C. Filed Nov. 12, 1969.

COUNTRY STYLE

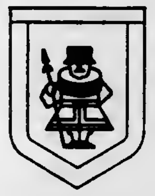
For Deep Chilled Fresh Poultry and Poultry Parts (Int. Cl. 29).
First use Mar. 30, 1968.
Subj. to Intf. with SN 344,394.

SN 344,197. Sucrest Corporation, New York, N.Y. Filed Nov. 21, 1969.

BEE-LIFE

For Food Supplement for Bees—Namely, a Dry Graunlar Product Containing Sugar, Invert Sugar, Soy Flour, and Pollen (Int. Cl. 31).
First use Aug. 28, 1969.

SN 345,043. CAI Research & Development Company, San Francisco, Calif. Filed Dec. 2, 1969.



YEOMAN

Owner of Reg. No. 856,148.
For Seasoning and Cooking Aid in the Nature of a Seasoned Salt and a Tenderizer (Int. Cl. 30).
First use Nov. 6, 1969; Feb. 9, 1968, as to "Yeoman."

SN 345,713. Borden, Inc., New York, N.Y. Filed Dec. 9, 1969.

SUN-SOFT

For Margarine (Int. Cl. 29).
First use on or before Oct. 7, 1969.

SN 346,131. United Fruit Company, Boston, Mass. Filed Dec. 12, 1969.

CHIQUITA

Owner of Reg. Nos. 711,623, 775,094, and others.
For Head Lettuce and Preprepared Lettuce-Containing Salad With Other Salad Ingredients—Namely, Endive, Celery, Radishes, Tomatoes, and Peppers (Int. Cls. 29 and 31).
First use Aug. 12, 1969.

SN 347,867. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 7, 1970.

PERTEX

Owner of Reg. No. 582,474.
For Processed Animal and Vegetable Fats and Oils, and Combinations Thereof (Int. Cl. 29).
First use Sept. 18, 1952.

SN 347,868. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 7, 1970.

MOONSTAR

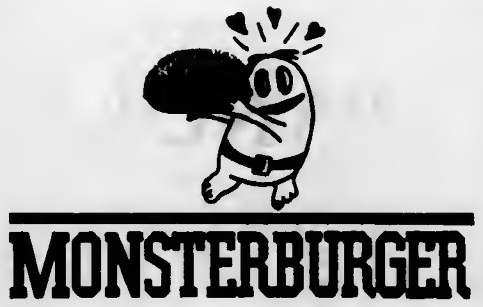
Owner of Reg. Nos. 148,218 and 304,824.
For Edible Vegetable Shortening (Int. Cl. 29).
First use Jan. 11, 1921.

SN 347,869. The Procter & Gamble Company, Cincinnati, Ohio. Filed Jan. 7, 1970.

NUTEX

Owner of Reg. No. 128,488.
For Edible Vegetable Shortening (Int. Cl. 29).
First use Dec. 18, 1918.

SN 348,203. M. V. Bast, Two Rivers, Wis. Filed Jan. 12, 1970.



Applicant disclaims the picture of a hamburger apart from the mark as shown.
For Hamburger Sandwiches, Onion Rings, French Fried Potatoes, and Milk Shakes Prepared and Sold at Drive-In Restaurants (Int. Cls. 29 and 30).
First use May 1967.

SN 348,233. Van Den Berghs and Jurgens Limited, London, England. Filed Jan. 12, 1970.

SUPERCOA

Owner of British Reg. No. 898,781, dated Aug. 26, 1966.
For Edible Vegetable Oils and Edible Vegetable Fats; Preserved, Dried and Cooked Fruits and Vegetables; and Mayonnaise (Int. Cl. 29).

SN 348,734. ITT Continental Baking Company, Rye, N.Y. Filed Jan. 16, 1970.

BEEFSTEAK

For Bread (Int. Cl. 30).
First use Sept. 26, 1968.

SN 349,913. California Canners and Growers, San Francisco, Calif. Filed Jan. 29, 1970.

EMILIO'S

Owner of Reg. No. 539,699.
For Canned Tomato Paste and Hollandaise Sauce Base (Int. Cl. 30).
First use Nov. 30, 1949.

SN 350,817. Deer Park Baking Co., Hammonton, N.J. Filed Feb. 9, 1970.

KITCHEN KORNER

For Cookies (Int. Cl. 30).
First use January 1970.

SN 351,023. Federal Sweets & Biscuit Co., Inc., Clifton, N.J. Filed Feb. 10, 1970.

CHIP CHIP

For Cookies (Int. Cl. 30).
First use Jan. 12, 1970.

SN 351,699. General Mills, Inc., Minneapolis, Minn. Filed Feb. 18, 1970.

COCOA PUFFS

Owner of Reg. No. 816,781.
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about Mar. 3, 1958.

SN 351,828. Philip Morris Incorporated, New York, N.Y. Filed Feb. 19, 1970.

SAFEGUARD

For Chewing Gum (Int. Cl. 30).
First use Jan. 22, 1970.

SN 351,829. Philip Morris Incorporated, New York, N.Y. Filed Feb. 19, 1970.

SURE

For Chewing Gum (Int. Cl. 30).
First use Jan. 22, 1970.

SN 351,830. Philip Morris Incorporated, New York, N.Y. Filed Feb. 19, 1970.

CONFIDENT

For Chewing Gum (Int. Cl. 30).
First use Jan. 22, 1970.

SN 352,277. Worthington Foods, Inc., Worthington, Ohio. Filed Feb. 24, 1970.

LEANIES

For High Protein, Vegetable Base Foods for Use in the Place of Meat of Flesh Type (Int. Cl. 29).
First use Jan. 16, 1970.

SN 352,278. Worthington Foods, Inc., Worthington, Ohio. Filed Feb. 24, 1970.

NUMETE

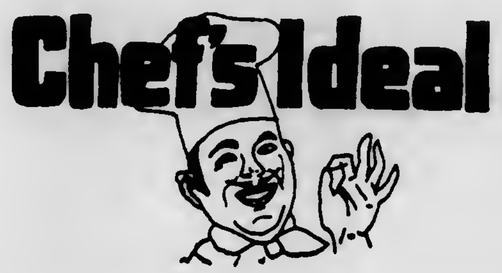
For High Protein, Vegetable Base Foods for Use in the Place of Meat of Flesh Type (Int. Cl. 29).
First use August 1942.

SN 352,872. Seaboard Allied Milling Corporation, d.b.a. Rodney Milling Co., Wilmington, Del. Filed Mar. 2, 1970.

LIFE

For Flour (Int. Cl. 30).
First use Feb. 5, 1970.

SN 353,366. Early California Industries, d.b.a. Early California Foods, Los Angeles, Calif. Filed Mar. 9, 1970.



The portrait shown on the drawing is fanciful, and does not represent any known living individual.
For Mayonnaise, Salad Dressings, Thousand Island Dressing (Int. Cl. 29).
First use at least as early as May 1, 1950.

SN 360,197. Doughboy Industries, Inc., New Richmond, Wis. Filed May 19, 1970.

BIG TOP

For Livestock Feeds and Feed Concentrates for Swine, Cattle, Ruminants, and Poultry (Int. Cl. 31).
First use Mar. 26, 1970.

SN 361,658. Ralston Purina Company, St. Louis, Mo. Filed June 4, 1970.

LUXURY

For Cat Food (Int. Cl. 31).
First use May 13, 1970.

SN 361,659. Ralston Purina Company, St. Louis, Mo. Filed June 4, 1970.

HIDDEN PERSUADERS

For Cat Food (Int. Cl. 31).
First use May 13, 1970.

SN 361,660. Ralston Purina Company, St. Louis, Mo. Filed June 4, 1970.

ENTREE

For Cat Food (Int. Cl. 31).
First use May 13, 1970.

SN 362,195. General Mills, Inc., Minneapolis, Minn. Filed June 10, 1970.

NATURAL SQUEEZE

For Orange Juice Food Drink Concentrate (Int. Cl. 32).
First use on or about May 20, 1970.

SN 362,197. General Mills, Inc., Minneapolis, Minn. Filed June 10, 1970.

SUN SQUEEZE

For Orange Juice Food Drink Concentrate (Int. Cl. 32).
First use on or about May 20, 1970.

Class 47 — Wines

SN 335,432. Cruse & Fils Freres, Gironde, France. Filed Aug. 15, 1969.

LES COUBERSANS

Priority claimed under Sec. 44(d) on French Reg. No. 765,464, dated July 4, 1969.
For Wines (Int. Cl. 33).

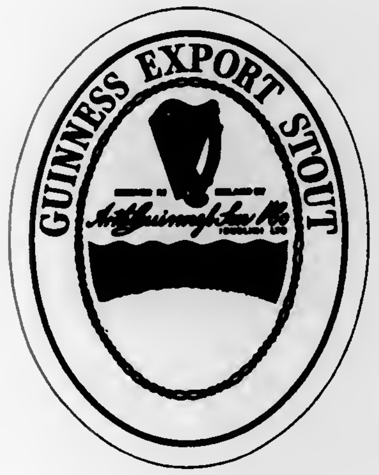
SN 335,081. E. & J. Gallo Winery, d.b.a. Ernest & Julio Gallo, Modesto, Calif. Filed Mar. 26, 1970.

SPAÑOLA

Owner of Reg. Nos. 884,276, 886,586, and others.
For Wines (Int. Cl. 33).
First use Mar. 18, 1970.

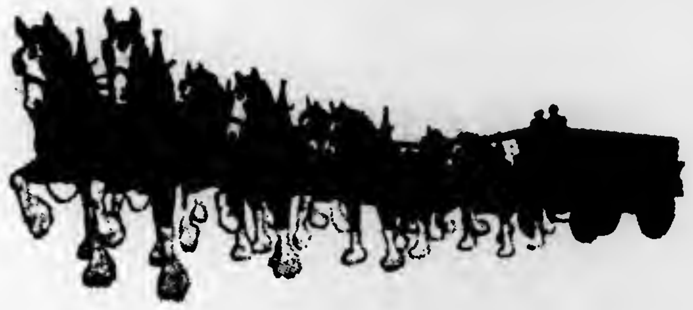
Class 48 — Malt Beverages and Liquors

SN 309,676. Arthur Guinness Son & Company Limited, London, England. Filed Oct. 15, 1968.



Applicant disclaims "Export Stout" and "Brewed in Ireland by" separate and apart from the mark as shown. Owner of U.S. Reg. Nos. 63,040, 861,769, and others.
For Stout (Int. Cl. 32).
First use July 1964; in commerce July 1964.

SN 310,533. Anheuser-Busch, Incorporated, St. Louis, Mo. Filed Oct. 25, 1968.



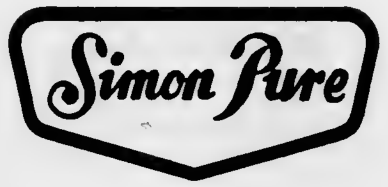
For Beer (Int. Cl. 32).
First use at least as early as Sept. 12, 1956.

SN 312,484. Miller Brewing Company, Milwaukee, Wis. Filed Nov. 18, 1968.

LA RUBITA

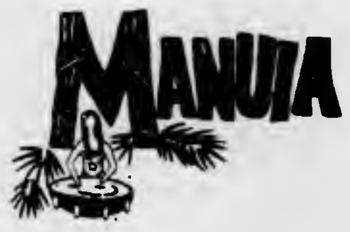
"La Rubita" is Spanish for "the little blond."
For Beer (Int. Cl. 32).
First use Nov. 12, 1968.

SN 314,627. The William Simon Brewery, Buffalo, N.Y. Filed Dec. 16, 1968.



Owner of Reg. No. 315,354.
For Beer and Ale (Int. Cl. 32).
First use 1961.

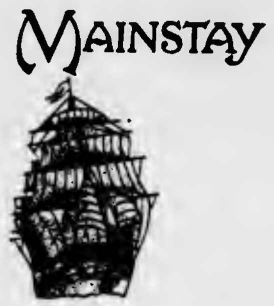
SN 317,710. Cerveceria de Mexicali, S.A., Mexicali, Baja California, Mexico. Filed Jan. 28, 1969.



For Beer (Int. Cl. 32).
First use Feb. 22, 1968; in commerce Feb. 26, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 314,883. Henry Tayler & Ries Limited, Durban, Natal, Republic of South Africa. Filed Dec. 19, 1968.



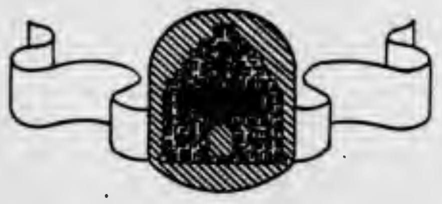
Owner of South African Reg. No. 64/3,876, dated Oct. 31, 1968.
For Cane Spirits (Int. Cl. 33).

SN 351,640. H. H. Pott Nfgr. Rumhandelshaus, Flensburg, Germany. Filed Feb. 17, 1970.

POTT

Owner of U.S. Reg. Nos. 775,101, 804,892, and 804,893.
For Rum (Int. Cl. 33).
First use in 1893; in commerce August 1963.

SN 355,489. H. H. Pott Nfgr. Rumhandelshaus, Flensburg, Germany. Filed Mar. 16, 1970.



The mark is lined for green and gold. Owner of U.S. Reg. Nos. 775,101, 804,893, and others.
For Rum (Int. Cl. 33).
First use 1893; in commerce August 1963.

Class 50 — Merchandise Not Otherwise Classified

SN 308,689. The Franklin Mint, Inc., Yeadon, Pa. Filed Oct. 2, 1968.

HEROES OF THE AMERICAN FRONTIER

For Non-Monetary Coined Tokens (Int. Cl. 14).
First use Sept. 25, 1968.

SN 329,851. The B. F. Goodrich Company, Akron, Ohio. Filed June 12, 1969.

SQUIRM WINDOW

Applicant disclaims the word "Window" apart from the mark as shown.
For Transparent Panel for Illustrating the Action of the Tread of a Tire on Pavement (Int. Cl. 20).
First use May 26, 1969.

SN 336,469. Pictorial Productions, Inc., Mount Vernon, N.Y. Filed Aug. 27, 1969.

MERRY MOTIONS

For Ornaments and Pictorial Displays for Use by Others for Advertising, Business, and Educational Purposes (Int. Cl. 16).
First use Mar. 17, 1967.

SN 337,650. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE FRANKLIN MINT THE WORLD MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 337,652. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE WORLD MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 337,653. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE WORLD'S MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 337,654. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE WORLD'S LARGEST PRIVATE MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 337,655. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE WORLD'S FOREMOST PRIVATE MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 337,656. The Franklin Mint, Inc., Yeadon, Pa. Filed Sept. 11, 1969.

THE FRANKLIN MINT THE WORLD'S LARGEST PRIVATE MINT

The term "Mint" is disclaimed apart from the mark as shown.
For Non-Monetary Coins, Tokens, Medals, and Medallions (Int. Cl. 14).
First use Sept. 10, 1969.

SN 359,298. Orin W. Loo, d.b.a. Mini-Craft, Colorado Springs, Colo. Filed May 11, 1970.

MINI-CRAFT

For Hobby Kits Comprised of Shingles, Doors, Siding and Windows for the Construction of Birdhouses, Mailboxes, Doll Houses and the Like, and Legs, Pins, Racks, Seats and Tops for the Construction of Chairs and Tables (Int. Cls. 19 and 28).
First use Apr. 15, 1970.

Class 51 — Cosmetics and Toilet Preparations

SN 293,384. Hilton Hotels Corporation, Chicago, Ill. Filed Mar. 15, 1968.

LADY HILTON

"Lady Hilton" does not designate any particular known individual, living or dead. Owner of Reg. No. 841,357.
For Perfumes and Colognes (Int. Cl. 3).
First use Feb. 7, 1968.

SN 316,153. William Waldron, d.b.a. House of Waldron, Portland, Maine. Filed Jan. 8, 1969.

SPENCER

For Men's and Women's Cosmetics and Toiletries—Namely, Cologne, After Shave Lotions, Face Powder, Deodorants, and Talc (Int. Cls. 3 and 5).
First use Dec. 2, 1968.

SN 322,815. The Princess Marcella Borghese, Inc., New York, N.Y. Filed Mar. 26, 1969.

ECCO

For Perfume, Perfume Oil, Toilet Water, Bath Oil, and Dusting Powder (Int. Cl. 3).
First use on or about June 1958.

SN 326,807. Tsumura Juntendo, Limited, Chuo-ku, Tokyo, Japan. Filed May 8, 1969.

BETA BATH

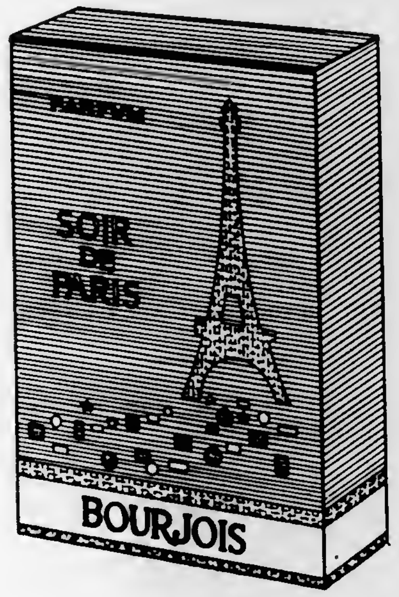
No registration rights are claimed for the word "Bath" apart from the mark as shown.
For Bath Crystals (Int. Cl. 3).
First use in 1894; in commerce January 1969.

SN 328,356. Shepard Laboratories, Inc., Fort Washington, Pa. Filed May 26, 1969.

TANKEEPER

For Suntan Lotions (Int. Cl. 3).
First use Apr. 25, 1969.

SN 331,104. Bourjois, Inc., New York, N.Y. Filed May 25, 1970.



The words "Soir de Paris" mean "evening in Paris" in English. The drawing is lined for gold and blue and applicant claims the colors gold, white and blue. Owner of Reg. Nos. 120,245, 575,238, and others.
For Perfume (Int. Cl. 3).
First use Feb. 24, 1969.

SN 333,148. Joseph A. Leoni, d.b.a. Leoni's U.S.A., Gilbert, Minn. Filed July 22, 1969.

Leoni's
U. S. A.

"U.S.A." is disclaimed apart from the mark as shown.
For Hand Lotion, Moisturizing Foot Lotion and Skin Balm (Int. Cl. 3).
First use Mar. 9, 1969.

SN 333,457. Therachemie Chemisch Therapeutische G.m.b.H., Dusseldorf, Germany. Filed July 24, 1969.

POLYLADY

Owner of German Reg. No. 827,039, dated Oct. 26, 1966; and U.S. Reg. Nos. 630,610, 864,007, and others.
For Preparations for Treating the Hair With Dyes (Int. Cl. 3).

SN 336,231. Hawaiian Perfumers, Inc., d.b.a. Liana of Waikiki, Honolulu, Hawaii. Filed Aug. 20, 1969.

Lemon baby

The word "Lemon" is disclaimed apart from the mark as shown.
For Perfumes, Colognes, and Pearl Essence Cologne Lotion for Women (Int. Cl. 3).
First use Oct. 3, 1968.

SN 349,587. Chesebrough-Pond's Inc., New York, N.Y. Filed Jan. 26, 1970.

smoke rings

For Kit Containing Eye Shadow and Cake Eye Liner (Int. Cl. 3).
First use Jan. 19, 1970.

SN 352,572. Redken Laboratories, Inc., Van Nuys, Calif. Filed Feb. 27, 1970.

Présol

For Hair Setting Lotion and Conditioner (Int. Cl. 3).
First use Dec. 19, 1969.

SN 357,166. Germaine Monteil Cosmetiques Corporation, New York, N.Y. Filed Apr. 17, 1970.

BRITISH AMERICAN COSMETICS

No claim is made to the exclusive right to the use of the word "Cosmetics" apart from the mark as shown.
For Fluid Make-Up, Cleansing Cream, Lipstick and Face Powder (Int. Cl. 3).
First use Apr. 1, 1970.

SN 358,144. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

SWEDISH GIRL

For Cosmetic Facial Cleanser (Int. Cl. 3).
First use Mar. 31, 1970.

SN 358,898. British-American Tobacco Company, Limited, London, England. Filed May 6, 1970.

ANATOME

For Cosmetic Creams and Fluid Make-Up (Int. Cl. 3).
First use prior to 1945; in commerce prior to 1945.

SN 359,791. La Bottega, Ltd., New York, N.Y. Filed May 15, 1970.

EARTH

For Men's Toiletries, i.e., Cologne and After Shave Lotion (Int. Cl. 3).
First use at least as early as 1957.

SN 360,277. Lever Brothers Company, New York, N.Y. Filed May 20, 1970.

BUILD UP

For Hair Conditioner (Int. Cl. 3).
First use May 8, 1970.

SN 360,279. Lever Brothers Company, New York, N.Y. Filed May 20, 1970.

EARLY BEAUTY

For Hair Conditioner (Int. Cl. 3).
First use May 8, 1970.

SN 360,283. Lever Brothers Company, New York, N.Y. Filed May 20, 1970.

REWARD

Owner of Reg. Nos. 333,687, 760,878, and 805,768.
For Dentifrice (Int. Cl. 3).
First use Apr. 17, 1970.

SN 360,620. American Home Products Corporation, New York, N.Y. Filed May 25, 1970.

TANDY

Owner of Reg. Nos. 596,319, 630,171, 708,337, and others.
For Oral Breath Freshener (Int. Cl. 3).
First use May 18, 1970.

Class 52 — Detergents and Soaps

SN 309,559. Economics Laboratory, Inc., St. Paul, Minn. Filed Oct. 14, 1968.

REGAIN

For Floor Maintenance Preparation for Degreasing and Stripping Flooring for Sale to the Industrial and Institutional Trade (Int. Cl. 3).
First use Oct. 3, 1968.

SN 318,522. Bonne Bell, Inc., d.b.a. Bonne Bell, Lakewood, Ohio. Filed Feb. 6, 1969.

SUPER SHOWER 2000

Without waiving common law rights, the words, "Super Shower," are disclaimed apart from the mark as shown.
For Liquid Moisturizer-Cleanser for the Bath and Shower (Int. Cl. 3).
First use at least as early as Dec. 13, 1968.

SN 330,423. Maurice Seiderman, d.b.a. Physiological Polymers, Hollywood, Calif. Filed June 18, 1969.

AQUALACRIMA

For Wetting and Cleaning Solution for Contact Lenses (Int. Cl. 3).
First use May 28, 1969.

SN 332,880. Horizon Industries Corporation, d.b.a. Horizon Industries, Cleveland, Ohio. Filed July 18, 1969.

JAZZ-UP

For All-Purpose Cleaner (Int. Cl. 3).
First use Mar. 14, 1969.

SN 335,069. Texize Chemicals, Inc., Greenville, S.C., assignee of Simoniz Company, Chicago, Ill. Filed Aug. 11, 1969.

WITH SOILGARD PROTECTION

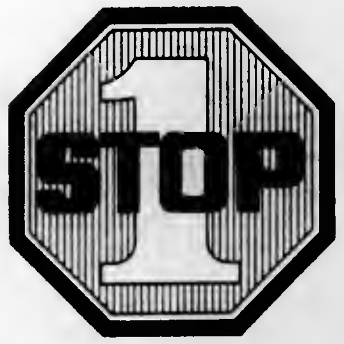
Without relinquishing any common law rights, no claim is made to the exclusive use of the words "With" and "Protection" apart from the mark as shown.
For Ingredient Contained in a Rug Shampoo Which Is Useful in Forming a Barrier Between Rugs and Carpets to Which the Rug Shampoo Is Applied and Soil or Dirt Which Thereafter Comes Into Contact With the Rugs and Carpets (Int. Cl. 3).
First use June 26, 1969.

SN 343,730. Metropolitan Refining Co., Inc., Long Island City, N.Y. Filed Nov. 17, 1969.

SOOTRACIDE

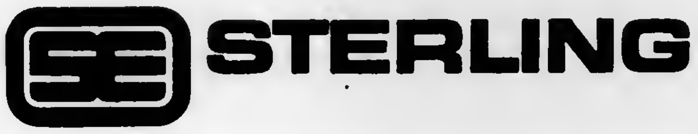
For Soot Remover Composition (Int. Cl. 3).
First use 1930.

SN 346,107. One Stop, Incorporated, Los Angeles, Calif. Filed Dec. 12, 1969.



The drawing is lined for the color red.
For Fabric Cleaner, Upholstery Shampoo, and Oven Cleaner (Int. Cl. 3).
First use Sept. 15, 1969.

SN 347,004. Sterling Electronics Corporation, Houston, Tex. Filed Dec. 23, 1969.



For Chemical Composition for Cleaning and Lubricating Tuner and Volume Controls and a Chemical Composition for Cleaning Records (Int. Cl. 3).
First use at least as early as about July 27, 1969.

SN 349,470. Irwin-Willert Company, St. Louis, Mo. Filed Jan. 23, 1970.

FLUSH-CLEAN

For Cleaning Tablets for Use in Toilet Tanks (Int. Cl. 3).
First use June 1, 1952.
Subj. to Intf. with SN 343,188.

SN 350,445. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Feb. 4, 1970.

GLAZCOTE

For Cleaner for Plastic Spectacle Lenses (Int. Cl. 3).
First use June 15, 1965.

SN 353,391. Universal Oil Products Company, Des Plaines, Ill. Filed Mar. 9, 1970.

UOP

Owner of Reg. Nos. 534,802, 884,111, and others.
For Industrial Cleaning Chemicals Including Solvents, Emulsifiers and the Like for Removing Rust, Oil, Grease, Scale and Dirt Accumulations From Various Types of Industrial Equipment (Int. Cl. 3).
First use on or prior to Jan. 24, 1970.

SN 359,305. Purex Corporation, Ltd., Lakewood, Calif. Filed May 11, 1970.

PUREX

Owner of Reg. Nos. 155,699, 854,332, and others.
For Enzyme Laundry Detergent (Int. Cl. 3).
First use Feb. 9, 1970.

SERVICE MARKS

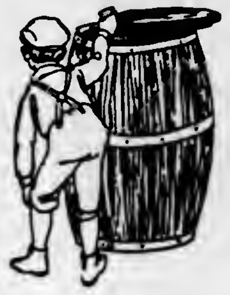
Class 100 — Miscellaneous

SN 271,593. The Cattleman, Inc., d.b.a. The Adult Western Restaurant, New York, N.Y. Filed May 16, 1967.

THE CATTLEMAN

For Restaurant and Catering Services (Int. Cl. 42).
First use Jan. 3, 1959.
Subj. to Intf. with SN 280,015.

SN 305,308. The Biscuit and Cracker Manufacturers' Association, Chicago, Ill. Filed Aug. 16, 1968.



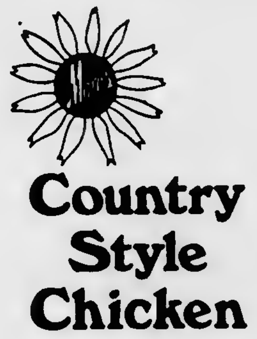
For Promotional Association Services for Biscuit and Cracker Manufacturers—Namely, Consulting Services and Conferences on Management and Production Processing, Correspondence Courses in Biscuit and Cracker Technology, and Publication of Technical Handbooks and Bulletins (Int. Cl. 42).
First use prior to 1966.

SN 334,053. Cruise Away Yacht Rentals, Inc., South Freeport, Maine. Filed July 31, 1969.

CRUISE AWAY

For Rental of Marine Goods—Namely, Boats and Associated Equipment Therefor (Int. Cl. 39).
First use on or about June 1966.

SN 344,394. Marc's Country Style Chicken Corporation, Milwaukee, Wis. Filed Nov. 24, 1969.



Applicant disclaims any exclusive right to the words "Country Style Chicken," apart from the mark as shown.
For Restaurant Services (Int. Cl. 29).
First use Sept. 11, 1969.
Subj. to Intf. with SN 343,217.

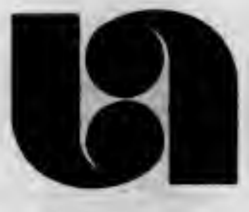
SN 348,231. Travel Towne Parks of America, Inc., Clearwater, Fla. Filed Jan. 12, 1970.

"YOUR DESTINATION FOR A HAPPY VACATION"

For Franchised Travel Trailer-Camper Parks (Int. Cl. 42).
First use Oct. 1, 1969.

Class 101 — Advertising and Business

SN 320,607. Interaccess Corp., Palo Alto, Calif. Filed Mar. 3, 1969.



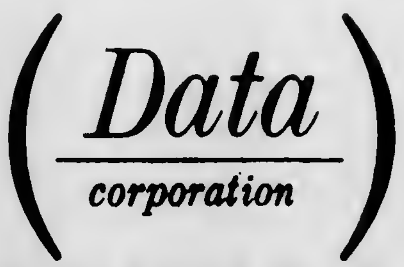
The mark consists of a fanciful design of the letters "I" and "A."
For Computer Programming Services (Int. Cl. 35).
First use at least as early as Dec. 15, 1968.

SN 325,971. Gimbel Brothers, Inc., New York, N.Y. Filed Apr. 30, 1969.

GIMBEL BROTHERS

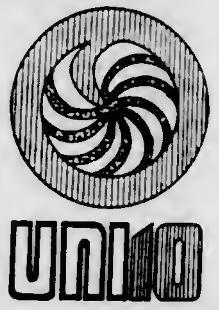
For Retail Department Store Services (Int. Cl. 35).
First use on or about Sept. 12, 1887.

SN 326,633. Data Corporation, Dayton, Ohio. Filed May 7, 1969.



Applicant disclaims the words "Data" and "Corporation" apart from the mark as shown. Owner of Reg. No. 867,874.
For Computer Services—Namely, Information Retrieval and Scientific Programming (Int. Cl. 35).
First use Sept. 13, 1961.

SN 328,820. Colonial Investment Corporation, Salt Lake City, Utah. Filed June 2, 1969.



The drawing is lined for gold and pink, but no claim is made as to color.
For Services, Specifically Promoting the Goods of Others by Providing Return or Dividend to Customers on Money Spent in Participating Retail Stores (Int. Cl. 35).
First use on or about Apr. 1, 1969.

SN 329,854. Greek Orthodox Church of Saint George, Incorporated (Ladies Auxiliary Philoptohos), Bethesda, Md. Filed June 12, 1969.

DIAL-A-BAKLAVA

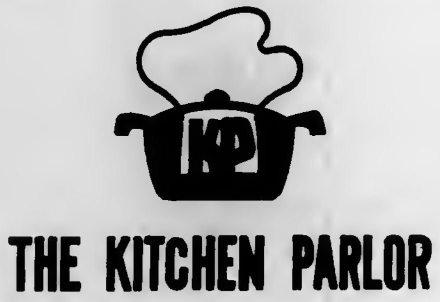
For Bakery Services Offered in Connection With Church Fund Raising (Int. Cl. 35).
First use Mar. 10, 1969.

SN 338,057. Listfax Corporation, New York, N.Y. Filed Sept. 16, 1969.

DIAL-DIARY

For Research Service in Which Consumer Reaction and Acceptance of Products Is Obtained Through a Telephone Poll (Int. Cl. 35).
First use June 2, 1969.

SN 338,312. The Kitchen Parlor, Inc., Boca Raton, Fla. Filed Sept. 19, 1969.



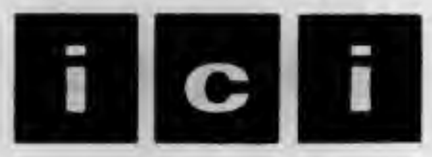
No claim is made to the word "Kitchen" apart from the mark without waiving any common law rights therein.
For Retail Store Services in the Field of Kitchen Equipment (Int. Cl. 35).
First use January 1967.

SN 346,433. Fiscal Systems, Inc., Minneapolis, Minn. Filed Dec. 17, 1969.

TAX-PAK

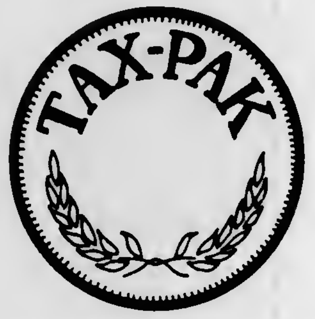
For Tax Accounting and Data Processing Services (Int. Cl. 35).
First use on or about Aug. 20, 1969.

SN 347,161. Intemark Communications, Inc., Rochester, N.Y. Filed Dec. 29, 1969.



For Preparation of Advertisements of Others for Insertion in Publications (Int. Cl. 35).
First use at least as early as Oct. 1, 1969.

SN 348,479. Fiscal Systems, Inc., Minneapolis, Minn. Filed Jan. 14, 1970.



For Tax Accounting and Data Processing Services (Int. Cl. 35).
First use on or about Aug. 20, 1969.

SN 349,340. Farm Journal, Inc., d.b.a. Consumer/Industrial Research Service and/or Farm Journal Research Service, Philadelphia, Pa. Filed Jan. 22, 1970.

RANDIAL

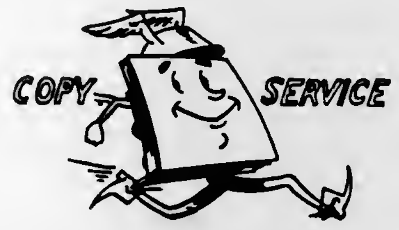
For Selecting Random Telephone Numbers by Computer for Use in Conducting Surveys of Telephone Households (Int. Cl. 35).
First use at least as early as Dec. 15, 1969.

SN 352,027. International Productions, Inc., Jacksonville, Fla. Filed Feb. 24, 1970.

SPORTS-A-RAMA

For Providing Convention and Trade Show Facilities (Int. Cl. 35).
First use Feb. 4, 1970.

SN 355,181. Copy Service, Inc., d.b.a. Copy Service of Miami Beach, Miami Beach, Fla. Filed Mar. 27, 1970.



No claim is made to the words "Copy Service" apart from the mark without waiving any common law rights therein.
For Making Reproductions and Copies of Printed Material for Others (Int. Cl. 35).
First use May 1963.

SN 355,183. Graphco, Inc., Crystal, Minn. Filed Mar. 27, 1970.

MR. PRINT

Applicant disclaims the term "Print" apart from the mark as shown.
For Printing Services (Int. Cl. 35).
First use on or about Mar. 14, 1969.

SN 356,333. Diversified Computer Services, Inc., New York, N.Y. Filed Apr. 9, 1970.

GARMATE

For Computerized Accounting Services and Computer Programming Services in Connection Therewtih (Int. Cl. 35).
First use Jan. 15, 1970.

Class 102 — Insurance and Financial

SN 323,246. The British Petroleum Company Limited, d.b.a. BP Oil Corporation, London, England. Filed Apr. 1, 1969.

BP

Owner of U.S. Reg. No. 654,019.
For Credit Financing Services for Automobile Service Stations, Marine and Aviation Terminals, Specifically for Extending Credit Card Services to Others (Int. Cl. 36).
First use Mar. 11, 1969; in commerce Mar. 11, 1969.

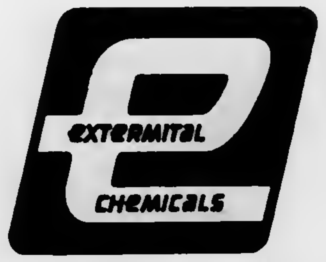
Class 103 — Construction and Repair

SN 262,122. Bird Space Technology, Inc., Palm Springs, Calif. Filed Jan. 9, 1967.

INNOVATOR

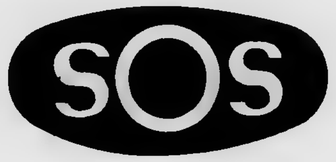
Owner of Reg. No. 890,812.
For Services for the Construction, Repair and Modification of Aircraft and Aircraft Structural Parts and Equipment Therefor (Int. Cl. 37).
First use on or about Feb. 15, 1966.

SN 320,258. Extermital Chemicals, Inc., Dayton, Ohio. Filed Feb. 27, 1969.



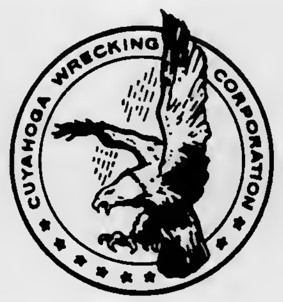
The mark consists in part of a fanciful "e." The drawing is not lined for color. The word "Chemicals" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 361,237, 868,585, and others.
For Termite and Pest Control Services (Int. Cl. 37).
First use February 1968; 1937 as to "Extermital" in a different form.

SN 330,473. Brammal, Inc., Angola, Ind. Filed June 19, 1969.



For the Straightening of Rolls of Metal, Paper, Cardboard, Plastics, and the Like (Int. Cl. 37).
First use Apr. 5, 1968.

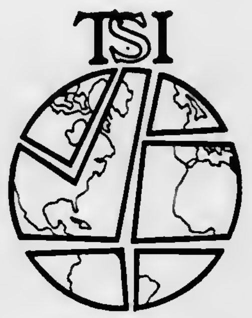
SN 353,363. Diversified Industries, Inc., St. Louis, Mo. Filed Mar. 9, 1970.



The terms "Wrecking" and "Corporation" are disclaimed from the mark as shown.
For Wrecking, Demolition, and Dismantling Services (Int. Cl. 37).
First use Jan. 1, 1968; about 1897 as to the term "Cuyahoga Wrecking Corporation."

Class 105 — Transportation and Storage

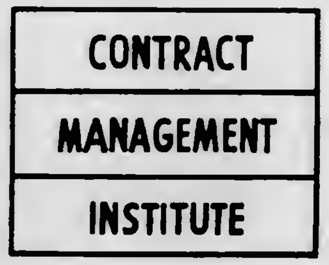
SN 349,055. Travel Systems/International, Ltd., Oak Brook, Ill. Filed Jan. 20, 1970.



For Conducting Travel Tours; Arranging and Operating Travel Tours for Others (Int. Cl. 39).
First use Nov. 3, 1969.

Class 107 — Education and Entertainment

SN 259,334. Arthur J. Nolan, d.b.a. Contract Management Institute, Washington, D.C. Filed Nov. 23, 1966.



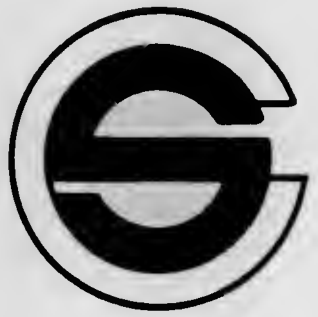
The applicant disclaims the term "Contract Management Institute" apart from the mark as shown.
For Conducting Seminars Concerning Contract Negotiation (Int. Cl. 41).
First use August 1963.

SN 312,176. Barbizon School of Fashion Modeling, Inc., New York, N.Y. Filed Nov. 14, 1968.

BARBIZON

For Educational Services—Namely, the Operation of a School Offering Training in Fashion and Photographic Modeling (Int. Cl. 41).
First use Apr. 3, 1939.

SN 329,283. Sound/City Recording Corporation, Shreveport, La. Filed June 5, 1969.



The mark comprises a fanciful representation of the letters "SC."
For Services in the Music and Recording Fields—Namely, the Managing and Representing of Recording Artists; the Writing and Arranging of Songs and Music; the Recording, Publishing and Distribution of Songs and Music in Tape and Record Form (Int. Cl. 41).
First use on or about Dec. 18, 1968.

SN 337,616. The Walter Reade Organization, Inc., Oakhurst, N.J. Filed Sept. 11, 1969.

CONTINENTAL

For Distribution by Leasing of Feature-Length and Short-Subject Motion Picture Films for Theatrical Exhibition (Int. Cl. 41).
First use Apr. 9, 1953.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

897,609. FLUOROMER. Greene, Tweed & Co., Inc., d.b.a. Greene, Tweed & Co. SN 289,398. Pub. 6–16–70. Filed 1–23–68.

897,610. WITONITE. Witco Chemical Corporation. SN 310,953. Pub. 6–16–70. Filed 10–30–68.

897,611. PITTSTON SEWELL AND DESIGN. The Pittston Company. SN 314,607. Pub. 6–16–70. Filed 12–16–68.

897,612. SANI LITTER. Sani Pine Products Co., Inc. SN 325,998. Pub. 6–16–70. Filed 4–30–69.

897,613. HB DESIGN. Husky Briquetting, Inc. SN 329,475. Pub. 6–16–70. Filed 6–9–69.

897,614. NICELL KB. International Pulp Sales Company. SN 335,582. Pub. 6–16–70. Filed 8–18–69.

897,615. CYTREL. Celanese Corporation. SN 337,151. Pub. 6–9–70. Filed 9–5–69.

897,616. BENILITE. Benilite Corporation of America. SN 342,222. Pub. 6–16–70. Filed 10–31–69.

897,617. HYDRAPRINT. J. M. Huber Corporation. SN 342,268. Pub. 6–16–70. Filed 10–31–69.

897,618. PRIMA. Golden State Sheep Tanning Co. SN 342,860. Pub. 6–16–70. Filed 11–6–69.

897,619. DAVON. Davies Nitrate Co., Inc. SN 343,091. Pub. 6–16–70. Filed 11–10–69.

897,620. PHENODUR. Reichold-Albert-Chemie AG. SN 343,328. Pub. 6–16–70. Filed 11–12–69.

Class 2 — Receptacles

897,621. TRI-SPENSER. Masterwares Corp. SN 331,633. Pub. 6–16–70. Filed 7–2–69.

897,622. WAMCO AND DESIGN. W. A. Miller Co., Inc. SN 335,598. Pub. 6–16–70. Filed 8–18–69.

897,623. COURTESY CUP. Nyman Mfg. Co. SN 335,602. Pub. 6–16–70. Filed 8–18–69.

897,624. CONALCO AND SUN DESIGN. Consolidated Aluminum Corporation. SN 337,523. Pub. 6–16–70. Filed 9–10–69.

897,625. FIBRE STAK AND DESIGN. General Nailing Machine Corporation. SN 338,564. Pub. 6–16–70. Filed 9–22–69.

897,626. AQUA-SEAL BY MENASHA AND DESIGN. Menasha Corporation. SN 340,028. Pub. 6–16–70. Filed 10–7–69.

897,627. SEAL-COAT BY MENASHA AND DESIGN. Menasha Corporation. SN 340,029. Pub. 6–16–70. Filed 10–7–69.

897,628. MANY MOODS. Sears, Roebuck and Co. SN 351,538. Pub. 6–16–70. Filed 2–16–70.

897,629. FORTUNE AND DESIGN. Fortune Plastics, Inc. SN 352,126. Pub. 6–16–70. Filed 2–24–70.

897,630. FDC. Filfast Corporation, d.b.a. FDC Packaging. SN 353,367. Pub. 6–16–70. Filed 3–9–70.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

897,631. POOCHIE. Tender Loving Care, Inc. SN 342,213. Pub. 6–16–70. Filed 10–31–69.

897,632. STUDIO GIRL. Studio Girl-Hollywood, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 343,030. Pub. 6–16–70. Filed 11–10–69.

Class 4 — Abrasives and Polishing Materials

897,633. GIULINI AND DESIGN. Gebrüder Giulini G.m.b.H. MULTIPLE CLASS (Classes 4, 6, 10. 18, 46, and 52). SN 279,131. Pub. 6–16–70. Filed 8–28–67.

897,634. MIROMET. Buehler Ltd. SN 343,503. Pub. 6–16–70. Filed. 11–14–69.

897,635. CONCOURS. Turtle Wax, Inc. SN 343,770. Pub. 6–16–70. Filed 11–17–69.

897,636. MAGOMET. Buehler Ltd. SN 351,898. Pub. 6–16–70. Filed 2–20–70.

Class 6 — Chemicals and Chemical Compositions

897,633. (See Class 4 for this trademark.)

897,637. DUAL-TINT. J. T. Baker Chemical Company. SN 311,227. Pub. 6–16–70. Filed 11–4–68.

897,638. ONE-DROP. Rhodes Pharmacal Co., Inc. SN 314,267. Pub. 6–16–70. Filed 12–11–68.

897,639. RF PET PRODUCTS ROYAL FAMILY AND DESIGN. Bandy Laboratories, Inc. MULTIPLE CLASS (Classes 6, 15, 18, and 51). SN 314,380. Pub. 6–16–70. Filed 12–13–68.

897,640. W–9. Gidley Laboratories, Inc. SN 315,408. Pub. 6–16–70. Filed 12–30–68.

897,641. SIGMA 7–9. Sigma Chemical Company. SN 315,504. Pub. 6–16–70. Filed 12–31–68.

897,642. SIGMA 104. Sigma Chemical Company. SN 315,505. Pub. 6–16–70. Filed 12–31–68.

897,643. NORTH STAR. Morton International, Inc. SN 319,673. Pub. 6–16–70. Filed 2–20–69.

897,644. P AND DESIGN. Process Materials Corporation. SN 320,738. Pub. 6–16–70. Filed 3–4–69.

897,645. NEAT 'N' SWEET. Johnson & Johnson. SN 321,655. Pub. 6–16–70. Filed 3–13–69.

897,646. PS AND DESIGN. Deleet Merchandising Corp. MULTIPLE CLASS (Classes 6 and 52). SN 334,463. Pub. 6–16–70. Filed 8–5–69.

897,647. VANGARD BT. R. T. Vanderbilt Company, Inc. SN 340,633. Pub. 6–16–70. Filed 10–13–69.

897,648. FLOMEX. Geigy Chemical Corporation. SN 341,029. Pub. 6–16–70. Filed 10–17–69.

897,649. ZONETROL. The Dow Chemical Company. SN 341,446. Pub. 6–16–70. Filed 10–20–69.

897,650. HYDROPHOBE. W. R. Grace & Co. SN 342,041. Pub. 6–16–70. Filed 10–29–69.

897,651. PRINTAFLOR. Ciba Limited. SN 342,619. Pub. 6–16–70. Filed 11–4–69.

897,652. CERA PREG. Johns-Manville Corporation. SN 343,293. Pub. 6–16–70. Filed 11–12–69.

897,653. SCALE-RID. Agway, Inc. SN 344,528. Pub. 6–16–70. Filed 11–25–69.

897,654. FOUNDREZ. Reichhold Chemicals, Inc. SN 345,570. 6–16–70. Filed 12–8–69.

897,655. SAYFBRITE. Philadelphia Quartz Company. SN 353,961. Pub. 6–16–70. Filed 3–13–70.

897,656. ALK-PHOSTEL. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 355,189. Pub. 6–16–70. Filed 3–27–70.

897,657. MISTOCIDE. Summit Chemical Co. SN 355,325. Pub. 6–16–70. Filed 3–30–70.

897,658. CATOCENE. Syntex Corporation. SN 355,590. Pub. 6–16–70. Filed 4–1–70.

897,659. ARAPACAT. Syntex Corporation. SN 356,177. Pub. 6–16–70. Filed 4–7–70.

Class 8 — Smokers' Articles, Not Including Tobacco Products

897,660. MANY MOODS. Sears, Roebuck and Co. SN 351,539. Pub. 6–16–70. Filed 2–16–70.

Class 10 — Fertilizers

897,633. (See Class 4 for this trademark.)

897,661. GOLD BOND. United States Steel Corporation. SN 354,373. Pub. 6–16–70. Filed 3–18–70.

Class 11 — Inks and Inking Materials

897,662. TENDER TOUCH. Office Devices, Inc. SN 336,150. Pub. 6–16–70. Filed 8–25–69.

897,663. HIGGINS INK CO. AND TRIANGLE DESIGN. A. W. Faber-Castell Pencil Co., Inc. SN 338,668. Pub. 6–16–70. Filed 9–23–69.

Class 12 — Construction Materials

897,664. BARRINGTON. Fleetwood Enterprises, Inc. MULTIPLE CLASS (Classes 12 and 19). SN 318,485. Pub. 6–16–70. Filed 2–6–69.

897,665. RIGICOMB. Yanton International, Inc. SN 319,660. Pub. 6–16–70. Filed 2–19–69.

897,666. HARCOFLOR. Hardwood Corporation of America. SN 333,562. Pub. 6–16–70. Filed 7–25–69.

897,667. POMONA. American Olean Tile Company, Inc. SN 335,930. Pub. 6–16–70. Filed 8–22–69.

897,668. MOVILLA. Movilla, Inc. SN 337,136. Pub. 6–16–70. Filed 9–5–69.

897,669. HARDCAST. Hardcast, Inc. SN 341,583. Pub. 6–16–70. Filed 10–24–69.

897,670. DANNO. Major Pool Equipment Corp. SN 343,142. Pub. 6–16–70. Filed 11–10–69.

897,671. LAMINAR. Eugene Olson. SN 343,155. Pub. 6–16–70. Filed 11–10–69.

897,672. BEN-WELD. United States Steel Corporation. SN 354,369. Pub. 6–16–70. Filed 3–18–70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

897,673. PASTWIST. Signode Corporation. SN 324,516. Pub. 6–16–70. Filed 4–14–69.

897,674. ARC-CO AND DESIGN. Arc-Co, Incorporated. SN 346,356. Pub. 6–16–70. Filed 12–16–69.

897,675. CONOFLOW. Conoflow Corporation. SN 346,868. Pub. 6–16–70. Filed 12–22–69.

Class 15 — Oils and Greases

897,639. (See Class 6 for this trademark.)

897,676. OX-MICRO-OIL. The L. S. Starrett Company. SN 301,778. Pub. 6–16–70. Filed 7–1–68.

897,677. CRANE CAMS SUPER LUBE AND DESIGN. Crane Engineering Co., Inc. SN 302,920. Pub. 6–16–70. Filed 7–17–68.

897,678. CASTROL GTX. Castrol Limited. SN 307,307. Pub. 6–16–70. Filed 9–3–68.

897,679. RING-FREE DRAG OIL AND DESIGN. MacMillan Ring-Free Oil Co., Inc. SN 312,390. Pub. 6–16–70. Filed 11–18–68.

897,680. MISCELLANEOUS DESIGN. Walker Enterprises, Inc. SN. 323,495. Pub. 6–16–70. Filed 4–2–69.

897,681. RUST RUNNER. Walker Enterprises, Inc. SN 232,496. Pub. 6–16–70. Filed 4–2–69.

897,682. OXY. Occidental Petroleum Corporation. SN 340,929. Pub. 6–16–70. Filed 10–16–69.

897,683. OXY AND CIRCULAR DESIGN. Occidental Petroleum Corporation. SN 340,930. Pub. 6–16–70. Filed 10–16–69.

897,684. OXYCHEM. Occidental Petroleum Corporation, d.b.a. Occidental Chemical Company. SN 340,931. Pub. 6–16–70. Filed 10–16–69.

897,685. POWERFUEL. United Refining Company. SN 348,370. Pub. 6–16–70. Filed 1–12–70.

897,686. TRANS POWER. Diamond Shamrock Corporation. SN 351,370. Pub. 6–16–70. Filed 2–16–70.

897,687. KSL. Pennwalt Corporation. SN 355,429. Pub. 6–16–70. Filed 4–1–70.

Class 16 — Protective and Decorative Coatings

897,688. EPOXIPLATE. Armstrong Products Co., Inc. SN 320,933. Pub. 6–16–70. Filed 3–6–69.

897,689. TOP FLO. Paint Producers Inc. SN 338,427. Pub. 6–16–70. Filed 9–19–69.

Class 17 — Tobacco Products

897,690. JOHN CHAPMAN. John Chapman Limited. SN 327,742. Pub. 6–16–70. Filed 5–20–69.

897,691. BARONET. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V. SN 353,457. Pub. 6–16–70. Filed 3–9–70.

897,692. ACTION. Stephano Brothers. SN 354,529. Pub. 6–16–70. Filed 3–18–70.

897,693. SIGNALINE. American Brands, Inc. SN. 355,290. Pub. 6–16–70. Filed 3–26–70.

Class 18 — Medicines and Pharmaceutical Preparations

897,633. (See Class 4 for this trademark.)

897,639. (See Class 6 for this trademark.)

897,694. KERAGEL. Allergan Pharmaceuticals. SN 309,351. Pub. 6–16–70. Filed 10–10–68.

897,695. WARDPAK. Sandoz-Wander, Inc., by merger and change of name from Sandoz, Inc. SN 311,638. Pub. 6–16–70. Filed 11–8–68.

897,696. PONDIMIN. A. H. Robins Company, Incorporated. SN 318,461. Pub. 6–16–70. Filed 2–5–69.

897,697. NEW ENGLAND SERUM COMPANY AND DESIGN. New England Serum Company. SN 318,858. Pub. 6–16–70. Filed 2–5–69.

897,698. BACTOFAC. Salsbury Laboratories. SN 320,972. Pub. 6–16–70. Filed 3–6–69.

897,699. PABAC. Salsbury Laboratories. SN 320,978. Pub. 6–16–70. Filed 3–6–69.

897,700. CHERAMIST #80. Emanuel Nathanson, d.b.a. K.I.K. Co. SN 321,257. Pub. 6–16–70. Filed 3–10–69.

897,701. TRIVASTAL. Biofarma, Societe Anonyme. SN 324,680. Pub. 6–16–70. Filed 4–16–69.

897,702. HALIBORANGE. Allen & Hanburys Limited. SN 325,447. Pub. 6–16–70. Filed 4–24–69.

897,703. G.G.I. Federal Pharmacal Corporation. SN 333,116. Pub. 6–16–70. Filed 7–22–69.

897,704. MATULANE. Hoffmann-La Roche Inc. SN 333,132. Pub. 6–16–70. Filed 7–22–69.

897,705. HI-PER. Wilson Enterprises Incorporated. SN 333,786. Pub. 6–16–70. Filed 7–28–69.

897,706. DEPO-PROVERA CONTRAJECT. The Upjohn Company. SN 334,502. Pub. 6–16–70. Filed 8–5–69.

897,707. MAXIRETS. Geigy Chemical Corporation. SN 334,576. Pub. 6–16–70. Filed 8–6–69.

897,708. TONOPLUS. Geigy Chemical Corporation. SN 334,578. Pub. 6–16–70. Filed 8–6–69.

897,709. S–4 FEEDMIX. Vineland Poultry Laboratories. SN 334,755. Pub. 6–16–70. Filed 8–7–69.

897,710. S–4 PLUS A. Vineland Poultry Laboratories. SN 334,757. Pub. 6–16–70. Filed 8–7–69.

897,711. HERCULIN. Hercules Incorporated, assignee of The Upjohn Company. SN 334,887. Pub. 6–16–70. Filed 8–8–69.

897,712. RENAPEN. Bristol-Myers Company. SN 334,974. Pub. 6–16–70. Filed 8–11–69.

897,713. LEPTO-CANIC. Phillips Roxane, Inc. SN 335,469. Pub. 6–16–70. Filed 8–15–69.

897,714. INTERDINE. The Purdue Frederick Company. SN 335,777. Pub. 6–16–70. Filed 8–20–69.

Class 19—Vehicles

897,664. (See Class 12 for this trademark.)

897,715. SPORTSMOBILE. General Engineering and Manufacturing Corporation. SN 316,637. Pub. 6–16–70. Filed 1–15–69.

897,716. JAYCO. Jayco, Inc. SN 325,044. Pub. 6–16–70. Filed 4–21–69.

897,717. SSK AND DESIGN. S. S. Kresge Company. SN 333,928. Pub. 6–16–70. Filed 7–30–69.

897,718. THE ALASKAN CAMPER ETC. FG AND LEAF DESIGN. R. D. Hall Mfg., Inc. SN 339,392. Pub. 6–16–70. Filed 10–1–69.

897,719. SCRAMP. Bridge Painting, Inc. SN 342,728. Pub. 6–16–70. Filed 11–5–69.

897,720. EGG HARBOR. Pacemaker Corporation. SN 343,746. Pub. 6–16–70. Filed 11–17–69.

897,721. LONDON HOMES AND DESIGN. Price-Meyers Corporation. SN 348,578. Pub. 6–16–70. Filed 1–14–70.

897,722. SPORTSCOACH. B & M Industries, Inc. SN 348,878. Pub. 6–16–70. Filed 1–19–70.

897,723. CON-STEP. Charles W. McCarter. SN 351,510. Pub. 6–16–70. Filed 2–16–70.

Class 20—Linoleum and Oiled Cloth

897,724. TEXTIMUR. Les Papeteries de Genval, Societe Anonyme. SN 331,917. Pub. 6–16–70. Filed 7–7–69.

Class 21—Electrical Apparatus, Machines, and Supplies

897,725. COOL–5. Hitachi, Ltd. Manufacturers. SN 296,536. Pub. 6–16–70. Filed 4–25–68.

897,726. LAZER LITE. Clevite Corporation. SN 300,255. Pub. 6–16–70. Filed 6–12–68.

897,727. PACFAX AND DESIGN. International Scanatron Systems Corp. SN 305,831. Pub. 6–16–70. Filed 8–23–68.

897,728. THE FUTURE . . . IS OUR BUSINESS. Fansteel Inc., assignee of Mech-Tronics Corporation. SN 313,952. Pub. 6–16–70. Filed 12–9–68.

897,729. MEMOREX. Memorex Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 314,481. Pub. 6–16–70. Filed 12–16–68.

897,730. DEX I. Graphic Sciences, Inc. SN 317,555. Pub. 6–16–70. Filed 1–27–69.

897,731. AMP. AMP Incorporated. SN 320,225. Pub. 6–16–70. Filed 2–27–69.

897,732. C COM-PAC AND DESIGN. Western New York Hospital Television, Inc. SN 320,754. Pub. 6–9–70. Filed 3–4–69.

897,733. AQUADYNE. Aquadyne, Inc. SN 320,935. Pub. 6–16–70. Filed 3–6–69.

897,734. TRANSISTAERIAL. Hugo H. Wiedekamp. SN 322,931. Pub. 6–16–70. Filed 3–26–69.

897,735. ELPHIAC AND SUN DESIGN. Elphiac, Société Anonyme. MULTIPLE CLASS (Classes 21, 26, and 34). SN 323,176. Pub. 6–16–70. Filed 4–1–69.

897,736. WEATHERADIO. Tandy Corporation, d.b.a. Radio Shack. SN 325,671. Pub. 6–16–70. Filed 4–28–69.

897,737. SILPAK AND DESIGN. Pemco Corporation. SN 328,245. Pub. 6–16–70. Filed 5–26–69.

897,738. RICHARDS GOLD STREAK AND DESIGN. Richards Manufacturing Company. SN 330,632. Pub. 6–16–70. Filed 6–20–69.

897,739. MIRADON. Phillips Audio, Inc. SN 331,936. Pub. 6–16–70. Filed 7–7–69.

897,740. MISCELLANEOUS DESIGN. Elphiac, Société Anonyme. MULTIPLE CLASS (Classes 21, 26, and 34). SN 332,774. Pub. 6–16–70. Filed 7–17–69.

897,741. ECONO-LOGIC. Tamar Electronics, Inc. SN 338,645. Pub. 6–16–70. Filed 9–22–69.

897,742. UNI-CURVE. Fenwal Electronics Inc. SN 341,453. Pub. 6–16–70. Filed 10–20–69.

897,743. WESTMINSTER. Hiraoka New York, Inc. SN 343,559. Pub. 6–16–70. Filed 11–14–69.

897,744. ICORE. Icore Electro-Plastics, Inc. SN 343,710. Pub. 6–16–70. Filed 11–17–69.

897,745. BACKUP X. Radair, Inc. SN 346,650. Pub. 6–16–70. Filed 12–18–69.

897,746. MULTRA-FONE. Multra-Guard, Inc. SN 347,616. Pub. 6–16–70. Filed 1–2–70.

897,747. PACE-MASTER. Chicago Wheel & Manufacturing Co. SN 347,883. Pub. 6–16–70. Filed 1–7–70.

897,748. MINI-FADE. Dynair Electronics, Inc. SN 347,900. Pub. 6–16–70. Filed 1–7–70.

897,749. MINI-G. Dynair Electronics, Inc. SN 347,901. Pub. 6–16–70. Filed 1–7–70.

897,750. MINI-AUD. Dynair Electronics, Inc. SN 347,902. Pub. 6–16–70. Filed 1–7–70.

897,751. MINI-SPK. Dynair Electronics, Inc. SN 347,903. Pub. 6–16–70. Filed 1–7–70.

897,752. MANY MOODS. Sears, Roebuck and Co. SN 351,540. Pub. 6–16–70. Filed 2–16–70.

Class 22—Games, Toys, and Sporting Goods

897,753. EL DORADO. Seward Luggage Manufacturing Company, Inc. SN 326,139. Pub. 12–30–69. Filed 5–1–69.

897,754. ZODIAC. The Franklin Mint, Inc. SN 327,264. Pub. 6–16–70. Filed 5–14–69.

897,755. DORADO. Northwestern Golf Company. SN 329,378. Pub. 12–30–69. Filed 6–6–69.

897,756. AMS AND DESIGN. The American Montessori Society, Inc. MULTIPLE CLASS (Classes 22, 37, and 38). SN 333,514. Pub. 6–16–70. Filed 7–25–69.

897,757. SSK AND DESIGN. S. S. Kresge Company. SN 334,349. Pub. 6–16–70. Filed 8–4–69.

897,758. CARDS OF FATE. Mattel, Inc. SN 338,316. Pub. 6–16–70. Filed 9–19–69.

897,759. Y.O.U. YOUR OWN UNIVERSE. Mattel, Inc. SN 339,395. Pub. 6–16–70. Filed 10–1–69.

897,760. FRIZZLE SIZZLE. Mattel, Inc. SN 340,315. Pub. 6–16–70. Filed 10–10–69.

897,761. RICK RILEY. Mattel, Inc. SN 340,325. Pub. 6–16–70. Filed 10–10–69.

897,762. BABY YO-YO. Mattel, Inc. SN 340,722. Pub. 6–16–70. Filed 10–15–69.

897,763. PITFALL. David W. Darr. SN 344,930. Pub. 6–16–70. Filed 12–1–69.

897,764. TOYTOWN. Toy Town, Inc. SN 346,584. Pub. 6–16–70. Filed 12–18–69.

897,765. THE WEDGE. Mattel, Inc. SN 353,626. Pub. 6–16–70. Filed 3–10–70.

897,766. THE ROUNDER. Mattel, Inc. SN 353,627. Pub. 6–16–70. Filed 3–10–70.

897,767. RING AROUND THE NOSEY. Mattel, Inc. SN 354,083. Pub. 6–16–70. Filed 3–16–70.

897,768. CATCH'EM. Mattel, Inc. SN 354,084. Pub. 6–16–70 Filed 3–16–70.

897,769. SCREAMIN'. Mattel, Inc. SN 354,091. Pub. 6–16–70. Filed 3–16–70.

897,770. T'RANTULA. Mattel, Inc. SN 354,356. Pub. 6–16–70. Filed 3–18–70.

897,771. RITA RIDER. Mattel, Inc. SN 354,358. Pub. 6–16–70. Filed 3–18–70.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

897,772. FANCIFUL GEOMETRICAL DESIGN. Maurey Manufacturing Corporation. SN 303,691. Pub. 6–16–70. Filed 7–26–68.

897,773. LUBER-FINER. North American Rockwell Corporation. SN 309,469. Pub. 6–16–70. Filed 10–11–68.

897,774. FLOCK MATER. Curtis L. Lorenz, d.b.a. Lorenz Enterprises. SN 311,280. Pub. 6–16–70. Filed 11–4–68.

897,775. AUTO FORGE. North American Rockwell Corporation. SN 311,910. Pub. 6–16–70. Filed 11–12–68.

897,776. AELITE AND DESIGN. Societe E. Demolin. SN 317,638. Pub. 6–16–70. Filed 1–27–69.

897,777. TURF TENDER. Gandy Company. SN 325,861. Pub. 6–16–70. Filed 4–29–69.

897,778. SFM. SFM Corporation. MULTIPLE CLASS (Classes 23 and 26). SN 328,238. Pub. 6–16–70. Filed 5–26–69.

897,779. HENRY. Henry Manufacturing Co., Inc. MULTIPLE CLASS (Classes 23 and 31). SN 329,980. Pub. 6–16–70. Filed 6–13–69.

897,780. THE CLUMPER AND DESIGN. Greene Nursery & Landscape Co., Inc. SN 331,611. Pub. 6–16–70. Filed 7–2–69.

897,781. MONTEREY. United Silver and Cutlery Company. SN 334,650. Pub. 6–16–70. Filed 8–6–69.

897,782. DAYDREAM. Oneida Ltd. SN 336,842. Pub. 6–16–70. Filed 9–2–69.

897,783. SAN MARINO. Oneida Ltd. SN 336,845. Pub. 6–16–70. Filed 9–2–69.

897,784. BRANDYWINE. Oneida Ltd. SN 336,846. Pub. 6–16–70. Filed 9–2–69.

897,785. WEDG-AC. The Gleason Works. SN 337,295. Pub. 6–16–70. Filed 9–8–69.

897,786. SWAN-MATIC. Automation Devices, Inc. SN 337,479. Pub. 6–16–70. Filed 9–10–69.

897,787. PURINA HEALTH PRODUCTS AND DESIGN. Ralston Purina Company. SN 339,956. Pub. 6–16–70. Filed 10–7–69.

897,788. REV-GRIP. Horstman Mfg. Co., Inc. SN 343,561. Pub. 6–16–70. Filed 11–14–69.

897,789. MINI-JAC. Stibbe Machinery Limited. SN 343,598. Pub. 6–16–70. Filed 11–14–69.

897,790. CREATIVE MANOR. Creative Merchandising, Inc. MULTIPLE CLASS (Classes 23 and 30). SN 344,275. Pub. 6–16–70. Filed 11–24–69.

897,791. SHOP-MATIC. Shop-Matic Industries, Inc. SN 344,583. Pub. 6–16–70. Filed 11–25–69.

897,792. D AND GEAR DESIGN. The Durst Corporation. SN 344,837. Pub. 6–16–70. Filed 11–28–69.

897,793. AIMCO AND ANGLE DESIGN. The Entwistle Company. SN 344,840. Pub. 6–16–70. Filed 11–28–69.

897,794. BRIDAL WREATH. Oneida Ltd. SN 344,880. Pub. 6–16–70. Filed 11–28–69.

897,795. ROSALIE. Oneida Ltd. SN 344,881. Pub. 6–16–70. Filed 11–28–69.

897,796. O/O/O (DESIGN). Rotek Incorporated. SN 345,015. Pub. 6–16–70. Filed 12–1–69.

897,797. SPIROLL AND DESIGN. Spiroll Corporation Ltd. SN 347,438. Pub. 6–16–70. Filed 12–30–69.

897,798. HOLWRAP. Pratt Manufacturing Corp. SN 348,178. Pub. 6–16–70. Filed 1–9–70.

897,799. FLIGHT. General Mills, Inc. SN 351,372. Pub. 6–16–70. Filed 2–16–70.

Class 26—Measuring and Scientific Appliances

897,729. (See Class 21 for this trademark.)

897,735. (See Class 21 for this trademark.)

897,740. (See Class 21 for this trademark.)

897,778. (See Class 23 for this trademark.)

897,800. ADD-A-HEAD. Ametek, Inc. SN 293,661. Pub. 6–16–70. Filed 3–20–68.

897,801. KRAUTKRAMER. Dr. J. U. H. Krautkramer, Gesellschaft fur Elektro-Physik. SN 309,668. Pub. 6–16–70. Filed 10–15–68.

897,802. DATAFACE. The Perkin-Elmer Corporation. SN 317,366. Pub. 6–16–70. Filed 1–23–69.

897,803. RAY-ALERT AND DESIGN. Advanced Research Corporation. SN 319,789. Pub. 6–16–70. Filed 2–24–69.

897,804. APAC. Systomation Inc. SN 321,337. Pub. 6–16–70. Filed 2–19–69.

897,805. DRYEDGE. Buckingham Graphics, Incorporated. SN 321,466. Pub. 6–16–70. Filed 3–12–69.

897,806. ALPHA TECH. Alpha Tech, Inc. SN 333,650. Pub. 6–16–70. Filed 7–28–69.

897,807. USE-PACK. VWR United Corporation. SN 335,092. Pub. 6–16–70. Filed 8–11–69.

897,808. KAL-STAT-D. Kalvar Corporation. SN 335,233. Pub. 6–16–70. Filed 8–13–69.

897,809. SIZEMATIC. Alexander Drafting Equipment Co. SN 337,416. Pub. 6–16–70. Filed 9–8–69.

897,810. GRANDAMO. Agfa-Gevaert Aktiengesellschaft. SN 340,749. Pub. 6–16–70. Filed 10–15–69.

897,811. TEL TAK. Monsanto Company. SN 344,126. Pub. 6–16–70. Filed 11–20–69.

897,812. DEA AND DESIGN. Pioneer Engineering and Manufacturing Company. SN 346,774. Pub. 6–16–70. Filed 12–19–69.

897,813. EDUPUTER. Programming Sciences Corporation. SN 351,387. Pub. 6–16–70. Filed 2–16–70.

897,814. RCA. RCA Corporation. SN 355,320. Pub. 6–16–70. Filed 3–30–70.

897,815. RCA (LOGO) RCA Corporation. SN 355,321. Pub. 6–16–70. Filed 3–30–70.

Class 27 — Horological Instruments

897,816. LITTLE NURSE. World Wide Watch Co., Inc. SN 316,358. Pub. 6–16–770. Filed 1–10–69.

897,817. ACHIEVEMENT. Gruen Industries, Inc. SN 343,548. Pub. 6–16–70. Filed 11–14–69.

897,818. PENTATHIN. Gruen Industries, Inc. SN 343,553. Pub. 6–16–70. Filed 11–14–69.

897,819. WALTHAMATIC. Waltham Watch Company. SN 343,781. Pub. 6–16–70. Filed 11–17–69.

Class 28 — Jewelry and Precious-Metal Ware

897,820. POMPADOUR. Pompadour Products, Limited. SN 335,775. Pub. 6–16–70. Filed 8–20–69.

897,821. GOLDEN HOUSTON. Oneida Ltd. SN 340,588. Pub. 6–16–70. Filed 10–13–69.

897,822. UNITY. David Dattner, Inc. SN 344,348. Pub. 6–16–70. Filed 11–24–69.

897,823. STUDIO GIRL. Studio Girl-Hollywood, Inc. SN 349,091. Pub. 6–16–70. Filed 1–20–70.

Class 29 — Brooms, Brushes, and Dusters

897,824. ECON-O-WIPES. Rock River Manufacturing Corporation. SN 342,181. Pub. 6–16–70. Filed 10–30–69.

Class 30 — Crockery, Earthenware, and Porcelain

897,790. (See Class 23 for this trademark.)

897,825. LORENZ HUTSCHEN REUTHER J-R AND DESIGN. Porzellanfabriken Lorenz Hutschenreuther Aktiengesellschaft. MULTIPLE CLASS (Classes 30 and 50). SN 323,620. Pub. 6–16–70. Filed 4–4–69.

Class 31 — Filters and Refrigerators

897,779. (See Class 23 for this trademark.)

897,826. STARBRIGHT. Silver Line Brake Lining Corporation, assignee of Chainveyor Corp. SN 228,330. Pub. 6–16–70. Filed 9–22–65.

897,827. ACROFLOW. Gelman Instrument Company. SN 335,448. Pub. 6–16–70. Filed 8–15–69.

Class 32 — Furniture and Upholstery

897,828. KOMPAKT. Sperry Rand Corporation. SN 293,410. Pub. 6–16–70. Filed 3–15–68.

897,829. DURADEIL. Electrohome Limited. SN 322,976. Pub. 6–16–70. Filed 3–27–69.

897,830. ART METAL. Art Metal-Knoll Corporation. SN 324,391. Pub. 6–16–70. Filed 4–14–69.

897,831. CROWN. Clopay Corporation. SN 324,409. Pub. 6–16–70. Filed 4–14–69.

897,832. ROYALRIDE. InterRoyal Corporation, by change of name from Royalmetal Corporation. SN 324,757. Pub. 6–16–70. Filed 4–16–69.

897,833. SECRET-SLEEPER. Serta Associates, Inc., assignee of American Manufacturing Company, Inc. SN 327,344. Pub. 3–10–70. Filed 5–15–69.

897,834. ELBO. Gene S. Tepper, d.b.a. Elbo Products. SN 342,766. Pub. 6–16–70. Filed 11–5–69.

Class 33 — Glassware

897,835. TURAN. Klöckner-Schott Glasfaser GmbH. SN 322,598. Pub. 6–16–70. Filed 3–24–69.

897,836. TURBOGLASS. Indiana Glass Company. SN 328,301. Pub. 6–16–70. Filed 5–26–69.

897,837. WATCHGUARD. PPG Industries, Inc. SN 351,592. Pub. 6–16–70. Filed 2–17–70.

Class 34 — Heating, Lighting, and Ventilating Apparatus

897,735. (See Class 21 for this trademark.)

897,740. (See Class 21 for this trademark.)

897,838. ALLWELD. Allweld Equipment Corporation. SN 299,743. Pub. 6–16–70. Filed 6–5–68.

897,839. NOXIDE. Allweld Equipment Corporation. SN 299,744. Pub. 6–16–70. Filed 6–5–68.

897,840. H.P.E. CO. Chemetron Corporation. MULTIPLE CLASS (Classes 34 and 44). SN 313,219. Pub. 6–16–70. Filed 11–29–68.

897,841. HUMID ALL AND DESIGN. Bergen County Service Co. SN 324,122. Pub. 6–16–70. Filed 4–10–69.

897,842. COMFORT-PAC AND DESIGN. Hagle, Inc. SN 332,943. Pub. 6–16–70. Filed 7–18–69.

Class 36 — Musical Instruments and Supplies

897,843. OLD STAGE ETC. AND DESIGN. William David Rogers, d.b.a. Old Stage Records. SN 334,254. Pub. 6–16–70. Filed 8–1–69.

897,844. MISCELLANEOUS DESIGN. MCA Inc. SN 349,777. Pub. 6–16–70. Filed 1–27–70.

897,845. ESP. Superscope, Inc., SN 352,535. Pub. 6–16–70. Filed 2–26–70.

Class 37 — Paper and Stationery

897,756. (See Class 22 for this trademark.)

897,846. EDIFLEX. American Maize-Products Company. SN 303,489. Pub. 6–16–70. Filed 7–24–68.

897,847. QUIK-PIC. William G. Pendill. SN 306,587. Pub. 6–16–70. Filed 9–4–68.

897,848. DRAGON. The Lynn Pacific Corporation. SN 308,706. Pub. 6–16–70. Filed 10–2–68.

897,849. REST-BAK. Boorum & Pease Company. SN 335,422. Pub. 6–16–70. Filed 8–15–69.

897,850. WHISPER. Statler Tissue Corp. SN 337,838. Pub. 6–16–70. Filed 9–12–69.

897,851. ARTROL AND DESIGN. Tape, Inc. SN. 340,621. Pub. 6–16–70. Filed 10–13–69.

897,852. HOT WHEELS. Mattel, Inc. SN 341,329. Pub. 6–16–70. Filed 10–22–69.

897,853. ZIP-WRAP. The Dow Chemical Company. SN 341,373. Pub. 6–16–70. Filed 10–22–69.

897,854. CAMP WRITES AND TEEPEE DESIGN. Wm. Goff Whitworth and Berneice Z. Whitworth, d.b.a. Bee Zee Originals. SN 341,969. Pub. 6–16–70. Filed 10–28–69.

897,855. DATA-MOUNT. Beekley Corporation. SN 342,820. Pub. 6–16–70. Filed 11–6–69.

897,856. SOFT-COTE. Scott Paper Company. SN 345,023. Pub. 6–16–70. Filed 12–1–69.

897,857. COPY COUNT. Writer's Craft Systems. SN 345,403. Pub. 6–16–70. Filed 12–4–69.

897,858. CRAFTSET. Writer's Craft Systems. SN 345,405. Pub. 6–16–70. Filed 12–4–69.

897,859. TRANSOFAX. Columbia Ribbon and Carbon Manufacturing Co., Inc. SN 345,600. Pub. 6–16–70. Filed 12–8–69.

897,860. "SCRATCH-ETCH." Nathan Polsky, d.b.a. Scratch-Art Co. SN 346,647. Pub. 6–16–70. Filed 12–18–69.

897,861. TRAKLYFE. Diebold Incorporated. SN 347,592. Pub. 6–16–70. Filed 1–2–70.

897,862. ATTACHE. K.C. Pen Co., Inc. SN. 350,271. Pub. 6–16–70. Filed 2–2–70.

897,863. KLEENEX LITTLE TRAVELERS. Kimberly-Clark Corporation. SN 352,030. Pub. 6–16–70. Filed 2–24–70.

Class 38 — Prints and Publications

897,756. (See Class 22 for this trademark.)

897,864. PLAIN TALK. Farm Business Council, Inc., d.b.a. The Picture Publications. SN 278,887. Pub. 6–16–70. Filed 8–23–67.

897,865. TREE DESIGN. Litchfield Park Properties. SN 304,362. Pub. 6–16–70. Filed 8–5–68.

897,866. FEED STANDARD'S QUALITY PREMIXES AND DESIGN. Standard Chemical Manufacturing Company. SN 307,243. Pub. 6–16–70. Filed 9–12–68.

897,867. MANAGEMENT & OPERATIONS. American Stock Exchange. SN 330,344. Pub. 6–16–70. Filed 6–18–69.

897,868. MOMENT OF TRUTH. Technic, Inc. SN 331,658. Pub. 6–16–70. Filed 7–2–69.

897,869. AUDIENCE. Hill Publishing Company, Inc. SN 340,146. Pub. 6–16–70. Filed 10–8–69.

897,870. RED BOOK LICENSE AND TITLE LAWS. National Market Reports, Inc. SN 340,583. Pub. 6–16–70. Filed 10–13–69.

897,871. NATIVITY-ART. Elmcraft, Inc., d.b.a. E-C Art. SN 342,588. Pub. 6–16–70. Filed 11–4–69.

897,872. UNITED TECHNICAL PUBLICATIONS AND DESIGN. United Technical Publications, Inc. SN 342,602. Pub. 6–16–70. Filed 11–4–69.

897,873. AVAIL A NEWS. Availability, Inc. SN 345,588. Pub. 6–16–70. Filed 12–8–69.

897,874. COMMERCIAL EXPANSION REPORTER AND DESIGN. Herbert A. Ireland, d.b.a. Prospector Research Services. SN 345,953. Pub. 6–16–70. Filed 12–11–69.

897,875. AB AND DESIGN. Solomon M. Malkin. SN 349,875. Pub. 6–16–70. Filed 1–28–70.

897,876. AQUARIUS PRESS. Ferdinand Roten, Incorporated. SN 350,306. Pub. 6–16–70. Filed 2–2–70.

897,877. POL AND DESIGN. Poster Originals Ltd. SN 350,402. Pub. 6–16–70. Filed 2–3–70.

897,878. MANY MOODS. Sears, Roebuck and Co. SN 351,543. Pub. 6–16–70. Filed 2–16–70.

Class 39 — Clothing

897,632. (See Class 3 for this trademark.)

897,879. COLLEGE HALL. College Hall Fashions, Inc. SN 275,036. Pub. 6–16–70. Filed 6–29–67.

897,880. HILL TOPPS AND DESIGN. American Self Service Stores, Inc., d.b.a. Hill Bros. SN 313,644. Pub. 6–16–70. Filed 12–5–68.

897,881. MEDLINE. Medline Industries, Inc. SN 318,077. Pub. 6–16–70. Filed 1–31–69.

897,882. DE CALQUER. Bernstein & Sons Shirt Corporation. SN 331,009. Pub. 6–16–70. Filed 6–26–69.

897,883. MOON BASE. Wellco Enterprises, Inc. SN 337,111. Pub. 6–16–70. Filed 9–4–69.

897,884. BAR C AND DESIGN. Chadbourn Inc. SN 338,538. Pub. 6–16–70. Filed 9–22–69.

897,885. SOUVEN-YEAR. Beatrice Foods Co. SN 340,730. Pub. 6–16–70. Filed 10–15–69.

897,886. FASHION GAL. New Process Company. SN 341,686. Pub. 6–16–70. Filed 10–24–69.

897,887. LEM. Donmoor, Inc. SN 342,238. Pub. 6–16–70. Filed 10–31–69.

897,888. MUSKI. Pyramid Trading Corporation. SN 343,161. Pub. 6–16–70. Filed 11–10–69.

897,889. VANILURE. V. F. Corporation. SN 344,042. Pub. 6–16–70. Filed 11–19–69.

897,890. VAPOR-ELLA. Vapor-Ella Shower or Raincap Inc. SN 344,270. Pub. 6–16–70. Filed 11–21–69.

897,891. SIREN. Uniroyal, Inc. SN 344,473. Pub. 6–16–70. Filed 11–24–69.

897,892. WEMANA. Wembley Industries, Inc. SN 345,696. Pub. 6–16–70. Filed 12–8–69.

897,893. TRIC-O-PLUS. Maidenform, Inc. SN 346,348. Pub. 6–16–70. Filed 12–16–69.

897,894. SALVATION. Thomson Company. SN 347,127. Pub. 6–16–70. Filed 12–24–69.

897,895. GAYLARK. Ultra Smart Hosiery Co., Inc. SN 347,658. Pub. 6–16–70. Filed 1–2–70.

897,896. SCATTER GUNNER. E. I. Anderson. SN 353,247. Pub. 6–16–70. Filed 3–6–70.

897,897. LOVE 'N STUFF. Nat Jolton Company. SN 353,701. Pub. 6–16–70. Filed 3–11–70.

897,898. PROVINCETOWN AND DESIGN. Judy Bond, Inc. SN 353,817. Pub. 6–16–70. Filed 3–12–70.

897,899. HANDSOME HANDS. Consolidated Foods Corporation. SN 353,818. Pub. 6–16–70. Filed 3–12–70.

897,900. PANTEENS. Maidenform, Inc. SN 353,956. Pub. 6–16–70. Filed 3–13–70.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

897,901. TOUCHE. Victor B. Handal & Bro. Inc. SN 324,454. Pub. 6–16–70. Filed 4–14–69.

897,902. KLEEN-WRAP. Pextile, Inc. SN 326,257. Pub. 6–16–70. Filed 5–2–69.

897,903. G. Mercer Industries, Inc. SN 332,502. Pub. 6–16–70. Filed 7–14–69.

897,904. SILDUKA, Klopman Mills, Inc. SN 341,322. Pub. 6–16–70. Filed 10–22–69.

897,905. SPATTER. Klopman Mills, Inc. SN 341,323. Pub. 6–16–70. Filed 10–22–69.

897,906. UTOPIA. Klopman Mills, Inc. SN 341,324. Pub. 6–16–70. Filed 10–22–69.

897,907. COBWEB SHEER. Klopman Mills, Inc. SN 341,325. Pub. 6–16–70. Filed 10–22–69.

897,908. MILLICORD. Deering Milliken, Inc. SN 347,684. Pub. 6–16–70. Filed 1–5–70.

897,909. TURPSICORD. Deering Milliken, Inc. SN 347,685. Pub. 6–16–70. Filed 1–5–70.

897,910. LUXPOINT. E. T. Barwick Industries, Inc. SN 349,110. Pub. 6–16–70. Filed 1–21–70.

897,911. NIGUEL. E. T. Barwick Industries, Inc. SN 349,113. Pub. 6–16–70. Filed 1–21–70.

897,912. SPANISH TRACE. E. T. Barwick Industries, Inc. SN 349,123. Pub. 6–16–70. Filed 1–21–70.

897,913. TEXTRA. E. T. Barwick Industries, Inc. SN 349,125. Pub. 6–16–70. Filed 1–21–70.

897,914. TRIPLE TEX. E. T. Barwick Industries, Inc. SN 349,126. Pub. 6–16–70. Filed 1–21–70.

897,915. UNISPHERE. E. T. Barwick Industries, Inc. SN 349,127. Pub. 6–16–70. Filed 1–21–70.

897,916. VELLMAR. E. T. Barwick Industries, Inc. SN 349,129. Pub. 6–16–70. Filed 1–21–70.

897,917. MANY MOODS. Sears, Roebuck and Co. SN 351,542. Pub. 6–16–70. Filed 2–16–70.

897,918. LIVING THEMES. E. T. Barwick Industries, Inc. SN 352,711. Pub. 6–16–70. Filed 3–2–70.

897,919. ECONOMO. E. T. Barwick Industries, Inc. SN 352,712. Pub. 6–16–70. Filed 3–2–70.

897,920. SPIKETUFT II. E. T. Barwick Industries, Inc. SN 352,714. Pub. 6–16–70. Filed 3–2–70.

Class 44 — Dental, Medical, and Surgical Appliances

897,840. (See Class 34 for this trademark.)

897,921. STERICLOTH. Medline Industries, Inc. SN 317,857. Pub. 6–16–70. Filed 1–29–69.

897,922. ULTRALUM. Sybron Corporation. SN 328,910. Pub. 6–16–70. Filed 6–2–69.

897,923. POISE. Kimberly-Clark Corporation. SN 331,909. Pub. 6–16–70. Filed 7–7–69.

897,924. MISCELLANEOUS DESIGN. Harco Electronics Ltd. SN 337,304. Pub. 6–16–70. Filed 9–8–69.

897,925. BELT-AIRE. American Optical Corporation. SN 338,027. Pub. 6–16–70. Filed 9–16–69.

Class 45 — Soft Drinks and Carbonated Waters

897,926. SILOUET. H. P. Hood & Sons, Inc., d.b.a. H. P. Hood & Sons. SN 284,305. Pub. 10–21–69. Filed 11–7–67.

897,927. SHOP-RITE. Wakefern Food Corporation. SN 297,464. Pub. 9–16–69. Filed 5–6–68.

Class 46 — Foods and Ingredients of Foods

897,633. (See Class 4 for this trademark.)

897,968. MISCELLANEOUS DESIGN (JAPANESE CHARACTERS), Ajinomoto Kabushiki Kaisha, d.b.a. Ajinomoto Co., Inc. SN 341,344. Pub. 6–16–70. Filed 10–22–69.

897,928. JOHNSTON'S. Ward Foods, Inc. SN 195,904. Pub. 3–9–65. Filed 6–17–64.

897,929. SHOP-RITE. Wakefern Food Corporation. SN 298,768. Pub. 9–9–69. Filed 5–21–68.

897,930. SUN BURST. Sunline, Inc. SN 303,547. Pub. 6–16–70. Filed 7–24–68.

897,931. BRILL ROYAL SWEET AND DESIGN. H. C. Brill Company, Inc. SN 305,626. Pub. 6–16–70. Filed 8–21–68.

897,932. BRILL E-Z-DO AND DESIGN. H. C. Brill Company, Inc. SN 305,627. Pub. 6–16–70. Filed 8–21–68.

897,933. BRILL DAN-DE-DO AND DESIGN. H. C. Brill Company, Inc. SN 305,628. Pub. 6–16–70. Filed 8–21–68.

897,934. PITO PITO. Lheritier Argentina, Sociedad Anonima Industrial y Comercial. SN 369,267. Pub. 6–16–70. Filed 10–9–68.

897,935. BLUE MOON. Foremost-McKesson, Inc. SN 315,222. Pub. 6–16–70. Filed 12–26–68.

897,936. SUGAR LOAF. Oxford Pickle Co., Inc. SN. 318,454. Pub. 6–16–70. Filed 2–5–69.

897,937. C Q CHOICE FEEDS. Choice Quality Mills, Inc. SN 321,383. Pub. 6–16–70. Filed 3–11–69.

897,938. TREE TOP. Tree Top, Inc. SN 322,928. Pub. 6–16–70. Filed 3–26–69.

897,939. GOBBLEDECRUNCH. General Mills, Inc. SN 324,012. Pub. 6–16–70. Filed 4–9–69.

897,940. ASTRO-HOT DOGS. Herrud & Company. SN 327,623. Pub. 6–16–70. Filed 5–19–69.

897,941. ICED BRAZILS. Fenn Bros., Inc. SN 331,607. Pub. 6–16–70. Filed 7–2–69.

897,942. ONE TASTE IS WORTH A THOUSAND WORDS AND DESIGN. The Cheese Joint, Inc. SN 336,975. Pub. 6–16–70. Filed 9–4–69.

897,943. MINUTE MAID. The Coca-Cola Company. SN 337,130. Pub. 6–16–70. Filed 9–5–69.

897,944. MALPEQUE. Malpeque Shrimps, Limited. SN 337,133. Pub. 6–16–70. Filed 9–5–69.

897,945. CAP'N SYD'S. Cap'n Syd's. SN 339,993. Pub. 6–16–70. Filed 10–7–69.

897,946. LOVE LINKS. The Donruss Company. SN 340,257. Pub. 6–16–70. Filed 10–9–69.

897,947. COOKING MACHINE. Pet Incorporated. SN 342,211. Pub. 6–16–70. Filed 10–31–69.

897,948. FEMME. General Mills, Inc. SN 342,360. Pub. 6–16–70. Filed 11–3–69.

897,949. GOLDEN VALLEY. General Mills, Inc. SN 342,361. Pub. 6–16–70. Filed. 11–3–69.

897,950. GOOD DOG. General Mills, Inc. SN 342,362. Pub. 6–16–70. Filed 11–3–69.

897,951. PROSPER. General Mills, Inc. SN 342,364. Pub. 6–16–70. Filed 11–3–69.

897,952. MAN (DESIGN). General Mills, Inc. SN 346,803. Pub. 6–16–70. Filed 12–22–69.

897,953. SLIM JIM. General Mills, Inc. SN 346,805. Pub. 6–16–70. Filed 12–22–69.

897,954. SNOW QUEEN AND LABEL DESIGN. North Sea Packing Co. A/S. SN 347,526. Pub. 6–16–70. Filed 12–31–69.

897,955. BEEF TENDERETTE. Gus Glaser Meats, Inc. SN 347,606. Pub. 6–16–70. Filed 1–2–70.

897,956. DOLLY MADISON KITCHEN BRAND. Dolly Madison Industries, Inc. SN 348,000. Pub. 6–16–70. Filed 1–8–70.

897,957. GILT BILT. Ralston Purina Company. SN 350,190. Pub. 6–16–70. Filed 2–2–70.

897,958. PEARL OF THE COVE. Fotomat Corporation. SN 350,656. Pub. 6–16–70. Filed 2–6–70.

897,959. TIMBERJAX. General Mills, Inc. SN 352,417. Pub. 6–16–70. Filed 2–26–70.

897,960. SHAKAROOS. General Mills, Inc. SN 352,418. Pub. 6–16–70. Filed 2–26–70.

897,961. MISCELLANEOUS DESIGN. Cavenham Confectionery Limited. SN 353,951. Pub. 6–16–70. Filed 3–13–70.

897,962. BIGGIES. The Quaker Oats Company. SN 354,267. Pub. 6–16–70. Filed 3–17–70.

897,963. TLC. Holly Farms Poultry Industries, Inc. SN 338,476. Pub. 2–24–70. Filed 9–22–69.

Class 47 — Wines

897,964. COLD MACKERAL. Michigan Wineries, Inc. SN 324,300. Pub. 6–16–70. Filed 4–11–69.

897,965. MATEUS. Sociedade Comercial dos Vinhos de Mesa de Portugal, Limitada. SN 330,424. Pub. 6–16–70. Filed 6–18–69.

897,966. LION AND MEDAL (DESIGN). Paul Masson, Inc., d.b.a. Paul Masson and Paul Masson Vineyards. SN 339,907. Pub. 6–16–70. Filed 10–6–69.

897,967. AQUARIUS. Canandaigua Industries Co., Inc. SN 353,128. Pub. 6–16–70. Filed 3–5–70.

897,968. (See Class 46 for this trademark.)

Class 48 — Malt Beverages and Liquors

897,969. SEMEUSE AND DESIGN. Brasseries Semeuse S.A. SN 310,537. Pub. 6–16–70. Filed 10–25–68.

Class 49 — Distilled Alcoholic Liquors

897,970. CONFORMATION OF A DISTINCTIVE CONTAINER. Charles Tanqueray & Co. Limited. SN 271,857. Pub. 6–16–70. Filed 5–18–67.

897,971. JOHN HANCOCK. Mar-Salle Chicago Co., d.b.a. Jerome Co. SN 296,333. Pub. 6–16–70. Filed 4–23–68.

897,972. TOURNEAU ET FILS. Zimmermann's Cut Rate Liquor Store, Inc. SN 297,911. Pub. 6–16–70. Filed 5–10–68.

897,973. POLMOS KRUPNIK ETC. AND DESIGN. Przedsiebiorstwo Handlu Zagranicznego "Agros." SN 318,098. Pub. 6–16–70. Filed 1–31–69.

Class 50 — Merchandise Not Otherwise Classified

897,825. (See Class 30 for this trademark.)

897,974. JIGGLY BUTTONS. Topps Chewing Gum, Incorporated. SN 334,501. Pub. 6–16–70. Filed 8–5–69.

897,975. MEMORY. Uniroyal, Inc. SN 341,713. Pub. 6–16–70. Filed 10–24–69.

897,976. ULTRA-VISION. Harold Soper Advertising. SN 342,073. Pub. 6–16–70. Filed 10–29–69.

897,977. AKRO. The Akro Corporation. SN 342,382. Pub. 6–16–70. Filed 11–3–69.

897,978. MANY MOODS. Sears, Roebuck and Co. SN 351,544. Pub. 6–16–70. Filed 2–16–70.

897,979. DEESCO. Horace C. Hudgins, d.b.a. Driver Education Equipment & Supply Co. SN 351,757. Pub. 6–16–70. Filed 2–19–70.

Class 51 — Cosmetics and Toilet Preparations

897,639. (See Class 6 for this trademark.)

897,980. DE RAUCH. Les Parfums Madeleine de Rauch, Societe Anonyme. SN 298,610. Pub. 6–16–70. Filed 3–16–70.

897,981. PEARL DROPS. Cameo, Inc. SN 308,361. Pub. 6–16–70. Filed 9–27–68.

897,982. ODORONO. Chesebrough-Pond's Inc. SN 342,412. Pub. 6–16–70. Filed 11–3–69.

897,983. BRONZE BARON. A. W. Curtis Laboratories, Inc. SN 353,132. Pub. 6–16–70. Filed 3–5–70.

Class 52 — Detergents and Soaps

897,633. (See Class 4 for this trademark.)

897,646. (See Class 6 for this trademark.)

897,984. ZOF DESIGN. Walter Corporation. SN 314,004. Pub. 6–16–70. Filed 12–9–68.

897,985. SUPER PLUMB. Plumbcraft Manufacturing Corporation. SN 325,384. Pub. 6–16–70. Filed 4–23–69.

897,986. T TOPCO AND DESIGN. Topco Associates, Inc. SN 342,600. Pub. 6–16–70. Filed 11–4–69.

897,987. BORASOPE. Delmar Products, Inc., d.b.a. Yankee Chemical Company. SN 346,606. Pub. 6–16–70. Filed 12–18–69.

897,988. DR CARE. Century Creations, Incorporated. SN 354,347. Pub. 6–16–70. Filed 3–18–70.

Service Marks

Class 100 — Miscellaneous

897,989. ISA INSTRUMENT SOCIETY OF AMERICA AND DESIGN. Instrument Society of America. SN 310,664. Pub. 6–16–70. Filed 10–28–68.

897,990. ISA INSTRUMENT SOCIETY OF AMERICA AND DESIGN. Instrument Society of America. SN 310,666. Pub. 6–16–70. Filed 10–28–68.

Class 101 — Advertising and Business

897,991. FR AND DESIGN. Foote, Cone & Belding, Inc. SN 311,854. Pub. 6–16–70. Filed 11–12–68.

897,992. DIAL-A-LETTER. Hal Butts, Jr. SN 322,960. Pub. 6–16–70. Filed 3–27–69.

897,993. DIAL-A-LETTER AND PHONE DESIGN. Hal Butts, Jr. SN 322,961. Pub. 6–16–70. Filed 3–27–69.

897,994. MR. TONY'S AND DESIGN. Mr. Tony's Submarine Shops, Inc. SN 324,731. Pub. 6–16–70. Filed 4–16–69.

897,995. THE MEATING PLACE AND DESIGN. MPA Franchise Systems, Inc. SN 325,617. Pub. 6–16–70. Filed 4–25–69.

897,996. GL (DESIGN). Gilbert Laboratories. SN 335,820. Pub. 6–16–70. Filed 8–21–69.

897,997. MISCELLANEOUS DESIGN. Numerax, Inc. SN 340,989. Pub. 6–16–70. Filed 10–17–69.

897,998. NUMERAX. Numerax, Inc. SN 340,990. Pub. 6–16–70. Filed 10–17–69.

897,999. CS (DESIGN). Computer Services Corporation. SN 341,575. Pub. 6–16–70. Filed 10–20–69.

898,000. THE INCREDITABLE CARD. Computer Services Corporation. SN 341,576. Pub. 6–16–70. Filed 10–20–69.

898,001. MORE OF EVERYTHING FOR COLLEGE STUDENTS . . . WITH MORE TO COME. Computer Services Corporation. SN 341,577. Pub. 6–16–70. Filed 10–20–69.

898,002. CAMCO. Camco Systems, Inc. SN 345,747. Pub. 6–16–70. Filed 12–10–69.

898,003. CAPIS. Fisher-Stevens, Inc. SN 349,797. Pub. 6–16–70. Filed 1–28–70.

Class 102 — Insurance and Financial

898,004. "DOUBLE-E." First Federal Savings and Loan Association of Peoria. SN 311,853. Pub. 6–16–70. Filed 11–12–68.

898,005. EXECREDIT. The Marina City Bank. SN 326,665. Pub. 6–16–70. Filed 5–7–69.

Class 105 — Transportation and Storage

898,006. ICS (DESIGN). Integrated Container Service, Inc. SN 318,194. Pub. 6–16–70. Filed 2–3–69.

Class 106 — Material Treatment

898,007. FLAME SPRAY, INC. AND DESIGN. Flame Spray, Inc. SN 318,412. Pub. 6–16–70. Filed 2–5–69.

Class 107 — Education and Entertainment

898,008. MISCELLANEOUS DESIGN. Harbinger Productions, Inc. SN 337,226. Pub. 6–16–70. Filed 9–8–69.

898,009. SIXTEENTH AVENUE, SOUTH. WSM, Incorporated. SN 347,800. Pub. 6–16–70. Filed 1–5–70.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

898,010. Lomey Manufacturing Corp., Deer Park, N.Y. SN 329,496. Filed P.R. 6-9-69; Am. S.R. 6-10-70.

POLY-N-LACE

For Flower Bouquet Holders (Int. Cl. 20).
First use Jan. 15, 1969.

Class 10 — Fertilizers

898,011. AG Marketing Corporation, Indianapolis, Ind. SN 312,411. Filed P.R. 11-18-68; Am. S.R. 6-8-70.

PRODUCTS FROM NATURE FOR AGRICULTURE

For Fertilizer Supplements (Int. Cl. 1).
First use Oct. 2, 1968.

Class 21 — Electrical Apparatus, Machines, and Supplies

898,012. Rohn Manufacturing Co., Peoria, Ill. SN 286,845. Filed P.R. 12-13-67; Am. S.R. 9-19-69.

TWIST-ON

For Wire Stand-Offs (Int. Cl. 9).
First use Nov. 15, 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

898,013. Niagara Machine & Tool Works, Buffalo, N.Y. SN 319,625. Filed P.R. 2-19-69; Am. S.R. 5-22-70.

E Z A-JUST

For Power Press Roll Feed Mechanisms (Int. Cl. 7).
First use Nov. 1, 1968.

Class 38 — Prints and Publications

898,014. Keller Publishing Corporation, New York, N.Y. SN 317,846. Filed P.R. 1-29-69; Am. S.R. 5-22-70.

SOFT DRINX MARKET PLACE

For Section of a Monthly Magazine (Int. Cl. 16).
First use Jan. 5, 1969.

898,015. Growth Fund Research, Inc., Long Beach, Calif. SN 324,192. Filed P.R. 4-10-69; Am. S.R. 5-18-70.

GROWTH FUND GUIDE

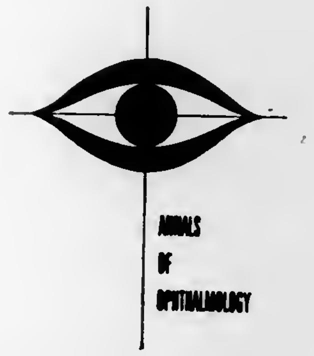
For Booklet (Int. Cl. 16).
First use January 1969.

898,016. University Galleries Inc., New York, N.Y. SN 327,986. Filed P.R. 5-21-69; Am. S.R. 6-15-70.

ART NOW:NEW YORK

For Periodical Art Brochure Containing Reproductions of Works of Art (Int. Cl. 16).
First use Jan. 22, 1969.

898,017. The Annal of Ophthalmology Publishing Corporation, Chicago, Ill. SN 329,677. Filed P.R. 6-11-69; Am. S.R. 5-19-70.



For Bi-Monthly Journal (Int. Cl. 16).
First use Apr. 19, 1969.

898,018. L. Ron Hubbard, Washington, D.C. SN 334,771. Filed P.R. 8-8-69; Am. S.R. 6-1-70.

SCIENTOLOGY

For Bulletins, Books and Newsletters (Int. Cl. 16).
First use Nov. 21, 1951.

Service Marks

Class 100 — Miscellaneous

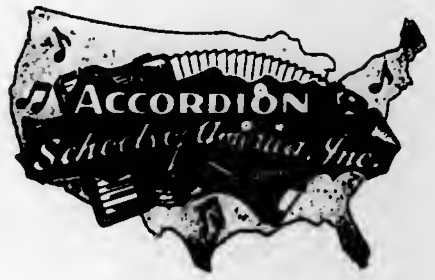
898,019. Boething Treeland Nursery Co., Woodland Hills, Calif. SN. 319,692. Filed P.R. 2-20-69; Am. S.R. 5-8-70.

GROWERS TO YOU

For Plant Nursery Services (Int. Cl. 42).
First use at least as early as June 1960.

Class 107 — Education and Entertainment

898,020. Accordion Schools of America, Inc., Colorado Springs, Colo. SN 297,156. Filed P.R. 5-2-68; Am. S.R. 5-7-70.



For Providing Instruction in Accordion Playing (Int. Cl. 41).
First use Apr. 17, 1967.

TRADEMARK REGISTRATIONS RENEWED

34,870. "COLUMBIA TEA" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 7-10-19.
77,144. STANDARD. Cl. 26 (Int. Cl. 9). 3-15-10.
78,142. TH IN CIRCLE WITHIN A DIAMOND. Cl. 42 (Int. Cl. 24). 5-31-10.
78,553. TON-CAP. Cl. 13 (Int. Cl. 6). 6-21-10.
79,056. CATERPILLAR. Cl. 23 (Int. Cl. 12). 8-2-10.
79,806. OLD MANSION. Cl. 46 (Int. Cl. 30). 10-11-10.
268,713. GRADAL. Cl. 26 (Int. Cl. 9). 3-18-30.
270,823. COTY. Cl. 51 (Int. Cl. 3). 5-13-30.
271,195. CARNADINE. Cl. 51 (Int. Cl. 3). 5-27-30.
272,007. SANONE. Cl. 39 (Int. Cl. 25). 6-24-30.
272,605. STANDARD RATE & DATA SERVICE. Cl. 38 (Int. Cl. 16). 7-8-30.
272,616. REPRESENTATION OF EAGLE MOUNTED ON GLOBE. Cl. 23 (Int. Cls. 7 and 12). 7-8-30.
273,320. CROWNZOL. Cl. 15 (Int. Cl. 4). 7-29-30.
273,494. ALLEGRO. Cl. 4 (Int. Cls. 3 and 8). 8-5-30.
273,735. KERFS. Cl. 37 (Int. Cl. 24). 8-12-30.
275,113. ANGORADOWN. Cl. 42 (Int. Cl. 25). 9-16-30.
276,106. NU-SPEDE. Cl. 16 (Int. Cl. 2). 10-7-30.
276,507. "COMFORT-TEX" AND DESIGN. Cl. 39 (Int. Cl. 25). 10-21-30.
276,692. REPRESENTATION OF HERALDIS SHIELD AND DESIGN. Cl. 37 (Int. Cl. 16). 10-28-30.
276,693. LT. Cl. 37 (Int. Cl. 16). 10-28-30.
276,779. 48-B. Cl. 21 (Int. Cl. 9). 10-28-30.
277,070. "LOOK FOR THE DIAMOND" AND DESIGN. Cl. 4 (Int. Cl. 7). 11-4-30.
277,171. LUXOL. Cl. 6 (Int. Cl. 2). 11-11-30.
277,190. COTTON PICKER. Cl. 44 (Int. Cl. 5). 11-11-30.
277,684. SKY KING. Cl. 27 (Int. Cl. 14). 11-25-30.
277,737. INDUSTRIAL ARTS AND VOCATIONAL EDUCATION. Cl. 38 (Int. Cl. 16). 11-25-30.
277,893. TEXACO TOPICS. Cl. 38 (Int. Cl. 16). 12-2-30.
278,257. PEERLESS. Cl. 35 (Int. Cl. 12). 12-9-30.
278,389. "VE&FCO." AND DESIGN. Cl. 38 (Int. Cl. 16). 12-16-30.
443,886. BYCLA AND DESIGN. Cl. 46 (Int. Cl. 29). 4-4-50.
443,958. PARAMINS. Cl. 15 (Int. Cl. 4). 5-2-50.
444,108. DESIGN OF MAN. Cl. 46 (Int. Cl. 29). 8-1-50.
444,301. UNITABLE. Cl. 23 (Int. Cl. 7). 11-7-50.
444,313. BUCCANEER SLACKS. Cl. 39 (Int. Cl. 25). 11-14-50.
444,330. BETSY ROSS. Cl. 27 (Int. Cl. 14). 11-21-50.
511,704. MRT. Cl. 18 (Int. Cl. 5). 6-28-49.
521,737. LIGHTHOUSE. Cl. 52 (Int. Cl. 3). 3-7-50.
521,835. LUSTRO-WARE. Cl. 2 (Int. Cl. 21). 3-7-50.
521,853. THE MODERNAIRE. Cl. 21 (Int. Cl. 9). 3-7-50.
521,984. TOUCH DOWN. Cl. 37 (Int. Cl. 16). 3-7-50.
522,798. PLENTY COPY AND DESIGN. Cl. 11 (Int. Cl. 16). 3-21-50.
523,367. RIVOLI. Cl. 39 (Int. Cl. 25). 4-4-50.
523,377. STAG. Cl. 39 (Int. Cl. 25). 4-4-50.
523,453. LITTLE MILL DONNA AND DESIGN. Cl. 39 (Int. Cl. 25). 4-4-50.
524,098. PB AND DESIGN. Cl. 11 (Int. Cl. 16). 4-18-50.
524,423. ADC. Cl. 21 (Int. Cl. 21). 4-25-50.
524,673. R AND DESIGN. Cl. 48 (Int. Cl. 32). 5-2-50.
524,674. ORANJEBOOM. Cl. 48 (Int. Cl. 32). 5-2-50.
524,738. CORONET. Cl. 49 (Int. Cl. 33). 5-2-50.
524,993. DESIRE. Cl. 39 (Int. Cl. 25). 5-9-50.
525,416. BECKWITH AND DESIGN. Cl. 46 (Int. Cl. 29). 5-23-50.
526,007. UNION. Cl. 52 (Int. Cl. 3). 6-6-50.
526,063. BREMIL. Cl. 46 (Int. Cl. 5). 6-6-50.
526,121. NORWICH. Cl. 46 (Int. Cls. 29 and 30). 6-6-50.
526,171. READY-POWER. Cl. 31 (Int. Cl. 11). 6-6-50.
526,270. AMERICAN GOLFER. Cl. 39 (Int. Cl. 25). 6-13-50.
526,286. EVERBRITE. Cl. 40 (Int. Cl. 21). 6-13-50.
526,422. HUMBER. Cl. 19 (Int. Cl. 12). 6-13-50.
526,496. MARBO AND DESIGN. Cl. 13 (Int. Cl. 25). 6-20-50.
526,573. XYLITE AND DESIGN. Cl. 6 (Int. Cl. 1). 6-20-50.
526,648. MISS AMERICA. Cl. 28 (Int. Cl. 14). 6-20-50.
526,687. MILIBIS. Cl. 18 (Int. Cl. 5). 6-20-50.
526,702. NATIONAL. Cl. 13 (Int. Cl. 6). 6-20-50.
526,749. KNITWELL. Cl. 39 (Int. Cl. 25). 6-27-50.
526,825. ALADDIN. Cl. 34 (Int. Cl. 11). 6-27-50.
526,857. ALBULAC. Cl. 46 (Int. Cl. 29). 6-27-50.
527,001. MOTO BUG. Cl. 19 (Int. Cl. 12). 6-27-50.
527,029. OPERATOR 25 Cl. 101 (Int. Cl. 35). 6-27-50.
527,100. DRAINATOR. Cl. 13 (Int. Cl. 11). 7-4-50.
527,235. DURIDIUM. Cl. 23 (Int. Cl. 8). 7-4-50.
527,383. LIFESAVER. Cl. 42 (Int. Cl. 24). 7-4-50.
527,386. MALLINSON. Cl. 42 (Int. Cl. 24). 7-4-50.
527,387. MOLLY O. Cl. 42 (Int. Cl. 24). 7-4-50.
527,414. STANDARD & POORS INDUSTRY SURVEYS. Cl. 35 (Int. Cl. 16). 7-4-50.
527,491. DOREL'S. Cl. 46 (Int. Cl. 30). 7-11-50.
527,503. COUCH. Cl. 21 (Int. Cl. 9). 7-11-50.
527,542. UNICO PREMIUM AND DESIGN. Cl. 23 (Int. Cl. 8). 7-11-50.
527,633. SLEEPERETTE. Cl. 105 (Int. Cl. 39). 7-11-50.
527,645. DUCKBILL AND DESIGN. Cl. 23 (Int. Cl. 7). 7-18-50.
527,688. BUNESIA. Cl. 18 (Int. Cl. 5). 7-18-50.
527,767. VARSITY. Cl. 44 (Int. Cl. 10). 7-18-50.
527,945. KEMI-KAL. Cl. 12 (Int. Cl. 1). 7-18-50.
527,950. NO-GALL. Cl. 12 (Int. Cl. 17). 7-18-50.
527,976. OFFICIAL. Cl. 39 (Int. Cl. 25). 7-25-50.
527,977. THE STETSON SHOE AND DESIGN. Cl. 39 (Int. Cl. 25). 7-25-50.
528,007. BARTON'S BONBONNIER. Cl. 46 (Int. Cls. 29 and 30). 7-25-50.
528,359. TWISTAGUIDE. Cl. 21 (Int. Cl. 9). 8-1-50.
528,585. MOR-FILM. Cl. 15 (Int. Cl. 4). 8-8-50.
528,646. HIGHLAND NECTAR. Cl. 49 (Int. Cl. 33). 8-8-50.
528,697. MIKE'S. Cl. 22 (Int. Cl. 28). 8-8-50.
528,721. WHEEL-EZY. Cl. 19 (Int. Cl. 12). 8-8-50.
528,760. MORAX. Cl. 6 (Int. Cl. 4). 8-8-50.
529,443. SOPHOMORE. Cl. 37 (Int. Cl. 16). 8-22-50.
529,464. BARBIC. Cl. 8 (Int. Cl. 34). 9-22-50.
529,491. SYNDROX. Cl. 18 (Int. Cl. 5). 8-22-50.
529,552. COACH DESIGN. Cl. 39 (Int. Cl. 25). 8-22-50.
529,766. SCOTCHLITE AND DESIGN. Cl. 50 (Int. Cl. 16). 8-29-50.
530,080. THE DICK MAILER. Cl. 23 (Int. Cl. 7). 9-5-50.
530,111. SHOP SMITH. Cl. 23 (Int. Cl. 7). 9-5-50.
530,282. JENKINS BROS. Cl. 35 (Int. Cl. 17). 9-5-50.
530,300. GOLDEN WEED. Cl. 101 (Int. Cl. 1). 9-5-50.
530,514. BOSTON. Cl. 13 (Int. Cl. 25). 9-12-50.
530,743. AQUA-FLAKES. Cl. 5 (Int. Cl. 1). 9-12-50.
530,812. FLEXO. Cl. 50 (Int. Cl. 16). 9-19-50.
531,063. NETASAP. Cl. 6 (Int. Cl. 1). 9-19-50.
531,137. JEWEL AND DESIGN. Cl. 13 (Int. Cl. 25). 9-26-50.
531,186. SERV AGEN AND DESIGN. Cl. 46 (Int. Cls. 29 and 30). 9-26-50.
531,224. XACTO. Cl. 1 (Int. Cl. 17). 9-26-50.
531,261. HILLCO. Cl. 46 (Int. Cl. 29). 9-26-50.
531,379. HYDRO-PLASTIC. Cl. 12 (Int. Cl. 19). 9-26-50.
531,392. CALL FOR PHILIP MORRIS. Cl. 17 (Int. Cl. 34). 9-26-50.
531,421. LEAF. Cl. 46 (Int. Cl. 30). 10-31-50.
531,610. CVCO. Cl. 23 (Int. Cl. 7). 10-10-50.
531,674. S AND DESIGN. Cl. 21 (Int. Cl. 9). 10-10-50.
532,426. GLENEAGLES. Cl. 39 (Int. Cl. 25). 10-24-50.
533,141. MULTIPATH. Cl. 21 (Int. Cl. 9). 11-7-50.
533,184. AUTOLITE. Cl. 23 (Int. Cl. 7). 11-7-50.
533,220. M AND DESIGN. Cl. 105 (Int. Cl. 39). 11-7-50.
533,249. GOLDBRICK. Cl. 6 (Int. Cl. 11). 11-7-50.
533,271. ORTHO LAWN OROOM AND DESIGN. Cl. 10 (Int. Cl. 1). 11-7-50.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

883,131. TARZOL. Cl. 6. 12–30–69.

Section 8

The following registrations issued July 14, 1964

772,992. BEEBE 76. Cl. 1.
772,994. RESILO-WRAP. Cl. 1.
772,995. ROPLAST. Cl. 1.
772,996. ROLUBE. Cl. 1.
773,008. CRASH-DASH. Cl. 1.
773,024. MER-SORB. Cl. 6.
773,031. HI-SPERSE. Cl. 6.
773,032. CY-KIL. Cl. 6.
773,042. GROVIN. Cl. 6.
773,045. NOLED. Cl. 6.
773,047. VANZAK-WL. Cl. 6.
773,048. VANZAK-RA. Cl. 6.
773,052. PHOENIX. Cl. 9.
773,053. COT-O-MULCH. Cl. 10.
773,059. E-Z LIVING HOMES AND DESIGN. Cl. 12.
773,060. LOCKWALL. Cl. 12.
773,061. INSEL SONIC. Cl. 12.
773,068. SPINTIE. Cl. 13.
773,069. MS AND DESIGN. Cl. 14.
773,081. SOLU-TRI. Cl. 18.
773,090. MATEB. Cl. 18.
773,091. NICATONE. Cl. 18.
773,103. WALKING STICK. Cl. 19.
773,105. CARRI-ETTE. Cl. 19.
773,107. S (DESIGN). Cl. 19.
773,114. IN-COM. Cl. 21.
773,116. TRANS ELECTRONIC ETC. BUGSNATCHER AND DESIGN. Cl. 21.
773,122. STRATABALANCE AND DESIGN. Cl. 21.
773,123. OXYDAIRE. Cl. 21.
773,125. LO-GEAR. Cl. 22.
773,126. ONE ARM BANDIT. Cl. 22.
773,127. FASHION QUEEN. Cl. 22.
773,128. TRAIL KING. Cl. 22.
773,129. DOBAN. Cl. 22.
773,130. MULTI-BAR. Cl. 22.
773,131. DELUXE READING CORP. AND DESIGN. Cl. 22.
773,133. TRESSY. Cl. 22.
773,134. TEE-TOTALER. Cl. 22.
773,135. WHICH ONE. Cl. 22.
773,136. NOC OUT AND DESIGN. Cl. 22.
773,137. KINDER CLAY. Cl. 22.
773,142. THE MIGHTY KONG. Cl. 22.
773,143. PUTTN BUTTN. Cl. 22.
773,149. WIKIUP. Cl. 22.
773,155. BUDDY-BOY. Cl. 23.
773,157. CHANGE-O-MATIC. Cl. 23.
773,159. BLUE LAKE. Cl. 23.
773,170. GL AND DESIGN. Cl. 28.
773,172. MOONOPALS AND DESIGN. Cl. 28.
773,173. SUN O PALS AND DESIGN. Cl. 28.
773,174. GOBLET (DESIGN). Cl. 28.
773,176. JH. Cl. 28.
773,178. ROFCO. Cl. 29.
773,180. REFRESHERATOR. Cl. 31.
773,181. DESIGN OF A BIRD. Cl. 31.
773,188. HI-WAVE ETC. AND DESIGN. Cl. 34.
773,194. PAPERFLAME. Cl. 34.
773,195. TOTER-KIT. Cl. 35.
773,201. ELECTRONIC PROCUREMENT. Cl. 38.
773,203. TOCSIN. Cl. 38.
773,214. THE TEN MINUTE REPORT AND DESIGN. Cl. 38.
773,215. ISA JOURNAL. Cl. 38.
773,216. REXALLITE REPORTER AND DESIGN. Cl. 38.
773,218. LITO AND DESIGN. Cl. 38.
773,222. PRIM. Cl. 39.
773,227. FIT-TOGETHERS. Cl. 39.
773,228. TEN-TWENTY 1020 COLLECTION. Cl. 39.
773,229. FIRST FAMILY HOSIERY FOR YOUR FIRST FAMILY. Cl. 39.
773,231. TOPILANO. Cl. 39.
773,232. SLIM-LASTIC. Cl. 39.
773,237. ROYALE. Cl. 40.
773,244. C & C WILSHIRE CLUB 7–11. Cl. 45.
773,246. SCHOONERS. Cl. 46.
773,261. CAN D LITE AND DESIGN. Cl. 46.
773,264. ALEMAGNA PANETTONE AND DESIGN. Cl. 46.
773,266. HOT STUFF. Cl. 46.
773,272. FLAVOS AND DESIGN. Cl. 46.
773,273. PEPPI-PRONTO. Cl. 46.
773,276. MELL-A-MAID AND DESIGN. Cl. 46.
773,277. MIZRACH. Cl. 46.
773,281. PAN WHIZ. Cl. 46.
773,284. OUTSIDE-INSIDE. Cl. 46.
773,288. SQUARONI. Cl. 46.
773,295. ROUND 'WICH. Cl. 46.
773,297. WANTED. Cl. 46.
773,310. GREEN FISH. Cl. 49.
773,313. IMPERIAL. Cl. 50.
773,314. SIGN-O-MATIC. Cl. 50.
773,319. LONGLIFE. Cl. 50.
773,320. U.S.C. Cl. 50.
773,321. VENDADCO. Cl. 50.
773,322. MILLIONAIRE. Cl. 51.
773,323. MILLIONAIRESS. Cl. 51.
773,324. COUTURINE. Cl. 51.
773,329. BIO GELE. Cl. 51.
773,336. CROSSBOW. Cl. 51.
773,345. RAU'S LAYMANS' CLEANER. Cl. 52.
773,347. GOBI. Cl. 52.
773,353. COLOR-POO. Cl. 52.
773,355. KARPETREET. Cl. 52.
773,358. POWERHOUSE. Cl. 52.
773,360. KLENZADE AND DESIGN. Cl. 52.
773,367. HAPI ETC. IN CIRCLE AND DESIGN. Cl. 101.
773,368. HAPI ETC. AND DESIGN. Cl. 101.
773,378. BIC BUDGET INSURANCE CENTER AND DESIGN. Cl. 102.
773,379. DOLLARCARE. Cl. 102.
773,384. ARKRAFT. Cl. 103.
773,386. MONITORED MOVEMENT. Cl. 105.
773,387. AEI-PAC. Cl. 105.
773,389. SCENOPHONIC. Cl. 107.
773,390. ACTION SALES CLINICS. Cl. 107.
773,394. FLORISTS' TELEGRAPH DEL ETC. AND DESIGN. Cl. 200.

Section 18

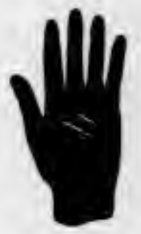
108,708. MME IRENE. Cl. 39. 2–22–16.
805,703. COFFEE BREAK. Cl. 46. 3–15–66.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 12 — Construction Materials

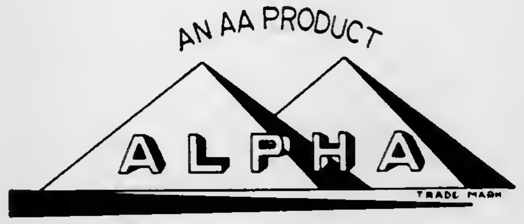
79,097. Aug. 9, 1910. D. Anderson & Son, Limited, Belfast, Ireland. Pub. by D. Anderson & Son, Limited, Stretford, Manchester, England.



For Roofing, Sarking, Sheathing and Lining Felts (Int. Cl. 19).

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

275,444. Sept. 23, 1930. The Alpha Tank & Sheet Metal Mfg. Co., St. Louis, Mo. Pub. by Alpha Tank & Metals Manufacturing Company, St. Louis, Mo.



For Base-Metal Kettles, Pans, and Funnels, Especially Adapted for Use in Filling Tanks and Tank Cars (Int. Cl. 21).

Class 18 — Medicines and Pharmaceutical Preparations

216,468. Aug. 10, 1926. W. W. Burgess, d.b.a. Carter Cystene Co. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.

Cystex

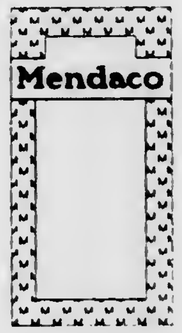
For Medicine for Kidney and Bladder Disorders.

239,462. Mar. 6, 1928. The Knox Company, Kansas City, Mo. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.

Diotex

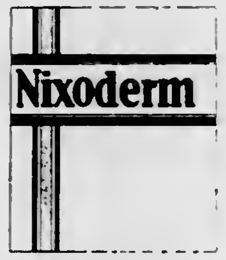
For Medicine for Indigestion.

343,133. Feb. 9, 1937. The Knox Company, Los Angeles, Calif. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.



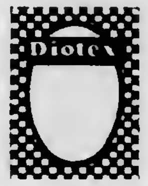
For Preparation Used in and for the Treatment of Asthma, Hay Fever and Related Pulmonary Conditions.

343,134. Feb. 9, 1937. The Knox Company, Los Angeles, Calif. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.



For Preparations Used in and for the Treatment of Ring Worm, Fungus Conditions of the Skin and Feet, and Other Skin Affections.

347,902. July 13, 1937. The Knox Company, Los Angeles, Calif. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.



For Medicated Tablets Indicated in and for the Treatment of Acidosis, Disorders of the Stomach and Digestive Tract, Hyperacidity and the Relief of Such Pathological or Physical Conditions as May Result From Excess Acidity of the Stomach.

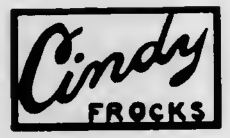
394,958. May 5, 1942. The Knox Company, Los Angeles, Calif. Pub. by Cooper-Knox International, Inc., d.b.a. The Knox Company, Los Angeles, Calif.

CHINAROID

For Preparation Used in and for the Treatment and To Relieve the Irritation and Pain of Bunions, etc.

Class 39 — Clothing

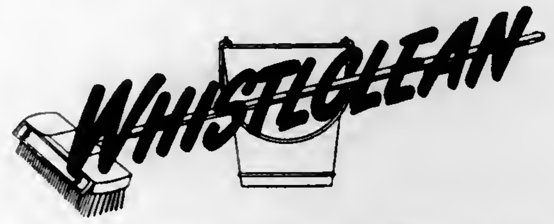
328,885. Oct. 8, 1935. Rosenau Brothers, Inc., Philadelphia, Pa. Pub. by registrant.



For Children's Dresses, Rompers, and Play Suits.

Class 52 — Detergents and Soaps

404,748. Dec. 21, 1943. American Oil and Disinfectant Corporation, New York, N.Y. Pub. by Alex C. Fergusson Company, Philadelphia, Pa.



For Chemical Cleaning Compound—Namely, a Detergent for General Industrial Cleaning Purposes.

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AMP Inc., Harrisburg, Pa. 897,731, pub. 6–16–70. Cl. 21.
Accordion Schools of America, Inc., Colorado Springs, Colo. 898.020. Cl. 107.
Advanced Research Corp., Washington, D.C. 897,803, pub. 6–16–70. Cl. 26.
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American Montessori Society, Inc., The, New York, N.Y. 897,756, pub. 6–16–70. Multiple Class (Classes 22, 37, and 38).
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American Self Service Stores, St. Louis, Mo. 897,880, pub. 6–16–70. Cl. 39.
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Bandy Laboratories, Inc., Temple, Tex. 897,639, pub. 6–16–70. Multiple Class (Classes 6, 15, 18 and 51).
Bartlett & Bickley Ltd., London, England. 529,464, ren. 9–1–70. Cl. 8.
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Castrol Ltd., London, England. 897,678, pub. 6–16–70. Cl. 15.
Caterpillar Tractor Co., Peoria, Ill. 79,056, ren. 9–1–70. Cl. 23.
Cavenham Confectionery Ltd., Hopkinsville, Ky. 897,961, pub. 6–16–70. Cl. 46.
Celanese Corp., New York, N.Y. 897,615, pub. 6–9–70. Cl. 1.
Century Creations, Inc., Venice, Calif. 897,988, pub. 6–16–70. Cl. 52.
Chadbourn Inc., Charlotte, N.C. 897,884, pub. 6–16–70. Cl. 39.
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  Silver Line Brake Lining Corp.
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Cheese Joint, Inc., The, Sodus, N.Y. 897,942, pub. 6–16–70. Cl. 46.
Chemetron Corp., Chicago, Ill. 897,840, pub. 6–16–70. Multiple Class (Classes 34 and 44).
Chesebrough-Pond's Inc., New York, N.Y. 897,982, pub. 6–16–70. Cl. 51.
Chevron Chemical Co., San Francisco, Calif. 533,271, ren. 9–1–70. Cl. 10.
Chicago Wheel & Mfg. Co., Chicago, Ill. 897,747, pub. 6–16–70. Cl. 21.
Choice Quality Mills, Inc., Newberry, S.C. 897,937, pub. 6–16–70. Cl. 46.
Ciba Ltd., Basel, Switzerland. 897,651, pub. 6–16–70. Cl. 6.
Clark & Vicario Corp., North Tarrytown, N.Y. 531,610, ren. 9–1–70. Cl. 23.
Clevite Corp., Cleveland, Ohio. 897,726, pub. 6–16–70. Cl. 21.
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Coach's Sporting Goods Corp., Marion, Ind. 773,130, canc. Cl. 22.

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Cooper-Knox International, Inc., d.b.a. The Knox Co., Los Angeles, Calif. 239,462, 12(c) pub. 9–1–70. Cl. 18.
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Crane Engineering Co., Inc., Hallandale, Fla. 897,677, pub. 6–16–70. Cl. 15.
Creative Merchandising, Inc., Denver, Colo. 897,790, pub. 6–16–70. Multiple Class (Classes 23 and 30).
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Curtis, A. W., Laboratories, Inc., Detroit, Mich. 897,983, pub. 6–16–70. Cl. 51.
Darr, David W., Winston-Salem, N.C. 897,763, pub. 6–16–70. Cl. 22.
Dattner, David, Inc., Buffalo, N.Y. 897,822, pub. 6–16–70. Cl. 28.
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General Mills, Inc., Minneapolis, Minn. 897,959–60, pub. 6–16–70. Cl. 46.
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Grace, W. R., & Co., New York, N.Y. 531,421, ren. 9–1–70. Cl. 46.
Grace, W. R., & Co., Cambridge, Mass. 897,650, pub. 6–16–70. Cl. 6.
Graphic Sciences, Inc., Danbury, Conn. 897,730, pub. 6–16–70. Cl. 21.
Great Bear Spring Co., New York, N.Y. 773,180, canc. Cl. 31.
Greene Nursery & Landscape Co., Inc., Memphis, Tenn. 897,780, pub. 6–16–70. Cl. 23.
Greene, Tweed & Co., Inc., d.b.a. Greene, Tweed & Co., North Wales, Pa. 897,609, pub. 6–16–70. Cl. 1.
Gross Mfg. Co., Inc., Monrovia, Calif. 773,195, canc. Cl. 35.
Growth Fund Research, Inc., Long Beach, Calif. 898,015. Cl. 38.
Gruen Industries, Inc., New York, N.Y. 897,817–18, pub. 6–16–70. Cl. 27.
HCA Industries, Inc., New York, N.Y. 529,552, ren. 9–1–70. Cl. 39.
Haertel, Norman E., d.b.a. Gamison, Haertel, New York, N.Y. 773,176, canc. Cl. 28.
Hagle, Inc., Winter Park, Fla. 897,842, pub. 6–16–70. Cl. 34.
Hall, R. D., Mfg., Inc., Sun Valley, Calif. 897,718, pub. 6–16–70. Cl. 19.
Halsingborgs Lithografiska Aktiebolag, Halsingborg, Sweden. 773,218, canc. Cl. 38.

Handel, Victor B., & Bro., Inc., New York, N.Y. 897,901, pub. 6–16–70. Cl. 42.
Harbinger Productions, Inc., New York, N.Y. 898,008, pub. 6–16–70. Cl. 107.
Harco Electronics Ltd., Winnipeg, Manitoba, Canada. 897,924, pub. 6–16–70. Cl. 44.
Hardcast, Inc., Dallas, Tex. 897,669, pub. 6–16–70. Cl. 12.
Hardmuth, L. & C., Inc., Bloomsbury, N.J. 529,443, ren. 9–1–70. Cl. 37.
Hardwood Corp. of America, Asheville, N.C. 897,666, pub. 6–16–70. Cl. 12.
Hayes-Sammons Chemical Co., Mission, Tex. 773,031, canc. Cl. 6.
Henry Mfg. Co., Inc., Bowling Green, Ohio. 897,779, pub. 6–16–70. Multiple Class (Classes 23 and 31).
Hercules Inc., Wilmington, Del., from The Upjohn Co., Kalamazoo, Mich. 897,711, pub. 6–16–70. Cl. 18.
Herrud & Co., Grand Rapids, Mich. 897,940, pub. 6–16–70. Cl. 46.
Hickey-Freeman Co., Rochester, N.Y. 773,231, canc. Cl. 39.
Hill, H. G., Co., Nashville, Tenn. 531,261, ren. 9–1–70. Cl. 46.
Hill Publishing Co., Inc., Boston, Mass. 897,869, pub. 6–16–70. Cl. 38.
Hiraoka New York, Inc., New York, N.Y. 897,743, pub. 6–16–70. Cl. 21.
Hitachi, Ltd. Manufacturers, Tokyo, Japan. 897,725, pub. 6–16–70. Cl. 21.
Hoffman Electronics Corp., Los Angeles, Calif. 773,114, canc. Cl. 21.
Hoffman-La Roche Inc., Nutley, N.J. 897,704, pub. 6–16–70. Cl. 18.
Holly Farm Poultry Industries, Inc., Wilkesboro, N.C. 897,963, pub. 2–24–70. Cl. 46.
Hood, H. P., & Sons, Inc., d.b.a. H. P. Hood & Sons, Boston, Mass. 897,926, pub. 10–21–69. Cl. 45.
Hopp Press, Inc., The, New York, N.Y. 530,812, ren. 9–1–70. Cl. 50.
Hopp Press, Inc., The, New York, N.Y. 531,224, ren. 9–1–70. Cl. 1.
Horstman Mfg. Co., Inc., Monrovia, Calif. 897,788, pub. 6–16–70. Cl. 23.
House of Worsted-Tex. Inc., Philadelphia, Pa. 276,507, ren. 9–1–70. Cl. 39.
Hubbard, L. Ron, Washington, D.C., 898,018. Cl. 38.
Huber, J. M., Corp., Borger, Tex. 897,617, pub. 6–16–70. Cl. 1.
Hudgins, Horace C., d.b.a. Driver Education Equipment & Supply Co., Jacksonville, Fla. 897,979, pub. 6–16–70. Cl. 50.
Humber Ltd., Coventry, England. 526,422, ren. 9–1–70. Cl. 19.
Husky Briquetting, Inc., Cody, Wyo. 897,613, pub. 6–16–70. Cl. 1.
Icore Electro-Plastics, Inc., Sunnyvale, Calif. 897,744, pub. 6–16–70. Cl. 21.
Imperial Homes, Inc., Griffin, Ga. 773,059, canc. Cl. 12.
Indiana Glass Co., Dunkirk, Ind. 897,836, pub. 6–16–70. Cl. 33.
Industrial Filter & Pump Mfg. Co., Cicero, Ill. 773,032, canc. Cl. 6.
Industrie A.-G. Allegro, Emmenbrucke, Switzerland. 273,494, ren. 9–1–70. Cl. 4.
Instrument Society of America, Pittsburgh, Pa. 773,215, canc. Cl. 38.
Instrument Society of America, Pittsburgh, Pa. 897,989–90, pub. 6–19–70. Cl. 100.
Integrated Container Service, Inc., New York, N.Y. 898,006, pub. 6–16–70. Cl. 105.
International Pulp Sales Co., New York, N.Y. 897,614, pub. 6–16–70. Cl. 1.
International Scanatron Systems Corp., Wyandanch, N.Y. 897,727, pub. 6–16–70. Cl. 21.
InterRoyal Corp., New York, from Royalmetal Corp., New York, N.Y. 897,832, pub. 6–16–70. Cl. 32.
Ireland, Herbert A., d.b.a. Prospector Research Services, Waltham, Mass. 897,874, pub. 6–16–70. Cl. 38.
Jayco, Inc., Goshen, Ind. 897,716, pub. 6–16–70. Cl. 19.
Jenkins Bros., New York, N.Y. 530,282, ren. 9–1–70. Cl. 35.
Johns-Manville Corp., New York, N.Y. 897,652, pub. 6–16–70. Cl. 6.
Johnson & Johnson, New Brunswick, N.J. 527,767, ren. 9–1–70. Cl. 44.
Johnson & Johnson, New Brunswick, N.J. 897,645, pub. 6–16–70. Cl. 6.
Jolton, Nat, Co., Los Angeles, Calif. 897,897, pub. 6–16–70. Cl. 39.
K. C. Pen Co., Inc., Brooklyn, N.Y. 897,862, pub. 6–16–70. Cl. 37.
Kalvar Corp., New Orleans, La. 897,808, pub. 6–16–70. Cl. 26.
Kansas Wholesale Grocery Co., Coffeyville, Kans. 773,261, canc. Cl. 46.
Kee Lox Mfg. Co., Rochester, N.Y. 524,098, ren. 9–1–70. Cl. 11.
Keller Publishing Corp., New York, N.Y. 898,014. Cl. 38.
Kendall Co., The, Walpole, Mass. 277,190, ren. 9–1–70. Cl. 44.
Kerns United Corp., Philadelphia, Pa. 528,585, ren. 9–1–70. Cl. 15.
Kimberly-Clark Corp., Neenah, Wis. 273,735, ren. 9–1–70. Cl. 37.
Kimberly-Clark Corp., Neenah, Wis. 897,923, pub. 6–16–70. Cl. 44.
Kimberly-Clark Corp., Neenah, Wis. 897,863, pub. 6–16–70. Cl. 37.
Kleinert, I. B., Rubber Co., New York, N.Y. 773,237, canc. Cl. 40.
Klockner-Schott Glasfaser G.m.b.H., Emsinghofstr. 75, Germany. 897,835, pub. 6–16–70. Cl. 33.
Klopman Mills, Inc., Rockleigh, N.J. 527,386–7, ren. 9–1–70. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J .897,904–7, pub. 6–16–70. Cl. 42.
Knox Co., The, Los Angeles, Calif. 347,902, 12(c) pub. 9–1–70. Cl. 18.
Krautkramer, Dr. J. U. H., Cologne-Klettenberg, Germany. 897,801, pub. 6–16–70. Cl. 26.
Kresge, S. S., Co., Detroit, Mich. 897,757, pub. 6–16–70. Cl. 22.
Kresge, S. S., Co., Detroit, Mich. 897,717, pub. 6–16–70. Cl. 19.
La Guardia, Savio T., d.b.a. Savio T. La Guardia Co., Kingston, N.Y. 773,273, canc. Cl. 46.
Landon, Inc., San Carlos, Calif. 773,159, canc. Cl. 23.
Lawrence, F. J., Co., Montclair, N.J. 773,336, canc. Cl. 51.
Les Papeteries de Genval, Genval, Belgium. 897,724, pub. 6–16–70. Cl. 20.
Les Parfums Madeleine de Rauch Societe Anonyme, Paris, France. 897,980, pub. 6–16–70. Cl. 51.
Lestoil Products, Inc., Holyoke, Mass. 773,358, canc. Cl. 52.
Lheritier Argentina, Sociedad Anonima Industrial y Comercial, Santa Fe, Argentina. 897,934, pub. 6–16–70. Cl. 46.
Lighter Corp. of America, Newington, Conn. 773,155, canc. Cl. 23.
Litchfield Park Properties, Litchfield Park, Ariz. 897,865, pub. 6–16–70. Cl. 38.
Litton Precision Products, Inc., Beverly Hills, Calif. 528,359, ren. 9–1–70. Cl. 21.
Lomey Mfg. Corp., Deer Park, N.Y. 898,010. Cl. 2.
Lorenz, Curtis L., d.b.a. Lorenz Enterprises, Modesto, Calif. 897,774, pub. 6–16–70. Cl. 23.
Luminerals Ltd., New York, N.Y. 773,172–3, canc. Cl. 28.
Lynn Pacific Corp., The, Union City, Calif. 897,848, pub. 6–16–70. Cl. 37.
MCA Inc., Universal City, Calif. 897,844, pub. 6–16–70. Cl. 36.
MPA Franchise Systems, Inc., Fort Lauderdale, Fla. 897,995, pub. 6–16–70. Cl. 101.
MacArthur, Charles P., d.b.a. The Dick Mailer, Buffalo, N.Y. 530,080, ren. 9–1–70. Cl. 23.
McCarter, Charles W., Imperial, Mo. 897,723, pub. 6–16–70. Cl. 19.
McCord, William, Pasadena, Tex. 773,090, canc. Cl. 18.
McElrath-Stewart Lumber Co., Milledgeville, Ga. 773,384, canc. Cl. 103.
Macmillan Ring-Free Oil Co., Inc., New York, N.Y. 897,679, pub. 6–16–70. Cl. 15.
McNeil Laboratories, Inc., Fort Washington, Pa. 527,688, ren. 9–1–70. Cl. 18.
McNeil Laboratories, Inc., Fort Washington, Pa. 529,491, ren. 9–1–70. Cl. 18.
Madame Irene, New York, N.Y. 108,708, canc. Cl. 39.
Magna American Corp., Raymond, Miss. 530,111, ren. 9–1–70. Cl. 23.
Magnetic Controls Co., Minneapolis, Minn. 524,423, ren. 9–1–70. Cl. 21.
Maidenform, Inc., New York, N.Y. 897,893, pub. 6–16–70. Cl. 39.
Maidenform, Inc., New York, N.Y. 897,900, pub. 6–16–70. Cl. 39.
Major Pool Equipment Corp., Clifton, N.J. 897,670, pub. 6–16–70. Cl. 12.
Malkin, Solomon M., Newark, N.J. 897,875, pub. 6–16–70. Cl. 38.
Malpeque Shrimps, Ltd., Montreal, Quebec, Canada. 897,944, pub. 6–16–70. Cl. 46.
Marder, B. L., Co., Chicago, Ill. 526,496, ren. 9–1–70. Cl. 13.
Marder, B. L., Co., Chicago, Ill. 531,137, ren. 9–1–70. Cl. 13.
Marina City Bank, The, Chicago, Ill. 898,005, pub. 6–16–70. Cl. 102.
Mar-Salle Chicago, d.b.a. Jerome Co., Chicago, Ill. 897,971, pub. 6–16–70. Cl. 49.
Marx, Louis, & Co., Inc., New York, N.Y. 773,142, canc. Cl. 22.
Masson, Paul, Inc., d.b.a. Paul Masson and Paul Masson Vineyards, San Francisco, Calif. 897,966, pub. 6–16–70. Cl. 47.
Masterwares Corp., Columbus, Ind. 897,621, pub. 6–16–70. Cl. 2.
Mastic Corp., South Bend, Ind. 773,061, canc. Cl. 12.
Mattel, Inc., Hawthorne, Calif. 773,125, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 773,127, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 897,758–62, pub. 6–16–17. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 897,765–71, pub. 6–16–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 897,852, pub. 6–16–70. Cl. 37.
Maurey Mfg. Corp., Chicago, Ill. 897,772, pub. 6–16–70. Cl. 23.
Mebuco, Inc., Mansfield, Ohio. 773,136, canc. Cl. 22.
Mech-Tronics Corp.: *See*—
    Fansteel Inc.
Medline Industries, Inc., Evanston, Ill. 897,881, pub. 6–16–70. Cl. 39.
Medline Industries, Inc., Evanston, Ill. 897,921, pub. 6–16–70. Cl. 44.
Memorex Corp., Santa Clara, Calif. 897,720, pub. 6–16–70. Multiple Class (Classes 21 and 26).
Menasha Corp., Neenah, Wis. 897,626–7, pub. 6–16–70. Cl. 2.
Mercer Industries, Inc., New York, N.Y. 897,903, pub. 6–16–70. Cl. 42.
Merck & Co., Inc., Rahway, N.J. 773,024, canc. Cl. 6.
Michigan Wineries, Inc., Paw Paw, Mich. 897,964, pub. 6–16–70. Cl. 47.
Mid-States Life Insurance Co. of America, Evanston, Ill. 773,379, canc. Cl. 102.
Miller, W. A., Co., Inc., Oquossoc, Maine. 897,622, pub. 6–16–70. Cl. 2.

Mill Strip Products Co., Evanston, Ill. 773,069, canc. Cl. 14.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 529,766, ren. 9–1–70. Cl. 50.
Mishawaka Rubber Co., Inc., Mishawaka, Ind. 527,976, ren. 9–1–70. Cl. 39.
Mr. Tony's Submarine Shops, Inc., Southfield, Mich. 897,994, pub. 6–16–70. Cl. 101.
Mizrach Kosher Provisions, Inc., New York, N.Y. 773,277, canc. Cl. 46.
Monroe Mfg. Co., Inc., Monroe, La. 444,313, ren. 9–1–70. Cl. 39.
Monsanto Co., St. Louis, Mo. 897,811, pub. 6–16–70. Cl. 26.
Moore & Munger, Stamford, Conn. 528,760, ren. 9–1–70. Cl. 6.
Moran Towing Corp., New York, N.Y. 533,220, ren. 9–1–70. Cl. 105.
Morris, Philip, Inc., d.b.a. American Safety Razor Co., New York, N.Y. 527,235, ren. 9–1–70. Cl. 23.
Morris, Philip, Inc., New York, N.Y. 531,392, ren. 9–1–70. Cl. 17.
Morton International, Inc., Chicago, Ill. 897,643, pub. 6–16–70. Cl. 6.
Movilla, Inc., Minneapolis, Minn. 897,668, pub. 6–16–70. Cl. 12.
Mueller Electric Co., Cleveland, Ohio. 276,779, ren. 9–1–70. Cl. 21.
Multi-Clean Products, Inc., St. Paul, Minn. 773,355, canc. Cl. 52.
Multra-Gaurd, Inc., Rockville, Md. 897,746, pub. 6–16–70. Cl. 21.
Nathanson, Emanuel, d.b.a. K.I.K. Co., Bethlehem, Pa. 897,700, pub. 6–16–70. Cl. 18.
National Council on Smoking & Health Inc., New York, N.Y. 773,091, canc. Cl. 18.
National Lock Washer Co., The, North Branch, N.J. 526,702, ren. 9–1–70. Cl. 13.
National Market Reports, Inc., Chicago, Ill. 897,870, pub. 6–16–70. Cl. 38.
National Retail Lumber Dealers Association, Washington, D.C. 773,367–8, canc. Cl. 101.
National Statch & Chemical Corp., New York, N.Y. 530,743, ren. 9–1–70. Cl. 5.
New England Serum Co., Topsfield, Mass. 897,697, pub. 6–16–70. Cl. 18.
New Process Co., Warren, Pa. 897,886, pub. 6–16–70. Cl. 39.
Niagara Machine & Tool Works, Buffalo, N.Y. 898,013. Cl. 23.
North American Aviation, Inc., El Segundo, Calif. 773,107, canc. Cl. 19.
North American Rockwell Corp., Pittsburgh, Pa. 897,773, pub. 6–16–70. Cl. 23.
North American Rockwell Corp., Pittsburgh, Pa. 897,775, pub. 6–16–70. Cl. 23.
North Sea Packing Co. A/S, Stravanger, Norway. 897,954, pub. 6–16–70. Cl. 46.
Northwestern Golf Co., Chicago, Ill. 897,755, pub. 12–30–69. Cl. 22.
Numerax, Inc., Englewood Cliffs, N.J. 897,997–8, pub. 6–16–70. Cl. 101.
Nyman Mfg. Co., Providence, R.I. 897,623, pub. 6–16–70. Cl. 2.
Occidental Petroleum Corp., Los Angeles, Calif. 897,682–4, 6–16–70. Cl. 15.
Office Devices, Inc., St. Louis, Mo. 897,662, pub. 6–16–70. Cl. 11.
Ojibway Press, Inc., Duluth, Minn. 773,201, canc. Cl. 38.
Old Mansion, Inc., Richmond, Va. 79,806, ren. 9–1–70. Cl. 46.
Olson, Eugene, Milwaukee, Wis. 897,671, pub. 6–16–70. Cl. 12.
Oneida Ltd., Oneida, N.Y. 897,782–4, pub. 6–16–70. Cl. 23.
Oneida Ltd., Oneida, N.Y. 897,794–5, pub. 6–16–70. Cl. 23.
Oneida Ltd., Oneida, N.Y. 897,821, pub. 6–16–70. Cl. 28.
Oxford Pickle Co., Inc., Cambridge, Mass. 897,936, pub. 6–16–70. Cl. 46.
Oxytronic Corp., Van Nuys, Calif. 773,123, canc. Cl. 21.
PPG Industries, Inc., Pittsburgh, Pa. 897,837, pub. 6–16–70. Cl. 33.
Pacemaker Corp., Egg Harbor City, N.J. 897,720, pub. 6–16–70. Cl. 19.
Paint Producers Inc., St. Louis, Mo. 897,689, pub. 6–16–70. Cl. 16.
Pan American World Airways, Inc., New York, N.Y. 527,633, ren. 9–1–70. Cl. 105.
Pa-Poose Products Co., Inc., Gretna, La. 773,266, canc. Cl. 46.
Parks Mfg., Inc., Pompano Beach, Fla. 527,100, ren. 9–1–70. Cl. 13.
Patterson, Bernard A., d.b.a. Albulac Co., Chicago, Ill. 526,857, ren. 9–1–70. Cl. 46.
Patterson, C. J., C., Kansas City, Mo. 773,295, canc. Cl. 46.
Pemco Corp., Bluefield, W. Va. 897,737, pub. 6–16–70. Cl. 21.
Pendill, William G., Hinsdale, Ill. 897,847, pub. 6–16–70. Cl. 37.
Pennwalt Corp., Philadelphia, Pa. 897,687, pub. 6–16–70. Cl. 15.
Penron Associated Hosiery Mills, Inc., High Point, N.C. 773,229, canc. Cl. 39.
Perkin-Elmer Corp., The, Norwalk, Conn. 897,802, pub. 6–16–70. Cl. 26.
Pet Inc., St. Louis, Mo. 897,947, pub. 6–16–70. Cl. 46.
Pextile, Inc., Stoneville, N.C. 897,902, pub. 6–16–70. Cl. 42.
Pfizer, Chas., & Co., Inc.: *See*—
  Pfizer Inc.
Pfizer Inc., New York, N.Y. 270,823, ren. 9–1–70. Cl. 51.
Pfizer Inc., New York, N.Y. 271,195, ren. 9–1–70. Cl. 51.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 897,656, pub. 6–16–70. Cl. 6.
Philadelphia Quartz Co., Philadelphia, Pa. 897,655, pub. 6–16–70. Cl. 6.
Phillips Audio, Inc., Long Island City, N.Y. 897,739, pub. 6–16–70. Cl. 21.
Phillips Roxane, Inc., New York, N.Y. 897,713, pub. 6–16–70. Cl. 18.
Physico-Chemical Processes Ltd., London E. 1., England. 773,322-3, canc. Cl. 51.
Pillsbury Co., The, Minneapolis, Minn. 773,281, canc. Cl. 46.
Pioneer Engineering & Mfg. Co., Warren, Mich. 897,812, pub. 6–16–70. Cl. 26.
Pittston Co., The, New York, N.Y. 897,611, pub. 6–16–70. Cl. 1.
Planada Packers, Inc., Planada, Calif. 525,416, ren. 9–1–70. Cl. 46.
Plumbcraft Mfg. Corp., Bedford Heights, Ohio. 897,985, pub. 6–16–70. Cl. 52.
Polsky, Nathan, d.b.a. Scratch-Art Co., Olympia Fields, Ill. 897,860, pub. 6–16–70. Cl. 37.
Pompadour Products, Ltd., London, England. 897,820, pub. 6–16–70. Cl. 28.
Porzellanfabriken Lorenz Hutschenreuther Aktiengesellschaft, Selb, Bavaria, Germany. 897,825, pub. 6–16–70. Multiple Class (Classes 30 and 50).
Poster Originals Ltd., New York, N.Y. 897,877, pub. 6–16–70. Cl. 38.
Potlatch Forests, Inc., Lewiston, Idaho. 773,060, canc. Cl. 12.
Pratt Mfg. Corp., Milwaukee, Wis. 897,798, pub. 6–16–70. Cl. 23.
Price-Meyers Corp., Elkhart, Ind. 897,721, pub. 6–16–70. Cl. 19.
Prim Products, Inc., Newark, N.J. 773,222, canc. Cl. 39.
Prince Macaroni Mfg. Co., Lowell, Mass. 773,288, canc. Cl. 46.
Process Materials Corp., Carlstadt, N.J. 897,644, pub. 6–16–70. Cl. 6.
Programming Sciences Corp., New York, N.Y. 897,813, pub. 6–16–70. Cl. 26.
Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. 897,973, pub. 6–16–70. Cl. 49.
Puget Sound Salmon Egg Co., Inc., Seattle, Wash. 528,697, ren. 9–1–70. Cl. 22.
Purdue Frederick Co., The, Yonkers, N.Y. 897,714, pub. 6–16–70. Cl. 18.
Pyramid Trading Corp., Dallas, Tex. 897,888, pub. 6–16–70. Cl. 39.
Quaker Oats Co., The, Chicago, Ill. 897,962, pub. 6–16–70. Cl. 46.
RCA Corp., New York, N.Y. 897,814–15, pub. 6–16–70. Cl. 26.
Radair, Inc., Seattle, Wash. 897,745, pub. 6–16–70. Cl. 21.
Ralston Purina Co., St. Louis, Mo. 897,787, pub. 6–16–70. Cl. 23.
Ralston Purina Co., St. Louis, Mo. 897,957, pub. 6–16–70. Cl. 46.
Rapistan Inc., Grand Rapids, Mich. 528,721, ren. 9–1–70. Cl. 19.
Ready-Power Co., The, Detroit, Mich. 526,171, ren. 9–1–70. Cl. 31.
Reichhold-Albert-Chemie AG., Hamburg, Germany. 897,620, pub. 6–16–70. Cl. 1.
Reichhold Chemicals, Inc., White Plains, N.Y. 897,654, pub. 6–16–70. Cl. 6.
Reis, Robert, & Co., New York, N.Y. 523,377, ren. 9–1–70. Cl. 39.
Revelon, Inc., New York, N.Y. 773,324, canc. Cl. 51.
Rexall Drug and Chemical Co., Los Angeles, Calif. 773,216, canc. Cl. 38.
Rhodes Pharmacal Co., Inc., Chicago, Ill. 897,638, pub. 6–16–70. Cl. 6.
Richards Mfg. Co., Philadelphia, Pa. 897,738, pub. 6–16–70. Cl. 21.
Robins, A. H., Co., Inc., Richmond, Va. 897,696, pub. 6–16–70. Cl. 18.
Rock River Mfg. Corp., Janesville, Wis. 897,824, pub. 6–16–70. Cl. 29.
Rocket Power, Inc., Mesa, Ariz. 773,052, canc. Cl. 9.
Rofe, Marcel, d.b.a. Marcel Rofe Co., New York, N.Y. 773,178, canc. Cl. 29.
Rogers, William D., d.b.a. Old Stage Records, Nashville, Tenn. 897,843, pub. 6–16–70. Cl. 36.
Rohn Mfg. Co., Peoria, Ill. 898,012. Cl. 21.
Rosenau Bros., Inc., Philadelphia, Pa. 328,885, 12(c) pub. 9–1–70. Cl. 39.
Rotacts, Inc., Saddle Brook, N.J. 772,995–6, canc. Cl. 1.
Rotek Inc., Ravenna, Ohio. 897,796, pub. 6–16–70. Cl. 23.
Roten, Ferdinand, Inc., Baltimore, Md. 897,876, pub. 6–16–70. Cl. 38.
Rothmoor Corp., Chicago, Ill. 524,993, ren. 9–1–70. Cl. 39.
Royalmetal Corp.: *See*—
  InterRoyal Corp.
Royster Co., Norfolk, Va. 530,300, ren. 9–1–70. Cl. 10.
Roz, Inc., Rydal, Pa. 773,347, canc. Cl. 52.
Russell, Frank C., d.b.a. F. C. Russell Institute of Selling, Chestertown, Md. 773,390, canc. Cl. 107.
SFM Corp., Union, N.J. 897,778, pub. 6–16–70. Multiple Class (Classes 23 and 26).
Salsbury Laboratories, Charles City, Iowa. 897,698–9, pub. 6–16–70. Cl. 18.
Sandoz, Inc.: *See*—
  Sandoz-Wander, Inc.
Sandoz-Wander, Inc., from Sandoz, Inc., Hanover, N.J. 897,695, pub. 6–16–70. Cl. 18.
Sani Pine Products Co., Inc., Great Neck, N.Y. 897,612, pub. 6–16–70. Cl. 1.
Saxone, Lilley & Skinner (Holdings) Ltd., London, England. 272,007, ren. 9–1–70. Cl. 39.
Saxone, Lilley & Skinner (Holdings) Ltd., London, England. 532,426, ren. 9–1–70. Cl. 39.
Schenley Industries, Inc., New York, N.Y. 524,738, ren. 9–1–70. Cl. 49.

Schwabe, Irwin B., Co., Inc., New York, N.Y. 773,228, canc. Cl. 39.
Scott Paper Co., Philadelphia, Pa. 897,856, pub. 6–16–70. Cl. 37.
Sears, Roebuck & Co., Chicago, Ill. 897,628, pub. 6–16–70. Cl. 2.
Sears, Roebuck & Co., Chicago, Ill. 897,660, pub. 6–16–70. Cl. 8.
Sears, Roebuck & Co., Chicago, Ill. 897,752, pub. 6–16–70. Cl. 21.
Sears, Roebuck and Co., Chicago, Ill. 897,878, pub. 6–16–70. Cl. 38.
Sears, Roebuck and Co., Chicago, Ill. 897,917, pub. 6–16–70. Cl. 42.
Sears, Roebuck and Co., Chicago, Ill. 897,978, pub. 6–16–70. Cl. 50.
Serta Associates, Inc., Chicago, Ill., from American Mfg. Co., Inc., Landover, Md. 897,833, pub. 3–10–70. Cl. 32.
Serv-Agen Corp., Philadelphia, Pa. 531,186, ren. 9–1–70. Cl. 46.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 897,753, pub. 12–30–69. Cl. 22.
Shell Oil Co., New York, N.Y. 773,042, canc. Cl. 6.
Sherwin-Williams Co., The, Cleveland, Ohio. 276,106, ren. 9–1–70. Cl. 16.
Shop-Matic Industries, Inc., Milwaukee, Wis. 897,791, pub. 6–16–70. Cl. 23.
Sifo Co., St. Paul, Minn. 773,137, canc. Cl. 22.
Sigma Chemical Co., St. Louis, Mo. 897,641–2, pub. 6–16–70. Cl. 6.
Signode Corp., Chicago, Ill. 897,673, pub. 6–16–70. Cl. 13.
Silver Line Brake Lining Corp., from Chainveyor Corp., Los Angeles, Calif., 897,826, pub. 6–16–70. Cl. 31.
Sinclair, Lewis A., d.b.a. Lou's Lures, Annandale, Va. 773,135, canc. Cl. 22.
Sociedade Comercial dos Vinhos de Mesa de Portugal, Limitada, Direito, Porto, Portugal. 897,965, pub. 6–16–70. Cl. 47.
Societe E. Demolin, Ivry-Sur-Seine, France. 897,776, pub. 6–16–70. Cl. 23.
Soper, Harold, Advertising, Glendale, Calif. 897,976, pub. 6–16–70. Cl. 50.
South Shore Packing Corp., The, Vermilion, Ohio. 773,240, canc. Cl. 46.
Southwestern Portland Cement Co., Los Angeles, Calif. 531,379, ren. 9–1–70. Cl. 12.
Spartans Industries, Inc., New York, N.Y. 773,128, canc. Cl. 22.
Sperry Rand Corp., New York, N.Y. 897,828, pub. 6–16–70. Cl. 32.
Spiroll Corp. Ltd., Winnipeg, Manitoba, Canada. 897,797, pub. 6–16–70. Cl. 23.
Stammelman, Mortimer J., d.b.a. The Atmos Products Co., New York, N.Y. 533,249, ren. 9–1–70. Cl. 6.
Standard & Poor's Corp., New York, N.Y. 527,414, ren. 9–1–70. Cl. 35.
Standard Chemical Mfg. Co., Omaha, Nebr. 897,866, pub. 6–16–70. Cl. 38.
Standard Oil Co., New York, N.Y. 443,958, ren. 9–1–70. Cl. 15.
Standard Rate & Data Service, Inc., Skokie, Ill. 272,605, ren. 9–1–70. Cl. 38.
Star Heel Plate Co., Inc., Newark, N.J. 530,514, ren. 9–1–70. Cl. 13.
Starrett, L. S., Co., The. 897,676, pub. 6–16–70. Cl. 15.
Statler Tissue Corp., Medford, Mass. 897,850, pub. 6–16–70. Cl. 37.
Stephano Brothers, Philadelphia, Pa. 897,692, pub. 6–16–70. Cl. 17.
Sterling Drug Inc., New York, N.Y. 526,687, ren. 9–1–70. Cl. 18.
Sternco Industries, Inc., Allendale, N.J. 773,319, canc. Cl. 50.
Stetsan, John B., Co., Philadelphia, Pa. 527,977, ren. 9–1–70. Cl. 39.
Stevens, J. P., & Co., Inc., New York, N.Y. 527,383, ren. 9–1–70. Cl. 42.
Stewart-Warner Corp., Chicago, Ill. 773,157, canc. Cl. 23.
Stibbe Machinery Ltd., Leicester, England. 897,789, pub. 6–16–70. Cl. 23.
Stromberg-Carlson Corp., Rochester, N.Y. 521,853, ren. 9–1–70. Cl. 21.
Studio Girl-Hollywood, Inc., Chicago, Ill. 897,632, pub. 6–16–70. Multiple Class (Classes 3 and 39).
Studio Girl-Hollywood, Inc., Chicago, Ill. 897,823, pub. 6–16–70. Cl. 28.
Sullivan Co., The, Memphis, Tenn. 527,945, ren. 9–1–70. Cl. 12.
Summit Chemical Co., Baltimore, Md. 897,657, pub. 6–16–70. Cl. 6.
Sunline, Inc., St. Louis, Mo. 897,930, pub. 6–16–70. Cl. 46.
Superscope, Inc., Sun Valley, Calif. 897,845, pub. 6–16–70. Cl. 36.
Swift Industries, Inc., Dorchester, Mass. 77,144, ren. 9–1–70. Cl. 26.
Sybron Corp., Rochester, N.Y. 897,922, pub. 6–16–70. Cl. 44.
Syntex Corp., Boulder, Colo. 897,658–9, pub. 6–16–70. Cl. 6.
Systomation Inc., Schnenectady, N.Y. 897,804, pub. 6–16–70. Cl. 26.
Tamar Electronics, Inc., Los Angeles, Calif. 897,741, pub. 6–16–70. Cl. 21.
Tandy Corp., d.b.a. Radio Shack, Boston, Mass. 897,736, pub. 6–16–70. Cl. 21.
Tanqueray, Charles, & Co., Ltd., London E.C. 1, England. 897,970, pub. 6–16–70. Cl. 49.
Tape, Inc., Green Bay, Wis. 897,851, pub. 6–16–70. Cl. 37.
Taylor-Winfield Corp., The, Warren, Ohio. 773,188, canc. Cl. 34.
Tech Aerofoam Products, Inc., Miami, Fla. 773,008, canc. Cl. 1.
Technic, Inc., Cranston, R.I. 897,868, pub. 6–16–70. Cl. 38.
Ten Minute Reports, Inc., Rye, N.Y. 773,214, canc. Cl. 38.
Tender Loving Care, Inc., New York, N.Y. 897,631, pub. 6–16–70. Cl. 3.
Tepper, Gene S., d.b.a. Elbo Products, San Francisco, Calif. 897,834, pub. 6–16–70. Cl. 32.
Texaco Inc., New York, N.Y. 277,893, ren. 9–1–70. Cl. 38.
Textron Inc., Fort Madison, Iowa. 521,984, ren. 9–1–70. Cl. 37.
Thermoelectric Systems Corp., Santa Barbara, Calif. 773,181, canc. Cl. 31.
Thomson Co., Thomson, Ga. 897,894, pub. 6–16–70. Cl. 39.
Thompson, M. R., Inc., New York, N.Y. 511,704, ren. 9–1–70. Cl. 18.
Tocsin, Inc., Oakland, Calif. 773,203, canc. Cl. 38.
Topco Associates, Inc., Skokie, Ill. 897,986, pub. 6–16–70. Cl. 52.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 897,974, pub. 6–16–70. Cl. 50.
Toy Town, Inc., Jacksonville, Fla. 897,764, pub. 6–16–70. Cl. 22.
Trans-Southwest Mfg. Inc., Anthony, Tex. 773,116, canc. Cl. 21.
Tree Top, Inc., Selah, Wash. 897,938, pub. 6–16–70. Cl. 46.
Turner Halsey Co. Inc., New York, N.Y. 78,142, ren. 9–1–70. Cl. 42.
Turtle Wax, Inc., Chicago, Ill. 897,635, pub. 6–16–70. Cl. 4.
Tyler, W. S., Inc., Cleveland, Ohio. 78,553, ren. 9–1–70. Cl. 13.
Ultra Smart Hosiery Co., Inc., New York, N.Y. 897,895, pub. 6–16–70. Cl. 39.
Union Oil Co. of California, Los Angeles, Calif. 526,007, ren. 9–1–70. Cl. 52.
Uniroyal, Inc., New York, N.Y. 278,257, ren. 9–1–70. Cl. 35.
Uniroyal, Inc., New York, N.Y. 897,891, pub. 6–16–70. Cl. 39.
Uniroyal, Inc., New York, N.Y. 897,975, pub. 6–16–70. Cl. 50.
United Co-Operatives, Inc., Alliance, Ohio. 527,542, ren. 9–1–70. Cl. 23.
United Engineering & Foundry Co., Pittsburgh, Pa. 278,389, ren. 9–1–70. Cl. 38.
United Refining Co., Warren, Pa. 897,685, pub. 6–16–70. Cl. 15.
United Silver & Cutlery Co., Los Angeles, Calif. 897,781, pub. 6–16–70. Cl. 23.
United States Crown Corp., Saddle Brook, N.J. 773,320, canc. Cl. 50.
United States Steel Corp., Pittsburgh, Pa. 897,661, pub. 6–16–70. Cl. 10.
United States Steel Corp., Pittsburgh, Pa. 897,672, pub. 6–16–70. Cl. 12.
United Technical Publications, Inc., Garden City, N.Y. 897,872, pub. 6–16–70. Cl. 38.
University Galleries Inc., New York, N.Y. 898,016. Cl. 38.
Upjohn Co., The: *See*—
  Hercules Inc.
Upjohn Co., The, Kalamazoo, Mich. 897,706, pub. 6–16–70. Cl. 18.
Utility Products Mfg. Co., Memphis, Tenn. 773,068, canc. Cl. 13.
V.F. Corp., Reading, Pa. 897,889, pub. 6–16–70. Cl. 39.
VWR United Corp., Seattle, Wash. 897,807, pub. 6–16–70. Cl. 26.
Valley Vegetable Shippers, Inc., Camarillo, Calif. 773,297, canc. Cl. 46.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 773,047–8, canc. Cl. 6.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 897,647, pub. 6–16–70. Cl. 6.
Vapor-Ella Shower or Raincap Inc., Miami, Fla. 897,890, pub. 6–16–70. Cl. 39.
Vendadco, Inc., Fort Lauderdale, Fla. 773,321, canc. Cl. 50.
Verenigde Nederlandse Brouweryen Breda-Oranjeboom N.V., Rotterdam, Netherlands. 524,673–4, ren. 9–1–70. Cl. 48.
Victory Markets Inc., Norwich, N.Y. 526,121, ren. 9–1–70. Cl. 46.
Vineland Poultry Laboratories, Vineland, N.J. 897,709–10, pub. 6–16–70. Cl. 18.
WSM, Inc., Nashville, Tenn. 898,009, pub. 6–16–70. Cl. 107.
Wakefern Food Corp., Elizabeth, N.J. 897,927, pub. 9–16–69. Cl. 45.
Wakefern Food Corp., Elizabeth, N.J. 897,929, pub. 9–9–69. Cl. 46.
Walker Enterprises, Inc., Beaumont, Tex. 897,680–1, pub. 6–16–70. Cl. 15.
Walking Stick Radiator Co., Inc., Blythe, Calif. 773,103, canc. Cl. 19.
Walter Corp., Denver, Colo. 897,984, pub. 6–16–70. Cl. 52.
Waltham Watch Co., Chicago, Ill. 897,819, pub. 6–16–70. Cl. 27.
Ward Foods, Inc., New York, N.Y. 897,928, pub. 3–9–65. Cl. 46.
Webb, Jervis B., Co., The, Detroit, Mich. 444,301, ren. 9–1–70. Cl. 23.
Weldon Farm Products, Inc., New York, N.Y. 805,703, canc. Cl. 46.
Wellco Enterprises, Inc., Waynesville, N.C. 897,883, pub. 6–16–70. Cl. 39.
Wembley Industries, Inc., New Orleans, La. 897,892, pub. 6–16–70. Cl. 39.

Western New York Hospital Television, Inc., Buffalo, N.Y. 897,732, pub. 6–9–70. Cl. 21.
Western Union Telegraph Co., The, New York, N.Y. 527,029, ren. 9–1–70. Cl. 101.
Westinghouse Air Brake Co., Chicago, Ill. 527,645, ren. 9–1–70. Cl. 23.
Whitworth, Wm. Goff, and Berneice Z. Whitworth, d.b.a. Bee Zee Originals, Chesterfield, Mo. 897,854, pub. 6–16–70. Cl. 37.
Wiedekamp, Hugo H., Powell, Wyo. 897,734, pub. 6–16–70. Cl. 21.
Wilson Enterprises Inc., Colonial Heights, Va. 897,705, pub. 6–16–70. Cl. 18.
Whitco Chemical Corp., New York, N.Y. 897,610, pub. 6–16–70. Cl. 1.
World Wide Watch Co. Inc., New York, N.Y. 897,816, pub. 6–16–70. Cl. 27.
Writer's Craft Systems, Narberth, Pa. 897,857–8, pub. 6–16–70. Cl. 37.
Yanton International, Inc., New York, N.Y. 897,665, pub. 6–16–70. Cl. 12.
Zeiss-Stiftung, Carl, d.b.a. Carl Zeiss, Wuerttemberg, Germany. 268,713, ren. 9–1–70. Cl. 26.
Zimmerman's Cut Rate Liquor Store, Inc., Chicago, Ill. 897,972, pub. 6–16–70. Cl. 49.

U.S. GOVERNMENT PRINTING OFFICE: O——1970

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Official Gazette of the United States Patent Office
September 8, 1970 Volume 878 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of July 1970

Examiner affirmed	138
Examiner affirmed in part	17
Examiner reversed	29
Total	184

Certificates of Correction for the Week of Sept. 8, 1970

3,302,309
3,348,985
3,381,365
3,423,306
3,425,666
3,438,972
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3,452,790
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3,513,015
3,513,772
3,513.801
3,514,359

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Design Patent No. 208,385, N. Iwata, S. Shinozaki, T. Tsuruta and T. Fujimoto, MEAT CHOPPER OR SIMILAR ARTICLE, decided Apr. 16, 1970, Interference No. 96,392.

Patent No. 3,176,279, A. D. Lin, D. D. Willard and D.D. Johnson, DATA STORAGE APPARATUS, decided June 12, 1970, Interference No. 96,488, claims 1, 2, 3, 14, 15 and 16.

Patent No. 3,248,261, B. Narken and B. Sunners, PHOTOCONDUCTING LAYERS, decided Apr. 20, 1970, Interference No. 95,920, claims 1, 2, 3 and 4.

Patent No. 3,249,570, J. E. Potts, C. L. Purcell and R. J. Turbett, TERPOLYMER OF ETHYLENT, ALKYL ACRYLATE AND ACRYLIC ACID, decided Mar. 30, 1970, Interference No. 95,849, claims 9–16.

Patent No. 3,291,261, M. L. Robb, TRUCK ELEVATOR, decided Apr. 20, 1970, Interference No. 96,226, claim 1.

Patent No. 3,343.106, W. J. Honeyball, TUNABLE ELECTRON DISCHARGE DEVICES AND CAVITIES, decided July 16, 1970, Interference No. 96,352, claims 1, 2, 4 and 5.

Lapsed Patents

The following patents have lapsed under the provisions of 35 U.S.C. 151 for failure of payment of remaining balances of issue fees due therein :

3,471,897 issued Oct. 14, 1969
3,486,308 issued Dec. 30, 1969

Disclaimers

3,502,686.—*Eugene E. Galantay*, Morristown, N.J. 2-HYDROXY-DIBENZAZULENE COMPOUNDS. Patent dated Mar. 24, 1970. Disclaimer filed Dec. 18, 1969, by the assignee, *Sandoz-Wander, Inc.*

Hereby disclaims the terminal portion of the term of the patent subsequent to June 10, 1986.

New Applications Received During June 1970

Patents	9,583
Designs	567
Plant Patents	7
Reissues	39
Total	10,196

Issue—September 8, 1970

Patents	1200	—No. 3,526.906 to No. 3,528,105, incl.
Designs	85	—No. 218,586 to No. 218,670, incl.
Reissues	4	—No. 26,946 to No. 26,949, incl.
Def. Pub	11	—No. T878,001 to No. T878,011, incl.
Total	1300	

3,510,981.—*Harvey W. La Branche*, Palos Verdes Peninsula, and *Howard F. Newman*, Los Angeles, Calif. VEHICLE AND TRACK COMBINATION TOY. Patent dated May 12, 1970. Disclaimer filed July 17, 1970, by the assignee, *Mattel, Inc.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Dec. 16, 1986.

3,516,796.—*Le Roy F. Grantham*, Calabasas, and *Christian M. Larsen*, Reseda, Calif. CARBONACEOUS PROCESS FOR SULFUR PRODUCTION. Patent dated June 23, 1970. Disclaimer filed Mar. 19, 1970, by the assignee, *North American Rockwell Corporation*.

Hereby disclaims the terminal portion of the term of the patent subsequent to Apr. 15, 1986.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 25, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	12-09-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-10-68
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-19-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-13-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-06-68
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	9-02-69
SECURITY, GROUP 220—C. D. QUARFORTH, Acting Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-14-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	2-03-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-20-69
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-05-69
DESIGNS, GROUP 290—C. D. QUARFORTH, Acting Director Industrial Arts; Household, Personal and Fine Arts.	11-29-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	6-02-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-13-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-03-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	8-01-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	7-10-69

Total number of pending applications (excluding Designs)	182,635
Total number of Design applications pending	2,866

Expiration of patents: The patents within the range of numbers indicated below expire during August 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,647,259 to 2,650,359, inclusive
Plant Patents	Numbers 1,208 to 1,212, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

SIEGFRIED KADEMANN *v.* ERNST BOLLMANN

No. 8262. Decided March 5, 1970

[57 CCPA —; 421 F.2d 1371; 164 USPQ 630]

1. INTERFERENCE—RIGHT TO MAKE—DISCLAIMER.

"Kademann's contention [in the interference proceeding] of disclaimer by Bollmann is * * * unsound. Bollmann's remarks [stating during prosecution that a claimed limitation not appearing in the count was 'of capital importance'] * * * were with regard to the claims then present in his application. We know of no authority for holding that the failure to present broader claims prior to suggestion thereof by the Examiner is any evidence of disclaimer."

APPEAL from Patent Office. Interference No. 95,195.

AFFIRMED.

Bryan & Butrum, *James E. Bryan*, *Roy W. Butrum*, for appellant.

Pennie, *Edmonds*, *Morton*, *Taylor* and *Adams* (*J. Philip Anderegg*, *John L. Sigalos*, of counsel) for appellee.

Before RICH, *Acting Chief Judge*, ALMOND, BALDWIN, LANE, *Associate Judges*, and FORD, *Judge*, United States Customs Court, sitting by designation

LANE, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Patent Interferences awarding priority on the single count in issue to Bollmann. The interference was declared between Bollmann's application Serial No. 271,795, filed April 9, 1963, for "Heavy Diesel Locomotive," and Kademann's application Serial No. 267,114, filed March 22, 1963, for "Locomotive."

Bollmann became senior party through the granting by the Primary Examiner of his motion to shift the burden of proof, based upon his earlier-filed Swiss application. Kademann's sole contention, both here and below, is that Bollman has no right to make the count. The Examiner found, and the Board held, that Bollmann could make the count. We agree, and we affirm the Board's decision.

The count is as follows:

> 1. A locomotive comprising trucks and a bridge girder connecting said trucks and having an engine mounted thereon, a power take-off on each end of the engine, a first pair of drive shafts each connecting one of the power take-offs with a *transmission carried by the locomotive*, and a second pair of drive shafts each connecting one transmission with a distributor gear on a truck whereby power from the engine is transmitted to the trucks to drive said locomotive, the second pair of drive shafts being connected to sides of the transmissions which face in the same direction. [Emphasis ours.]

The issue with respect to Bollmann's right to make the count concerns the emphasized limitation that each transmission be carried by the locomotive. Bollmann's specification and drawing show the transmissions mounted on the trucks. Kademann's disclosure and drawing show them mounted on the bridge girder connecting the trucks.

Kademann contends that the meaning of "carried by the locomotive" is ambiguous and hence should be construed to mean "carried by

the locomotive frame," as stated in Kademann's disclosure, since the count originated in Kademann's application. He cites this court's decision in *McCutchen* v. *Oliver*, 54 CCPA 756, 367 F.2d 609, 151 USPQ 387 (1966), in support of this position. Kademann also contends that Bollmann disclaimed the subject matter of the count. He bases this contention on Bollmann's remarks, made during the course of prosecution, that the limitation in certain of Bollmann's claims that "a separate hydraulic drive unit is supported in each of the two recited trucks" was "of capital importance." Kademann also bases his contention of disclaimer on the fact that, until the interference was declared, Bollmann had not asserted any claim as broad as the count here in issue.

Kademann's contention of ambiguity of the count limitation in issue is unsound. Whatever "locomotive" may mean in other contexts, as used by both Kademann and Bollmann it clearly includes the trucks. The count first appeared as claim 1 in Kademann's application, and, as set forth above, it recites "A locomotive comprising trucks and a bridge girder * * *." Further, claim 5 of Kademann's application reads: "5. A *locomotive* according to claim 1 *in which the trucks* face in the same direction." Clearly Kademann considered the trucks to be part of the locomotive, and we see no such ambiguity as was present in *McCutchen*, supra.

[1] Kademann's contention of disclaimer by Bollmann is also unsound. Bollmann's remarks, mentioned above, were with regard to the claims then present in his application. We know of no authority for holding that the failure to present broader claims prior to suggestion thereof by the Examiner is any evidence of disclaimer.

The decision of the Board is affirmed.

AFFIRMED.

NOTICE: This opinion is subject to formal revision before publication in the preliminary print of the United States Reports. Readers are requested to notify the Reporter of Decisions, Supreme Court of the United States, Washington, D.C. 20543, of any typographical or other formal errors, in order that corrections may be made before the preliminary print goes to press

Supreme Court of the United States

STANDARD INDUSTRIES, INC., PETITIONER, *v.* TIGRETT INDUSTRIES, INC. ET AL.

No. 445. April 20, 1970

ON WRIT of certiorari to the United States Court of Appeals for the Sixth Circuit.

PER CURIAM.

The judgments are affirmed by an equally divided Court.

MR. JUSTICE BLACK, with whom MR. JUSTICE DOUGLAS joins, dissenting.

In this case respondent sued petitioner for payments alleged to be due under a patent licensing agreement. At trial and on appeal petitioner defended primarily on the ground that its product did not involve any use of the respondent's patent. Petitioner did not at any time attack the validity of the patent itself, and apparently conceded that controlling law prevented it from doing so. The District

Court found that the product did utilize the patented invention and awarded damages. The Court of Appeals for the Sixth Circuit affirmed in an opinion delivered May 27, 1969.

On June 16, 1969, this Court decided in *Lear, Inc.* v. *Adkins*, 395 U.S. 653, that a patent licensee could attack the validity of a patent. That case specifically overruled the patent-licensee estoppel doctrine applied in *Automatic Radio Manufacturing Co.* v. *Hazeltine Research, Inc.*, 339 U.S. 827 (1950), a doctrine that was the controlling law at all times in the proceedings below. Petitioner now seeks to attack the validity of respondent's patent, but respondent argues that since the issue was never raised below, it cannot now be litigated.

The failure to assert invalidity below cannot, in these circumstances, be deemed a waiver of that defense. The Court has recognized that to be effective a waiver must be "an intentional relinquishment or abandonment of a known right or privilege," *Johnson* v. *Zerbst*, 304 U.S. 458, 464 (1938), and we have frequently allowed parties to raise issues for the first time on appeal when there has been a significant change in the law since the trial. This principle has most often been applied in proceedings relating to criminal prosecutions,[1] but it has also been invoked in purely civil cases.[2] The principle has not been limited to constitutional issues, and the Court has permitted consideration on appeal of statutory arguments not presented below.[3] In deciding whether such new arguments can be considered, we have primarily considered three factors: first, whether there has been a material change in the law; second, whether assertion of the issue earlier would have been futile; and third, whether an important public interest is served by allowing consideration of the issue. It is clear to me that all these criteria are met in this case.

Undoubtedly our decision in *Lear* was a major change in the field of patent law. The Court implicitly recognized this fact by overruling the estopped holding in *Automatic Radio*. It is also clear that the trial court was satisfied that applicable law precluded the assertion of invalidity by patent licensees[4] and thus earlier argument on the point would have been futile. Finally, and most importantly, an overriding public interest would be served by allowing petitioner to challenge the validity of this patent. Last Term we unanimously held that "the public's interest in the elimination of specious patents would be significantly prejudiced if the retroactive effect of [*Lear*] were limited in any way." *Lear*, supra, at 674, n. 19. I do not understand how today's decision can be reconciled with that statement. Although analytically this case may present a question of waiver and not retroactivity, the public interest which the Court felt required full retroactivity in *Lear* is an equally compelling reason for allowing petitioner's attack now in spite of the concessions below. I would vacate the judgments below and remand the case to the District Court for a determination of the validity of the patent in issue.

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[1] See *White* v. *Maryland*, 373 U.S. 59 (1963); cf. *McConnell* v. Rhay, 393 U.S. 3 (1968); *Tehan* v. *Schott*, 382 U.S. 406 (1966); *Linkletter* v. *Walker*, 381 U.S. 618, 622–629; (1965); *Griffin* v. *California*, 380 U.S. 609 (1965).

[2] *Curtis Publishing Co.* v. *Butts*, 388 U.S. 130, 142–145, 172, n. 1 (1967); *Rosenblatt* v. *Baer*, 383 U.S. 75 (1966); *Uebersee Finanz-Korp* v. *McGrath*, 343 U.S. 205, 213 (1952); *Hormel* v. *Helvering*. 312 U.S. 552, 556–557 (1941).

[3] In *Hormel* v. *Helvering*, supra, the Court allowed the Commissioner of Internal Revenue to rely on § 22(a) of the Revenue Act of 1934 although his argument before the Board of Tax Appeals had rested solely on §§ 166 and 167. We did so because of the intervening decision in *Helvering* v. *Clifford*, 309 U.S. 331 (1940).

[4] App. 52a, 129a–3.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,613,066, J. W. Wolfram, COUPLING FOR FLARELESS TUBES; **3,485,517**, E. E. Howe, PRESSURE FITTING FOR PIPES CARRYING GASEOUS FLUIDS, **filed** Dec. 17, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2612, *Chicago Fittings Corporation* v. *Earl E. Howe, Richard Howe, and Margaret Frisby*. Defendants' motion to dismiss granted, cause dismissed and defendants motion to amend their motion to dismiss by including res judicata as a ground for dismissal hereby denied as moot, Mar. 4, 1970.

2,690,518, Fyler and Rowe, COLOR PICTURE TUBE; **3,179,836**, J. Giuffrida, COMPENSATOR FOR EARTH'S MAGNETIC FIELD BY COLOR DOT DISPLACEMENT, **filed** Apr. 29, 1970, D.C. Mass. (Boston), Doc. CA 70–581–C, *Columbia Broadcasting System* v. *Northeastern Distributors, Inc.*

2,741,893, Vandamme and Rouyer, METHOD AND APPARATUS FOR PRODUCING CRINKLED YARN; **2,761,272**, same, APPARATUS FOR PRODUCING CURLED YARN; **2,780,047**, same; **2,788,634**, H. Crouzet, TWIST ARRESTORS FOR YARN TWISTERS; **2,823,513**, Vandamme and Rouyer, APPARATUS FOR PRODUCING CURLED YARN; **2,891,375**, same, APPARATUS FOR THE PRODUCTION OF HIGH-BULK YARN; **2,944,319**, H. Crouzet, HEATING DEVICE FOR FILAMENTS; **3,012,397**, H. Servage, METHOD OF MAKING HIGH-BULK YARNS; **3,117,361**, H. Crouzet, YARN HEAT TREATMENT APPARATUS; **3,123,973**, H. Servage, PROCESS FOR THE PRODUCTION OF FANCY YARNS HAVING A THREE DIMENSIONAL CURL; **3,137,119**, C. Crouzet, PROCESS FOR THE PRODUCTION OF HIGH BULK YARNS; **3,165,881**, De Moncuit and Crouzet, PRODUCTION OF HIGH BULK YARNS; **3,166,881**, H. Servage, APPARATUS AND PROCESS FOR THE MANUFACTURE OF HIGHLY CRIMPED YARNS BY FALSE TWIST; **3,232.037**, H. Crouzet, FALSE-TWIST SPINDLE; **3,237,392**, same, PROCESS FOR PRODUCING BULKED YARN; **3,283,414**, same, THERMAL TREATMENT OF SYNTHETIC TEXTILES; **3,333,409**, H. Servage, PROCESS FOR PRODUCING HIGH BULK STRETCH YARNS; **3,382,656**, H. Crouzet, FALSE-TWIST FRAMES AND METHOD FOR TEXTURING SYNTHETIC FILAMENTS, **filed** Apr. 29, 1970, D.C., M.D.N.C. (Greensboro), Doc. C–88–G–70, *Leon-Ferenbach Incorporated* v. *Deering Milliken Research Corporation et al.* **Same, filed** June 12, 1970, D.C., M.D.N.C. (Greensboro), Doc. C–123–G–70, *Blanchard Yarn Co., Inc.* v. *Deering Milliken Research Corp. et al.*

2,761,272. (See 2,741,893.)

2,766,510, J. D. Heibel, METHOD AND APPARATUS FOR MAKING CONDENSERS, **filed** Feb. 3, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c186, *Erie Technological Products, Inc.* v. *Die Craft Metal Products, Inc.* Judgment order, claims 1, 3, 4, 5 and 6 of the patent are valid. Claim 2 not in issue and the Court makes no determination with respect to its validity or infringement. Complaint for infringement of claims 1 and 3–6 dismissed with prejudice, May 5, 1970.

2,780,047. (See 2,741,893.)

2,788,634. (See 2,741,893.)

2,798,120, R. W. Sabol, PHONOGRAPH PICKUPS; **Re. 24,968**, H. F. Klingener, PHONOGRAPH PICKUPS; **3.182.136**, Dieter and Bauer, PHONOGRAPH PICKUPS WITH DETACHABLY REPLACEABLE STYLUS DRIVE STRUCTURE; **3,236.956**, REPLACEABLE STYLUS HOLDERS FOR PHONOGRAPH PICKUPS, **filed** Sept. 27, 1968, D.C., S.D.N.Y., Doc. 68–C–3863, *Sonotone Corporation* v. *Rivertone Co., Inc.* Endorsed on plaintiff's show cause order; dismissed with prejudice, Jan. 7, 1970.

2,803,105, Stoddard and Seem, APPARATUS FOR PROCESSING TEXTILE YARNS; **2.803,108**, same, METHODS OF PROCESSING TEXTILE YARNS; **2.803.109**, same, METHOD OF PROCESSING THERMOPLASTIC YARNS, **filed** Apr. 24, 1970, D.C., E.D.N.Y. (Brooklyn), Doc. 70–C–529, *Leon Ferenbach Incorporated* v. *Leesona Corporation*. **Same, filed** Apr. 27, 1970, D.C., E.D.N.Y. (Brooklyn), Doc. 70–C–544, *Penn-Dale Knitting Mills, Inc.* v. *Leesona Corporation*. **Same, filed** Apr. 27, 1970, D.C., E.D.N.Y. (Brooklyn), Doc. 70–C–545, *Penn-Grove, Inc.* v. *Leesona Corporation.*

2,803,108. (See 2,803,105.)

2,803,109. (See 2,803,105.)

2,823,513. (See 2,741,893.)

2,868,199, C. H. Hudson, CANNULA, **filed** Feb. 12, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–338–IH, *Hudson Oxygen Therapy Sales Co.* v. *James A. Farr, doing business as Med-Econ Plastics Co.*

2,891,375. (See 2,741,892.)

2,895,950, V. K. Krieble, COMPOSITION CONTAINING HYDROPEROXIDE POLYMERIZATION CATALYST AND ACRYLATE ACID DIESTER; **3,043,820**, R. H. Krieble, ANAEROBIC CURING SEALANT COMPOSITION HAVING EXTENDED SHELF STABILITY, **filed** Sept. 25, 1967, D.C.N.J. (Newark), Doc. C–999–67, *Loctite Corporation* v. *Eastern Bearing, Inc.* Consent judgment permanent injunction, patents valid and infringed, May 6, 1970.

2,944,319. (See 2,741,892.)

2,976,576, Wichterle and Lim, PROCESS FOR PRODUCING SHAPED ARTICLES FROM THREE-DIMENSIONAL HYDROPHILIC HIGH POLYMERS; **3,220,960**, same, CROSS-LINKED HYDROPHILIC POLYMERS AND ARTICLES MADE THEREFROM, **filed** May 13, 1970, D.C., W.D.N.Y. (Buffalo), Doc. C–1970–212, *Griffin Laboratories, Inc.* v. *National Patent Development Corp., et al.*

3,012,397. (See 2,741,892.)

3,043,820. (See 2,895,950.)

3,064,669. (See 3,133,610.)

3,117,361. (See 2,741,892.)

3,123,973. (See 2,741,892.)

3,133,610, W. L. Sheppard, SPEED GOVERNING SYSTEM; **3,064,669**, same, GOVERNOR, **filed** May 15, 1970, D.C., E.D. Mich. (Detroit), Doc. 34890, *William L. Sheppard and Rex Industries, Inc.* v. *General Motors Corp.*

3,137,119. (See 2,741,892.)

3,146,290, D. M. Park, ELECTRONIC MUSIC CIRCUIT; **3,383,452**, Park and Campbell, MUSIC INSTRUMENT; **Re. 26,521**, D. M. Park, AUTOMATIC REPETITIVE RHYTHM INSTRUMENT TIMING CIRCUITRY, **filed** Apr. 21, 1970, D.C., N.D. Ill (Chicago), Doc. 70c961, *The Seeburg Corporation* v. *Sakata International, Inc. et al.*

3,165,881. (See 2,741,892.)

3,166,881. (See 2,741,892.)

3,179,836. (See 2,690,518.)

3,182,136. (See 2,798,120.)

3,219,276. (See 3,251,551.)

3,220,960. (See 2,976,576.)

3,232,037. (See 2,741,893.)

3,236,956. (See 2,798,120.)

3,237,392. (See 2,741,893.)

3,251,551, A. C. Walberg, ELECTROSTATIC COATING SYSTEM; **3,268,171**, same; **3,219,276**, E. O. Norris, PLURAL NOZZLES HAVING INTERSECTING SPRAY AND CONTROL THEREFOR, **filed** June 21, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1162, *The Gyromat Corporation* v. *H. G. Fischer & Company*. Claims 2, 3, 4, 5, 7, 8 and 10 of Patent No. 3,251,551 invalid and not infringed; Count II of the plaintiff's amended complaint dismissed for lack of jurisdiction over the subject matter thereof; claims 5 and 6 of the plaintiff's Patent No. 3,219,276 valid and infringed by defendant; defendant enjoined and counterclaim dismissed with prejudice, June 3, 1970.

3,268,171. (See 3,251,551.)

3,283,414. (See 2,741,893.)

3.306.864, Lang, Grazen and Less, PHENOL FORMALDEHYDE-UREA RESIN COMPONENT BINDER, **filed** Apr. 27, 1970, D.C., S.D. Ohio (Dayton), Doc. 3838. *Ashland Oil & Refining Co.* v. *Hooker Chemical Corp.*

3,333,409. (See 2,741,893.)

3,382,656. (See 2,741,893.)

3,383,452. (See 3,146,290.)

3,444,597, A. R. Bone, FILAMENT TYPE ATTACHMENT DEVICE AND MANUFACTURE OF SAME, **filed** June 3, 1970, D.C. Mass. (Boston), Doc. 70–678–C, *Dennison Manufacturing Company* v. *The Monarch Marking System Company.*

3,480,984, J. V. Kidd, PIG APPARATUS, **filed** June 9, 1970, D.C., S.D. Tex. (Houston), Doc. CA 70–H–581, *Kidd Pipeline & Specialties, Inc.* v. *Rubber Applicators and M & J Valve Co.*

3,485,517. (See 2,613,086.)

3,491,998, G. Lyon, COT EXERCISING DEVICE; **D. 213,889,** same, EXERCISING DEVICE, **filed** Mar. 9, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–495–AAH, *House of Slender, Gem, Inc.* v. *The Relaxaway Corporation.*

Re. 23,830, A. B. Mojonnier, DISPENSING MECHANISM WITH TIME CONTROLLED FLOW, **filed** Jan. 21, 1969, D.C.N.J. (Newark), Doc. 75–69, *The Kartridge-Pak Co.* v. *J. G. Machine Works, Inc.* Consent judgment for permanent injunction dismissal of counterclaim; declaring claims 1, 6 and 7 of patent valid, June 5, 1970.

Re. 24,968. (See 2,798,120.)

Re. 26,521. (See 3,146,290.)

D. 203,633, R. M. Neece, AIR CONDITIONER CASING, **filed** Aug. 28, 1969, D.C., N.D. Tex. (Wichita Falls), Doc. CA 7–473, *Dynaplastics, Inc.* v. *Household Finance Corporation, Champion Cooler Corporation and White Stores, Inc.* Final judgment, defendants White Stores, Inc. and Champion Cooler Corp. have infringed but have accepted a license from plaintiff and an injunction is not necessary, May 8,1970.

D. 207,227, K. Solheim, GOLF PUTTER; **Reg. No. 704,552** (PING), Karsten Solheim, Golf clubs; **Reg. No. 890,396** (ANSER), same, Golf playing equipment, **filed** May 12, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1049–HP, *Karsten Mfg. Corp. et al.* v. *Aero Cast Company et al.*

D. 213,889. (See 3,491,998.)

Reg. No. 704,552. (See D. 207,227.)

Reg. No. 890,396. (See D. 207,227.)

DEFENSIVE PUBLICATIONS

PUBLISHED SEPTEMBER, 8, 1970

Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T878,001
METHOD OF PURIFYING VINYL MONOMERS

Clarence C. Dannelly, Rte. 8, Indian Springs 37664, and John R. Caldwell, 404 Colonial Heights Road 37663, both of Kingsport, Tenn.
Filed Dec. 13, 1968, Ser. No. 783,719
Int. Cl. C07c *69/54*
U.S. Cl. 260—486
No Drawing. 18 Pages Specification

Vinyl monomer containing an acidic or basic organic inhibitor of free radical initiation of polymerization, such as a phenolic and amino compound, is treated to remove the inhibitor by contacting said vinyl monomer with an inorganic basic or acidic compound which is insoluble in the monomer but which reacts with the inhibitor to form a removable salt in either solid or liquid phase and thereafter separating the salt thus formed from the monomer. Suitable basic compounds are typified by the alkaline earth oxides and hydroxides and acidic compounds by inorganic acid salts.

T878,002
PROCESS FOR PRODUCING MINUTE CAPSULES

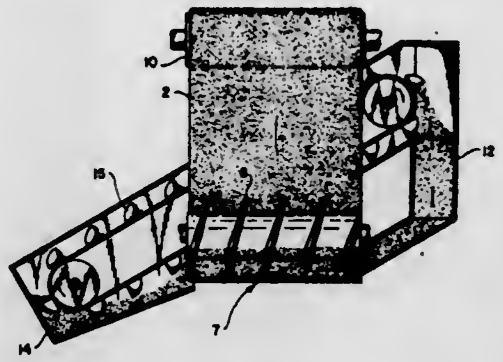
Herbert S. Elins and Nicholas L. Weeks, both ℅ Eastman Kodak Co., Kodak Park Division, Rochester, N.Y. 14650
Filed Jan. 22, 1969, Ser. No. 793,171
Int. Cl. G03c *1/76*
U.S. Cl. 96—67
No Drawing. 10 Pages Specification

Minute capsules can be prepared by incorporating an oil-soluble acid percursor, e.g., n-butyl oxalate, into an oil, the acid precursor being capable of hydrolyzing to form an acid when contacted by water at a temperature below about 100° C., mixing the oil with a continuous aqueous phase containing an alkali-soluble acid-insoluble cellulose ether, e.g., cellulose ether phthalate, to form a discontinuous oil phase, e.g., oil droplets, within said continuous aqueous phase. An alkali-soluble acid-insoluble cellulose ether encasing wall forms at the interface of the two phases. This is caused by the acid which is produced by the hydrolysis of the oil-soluble acid precursor contacting the alkali-soluble acid-insoluble cellulose ether contained in the continuous aqueous phase. These minute capsules can be employed in photographic elements and emulsions, e.g., they can contain photographic silver halide processing agents.

T878,003
LATENT IMAGE DEVELOPMENT STATION

Conrad Altmann, 901 Elmgrove Road,
Rochester, N.Y. 14650
Filed Nov. 12, 1969, Ser. No. 875,814
Int. Cl. G03g *13/08*
U.S. Cl. 355—3
1 Sheet Drawing. 5 Pages Specification

An image development station is provided wherein a photoconductive web bearing an electrostatic image is moved through a development station along a path which forms a loop having an approximately 180° turn through which loop an auger extends. Developing powder is dropped onto the photoconductive material at the loop and the auger moves the development material thereacross as the photoconductive member moves along the loop so that development material is moved both longitudinally and laterally of the web to insure adequate development of a latent electrostatic image thereon.



T878,004
POLY(TETRAMETHYLENE GLYCOL) HAVING A NARROW MOLECULAR WEIGHT DISTRIBUTION AND ITS MANUFACTURE

William H. Seaton, Theodore E. Stanin, and Robert E. Gee, Jr., all of P.O. Box 511, Kingsport, Tenn. 37662
Continuation of application Ser. No. 822,832, Apr. 9, 1969, which is a continuation-in-part of application Ser. No. 627,558, Mar. 31, 1967, which, in turn, is a continuation of application Ser. No. 239,684, Nov. 23, 1962. This application Dec. 22, 1969, Ser. No. 883,666
Int. Cl. C07c *43/00*
U.S. Cl. 260—615
2 Sheets Drawing. 23 Pages Specification

Poly(tetramethylene glycol) compositions having a number-average molecular weight of 1,000 to 6,000 can be prepared by a process which comprises (1) continuously polymerizing tetrahydrofuran at a temperature from about 20° to about 65° C. within from 2 to 60 minutes in the presence of Lewis acids and (2) terminating the polymerization reaction before equilibrium is attained, that is, before the relative amounts of monomer and polymer in the reacting solution become constant at a definite temperature and pressure. The resulting polymeric compositions are characterized in having a narrow molecular weight distribution. The poly(tetramethylene glycol) compositions having a narrow molecular weight distribution which are produced according to the disclosed process are particularly valuable as glycol constituents in the production of elastomeric polyesters.

T878,005
PHOTOGRAPHIC DIFFUSION TRANSFER PRODUCT AND PROCESS

Timothy F. Parsons, Hilton, N.Y.
(Kodak Park, Rochester, N.Y. 14650)
Filed Jan. 14, 1970, Ser. No. 2,932
Int. Cl. G03c *1/48*
U.S. Cl. 96—29
No Drawing. 15 Pages Specification

A substantially protein free receiving layer for use in a photographic diffusion transfer process comprises silver precipitants and a colloid binder comprising from about 50 to about 95% by weight polyvinyl alcohol based on the total binder and from about 5 to about 50% by weight of a neutral polymer such as a polymer of about 50 to about 95% by weight of at least one butyl acrylate with from about 5 to about 50% by weight of an ethylenically unsaturated polymerizable monomer other than butyl acrylate. Useful polymers include hydrosols comprising poly(n-butylacrylate-styrene-methacrylamide), poly(n-butylacrylate-acrylonitrile), poly(n - butylacrylate - acrylic acid), etc. The layer can also contain toning or processing compounds. This layer is typically carried on a support and is used in a diffusion transfer process to provide a photographic print having an image in the receiving layer on the support.

T878,006
PHOTOGRAPHIC DIFFUSION TRANSFER PRODUCT AND PROCESS
Walter J. Weyerts, Kodak Park,
Rochester, N.Y. 14650
Filed Jan. 14, 1970, Ser. No. 2,933
Int. Cl. G03c *1/48, 5/54*
U.S. Cl. 96—29
No Drawing. 17 Pages Specification

A substantially protein free receiving layer for use in a photographic diffusion transfer process comprises silver precipitants and a colloid binder comprising from about 50 to about 95% by weight polyvinyl alcohol based on the total binder and from 5 to about 50% sulfonated aromatic polymer, such as a sulfonated polysytrene or a salt of a sulfonated polymer. The layer can also contain toning and/or processing compounds. The layer is typically coated on a support and used in the silver salt photographic diffusion transfer process to provide an image in the receiving layer on a support.

T878,007
PHOTOGRAPHIC SILVER BLEACH REPLENISHING SOLUTION
Robert S. Walsh, 1669 Lake Ave.,
Rochester, N.Y. 14650
Filed Jan. 29, 1970, Ser. No. 6,941
Int. Cl. C03c *5/32*
U.S. Cl. 96—60
No Drawing. 2 Pages Specification

A concentrated solution of sodium ferricyanide useful as a silver bleaching replenisher solution in photography is prepared by oxidizing sodium ferrocyanide with hydrogen peroxide in the presence of hydrobromic acid and phosphoric acid. The solution is more concentrated than is obtainable with potassium ferricyanide.

T878,008
STORAGE OF WATER IN COATED LAYERS
John F. Padday, Nether Crutches, Jordans,
Beaconsfield, England
Filed Feb. 16, 1970, Ser. No. 11,831
Int. Cl. G03c *1/48, 5/26, 5/54*
U.S. Cl. 96—29
No Drawing. 18 Pages Specification

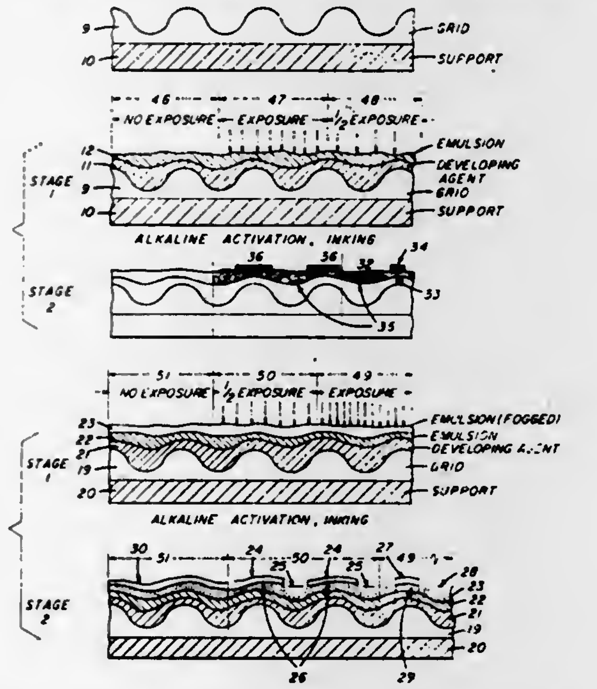
A photographic product comprising a support, a silver halide layer and a discrete layer of a water-in-wax emulsion comprising a dispersed water phase and a dispersing wax phase, a plasticizer for said wax phase in order to prevent cracking and a surfactant. The emulsion is stable at the melting point of the wax. The wax emulsion can be coated contiguous to a photographic element or coated upon a non-absorbing support and contacted with a photographic element. Pressure or heat effects the release of water thereby initiating development of exposed photographic silver halide.

The wax phase comprises an animal, mineral or vegetable wax such as beeswax, paraffin wax, carnauba wax, azokerite wax, and the like; a plasticizer soluble in the wax such as paraffin oils having a boiling point of at least 100° C. The surfactants, for example, oleic acid, erucic acid and the like are hydrophilic at one end and hydrophobic at another end.

The water phase can be water alone which when released will induce initiation of development of a latent image in a photographic element having incorporated therein developers and activators or the water phase may be an aqueous developing solution, an aqueous solution of a silver halide solvent, and the like.

The silver halide emulsions and elements can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain spectral sensitizers, incorporated color forming couplers, incorporated developing agents, antifoggants, hardeners, plasticizers, coating aids and other suitable photographic addenda, such as described in U.S. Pat. 3,297,446 (columns 4–9).

T878,009
NOVEL PRESCREENED PHOTOSENSITIVE LITHOGRAPHIC PRINTING PLATES
Joe E. South, % Eastman Kodak Co., Kodak Park Works,
Rochester, N.Y. 14650
Filed Feb. 24, 1970, Ser. No. 13,493
Int. Cl. G03t *7/02*
U.S. Cl. 96—33
1 Sheet Drawing. 17 Pages Specification



A light sensitive photographic element capable of use as a lithographic printing plate, comprises a support having thereon an embossed surface comprising a myriad of elevations and cavities, the upper surface of the elevations lying in the same plane with respect to each other. Over the embossed surface is coated a gelatin layer containing a sufficient amount of a polyhydroxybenzene silver halide developing agent to develop a latent image in a silver halide light sensitive layer above it. The developing agent can be pyrogallol and halogen substituted, phenyl substituted, or alkyl substituted polyhydroxybenzene developing agents containing from 2 to 6 carbon atoms, the oxidation products of which render gelatin oleophilic. Over the gelatin layer there can be gelatino-silver halide emulsion layer uniformly hardened with a hardener such that the gelatin has a hardness equivalent to that of a gelatin layer hardener with about 2 to about 15 grams of dry formaldehyde per pound of gelatin, with the gelatin layer and the gelatino-silver halide emulsion layer together together and separately being of lesser

thickness in the regions of the elevations of the embossed surface than in the regions of the cavities thereof.

T878,010
USE OF ORGANIC ACIDS AND ACID DERIVATIVES AS ANTIFOGGANTS IN SILVER HALIDE EMULSIONS
Dorothy J. Beavers, % Eastman Kodak Co., Kodak
Park Works, Rochester, N.Y. 14650
Filed Mar. 9, 1970, Ser. No. 17,879
Int. Cl. G03c *1/34*
U.S. Cl. 96—109
No Drawing. 35 Pages Specification

Organic acids and acid derivatives are effective antifoggants for silver halide photographic emulsions. Examples indicate that a higher degree of antifoggant capability results from the use of these compounds than would be expected from the lowering of the pH of the emulsion resulting from such compounds. Effective antifoggants include organic acids, anhydrides, imides, esters, and polymers thereof, containing free carboxy, sulfonic, or phosphate groups, or groups which will cleave to form free carboxy, sulfonic, or phosphate groups. Specific examples found effective include benzoic acid, 3,4,5-trimethoxycinnamic acid, 1 - bromo-3,3 - dimethylcyclobutane carboxylic acid, quinic acid, octric acid, homoisophthalic acid, maleic anhydride, N - hydroxysuccinimide, N - hydroxyphthalimide, 3-sulfolamylsulfonic acid, ammonium salt; mono-n-octadecylphosphate, 3,4-epoxysulfolane, hydroxyhydroquinone triacetate, and copoly(methacrylate; acrylic acid) (10:90 ratio).

T878,011
PHOTOGRAPHIC PAPER
Louis G. Loquifer, Brussels, Belgium, and Lesley Hinds, Welwyn Garden City, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 11, 1970, Ser. No. 18,708
Claims priority, application Great Britain, Mar. 14, 1969,
13,575/69
Int. Cl. B32b *23/08*
U.S. Cl. 117—68
No Drawing. 5 Pages Specification

A photographic paper is disclosed having a paper base coated on at least one side with a 4-methylpentene-1 polymer, the emulsions are then applied to the coating of 4-methylpentene-1 polymer. Photographic papers thus produced have a reduced drying time and are heat stable when subjected to drying temperatures. It is preferred that both sides of the paper be coated with the 4-methylpentene-1 polymer.

The method of making a photographic paper with reduced drying time comprises coating at least one side (preferably both sides) of the paper with 4-methylpentene-1 polymer to a thickness of the order of about 20 to 25 microns, subjecting a 4-methylpentene-1 layer to surface treatment such as corona discharge to promote the adhesion of the emulsion of the polymer, placing an initial layer of gelatin on the polymer layer thus treated and applying a layer of radiation sensitive material such as a photographic emulsion to the prepared polymer layer. Papers thus produced are suitable for both black and white and color photography.

REISSUES

SEPTEMBER 8, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,946

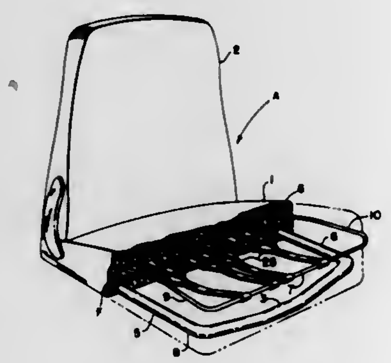
LOAD SUPPORTING STRUCTURES

Edward T. Getz, Cleveland Heights, and Matthew Pacak, Solon, Ohio, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Original No. 3,329,466, dated July 4, 1967, Ser. No. 525,037, Feb. 4, 1966. Application for reissue Feb. 4, 1969, Ser. No. 813,774

Int. Cl. A47c *27/14, 27/22*

U.S. Cl. 297—458 **23 Claims**



1. Load supporting structure comprising:
frame means including a substantially rigid sub-frame and a bolster frame attached to the sub-frame,
said bolster frame including a front portion spaced from said sub-frame and movable towards the sub-frame upon application of load,
load transfer means supported solely at one end to said front portion of said bolster frame and extending longitudinally toward the rear of the frame means,
and elastomeric material [bonded to and] surrounding said *bolster* frame [means] and [bonded to at least the underside of] said load transfer means *and bonded to at least a portion of said bolster frame and said load transfer means,*
said elastomeric material, load transfer means and said bolster frame cooperatively transferring any load on said structure to said sub-frame.

26,947

LOAD SUPPORTING STRUCTURES HAVING AUXILIARY MOUNTING FRAME MEANS

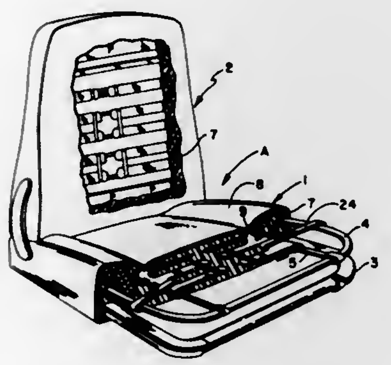
Edward T. Getz, Cleveland Heights, and Matthew Pacak, Solon, Ohio, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Original No. 3,363,943, dated Jan. 16, 1968, Ser. No. 569,872, Aug. 3, 1966. Application for reissue Feb. 4, 1969, Ser. No. 813,773

Int. Cl. A47c *27/14, 27/22*

U.S. Cl. 297—452 **21 Claims**

1. Load supporting structure comprising:
frame means including a rigid subframe, and a bolster frame and mounting frame both secured to said subframe,
at least one of said bolster and mounting frames having portions spaced from at least a portion of the subframe and movable relative to said subframe upon application of load,
load transfer means supported by said mounting frame,
elastomeric material *surrounding said mounting frame and said load transfer means and* bonded to at least [the underside] *a portion* of said *mounting frame and said* load transfer means,
said elastomeric material, load transfer means and said bolster and mounting frames cooperatively transferring any load on said structure to said subframe.



26,948

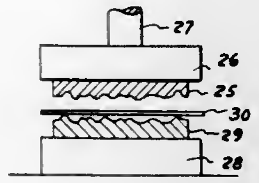
TEXTURED SURFACE PAINTING SHEETS AND METHOD OF MAKING SAME

Max Klein, Smithfield, Mich., assignor, by mesne assignments, to KMS Industries, Inc., Ann Arbor, Mich., a corporation of Delaware

Original No. 3,287,193, dated Nov. 22, 1966, Ser. No. 422,233, Dec. 30, 1964. Application for reissue Nov. 20, 1968, Ser. No. 786,495

Int. Cl. B44c *3/08;* **B44f** *7/00;* **G09b** *11/10*

U.S. Cl. 161—18 **8 Claims**



The textured surface painting sheets have on one surface a line outline of areas to be painted which have indicia therein indicating the color of paint to be applied, said sheet being made of a material having said surface capable of taking and retaining ia molded shape, and said sheet having said surface permanently set into the texture of said original oil painting. A layman painter who applies a smooth coat of paints of the indicated colors to said sheet is enabled to faithfully reproduce the color and texture of the orignal oil painting.

The method of making the textured surface painting sheets comprises preparing a sheet having a painting surface capable of being molded and taking on a permanent set. The painting surface is also provided with a visible line outline of the identified areas to be painted with indicated colors so as to reproduce, when so painted, the colors of the original painting. A die is prepared which has on one surface the image or reverse image of the surface texture of the original oil painting. This may be done by

conventional methods of tracing the surface on steel die blanks or by means of a casting from the original painting using a suitable material such as plastic, metal, plaster of Paris and then duplicating this cast surface upon metal dies. The painting surface is then molded in the die to impart to it the surface texture corresponding to the original painting and given a permanent set.

The painting sheet may be provided with a marginal area simulating a frame.

26,949

CONTOURED ONE-PIECE HANGER

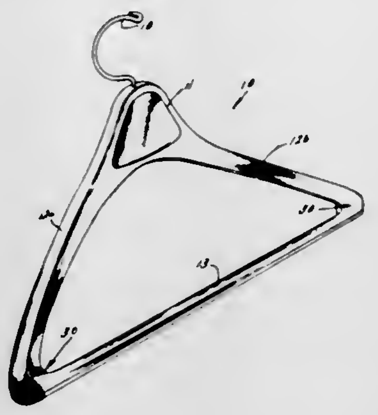
John H. Batts, Grand Rapids, Mich., assignor to John Thomas Batts, Inc., Zeeland, Mich., a corporation of Michigan

Original No. 3,406,881, dated Oct. 22, 1968, Ser. No. 615,733, Feb. 13, 1967. Application for reissue Feb. 18, 1970, Ser. No. 12,162

Int. Cl. A47j *51/08*

U.S. Cl. 223—88 **3 Claims**

An integrally moulded garment hanger having an enlarged header portion, a support element associated with the header portion, a pair of diverging legs extending downwardly and outwardly from the sides of the header portion, each of the legs extending forwardly from and out of the general plane of the header portion, and a trouser bar connecting the extremities of each of the legs. The entire structure, with the exception of the support element, may be integrally moulded in a two-piece mould structure opening by simple movement of the mould valves in opposite directions. This is permitted by displacing all upwardly facing segments of the header portion, legs and bar either laterally aligned or forwardly offset with respect to one another. In this manner, the hanger may be moulded with hollow, shell-like components while still permitting vertical opening of the mould members for removal of the hanger.

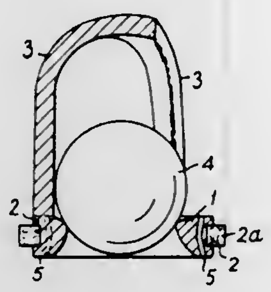


PATENTS

GRANTED SEPTEMBER 8, 1970

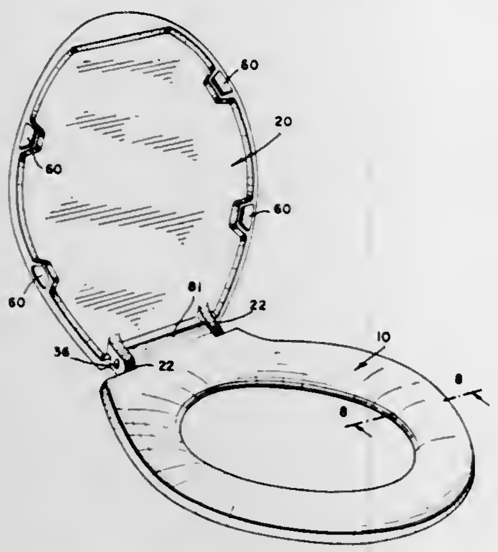
GENERAL AND MECHANICAL

3,526,906
PROSTHETIC IMPLANTS MADE FROM CARBONACEOUS MATERIALS
Henry G. De Laszlo, Engelfield Green, England, assignor to Societe le Carbone-Lorraine, Paris, France, a French body corporate
Filed Oct. 10, 1966, Ser. No. 585,688
Claims priority, application Great Britain, Nov. 5, 1965, 47,055/65
Int. Cl. A61f *1/22, 1/24*
U.S. Cl. 3—1 **8 Claims**



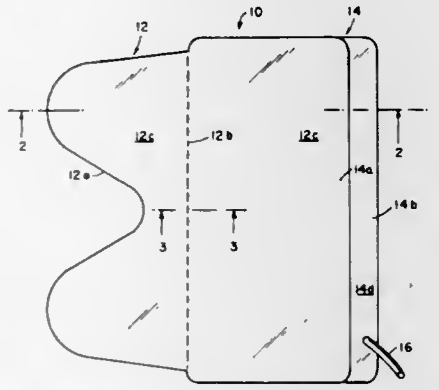
A prosthesis for implanting into a human or other animal body is made mainly of elemental carbon or graphite in the form of a non-metallic, electrically non-insulating member or piece of tissue. Cage and ball or lenticular heart valves, vascular grafts, patches and artificial bone processes are examples of such prostheses.

3,526,907
TOILET SEAT AND COVER COMBINATION
Henry Marshall Stairs, Jefferson, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 687,006
Int. Cl. A47k *13/12, 13/00, 13/02*
U.S. Cl. 4—236 **17 Claims**



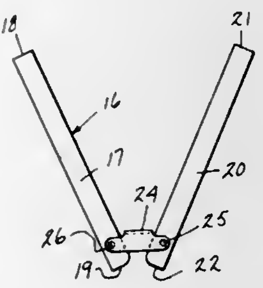
This invention relates to a readily installable and detachable toilet seat and cover combination. The combination includes an elongated cylindrical pintle with a longitudinal groove cut at one end of the pintle so as to provide two prongs and the ends of these prongs are formed into a spherical shape having a diameter somewhat larger than the diameter of the openings of the lugs of the toilet seat and cover and of the seat posts. The other end of the pintle is formed into an enlarged cap or head which serves to limit the longitudinal movement of the pintle. The pintle may be inserted into the openings of the several lugs and seat posts merely by the application of manual longitudinal pressure so as to install the parts in their operative positions. In order to remove the pintle, very small pressure is applied to the end of the prongs so as to reduce the spacing between the prongs, whereupon the pintle may be slid out of the abovementioned openings.

3,526,908
BODY-TURNING DEVICE FOR A HOSPITAL PATIENT
Sanford Davis, Stoney Creek Lane, Colts Neck, N.J. 07722
Filed Oct. 24, 1968, Ser. No. 770,314
Int. Cl. A61g *7/10*
U.S. Cl. 5—81 **3 Claims**



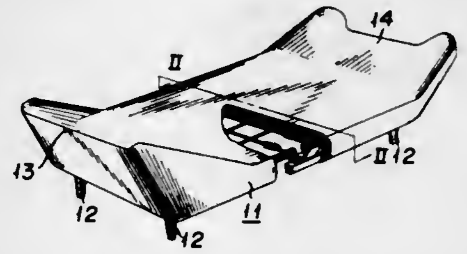
As a useful aid for hospitals or the like, an inflatable device effective in causing a body-turning maneuver for the hospital patient wherein a first inflatable body lifts the patent partially on his side and then a second inflatable body, during its inflation, bears on one side against the already inflated first body and with its opposite side exerts pushing contact against the patient to complete the body-turning maneuver.

3,526,909
HAMMOCK SPREADER BARS
Aaron L. Kotler, Beverly Hills, Calif., assignor to Algoma Net Company, Algoma, Wis., a corporation of Wisconsin
Filed Sept. 24, 1968, Ser. No. 761,938
Int. Cl. A45f *3/22*
U.S. Cl. 5—123 **1 Claim**



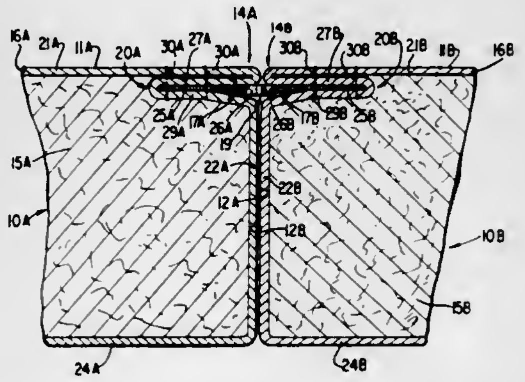
A spreader bar for the end of a hammock bed which bar is provided with one or more hinged joints intermediate its length to permit it to be folded over upon itself when not installed in a hammock bed to permit said bed and spreader bar to be arranged in relatively small, compact package for convenient and economical shipment or storage.

3,526,910
BED CONSTRUCTIONS
Minoru Ikeda, Tokyo, Japan, assignor to France Bed Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Dec. 21, 1967, Ser. No. 692,489
Claims priority, application Japan, July 20, 1967, 42/62,303
Int. Cl. A47c *19/00*
U.S. Cl. 5—186 **4 Claims**



A bed construction which includes a bed body having legs, the bed body consists of a mattress section with a sufficient cushioning property formed in the central part thereof, and a ledged section with a lesser cushioning property than the mattress section formed at the marginal part of the mattress section.

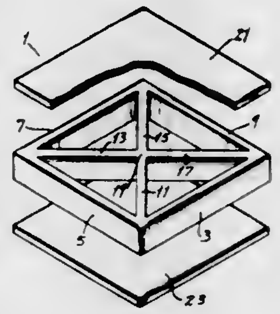
3,526,911
COMPOSITE GYMNASIUM MATS
Hans Meyer, White Plains, and Carmine Carpanzano, New Rochelle, N.Y., assignors to Air-Tech. Industries Inc., Clifton, N.J., a corporation of New York
Filed Apr. 4, 1968, Ser. No. 718,820
Int. Cl. A47c *27/00*
U.S. Cl. 5—345 **2 Claims**



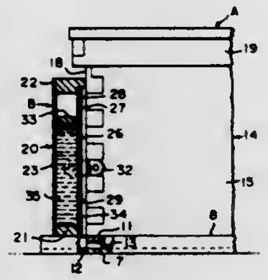
A composite gymnasium mat including two or more abutting mat units provided with a simplified reinforcing arrangement for complementary slide fastener elements which hold the units in abutting relationship. The reinforcement for each of the slide fastener elements is formed by folding the covering of the mat units to form a pocket for receiving the fastener element and a flap to cover the fastener element, and to provide three layers of the covering material to which the fastener element is secured by stitching.

3,526,912
UPHOLSTERING STUFFING MEMBER
Samuel Lerman, St. Louis County, Mo., assignor to Milbern Company, St. Louis, Mo., a partnership consisting of Joseph G. Schwartz, Mildred Schwartz, Bernice Lerman, and Samuel Lerman
Filed May 8, 1968, Ser. No. 727,608
Int. Cl. A47c *27/14, 27/22*
U.S. Cl. 5—355 **6 Claims**

This invention relates to a cushion designed for inclusion as part of the seat or back of upholstered furniture or as an independent unit. The cushion is constructed of an elastomeric foamed material frame, diagonal ribs of the same material crossing the frame, and resilient stuffing means within the frame. The entire unit is held together by sheets of the elastomeric material or by a fabric outer cover. Several of the units may be combined in a large furniture piece.

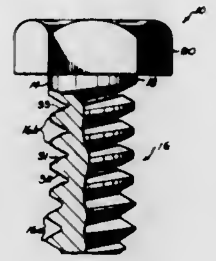


3,526,913
BEE FEEDERS
Herman Warner, P.O. Box 64, Matlock, Manitoba, Canada
Filed May 24, 1968, Ser. No. 731,867
Int. Cl. A01k *53/00*
U.S. Cl. 6—5 **13 Claims**



A bee feeder consisting of a vertical situated shallow box attachable to the front or rear of the hive and having an inner panel which provides a bee passageway from the base of the feeder to the entrance of the feeder adjacent the upper end thereof and a float bar which permits the bees access to the contents of the feeder, but without immersion.

3,526,914
LOCK BOLT AND METHOD OF MAKING THE SAME
Arthur R. Breed, Euclid, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 527,965, Feb. 16, 1966. This application Apr. 7, 1967, Ser. No. 629,133
Int. Cl. B21h *3/02, 3/06;* **B21k** *1/44*
U.S. Cl. 10—10 **2 Claims**

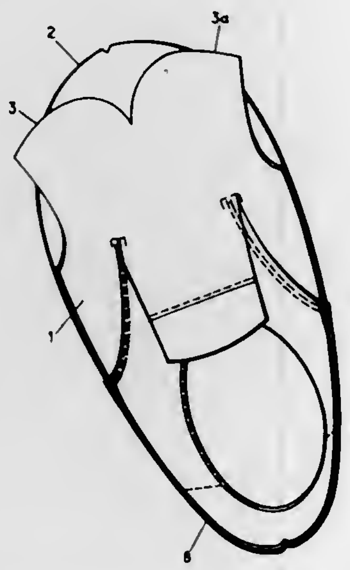


An external locking thread convolution is provided which deviates from a standard Class 5 interference-fit thread in that the space provided at the root of the thread form between adjacent locking threads is greater than the maximum space provided at this location for the standard Class 5 thread. Also, an externally threaded locking fastener having such a locking thread convolution and a method for making such a locking fastener by a thread rolling operation is provided.

3,526,915

METHOD OF ASSEMBLING THE UPPER OF A SAFETY SHOE WITH A SAFETY PLATE THEREIN

Antoine Joseph Georges Baudou,
Les Eglisottes 33, France
Filed July 1, 1968, Ser. No. 741,532
Claims priority, application France, June 29, 1967, 112,532
Int. Cl. A43d
U.S. Cl. 12—146 7 Claims

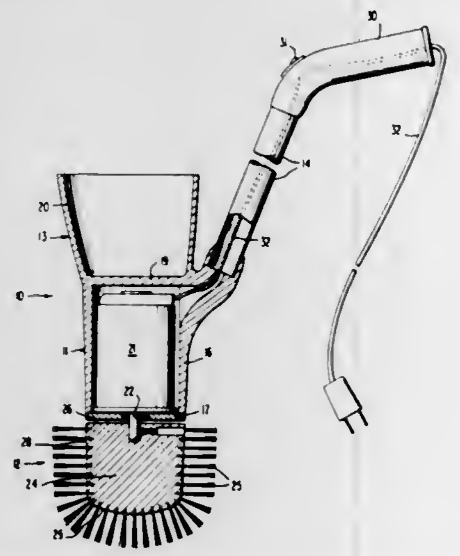


A method of assembling the upper of a safety shoe in which a lining is cut and stitched at the front part of a shoe upper to form a pocket, the portions of which have been pre-coated with a heat sensitive cement. A safety toe plate and a member shaped to the contour of the front part of the shoe are secured to the pocket after which the front part of the upper is turned inwardly and a flexible insole is secured to the assembly. The assembled upper is then placed on a mold and a sole of elastomeric or plastomeric material is secured thereto by direct molding.

3,526,916

BATHTUB CLEANER

Glenn E. Thomas, 4829 Glenwood Road, and James C. Thomas, 3611 Mecklinburg Place, both of Decatur, Ga. 30032
Filed May 21, 1968, Ser. No. 730,770
Int. Cl. A46b *13/04*
U.S. Cl. 15—29 4 Claims

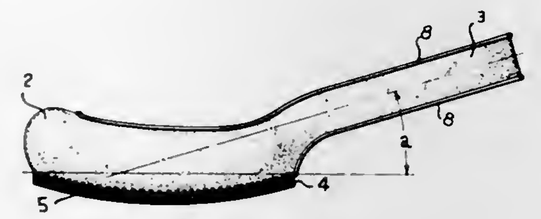


A bathtub cleaner comprising a housing, an electric motor in the housing, a brush suspended below the housing and rotatably supported by the motor, and open ended liquid receptacle mounted on top of the housing, and a handle connected to and extending in an upward direction from one side of the housing.

3,526,917

FOOT FLOOR SCRUBBER

Allan E. Haywood, Jr., Battle Creek, Mich., assignor to Cardinal Industries, Inc., Battle Creek, Mich., a corporation of Michigan
Filed June 21, 1968, Ser. No. 738,909
Int. Cl. A47l *13/18*
U.S. Cl. 15—104.93 10 Claims

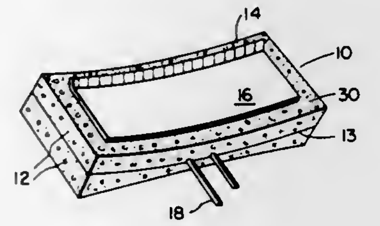


This invention provides a detachable floor scrubber which may be mounted on the foot. The scrubber comprises a toe covering portion, a sole portion, a heel portion, and an abrasive pad section mounted on the said sole portion. The scrubber toe, sole, and heel portions are comprised of an elastic material, with the heel portion pulling upwardly on the toe covering portion to insure firm, operative positioning of the abrasive pad section which is mounted on the bottom of the foot sole.

3,526,918

FLEXIBLE WINDOW WASHER AND WIPER

Ragnvald G. Leland, 2334 W. 241st St., Lomita, Calif. 90717
Filed Sept. 24, 1968, Ser. No. 761,971
Int. Cl. A47l *1/08;* **B60s** *1/04*
U.S. Cl. 15—121 3 Claims



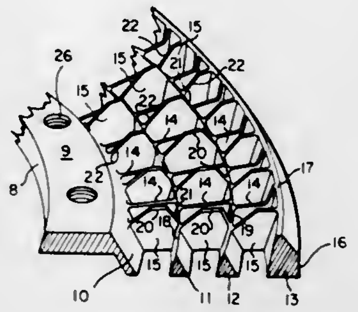
A combination flexible window washer and wiper assembly suitable for curved windows by having a porous, compressible spongelike pad, a resilient blade member and handle means attached to said pad for the purpose of washing and wiping a curved surface.

3,526,919

ROTARY BROOM CONSTRUCTION

Herbert W. Byers, 605 S. Westervelt, Zilwaukee, Mich. 48604
Filed Apr. 24, 1968, Ser. No. 723,754
Int. Cl. A46b *13/00*
U.S. Cl. 15—180 11 Claims

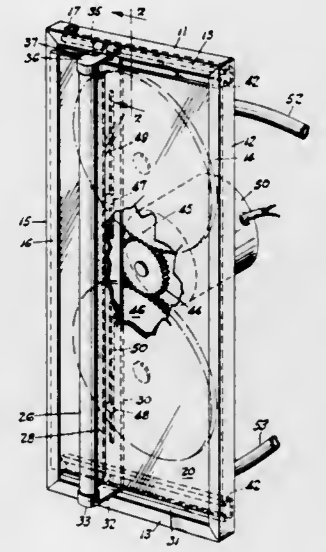
A rotary broom composed of a plurality of arcuate segments secured end to end to form an annulus having a radially inner body provided with a flat upper surface and surrounded by a plurality of concentric ribs. Extending from the body to the outermost rib is a plurality of radial connectors which are circumferentially staggered and spaced from one another. Between adjacent connectors is a bristle support which extends radially from the body to the outermost rib, the supports being staggered similarly to the connectors. Each bristle support has a radially outer upper surface which is coplanar with the upper surface of the body and a radially inner surface which is inclined downwardly and radially inwardly. U-shaped bristles are supported on the inclined surfaces of the bristle supports and extend downwardly and radially outwardly from the annulus. A disk overlies the annulus and prevents relative vertical movement of the annulus and the bristles.



3,526,920

REARVIEW MIRROR WIPER

Milan Boyanich, Sr., 41 Fontaine Drive, Cheektowaga, N.Y. 14215
Filed Sept. 5, 1968, Ser. No. 777,210
Int. Cl. B60s *1/44*
U.S. Cl. 15—250.29 5 Claims



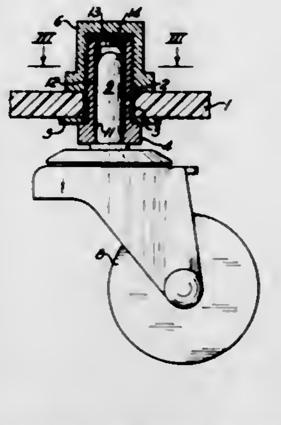
An outside-mounted rectangular rearview mirror having a vertical wiping blade with horizontal slots above and below the mirror portion. Drive and transmission means is disposed in a casing behind the mirror and has wiper support members extending through the slots and in engagement with the upper and lower ends of the wiper to reciprocate the latter horizontally across the mirror.

3,526,921

SUITCASE CASTOR MOUNTING

Jean A. Aupke, 1328 Middle St., Pittsburgh, Pa. 15215
Filed Oct. 16, 1968, Ser. No. 767,960
Int. Cl. A47b *33/00*
U.S. Cl. 16—43 6 Claims

A hollow stud with a head has an externally threaded stem that will fit in and extend through a hole in the wall of a suitcase with the head outside. A cup-like nut is screwed onto the stem for holding the stud in place so that the mounting post of a castor can be inserted in it.

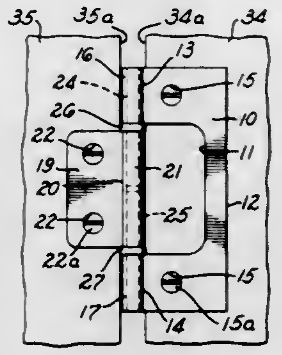


A friction sleeve inside the stem grips the castor post to prevent it from accidently coming out of the stud.

3,526,922

EDGE MOUNTED NONMORTISED HINGE

Kenneth K. Kellems, Costa Mesa, Calif., assignor to Acme General Corporation, Monrovia, Calif., a corporation of California
Filed May 10, 1968, Ser. No. 728,176
Int. Cl. E05d *9/00*
U.S. Cl. 16—128 2 Claims

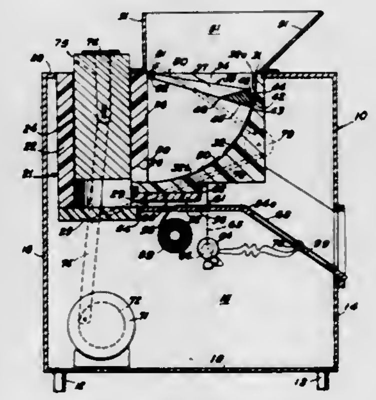


An edge mounted, nonmortised, leaf hinge for doors, or the like, having a pair of hinge leaves pivotally connected together by pintles.

3,526,923

MEAT MOLDING APPARATUS

Owen P. Barnes, Jr., P.O. Box 159, Warner Robins, Ga. 31093
Filed Jan. 17, 1967, Ser. No. 609,814
Int. Cl. A22c *7/00*
U.S. Cl. 17—32 9 Claims

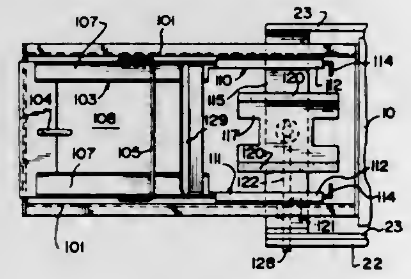


Meat molding method and apparatus comprising a hopper for the receipt of moldable meat, an arcuate feed conduit disposed below the hopper, a compression chamber positioned adjacent said feed conduit and defining an opening adjacent said feed conduit, a feed paddle positioned in said feed chamber for oscillating movement, an extruding conduit communicating with the lower portion of the compression chamber, paper supply means for applying a strip of paper to the meat extruded from the extruding conduit and cutting means for cutting the meat and paper in predetermined lengths.

3,526,924

SEPARATOR SHEET FEEDER AND PATTY MOLDER

James A. Holly, Olympia Fields, Ill., assignor to Hollymatic Corporation, a corporation of Delaware
Original application Sept. 9, 1966, Ser. No. 578,234, now Patent No. 3,417,425, dated Dec. 24, 1968. Divided and this application June 26, 1968, Ser. No. 740,117
Int. Cl. A22c *7/00*
U.S. Cl. 17—32 **6 Claims**

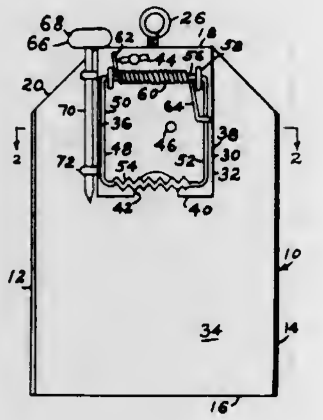


An apparatus for applying a sheet such as a separator sheet to a shaped article such as patties of moldable food material that are molded successively in a movable mold in which a carrier transfers a sheet from a stack of sheets into a frame in position to have the ejected article pick up its sheet when ejected from the mold and in which the carrier it itself moved by movement of the mold.

3,526,925

CONVERTIBLE FISH CLEANING AND KITCHEN BOARD DEVICE

Paul H. Mason, 166 Kenan St., Mobile, Ala. 36606
Filed Apr. 16, 1968, Ser. No. 721,820
Int. Cl. A22c *25/06*
U.S. Cl. 17—70 **1 Claim**

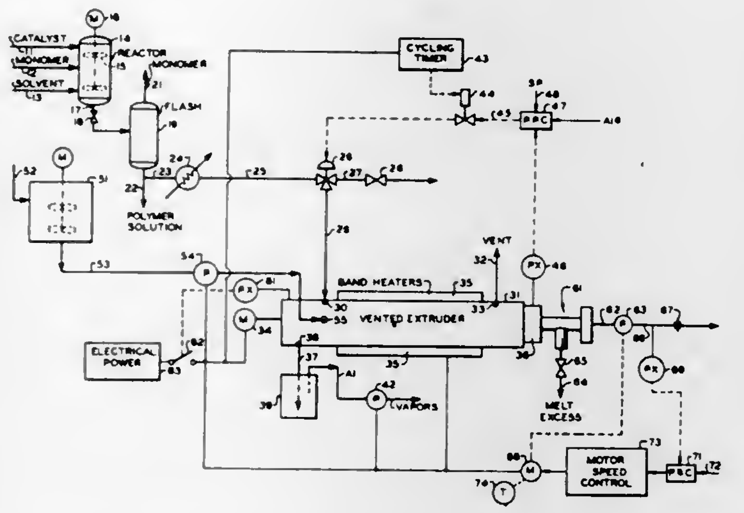


An all purpose kitchen utensil including a kitchen board with a fish cleaning device forming a removable part thereof. The cleaning device has a fish engaging clamp to hold the tail of the fish securely while being scaled and cleaned and there is a pointed awl for holding down the fish head to the board. The board is also otherwise usable for other kitchen purposes. The clamp portion is constructed to avoid multilation of the fish flesh.

3,526,926

POLYMER EXTRUSION SAMPLING SYSTEM

Richard K. Reid, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,065
Int. Cl. B29h *21/00*
U.S. Cl. 18—2 **7 Claims**

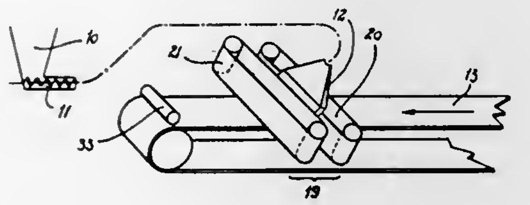


Polymerization reaction effluent is flashed to remove unreacted monomer, and a portion of the remaining solution of normally solid polymer in solvent is heated and injected into a vented extruder. A polymer trap is located below and connected to a vacuum port in the bottom of the extruder upstream of the feed inlet. A vacuum pump is connected to the polymer trap for removal of flashed solvent. The sample solution is injected into the extruder at a rate responsive to the extruder die pressure. A pressure limit switch deenergizes the sampling system if the pressure in the feed section of the extruder exceeds a predetermined value. A portion of the extrudate is passed to a melt index analyzer.

3,526,927

METHOD AND APPARATUS FOR MAKING ARTIFICIAL SKINS

Pierre Edouard Villain, Beauvais, France, assignor to Novacel, S.A., Paris, France, a corporation of France
Filed Nov. 21, 1966, Ser. No. 595,855
Claims priority, application France, Nov. 22, 1965, 39,272; Apr. 15, 1966, 57,763
Int. Cl. B29d *3/02*
U.S. Cl. 18—4 **3 Claims**

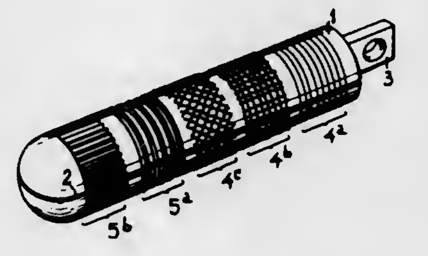


Apparatus for preparing an artificial skin through the production of a continuous sheet of paste with subsequent disorientation of fibers incorporated therein without any reduction in the thickness of the sheet. Said apparatus comprises an extrusion means for said paste, a means for distributing said paste in a continuous sheet, an endless conveyor receiving said sheet, and a treatment bath for coagulating and finishing said sheet, said paste-distributing means comprising an extrusion box producing a sheet of paste, two belts disposed at right angles to said conveyor and adapted to be driven in movement, the sides of said belts which face each other being displaced in opposite directions, and two adjustable lateral guides limiting the space between said two belts, said belts inducing a rolling effect on the sheet.

3,526,928

MANDREL FOR MAKING SAUSAGE CASINGS AND WIRE STRUCTURE THEREFOR

Hubert J. Vaessen, 5 Singel, Deventer, Netherlands
Filed Aug. 7, 1967, Ser. No. 658,749
Int. Cl. B29f *3/04*
U.S. Cl. 18—14 **7 Claims**

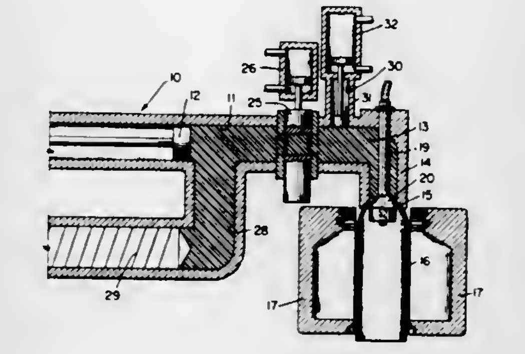


A mandrel for making sausage casings provided with a non-smooth surface either by treatment of the outer surface of the mandrel or by providing a removable outer structure such as wire mesh.

3,526,929

APPARATUS FOR MINIMIZING TERMINAL DROOL IN INTERMITTENT-CHARGE PLASTIC EXTRUSION APPARATUS

Frank E. Coupland, Blackwood, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Nov. 24, 1967, Ser. No. 685,400
Int. Cl. B29d *23/04*
U.S. Cl. 18—14 **7 Claims**



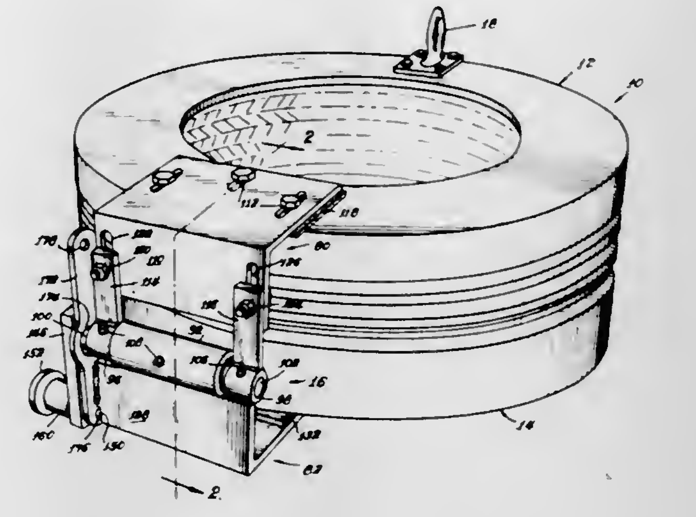
This application discloses a method and apparatus for minimizing terminal drool in intermittent-charge plastic extrusion apparatus, especially in valve-controlled intermittent-charge plastic extrusion apparatus for producing tubular parisons and blown hollow articles from compressible plastic material, such for example as polyolefins and particularly polyethylene.

3,526,930

TIRE FORMING APPARATUS

Vaughn Rawls, Lima, Ohio, assignor to National Standard Company, Niles, Mich., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,942
Int. Cl. B29h *5/02*
U.S. Cl. 18—18 **12 Claims**

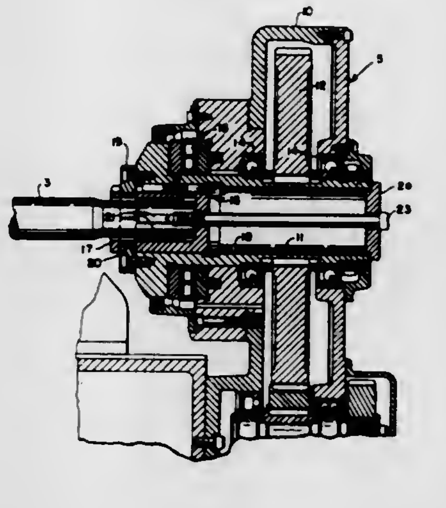
Two tire mold components without a spacer therebetween may be relatively pivoted about a first hinge axis and thereby separated to permit a tire to be inserted or withdrawn. The same tire mold components with a spacer therebetween may be relatively pivoted about a second hinge axis to the same end. The same detachable clamping band may be used to clamp together the tire mold components either with or without a spacer therebetween.



3,526,931

INJECTION MOLDING MACHINE

William H. Schwartz, University Heights, Ohio, assignor to Lester Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed July 31, 1967, Ser. No. 657,383
Int. Cl. B29f *1/02*
U.S. Cl. 18—30 **5 Claims**



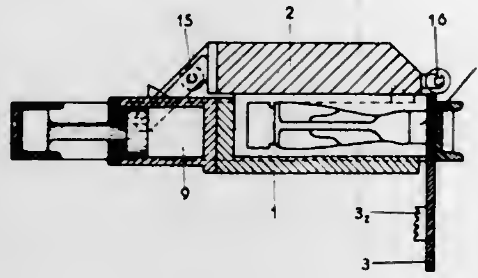
An injection molding machine of the reciprocating screw type characterized in that the screw may be serviced or replaced by rearward retraction from the injection cylinder and from the screw drive mechanism.

3,526,932

MOLD-HOLDER, MORE PARTICULARLY FOR PRODUCING INJECTED ARTICLES, SUCH AS FOOTWEAR ARTICLES OR OTHER APPLICATIONS, AS WELL AS INJECTING MACHINES PROVIDED WITH THIS MOLD-HOLDER OR THE LIKE

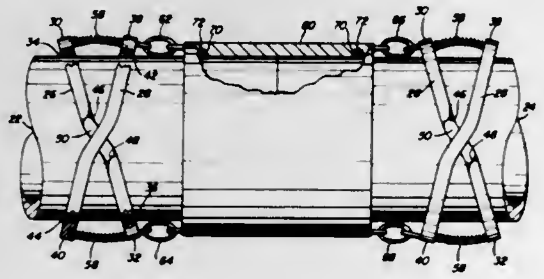
Marcel Jezequel and Jean Ovtcharenko, both of 18 Avenue d'Epinay, Colombes, France
Filed Apr. 7, 1967, Ser. No. 629,313
Claims priority, application France, Apr. 28, 1966, 59,548
Int. Cl. B29c *1/00*
U.S. Cl. 18—42 **6 Claims**

The invention relates to a mold-holder, in particular for producing injected articles, such as footwear articles, comprising a fixed plate and a pivoting lid able to close this plate and a lateral closing plate for the fixed plate and its lid, application and locking means for these lids cooperating for ensuring in particular, a safety closing of the mold-holder.



3,526,933
CROSS RING LOCK

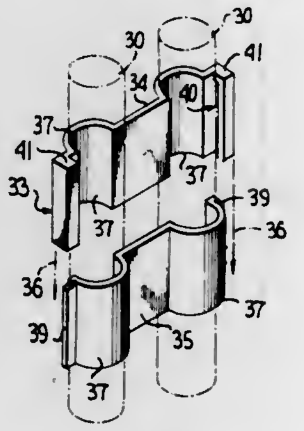
Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.
Continuation-in-part of application Ser. No. 512,567, Dec. 6, 1965. This application Sept. 9, 1968, Ser. No. 758,212
Int. Cl. A44b *21/00;* **F16l** *37/00*
U.S. Cl. 24—73 **13 Claims**



A coupling for joining two elements such as pipes, which coupling includes a pair of rings disposed in interlaced and crosswise relationship. Each ring is provided with diametrically disposed portions, each portion having a gripping surface on the inner arcuate side thereof. The gripping surfaces of one of the rings is capable of gripping both of the elements. Likewise, the two gripping surfaces of the other ring are capable of gripping both of the elements.

3,526,934
INTERLOCKING SPACERS

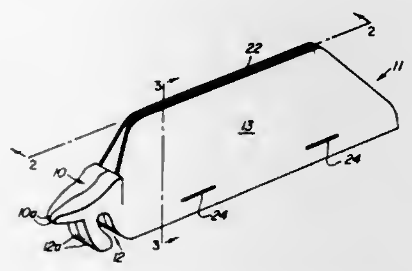
David H. Owen, Sr., 4019 Michael Blvd., Mobile, Ala. 36609
Filed Aug. 20, 1968, Ser. No. 754,001
Int. Cl. A44b *21/00;* **F16l** *3/22*
U.S. Cl. 24—81 **18 Claims**



This disclosure relates to a device for maintaining a plurality of tubular members in spaced parallel relation. The device comprises complementary halves defining at least two spacer pockets therebetween for fixing tubular members in a predetermined spaced relation. The complementary halves have coacting interfitting tongue and groove portions for interlocking the device about the tubular members, preferably by longitudinally sliding one of the halves relative to the other, but in other instances by interconnecting snap action.

3,526,935
ARTICLE-HOLDING CLIP AND METHOD OF PRODUCING SAME

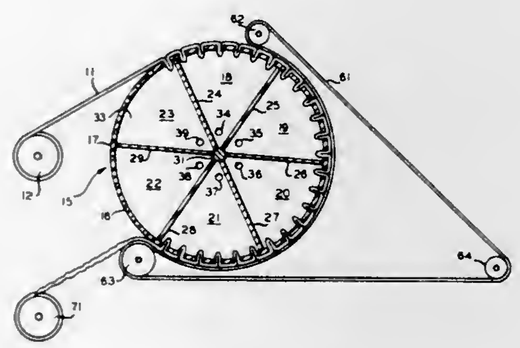
Elvin L. Boyce and Paul W. Cox, Salt Lake City, Utah, assignors to Elbo File Control Systems, Incorporated, Salt Lake City, Utah, a corporation of Utah
Filed Jan. 29, 1968, Ser. No. 701,370
Int. Cl. A44b *21/00*
U.S. Cl. 24—84 **5 Claims**



A unitary article-holding clip molded from a tough yet resilient plastic material, such as nylon or the like. The clip is provided with article-holding jaws interconnected at their backs by a membrane portion of the plastic material serving as a hinge that keeps the respective jaws tied to each other while still enabling them to be brought into and maintained in coacting, clip positions. Consequently, the clip can be molded flatwise, as a unitary article. It is folded upon itself, following the molding operation, utilizing the interconnecting membrane as a hinge, and is fastened into clip formation thereafter. Suitable fasetening members may be molded into respective confronting faces of the backs of the respective jaws for locking coaction when the jaws are folded into clip formation, or staples or some other fastening devices may be applied to such back portions of the jaws to hold such jaws in folded, clip formation for use.

3,526,936
FIBER TEXTURING APPARATUS UTILIZING A CONTINUOUS, MOVING, APERTURED SURFACE

Lee O. Edmonds, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 14, 1968, Ser. No. 767,115
Int. Cl. D02g *1/00*
U.S. Cl. 28—1.2 **4 Claims**

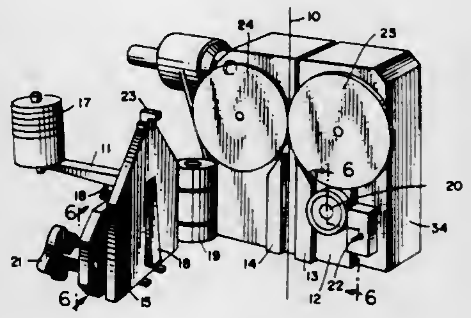


One or more yarns are crimped by contacting a moving apertured surface, with a portion of the surface subsequently being subjected to reduced pressure on the side opposite the yarns to force portions of the yarns into the apertures. The resulting crimp is set by heating the crimped yarn, for example with steam, and then permitting the yarn to cool, preferably by contact with a cooling

fluid. The crimped yarn is then removed from the apertured surface. The apertured surface can be a rotating drum or a continuous belt, and can be provided with slots at an angle to the direction of movement, or a plurality of circular openings.

3,526,937
CRIMPING APPARATUS

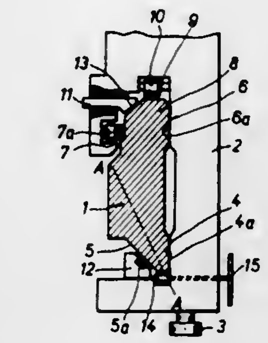
Hermann Kubler, Remscheid-Lennep, Germany, assignor to Barmag Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal, Germany
Filed Apr. 21, 1967, Ser. No. 632,623
Claims priority, application Germany, Apr. 29, 1966, B 86,885
Int. Cl. D02g *1/12*
U.S. Cl. 28—1.6 **5 Claims**



A crimping device for synthetic yarn in which one side wall of an elongated crimping chamber is pivotally hinged along one edge and contains a yarn guide member to receive a running length of yarn when said side wall is swung open, the guide member acting to guide the yarn into feed rolls adjacent the inlet end of the crimping chamber when the side wall is swung to a closed position.

3,526,938
MACHINE TOOL

Erich Grabber, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed Sept. 11, 1967, Ser. No. 666,586
Claims priority, application Switzerland, Sept. 13, 1966, 13,212/66
Int. Cl. B21d *53/00*
U.S. Cl. 29—1 **4 Claims**



In the case of machine tools a slide is guided on a guide portion by means of a combined roller- and slide guiding.

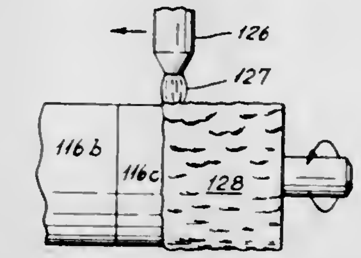
A holding roller of the slide rolls with adjustable contact pressure of the roller, for play-free sliding of locking of the slide, on a rolling track of the guide portion in the next vicinity of a prism forming the slideways.

The rolling track is disposed at a right angle to the plane of symmetry of the said prism and its projection, parallel to said plane, meets the prism.

The distance of the rolling track from the prism represents a fraction of that of adjustable rollers on a bar of the guide portion from said prism.

3,526,939
METHOD FOR COVERING PRESS ROLLS

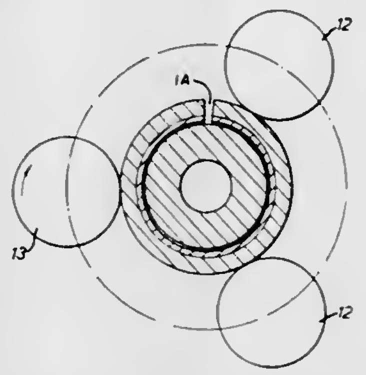
Klaus Kalevi Nikkanen, Karhula, Finland, assignor to A. Ahlstrom Osakeyhtio, Karhula, Finland, a corporation of Finland
Continuation-in-part of application Ser. No. 587,732, Oct. 19, 1966. This application Dec. 19, 1968, Ser. No. 785,318
Int. Cl. B21d *53/26*
U.S. Cl. 29—148.4 **14 Claims**



Press roll bodies are covered by applying a weldable, relatively thick, metallic jacket to a roll body, locally applying high temperatures to the jacket to render a surface layer thereof molten and thereby shrink the jacket to the roller body, and machining at least the resulting fused layer from the jacket to provide a press roll cover having an essentially homogenous structure.

3,526,940
METHOD OF MANUFACTURING A JOINT OF THE BALL AND SOCKET TYPE

Rodney Thomas Beazley, Maidstone, and Dennis Thornton, Doncaster, England, assignors to The Glacier Metal Company Limited, Alperton, Wembley, England
Filed June 26, 1968, Ser. No. 740,263
Int. Cl. B23p *11/00*
U.S. Cl. 29—149.5 **6 Claims**

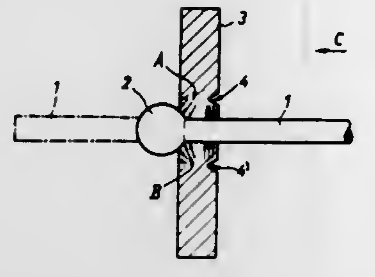


A method of making a ball and socket joint comprising locating a ball member in a cylindrical blank slotted from end to end which is compressed axially to form an annular outer member constituting the socket, the mean circumferential length of which is then extended by rolling to provide a working clearance between the ball member and the socket.

3,526,941
METHOD OF FASTENING ANCHORING MEANS TO A TENSIONING WIRE

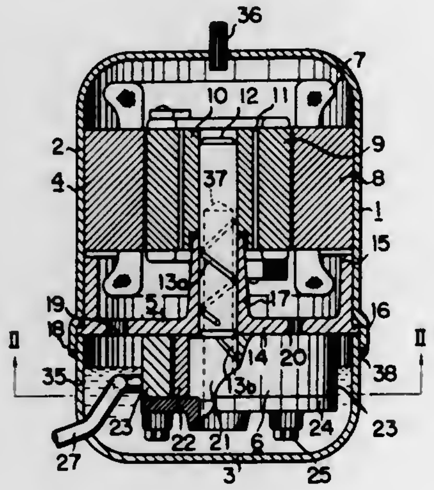
Antonio Brandestini, 60 Alte Landstrasse, Kusnacht, Zurich, Switzerland, and Hans Rudolf Siegwart, Kilchberg, Switzerland; said Siegwart assignor to said Brandestini
Filed Sept. 17, 1968, Ser. No. 760,258
Claims priority, application Switzerland, Sept. 19, 1967, 13,132/67
Int. Cl. B23p *17/00, 11/00*
U.S. Cl. 29—155 **6 Claims**

A method of fastening an anchoring element of steel to a tensioning wire for pre-stressed concrete structures, in which the steel element is threaded over the wire through a hole provided in the element and corresponding to the cross-section of the wire; an abutment or region of increased dimensions is then formed on the wire such that the element cannot slip over the abutment, the element is thrust against the abutment while simultaneously the element is subjected to external deformation to clamp the element to the wire.



3,526,942
MOTOR DRIVEN ROTARY COMPRESSORS

Tuneo Monden, Tokyo, and Makoto Watanabe, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed June 19, 1968, Ser. No. 738,178
Claims priority, application Japan, June 21, 1967, 42/39,812, 42/53,294
Int. Cl. B23b *15/00;* **B21d** *39/02;* **F04c** *23/02*
U.S. Cl. 29—156.4 **4 Claims**

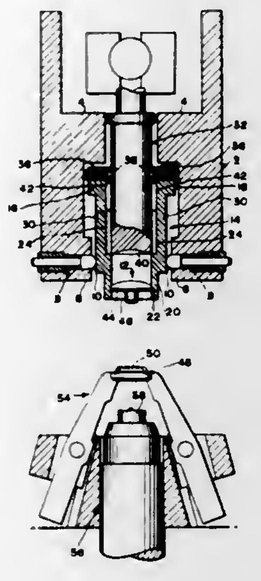


In a motor driven rotary compressor comprising a motor, a frame for supporting the motor and a compressor which are contained in a hermetically sealed casing, the casing is made of two halves, the diameter of the frame is made larger than that of the motor stator, the stator is first force fit in one casing half, then the frame is force fit and the other casing half is joined to the one casing half by a faucet joint.

3,526,943
TOOL HEAD ASSEMBLY

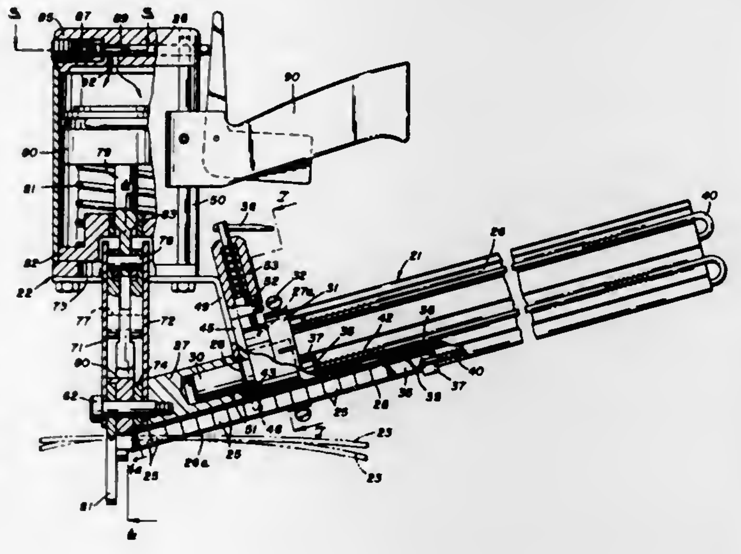
William A. Erhardt, Jr., South Weymouth, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,587
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **10 Claims**

An upper tool head assembly for a fastener component applying machine has a resilient component part receiving and transporting sleeve which carries parts from an upper part feeding level to a lower part attaching level responsive to the driving stroke of a punch which reciprocates within a bore in the sleeve. The portion of the bore in the sleeve through which the punch travels during the terminal portion of its driving stroke is of uniform diameter whereby the sleeve dilates under tension to permit the punch to move the part through the bore and into engagement with the work solely by reason of the said movement of the part. The sleeve thus maintains a constant aligning tension on the part and substantially eliminates free fall of the part prior to its engaging the work and the other component part of the fastener.



3,526,944
CLIP SUPPLYING AND CLINCHING TOOL

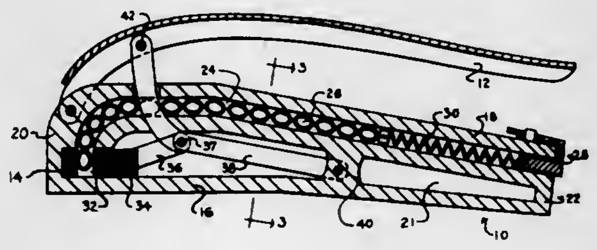
Michael A. Cherup, Columbus, Ohio
(2895 NE. 33rd Court, Fort Lauderdale, Fla. 33306)
Filed June 21, 1967, Ser. No. 647,785
Int. Cl. B23q *7/10;* **B23p** *11/00*
U.S. Cl. 29—212 **10 Claims**



A tool is provided for clinching or crimping an open-sided staple or clip around a work element. A set of normally open or expanded crimping jaws receives uncrimped clips from a barrel-type magazine through an intermediate interconnecting feed chute at the location where the clips are crimped around the work element through closing or contracting operation of the jaws. The feed chute and a stop plate cooperatively positioned at the jaws retain an uncrimped clip between the jaws when the jaws are in an expanded configuration. The jaws, when expanded, are of a configuration to receive an uncrimped clip at this location with the open side of the clip substantially unobstructed for readily receiving the work element and the jaws, when contracted, deform the clip in a crimping operation to a configuration which will be released from the feed chute when the jaws are again expanded. A guide mechanism disposed in cooperative relationship to the jaws assists in positioning of a work element between the jaws and within an uncrimped clip positioned between the jaws. The magazine for the clips comprises several elongated barrels revolvable about a longitudinal axis to sequentially bring each barrel into alignment with the feed chute with the feed chute and barrel angularly disposed relative to the jaws to avoid interference to engagement of the jaws and a clip with a work element and disengagement of the jaws from a clip crimped about a work element.

3,526,945
HAND CRIMPER

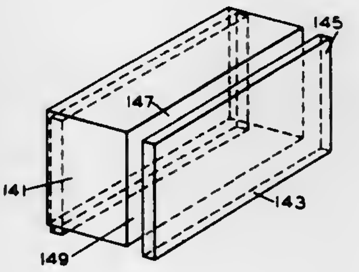
Jimmy C. Ray, Rte. 2, Box 33, Denison, Tex. 75020
Filed Mar. 7, 1968, Ser. No. 711,266
Int. Cl. B23q *7/10;* **H01r** *43/04;* **B21d** *11/04*
U.S. Cl. 29—212 **3 Claims**



Connectors for communication wires are crimped one at a time by hand crimper which moves the hammer against the anvil by a toggle mechanism. For strength and simplicity of construction, the anvil and the bottom of the toggle are connected in a unified loop construction in a handle that contains a magazine of connectors.

3,526,946
METHOD FOR MAKING AN ENCASED STEEL BUILDING BLOCK

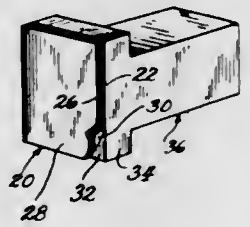
Robert A. Palmer, Dansville, N.Y., assignor to Korblock Corporation, Hornell, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 484,005, Aug. 31, 1965. This application Mar. 26, 1968, Ser. No. 716,050
Int. Cl. B23q *17/00*
U.S. Cl. 29—403 **7 Claims**



A discarded or junk automobile is stripped down by removing the engine, transmission, differential, axles and other relatively massive metal parts, to provide a body mainly of sheet steel and other relatively light metal parts. This is then heated to burn out upholstery and other combustible ingredients and to melt any remaining glass, is tumbled to remove ash and small fragments, and the entire body or a suitably severed fraction thereof is pressed to form a compact crumpled mass of sheet metal. This mass is then used as a core, covered by cement, to form a large sturdy building block suitable for heavy construction. Burning ovens, conveyors, and tumbling means are provided, as well as a heavy duty press, for mechanizing the operation to a considerable extent.

3,526,947
TEMPLATE, COMBINATIONS THEREWITH, AND METHODS FOR USE THEREOF

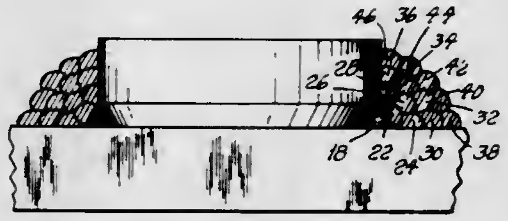
Frank S. Pasek, Westchester, Ill., assignor to Rixson Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 30, 1967, Ser. No. 650,539
Int. Cl. B23g *17/00;* **B23p** *19/00;* **G01b** *3/14*
U.S. Cl. 29—407 **11 Claims**



A template, combinations therewith, and methods for use thereof, said template having first securing means for removably securing it on the obverse side thereof to a member and second securing means for securing it on the reverse side thereof to a support, the latter securing means having greater mechanical strength than the mechanical strength of said first securing means to cause said template to be transferable from said member to said support to which said member is adapted to be mounted.

3,526,948
CIRCULAR FILLET WELDABILITY TEST

Irving L. Stern, Brooklyn, and Robert F. Quattrone, Staten Island, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 15, 1967, Ser. No. 690,811
Int. Cl. B23q *17/00*
U.S. Cl. 29—407 **10 Claims**

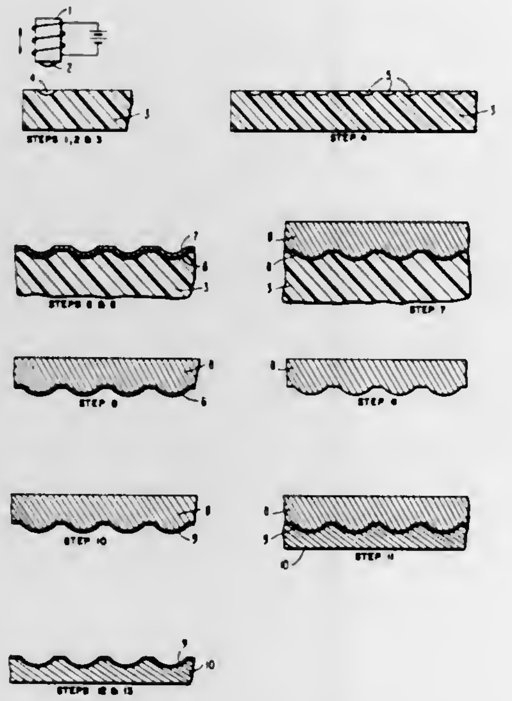


Means for testing weldability of various base-metal/filler-metal combinations under heavy self-restraint and of the merit of various welding procedures. The base metal is formed into a plate and a smaller circular disc having two flat surfaces connected by a circular surface. One circumferential boundary of the circular surface and a flat surface is inwardly chamfered. The disc is placed in the center of the plate with the flat, chamfered surface in contact with the plate. A continuous circumferential bead of filler material is deposited in the chamfer space and concavely machined after it cools. Other circumferential beads are deposited in layers, subsequent layers being laid down after the prior layer cools. The cracks which develop in each layer are recorded. After approximately five layers are laid down, the weld is allowed to cool for a week and is examined daily for cracking. After a week has elapsed, the weldment is macrosectioned and examined under magnification for cracking.

3,526,949

FLY'S EYE MOLDING TECHNIQUE

Frank C. Genovese, Yonkers, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,769
Int. Cl. B21d *32/16;* **B23k** *31/00;* **B23p** *3/02*
U.S. Cl. 29—424 8 Claims

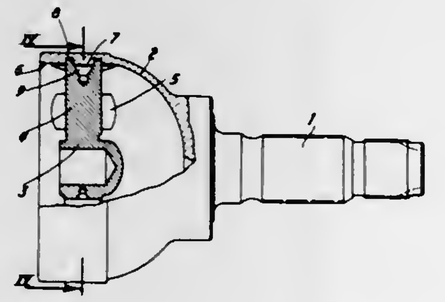


A method of forming a fly's eye lens mold comprising the formation of a detent in a thermoplastic material with a heated tool, allowing the tool to cool in place before removing and repeating the step at an adjacent area to form a detent array, forming a metal mold replica and finally a positive metal mold using conventional electroplating techniques.

3,526,950

METHOD OF ASSEMBLING ELEMENTS

Michel Orain, Courbevoie, France, assignor to Societe Anonyme Glaenzer Spicer, Poissy, France, a corporation of France
Filed Apr. 22, 1968, Ser. No. 722,856
Claims priority, application France, Apr. 28, 1967, 104,730
Int. Cl. B23p *11/00*
U.S. Cl. 29—434 5 Claims

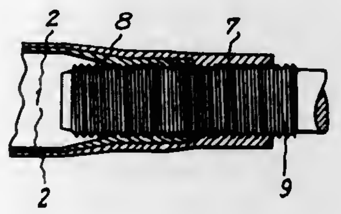


In order to assemble a mechanical part having external spindles with an enclosing part of circular cross section, a cylindrical recess is stamped at the end of each of said spindles, coaxially with the same, cylindrical studs in a member corresponding to said spindles and having a diameter slightly less than that of said recesses are stamped in the inner surface of the enclosing part, together with annular grooves surrounding said studs, the enclosing part is radially deformed to give it a polygonal section enabling the part with the spindles to be introduced therein with the recesses in the spindles engaged over said studs, said enclosing part being thereafter restored to its cylindrical shape.

3,526,951

METHOD FOR MAKING A CONNECTING DEVICE

Robert E. Witsenhausen-Adelmann, Saint-Vallier, France
Filed July 20, 1967, Ser. No. 654,734
Claims priority, application France, July 20, 1966, 70,003
Int. Cl. B23p *11/00*
U.S. Cl. 29—437 4 Claims

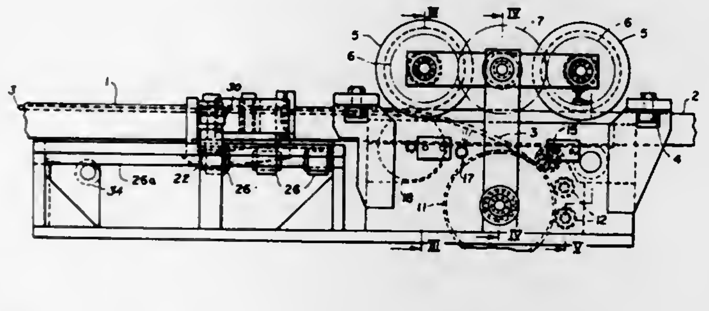


Connecting devices or brake rods are made by introducing two cylindrical coaxial tubes into one another so that the end of the outer tube extends outwardly beyond the end of the inner tube, deforming the inner and outer tube ends inwardly onto a threaded mandrel, and then withdrawing the threaded mandrel.

3,526,952

APPARATUS AND METHOD FOR ASSEMBLING A WALL PANEL

Mark I. Place, Bethel Park, Pa., assignor to Elwin G. Smith & Co., Inc., Pittsburgh, Pa.
Filed May 15, 1968, Ser. No. 729,258
Int. Cl. B23p *19/04;* **B23k** *37/06;* **B23g** *41/08*
U.S. Cl. 29—450 5 Claims



Apparatus and method for installing a tubular gasket in the female portion of a rib of a wall or roof panel or similar element.

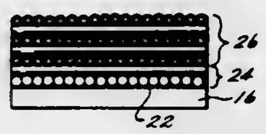
The method comprises spraying glue into the female portion and blowing the tubular gasket into such portion by an air jet so as to prevent twisting of the tube along its longitudinal axis as might otherwise occur by mechanical forcing means.

After the tube is sealed in place in the rib, it is cut in the gap between panels by a flying shear of unique construction so that cutting takes place after the gap reaches a predetermined position and by camming means which operate a shearing knife mounted on a cutting platform which is retracted by spring action to its initial position without retracting the panel so that the latter may continue to move on a production line.

3,526,953

METHOD FOR MAKING LIGHTWEIGHT METALLIC STRUCTURE

Moses A. Levinstein, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Original application Jan. 3, 1967, Ser. No. 606,943, now Patent No. 3,489,534. Divided and this application June 5, 1969, Ser. No. 847,765
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.3 7 Claims

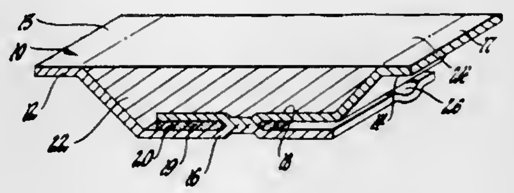


A method wherein a plurality of bonded hollow tube like members are provided by juxtaposing a plurality of solid wire like coated core members and heating to diffuse substantially all of the core material into the coating material while also bonding each of the coatings together.

3,526,954

METHOD OF SOLDERING UTILIZING A BACKING COMPOSITION

Seymour Katz, Royal Oak, and Richard M. Baehr, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,002
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.5 3 Claims



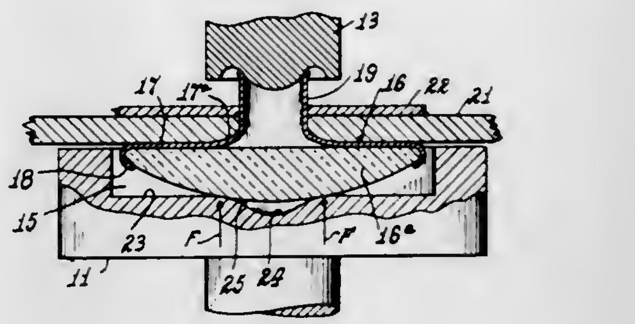
A backing composition and a method of bridging the gap between overlapping metal parts which are subsequently spot welded together to provide a leakproof seal suitable for retaining molten solder in a subsequent soldering operation are disclosed. The composition contains calcium sulphate dihydrate, powdered graphite, and a suspension agent. Sufficient water is added to the composition to form a soft extrudable paste. The paste is applied to one of the mating surfaces of the overlapping metal parts. The overlapping metal parts are brought in firm or tight contact with each other thereby squeezing the paste and causing it to seal the gap between the overlapping metal parts. The overlapping metal parts are then spot welded. The paste in the gap is dried. The joint formed by the overlapping metal parts including the paste filled gap is heated and covered with molten solder by a soldering operation.

3,526,955

METHOD OF ATTACHING FASTENER COMPONENTS

Augustine Cilione, Cranston, R.I., assignor to U.S. Industries, Inc. (doing business as Rau Fastener), Providence, R.I., a corporation of Delaware
Filed Mar. 26, 1968, Ser. No. 716,162
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—512 8 Claims

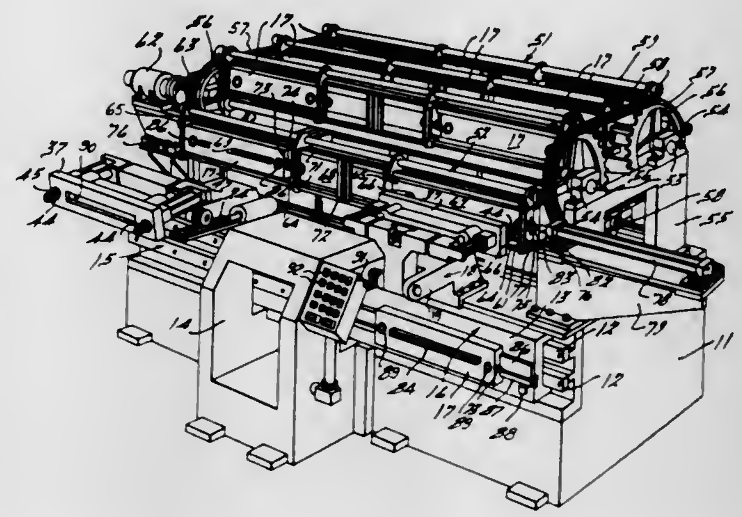
The method of attaching fastener components having fragile inserts which involves the use of a bottom tool having its insert supporting face contoured in a manner to impart controlled forces in a vertical direction and only in an area that is backed by the eyelet barrel so as to resist fracture of the fragile insert.



3,526,956

METHOD OF PROGRESSIVE BROACHING BY MEANS OF A BROACHING APPARATUS HAVING AUTOMATIC TOOL CHANGING MEANS

James K. Fulks, Detroit, Mich., assignor to Colonial Broach & Machine Company, Warren, Mich., a corporation of Delaware
Original application Dec. 5, 1966, Ser. No. 599,113, now Patent No. 3,431,633, dated Mar. 11, 1969. Divided and this application Oct. 28, 1968, Ser. No. 785,430
Int. Cl. B23d *37/00;* **B23q** *3/155*
U.S. Cl. 29—568 3 Claims



A method and an apparatus for performing a broaching operation on a workpiece by serially applying broach sections to the workpiece. The broach sections successively are removed from a storage area, clamped to a support which is advanced past the work piece to effectuate a partial broaching operation and returned to the storage area.

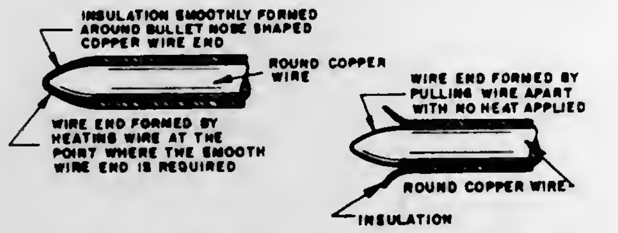
3,526,957

METHOD AND APPARATUS FOR PREPARING WIRES FOR THREADING PERFORATED ARTICLES

Walter Rohrbach, Burnsville, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Nov. 28, 1967, Ser. No. 686,244
Int. Cl. H01b *19/00;* **B21d** *41/04*
U.S. Cl. 29—604 13 Claims

A method, and apparatus for practicing the method, for preparing the ends of an array of wires for stringing through an array of computer memory cores is disclosed.

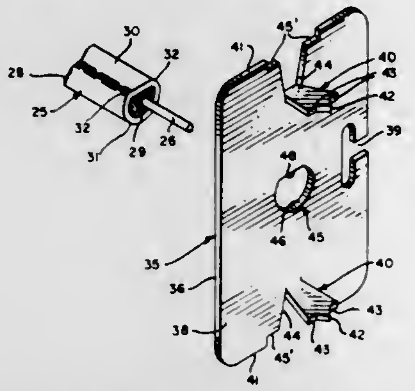
The wires are placed under tension, locally heated to reduce their tensile strength, and thereby broken. This


INSULATION SMOOTHLY FORMED AROUND BULLET NOSE SHAPED COPPER WIRE END
ROUND COPPER WIRE
WIRE END FORMED BY HEATING WIRE AT THE POINT WHERE THE SMOOTH WIRE END IS REQUIRED
WIRE END FORMED BY PULLING WIRE APART WITH NO HEAT APPLIED
ROUND COPPER WIRE
INSULATION

method of preparation forms rounded wire ends which facilitate the threading of the wires through the cores.

3,526,958
FINNED SURFACE ELECTRICAL HEATING UNIT AND METHOD OF MAKING SAME

Cuthbert Grant, Williamsville, N.Y., assignor to Markel Electric Products, Inc., Buffalo, N.Y., a corporation of New York
Filed Sept. 19, 1967, Ser. No. 668,841
Int. Cl. H05b *3/00*
U.S. Cl. 29—611 **10 Claims**

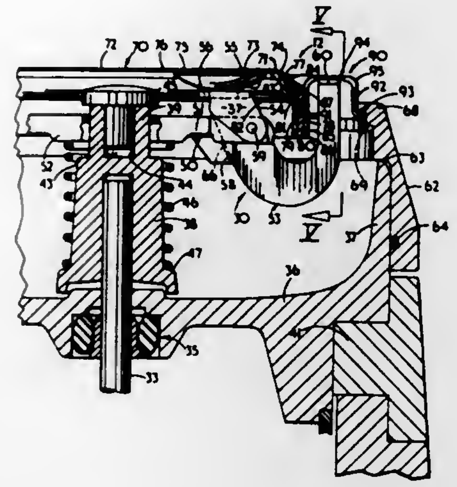


On a metal tubular sheath containing a resistance heating wire, spaced transverse fin plates are provided without solder or necking by making the sheath D-shaped in cross section; providing similar D-shaped holes in the fin plates; threading the fin plates on the sheath in uniformly spaced relation; and turning the fin plates relative to the sheath about its axis to effect pressure and good thermal conductivity contact between the greater part of the D-shaped edge of each fin plate and the periphery of the sheath. The fin plates are spaced from each other by spacing tabs on each plate which initially engage the side of an adjacent fin plate, but which are subsequently moved out of such contact so that the only fin plate-to-fin plate connection is through the above pressure and thermal contacts with the sheath, and the spacing tabs cannot produce noise as the unit expands and contracts thermally.

3,526,959
DRY SHAVERS

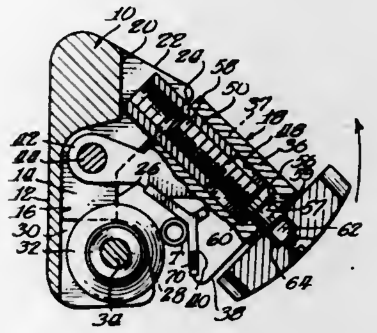
George Young, Alcester, England, assignor, by mesne assignments, to Wilkinson Sword Limited, London, England, a British company
Filed Nov. 7, 1967, Ser. No. 681,277
Int. Cl. B26b *19/14*
U.S. Cl. 30—43.6 **12 Claims**

A mains or battery operated dry shaver having a cutter member spring pressed into contact with a guard member (sometimes known as a shear plate). The cutter member comprises a three armed carrier having a respective blade carrier pivotally mounted on each arm for angular movement about respective axes extending in a common plane which is itself generally normal to the axis of revolution or oscillation of the carrier member. Each blade carrier supports a radially inner concave blade and is formed to afford a radially outer blade. The guard member is formed with a perforated inner part made of thin tensioned foil with which the inner concave blades co-operate, and an annular outer part formed with generally radial slots with which the outer blades co-operate and made of thicker metal than the foil. The height of the inner part may be adjustable relative to the outer part.



3,526,960
MANUALLY OPERABLE TUBE CUTTER

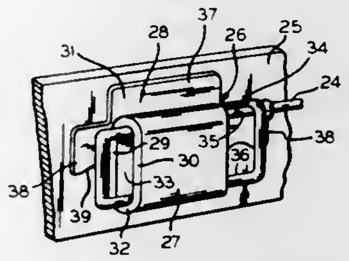
William C. Gore, Streamwood, and Eugene B. Shapiro, Highland Park, Ill., assignors to Chicago Specialty Manufacturing Co., Skokie, Ill., a corporation of Illinois
Filed Feb. 21, 1968, Ser. No. 707,049
Int. Cl. B23d *21/08;* **B26d** *3/16*
U.S. Cl. 30—102 **6 Claims**



A cutting tool having a body member which supports a rotatably mounted cutting wheel. A pivotal member is pivotally secured to the body member and said pivotal member has a jaw surface adapted to engage a tube to be cut. Said pivotal member has means for positioning the pivotal member in relation to the cutting wheel.

3,526,961
BUCCAL TUBE ASSEMBLY

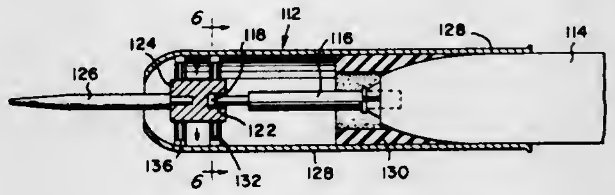
Peter C. Kesling, Green Acres, La Porte, Ind. 46350
Filed May 12, 1969, Ser. No. 823,735
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **14 Claims**



Buccal tube assembly adapted to be mounted on a tooth for receiving the distal end of an arch wire and capable of selectively providing an oval opening for receiving a doubled back portion of an arch wire to obtain movement control of the tooth, or a generally cylindrical opening to receive a single arch wire to anchor the distal end thereof, wherein the assembly may be converted while in the patient's mouth.

3,526,962
DENTAL VIBRATOR FOR SCALING TEETH

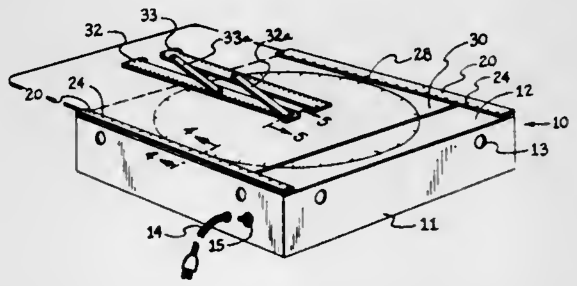
Herbert Fuerst, First Federal Bldg., Rocky Mount, N.C. 27801
Filed Jan. 24, 1969, Ser. No. 793,727
Int. Cl. A61c *3/16*
U.S. Cl. 32—50 **3 Claims**



A vibrating appliance used by dentists to massage gums, remove calculus or tartar from teeth and excess cement from crowns or orthodontic bands wherein an air driven turbine through a mechanical linkage effects vibration of a dental tool, particularly a scaler. The turbine receives its air supply from a water or electric motor driven fan. In another form of the invention, a dental handpiece is provided with a mandrel that drives a head member provided with a plurality of protuberances that sequentially engage the walls of an elongated slot in a member which carries the dental tool to be vibrated.

3,526,963
RADAR-NAVIGATION APPARATUS

John B. Pansmith, West Islip, N.Y., assignor to Pansmith, Inc., Hauppauge, N.Y., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,210
Int. Cl. B43l *5/00*
U.S. Cl. 33—1 **6 Claims**

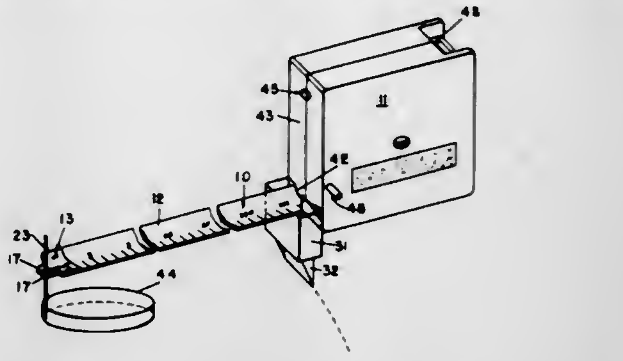


This invention is concerned essentially with radar navigation, embracing unique apparatus for and methods of radar navigation, wherein a course line of a radar-equipped vessel is marked on a plotting sheet including successive positions of the radar-equipped vessel; and corresponding successive positions of the other vessel are marked on the plotting sheet, so that the true or actual courses and speeds of the radar-equipped and other vessels are visually obvious to the operator.

3,526,964
FLEXIBLE MEASURING TAPE SCRIBER

Edward Burns Clark, Jr., Curlew, Wash. (Box 57, Miami, Ariz. 85539)
Filed Oct. 2, 1968, Ser. No. 764,584
Int. Cl. B43l *9/04*
U.S. Cl. 33—27 **8 Claims**

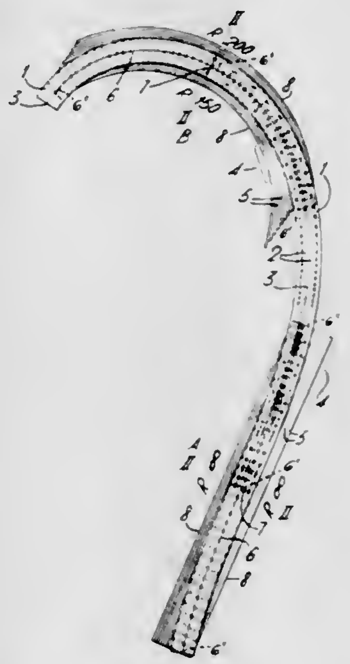
A craftsman's flexible measuring tape having an adaptor on the housing holding a scribe and an indicator at coincident points relative to the calibration of the tape and a tape end adaptor to hold a scribe on the "Zero" digit of the tape calibration to serve as an anchor about



whose axis measured arcs may be scribed, and to hold a profile chaser.

3,526,965
ADJUSTABLE FRENCH CURVES FOR CIRCULAR ARCS

Dieter Haefele, Hechtstrasse 6, Ehingen (Danube), Germany
Filed Dec. 11, 1967, Ser. No. 689,479
Claims priority, application Germany, Dec. 21, 1966, H 61,359
Int. Cl. B43l *13/20*
U.S. Cl. 33—177 **7 Claims**

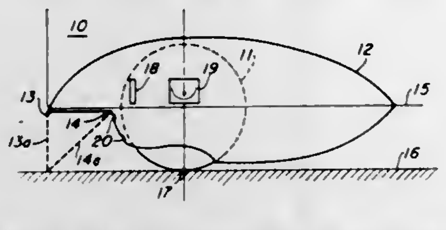


A substantially generally spiral shaped rigid guide rule with a guide groove of the same spiral shape therein. A flexible body assembly, comprised of a plurality of flexible lamellas movably guided on each other and mutually displaceable, connected on the rule by a flexible guide rail engaged in the guide groove and disposed to flex to assume the curvature of the guide groove and in turn bend the flexible body assembly to various circular arcs as the body assembly is moved longitudinally along the guide rule. A pointer on said guide rail registers with graduations on the rule giving an indication of the radii of the body assembly edges.

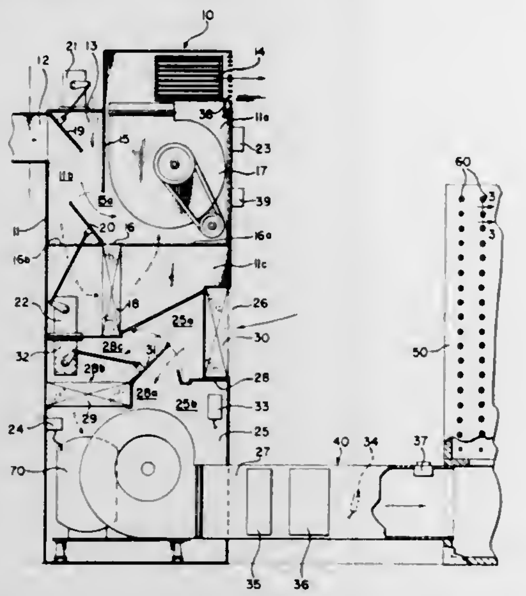
3,526,966
DEEP SUBMERSIBLE SLOPE MEASUREMENT SYSTEM

Edwin C. Buffington and Robert L. Seeley, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 19, 1968, Ser. No. 746,231
Int. Cl. B63c *11/00;* **G01c** *9/00*
U.S. Cl. 33—204 **7 Claims**

Light beam generating means are positioned on a deep submersible vessel in alignment such that the projection of the light beams will coincide at a spot on the slope upon which the vessel is resting only when a reference plane through the vessel is aligned parallel to the slope. Angle measuring means within the vessel are then employed to meaure the angular displacement relative to the reference axis thereby providing an accurate measurement of the outside slope upon which the vessel is resting. In operation, the vessel is maneuvered until the described alignment and coincidence of the light beams at a single point is achieved.



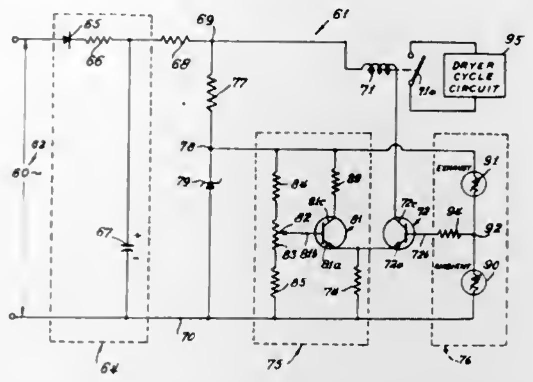
3,526,967
PELT DRYING SYSTEM
Robert E. Bolz, 1270 Highway 99,
Edmonds, Wash. 98020
Filed Jan. 21, 1969, Ser. No. 792,404
Int. Cl. F26b *21/06*
U.S. Cl. 34—46 **11 Claims**



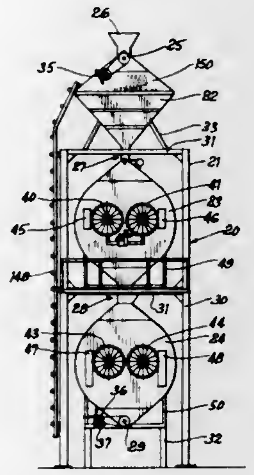
A pelt drying system for drying pelts fur side out is disclosed which comprises a manifold or series of manifolds having structurally improved air discharge nozzles therein for supplying temperature and humidity controlled air to drying frames through a common trunk line connected to an air conditioning unit. The air conditioning unit controls not only the temperature and humidity of air entering the manifold to dry the pelts but also the temperature and humidity of the air surrounding the pelts and the manifold. The air conditioning unit comprises a first means for supplying temperature and humidity controlled air to the interior of the manifold or manifolds and thence to the pelts, the air supply for the second means being air supplied to the enclosed drying zone by the first means. Heating and cooling control means are provided for automatically controlling the temperature and humidity of the air.

3,526,968
ELECTRONIC CONTROL CIRCUIT FOR CLOTHES DRYERS
Robert D. Triplett, Effingham, Ill., assignor, by mesne assignments, to Fedders Corporation, a corporation of New York
Filed Jan. 12, 1968, Ser. No. 697,359
Int. Cl. F26b *19/00*
U.S. Cl. 34—48 **4 Claims**

An electronic control circuit for an article dryer having one thermistor at ambient temperature and another thermistor at exhaust temperature, and a differential amplifier for monitoring the difference in temperature between ambient air and exhaust air so as to respond to an increase in temperature differential to initiate termination of dryer operation.



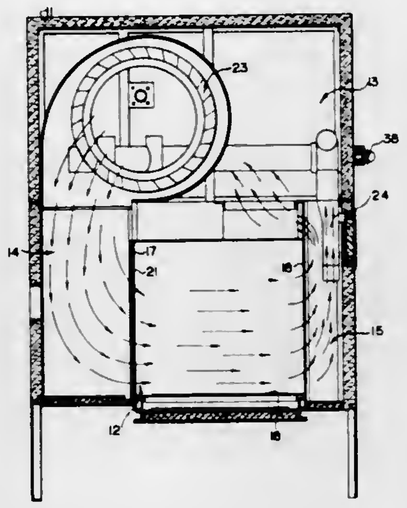
3,526,969
BATCH TYPE GRAIN DRYER WITH SEPARATE DRYING AND COOLING BINS
Erhard E. Alms, Barrington, and James E. Mitchell, Cary, Ill., assignors to American Farm Equipment Co., Lake Zurich, Ill., a corporation of Delaware
Continuation of application Ser. No. 700,877, Jan. 26, 1968. This application Sept. 12, 1969, Ser. No. 858,570
Int. Cl. F26b *13/10*
U.S. Cl. 34—56 **16 Claims**



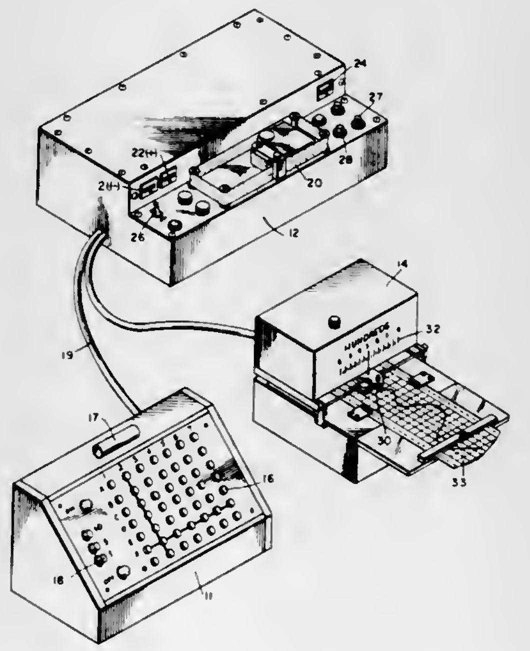
A batch type grain dryer in which the drying and subsequent cooling operations are conducted in separate chambers arranged one above the other, with gravity feed, from a main holding chamber above the drying chamber into the drying chamber, and gravity feed from the drying chamber to the cooling chamber. An auger feeds the grain horizontally into the holding chamber and another auger takes the grain from the cooling chamber to the exterior of the cooling chamber with electrical grain-operated interlocks for the grain-moving mechanisms to prevent operation of any one function until the preceding grain moving function has been completed.

3,526,970
DRYING OVEN AND VOLATILE CONDENSER
William B. Harrison, Dedham, and Clifford F. Tirrell, South Weymouth, Mass., assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Apr. 11, 1968, Ser. No. 720,533
Int. Cl. F26b *21/02, 21/06*
U.S. Cl. 34—73 **4 Claims**

A drying oven particularly adapted for curing volatile compositions is disclosed. The oven has stationary, perforated side walls, at least one of which has a second adjacent, movable, similarly-perforated wall to regulate the flow of air through it. The oven further is provided with a perforated exhaust stack containing a series of baffle plates whereby a cooling medium, e.g. air, is introduced into the stack and odorous volatiles are condensed and collected.



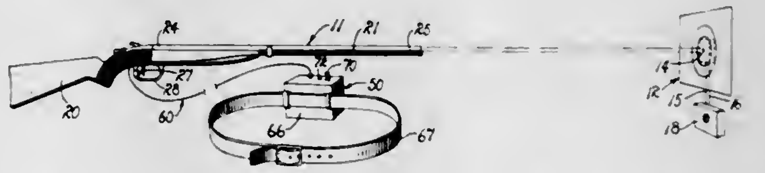
3,526,971
METHOD AND APPARATUS FOR TESTING QUALITIES OF JUDGMENT
Robert E. Shipley, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Jan. 2, 1968, Ser. No. 695,041
Int. Cl. G09b *7/06*
U.S. Cl. 35—9 **31 Claims**



A method and apparatus for determining the quality of a subject's judgment-making abilities by having him play a game in which he makes successive decisions based on progressively supplied information, requiring him to indicate a measure of his confidence of the correctness of each decision he makes, and evaluating his over- and under-confidence in making such decisions.

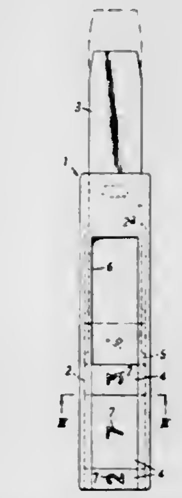
The subject successively depresses selected play buttons on a 7 x 7 array of buttons for which a recognizable correct pattern of play is programmed. Before each play, he bets 1, 5 or 10 score points on the correctness of his selection. A counter accumulates his wins and losses on such bets to give him an accumulative score for a number of programmed games. Concurrently, each of his bets is evaluated by comparison with what is programmed to be an "appropriate" bet and he is scored over- and under-confidence points on separate counters accordingly as an evaluation of his judgment. In evaluating his bets, adjustment is made (a) for whether his previous play was "right" and hence such that it should raise his confidence, or "wrong" and hence that it should lower his confidence; (b) for whether his accumulated game score is high and hence such as to justify increased confidence, or low and hence such as to lead to decreased confidence; and (c) for increased chances of success from deducing the position of right plays by a process of elimination.

3,526,972
MARKSMAN'S PRACTICING DEVICE
Hans C. Sumpf, 2393 W. Barstow,
Fresno, Calif. 93705
Filed Mar. 18, 1968, Ser. No. 713,821
Int. Cl. F41g *3/26*
U.S. Cl. 35—25 **4 Claims**



A marksman's practicing device for use as an attachment on a shotgun or the like providing a casing adapted to be borne by the barrel of the shotgun having a light source disposed therein including a trigger-actuated switch to energize the light source momentarily to produce a light beam within the casing, and beam directing means disposed within the casing for projecting said light beam coaxially outwardly from the barrel of the gun, said attachment being susceptible to use by a marksman with a gun, to which he is accustomed and with which he wishes to become more proficient, without substantially changing the weight or balance of the gun.

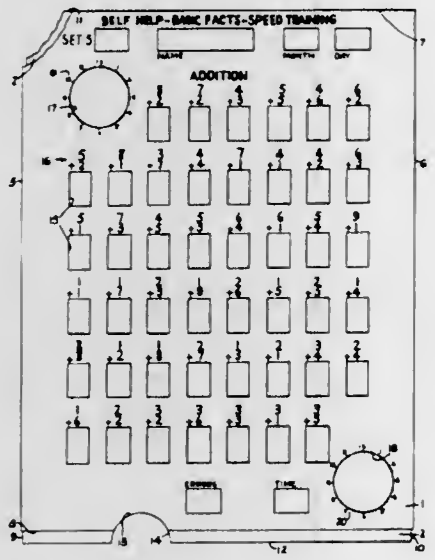
3,526,973
CALCULATING INSTRUMENT
James A. H. Delves, Wigston, England, assignor to Brees Plastics Limited, Leicester, England, a British company
Filed Feb. 18, 1969, Ser. No. 800,212
Claims priority, application Great Britain, Feb. 23, 1968, 8,868/68
Int. Cl. G09b *19/02*
U.S. Cl. 35—31 **7 Claims**



Calculating instrument primarily for use in teaching children addition and subtraction of numbers. Comprises a holder having an open-ended guideway for a slide which projects from one end of the latter.

Numbered tablets, each of which is of a length proportional to the number it carries are introduced into the guideway from the end remote from the slide and the latter is moved along the guideway to close tablets up together. The slide carries numbers visible through an aperture in the holder and the number visible when tablets are closed up in the guideway indicates the sum of numbers carried by these tablets.

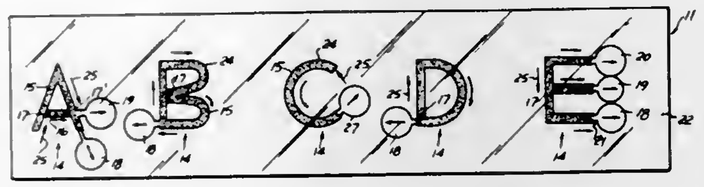
3,526,974
TEACHING DEVICE
Eunice M. Van Derveer and Earl B. Van Derveer, both of Box 68, Adelanto, Calif. 92301
Filed May 1, 1968, Ser. No. 726,647
Int. Cl. G09b *19/02*
U.S. Cl. 35—31 **8 Claims**



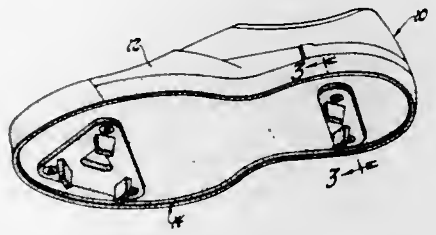
A teaching device includes an answer card which slides beneath an apertured problem sheet. In a problem-solving position, answers on the card are out of view beneath the sheet. In an answer-checking position the answers are visible through openings in the sheet. The card has an edge portion which projects beyond a corresponding edge portion of the sheet in the problem-solving position, and which is conveniently movable into alignment with the sheet edge portion to place the card in answer-checking position. Matching openings in the answer card provide for writing of answers through the sheet. The card is relatively movable between problem-sheet and card. The matching openings also provide for visual comparison of the written answers and correct answers when the card is in answer-checking position. The problem sheet has two timing openings through which the starting and finishing times may be recorded. Both the problem sheet and answer card have matching cut-outs providing fingerhold areas for convenient removal of the work sheet.

3,526,975
EDUCATIONAL GAME DEVICE
Stanley H. Reeves, 2804 Oakman Blvd., Detroit, Mich. 48238
Filed Mar. 19, 1969, Ser. No. 808,455
Int. Cl. G09b *11/04*
U.S. Cl. 35—37 **6 Claims**

An educational device for learning the correct stroke in printing or writing letters of the alphabet and numbers which consists of an elongated base having grooved into its top surface a series of such letters or numbers, there being spread throughout said grooves magnetically charged particles, and one or more storage chambers for the charged particles formed in said top surface at locations corresponding to the ends of the normal strokes for the individual letter or number, and a transparent cover snugly overlying said top surface together with a magnetic stylus for manual tracing over and along said grooves respectively for collecting and transporting said charged particles into said storage chambers.

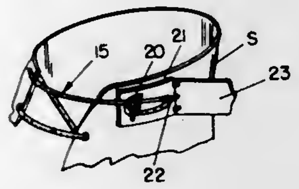


3,526,976
INTERCHANGEABLE SPORTS SHOE
Charles E. Jacobs, 13158 Nadine, Huntington Woods, Mich. 48070
Filed May 20, 1968, Ser. No. 730,333
Int. Cl. A43b
U.S. Cl. 36—2.5 **12 Claims**



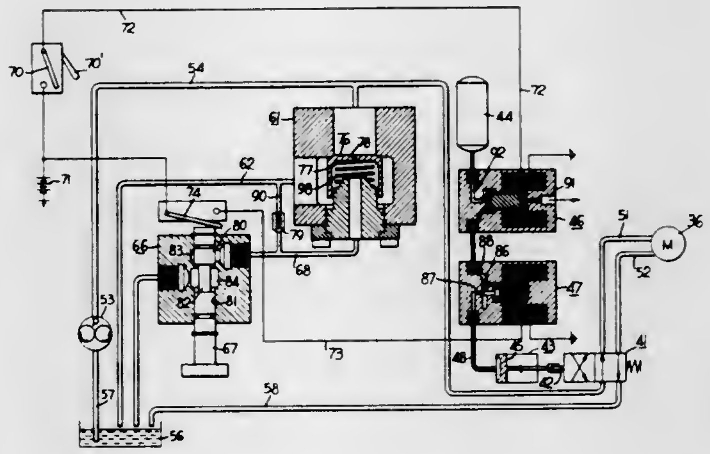
In a preferred form, the present invention relates to athletic shoes that are adaptable for use in a plurality of sports by inserting different types of playing surface engaging apparatus peculiar to different sports into recesses formed in a sole of the shoes so that these different types of playing surface engaging devices can be interchanged when the wearer of the athletic shoe utilizes the same shoe to participate in these various sports. In a specific form, a plastic insert has different types of playing surface engaging elements formed thereon, peculiar to these different sports, and therefore the same shoe can be convertible for use in these different sports.

3,526,977
SAFETY SHOELACES
Catalina Partagas, Las Vegas, Nev.
(2712 Wilderness Way, North Las Vegas, Nev. 89030)
Filed Dec. 17, 1968, Ser. No. 784,404
Int. Cl. A43b *23/00*
U.S. Cl. 36—50 **2 Claims**



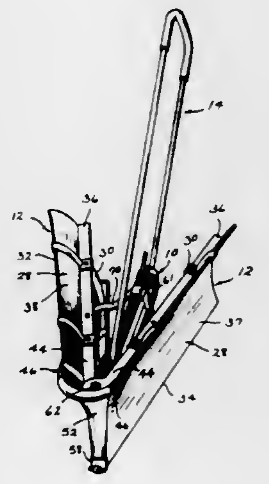
This invention consists of a shoelace having one end enlarged and the other end reduced in diameter for a predetermined length in order to be threaded through an opening in the instep of the shoe to which it is secured. The aforesaid instep of the shoe is provided with an overlapping member that is suitably secured on top of the lower end of the shoelace after the lace has secured the shoe on the foot. This is accomplished by the shoelace being wrapped around two laterally spaced hooks on the instep of the shoe. The aforesaid overlapping member of the shoe may be secured at one end to the shoe by a metal hinge, a zipper fastener, or any other desired means. The flap may be secured over the lower end of the shoelace by a zipper fastener or by any other desired means. The same form of securement of the lower end of the shoelace may be applied to the upper end of the same lace, the only difference being that the flap is located on the side and near the top of the shoe.

3,526,978
ELEVATOR MOTOR REVERSING VALVE CONTROL SYSTEM
David H. Jordan, Cedar Rapids, Iowa, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 1, 1968, Ser. No. 709,635
Int. Cl. B60p *1/36*
U.S. Cl. 37—8 **5 Claims**



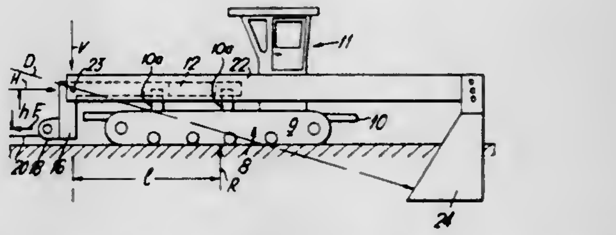
A control system for a hydraulic motor driving the elevating mechanism of a motor scraper which avoids excessive pressures when reversing the direction of operation. This is achieved by delaying the delivery of high pressure fluid to the motor for reverse operation thereof for a sufficient time to permit the elevating mechanism to substantially stop movement in its initial direction.

3,526,979
SNOW PLOW WITH ADJUSTABLE BLADES
Casimer S. Ladewski, 807 W. La Salle St., South Bend, Ind. 46601
Filed Sept. 12, 1969, Ser. No. 857,436
Int. Cl. E01h *5/04*
U.S. Cl. 37—44 **9 Claims**



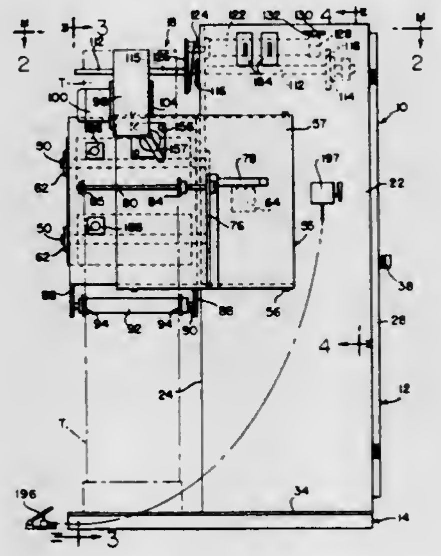
A snow plow having a longitudinal frame support and a pair of blades connected to the frame support. The blades extend outwardly from opposite sides of the frame support with each such blade being pivotally connected about the same axis to the forward end of the support. A handle is connected to the frame support and extends rearwardly of the pivotal connection of the blades to the support. Adjustable means are provided for retaining the blades in selected angular relationship relative to the frame support. An end portion of each blade extends forwardly of an partially around the pivot connection of its blade and is radially spaced from the pivotal axis of the blades. Such an end portion of one blade overlies the similarly shaped end portion of the other blade and is shiftable thereover upon adjustment of the angular relationship of the blades relative to the frame support.

3,526,980
PIPE-LAYING APPARATUS INCLUDING A MOLE PLOUGH
Ainsley Neville Ede, 36 Thornton Way, Cambridge, England
Filed Mar. 8, 1968, Ser. No. 711,804
Claims priority, application Great Britain, Mar. 10, 1967, 11,286/67
Int. Cl. E02f *5/18, 5/06*
U.S. Cl. 37—193 **6 Claims**



Mole plough apparatus comprises a mole plough dragged behind a vehicle and attached to a frame which is pivotal about a horizontal axis on and in front of the vehicle, a horizontal force being applied to the vehicle to draw it along, at a point below the axis. Thus the couple created by this force and the horizontal component of the drag on the mole plough, which tends to raise the front of the vehicle, is opposed by the couple created by the vertical component of the drag and the weight of the apparatus.

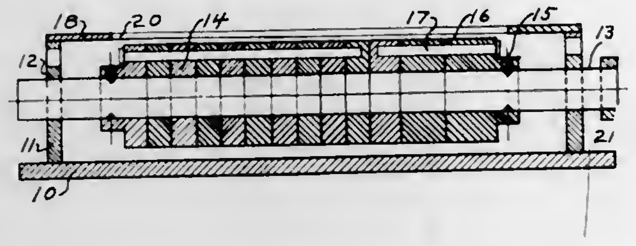
3,526,981
CONTINUOUS TOWEL IRONING STRUCTURE
Alec Kessler, 29489 Everett Ave., and Theodore Rosen, 29610 Everett Ave., both of Southfield, Mich. 48075
Filed Mar. 17, 1969, Ser. No. 807,744
Int. Cl. D06f *65/00*
U.S. Cl. 38—2 **14 Claims**



The invention pertains to an ironing device for elongated strips of continuous washed moist toweling, in which rotatable rollers are fixedly supported and heated ironing shoes are mounted in a pivoted housing arranged to bring the shoes into engagement upon the toweling which is pressed between the shoes and the padded rollers. The shoes are preferably arranged in vertical alignment, electrically heated and suitably recessed to accommodate and complement the configuration of the rollers. The toweling is wound up into a roll upon a single shaft, which draws it from its at-rest position at the base of the machine through the ironing structure. As the toweling, now ironed, passes from the ironing shoes and rollers to the wind-up shaft, a blast of air is blown against the heated toweling so as to disperse and substantially remove the moisture remaining in the toweling. A modified form of the invention involves a duplex machine having a pair of such ironing structures, each having a moist towel spreading device for automatically spreading the washed moist toweling before it enters the ironing structure.

3,526,982
BASEBALL SCHEDULING METHOD AND MACHINE

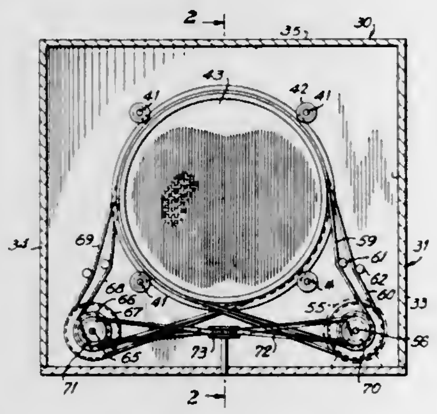
Francis M. Hess, 5341 100th Ave. N., Pinellas Park, Fla.
Filed June 3, 1966, Ser. No. 555,030
Int. Cl. G09f *11/02*
U.S. Cl. 40—68 **2 Claims**



A method for scheduling events involving various pairs of participants at periodic time intervals, comprising the tabulation of a series of different pairs in registry with a tabulation of periodic time intervals.

3,526,983
METHOD AND APPARATUS FOR COMPOSING AND DECOMPOSING PICTORIAL REPRESENTATIONS

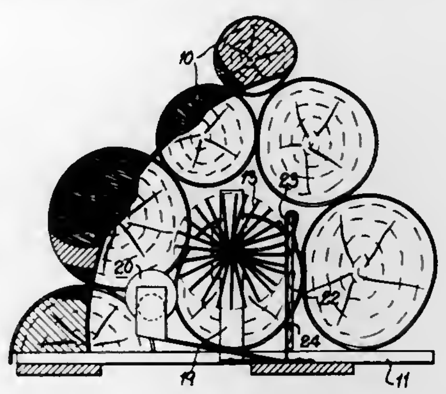
George Klauber, 194 Columbia Heights, Brooklyn, N.Y. 11201
Filed Sept. 7, 1967, Ser. No. 666,105
Int. Cl. G09f *13/36*
U.S. Cl. 40—106.53 **19 Claims**



This invention is concerned essentially with a method and apparatus for composing and decomposing pictorial representations employing a plurality of color separations of a picture, which separations are mounted for relative movement to produce moiré effects and an intermittently reconstituted representational picture.

3,526,984
LIGHTED FIREPLACE AND FIRE NOISE SIMULATOR

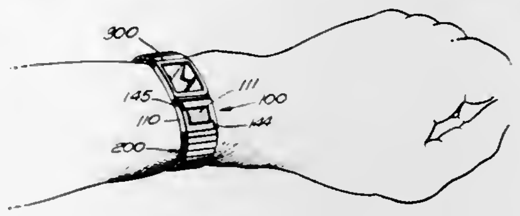
Herman Nielsen, Tuckahoe, N.Y., and Stephen S. Valliant, Greenwich, Conn., assignors to Drum Fire, Inc., Tuckahoe, N.Y., a corporation of New York
Filed Mar. 22, 1968, Ser. No. 715,416
Int. Cl. G09f *13/34;* **A63j** *5/04, 5/02*
U.S. Cl. 40—106.52 **7 Claims**



A fire noise simulator in a lighted fireplace fire simulator comprising a first member having a multiplicity of relatively long and narrow, flexible and resilient fingers extending therefrom, a second member engageable with said fingers and means for moving one of said members so as to cause the fingers to brush across a surface of the second member.

3,526,985
CALENDAR DEVICE FOR A BRACELET OR STRAP

Kurt A. Rieth, Warwick, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Continuation-in-part of application Ser. No. 699,167, Jan. 19, 1968. This application Sept. 16, 1969, Ser. No. 866,060
Int. Cl. G09d *3/10*
U.S. Cl. 40—117 **20 Claims**



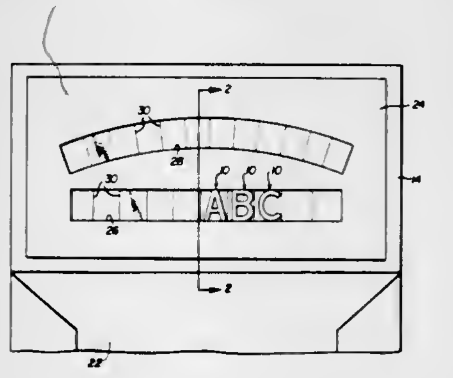
A device bearing stored calendar indicia and adapted to form a link of an item such as a watch bracelet, identification bracelet or watch strap. The device is positioned relative to the item so that a portion of the stored information is controllably accessible and easily readable. In the case of a watch bracelet, the device is located so that its stored calendar indicia can be read with facility, as by forming a link between a timepiece and the remainder of the bracelet.

Illustratively, the calendar indicia consist of a series of months which appear on a strip of plastic tape carried by a removable transport mechanism within the device, with the base of the device forming an end link of the bracelet. The tape is controllably advanced in respective directions of movement by arbors positioned at the extremities of the transport mechanism and connected to the ends of the tape. To maintain the tautness of the tape against a support surface of the transport mechanism, the arbors are rotatably mounted in resilient or spring-loaded bearings. To prevent rotation of the arbors in the wrong directions the arbors are mounted in bearings which permit at least one end of each arbor to move longitudinally relative to the transport mechanism in one direction and means are provided for preventing further rotation of each arbor in that direction upon sliding movement of its end in its bearing.

The transport mechanism is held in place with respect to the base by a cover which is attached by a single, centrally positioned spring bar. The cover has a window which provides viewing access to the calendar indicia of the tape. It also has diagonally opposite slots for user access to crowns that are used for rotating the respective arbors and in one embodiment they are also used to prevent rotation of the arbors in the wrong directions.

3,526,986
LETTERING KIT

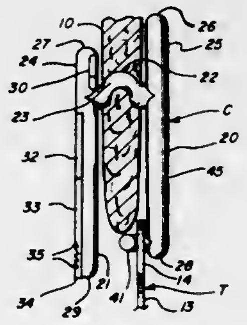
Richard C. Dempnock, Detroit, Arthur V. Smith, Mount Clemens, and Harry J. Siloac, Detroit, Mich., assignors to The Demp-Nock Company, Warren, Mich., a corporation of Michigan
Filed May 23, 1968, Ser. No. 731,461
Int. Cl. G09f *7/12*
U.S. Cl. 40—125 **3 Claims**



A lettering kit for arranging individual indicia units into an organized array for subsequent application to a receiving surface.

3,526,987
CONNECTOR FOR ANIMAL IDENTIFICATION TAGS

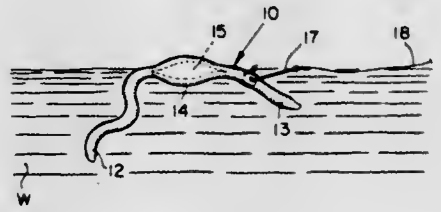
Leo M. McCarty, Denver, Colo. (2583 S. Dexter St., Denver, Colo. 80222), and Clarence H. Howe, Diamond Bar Ranch S., Fork Rte., Cody, Wyo. 82414
Filed May 31, 1968, Ser. No. 733,386
Int. Cl. G09f *3/00*
U.S. Cl. 40—301 **14 Claims**



A connector for an animal identification tag, which is H-shaped, so that the upper portions of front and rear arms, which are connected by an upwardly bowed yoke which extends through an aperture in an ear of the animal, will clamp the ear between them whenever the lower portion of either arm is pulled away from the ear. The lower end of the rear arm has a neck and cross bar to which the identification tag may be attached, or the tag may be formed integrally with the rear arm. The front arm has a blunt point at the lower end and a flat, tapering blade, which is inserted through the slit in the ear and then pulled on through, as by a pair of pliers. A pressure plate extends laterally of the front arm, above the yoke, to shorten the front arm and provide sufficient bearing pressure for the above described clamping action.

3,526,988
FISHING LURE AND METHOD OF PREPARING THE SAME

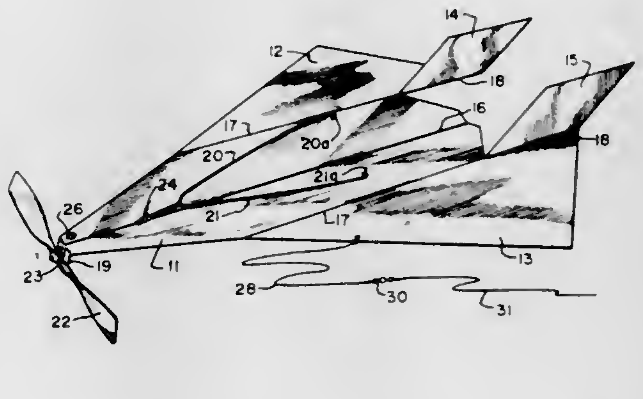
Arthur C. Young, 85 Front St., Berea, Ohio 44017
Original application Aug. 6, 1965, Ser. No. 477,791, now Patent No. 3,403,466, dated Oct. 1, 1968. Divided and this application June 7, 1968, Ser. No. 735,258
Int. Cl. A01k *85/00*
U.S. Cl. 43—4 **6 Claims**



A fishing lure comprising live bait such as an angleworm which has been inflated to achieve a specific gravity less than that of water, and a novel method of fishing employing such lure.

3,526,989
TOY AIRPLANE

Leon C. Wallace, 2483 S. 4th East, Salt Lake City, Utah 84115
Filed June 24, 1968, Ser. No. 739,402
Int. Cl. A63h *27/00*
U.S. Cl. 46—79 **9 Claims**

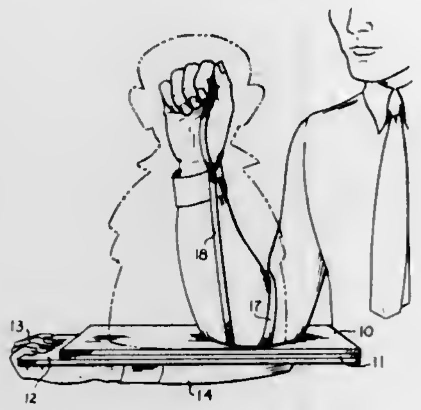


A toy airplane having a one-piece body, wing, and tail unit made of lightweight, sturdy sheet material, a propeller mounted on one end of a shaft that is extended through the body and arms formed at the other end of the shaft that are centrifugally thrown against the body to create a loud clacking and scraping sound analogous to the sound of an actual airplane engine.

3,526,990
PLATFORM WITH HAND-AND-ARM SIMULATION FOR USE WITH HAND-OPERATED PUPPETS, DOLLS AND VENTRILOQUIAL FIGURES

William B. Edmonds, 1444 Shakespeare Ave., Bronx, N.Y. 10452
Filed July 27, 1967, Ser. No. 662,557
Int. Cl. A63h *3/14;* **A63j** *5/02*
U.S. Cl. 46—116 **3 Claims**

This invention relates to a new and unique method of presenting a hand-puppet, hand-operated doll, or ventriloquial figure through the use of a small platform with a hand-and-arm simulation. The invention adds immeasurably to the desired illusion that the puppet, doll or

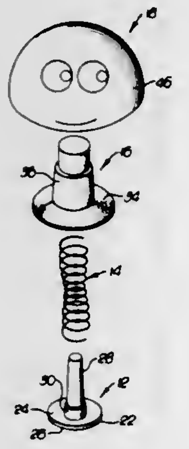


ventriloquial figure has a life and will of its own by totally concealing the operator's arm and hand, thereby concealing the method of operation.

3,526,991

DELAY ACTION PLAY UNIT

Adolph E. Goldfarb, 7427 Varna St., Los Angeles, Calif., and Rene Soriano, Los Angeles, Calif.; said Soriano assignor to said Goldfarb
Continuation-in-part of application Ser. No. 731,914, May 24, 1968. This application Jan. 9, 1969, Ser. No. 790,074
Int. Cl. A63h *11/06*
U.S. Cl. 46—129 4 Claims



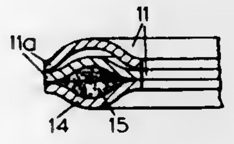
A pop-up play unit which may be set, and which will, after a time interval, be propelled up into the air. The illustrated unit comprises a base adapted to rest upon a support surface and carrying a coil compression spring. The spring in turn carries a suction cup element which is releasably engageable with the supporting surface against the force of the spring. When the suction cup element releases, the spring propels the entire unit upwardly.

3,526,992

FLORAL SUPPORTS

David Joseph Foster, 45 Kiln Lane, St. Helens, Lancashire, England
Filed Aug. 8, 1967, Ser. No. 659,150
Claims priority, application Great Britain, Aug. 12, 1966, 36,158/66
Int. Cl. A47g *7/07;* **A01g** *5/04*
U.S. Cl. 47—41.11 3 Claims

Floral support comprising at least two spaced apart support layers adapted to receive and retain stem portions of flora by the provision of aligned apertures in the support layers; and a piercing tool for forming said apertures comprising a plurality of vanes extending laterally

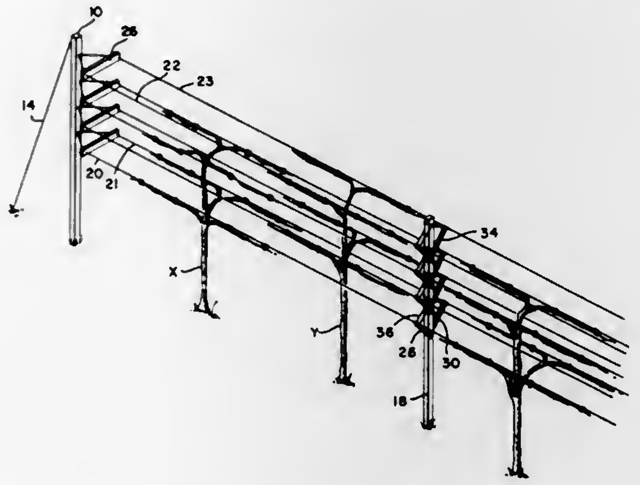


of an arm and tapering to a common end region directed longitudinally of said arm.

3,526,993

ORCHARD TRELLIS SYSTEM

Henry Siebol, Rte. 1, Outlook, Wash. 98938
Continuation of application Ser. No. 656,761, July 28, 1967. This application Jan. 21, 1969, Ser. No. 796,285
Int. Cl. A01g *17/06*
U.S. Cl. 47—46 7 Claims

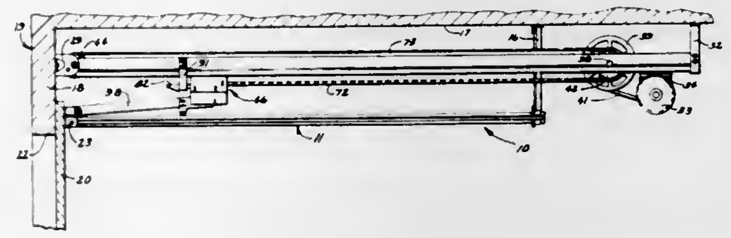


An orchard trellis comprises wire strung between end posts with intermediate wire strand-supporting posts. The intermediate posts support the fruit bearing sections of fruit plants in a manner permitting shaking of the wire strand to dislodge the fruit. Fruit trees, e.g. apple trees, may be closely-spaced in trellis-supported rows in a manner whereby four or more principle fruit bearing branches of each tree are attached to the wire strands without interference from immediately adjacent plants.

3,526,994

LOCK FOR ONE-PIECE GARAGE DOORS

Charles E. Delaney, Irving, Tex., assignor to Overhead Door Corporation, Dallas, Tex., a corporation of Indiana
Filed Apr. 18, 1968, Ser. No. 722,329
Int. Cl. E05f *11/54, 15/12*
U.S. Cl. 49—199 10 Claims

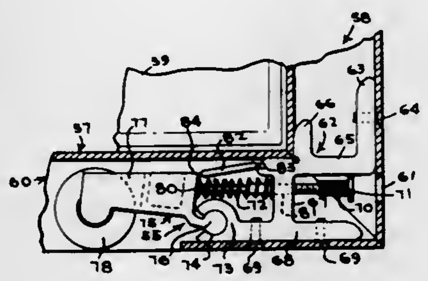


A motorized operator for one-piece sliding and upwardly acting doors having means supporting same for movement between open and closed positions and a track supporting a carriage which is secured to the door and is movable with the door between its open and closed positions. A latch assembly is connected to the carriage for locking the door in the closed position.

3,526,995

ROLLER ASSEMBLY FOR SLIDING DOORS

Robert M. Saunders, 1025 E. 24th St., Hialeah, Fla. 33013
Filed Feb. 3, 1969, Ser. No. 795,936
Int. Cl. E05d *13/02*
U.S. Cl. 49—420 4 Claims

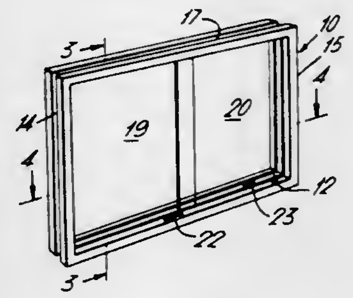


A sliding door roller assembly with a no-jump feature, and wherein there is provided a replaceable wheel housing and a spring-loaded mechanism for maintaining the parts in their proper location.

3,526,996

FASTENER FOR SECURING A WINDOW TRACK TO A WINDOWSILL

William P. Fraleigh, Hamilton, Ontario, Alcide Melanson, Quebec, Quebec, and Lorne H. Arthur, Burlington, Ontario, Canada, assignors to H & A Supply Company Limited, Burlington, Ontario, Canada
Filed Feb. 19, 1968, Ser. No. 706,551
Int. Cl. E06b *1/18*
U.S. Cl. 49—504 16 Claims



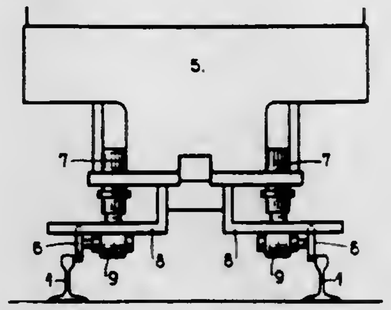
A novel sill construction is provided including interconnected outer sill frame members and inner sill frame members, usually formed of an extruded metal, e.g. aluminum or steel. A track, formed of a heat insulating material, for example, a vinyl plastic such as polyvinyl chloride, is disposed in spaced apart superposed relationship to the interconnected sill frame members. A common thermal barrier connector, formed of heat insulating material, for example, a vinyl plastic such as polyvinyl chloride is provided with keys cooperating with keyways on the inner and outer sill frame members to hold the sill members together. An upstanding portion of the connector is provided with a key cooperating with a keyway on the track to hold the track to the connected sill frame.

The invention also provides a novel window frame construction including such sill, and the connector used to assemble the sill.

3,526,997

APPARATUS FOR DEBURRING THE RAILS OF RAILWAY TRACK

Romolo Panetti, Geneva, Switzerland, assignor to Speno International S.A., Geneva, Switzerland
Filed Dec. 12, 1967, Ser. No. 689,921
Claims priority, application Switzerland, Aug. 8, 1967, 11,305/67
Int. Cl. B24b *23/00*
U.S. Cl. 51—178 11 Claims

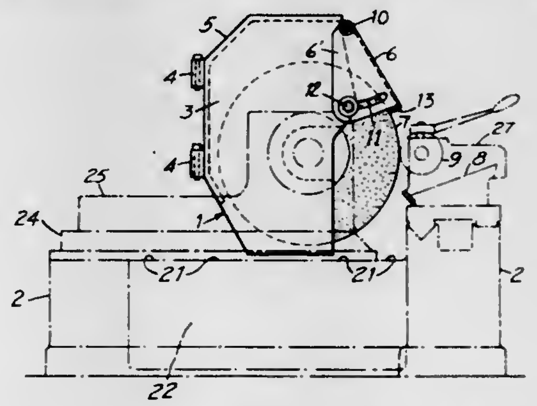


A vehicle which travels on the rails of a track and carries a succession of grinding units having grindstones which grind the rails of the track during passage of the vehicle to debur such rails.

3,526,998

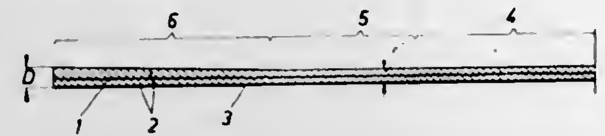
GRINDING WHEEL GUARD FOR ABRADING MACHINES

William R. Backer and Richard A. Dahlin, Holden, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 606,799, Jan. 3, 1967. This application June 24, 1969, Ser. No. 835,928
Int. Cl. B24b *55/04*
U.S. Cl. 51—269 8 Claims



On an abrading machine including a large hollow base and a grinding wheel rotatably mounted upon a support either fixedly or slidably mounted upon the hollow base, an improved grinding wheel guard comprising a peripheral portion substantially coextensive with the half portion of the circumference of the enclosed grinding wheel most remote from the hollow base except immediately adjacent to the line of contact with a workpiece relieved to permit engagement of the grinding wheel with the workpiece; spaced side portions of the grinding wheel operatively engaging the peripheral portion and together with the peripheral portion forming a substantially enlarged chamber on the side of the grinding wheel most remote from the hollow base of a size sufficient to receive and contain a major portion of the volume of the grinding wheel in the event of grinding wheel failure and including an inner surface portion immediately adjacent to the line of contact with a workpiece to be ground so disposed fragments of a broken grinding wheel driven into the chamber are deflected into the hollow base; and a lip portion at the end of the peripheral portion closest to the line of contact between the grinding wheel and a workpiece to be ground extended toward the circumferential surface of the grinding wheel to further assure deflection of the fragments of a broken grinding into the hollow base.

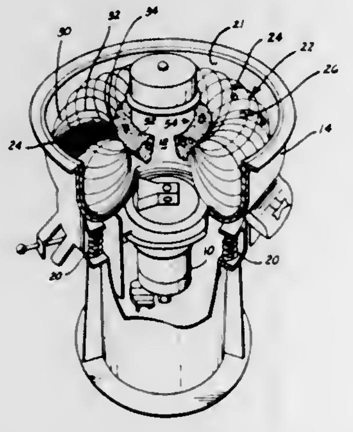
3,526,999
CUTTING BLADES
Leopold Jägers, 115 Mnnstereifeler Str.,
535 Euskirchen, Germany
Filed Aug. 8, 1968, Ser. No. 751,135
Int. Cl. B24d *5/12*
U.S. Cl. 51—206 **3 Claims**



A circular cutting blade, which is adapted to be rotated about its axis, has two axial end faces one of which is planar. The cutting blade has a central portion and a circumferentially complete marginal edge portion and intermediate the axial end faces it has a thickness which increases in direction from the center portion to the circumferential edge portion.

ERRATUM
For Class 51—281 see:
Patent No. 3,527,028

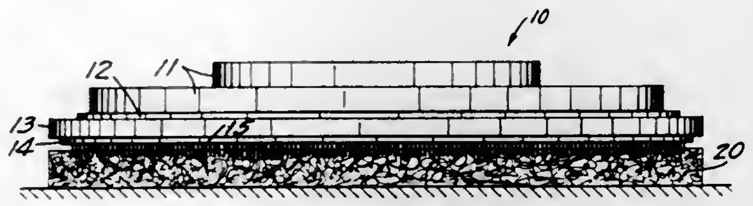
3,527,000
VIBRATORY FINISHING METHOD
William Randell Carter, Houston, Tex., assignor to Geo Space Corporation, Houston, Tex., a corporation of Texas
Filed July 15, 1968, Ser. No. 744,972
Int. Cl. B24b *1/00*
U.S. Cl. 51—316 **4 Claims**



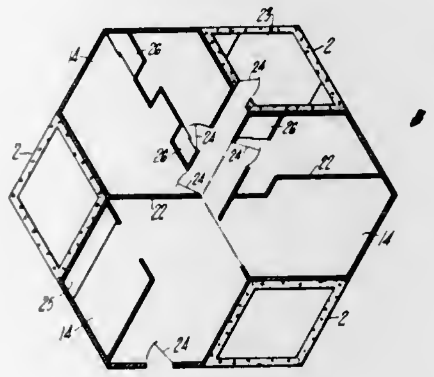
This invention relates to an improved method for finishing relatively delicate parts by conventional vibratory machines which method includes the steps of combining the parts with suitable abrasive materials to form a work load, and forming gas bubbles within the work load for the purpose of creating a cellular layer which acts as a cushioning agent for the protection of the parts during the vibration cycle.

3,527,001
HOLDER FOR ABRASIVE PRODUCT
Robert H. Kleemeier, Arden Hills Village, and Ronald O. Zemke, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,808
Int. Cl. B24d *17/00*
U.S. Cl. 51—358 **10 Claims**

Fibrous low density abrasive products are firmly but removably gripped by a device which is surfaced with a multiplicity of filament segments having enlarged heads. The segments, which penetrate the fibrous product and engage the fibers thereof, may either constitute the pile in an open pile fabric or individually have their lower ends embedded in a resinous layer. A particular application involves a device for holding and driving fibrous pads used on a floor surfacing machine.



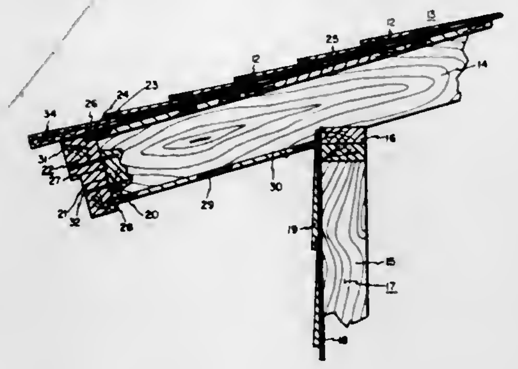
3,527,002
MODULAR BUILDING STRUCTURE
William C. Mead, Granby, Conn., assignor to Austin and Mead, Hartford, Conn., a partnership organized under the laws of Connecticut
Filed Feb. 15, 1968, Ser. No. 705,774
Int. Cl. E04b *1/34, 1/348, 1/04*
U.S. Cl. 52—79 **16 Claims**



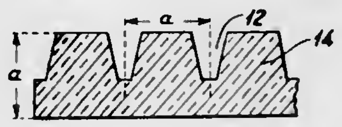
A modular building structure in which all components of the structure other than foundation are derived from a single basic elemental shape, the modular structure allowing for substantial variations and changes in size to accommodate changes in population density. The single basic elemental shape is a 60°–120° equilateral parallelogram in plan cross section. Service columns for both utilities and support are composed of this elemental shape, and functional modular units are composed of three such elemental shapes joined together to form a hexagon, each hexagon preferably being supported by two service units. One, two or three functional hexagonal units can constitute a living unit, depending on space desired, and installations constructed of the modular building unit are expandable both vertically and horizontally, demountable and reusable.

3,527,003
ROOF CONSTRUCTION AND CORNICE STRIP THEREFOR
Sherman A. Woodard, 701 E. 800 N.,
Ogden, Utah 84404
Filed Apr. 8, 1968, Ser. No. 719,548
Int. Cl. E04d *13/15*
U.S. Cl. 52—94 **6 Claims**

The present invention comprises a unitary elongate cornice strip of uniform transverse cross-section, and roofing constructions incorporating the same, wherein the cornice strip incorporates an overhang portion or shingle strip portion disposed above the usual outer or facia surface of the cornice strip. Further improvements in the cornice strip include an upper inner groove or recess for accommodating roof sheeting overlap and, additionally, a lower, interior soffit groove for receiving soffit sheets during installation thereof next to the undersides of roof rafters, for securement thereto.

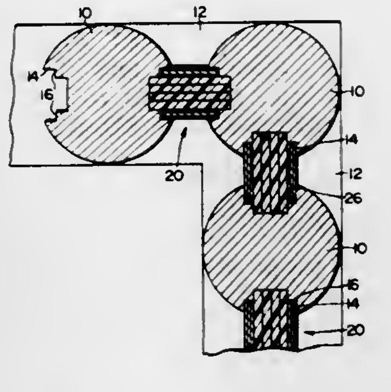


3,527,004
BUILDING BOARD FOR BUILDING HOUSE MODELS ON A MODULE SYSTEM
Jens Ole Sorensen, 56 Tornevangsvej,
Birkerod, Denmark
Filed Nov. 15, 1966, Ser. No. 594,537
Claims priority, application Denmark, Nov. 19, 1965,
5,967/65
Int. Cl. A63h *33/06;* **E04c** *2/30*
U.S. Cl. 52—98 **1 Claim**



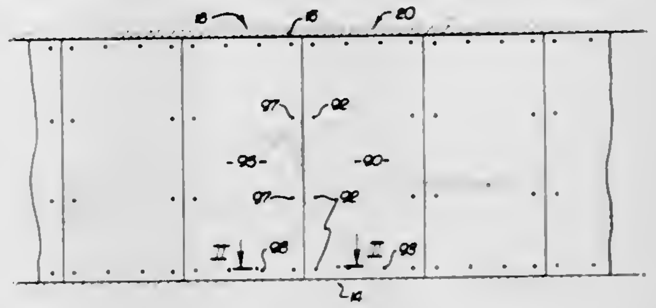
A building board used in making models, such board being divided by grooves extending in the two main directions of the board in accordance with a module system. The parts of the board when so divided are directly usable to make models entirely to scale. The parts are assembled into models by adhering them together thus avoiding any additional fastenings.

3,527,005
WALL CONSTRUCTION WITH COMPRESSIBLE SPLINES
Bert M. Slavens, 577 Hooulu St., Kailua,
Oahu, Hawaii 96734
Continuation-in-part of application Ser. No. 586,602, Oct. 10, 1966. This application Nov. 12, 1968, Ser. No. 775,016
Int. Cl. E04b *1/10;* **E04c** *2/10, 1/10*
U.S. Cl. 52—227 **7 Claims**



Wall construction composed of substantially parallel timber members having opposed dados and a spline in the form of a compressible insulating member in compressed sealing engagement with adjacent opposed dados.

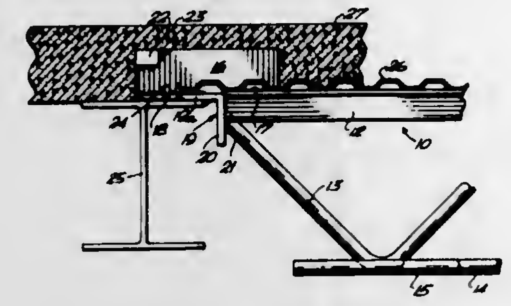
3,527,006
PARTITION MODULE CONSTRUCTION
Russell G. Hanson, 14628 Natalie Drive,
Whittier, Calif. 90604
Filed Mar. 15, 1968, Ser. No. 713,332
Int. Cl. E04b *1/343;* **E04h** *1/06*
U.S. Cl. 52—241 **10 Claims**



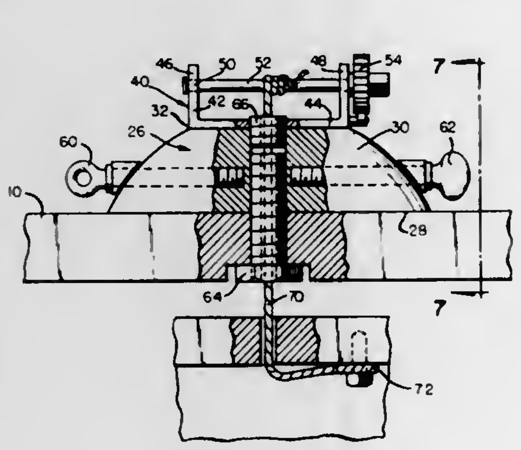
Module construction including a framework to which may be attached modular panels of wallboard or the like, including longitudinal U-shaped trackway sections, preferably formed of sheet metal, for attachment to existing floor and ceiling, at least the floor trackway having an end portion, either integral or formed in a removable splice plate and provided with a slot formed centrally of a bifurcated tongue projecting beyond the nominal trackway end and virtually coplanar with the base of the trackway for embracing a shank portion of a removable attachment member such as a doubleheaded nail driven into the floor or ceiling, the trackway end portion also having one or more integral tabs lying in vertical planes normal to the trackway axis and serving to abuttingly contact tabs of an adjacent trackway section similarly provided with a central slot for slidably embracing another shank portion of the attachment member, the tabs serving also, when folded outwardly of the general outline of the trackway, as alignment flanges against which wallboard panel edges may be abutted for accuracy of alignment; and further including vertically extending studs for mounting in combination with such trackway sections, a preferred form of stud being provided with an integrally formed vertically extending fin or abutment flange projecting transversely of the trackway axis, a side panel of the trackway having its edge spaced inwardly from the end of the trackway proper to define, with the side panel edge of an adjacent trackway, a vertical recess or slot through which the abutment flange projects to serve as an alignment means for wallboard panels to be mounted on the trackways and studs; the slotted end portions of the trackways and the double-headed attachment member permitting rapid and easy assembly of a module into a partition or wall, and rapid and easy disassembly of the wall into its component modules for subsequent reuse.

3,527,007
STEEL JOIST CONNECTION AND END CONNECTION THEREFOR
Ira J. McManus, 39 Lincoln Ave.,
Florham Park, N.J. 07940
Filed Aug. 12, 1968, Ser. No. 751,930
The portion of the term of the patent subsequent to July 16, 1985, has been disclaimed
Int. Cl. E04b *1/16, 5/29*
U.S. Cl. 52—327 **9 Claims**

A steel joist construction and the connection therefor wherein the joist is of open-web steel having upper and lower chord members interjoined by a zig-zag bar-web, and wherein an angular bed plate member has a vertical web portion welded against the outer end of the joist and a horizontal outwardly-extending web portion adapted to seat upon and be secured to a supporting girder. Vertically-extending shear plate and keying means is welded either against the top of the horizontal bed plate member web portion, or alternatively, directly to the beam or girder in the vicinity of where the bed plate member seats. An outer end portion of the top chord of the joist is sloped downwardly toward the bottom chord to provide a greater thickness of concrete in a slab poured over the joist and supporting beam to enhance floor system rigidity while at the same time permitting more economical use of framework steel.



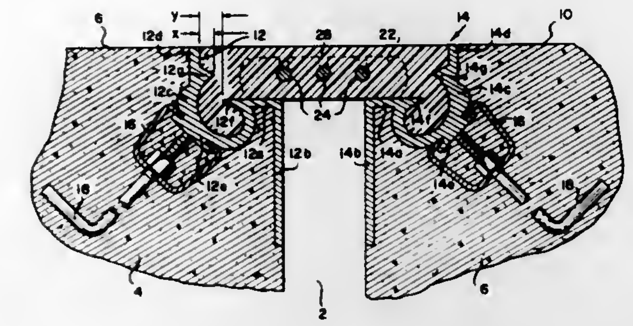
3,527,008
INSTANTERECT CONSTRUCTION DEVICE
William Greenhalgh, P.O. Box 521,
Oshawa, Ontario, Canada
Continuation-in-part of application Ser. No. 626,572, Mar. 28, 1967. This application Mar. 28, 1969, Ser. No. 811,566
Int. Cl. B66c *1/10;* **E04g** *21/14*
U.S. Cl. 52—749 **3 Claims**



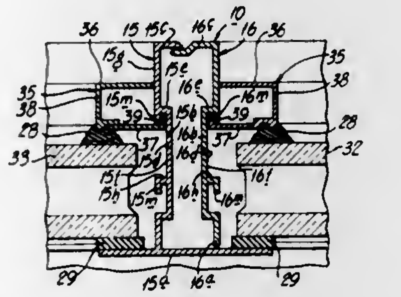
A device to be used in the erection or disassembling of buildings or building frames formed of individual panels, the device including a plurality of winch units which are detachably secured to a roof or ceiling panel and are used to raise or lower individual wall panels to a uniform height after they have been raised to non-uniform heights as a result of raising them from a prepared package lying on a floor or foundation, or to raise or lower the vertical panels in an existing structure to non-uniform heights such that the vertical panels can be swung to horizontal positions, in a desired sequence to form a collapsible structure suitable for collapsing and packaging for removal to another site for erection again.

3,527,009
EXPANSION JOINT SEAL
Lawrence M. Nyquist, 2234 N. Halsted St.,
Chicago, Ill. 60614
Filed Jan. 10, 1969, Ser. No. 790,364
Int. Cl. E04b *1/36*
U.S. Cl. 52—288 **10 Claims**

Expansion joint seal means for sealing the vertical gap between a pair of structural bodies, such as a pair of concrete floor sections, characterized in that the seal is formed of a compressible resilient material, such as polyurethane, and has longitudinal edge portions at least one of which is cast and rigidly locked within a cavity contained in a metal channel member. The channel member is embedded in the concrete and includes both a horizontal retaining lip that extends partially over the cavity to retain therein the edge portion of the cast sealant, and a protective rib which extends in the opposite direction paritally across the cavity to protect the outermost portion of the sealant against downward vertical pressure.



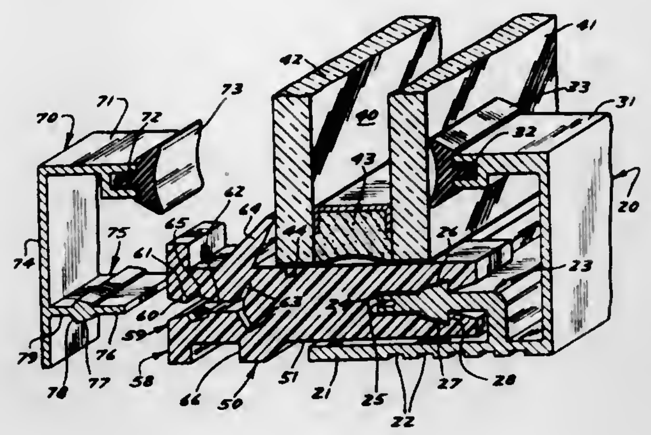
3,527,010
BUILDING WALL CONSTRUCTION
Kazimierz J. Brzezinski, Willowdale, Ontario, Canada, assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed May 20, 1968, Ser. No. 730,530
Int. Cl. E06b *3/62*
U.S. Cl. 52—397 **3 Claims**



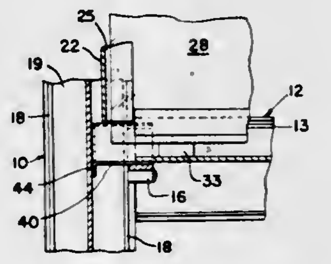
There is provided an improved building wall construction including a thermal expansion type split mullion. The mullion includes a continuous face member against which opposed panels are glazed with glazing tape as the seam end weathering. This eliminates the seam between the mullion halves from the exterior face of the mullion assembly altogether, protecting the seam from the weather, and reducing the vulnerable sealing lines exposed to the weather.

3,527,011
INSULATED PANEL FRAME
Lester W. Bloom, Richfield, and Thomas P. Olson, Bloomington, Minn., assignors to Cronstroms Manufacturing, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 29, 1967, Ser. No. 694,711
Int. Cl. E06b *1/32*
U.S. Cl. 52—398 **8 Claims**

Insulated panel supporting framing members in which a gutter portion is constructed to be rigidly attached to an opening or aperture in a structure and to sealingly engage a panel, a face member is adapted to be disposed outside of the gutter member and is also adapted to sealingly engage a panel and one or more thermally insulated connecting blocks are substantially permanently engaged with a portion of the gutter members and removably engaged with a portion of the face members to support the panel and the face members in a removable predetermined relationship whereby the panel members are disposed and sealingly engaged between the gutter and face members while retaining or maintaining thermal insulation between the gutter and face members and simultaneously supporting and retaining the panel members in operative disposition on a structure.



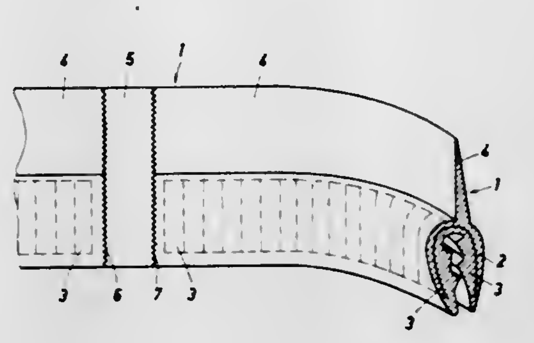
3,527,012
MOISTURE DEFLECTOR
James W. Hemminger, Buchanan, Mich., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York
Filed Apr. 14, 1969, Ser. No. 815,633
Int. Cl. E06b *7/26*
U.S. Cl. 52—665 **2 Claims**



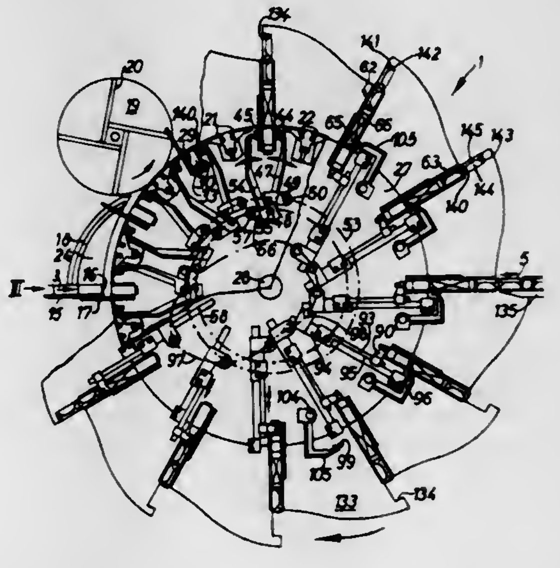
There is provided an improved moisture deflector for use in wall construction of the type including a vertical mullion defining a frame pocket and interconnected horizontal members. The horizontal members are secured to the vertical by means of a shear block attached to the vertical mullion. A filler member snaps or secures to the vertical mullion and defines a glazing pocket for glass or other panels. A moisture deflector is positioned at each end of the horizontal structural member and extends over the upper end of the glazing pocket so as to direct moisture between the frame pocket and the filler member.

3,527,013
SEALING STRIP FOR THE EDGES OF OPENINGS OF LUGGAGE COMPARTMENTS, DOORS OR WINDOWS OF AUTOMOBILES
Werner Kruschwitz, Dusseldorf, Germany, assignor to Draftex G.m.b.H., Rhineland, Germany, a corporation of Germany
Filed Jan. 7, 1969, Ser. No. 789,505
Claims priority, application Germany, Jan. 15, 1968, D 37,367
Int. Cl. B32b *3/04;* **E06b** *7/16*
U.S. Cl. 52—716 **8 Claims**

A sealing strip, for luggage compartments, doors or windows of automobiles, has a portion of substantially U-shaped cross section. To compensate for tolerances, one or more short portions are interposed in the strips, which portions are made of softer material than the material of which the rest of the strips is made.



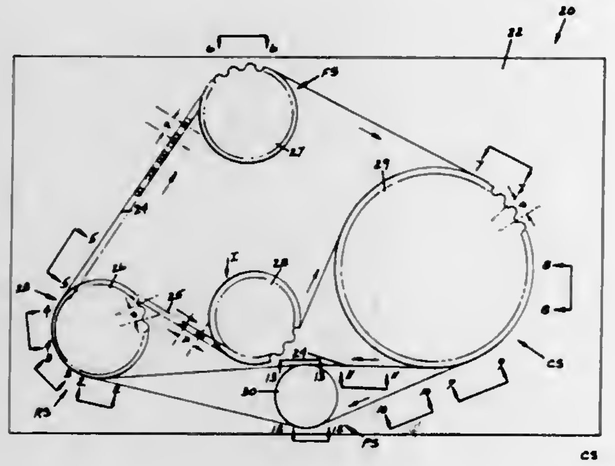
3,527,014
METHOD AND APPARATUS FOR WRAPPING BLOCK-SHAPED COMMODITIES
Günter Wahle, Reinbeck, and Heinz-Christen Lorenzen, Hamburg, Germany, assignors to Hauni-Werke, Korber & Co., K.G., Bergedorf, Germany
Filed June 26, 1967, Ser. No. 648,723
Claims priority, application Great Britain, July 8, 1966, 30,804/66; July 21, 1966, 32,851/66
Int. Cl. B65b *11/28*
U.S. Cl. 53—33 **39 Claims**



The output of a wrapping machine for cigarette packs is increased by carrying out the wrapping operation while the packs orbit with a turret about a fixed axis and perform movements in parallelism and radially of such axis and complete more than one revolution prior to removal from the turret. The packs are introduced into open-sided pockets provided on the periphery of the turret and are thereupon shifted by the pockets axially together with the blanks which are converted into tubes prior to such axial movement. The tubes and the packs then move radially of but share the rotary movement of the turret while the pockets return to original axial positions to receive fresh blanks and fresh packs. The feed for blanks and the means for supplying packs to the pockets are adjacent to one annular zone of the turret and the radial movements of packs take place in a second annular zone of the turret. Finished packs are removed from the second annular zone.

3,527,015
METHOD AND APPARATUS FOR FILLING CAPSULES

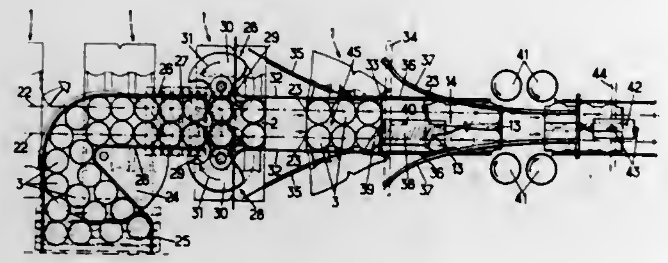
Theodore F. Aronson, Glen Cove, N.Y., and Van B. Hostetler, Indianapolis, Ind., said Aronson assignor, by mesne assignments, to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Oct. 7, 1968, Ser. No. 765,519
Int. Cl. B65b *1/04*
U.S. Cl. 53—37 **27 Claims**



This disclosure is directed to a method and apparatus for filling and handling a capsule, and comprises essentially the conveying of a capsule having a cap portion and body portion through a series of operating stations by a pair of complementary endless conveyor means each having complementary capsule holding means. The respective conveyor means are guided through the successive stations along a predetermined path in which the conveyor means and their complementary capsule holding means moved into and out of alignment to effect sequentially the feeding, separation, filling and reassembling of the respective capsule portions, and the subsequent ejection of the reassembled capsule. Thereafter this capsule holding means of the respective conveyor means are purged of any defective capsules.

3,527,016
APPARATUS FOR PACKAGING A PLURALITY OF CYLINDRICAL ARTICLES

Jacques Doreau, Bois-Colombes, France, assignor to Societe a responsabilite Limitee dite: Cartonnages du Val de Seine, Saint-Denis, France
Filed Sept. 6, 1968, Ser. No. 757,809
Claims priority, application France, Sept. 6, 1967, 120,205; Aug. 23, 1968, 164,074
Int. Cl. B65b *11/10*
U.S. Cl. 53—48 **11 Claims**

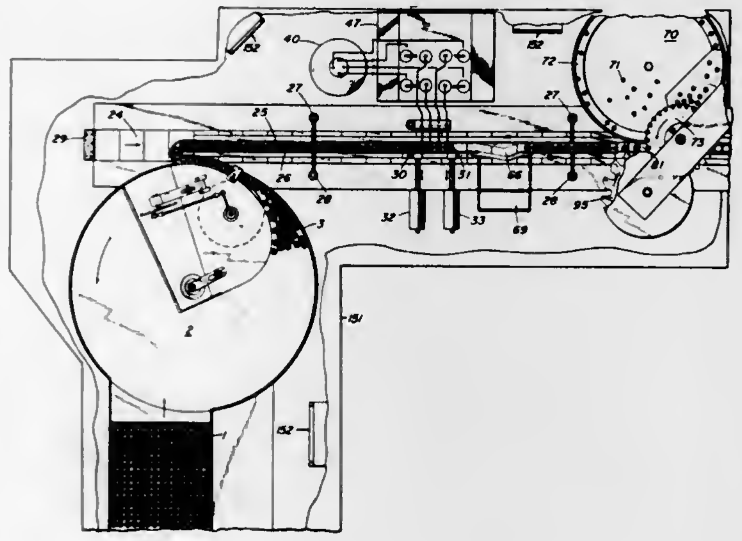


A package for a number of cylindrical cans or the like arranged in two rows wherein a sheet of cardboard is folded around the cans and includes two upper edge portions which are interengaged at notches formed in the edge portions such that one part of one edge portion overlies one part of the other edge portion whereas the other part of the first edge portion is beneath the other part of the other edge portion. The edge portions may be secured by integral locking flaps which are forcibly inserted into apertures.

A machine for forming a package of the above type includes distributor wheels which feed the cams in two rows, in appropriate number, onto advancing sheets and first and second sets of inclined rails which respectively upfold the sides of the sheets and fold down the overlapped edge portions in cooperation with a device which causes the edge panels to become interengaged at said notches.

3,527,017
STERILE CONTAINER FILLING APPARATUS

Arthur Sinclair Taylor, Spring Valley, and Ellsworth Sandhage, Pearl River, N.Y., George Bott, Westwood, N.J., and William Konazewski, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Original application July 5, 1966, Ser. No. 562,620, now Patent No. 3,453,804, dated July 8, 1969. Divided and this application Apr. 2, 1969, Ser. No. 812,833
Int. Cl. B65b *57/10, 3/12*
U.S. Cl. 53—62 **8 Claims**

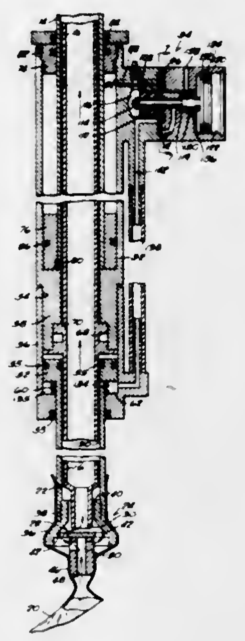


An automatic, essentially continuous system for filling and stoppering containers includes the following stations. The first station arranges a series of empty containers, such as vials, into single file with open mouth up. The single file of containers is loaded onto a moving conveyor on which the single file of containers is carried first to a filling station with filling nozzles for a predetermined number of containers in the line. After filling the conveyor moves the file along past means for rejecting containers which have fallen on their side to the stoppering station. The whole system is maintained in a sterile environment until the filled and stoppered vials are loaded on the trays.

3,527,018
VACUUM PACKAGING OF POULTRY

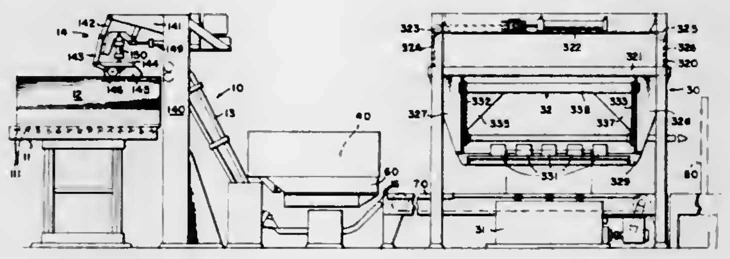
Donald E. Jahnke, Milwaukee, Wis., assignor to Vac-Air, Inc., Menomonee Falls, Wis., a corporation of Wisconsin
Filed Oct. 21, 1968, Ser. No. 769,296
Int. Cl. B65b *31/04*
U.S. Cl. 53—112 **15 Claims**

Disclosed herein is an apparatus for vacuuming and lifting a package which includes a vertically disposed vacuum tube and a nozzle mounted for relative motion with respect to said vacuum tube to form a valve, a vacuum actuated air pressure control valve connected to supply high pressure air to a lift cylinder to raise the vacuum tube and a quick disassembly arrangement to allow for the removal of the vacuum tube and nozzle from the apparatus.



3,527,019
SYSTEMS FOR AUTOMATICALLY WRAPPING PULP BALES

Werner Furrer and Maurice A. Candey, Hoquiam, Wash., assignors to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash.
Filed Dec. 27, 1966, Ser. No. 604,710
Int. Cl. B65b *11/02*
U.S. Cl. 53—209 **14 Claims**

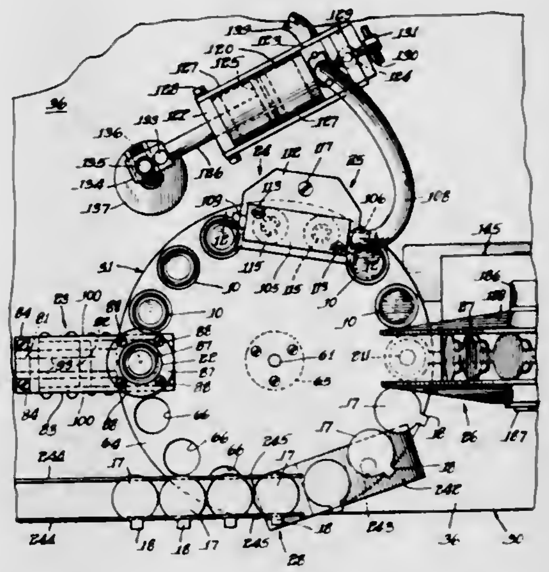


An automatic system for applying bottom and top wrapper sheets to pulp bales is disclosed. The system comprises top and bottom wrapper sheet dispensers, top and bottom wrapper sheet accumulators adapted to receive wrapper sheets from the dispensers and to apply the dispensed sheets to pulp bales, and a wrapper sheet folder adapted to fold the applied wrapper sheets against the pulp bale sides.

3,527,020
APPARATUS FOR FILLING AND SEALING CUPS

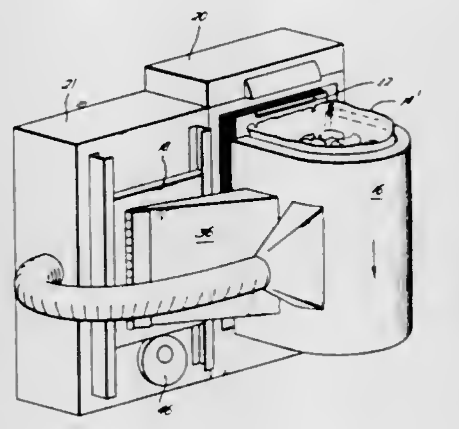
Derek Mancini, Agincourt, Ontario, Canada, assignor to Portion Containers, Inc., Chicago Heights, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 515,011, Dec. 20, 1965. This application June 21, 1968, Ser. No. 738,951
Int. Cl. B65b *3/12, 7/28*
U.S. Cl. 53—282 **18 Claims**

Round synthetic plastic cups having annular flanges at their open upper ends provided with upwardly facing flat annular surfaces are sequentially dispensed from a stack of said cups, are annularly supported on the underside of said annular flanges and sequentially advanced along a path of movement, and are sequentially filled in stages as they are so sequentially advanced. A cover strip, including a paper backed foil having a heat sealing coating on the exposed foil on the underside of the strip, flat round covers each having a diameter at least as large as the outside diameter of the flat annular surfaces of the annular flanges of the cups, and interconnecting webs between the covers, is sequentially advanced and the end cover of the cover strip is directed over the upwardly facing flat annular surface of the annular flange of a dispensed, supported and filled cup as it is sequentially advanced along the path of movement. The heat sealing coating on the underside of the end cover is annularly heated and pressed against the annularly supported upwardly facing flat annular surface of the annular flange of said cup for heat sealing said cover to said filled cup. The interconnecting web between said end cover and the next adjacent cover in the cover strip is severed adjacent said next adjacent cover to provide said end cover with a laterally extending tab to facilitate subsequent removal of the heat sealed cover from the cup.



3,527,021
AUTOMATIC BAGGING MACHINE

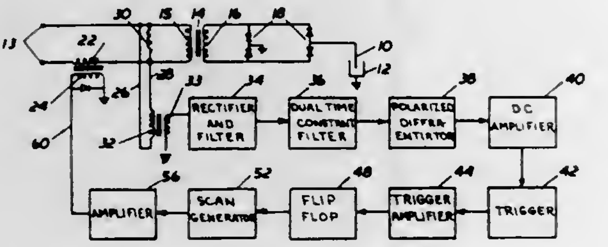
Robert W. Pitts, Jr., 7710 Barberton 77036, and Malone H. Farrar, 5763 S. Reed Road 77033, both of Houston, Tex.
Filed Oct. 2, 1967, Ser. No. 672,103
Int. Cl. B65b *43/36*
U.S. Cl. 53—385 **5 Claims**



Packaging apparatus preferably inflating a folded bag by means of vacuum engagement with the exterior to permit entry of an item or items through the mouth into the bag; means for reciprocating said vacuum engagement means while engaging the bag to free the bag of impediments and thereby release the bag to permit filling of a subsequent bag.

3,527,022
ELECTRICAL CONTROL METHOD AND APPARATUS

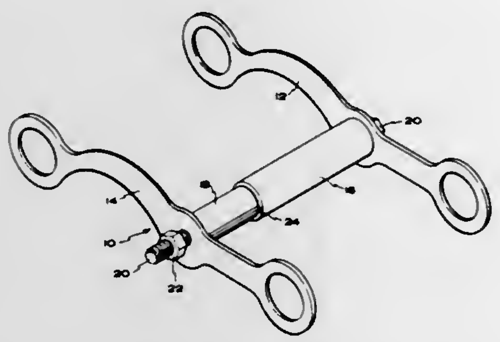
William E. Archer, 14040 Orizaba Ave., Paramount, Calif. 90723, and Everett L. Coe, Jr., 9514 E. Fostoria St., Downey, Calif. 90241
Continuation-in-part of application Ser. No. 491,605, Sept. 30, 1965. This application June 18, 1969, Ser. No. 834,482
Int. Cl. B03c *3/68*
U.S. Cl. 55—2 **15 Claims**



A system for controlling the average discharge electrode voltage of discharge electrodes of an electrostatic precipitator, said system having a device for generating control signals in response to a decreasing average discharge electrode voltage and a device for alternately increasing and decreasing the power input to said discharge electrodes in response to successive ones of said control signals to cause said average discharge electrode voltage to be increased through its peak value.

3,527,023
BRIDLE BIT

Naomi S. Swanson, Challis, Idaho 83226
Filed Mar. 25, 1968, Ser. No. 715,790
Int. Cl. B68b *1/06*
U.S. Cl. 54—8 **4 Claims**



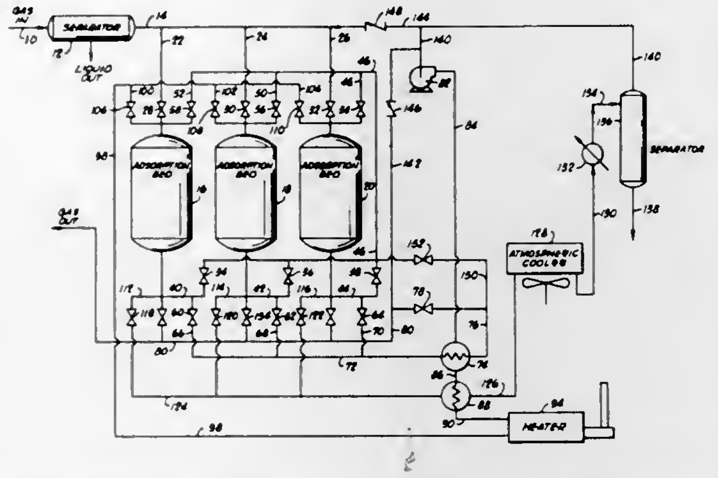
A bridle bit which includes a first side piece having an elongated sleeve affixed thereto; a second side piece having a shaft affixed thereto sized to slide into the interior of said sleeve to form a bit bar between said side pieces; and positioning means coacting between said side pieces to hold them at a maximum spacing. Means can be secured to the sleeve and shaft for restricting rotational movement of the shaft within the sleeve.

ERRATUM

For Class 55—2 see:
Patent No. 3,527,022

3,527,024
PROCESS FOR RECOVERING CONDENSIBLE COMPONENTS FROM A GAS STREAM

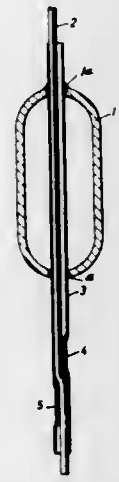
Robert E. McMinn, James A. Loomer, and Arnol I. Sellars, Oklahoma City, Okla., assignors to Black, Sivalls & Bryson, Inc., Kansas City, Mo., a corporation of Delaware
Filed Nov. 5, 1968, Ser. No. 773,514
Int. Cl. B01d *53/04*
U.S. Cl. 55—62 **6 Claims**



This invention relates to an improved process for adsorbing and recovering condensible components from a gas stream. More particularly, this invention relates to adsorbing the condensible components out of the inlet gas stream in one of a plurality of stationary adsorption beds while simultaneously cooling one or more of the other absorption beds with the residue gas stream from the adsorbing bed. At the same time one or more other adsorption beds are heated by a regeneration gas stream in a closed cycle thereby stripping and vaporizing the condensible components contained therein. A special main gas flow pattern is utilized at the beginning of each cycle to prevent condensible components remaining in the bed or beds just heated from being lost with the gas stream leaving the process.

3,527,025
FASTENING MEANS FOR ELECTRICAL DISCHARGE WIRES

Hubert Josef Kinne, Cologne-Bruck, Germany, assignor to Klockner-Humboldt-Deutz AG., Cologne-Deutz, Germany, a corporation of Germany
Filed July 9, 1968, Ser. No. 743,458
Claims priority, application Germany, July 31, 1967, 1,557,111
Int. Cl. B03c *3/41*
U.S. Cl. 55—148 **2 Claims**

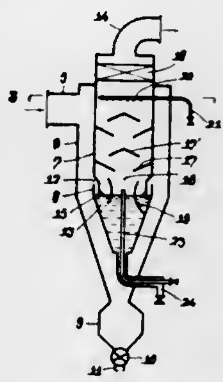


The individual electrical discharge wires of an electrostatic dust separator are secured with their upper ends, each in a separate sheet metal member of circular or semi-circular cross-section by a crimping (solder-less)

or welding operation and the sheet metal member in turn extends through alined holes in a hollow supporting beam and is attached to said beam by a welding operation.

3,527,026
APPARATUS FOR TREATING A GAS TO REMOVE IMPURITIES THEREFROM

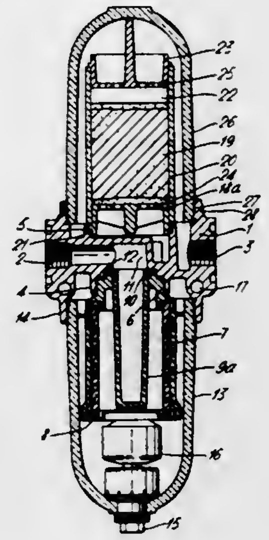
Mitsugi Miura, 13 Tezukayama-Higashi 2-chome, Sumiyoshi-ku, Osaka, Japan
Filed June 3, 1968, Ser. No. 734,116
Int. Cl. B01d *47/02*
U.S. Cl. 55—236 **4 Claims**



A cyclone provided with spray means in the gas discharge pipe and including a hopper spaced from the wall of cyclone filled with liquid, the gas discharge pipe extending into the liquid.

3,527,027
AIR FILTRATION APPARATUS

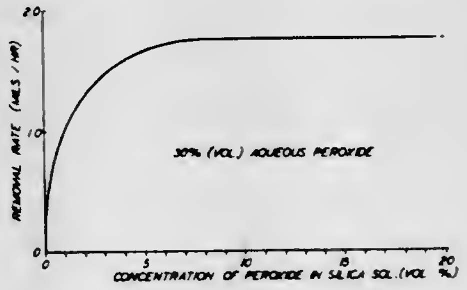
Rogers Evert Knight, London, and Leslie William Smith and Leonard Harris, Shipston-on-Stour, England, assignors to C. A. Norgren Limited, London, England, a British company
Filed Aug. 16, 1968, Ser. No. 753,128
Claims priority, application Great Britain, Aug. 17, 1967, 38,004/67, 38,005/67
Int. Cl. B01d *25/02*
U.S. Cl. 55—275 **4 Claims**



An air filtering apparatus comprising a body member having an air inlet and spaced air outlet and a bowl and tubular micro-filter coalescer detachably secured thereto. A relatively coarse hollow filter having a closure at the bottom is secured to the body member across the air inlet within the tubular micro-filter so that an incoming air stream flows into it. The micro-filter has an impervious closure at the bottom remote from the body member and surrounds the hollow filter in a spaced relation to form an intermediate closed chamber between both filters while serving to coalesce micro-size liquid droplets entrained by the incoming air entering the micro-filter from the intermediate closed chamber. The micro-filter is provided with a screw threaded ring mount at its open end so that the ring mount may be screwed to the body member and the open end of the hollow filter is clamped to the body member so that it communicates with the air inlet. Means are provided between the ring mount and the body member to seal the two filters to the body member when the ring mount is screwed to the body member. A bowl extends below the micro-filter to receive liquid coalesced by and displaced from the micro-filter. The bowl and the micro-filter may be detached from the body member allowing detachment of the hollow filter through the ring mount of the micro-filter.

3,527,028
PREPARATION OF SEMICONDUCTOR SURFACES

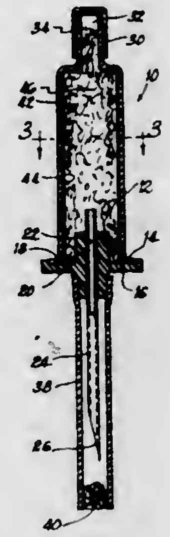
Donald R. Oswald, Schnecksville, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 26, 1967, Ser. No. 670,714
Int. Cl. B24b *1/00*
U.S. Cl. 51—281 **3 Claims**



Although neither silica sol polishes nor peroxide-containing etchants alone can provide suitably pit-free surfaces on germanium, lead telluride and zinc telluride semiconductors, it has been found that silica sols containing at least 0.2% concentrated hydrogen peroxide can produce such surfaces reliably and at very good etch rates. The semiconductor surfaces obtained are sufficiently imperfection-free to be acceptable for use in the manufacture of small dimension planar semiconductor devices.

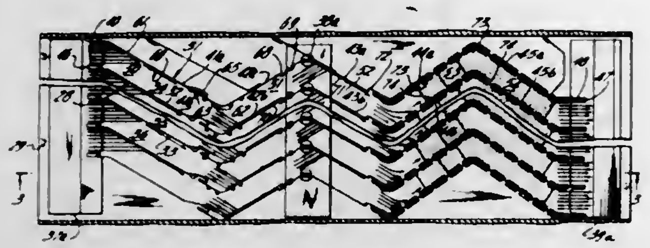
3,527,029
FILTER DEVICE FOR THE PASSAGE OF AIR INTO A CONTAINER

Leon I. Kirschner, Skokie, Ill., assignor to K-N Enterprises, Inc., Skokie, Ill., a corporation of Illinois
Filed Oct. 14, 1968, Ser. No. 767,095
Int. Cl. A61n *5/14;* **B01d** *29/08*
U.S. Cl. 55—385 **3 Claims**



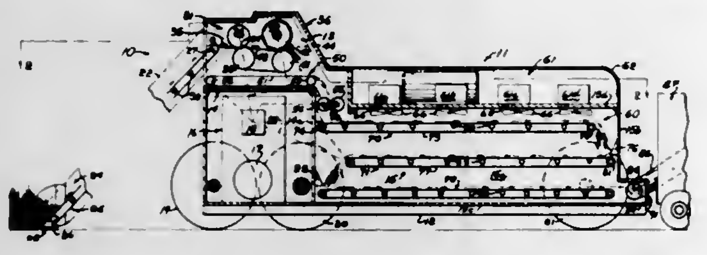
A device for passage of air comprising a cylinder filled with a fibrous filter medium including an adhesive coating on the inside surface of the cylinder whereby the filter medium is bonded to the cylinder and including a cannula extending into a boss at the end of the cylinder.

3,527,030
ELIMINATOR STRUCTURE
Ernest C. Hungate, Rte. 5, Box 88,
Greensboro, N.C. 27402
Filed Sept. 19, 1967, Ser. No. 668,865
Int. Cl. B01d *45/08*
U.S. Cl. 55—440 **12 Claims**



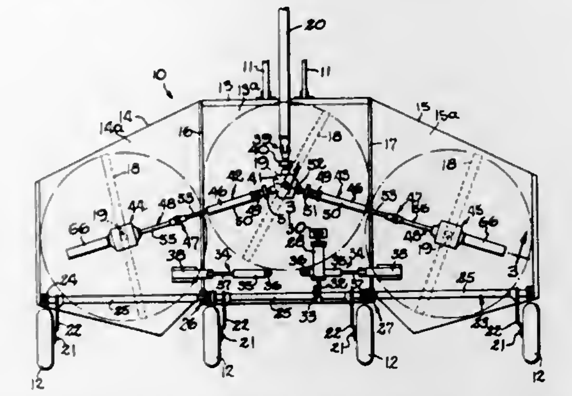
An apparatus for treating a gas with a liquid and more specifically to air washers wherein air is treated with water. In systems of this type the gas stream is passed through a housing into direct contact with liquid by discharging the liquid into the gas stream as it passes through the housing. The present invention is directed to eliminator structure for removing liquid particles from the gas stream by passing liquid and gas streams through a plurality of passages so that the liquid and gas streams impinge on the walls of these passages, at least one of the walls including a substantially vertically disposed longitudinal groove which groove includes an offset portion and fluid stream reversal means so that liquid which impinges upon the wall member upstream from the groove passes into the groove as do portions of the gas stream. The fluid reversal means changes the direction of one or both of the fluid streams so that the direction of liquid stream and of the gas stream are in substantially confronting arrangement so that the directional components of the gas and liquid streams are substantially nullified permitting the liquid to flow in a substantially vertical direction down the groove.

3,527,031
METHOD AND APPARATUS FOR HARVESTING FIELD CROPS
David C. Winger, R.D. 2, Mansfield, Ohio 44903
Filed Mar. 3, 1967, Ser. No. 620,431
Int. Cl. A01d *43/00*
U.S. Cl. 56—1 **8 Claims**



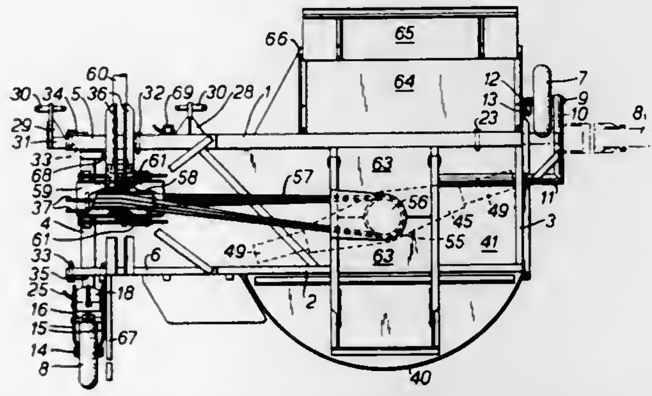
An apparatus for harvesting a field crop comprises a wagon-like chassis having a frame supported by ground-engaging wheels, an internal combustion engine supported by the frame, a generator driven by the engine, a plurality of microwave generating units powered by the generator and connected to the chassis for directing microwave radiation into the chassis, conveyor means in the chassis for moving the crop past the microwave generating units to expose the crop to microwave radiation which dries the crop. Additionally, the apparatus includes a cutter bar for severing the field crop from the ground, a conveyor unit for conveying the crop from the cutter bar to crushing rolls which crush the stems of the crop, and heating means which removes external moisture from the crop prior to the crop being exposed to the microwave radiation.

3,527,032
CUTTER SECTION FOR MULTISECTION MOWER
Keith S. Wood, Oregon, Ill., assignor, by mesne assignments, to Hesston of Delaware, Inc., Wilmington, Del., a corporation of Delaware
Continuation of application Ser. No. 600,852, Dec. 12, 1966. This application Aug. 7, 1969, Ser. No. 850,693
Int. Cl. A01d *75/30*
U.S. Cl. 56—6 **9 Claims**



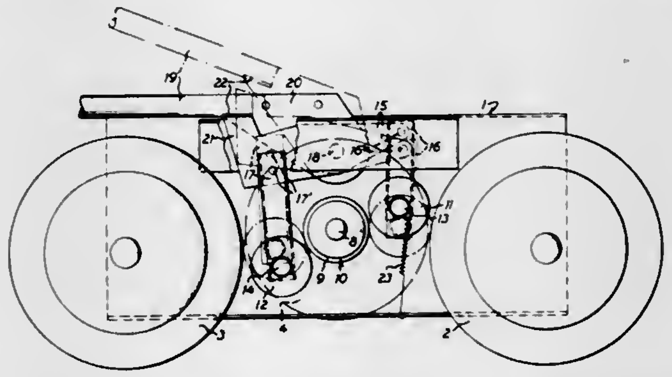
A drive shaft for a multi-section mower of the type in which a wing section is hinged to a center section and can swing about the hinge to positions above and below the plane of the center section. The drive shaft is connected between a main gearbox on the center section and a gearbox on the wing section to transmit power to the wing gearbox to drive a mower blade on the wing section. To maintain a driving connection between the gearboxes as the wing section swings, the drive shaft comprises two telescoping sections. The first telescoping section is joined by a first universal joint at one end to one end of the second telescoping section and by a second universal joint at the opposite end to the main gearbox. The second telescoping section telescopes into the wing gearbox. With this arrangement, the first universal joint can be positioned close to the hinge when the wing section swings below the plane of the center section thus allowing the drive shaft to be mounted on the mower closer to the housing of the mower. Additionally, the second telescoping section may be spring biased toward a fully telescoped portion to maintain the first universal joint near the wing gearbox when the wing is raised to generally vertical positions thus keeping the bend in the two universal joints generally equal when the wing is raised.

3,527,033
AGRICULTURAL MOWERS
William T. Teagle, Blackwater, Truro, Cornwall, England
Filed May 15, 1967, Ser. No. 638,345
Claims priority, application Great Britain, May 17, 1966, 21,895/66
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **13 Claims**



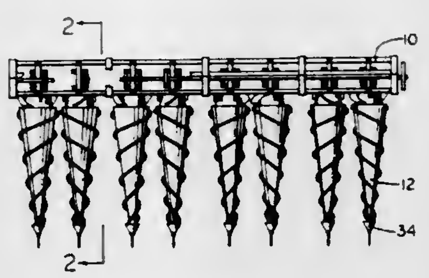
A mower to be attached to the power lift linkage of a towing tractor with its cutting blades operatively connected to the power take-off shaft of the tractor for rotation about a vertical axis in a path offset from the path of travel of the tractor, the whole or a part of the mower being displaceable through 90° relative to the tractor to align the cutting blades behind the tractor and reduce the overall width of the mower for towing in its non-operational state.

3,527,034
POWER TRANSMISSIONS FOR LAWNMOWERS
Stig Gunner Hjelmquist, Box 6, 57300 Tranas, Sweden
Filed June 18, 1968, Ser. No. 738,001
Claims priority, application Sweden, June 20, 1967, 8,703/67
Int. Cl. A01d *35/24*
U.S. Cl. 56—26 **4 Claims**



A power transmission device for self-propelled cylinder type lawnmowers comprises a drive shaft, preferably cutter shaft, mounted midway between two traveling wheels and in parallel with the axles thereof, a drive roller or pinion arranged on said drive shaft and being caused to transmit drive power to the traveling wheels over intermediate wheels shiftable in a radial plane, the distance between the drive roller or pinion and the peripheries of the traveling wheels being so adapted relative to the diameter of the intermediate wheels that upon rotation of the drive roller or pinion by the intermediary of a motor, the intermediate wheels are urged in between the roller or pinion and the peripheries of the traveling wheels thereby transmitting drive power to the said wheels. The device also includes means by which the intermediate wheels can be shifted from the power transmitting position to a non-operative position.

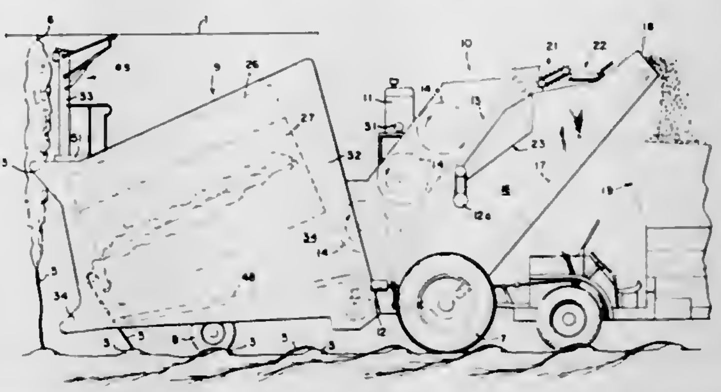
3,527,035
ROLLING SHOE
Wylie A. Byrd, Rte. 2, Box 25, Tulia, Tex. 79088
Filed Dec. 21, 1967, Ser. No. 692,371
Int. Cl. A01d *45/02*
U.S. Cl. 56—119 **16 Claims**



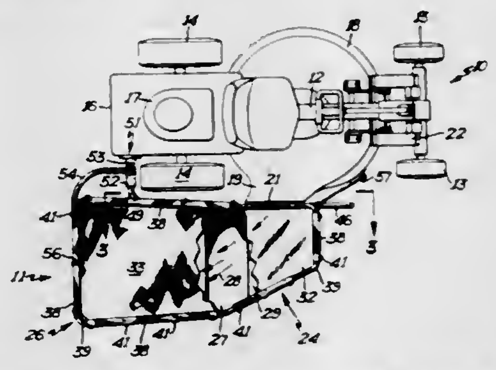
A rolling conic shoe is journaled for rotation coaxially with each lifting cone of a grain harvester to prevent the apex of the lifting cone from digging into the soil.

3,527,036
HOP PICKING MACHINE
Henry Siebol, Rte. 1, Outlook, Wash. 98938
Filed Oct. 11, 1967, Ser. No. 674,592
Int. Cl. A01d *45/22*
U.S. Cl. 56—130 **11 Claims**

A hop-picking machine for stripping hop vines in the field and having picker units comprising two sets of inclined picker frames. The picker frames are inclined longitudinally of the machine and are also inclined laterally with the width of the outboard frame in each set being less than the width of the inboard frame. Each picker frame has endless chains or belts mounting a plurality of picker bars which carry picker fingers. The fingers move horizontally and in a longitudinal direction opposite from the direction in which the hop vines are pulled between the frames as the machine advances. A conveyor belt removes the cones or clusters of hops to be further separated and cleaned and the stripped vines are deposited on the ground as the machine advances.



3,527,037
RIDING MOWER GRASS CATCHER
Victor Leader, 2339 Sheridan Ave. N., Minneapolis, Minn. 55411
Filed Feb. 19, 1968, Ser. No. 706,297
Int. Cl. A01d *35/22, 53/06*
U.S. Cl. 56—202 **18 Claims**

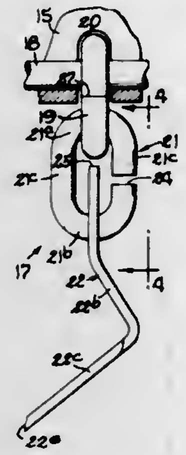


A riding rotary lawn mower equipped with a side grass catcher to receive and collect grass, leaves and other material discharged from the mower. The catcher has a transverse deflector plate which directs the material discharged from the mower upwardly into the back of the catcher and prevents a buildup of material in the front of the catcher. The catcher is pivotally mounted on the mower for independent floating movement to eliminate scalping by the mower. The rear of the catcher has a flap opened and closed by a zipper to provide a large discharge opening for the material collected in the catcher.

3,527,038
QUICK-CHANGE FLAIL BLADE
Keith S. Wood and Mervel E. Wood, Oregon, Ill., assignors, by mesne assignments, to Hesston of Delaware, Inc., Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 735,829, June 10, 1968. This application Aug. 26, 1968, Ser. No. 767,019
Int. Cl. A01d *55/22*
U.S. Cl. 56—294 **19 Claims**

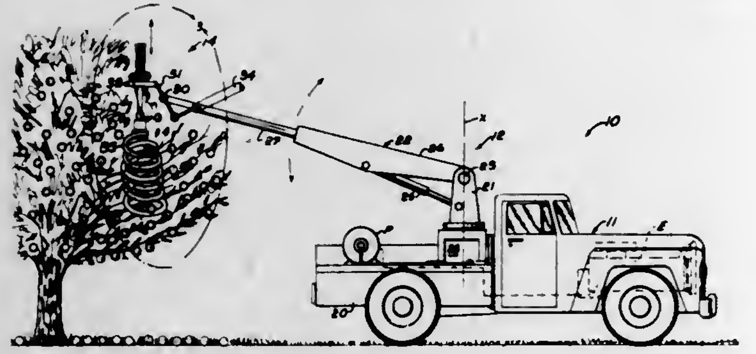
A flail-type mower having an elongated rotor with cutter assemblies spaced along and around the mower, each cutter assembly comprising a closed connecting link pivotally attached to the mower, an oval attaching link interlinked with the connecting link, and a flail blade having an inner end portion with a hole through which the attaching link extends and an outer cutting end.

Formed in one side section of the attaching link is a gap for passing the blade edgewise into the link, the hole being spaced from the inner end of the link a distance about 1½ times the width of the interior of the attaching link while the width of the blade on each side of the hole is less than the width of the interior. Thus, the blade normally is prevented from moving directly to the gap but is removable upon turning of the inner end portion out of the link for sliding of the blade sidewise into alinement with the gap. In one embodiment, the blade must be driven forcibly through the gap before the blade can be detached.



3,527,039
FRUIT HARVESTER INCLUDING RECIPROCABLE AND ROTATABLE ROD-LIKE HELICAL MEMBER

Kenneth H. Recker, Winter Haven, Fla., assignor to Heli Pic, Incorporated, Polk County, Fla., a corporation of Florida
Filed Apr. 27, 1967, Ser. No. 634,201
Int. Cl. A01g *19/08*
U.S. Cl. 56—328 3 Claims

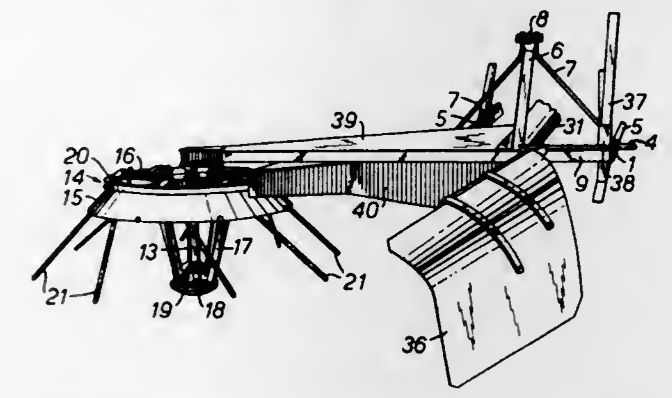


Harvesting apparatus comprises a mobile boom structure supporting a tree foliage engaging means having reciprocable axial movements whereby the foliage engaging means may be inserted into foliage of the tree and reciprocated to shake the tree branches near their extremities and cause fruit to be separated from the branches. The foliage engaging means includes a rod-like member in the form of a helix which is threaded into the foliage of the tree and reciprocated axially to shake the crop from the tree after which the member is unthreaded from the tree. The helix may be inserted or threaded into the foliage from various desirable angles relative to the tree.

3,527,040
HAY-TEDDER INCLUDING ROTATABLE TEDDER REEL WITH FLEXIBLY MOUNTED TINES

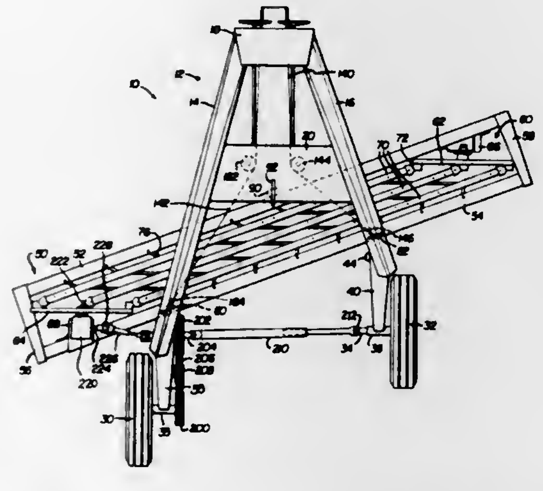
William T. Teagle, Blackwater, Truro, England
Filed Sept. 20, 1967, Ser. No. 669,082
Int. Cl. A01d *79/00*
U.S. Cl. 56—370 16 Claims

The invention consists of a one-, two- or four-row hay-tedder adapted to be carried by the power lift mechanism of a farm tractor or provided with ground wheels and a draw-bar for towing behind the tractor. The single row machine has one tedding reel rotatable about a substantially vertical axis through a belt-drive from the tractor power take-off shaft and provided with a plurality of flexibly mounted downwardly extending rigid tines which act on the hay. The two-row machine is provided with a second tedding reel similar to and laterally spaced from the first reel and rotatable thereby through a second belt-drive, whilst the four-row machine is provided with two pairs of tedding reels each driven from the tractor power take-off shaft in the same manner as the reels of the two-row machine.



3,527,041
CONTROL MECHANISM FOR AGRICULTURAL IMPLEMENT

Laurel R. Yeske, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed May 9, 1968, Ser. No. 727,791
Int. Cl. A01d *77/06*
U.S. Cl. 56—377 10 Claims



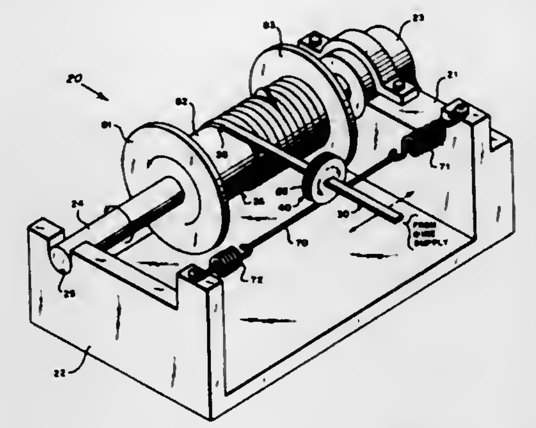
A clutch actuating mechanism for a side delivery rake which allows the rake to be moved to an inoperative position while the clutch remains in the engaged position when the torque forces in the clutch are above a predetermined level. Means are included in the actuating mechanism for disengaging the clutch when the torque forces between the clutch elements are reduced below the predetermined level.

3,527,042
WIRE TWISTING APPARATUS

Richard O. Rowlands, State College, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 6, 1969, Ser. No. 804,893
Int. Cl. D07b *7/10;* **D01h** *7/00*
U.S. Cl. 57—62 11 Claims

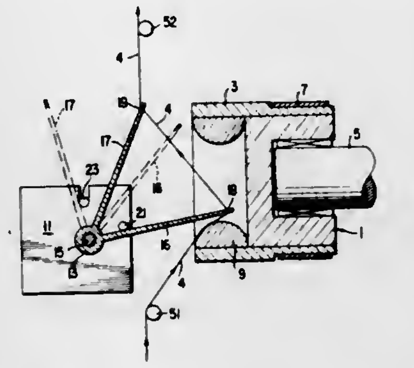
Apparatus for introducing twists into flat, plural conductor cable including a motor-driven spool and a circular disc having an elongated aperture or slot through which the cable is fed to the spool. The disc is encircled

by a flexible, tensioned belt whose ends are attached by springs to support means. As successive turns of the cable in a layer are applied to the spool, the disc tends to be rolled along the belt and twists the cable.



3,527,043
MEANS AND PROCESS FOR PRODUCING A FALSE TWIST BY FRICTION

Louis E. Sabaton, Saint-Pierre-sous-Aubenas, France, assignor to Societe Moulinage et Retorderie de Chavanoz, Chavanoz, France, a corporation of France
Filed Jan. 2, 1969, Ser. No. 788,428
Claims priority, application France, Jan. 5, 1968, 49,500
Int. Cl. D01h *7/92;* **D02g** *1/04*
U.S. Cl. 57—77.4 9 Claims



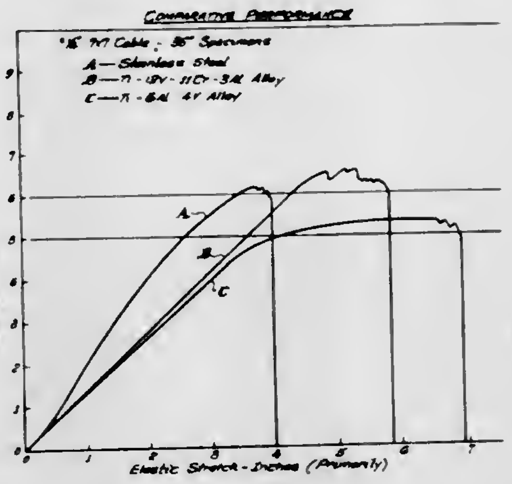
An apparatus and process for creating a false twist in a textile yarn by friction, said apparatus comprising at least one annular friction surface rotating about itself around a stationary axis, such annular friction surface being in contact at at least one point with a textile yarn in movement under tension, the yarn being guided to and from the annular friction ring by means located on the same side in relation to the entry and exit plane of the textile yarn. An intermediate guiding means may be provided to engage and guide the textile yarns in the annular space of the friction ring so as to maintain the textile yarn inside such base in contact with the friction ring.

Such an apparatus and process for creating a false twist therewith take advantage of a considerable peripheral diameter of the friction ring, a high rotational speed of such ring and a great ease in handling of the textile yarn.

3,527,044
INERTIAL CONCEPT FOR CABLE DYNAMICS

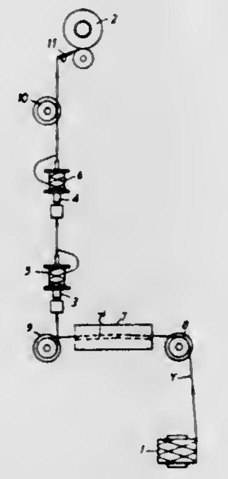
Milton A. Nation, 905 Moraga Drive, Los Angeles, Calif. 90049
Filed May 20, 1968, Ser. No. 730,681
Int. Cl. D02g *3/02;* **C22c** *15/00*
U.S. Cl. 57—139 4 Claims

A cable having a plurality of wires each being selected and processed from titanium and titanium base alloys to embody novel combinations of inertial elements, and next, tailored twisted and assembled into axially symmetric construction, physically and generally changed by (a) reduced mass due to lower density, (b) greater flexibility due to doubled wire elasticity, (c) smaller cross-section due to higher usable strength.



3,527,045
PRODUCTION OF YARNS

David Wilson, West Bridgford, England, assignor to Clutsom-Penn International Limited, Coalville, Leicester, England, a British company
Filed Jan. 6, 1969, Ser. No. 789,119
Claims priority, application Great Britain, Jan. 30, 1968, 4,774/68
Int. Cl. D02g *3/32;* **D02j** *13/00*
U.S. Cl. 57—152 7 Claims

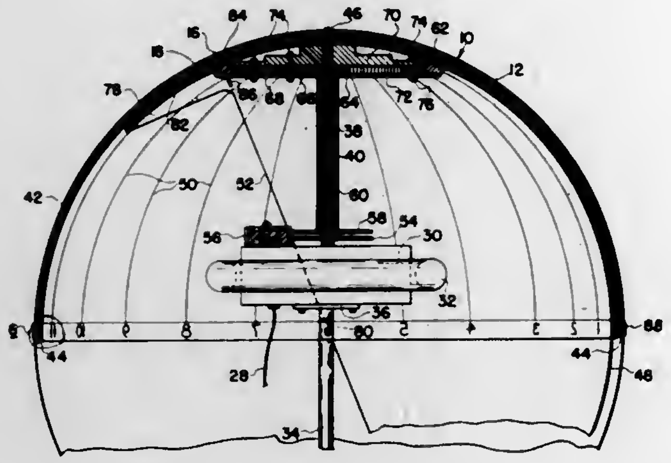


A process for the production of thermoplastic elastomeric yarn containing at least 85% segmented polyurethane. Such a yarn, initially bare, is simultaneously extended to an extent of less than 200 percent and heat set at a temperature in the range 160–300° C. over a period of time not exceeding 30 seconds. Preferably the process is carried out on a covering machine as part of a covering operation on the bare yarn, although it may be carried out when winding the initially bare yarn from one package to another.

3,527,046
GLOBE MAP CLOCK

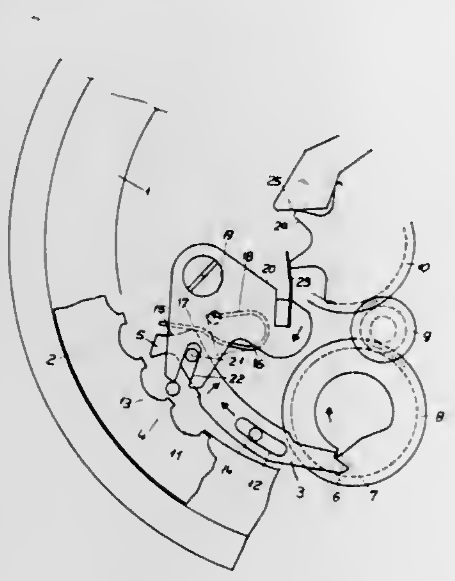
Walter S. Pawl, 2844 Powder Mill Road, Adelphi, Md. 20783
Filed May 21, 1969, Ser. No. 826,487
Int. Cl. G04b *19/22*
U.S. Cl. 58—44 7 Claims

This clock is an adaptation of means operated by a 24-hour clockworks mounted inside a transluscent globe map, for rotating a transparent hemispherical shell within the northern portion of the globe about the polar axis, at the rate of one revolution per day. This hemisphere has inscribed on it heavy great circle lines radiating from the polar axis at 15 degree intervals and extending to the equatorial edge of the transparent hemispherical shell where they are designated by their hour numerals from 1 to 12 in counterclockwise direction repeated once to complete the designation of all the 24 line terminals at the Equator. A somewhat darkened hemispherical shell is pivotally mounted diametrically of its edge on the 6 o'clock diameter of the edge of the transparent shell for daily rotation therewith to cast a moving shadow on the globe map indicating the extent of the darkness portion of the earth at any time, there being lights mounted around the clockworks inside the globe. Gearing is provided to tilt the darkened shell from day to day in accordance with the seasons of the year and to drive an annular scale about a pointer indicating the day of the year automatically throughout the year.



3,527,047
DAY- AND DATE-INDICATING WRISTWATCH

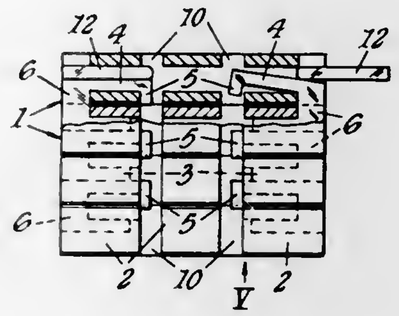
Benjamin Bolle, Pforzheim, Germany, assignor to Bernhard Forster, Pforzheim, Germany, a firm
Filed Oct. 7, 1968, Ser. No. 765,339
Claims priority, application Germany, June 27, 1968, 1,773,722
Int. Cl. G04b *19/24*
U.S. Cl. 58—58 3 Claims



Means for advancing a date ring and day ring once every twenty-four hours comprising a drive wheel arranged to revolve once every twenty-four hours and drive a pawl which has an output end for engaging and advancing a tooth of said date ring while moving laterally and pivotally, a pin carried on said pawl simultaneously pivoting a bell-crank lever which engages and advances a tooth of said day ring, said pawl being spring loaded to return to starting position.

3,527,048
ARTICULATED BRACELETS, WATCH STRAPS OR THE LIKE AND A METHOD OF MAKING SAME

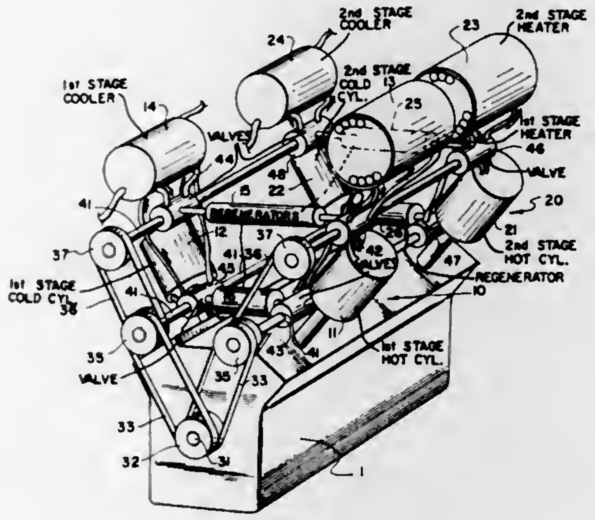
Harvey James East, Chesham, England, assignor to David Shackman & Sons Limited, Chesham, England
Filed Apr. 2, 1968, Ser. No. 718,121
Claims priority, application Great Britain, Feb. 8, 1968, 6,199/68
Int. Cl. B21l *11/10*
U.S. Cl. 59—35 4 Claims



A bracelet is made up of a multiplicity of closely located transverse members having hollow portions at each end, and these members are connected together at each side of the bracelet by U-shaped keys which bridge the hollow end portions of pairs of bricks and are arranged so that one limb of the U enters the hollow end portion of one member and the other limb thereof enters the hollow end portion of the adjacent member, and the free end of one limb is formed with a laterally directed locking nose which, when the limb is bent towards its other limb, engages behind the inner end of the hollow portion and prevents withdrawal of the key.

3,527,049
COMPOUND STIRLING CYCLE ENGINES

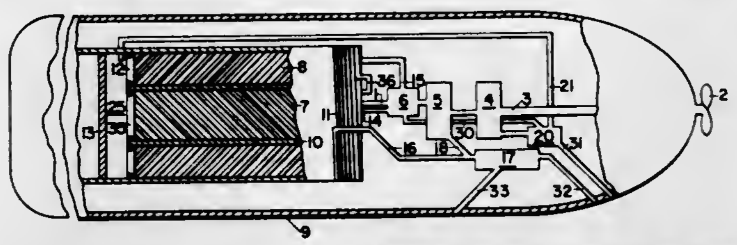
Vannevar Bush, 304 Marsh St., Belmont, Mass. 02178
Filed Nov. 3, 1967, Ser. No. 680,491
Int. Cl. F03g *7/06;* **F25b** *9/00*
U.S. Cl. 60—24 3 Claims



Methods and apparatus for compounding Stirling cycle engines and control methods and apparatus are described herein.

3,527,050
SOLID FUEL AND OXIDIZER FOR UNDERWATER PROPULSION SYSTEM

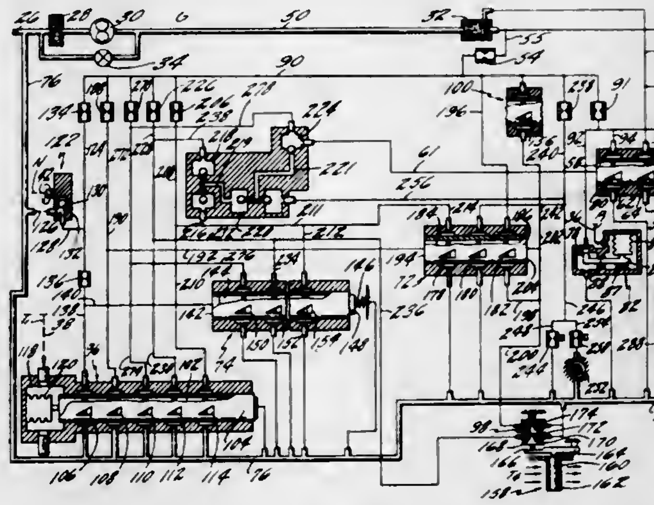
Leonard Greiner, Palo Alto, Calif., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 18, 1966, Ser. No. 565,765
Int. Cl. F02g *3/00*
U.S. Cl. 60—39.05 9 Claims



An underwater propulsion system employing as a fuel component a flowable slurry of fuel material dispersed in molten sulphur and as the oxidizer component a molten oxidizing agent having a melting point approximating that of sulphur such as a mixture of lithium chlorate and lithium perchlorate.

3,527,051
FUEL CONTROL

Charles F. Stearns, East Longmeadow, Mass., and Louis A. Urban, Granby, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,329
Int. Cl. F02c *9/10, 7/08*
U.S. Cl. 60—39.28 8 Claims

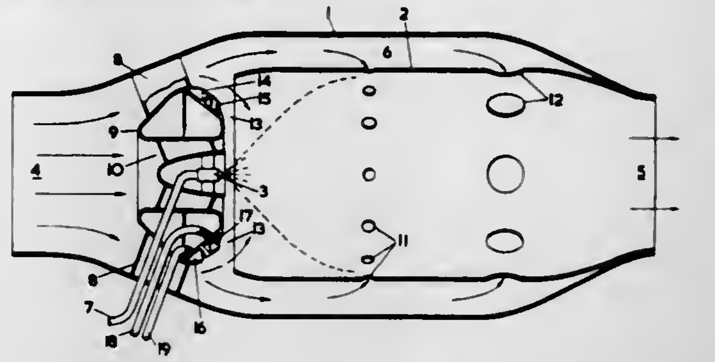


A fuel control utilizes power plant speed, inlet air temperature, inlet air pressure and combustion section inlet temperature as parameters for scheduling the acceleration of the power plant within surge and over temperature limits; the control utilizes combustion section temperature rise, compressor inlet pressure and power lever setting for scheduling fuel flow during steady state operation; and during deceleration the control utilizes compressor inlet temperature, compressor inlet pressure and power plant speed as parameters for scheduling the fuel flow.

3,527,052
COMBUSTION SYSTEM WITH AERODYNAMICALLY VARIABLE GEOMETRY

William Dean Bryce, Farnham, Surrey, England, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed July 31, 1968, Ser. No. 748,998
Claims priority, application Great Britain, Aug. 10, 1967, 36,856/67
Int. Cl. F02c *7/00*
U.S. Cl. 60—39.65 12 Claims

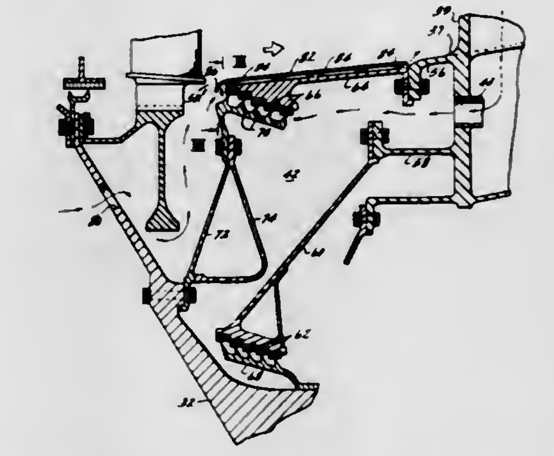
Suction is applied to the surfaces of passages by which air enters a combustion chamber, to control the pattern of air flow in order to vary the fuel to air ratio and other conditions in the primary combustion zone. In one embodiment, a baffle in the air inlet to a combustor surrounds a spray atomiser to form an annular duct by which air passes to the primary zone. Further air passes round the outside of the baffle which is provided with suction slots in its surface. By varying the amount of suction, the direction of the further air can be altered and the volume flowing to the primary and secondary zones varied accordingly.



In another embodiment, the end wall of a flame tube surrounding the air inlet to the primary combustion zone is a hollow structure having an opening facing upstream of flow through the combustion chamber. Slots are provided in the downstream face of the end wall and around its periphery whereby air entering the opening can be directed along the face and the flame tube walls for cooling. Adjacent to the peripheral slot is an annular tube having rows of holes in its surface so that suction applied to the tube will act on the cooling air issuing from the slot to reduce its velocity and change its direction. The cooling stream normally passes over secondary air inlet holes in the flame tube walls and directs the secondary air in a generally downstream direction to give an extended recirculation pattern. Diverting the cooling stream has the effect of varying the inlet angle of the secondary air and thus reduce the length of the recirculation pattern.

3,527,053
GAS TURBINE ENGINE WITH IMPROVED GAS SEAL

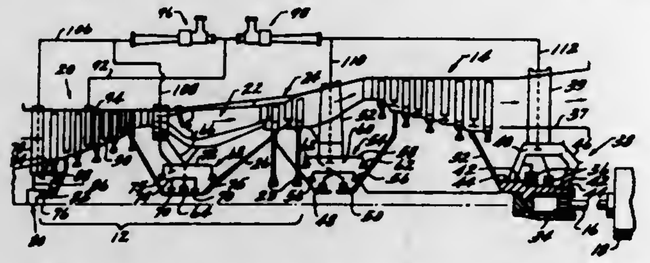
Roy L. Horn, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 11, 1968, Ser. No. 782,991
Int. Cl. F02c *7/12*
U.S. Cl. 60—39.66 5 Claims



In a gas turbine engine, a chamber at the downstream end of a power turbine is pressurized to provide a balancing force on the rotor, minimizing axial loads. This chamber is sealed from the hot gas stream by a labyrinth type, tooth seal. In order to minimize loss of seal effectiveness due to differential thermal growth, the relatively cool air which bleeds through the seal is directed through passageways on the outer surface of the stationary portion of the labyrinth tooth seal.

3,527,054
PRESSURIZATION OF LUBRICATION SUMPS IN GAS TURBINE ENGINES

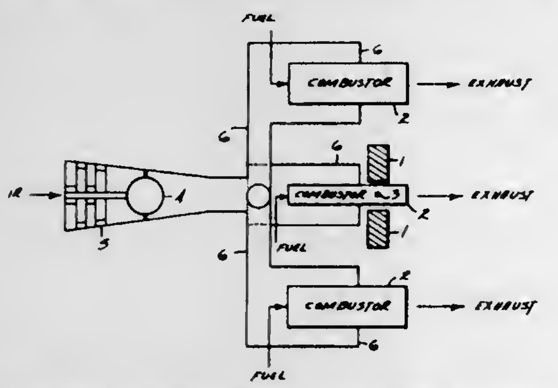
Martin C. Hemsworth, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Jan. 23, 1969, Ser. No. 793,293
Int. Cl. F02c *7/06, 7/28*
U.S. Cl. 60—39.66 **2 Claims**



Air is bled from an intermediate stage of a compressor in a gas turbine engine to provide motive fluid for a pair of eductors. The eductors have secondary inlets, open to relatively cool ambient air. The eductors discharge mixed compressor and ambient air to pressurization chambers surrounding annular seals between the engine rotors and stationary lubrication sumps. The arrangement assures sufficient pressure and relatively cool air, under all operating conditions, for maintaining a pressure in the pressurization chambers sufficient to prevent oil loss through the annular sump seals.

3,527,055
MAGNETOPLASMADYNAMIC JET ENGINE

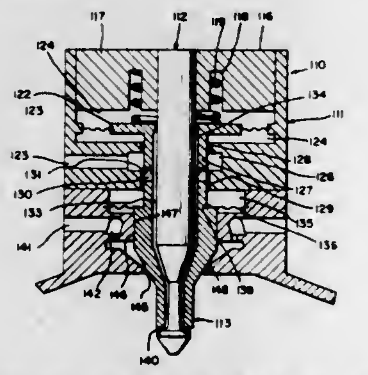
Jose Dominguez Rego, 600 Broad St., Newark, N.J. 07102
Filed Apr. 15, 1968, Ser. No. 721,459
Int. Cl. F02k *5/00;* **H02k** *45/00*
U.S. Cl. 60—224 **2 Claims**



A jet engine comprising a compressor, a combustor and magnetoplasmadynamic means to generate electrical energy for driving the compressor and other auxiliary electrical equipment.

3,527,056
FLOW POSITIONED INJECTOR

Herbert J. Hoffman, Torrance, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 20, 1967, Ser. No. 684,128
Int. Cl. F02k *9/02*
U.S. Cl. 60—258 **4 Claims**

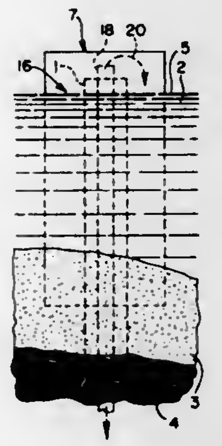


A bifluid injector being operable by the fluid flow so that essentially constant velocities are maintained for the fluid discharge of the injector over predetermined changes of rates of flow into the injector. The constant injection velocities are made possible by a metering orifice and balanced piston areas in at least one of the flow paths so that as the flow increases, a spring is compressed or moved oppositely to its bias by an increased pressure differential within the injector, causing an injector element, which separates the flow paths of the two fluids, to increase the size of discharge orifices for each of the fluids, thereby preserving constant pressure drop and constant injection velocity at the discharge outlets.

A rocket engine combustion chamber employing an injector as described above.

3,527,057
METHOD AND APPARATUS FOR CONTAINING WELL POLLUTANTS

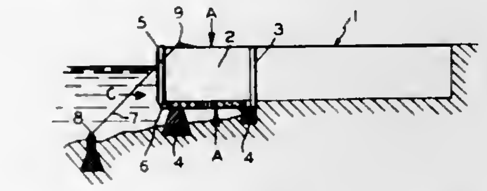
Chester George Riester, 10397 S. Lake Blvd., Parma, Ohio 44129
Filed Mar. 1, 1968, Ser. No. 709,704
Int. Cl. E02b *1/00;* **E21b** *15/02*
U.S. Cl. 61—34 **7 Claims**



Well installation apparatus and method utilizing a header surrounding the well casing and a large coffer or caisson surrounding the header, the diameter of the caisson being large enough to contain the well tailings which might otherwise pollute the area surrounding the well site, the caisson of an adjacent well site being used to contain the tailings of the initially completed well.

3,527,058
DEVICE FOR EXTENDING A DRYDOCK

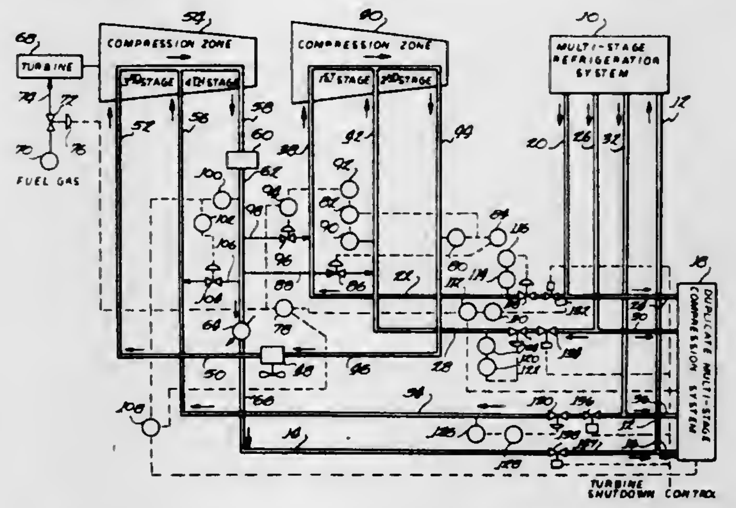
Tadaatsu Noguchi, Tamano, Okayama-ken, Japan, assignor to Mitsui Shipbuilding & Engineering Co., Ltd., Tokyo, Japan
Filed Oct. 8, 1968, Ser. No. 765,956
Int. Cl. B63c *1/00*
U.S. Cl. 61—64 **2 Claims**



A device for extending a drydock. The device has an extension having a body portion with a generally U-shaped rectangular cross section which is the same as the cross section of the drydock to be extended, a drydock gate over one end thereof, and the other end being adapted to be engaged against and sealed to the end of the drydock at the water's edge. The body portion has bottom and side walls with ballast tanks therein. Bases are provided adapted to be mounted on the bottom of the body of water adjacent the mouth of the drydock to be extended and on which the extension rests with the inside surface of the bottom level with the surface of the inside of the surface of the bottom of the drydock. Wiring fixtures are positioned on the shore adjacent the drydock and the bottom of the body of water adjacent the drydock, and wire ropes or the like are attached between the extension and the wiring fixtures for securing the extension against the forces of the tides, winds and the like.

3,527,059
METHOD OF CONTROLLING PARALLEL-OPERATING REFRIGERATION COMPRESSORS

Jack R. Rust and Hadwen A. Clayton, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1968, Ser. No. 793,217
Int. Cl. F25b *1/00*
U.S. Cl. 62—115 **12 Claims**

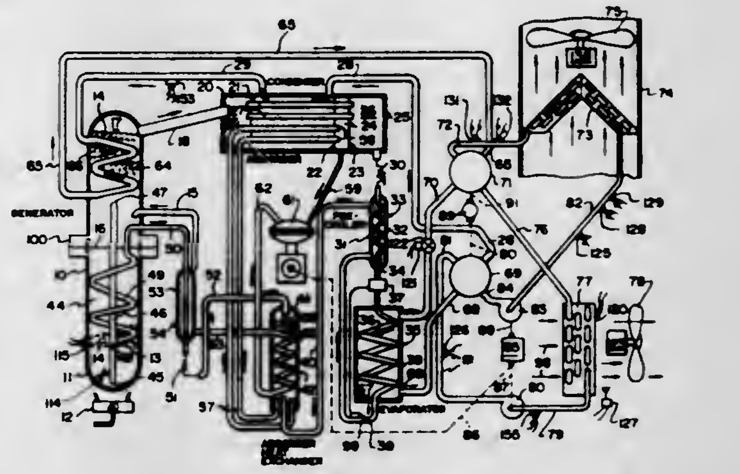


A method of balancing the operation of a plurality of turbine-powered multi-stage refrigeration compressors which operate in parallel to supply refrigerant to a single multi-stage refrigeration system comprises interrelated control steps which interact to achieve the desired balanced operation. The control steps include recycling a portion of the compressed gaseous refrigerant from the final stage to the earlier stages of each compressor so that all stages operate at least about 80% of their normal capacity and excessive surging is avoided. Recycle to the first stage also may be used to maintain suction pressure above a predetermined minimum. The speed of the turbine prime movers is also controlled to achieve the desired common suction pressure to the first stage of compression and substantially equal flow rates from the final stages of compression of each compressor. Recycled gaseous refrigerant may be contacted with liquid refrigerant to cool and staturate the recycled vapors.

3,527,060
HEAT PUMP FOR SELECTIVELY HEATING OR COOLING A SPACE

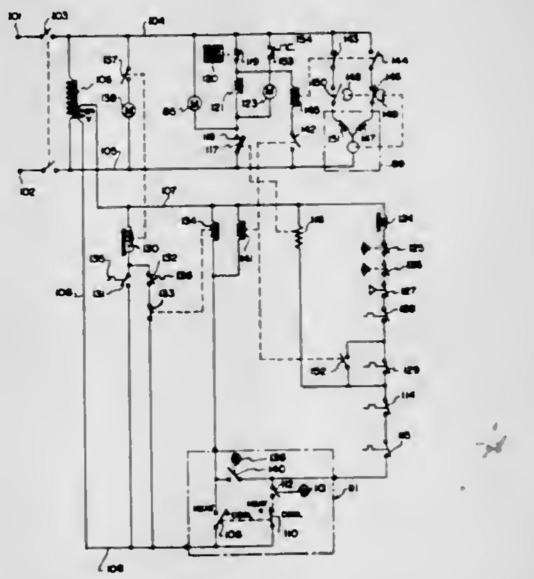
Roy W. Kruggel, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,288
Int. Cl. F25b *29/00;* **F25d** *21/12*
U.S. Cl. 62—140 **9 Claims**

A secondary, fluid-carrying circuit for use either with a gas-fired absorption refrigeration system or a mechanical refrigeration system to transfer heat generated by the heat dissipating components of the refrigeration system to a space for heating purposes or, alternately, to provide for cooling the space by transferring heat from said space to the heat absorbing components of the refrigeration system. The secondary, fluid-carrying circuit allows the refrigeration system to operate in precisely the same manner whether a heating or cooling function is being performed. The invention provides separate hot and cold water hydraulic systems interconnected by appropriate valving whereby a hot water stream may be directed through a house coil for winter heating purposes and cold water may be conducted to the coil for cooling purposes. The hydraulic circuitry further includes a radiator used to dissipate heat from the hot water stream during cooling mode operation and to deliver heat to the cold water stream during heating mode operation. Should the radiator become clogged with frost during winter operation, the fluid circuit of this invention provides for automatic defrosting thereof.



3,527,061
ABSORPTION REFRIGERATION SYSTEM WITH REFRIGERANT CONCENTRATION CONTROL

Roy W. Kruggel, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,287
Int. Cl. F25b *29/00*
U.S. Cl. 62—142 **9 Claims**

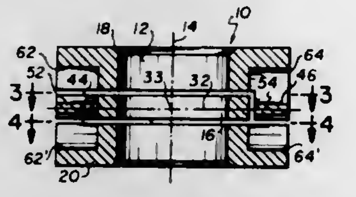


An improved fluid concentration control for a heat pump using an absorption refrigeration system wherein the quantity of refrigerant supplied to the evaporator is automatically varied in accordance to the cooling load to which the evaporator is subjected. For example, should the cooling load decrease as during winter or heating operation, flow of refrigerant to the evaporator is cut back and the refrigerant is automatically stored out of the working fluid circuitry. This storage varies the concentration of refrigerant in the refrigerant-absorption liquid solution such that pressure within the evaporator is adjusted for optimum heat pump performance regardless of the ambient in which the heat pump operates. As refrigerant is removed or added to the system, the total volume of the refrigerant-absorption solution in the system, of course, varies accordingly. Thus, an enlarged liquid storage volume is provided within the generator so that even widely varying amounts of solution in the system will have only minor effect on changes in the liquid level within said generator.

3,527,062

UNIVERSAL JOINT FLEXURE HINGE

Donald J. Bilinski, Randolph Township, Dover County, and George S. Macor, Bloomfield, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Sept. 25, 1968, Ser. No. 762,514
Int. Cl. F16d *3/52*
U.S. Cl. 64—15 9 Claims

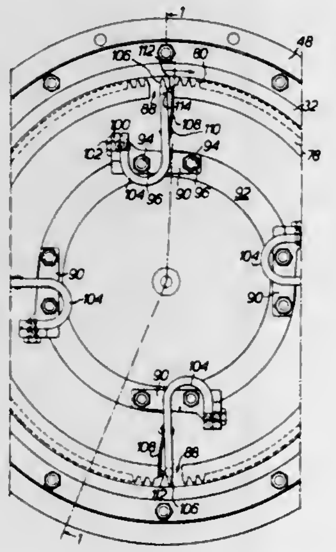


An extremely compact universal-joint gyroscope flexure hinge is provided comprising an upper gimbal, a middle gimbal, and a lower gimbal. The middle gimbal includes a first pair of diametrically opposed, oppositely extending, cantilevered flexure bars arranged in quadrature with respect to the first pair. The upper gimbal includes a pair of diametrically opposed downwardly extending portions connected respectively to the outer ends of the first pair of flexure bars while the lower gimbal includes a pair of diametrically opposed upwardly extending portions integrally attached to the outer ends of the second pair of flexure bars respectively. With this construction, the upper gimbal may tilt relative to the middle gimbal about an axis passing through the first pairs of flexure arms, and likewise, the lower gimbal may tilt relative to the middle gimbal about a second axis passing through the second pair of flexure bars. In addition, the entire hinge assembly is symmetrical about any of its three principal axes; hence, the hinge's mass center is located substantially at the intersection point of the first and second pivot axis.

3,527,063

SERRATED COUPLINGS

Karl Gustav Ahlen, Stockholm, Sweden, assignor to S.R.M. Hydromekanik AB, Stockholm-Vallingby, Sweden, a company of Sweden
Filed Aug. 22, 1968, Ser. No. 754,657
Claims priority, application Germany, Sept. 2, 1967, S 111,671
Int. Cl. F16d *3/06*
U.S. Cl. 64—23 17 Claims

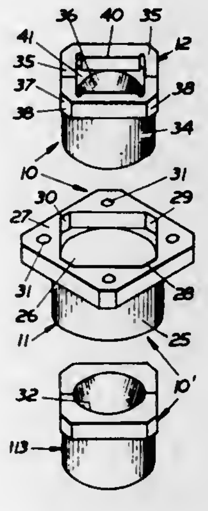


A transmission shafting having relatively axially displaceable members comprising a pair of intermeshing serrated members. Flank elements extend from one member against the serrations of the other member to eliminate play between the members. The flank elements are biased to maintain the members in mesh in the driving direction.

3,527,064

MASTER BUSHING ASSEMBLY

Charles D. Crickmer, 12923 Memorial Drive, Houston, Tex. 77024
Continuation of application Ser. No. 607,237, Jan. 4, 1967. This application July 25, 1968, Ser. No. 747,742
Int. Cl. F16d *3/06*
U.S. Cl. 64—23.5 17 Claims

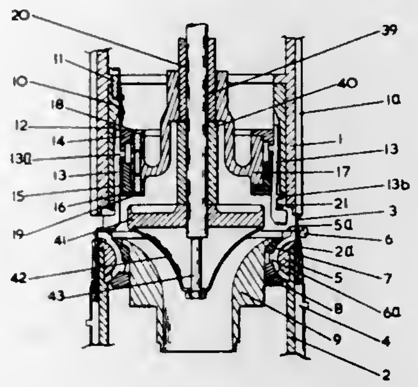


An improved master bushing assembly capable of selectively driving either a pin drive kelly bushing or a square drive kelly bushing.

3,527,065

FABRIC CONTROLLING MEANS FOR CIRCULAR KNITTING MACHINES

Roland Peberdy, Wigston Magna, England, assignor to The Bentley Engineering Company Limited, Leicester, England
Filed Jan. 8, 1968, Ser. No. 698,094
Claims priority, application Great Britain, Jan. 13, 1967, 1,918/67
Int. Cl. D04b *15/88*
U.S. Cl. 66—14 4 Claims

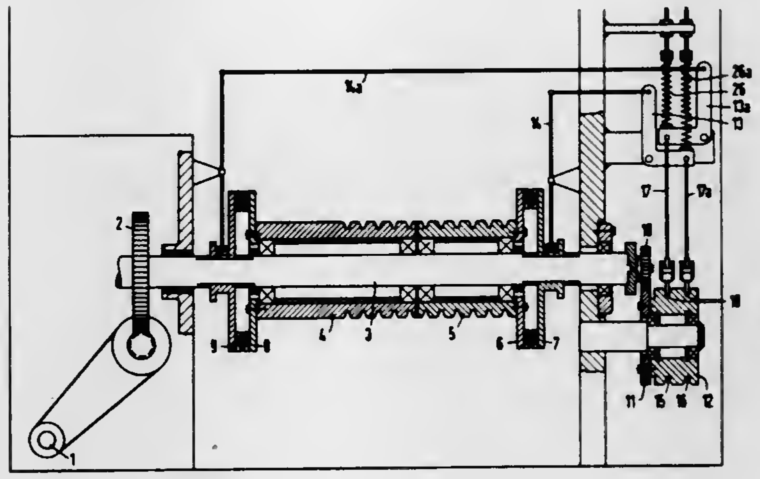


Fabric draw-off means in a circular knitting machine comprising fabric loop engaging instruments spaced apart around the circle of needles in a needle cylinder and mounted to operate in the neighbourhood of the needle circle at positions related to needle positions, such instruments being cam actuated in turn at a knitting station so that fabric loop engaging feet on them are moved first upwardly and outwardly to near the needle circle and then downwardly and inwardly to draw off fabric. The loop engaging instruments may be rocking instruments accommodated in internal tricks in a cylinder opposed to the needle cylinder and operated by appropriately timed raising and lowering cams and rocking cams.

3,527,066

WARP KNITTING MACHINE WITH A MECHANISM FOR SAVING PATTERN CHAIN LINKS

Arno Zwingenberger, Marxgrun, Adolf Hägel, Bobengrun, and Roland Wunner, Bernstein am Wald, Germany, assignors to Karl Liebrandt, Naila, Bavaria, Germany
Filed July 1, 1968, Ser. No. 741,413
Claims priority, application Germany, July 26, 1962, 1,635,835
Int. Cl. D04b *23/00*
U.S. Cl. 66—86 4 Claims

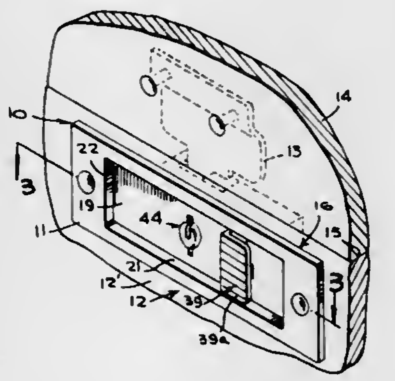


A warp knitting machine with pattern drums for effecting the reciprocating movements of guide bars is provided with clutch means mounted on the continuously rotating drum shaft to switch the drums individually in and out of operation. The clutches are controlled by a counting or switching drum which rotates in fixed relation to the drum shaft speed and carries a switching chain built up from usual chain links. The length of the pattern chain can thus be materially reduced without complicated and expensive gear means heretofore known for this purpose.

3,527,067

COMBINED LATCH AND LOCK STRUCTURE

Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia
Filed Feb. 17, 1969, Ser. No. 799,665
Int. Cl. E05b *65/52;* **E05c** *1/10;* **A45c** *13/10*
U.S. Cl. 70—71 10 Claims

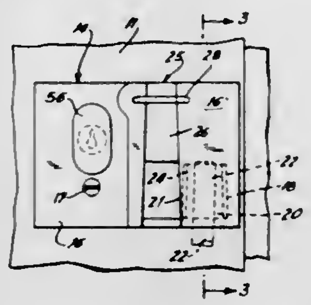


A combined latch and lock structure for luggage and the like, having a cup member to be mounted on a luggage surface defining a forwardly opening well extending rearwardly in recessed relation from the surface, a box-like housing mounted on and extending rearwardly from the cup member, a sliding bolt member in the housing having a fingerpiece projecting through a slot in the base wall of the well for latching a keeper hook projectable into the housing, and a spring in the housing which is flexed upon entry of the keeper hook to automatically eject the keeper upon release of the keeper.

3,527,068

POLICE LOCK

Melvyn A. Gervis, Haworth, and Eugene Taras Wozny, Harrington Park, N.J., and Nicholas Giardina, Mount Vernon, N.Y., assignors to Magic Eye Associates, Inc., New York, N.Y., a corporation of New York
Filed Jan. 24, 1969, Ser. No. 793,816
Int. Cl. E05b *65/00*
U.S. Cl. 70—94 2 Claims

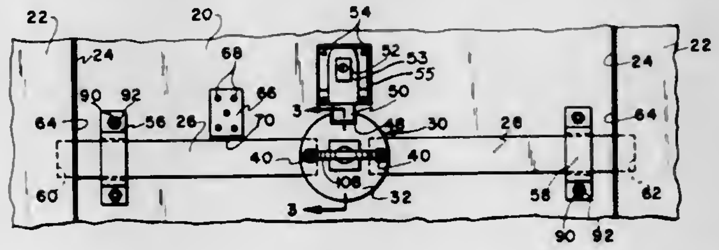


A police lock is disclosed which may be locked in a deadlocked condition, or unlocked from the outside by a key actuatable member, and/or from the inside by a manually actuatable member.

3,527,069

SECURITY BAR DOOR LOCK ASSEMBLY

Barney Tumbiolo, 994 Little E. Neck Road, West Babylon, N.Y. 11704
Filed May 8, 1968, Ser. No. 727,632
Int. Cl. E05b *59/00;* **E05c** *1/00*
U.S. Cl. 70—114 7 Claims



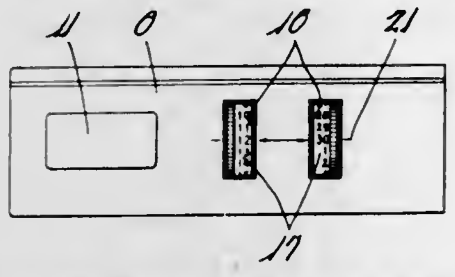
A heavy duty security lock assembly includes two heavy steel bars, pivotally interconnected at adjacent ends by a connector piece, extending horizontally across the inner surface of a heavy duty warehouse door. The bars are slid into sockets in reinforced door frame jambs. The two bars pass through guide brackets near the edges of the door. A handle secured on the interconnecting link can rotate the link and withdraw the two steel bars from their sockets to unlock the door. One embodiment has an inside-outside double cylinder key operated deadlock, the deadbolt of which cooperates with a locking recess in the interconnecting link to prevent withdrawing the lock bars. The handle unit extends through the door and has interior and exterior handles. Another embodiment with inside control only, has a handle formed integral with the interconnecting link and parts of one of the lock bars and of the link enables locking by means of a padlock.

3,527,070

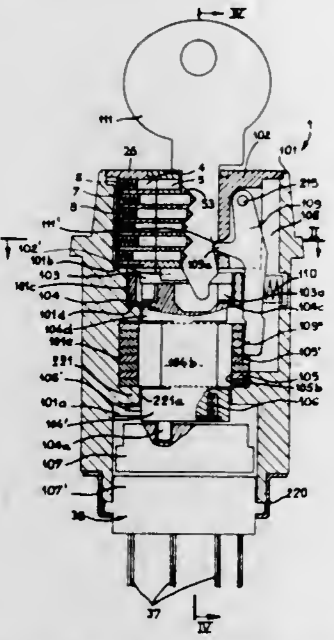
DIAL LOCK

Yoshiteru Sato, 87 9-chome, Uehonmachi Tennoji-ku, Osaka-shi, Osaka-fu, Japan
Filed Mar. 20, 1968, Ser. No. 714,630
Claims priority, application Japan, Mar. 22, 1967, 42/18,185
Int. Cl. E05b *63/06, 39/02, 39/04*
U.S. Cl. 70—133 2 Claims

A dial lock suitable for the door of a rental locker or the like. The lock has a bolt shiftably mounted on the frame body and a number of revolving pieces which are rotatable around the bolt and axially movable with the bolt. A hooking piece is provided which engages with a notch in a part of each revolving piece when the revolving piece is moved along with the bolt to the unlocking position. A dial is provided which is rotatably mounted at a fixed position on the frame with which the revolving pieces are engaged when the revolving pieces are moved with the bolt to the locking position. Means for preventing mutual rotation of the dials and revolving pieces when the revolving pieces are engaged with the dials is also provided.



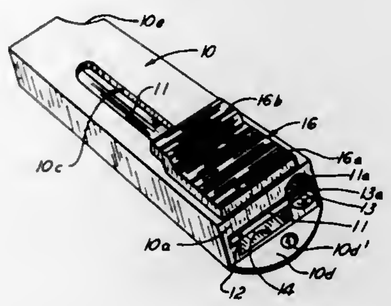
3,527,071
LOCKING DEVICE, IN PARTICULAR FOR THEFT PREVENTION ON AUTOMOTIVE VEHICLES
Bertrand Antoine Warnod, 30 Rue Charles Laffitte, Neuilly-sur-Seine, France
Original application Jan. 2, 1968, Ser. No. 695,158. Divided and this application Jan. 23, 1969, Ser. No. 793,253
Claims priority, application France, Oct. 5, 1967, 123,357
Int. Cl. E05b *65/12*
U.S. Cl. 70—252 **24 Claims**



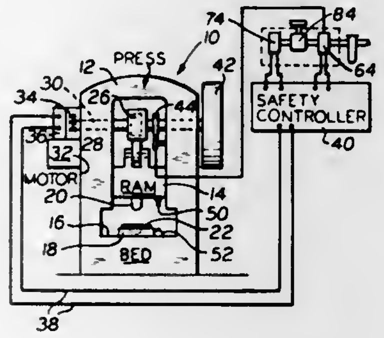
An anti-theft device on a motor vehicle for locking the steering-wheel shaft while simultaneously breaking all electric circuits, comprising a cartridge-like assembly mounted in a socket-like holder integral with the steering-column and including a safety-lock operable by a removable key which may successively assume a "stop," a "parking," a "run," and a "start" position, a retractable snap-bolt actuated by said safety-lock and insertable, when extended, into a clasp integral with said shaft, and a rotary switch controlling at least the electric ignition and start circuits and operable in unison with said lock.

3,527,072
COMBINATION KEY HOLDER AND EJECTOR
James N. Demetreon, Kansas City, Mo., assignor, by direct and mesne assignments, to Ejecto Key, Inc., a corporation of Missouri
Filed Apr. 10, 1968, Ser. No. 720,108
Int. Cl. E05b *19/00*
U.S. Cl. 70—414 **7 Claims**

A combination key holder and ejector has a housing having an elongate passageway in which an "L"-head key can be inserted for slidable movement within prescribed limits. One side of the housing is slotted substantially along the length of the passageway. A single key ejecting thumb pusher may be inserted through the slot and through an aperture in the key head by manually applying pressure to the pusher. This pusher includes a compressible extension depending therefrom which is securely engaged within the key aperture when inserted therethrough. A longitudinal cylindrical spring chamber which receives a compression spring is located adjacent the longitudinal passage and positioned so that a lug on the "L"-head key contacts one end of the compression spring. They key is ejected by pushing the thumb pusher along the case, the ejection being against the bias of the spring as it is engaged by the lug. When the thumb pusher is released, and if there is no restraining force on the key, it will be returned to the concealed position within the housing.

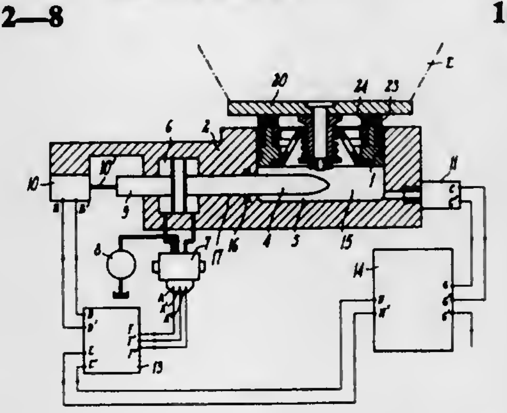


3,527,073
FLUIDIC SYSTEMS FOR MALFUNCTION DETECTORS
George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York
Filed Dec. 15, 1967, Ser. No. 690,958
Int. Cl. B21d *55/00*
U.S. Cl. 72—4 **12 Claims**



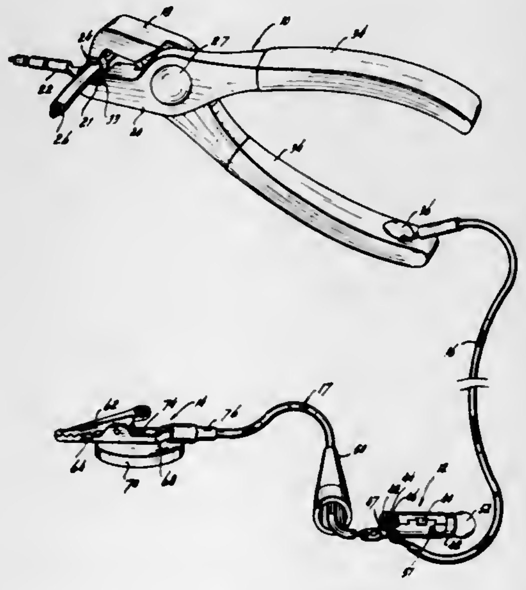
This specification discloses a safety control system for repetitive cycle automatic machines. A sensor is placed in a position to be operated, at least indirectly, by a part of the machine at the end of each successful operation of the machine on a work piece. "Successful operation" includes completing of a full stroke in a press, full closing of a die, and delivery of a finished work piece at a delivery station. The safety control, such as an automatic stop, clutch throw-out, is operated by a switch, valve, or other fluid device with a fluid actuator controlled from the pneumatic sensor. The device is preferably located remote from the sensor and its associated parts of the machine with only a tube of fluid extending between the sensor and the actuator. The preferred construction is a two pulse system with a cyclically operated sensor on the machine and the other sensor with its operation a function of the work piece progress. Sensitivity of the sensors is varied as necessary by changing the fluid pressure.

3,527,074
DEVICE FOR REGULATING THE THICKNESS OF ROLLING-MILL PRODUCTS, AND ROLLING MILLS EQUIPPED THEREWITH
Claude Guillot, St. Chamond, France, assignor to Compagnie des Ateliers et Forges de la Loire, St. Chamond, Firminy, St. Etienne, Jacob-Holtzer, and Hydromecanique et Frottement, Paris, France
Filed Nov. 14, 1967, Ser. No. 682,794
Claims priority, application France, Dec. 19, 1966, 87,949
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 **10 Claims**



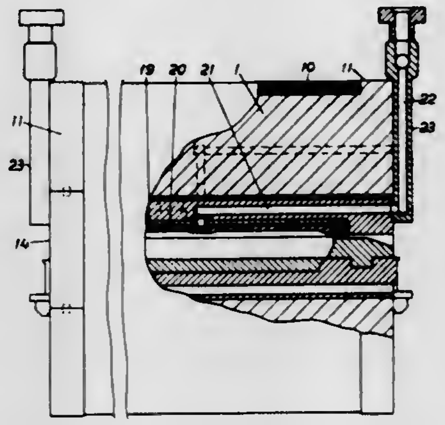
A regulator actuator for rolling mills having a bottomless piston consisting of a main ring provided with suitable packings. A flat cover bears on the ring and contacts the plummer-block. The cover is adapted to move as a consequence of variations in the pressure of a material filling a bore in which the ring is slidably mounted. A plunger piston has one end embedded in such material adapted when sunk more or less in the material to cause movements of the bottomless piston and therefore of the cover. A first means controls the movements of the plunger piston and a second means detects variations in the actual position of the plunger piston. A third means detects variations in the rolling effort during the roll stand operation and a fourth means subordinates the actual position of the plunger piston to its desired position. A fifth means generates a compensator signal corresponding to the desired position.

3,527,075
COMBINATION CRIMPER AND TESTER
John C. Abromavage, Tempe, Ariz., assignor to Arcoa, Incorporated, Phoenix, Ariz., a corporation of Oregon
Filed Feb. 28, 1968, Ser. No. 708,897
Int. Cl. B21c *51/00*
U.S. Cl. 72—31 **4 Claims**



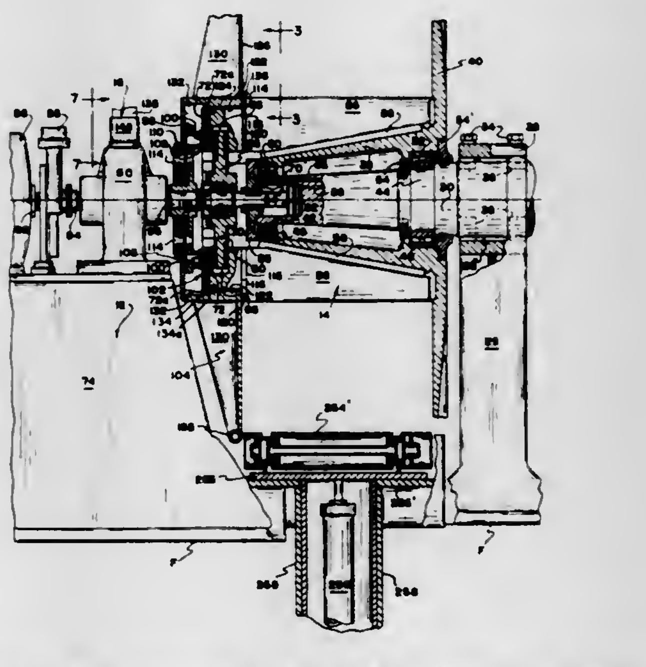
A combination crimper and tester, particularly a plier-like tool adapted for crimping a contacting clip about automobile tail light wiring and including a ground wire clip and indicator bulb which lights.

3,527,076
PRESS STAND
Torstein Landa and Stig Johnsson, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Apr. 8, 1968, Ser. No. 719,545
Claims priority, application Sweden, Apr. 14, 1967, 5,190/67
Int. Cl. B21d *22/10*
U.S. Cl. 72—63 **8 Claims**



A press stand having an internal chamber for receiving a forming block and a rubber sheet above the forming block adapted to be pressed against it by hydraulic pressure. The enclosing frame for the press stand is composed of two yokes and two spacers between the yokes. The spacers and yokes both have convexly curved external surfaces upon which are wound a pre-stressed metal wire or strip.

3,527,077
METHOD AND APPARATUS FOR COILING ROD
John W. Nargang, Lafayette, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 685,197
Int. Cl. B21f *3/04*
U.S. Cl. 72—142 **22 Claims**

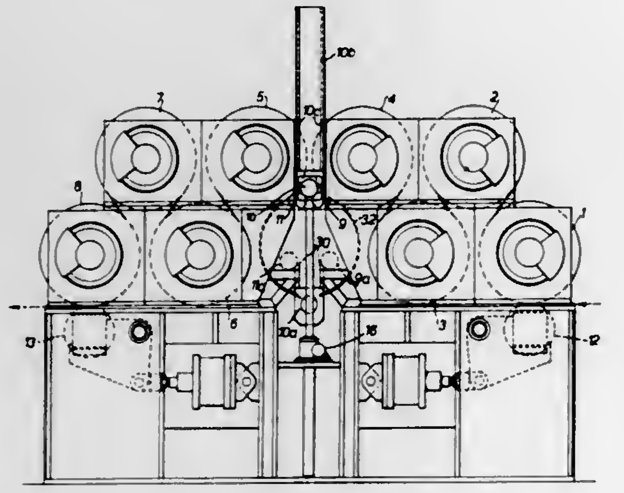


A method and apparatus for holdably engaging a leading edge of a rod to enable the leading portion of the rod to be bent into a convolution and for tightly wrapping the rod into a coil. A rotatable coiling apparatus is provided with a surface of revolution and at a preselected area thereof includes a circumferential groove for holdably engaging the leading edge of the rod. The coiling apparatus further includes a force applying mechanism alignable with the groove during the rotation thereof for directing the leading edge of the rod toward the groove and for forceably pressing the same into holding engagement with the groove so as to induce the tight wrapping of the rod about the surface of revolution. After the rod is tightly wrapped about the apparatus to form a coil, the apparatus is also operable to dilate the groove for releasing the coil, including the previously tightly held leading edge of the rod, in order that the apparatus can be recycled for wrapping another rod thereabout.

3,527,078
STRIP FLATTENING

Kenneth Thomas Lawson, Marton, and Jerzy Franciszek Nofer, Middlesbrough, England, assignors to Head, Wrightson and Company, Limited, Thornaby-on-Tees, Yorkshire, England, a corporation of the United Kingdom

Filed Aug. 12, 1968, Ser. No. 752,009
Int. Cl. B21d *1/02*
U.S. Cl. 72—160 15 Claims



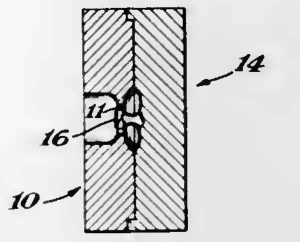
Continuous metal strip is flattened by driving it at two spaced locations at speeds differing by a predetermined proportion, and between these locations the strip is subjected to the action of a roll system in which the strip enwraps a floating roll so as to cause the roll to pinch the strip against further rolls at the points of which the strips wraps onto and unwraps from the floating roll. This may be followed by a further stretch levelling operation. Apparatus is provided comprising first and second sets of bridle rolls and between them in one case a pair of floating rolls co-acting with a central roll and the innermost rolls of the bridles and in a second case a pair of floating rolls coaching with each other and a pair of large diameter backing rolls. In an alternative form of apparatus a further downstream bridle is provided, each bridle being driven at a speed higher than the previous one by a selected proportion, so that the strip is subjected to a further stretching operation either with or without the action of bending rolls. In each case the floating roll or rolls have a diameter at least 25 times the thickness of the strip to be heated and a radius small enough for the strip to be subject to plastic deformation when bent to this radius under the influence of the tension to which it is subjected.

3,527,079
FEEDER HOLE DIE WITH IMPROVED METAL FLOW

Karl F. Braeuninger, Ferguson, Mo., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 1, 1966, Ser. No. 569,210
Int. Cl. B21c *25/04*
U.S. Cl. 72—269 9 Claims

A feeder hole die having feeder holes in the feeder hole plate in substantial alignment with the die orifice or orifices of the die plate, the feeder holes being large enough and of proper configuration whereby at least 50% of each die orifice is visible through the feeder holes, collectively, which serve the orifice, when viewed along the axis of each feeder hole, respectively, and from the billet side of the feeder hole plate, and at least 90% of the orifice being visible when viewed through the feeder holes from the billet side of the feeder hole plate and, furthermore, scanned from all possible line of sight positions, permits substantial improvements in metal flow and better flushing out of residual metal remaining in the die from the previous push. The die is further improved upon tapering the bridges at the die plate side, in flaring the feeder holes whereby at least 50% of the die orifice is contiguous to the openings in the feeder holes, in providing dished-out saucer-shaped depressions in the die plate adjacent to the die orifice, in providing supporting integrally formed pads in the die plate to support the bridges of the feeder hole plate to reduce support span to a minimum and thereby to reduce the distance between the innermost boundary of each pad to the adjacent bearing land of the die to not more than about two times the wall thickness of the shape produced by the porthole die adjacent to such pad, and the span being not greater than one inch, in placing each mandrel symmetrically on the bridge structure and further in employing a relatively thin feeder hole plate.



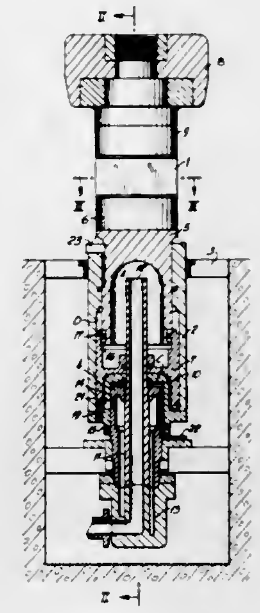
The die of the invention permits substantial increases in volume of material moved through the die while minimizing die wear.

3,527.080
HIGH ENERGY IMPACT MACHINE

Jury Petrovich Kuzko, Sharikopodshipnikovskaya ul. 2, kv. 112, Moscow, U.S.S.R.; Vladimir Alexandrovich Livanov, Moskovskoi obl., Sovetskaya 34, kv. 38; Lev Nikolaevich Konstantinov, Moskovskoi obl., prosp. Pobedy 38/29, kv. 37; Anatoly Petrovich Chekinov, Moskovskoi obl., prosp. Pobedy 29/38, kv. 46; Semen Davydovich Fainbron, Moskovskoi obl., ul. Gorkogo 33, kv. 37; Alexandr Iosifovich Mazur, Moskovskoi obl., ul. Sovetskaya 34, kv. 28; and Mikhail Ivanovich Surkov, Moskovskoi obl., ul. Kuibysheva 29/28, kv. 7, all of Stupino, U.S.S.R.; Afanasy Ivanovich Nazarov, Leningradskoe shosse, 1 kvartal, korpus 32, kv. 78; Alexandr Petrovich Monakhov, Leningradsky prosp. 91, kv. 140; Nikolai Nikolaevich Malorov, Leningradsky prosp. 32, kv. 385; and Boris Antonovich Stopachinsky, Ploschad Vosstania 1, kv. 313, all of Moscow, U.S.S.R.; and Stanislav Vladimirovich Ryndenkov, Moskovskoi obl., ul. Chaikovskogo 10, kv. 5; Gennady Alexeevich Shebeko, Moskovskoi obl., Komsomolskaya ul. 17/16, kv. 1; Arkady Vasilievich Androsov, Moskovskoi obl., prosp. Pobedy 29/38, kv. 59; and Veniamin Georgievich Titov, Moskovskoi obl., ul. Sovetskaya 44, kv. 12, all of Stupino, U.S.S.R.

Filed May 25, 1967, Ser. No. 641,314
Claims priority, application U.S.S.R., May 28, 1966, 1,079,593
Int. Cl. B21j *9/12*
U.S. Cl. 72—453 5 Claims

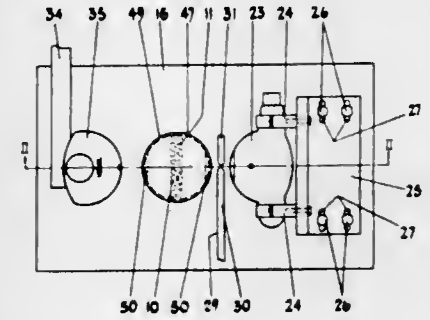
A high energy impact machine is provided with a vertically movable ram supported in a bed which is also vertically movable, the ram and bed carrying facing dies which come together during a power stroke. A free piston is slidably mounted in the bed below the ram and the bed is raised and the ram lowered in a ready position by supplying hydraulic fluid under pressure into the space between the ram and piston and thereafter depressurizing the fluid while holding the bed suspended. The power stroke is obtained by supplying air under pressure between the bottom of the bed and the piston which causes the piston and the ram therewith to move upwardly and the body downwardly.



3,527,081
DIFFERENTIAL SCANNING CALORIMETER

Royston Arthur Walter Hill, West Kilbride, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Feb. 23, 1966, Ser. No. 529,496
Claims priority, application Great Britain, Mar. 10, 1965, 10,212/65
Int. Cl. G01n *25/00*
U.S. Cl. 73—15 20 Claims

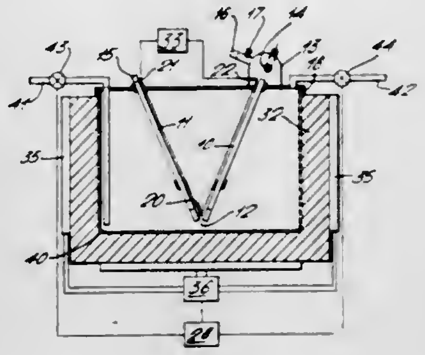


A differential scanning calorimeter whereby both a sample and a reference material are heated by a scanning heater so that the temperatures of the sample and the reference are both varied over a given range and a source of focused radiation is utilized to differentially heat the sample and the reference to maintain both at the same time temperature so that the power used by the source of focused radiation relates to the calories evolved or absorbed by the sample. A source of radiation can also be used as the scanning heater and the use of a source of radiation to differentially heat the sample and reference instead of heating by electrical wires results in a device which is cheap, rugged and simple to manufacture.

3,527,082
APPARATUS FOR DETECTING THE END POINT IN CLOUD POINT DETERMINATION

Eugene Pruvot, Courbevoie, Hauts-de-Seine, France, and Norman Evans, Walton, and Gordon J. Smith, Shepperton, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England

Filed Sept. 21, 1967, Ser. No. 669,524
Claims priority, application Great Britain, Sept. 27, 1966, 42,987/66
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 13 Claims



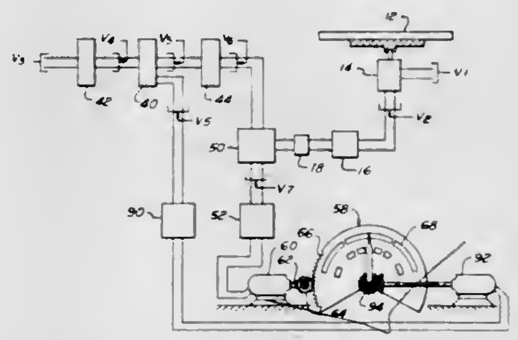
An end point detector for a cloud point monitor in which light is passed from a primary to a secondary light guide. At the end point wax begins to precipitate and the consequent reduction of output light intensity is detected.

Preferably the light is reflected off the base of the same container.

3,527,083
WEIGHT CONTROL OF SLICED BACON

Bernard T. Hensgen, Highland Park, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 14, 1966, Ser. No. 593,933
Int. Cl. G01n *9/02*
U.S. Cl. 73—32 8 Claims



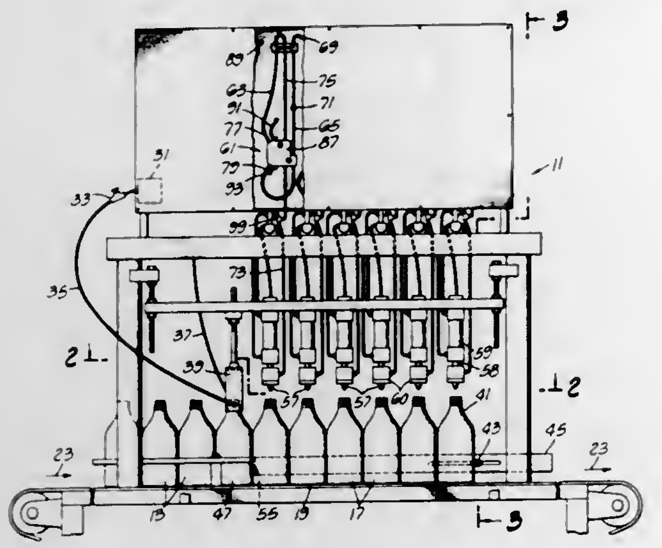
Methods of designating optimum number and thickness of product slices to be taken from block of food material (bacon) to make up drafts of desired weight as function of cross-sectional area and density of said food block. Apparatus includes means for measuring cross-sectional area of food block, means for determining density of food block, and indicating and control means operable to designate desired number of slices and desired thickness of slices to be cut from said block as function of block cross-sectional area and block density.

3,527,084
LEAK-DETECTOR

Herman Laub III, 244 N. San Marino Ave., San Gabriel, Calif. 91775

Filed Apr. 25, 1968, Ser. No. 724,035
Int. Cl. G01m *3/32*
U.S. Cl. 73—45.2 8 Claims

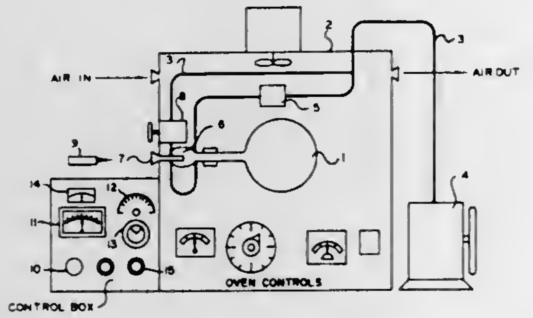
A testing machine is disclosed for automatically detecting leaks in containers. An electro-manometer is used in combination with electronic amplification so as to utilize a change in volume, instead of a change in pressure, in order to be able to detect leaks in deformable plastic containers. The machine can test a plurality of containers simultaneously, and automatically shuts itself off when the containers are no longer fed to it.



3,527,085
METHOD AND APPARATUS FOR DETERMINING MOLECULAR WEIGHTS EMPLOYING A PRESSURE TRANSDUCER

Robert S. Silas and William J. Hines, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 8, 1968, Ser. No. 765,788
Int. Cl. G07n *7/16*
U.S. Cl. 73—64.2 6 Claims



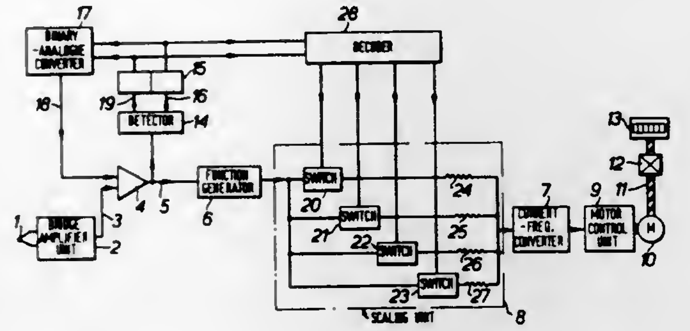
A method for determining molecular weight and vapor pressure of a sample by measuring the pressure generated from the vaporization of a known weight of sample at constant volume and known temperature. The apparatus comprises a sample evaporation container. A vacuum pump is connected to one side of a transducer and through a shut-off valve to said container. The container is connected to the other side of the transducer. Means are provided for introducing a sample into said container.

3,527,086
APPARATUS FOR PROVIDING A REPRESENTATION OF ENGINE LIFE

John F. O. Evans, Micheldever, near Winchester, and Derek Anthony Rush, Brighton, England, assignors to Smith Industries Limited, London, England, a British company

Filed Jan. 14, 1969, Ser. No. 790,991
Claims priority, application Great Britain, Jan. 15, 1968, 2,234/68; May 17, 1968, 23,469/68
Int. Cl. G01m *15/00*
U.S. Cl. 73—116 12 Claims

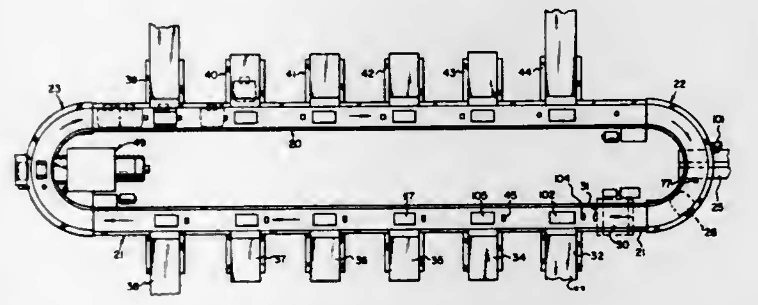
Representation of expended life of a gas-turbine engine is made in accordance with a logarithmic function relating permissible running-time to sensed jet-pipe temperature through four successive temperature ranges. A signal representative of the rate of life-expenditure is derived by a function generator from a sensed-temperature signal that is restricted to a range of signal-levels corresponding to the lowest of the four ranges. Compensation for the restriction is made in the engine-life representation by the application to the rate signal of a scaling factor (affecting signal-magnitude or -frequency) that is dependent upon which range is involved.



3,527,087
AUTOMATED ENGINE TEST CONVEYOR

Vernon G. Converse III, Franklin, George R. Allington, Westland, Peter J. Mosher, Livonia, and Lee J. Seymour, Farmington, Mich., assignors to Scans Associates, Inc., Livonia, Mich., a corporation of Michigan

Continuation-in-part of application Ser. No. 707,033, Feb. 21, 1968. This application Mar. 29, 1968, Ser. No. 717,103
Int. Cl. G01m *15/00*
U.S. Cl. 73—117.3 6 Claims

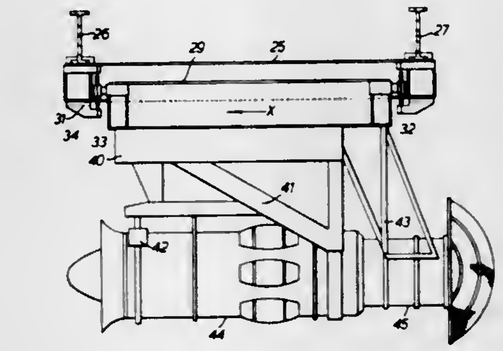


This application discloses an automation system whereby a number of different machines, test stands, and the like previously operated as separate machines or installations are grouped together with the aid of an accumulator conveyor system into a unitary system operating substantially as a single machine, with the operators merely loading and unloading workpieces at a predetermined place or station. The application discloses as a particular example an installation for combining into a single installation a number of test stands and machines directed to testing automobile engines, as well as operations related to such tests, such as filling the engines with oil, balancing the engines, hot-run testing the engines, removing rejected engines from the installation and directing them to repair stands and the like, and dynamometer load testing. The construction utilizes the non-positive accumulator conveyor such as disclosed in detail in our co-pending application identified below. In some of its aspects the present invention relates to an improved method of automating industrial plants or portions of such plants to provide for operation of such plants or portions thereof formerly composed of a large number of independent units, machines or devices as single systems.

3,527,088
ENGINE TEST MOUNTINGS

Edward Elijah Weekley, Barry, Glamorgan, Wales, assignor to John Curran Limited, Cardiff, Wales, a British company

Filed Aug. 15, 1968, Ser. No. 753,013
Int. Cl. G01n *15/00*
U.S. Cl. 73—117.4 6 Claims

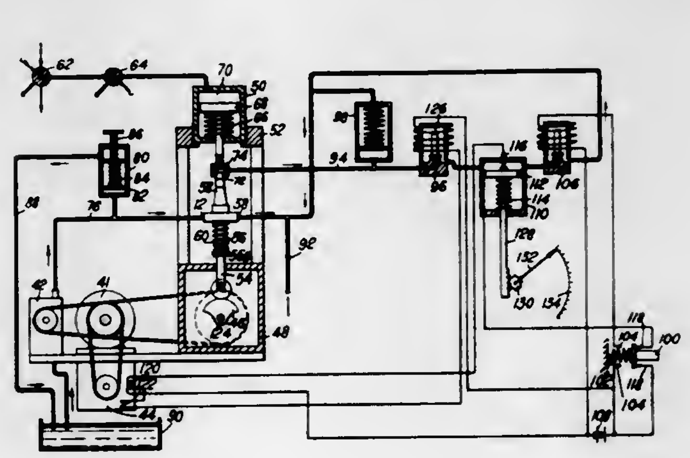


A mounting for an engine under test, incorporating an engine thrust measuring device, and including an antifriction support comprising two parallel flexible links each connected at one end to a stationary support and at the other end to a movable support for the engine, and each link having a central length located between two relatively rigid guides, and two flexible portions adjacent opposite ends of each link.

3,527,089
APPARATUS FOR TESTING ENGINE FUEL INJECTORS

Reginald S. Emerson, Buckingham, England, assignor to Leslie Hartridge Limited, Buckingham, England, a British company

Filed Sept. 13, 1968, Ser. No. 759,718
Claims priority, application Great Britain, Sept. 14, 1967, 42,011/67
Int. Cl. G01m *15/00*
U.S. Cl. 73—119 7 Claims

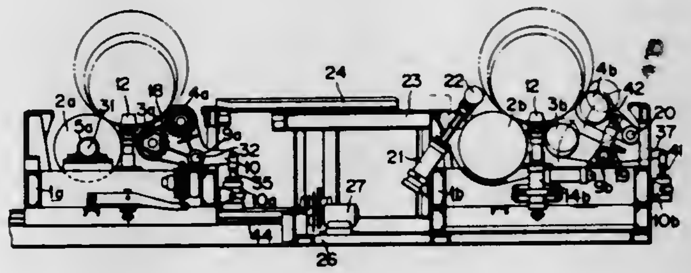


Apparatus for testing the fuel injectors of compression ignition engines, the apparatus comprising an accurate fuel-metering device for measuring the amount of fuel delivered by an injector under test, and fuel pressure-varying means by which the quantity of fuel collected by the metering device can be varied by varying the pressure of the fuel fed to the injector.

3,527,090
DEVICE FOR MEASURING THE VELOCITY OF VEHICLE WHEELS

Mituo Imada, Tokyo, Japan, assignor to Iyasaka Seiki Co., Tokyo, Japan, a corporation of Japan

Filed Mar. 22, 1968, Ser. No. 715,411
Claims priority, application Japan, Mar. 23, 1967, 42/17,865
Int. Cl. G01l *5/28*
U.S. Cl. 73—124 2 Claims

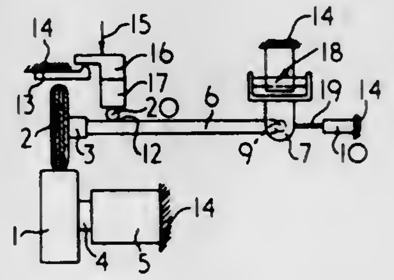


This measuring device includes a front, a first and a second roller provided for each of all the front and rear wheels involved in a vehicle. The device further comprises means for urging the first and second rollers onto the surface of the wheel, means for retracting the first roller from the wheel, and means for measuring the varying rotations of the second roller. The rotation of the wheel is exactly and continuously transmitted to the second roller.

3,527,091
TIRE TESTING APPARATUS

Walter Reus, Neuses, Gelnhausen, Germany, assignor to The Dunlop Company Limited, London, England, a British company

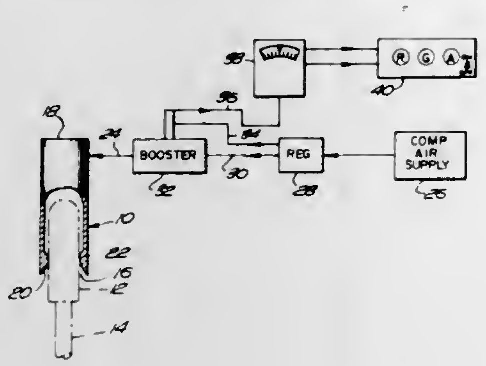
Filed June 21, 1968, Ser. No. 739,028
Claims priority, application Germany, July 4, 1967, 1,648,435
Int. Cl. G01m *17/02*
U.S. Cl. 73—146 13 Claims



Wheel and tire testing apparatus and method, the apparatus comprising a horizontal pivoted beam for carrying the wheel and tire under test and adapted to move the said wheel and tire into or out of engagement with a rotatable drum disposed with its axis horizontal. Pressure can be applied to the beam to press the wheel and tire against the drum periphery, and gauges connected to the beam e.g. at the horizontal pivot, determine the forces in the direction of the wheel and tire axis, said forces arising as the wheel and tire rotates.

3,527,092
AIR GAUGING THREE-DIMENSIONAL OBJECTS

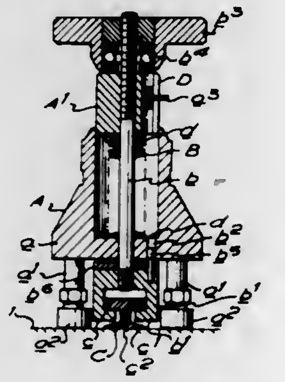
Robert D. Bond, Waltham, Mass., assignor to B. C. Ames Company, Waltham, Mass., a corporation of Massachusetts
Filed Sept. 4, 1968, Ser. No. 757,242
Int. Cl. G01b *13/08*
U.S. Cl. 73—37.5 **3 Claims**



Three dimensional objects, particularly cylindrical parts, are gauged by means of a tubular nozzle open at one end and closed at the other. The nozzle is connected to a source of compressed air which normally exhausts out the open end thereof. The part, however, once it is inserted in the nozzle, increases the back pressure of the air and this increase is directly related to the size of the object. This increase is measured to provide an extremely precise indication of the size of the object or any variation from a predetermined size.

3,527,093
INSTRUMENTS FOR TESTING THE ADHESION OF COATINGS TO SURFACES

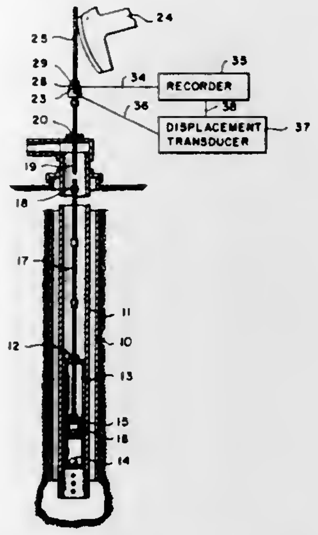
Ian C. Sellers, Mobberley, England, assignor to Elcometer Instruments Limited, Droylsden, England, a body corporate of Great Britain
Filed Oct. 18, 1968, Ser. No. 768,657
Claims priority, application Great Britain, Nov. 11, 1967, 51,407/67
Int. Cl. G01n *19/04*
U.S. Cl. 73—150 **4 Claims**



An instrument for testing the adhesion of a coating to surfaces including a body closed at its lower end having a plurality of Belleville washers housed within and a barrel capable of sliding in a bore in the body. A screwed spindle passes through the body, the Belleville washers, and the barrel, with a socket being provided on the lower end of the spindle. A dolly member is mounted on the socket and a predetermined area of the coating to be tested is secured thereto by an adhesive. A nut on the spindle is used to compress the Belleville washers and apply a tractive force to the coating at right angles to a plane passing through the coated surface.

3,527,094
APPARATUS FOR ANALYZING SUCKER-ROD WAVE MOTION

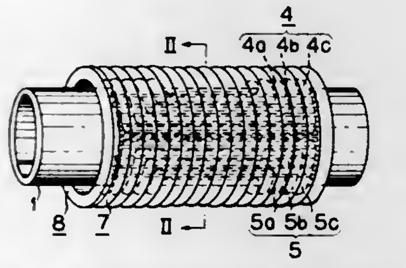
Ching H. Yew and Eugene A. Ripperger, Austin, and Sam G. Gibbs, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,407
Int. Cl. G01l *5/00*
U.S. Cl. 73—151 **2 Claims**



An apparatus for analyzing the elastic waves in a steel sucker-rod having a transmission line, a signal generator, and a display unit. The wave equation of the steel rod is solved to provide quantitative values for the load on and displacement of the rod at any point on its length.

3,527,095
ELECTROMAGNETIC FLOWMETER

Ichiro Wada, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 10, 1968, Ser. No. 720,749
Claims priority, application Japan, Apr. 15, 1967, 42/31,590
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 **4 Claims**



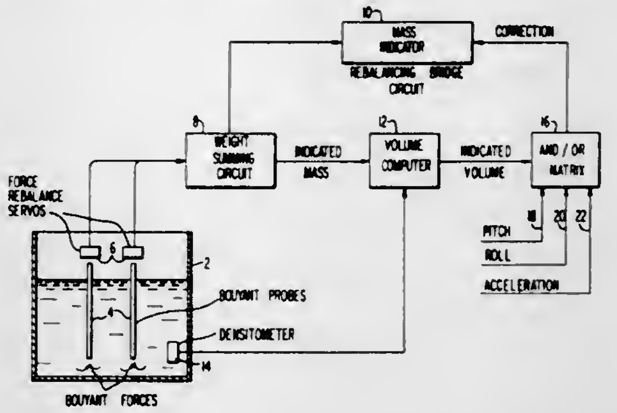
A pair of opposed electrodes are mounted on the inner surface of a conduit adapted to pass fluid in contact therewith, an exciting coil is wound around the conduit to create magnetic flux perpendicular to a line interconnecting the electrodes and to the direction of flow of the fluid and a single strand or a bundle of magnetic strands is closely wound around the exciting coil to form a cylindrical core acting as the flux path.

3,527,096
ATTITUDE ERROR CORRECTION FOR A FLUID GAUGING SYSTEM

Irving H. Cohn, Yonkers, N.Y., and Frank De Nardo, Middlebury, Vt., assignors to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 589,631, Oct. 26, 1966. This application June 26, 1969, Ser. No. 836,886
Int. Cl. G01f *15/02, 23/10*
U.S. Cl. 73—309 **5 Claims**

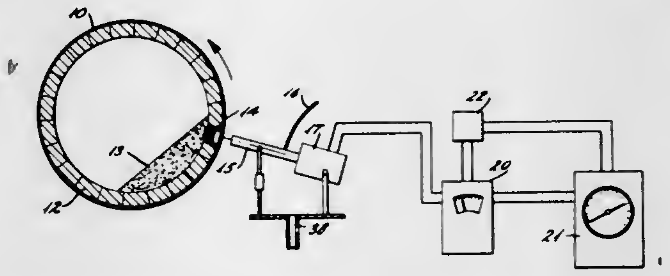
An aircraft fuel gauge having a servo-rebalanced buoyant liquid level probe. The mass signal derived from

the probe is corrected for density variation by an error signal from a densitometer, and the corrected signal is indicative of the volume. The volume signal is corrected for pitch, roll and acceleration in an AND/OR matrix to provide a correction signal for an indicator for the mass signal.



3,527,097
TEMPERATURE MEASUREMENT SYSTEM FOR ROTARY KILNS

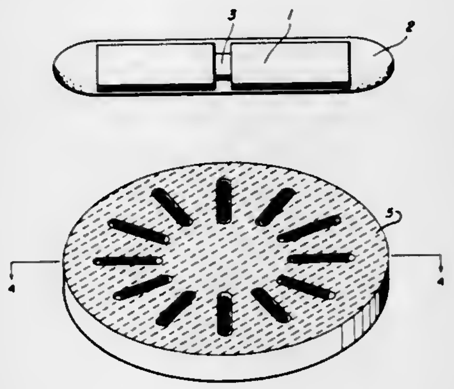
Andor Jenoe Deczky, Arvida, Quebec, Canada, assignor, by mesne assignments, to Milletron Incorporated, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1967, Ser. No. 656,252
Int. Cl. G01j *5/02;* **G01k** *1/14*
U.S. Cl. 73—351 **9 Claims**



Sensing system for measuring the temperature of the charge inside a rotating kiln. A thermal window built into the kiln wall is associated with a pyro-optical device sighted on the window. The temperature measurement signal may be employed for controlling kiln operation.

3,527,098
GROOVED MELT WIRES

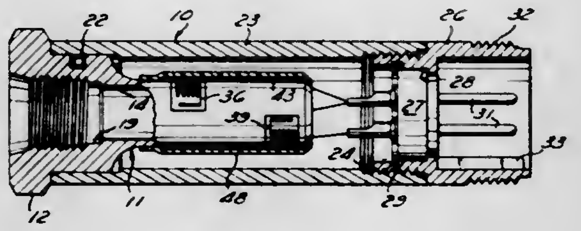
Peter G. Salgado and James F. Torbert, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 25, 1969, Ser. No. 802,011
Int. Cl. G01k *11/06*
U.S. Cl. 73—358 **6 Claims**



An improved melt wire for measuring temperature. A wire with a circumferential groove and composed of material that melts at a known temperature is encapsulated in a quartz or graphite tube. By noting whether or not the wire has melted, it is possible to determine whether the temperature has been reached.

3,527,099
STRAIN GAGE PRESSURE TRANSDUCER

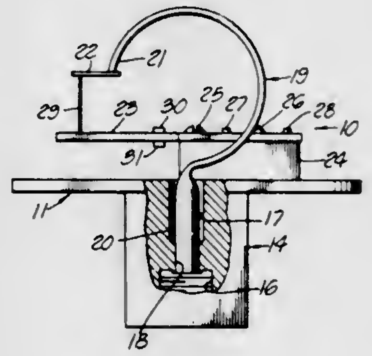
Edward E. Herceg, Lakewood, Ohio, assignor to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 6, 1968, Ser. No. 781,872
Int. Cl. G01l *19/04*
U.S. Cl. 73—393 **1 Claim**



A temperature-compensated strain gage pressure transducer is disclosed which includes a cylindrical pressure vessel having a thin-walled pressure chamber and a solid end portion. Two active strain gages are bonded to the thin-walled chamber to measure strain resulting from fluid pressure therein, and two temperature-compensating strain gages are bonded to the unstressed solid end portion. An adhesive-coated web serves as a mounting vehicle for carrying all of the strain gages simultaneously and for positioning them on the pressure vessel in predetermined positions. The adhesive-coated web holds the strain gages in position on the pressure vessel during curing of a strain gage adhesive which bonds the strain gages to the pressure vessel, and then serves as a permanent protective blanket for the gages. The entire strain gage assembly is then encapsulated by a heat-shrinkable polyolefin tubing and assembled within a metallic protective shroud.

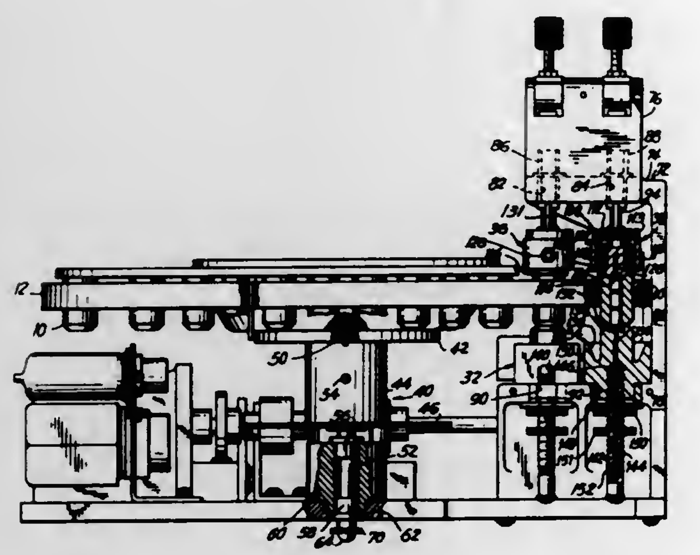
3,527,100
TRANSDUCER

Robert E. Talmo and Victor N. Lawford, Pasadena, and Hector Aguilar, Monterey Park, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,273
Int. Cl. G01l *9/04*
U.S. Cl. 73—398 **1 Claim**



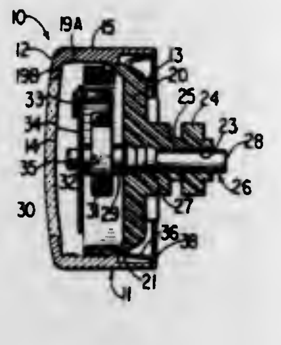
The invention includes a pressure transducer having a Bourdon tube connected to a cantilever beam. Strain gages are fixed to the beam for connection in a bridge circuit. The bridge circuit thus produces an output signal in accordance with pressure.

3,527,101
SAMPLER FOR CHROMATOGRAPHY COLUMN
Edwin A. Sprunger, Port Chester, and Allen S. Reichler, Pearl River, N.Y., assignors to Technicon Corporation, Chauncey, N.Y., a corporation of New York
Filed Jan. 19, 1968, Ser. No. 699,140
Int. Cl. G01n *1/10*
U.S. Cl. 73—423 **9 Claims**



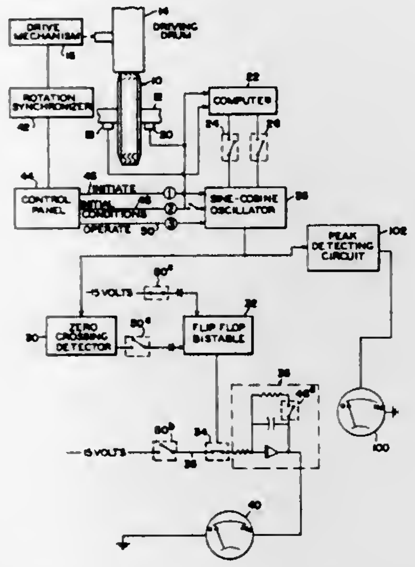
An automatic sample loading device for a set of basic and acid-neutral chromatography columns includes an indexible turntable having pairs of tubular sample containers disposed in two annular rows, to be received between two sets of eluting liquid inlet means and eluting liquid outlet means. The table is intermittently rotated, lowered and raised for each pair of containers, while the two inlet means are intermittently cranked down and up.

3,527,102
PLASTIC CASE CONSTRUCTION WITH TIGHT SEAL AND BLOWOUT
Philip W. Harland, Sellersville, Pa., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 785,308
Int. Cl. G01l *19/14*
U.S. Cl. 73—431 **4 Claims**



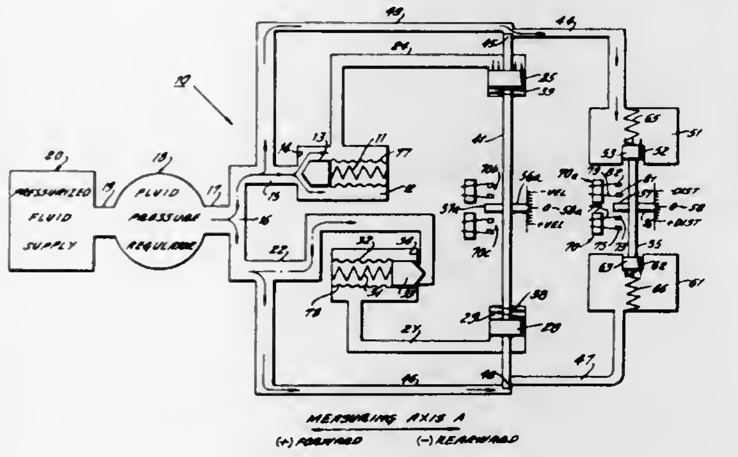
An instrument casing is formed by a plastic back plate having an annular groove snapped into an internal annular rib on the cylindrical side wall of a cover. A resilient annular skirt is integrally formed on the back plate and the other end engages the inner face of the cover side wall. In its unflexed position, the skirt end is of a greater diameter than the inner diameter of the cover side wall so that when assembled this skirt end exerts a force against the cover side wall. When a predetermined pressure within the casing is exceeded, this pressure will bleed past the resilient skirt and towards the rear of the assembly.

3,527,103
PHASE ANGLE DETECTOR
Howard S. Hale and Robert C. Weyrick, Akron, Ohio, assignors to Information Development Corporation, Akron, Ohio, a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 678,797
Int. Cl. G01m *1/22*
U.S. Cl. 73—462 **11 Claims**



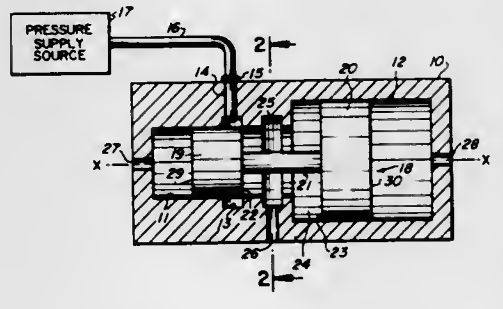
Electronic circuitry is utilized to generate Fourier coefficients for an arbitrary periodic input which input is related in phase to a rotating object. The phase angle and magnitude of the fundamental or harmonic components of the input are detected by introducing the Fourier coefficients in a sine-cosine oscillator to produce a sinusoidal signal, and determining when the sinusoidal signal reaches maximum and when it crosses its zero axis from negative to positive in relation to the rotation of the object. A linearly driven gauge registering 360° commences movement upon a predetermined reference on the object, and is stopped to register the phase angle when the sinusoidal signal crosses its zero axis going from negative to positive. In addition, the maximum amplitude of the sinusoidal signal is a measure of the magnitude of the component, and is registered as pounds on a linearly driven gauge.

3,527,104
VELOCITY AND DISTANCE MEASURING DEVICE
John D. Barbieri, Howard Beach, James A. Xenakis, Woodside, and Nai-Chong Chang, Scarsdale, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,973
Int. Cl. G01p *15/04*
U.S. Cl. 73—490 **10 Claims**



A fluid operated velocity and distance measuring device is constructed with normally closed acceleration sensitive valves to control fluid pressure which operates a velocity output device. Fluid under pressure is admitted into a storage chamber in a manner controlled by the velocity output device, with fluid accumulation in the storage chamber being related to total distance travelled. For improved speed of response and accuracy, the pressure ratio across each of the acceleration sensitive valves is maintained at a level which results in sonic flow through such valves.

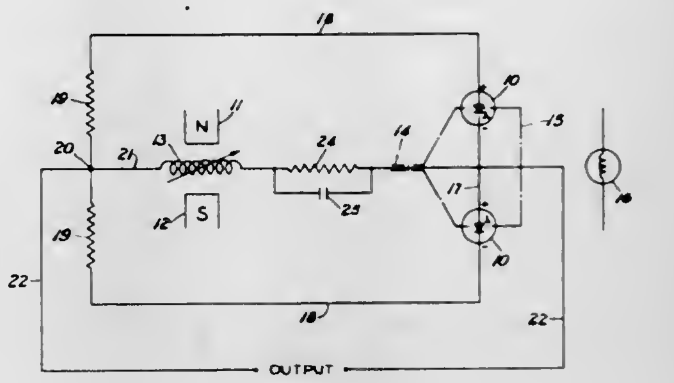
3,527,105
FLUID PRESSURE OPERABLE ACCELEROMETER
Leon Weisbord, New York, N.Y., and Hugh E. Riordan, Wyckoff, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,209
Int. Cl. G01p *15/00*
U.S. Cl. 73—515 **5 Claims**



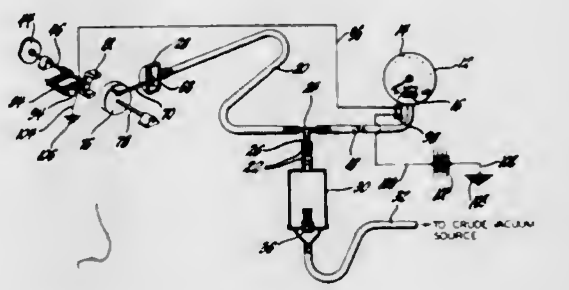
A fluid pressure operable accelerometer is provided comprising a housing and a spool-shaped inertial mass. The inertial mass in the basic embodiment of the invention is a single spool formed by two cylindrical end sections of unequal diameter which are joined by a stem. The accelerometer housing is provided with an aperture consisting of concentrically disposed cylindrical bores which are adapted to receive the end sections of the spool to form a relatively fluid-tight cavity within the aperture between the spool end sections. When the accelerometer housing is mounted on an object with the housing aperture in alignment with the path of travel of the object and the spool is slidably disposed within the aperture, the inertia of the spool causes the spool to tend to remain at rest when the object is accelerated. The resulting relative movement between the spool and the housing is employed to pressurize the fluid-tight cavity with a fluid pressure which will exert a feedback force on the spool in the direction of the acceleration, to prevent the relative movement between the spool and the housing and thereby cause the spool to have the same acceleration as the housing. Since the acceleration of the spool is proportional to the feedback force applied to the spool and the feedback force is proportional to the fluid pressure within the cavity, the fluid pressure within the cavity is proportional to the acceleration of the housing and the object along the path of travel.

3,527,106
ACCELEROMETER
Walter J. Hirtreiter, 15 Ranch Trail, Williamsville, N.Y. 14221
Continuation-in-part of application Ser. No. 213,308, July 30, 1962. This application Dec. 29, 1966, Ser. No. 605,903
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **1 Claim**

An accelerometer wherein a mass which is normally in a medial position lies between a light source and a pair of balanced self-generating photocells so that movement of the mass in acceleration unbalances the distribution of light to the pair of photocells and thus creates an imbalance in their outputs. A combined readout and restoring means connects directly across the normally balanced output circuits so that the resistance of the readout and restoring means does not disturb the balance of the output circuit, the restoring means including magnetic means for restoring the mass to center position upon deflection thereof under acceleration forces.



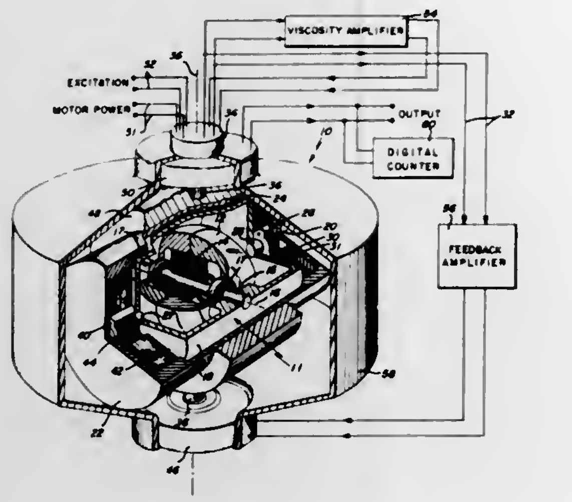
3,527,107
PNEUMATIC SPEED TRANSDUCER SYSTEM
Arthur T. Crane, Burt, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 1, 1967, Ser. No. 679,895
Int. Cl. G01p *3/42, 3/26*
U.S. Cl. 73—519 **2 Claims**



A system for indicating revolutions of a shaft per increment of time or an expression of vehicle speed with the operation of that system being by vacuum modulated in accordance with the revolutions or the speed and without the use of centrifugal force. The vacuum is modulated by a bleed valve which has its movable member connected to a speed cup. The valve is normally open to provide a bias across the valve and a counter torque on the speed cup.

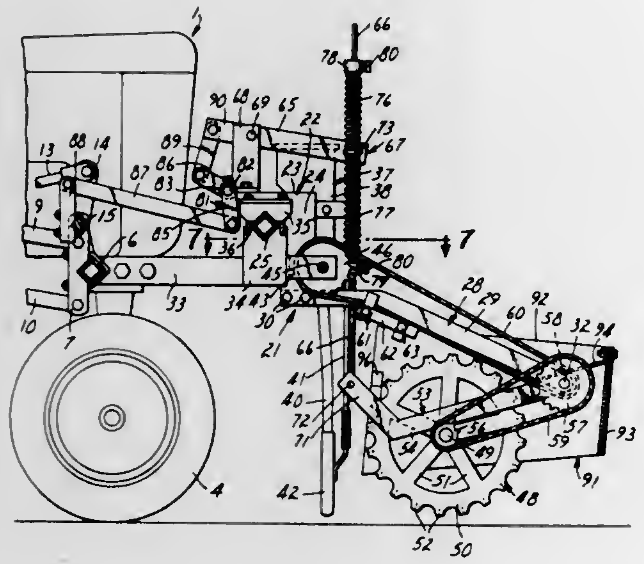
3,527,108
ZERO CROSS-COUPLING SINGLE AXIS GYRO STABILIZATION SYSTEM
Stanley Fay, West Roxbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,151
Int. Cl. G01c *19/16*
U.S. Cl. 74—5 **21 Claims**

A gyro stabilization system having feedback loop amplification which is adjusted so that the gyroscopic reaction torque which opposes the applied precessional torque becomes balanced therewith without the usual residual angular displacement of the output shaft of the system resulting from system rotation having a component of motion about the system gyro output axis thereby eliminating error due to cross-coupling of such motion. The amplification adjustment is manifest as a null indication on the system output shaft pickoff device when the system is subjected to angular motion and oriented so that the angular motion occurs about the gyro output axis. Afer such adjustment, the aforementioned error is eliminated for system rotation about any axis. In such stabilization systems of the gas bearing types, viscosity used in tuning out cross-coupling is provided artificially by separate torque generating means. In some gyro systems, as of the strapped down type, further reduction of cross-coupling error is achieved by making specific elements exhibit isoinertial characteristics.



3,527,109
ROTARY DRIVE MECHANISM FOR AGRICULTURAL IMPLEMENTS

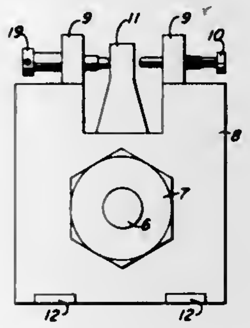
Ebenhard S. Gandrud, P.O. Box 528, Owatonna, Minn. 55060
Filed Jan. 2, 1969, Ser. No. 788,462
Int. Cl. F16h *37/00*
U.S. Cl. 74—13 12 Claims



Rotary drive mechanism for power operated implements mounted on a prime mover, including a ground-engaging drive wheel operatively connected to implements to be driven, and means for selectively moving the drive wheel into and out of driving engagement with the ground. A resilient lost motion connection maintains the drive wheel in driving engagement with the ground when the mechanism traverses rough or uneven terrain.

3,527,110
MIRROR POSITIONER FOR A ROTATING MIRROR CAMERA

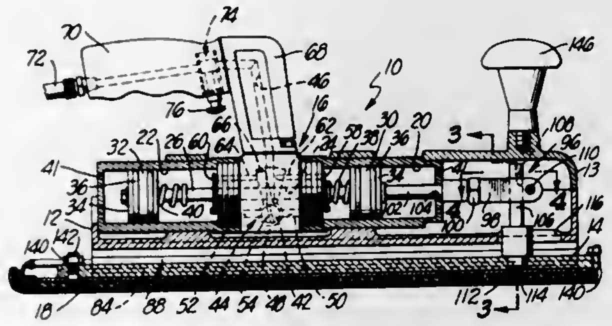
Benjamin T. Rogers, Embudo, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 14, 1968, Ser. No. 775,742
Int. Cl. F16h *25/12*
U.S. Cl. 74—89.15 2 Claims



A device for positioning the mirror of a rotating mirror camera so that the mirror will accurately fold the primary optical axis of the camera so as to be coincident with the optical axis of the focusing microscope. A shaft in the device is placed in engagement with the rotating mirror's shaft and held in engagement by a multiple lead actuating nut. Movement of a tangent arm that extends from the shaft in the device causes rotation of both shafts. Fine adjustment is accomplished by a tangent screw and spring loaded plunger operating in opposition thereto, said tangent screw and plunger located normal to the tangent arm.

3,527,111
PNEUMATIC TOOL

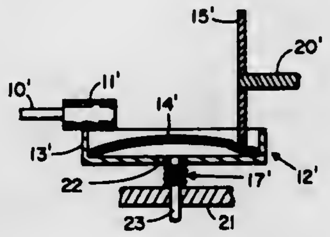
Robert G. Zimmerman, Santa Monica, Calif., assignor to Air Speed Tool Company, Los Angeles, Calif., a partnership
Filed Sept. 24, 1968, Ser. No. 761,910
Int. Cl. F16h *21/04*
U.S. Cl. 74—110 6 Claims



A pneumatic tool including a body having aligned cylinders and a bore therebetween, with a piston rod reciprocal within the bore and extending into the cylinders, and with pistons carried by the rod and slidable in the cylinders and forming a piston-and-rod assembly. An oscillating valve mechanism controls the flow of compressed air alternately into and out of the cylinders to reciprocate the piston-and-rod assembly. A tool carrier is supported by the body and guided thereon and is reciprocal relative thereto. Coupling means are provided between the tool carrier and the piston-and-rod assembly for simultaneous movement of the tool carrier and the piston-and-rod assembly in the same or in opposite directions.

3,527,112
LONG WEARING FRICTION DRIVE MECHANISM

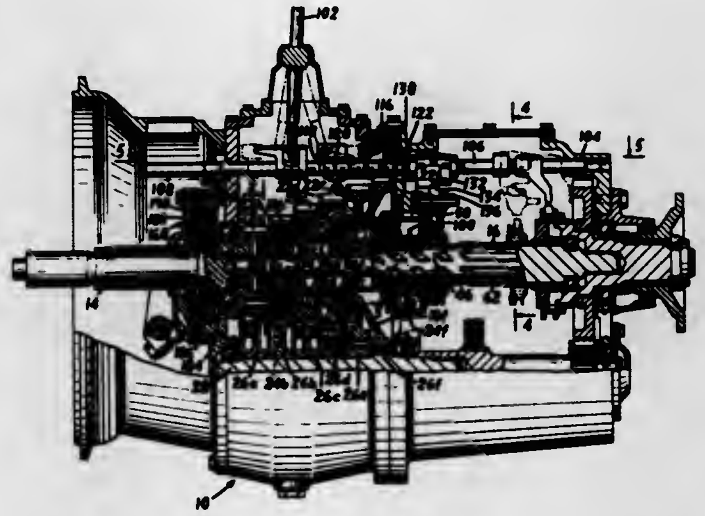
Donald D. Korell, Marion, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 5, 1968, Ser. No. 773,498
Int. Cl. F16h *13/02, 13/14, 15/08, 55/52*
U.S. Cl. 74—194 6 Claims



A three-element friction drive means in which the input element is a drum and the output element a disc, with parallel axes. A third, coupling disc-like element has its axis perpendicular to said parallel axes, and further has an axially disposed lip around the edge thereof, and a dome-shaped, rubber-like disc secured to one surface thereof. A first spring-like means forces the third disc-like element along its axis so that its lip is spring loaded against the drum. Substantially independent thereof, the resilient dome-shaped disc provides a spring-like pressure against the rim of the output disc which rides thereon.

3,527,113
SELF-SHIFTING TRANSMISSION

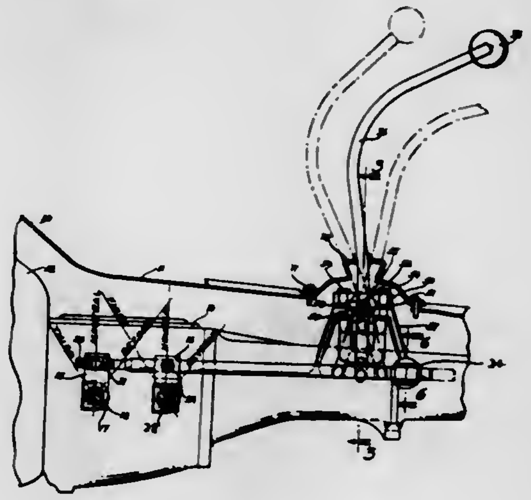
Irvin G. Detra, Mertztown, Pa., and Paul E. Carlson, Williamsport, Md., assignors to Mack Trucks, Inc., Allentown, Pa., a corporation of New York
Filed Nov. 26, 1968, Ser. No. 779,021
Int. Cl. F16h *3/08, 3/38, 5/52*
U.S. Cl. 74—371 5 Claims



A self-shifting transmission has a rotatable input shaft and a rotatable output shaft. The output shaft is formed with axial threads or splines and, along a portion thereof, with helical threads or grooves cut into the axial splines. The input shaft drives a direct-drive gear and a plurality of low-ratio gears. A shift member rotatable with the output shaft is formed with helical threads engaging the helical grooves of the output shaft, so that torque therebetween tends to shift the shift member helically along the output shaft. Drive lock teeth and coast lock teeth are formed on the shift member. A drive lock is engageable with the drive lock teeth, and a coast lock is engageable with the coast lock teeth. The drive and coast locks are movable axially along the output shaft for engagement with and disengagement from the shift member. When engaged by the shift member, they transmit, respectively, drive torque from the shift member to the output shaft and coast torque from the output shaft to the shift member. The transmission is shifted, under conditions established by an operator, between (a) a high-gear position in which it engages the direct-drive gear, (b) a plurality of lower-gear positions in which it engages one of the reduction gears, and (c) a plurality of neutral positions interspersed among the high-gear and lower-gear positions in which it is disengaged from the direct-drive and reduction gears.

3,527,114
GEAR SHIFT CONTROL ARRANGEMENT

Thomas A. Martz, Detroit, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Aug. 8, 1968, Ser. No. 751,280
Int. Cl. G05g *9/00*
U.S. Cl. 74—473 6 Claims

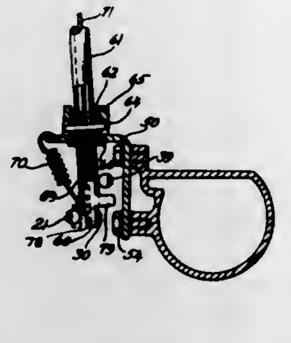


An arrangement for shifting the gears of a multi-speed transmission having a pair of externally mounted control levers. The control levers are connected to the shifter shafts and associated shift forks for gear selection located inside the transmission housing. The arrangement including a pair of rods pivotally connected to the control levers and slidably mounted on the transmission and an operator's shift lever pivotally mounted on the transmission and having a portion adapted to directly engage detents in the rods to move same for gear selection.

3,527,115
GEAR SHIFT CONTROL ARRANGEMENT

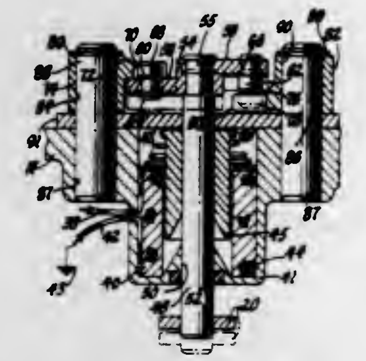
Earl M. Muhleck, Detroit, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Apr. 14, 1969, Ser. No. 815,804
Int. Cl. G05g *9/12*
U.S. Cl. 74—476 10 Claims

An arrangement for shifting the gears of a multi-speed transmission having three externally mounted control levers. The control levers are connected to shifter shafts and associated shift forks for gear selection located inside the transmission housing. The arrangement includes three rods, each of which is pivotally connected to a control lever and slidably mounted on a bracket adapted to be attached to the transmission housing. The rod for reverse gear operation is preferably located above the other two rods. Also included in the arrangement is an operator's shift lever pivotally mounted on the bracket and having a selector slidably mounted thereon which is adapted to directly engage detents in the two lower rods to move same for gear selection and a detent in the upper rod for reverse gear selection.



3,527,116
TRANSMISSION CONTROL

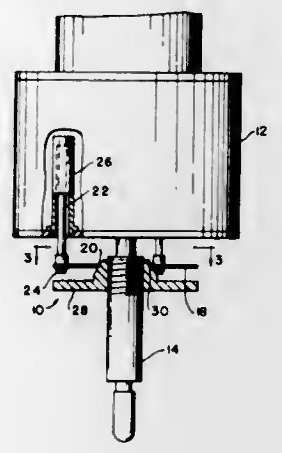
Dan R. Kimberlin, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 783,362
Int. Cl. G05g *9/18*
U.S. Cl. 74—484 10 Claims



The transmission control assembly shown embodies a shift lever and an electrically operated cross-shift mechanism including a solenoid which is energized by a switch actuated by axial pivotal movement of the H-type manual shift lever in the neutral portion thereof from the second-third shift position to the first-reverse shift position. The switch is located in the upper steering column housing, and the solenoid is mounted on a cover plate of the transmission housing. When the solenoid is in its deenergized position, a first pin mounted on a selector lever which is movable with the solenoid core, is in contact with a second-third shift lever which is operatively connected to second and third gears. Energization of the solenoid causes a second pin on the selector lever to move in a direction away from the second-third lever and then into contact with the first-reverse lever which is operatively connected to first and reverse gears. After opening or closing the switch by axial pivotal movement of the manual lever and thereby selecting a particular lever, subsequent rotary movement of the manual lever along the second-third or first-reverse legs, respectively, of the H shift will complete the engagement of the appropriate transmission gearing.

3,527,117
STRUCTURE FOR AND METHOD OF TRACING STYLUS DEFLECTION LIMITING

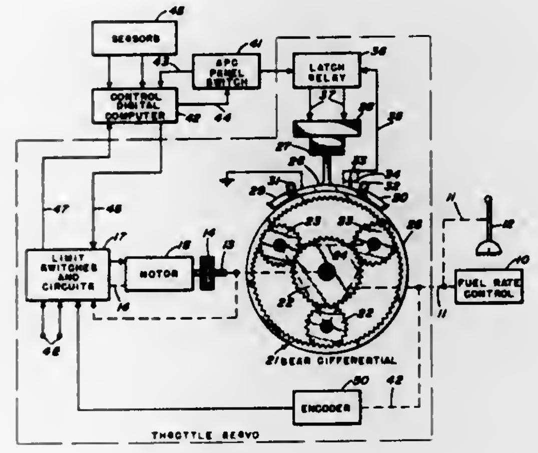
David W. Sallberg, Farmington, Donald W. Ericson, Birmingham, and Robert L. Zimmerman, Royal Oak, Mich., assignors to Pegasus Laboratories, Inc., Berkley, Mich., a corporation of Michigan
Filed May 28, 1968, Ser. No. 732,578
Int. Cl. B23q *35/00;* **F16h** *53/00*
U.S. Cl. 74—569 10 Claims



A method of operating a tracing stylus and structure for accomplishing the method is disclosed. In accordance with the method of operating the tracing stylus a limiting deflection for the tracing stylus is first selected, the tracing stylus is then deflected as desired up to the selected limit and if necessary the selected limit of deflection of the tracing stylus is knowingly exceeded.

3,527,118
SELECTIVE AUTOMATIC AND MANUAL THROTTLE ACTUATOR

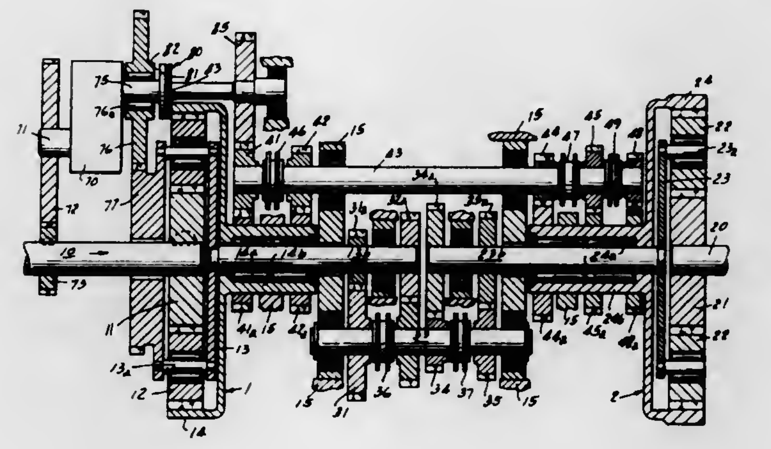
Donald P. Jenson, Lakewood, and James H. Murrill, Santa Ana, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 10, 1968, Ser. No. 743,733
Int. Cl. F16h *1/32*
U.S. Cl. 74—626 3 Claims



An automatic power compensation throttle actuator and manual throttle override on the throttle shaft for power plants having a throttle motor driving through a differential to the throttle shaft, the differential having a brake engageable for throttle motor actuation of the throttle and disengageable by the manual override to avoid heavy drag during manual throttle operation to allow selective automatic power compensation and manual throttle control.

3,527,119
TRANSMISSION

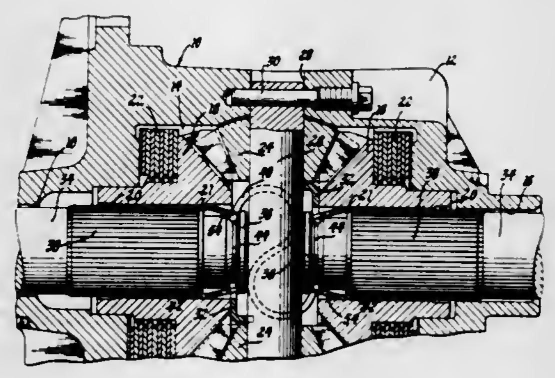
Algirdas L. Nasvytis, 10823 Magnolia Drive, Cleveland, Ohio 44106
Filed June 6, 1968, Ser. No. 735,024
Int. Cl. F16h *37/06, 9/26*
U.S. Cl. 74—681 8 Claims



A novel and improved transmission having a finite number of speed ratios over a wide range and employing a small variable speed drive unit assuming a small portion of the torque load and providing infinite ratios between said finite ratio steps to thereby provide a continuously variable speed transmission when used with a substantially constant speed prime mover. A variable speed drive unit is integrated into a transmission in a manner providing a relatively limited torque transfer by way of the variable speed drive while at the same time providing substantially improved control sensitivity.

3,527,120
DIFFERENTIAL ASSEMBLY AND AXLE SHAFT RETAINER THEREFOR

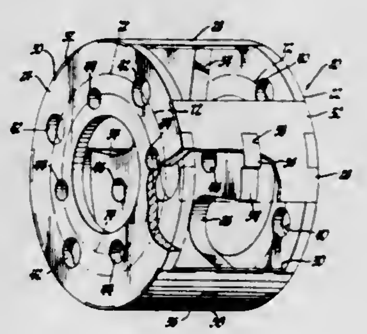
Morris J. Duer, Lansing, and Thomas J. Krieg, East Lansing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,503
Int. Cl. F16h *1/44;* **F16b** *21/08;* **F16d** *1/06*
U.S. Cl. 74—711 6 Claims



In a preferred embodiment, a limited slip differential includes axle shaft retaining means including a spring steel member retained on the axle shaft by tangs engaging a groove formed on the shaft. The body of the retainer is flexible outwardly for installation on the axle shaft and flexes inwardly so as to permit sliding the axle shaft through the differential case and side gear openings into its installed position. Upon installation, the retainer fingers spring outwardly into engagement with abutting surfaces of the side gear so as to lock the axle shaft in position and prevent outward axial movement thereof.

3,527,121
CARRIER

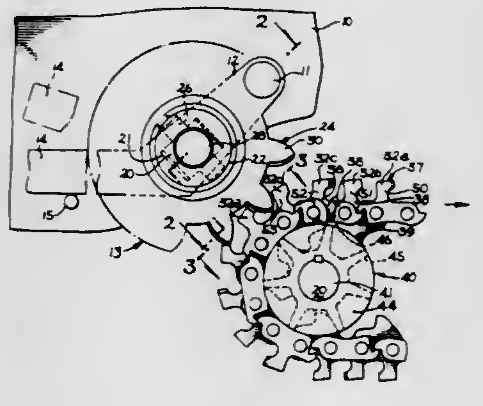
Charles R. Moore, Grosse Pointe Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,080
Int. Cl. F16h *3/62, 57/10*
U.S. Cl. 74—760 7 Claims



Shown and described in the following description and drawings is a sheet metal carrier which is a member of a planetary gear set adapted for use in a multi-ratio transmission. The carrier has a central sheet metal plate connected to the output shaft and two end wall sheet metal flanges which are secured to the central plate at a plurality of locations by peripheral sheet metal spacers. The sheet metal spacers may be separate from the flanges or be formed as continuous drum-like extensions of the flanges. The spacers are located, at spaced intervals, around the periphery of the flanges to provide openings in the carrier to permit the root diameter of the pinion gears carried therein to extend beyond the periphery of the carrier.

3,527,122
SAW TOOTH SHARPENER FOR SAW CHAIN AND OTHER SAWS

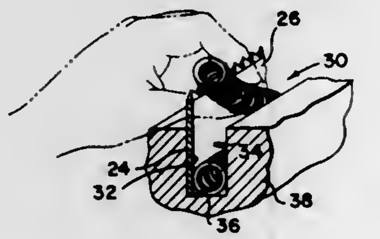
John W. Oehrli, 251 Tranquillo Road, Pacific Palisades, Calif. 90272
Filed July 9, 1968, Ser. No. 743,348
Int. Cl. B23d *63/12*
U.S. Cl. 76—37 15 Claims



A saw tooth sharpener comprising a gear with abrasive teeth adapted to mesh and run with the teeth of saw chain, the abrasive gear teeth moving across the front cutting edge of successive saw teeth as the gear and saw teeth run in mesh.

3,527,123
METHOD AND APPARATUS FOR ASSEMBLING BLADES ONTO A BLADE SUPPORT

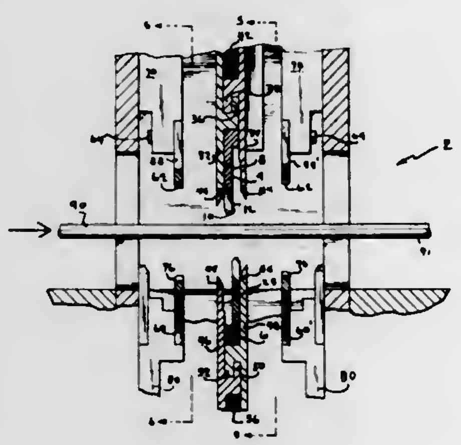
Norman Edward Dovey, Pompano Beach, Fla., assignor to Dovey Manufacturing Company, Anderson, Ind., a corporation of Indiana
Filed Mar. 25, 1968, Ser. No. 715,653
Int. Cl. B26d *7/26*
U.S. Cl. 76—107 **16 Claims**



An improved method and apparatus for assembling cutting blades onto the outer surface of a blade support. The method includes: forming an elongated groove on the outer surface of the support, positioning the blade in the groove; and, force fitting into the groove an elongated, resiliently deformable member having a plurality of closely spaced outwardly extending surface portions on opposite longitudinal sides thereof. In the preferred embodiment, the deformable members are of coil springs and two of them are utilized.

3,527,124
WIRE STRIPPING

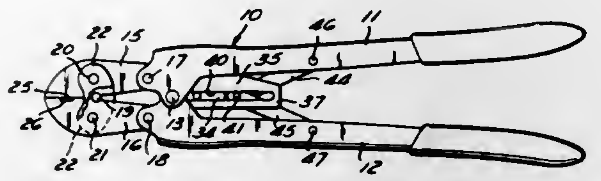
Robert Ullman, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 652,929, July 12, 1967. This application Dec. 29, 1967, Ser. No. 701,804
Int. Cl. H02g *1/12*
U.S. Cl. 81—9.51 **6 Claims**



Wire stripping apparatus comprises a pair of cooperable wire severing blades each of which has a wire clamping member on each side. When blades move relatively towards each other, a wire positioned between the blades is severed and the clamping members cooperate with each other to clamp the cut ends of the wire. Insulation parting blades which are spaced from the severing blades on each side of the severing blades part the insulation of the wire ends. The wires are thereafter pulled away from the plane of the severing blades so that the metallic cores in the severed ends are pulled from the insulation which is held by the clamping members.

3,527,125
FULL STROKE COMPELLING MECHANISM

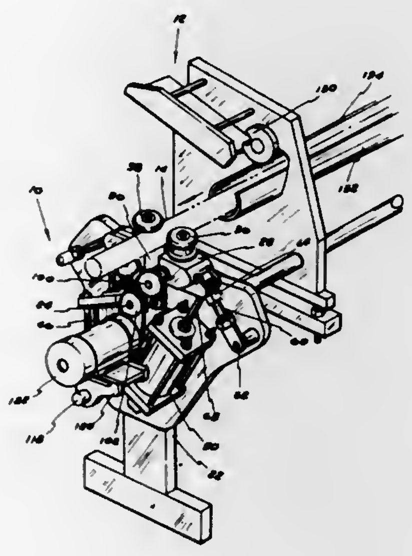
Vincent P. Di Filippo, Parma, Ohio, assignor to ETC Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 7, 1968, Ser. No. 703,592
Int. Cl. B25b *7/00;* **B26b** *17/00*
U.S. Cl. 81—313 **6 Claims**



A mechanism for insuring proper jaw closure in a tool having a pair of handles which are linked to each other and to the jaws. The mechanism includes a pawl having a pawl housing which is pivotally connected to a pair of links. Each handle is pivotally connected to the other end of each link. A ratchet housing and guide means is provided which houses a ratchet and which guides the pawl rectilinearly along the ratchet upon closure of the handles. The pawl and ratchet mechanism prevents opening of the handles and, therefore, the jaws prior to the attainment of a predetermined force applying position of the jaws.

3,527,126
STOCK FEEDING APPARATUS WITH CHAIN DEVICE

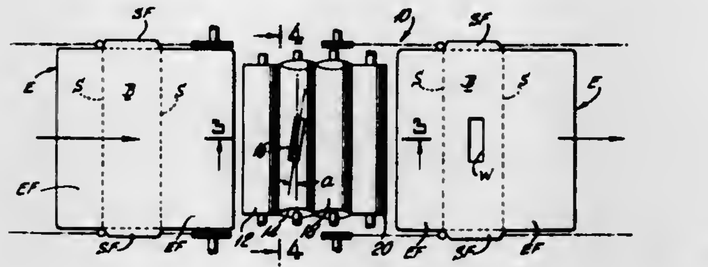
Otis V. Jones, Jr., Dearborn, Mich., assignor to Acro Feed Industries, Inc., Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1968, Ser. No. 756,487
Int. Cl. B23b *13/00*
U.S. Cl. 82—2.5 **9 Claims**



Feed apparatus for servicing a screw machine or the like with bar stock including a pair of rollers pivotally supported for motion about a common pivot between an open position for receiving a section of stock between them and a closed position for engaging the stock, and chain drive means coupled to the rollers to provide the stock with a longitudinal force in the direction of the machine. Each roller is pivoted between its open and closed position by a toggle linkage.

3,527,127
METHOD OF SHEAR CUTTING ENVELOPE BLANKS

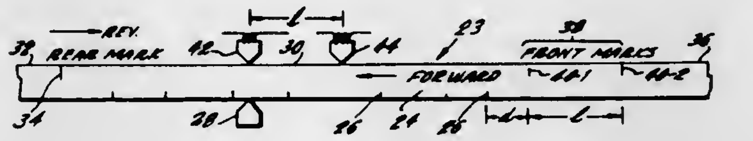
Milton A. Stovall, Altoona, Pennsylvania, assignor to F.L. Smithe Machine Company, Inc., Duncansville, Pennsylvania a corporation of New York
Original application Sept. 12, 1967, Ser. No. 667,212, now Patent No. 3,465,626, dated Sept. 9, 1969. Divided and this application March 10, 1969, Ser. No. 828,040
Int. Cl. B26f *1/38*
U.S. Cl. 83—23 **2 Claims**



A method of shear cutting envelope blanks having a plurality of pairs of rollers for advancing envelope blanks, for example, at least one of the rollers of the first pair of rollers is tilted in a vertical plane with respect to the direction of blank travel. The cutting knife is perpendicular to blank travel but the blank is diverted angularly by the first vertically tilted roller while moving generally longitudinally to provide progressive or shear cutting. A second pair of rollers, with at least one of the rollers of this pair tilted in a vertical plane, relocates the blank along its original path.

3,527,128
MAGNETIC TAPE REVERSING SYSTEM

Carl Thumim, Chicago, Illinois, assignor to Miehle-Goss-Dexter, Incorporated, Chicago, Illinois a corporation of Delaware
Filed July 22, 1968, Ser. No. 746,508
Int. Cl. B26d *5/36;* **G05b** *19/16*
U.S. Cl. 83—71 **10 Claims**

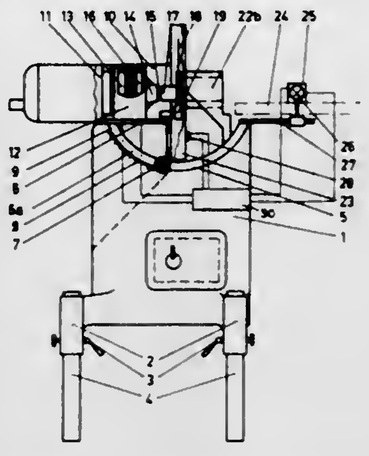


A magnetic tape control system for automatically reversing the direction of travel of the back gauge of a paper cutter in response to such back gauge reaching either the forwardmost or rearwardmost predetermined limit of travel. To eliminate the need for two direction-controlling tape channels for each channel which bears a cutting program, while at the same time prevent the possibility of the back gauge becoming "-trapped" between the end of the work table and the nearest limit mark; the system utilizes distinguishable magnetic marks at each end of the tape to uniquely set the new direction of travel.

3,527,129
AUTOMATIC APPARATUS FOR ACCURATELY CUTTING TO SIZE EXTRUDED LENGTHS OF SOLID AND TUBULAR MATERIAL

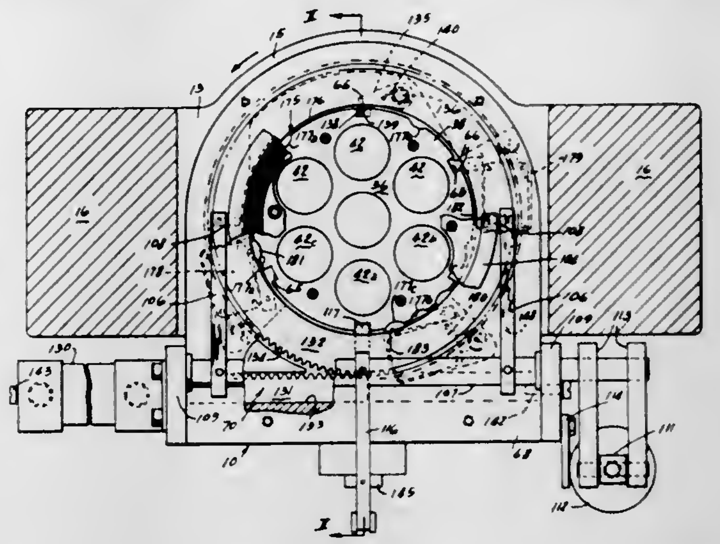
Werner Hugo Schiesser, Hortensienstrasse 9, Zurich, Switzerland
Filed Aug. 23, 1968, Ser. No. 754,903
Claims priority, application Switzerland, Aug. 24, 1967, 12,001/67
Int. Cl. B23d *25/16, 1/56*
U.S. Cl. 83—287 **4 Claims**

Automatic apparatus for accurately cutting extruded lengths of solid or tubular material to size by means of an electromagnetic rapidly acting brake and a rapidly acting clutch which are alternately engaged and released in accordance with control pulses from a photo-electric cell through an electronic control device thereby actuating the cutting knife at the proper intervals.



3,527,130
PUNCH PRESS TURRET ASSEMBLY

Hugo Knehans, Chicago, Illinois, assignor to Argus Manufacturing Company, Chicago, Illinois a corporation of Illinois
Filed July 11, 1968, Ser. No. 744,158
Int. Cl. B26d *7/02, 5/08*
U.S. Cl. 83—454 **20 Claims**



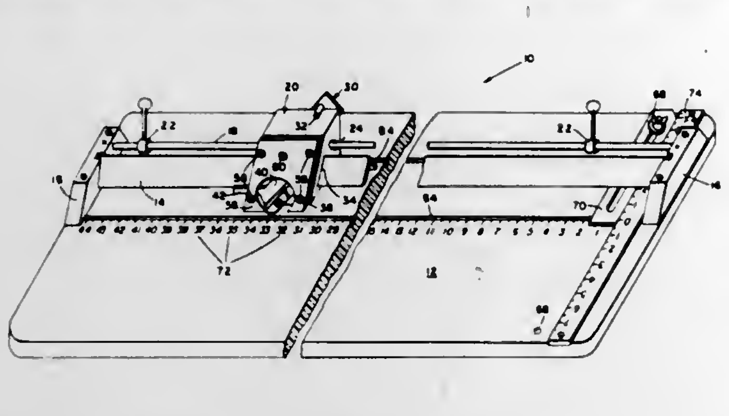
A drop-in turret assembly is held in a tool holder beneath the ram of a punch press and has a plurality of tool-receiving stations which are indexed between different angular positions. The device includes a die turret having dies which coact with the punches of the tool turret, and includes retractable pins which interconnect the two turrets for rotation together during indexing.

3,527,131
MAT CUTTER

Charles Ellerin, 3604 Woodvalley Drive, Baltimore, Maryland and Eugene B. Laskin, 2419 Lightfoot Drive, Baltimore, Maryland
Filed April 3, 1968, Ser. No. 718,488
Int. Cl. B26d *5/10, 1/10, 2/02*
U.S. Cl. 83—522 **6 Claims**

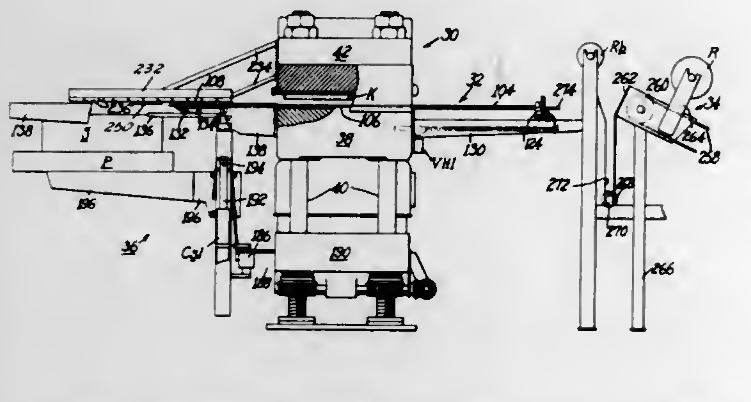
A device is provided for trimming art mats and for cutting bevel edged apertures useful in picture mounting. A ways is mounted on a base plate and carries a sliding cutter block. A rod parallel with the ways supports travel limiting stops. One side of the block is arranged perpendicular to the base plate, while the other side thereof is arranged to slope relative thereto at about 45°.

Both sides of the block mount knife plates assemblies which can be rotated to place their knives in or out of cutting position. When a knife is in a cutting position, a knife corner extends downwardly into clearance channels in the base to define the cutting pathways, whereby a clean cut entirely through the workpiece may accurately be made either square-edged with one knife plate or bevel-edged with the other.



3,527,132
CUTTING PRESS HAVING IMPROVED MEANS FOR CLAMPING DIES ON THE BEAM

David F. Creffield, Bristol, England, assignor to USM Corporation, Flemington, New Jersey a corporation of New Jersey
Filed Nov. 14, 1967, Ser. No. 682,953
Claims priority, application Great Britain, Nov. 16, 1966, 51,259/66
Int. Cl. B26d *7/26*
U.S. Cl. 83—698 **4 Claims**

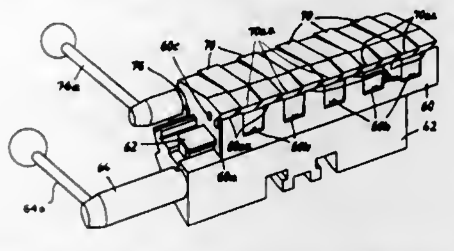


A cutting press having a beam and a bed arranged for relative movement of approach and separation is provided with improved means for die loading and unloading, for clamping dies on the beam, and for handling the cut product. The die clamping means is selectively operable to clamp dies from, or release them on, a feed table carried by the bed for quick and easy die changes. The product handling means includes improved separator means and a stacking device having a vertically movable table and control means operative in response to engagement of the upper surface of the stack with sensing means adjacent the under side of the feed table to terminate upward movement of the table of the stacking device.

3,527,133
CLAMPING DEVICE FOR MICROTOME KNIVES

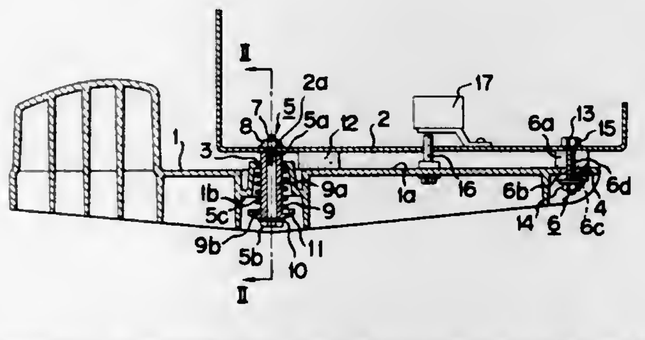
Richard Lankes, Munich, Germany and Anton Imhof, Munich, Germany, assignors to Compur-Werk Gesellschaft mit beschrankter Haftung & Co., Munich, Germany a firm of Germany
Filed April 3, 1968, Ser. No. 718,538
Claims priority, application Germany, April 17, 1967, C 42,067
Int. Cl. B26d *4/48*
U.S. Cl. 83—699 **9 Claims**

A clamping device for a microtome knife comprises a holder which includes a support surface having a clamping edge which bears against a lower longitudinal surface of the knife. A plurality of adjustable clamping elements are serially positioned in longitudinally spaced recesses in the holder and are adjustable through rotation of a self-locking eccentric rod. Actuation of the eccentric rod causes a clamping edge on each of the clamping elements to engage an upper longitudinal surface of the knife and to press the knife against the clamping edge of the holder in a closed system of forces.



3,527,134
PEDAL KEY ASSEMBLY OF AN ELECTRONIC MUSICAL INSTRUMENT

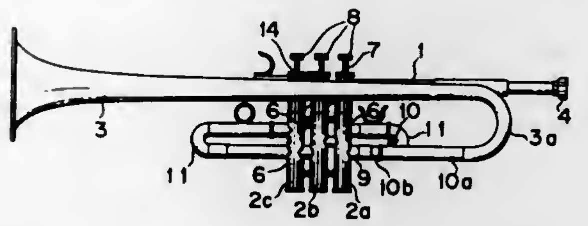
Shuji Muraki, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan a corporation of Japan
Filed April 23, 1969, Ser. No. 818,482
Int. Cl. G10b *3/10;* **G10c** *3/12*
U.S. Cl. 84—366 **6 Claims**



A plurality of parallel arranged pedal key members are individually swingable on a vertical plane and floatingly supported by the corresponding suspension members downwardly extending from the bottom frame of a musical instrument body.

3,527,135
VALVE TRUMPET

Yukihiro Oguma, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan a corporation of Japan
Filed July 22, 1968, Ser. No. 746,569
Int. Cl. G10d *7/10, 9/00*
U.S. Cl. 84—394 **7 Claims**



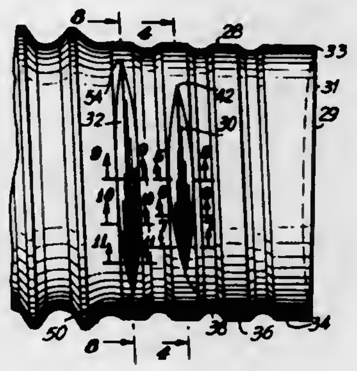
A valve trumpet is provided with a tapered lead pipe directly connected with the inlet of a valve assembly, a bell and a telescopic connector disposed at the end of the bell to connect the inlet of the bell with the outlet of the valve assembly. Said bell connector has an outer tube and an inner tube slidable through the outer tube so as to tune the trumpet to a desired pitch.

3,527,136
SELF-RETAINED THREAD ROLLING SCREW

Charles A. Wilson, Williamstown, New Jersey, assignor to Standard Pressed Steel Co., Jenkintown, Pennsylvania a corporation of Pennsylvania
Filed Feb. 27, 1969, Ser. No. 802,774
Int. Cl. F16b *25/00, 39/30*
U.S. Cl. 85—46 **13 Claims**

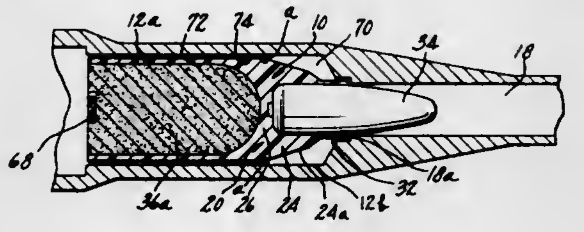
A self-retaining thread rolling screw including a shank portion having a pilot end adapted to be received in an

unthreaded hole in a metallic member. Spaced from the end of the pilot portion are a plurality of cam-shaped thread rolling members which initially align the screw within an unthreaded hole and, as the screw is rotated, roll form internal threads in the hole. Because of the shape of the thread rolling members, the internal threads are rolled by a radially outward elastic expansion of the metal, and, after the cam-shaped thread rolling members have passed through the rolled threads, there is a radially inward relaxation of the metal which provides a self-retention action on the screw after the cam-shaped rolling members have passed completely through the hole so that the screw cannot be inadvertently removed.



3,527,137
EXPENDABLE CASE AMMUNITION

John J. Scanlon, Monroe, Connecticut, assignor to Remington Arms Company, Inc., Bridgeport, Connecticut a corporation of Delaware
Continuation-in-part of application Ser. No. 686,508, Nov. 29, 1967, now Patent No. 3,485,170. This application Dec. 24, 1968, Ser. No. 786,597
Int. Cl. F41f *1/00;* **F42b** *9/06*
U.S. Cl. 89—1 **14 Claims**

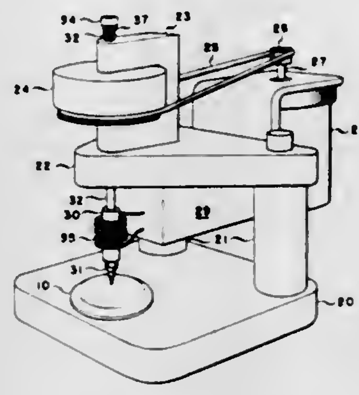


A combination gun chamber and plastic expendable cartridge case designed to permit the cartridge case to be expelled from the muzzle of the gun along with the projectile means. A free expansion chamber is provided between the cartridge case and the chamber bore to permit the case to deform upon firing to take up some of the initial shock of firing and allow the projectile means to get started through the gun barrel before the cartridge case buckles and is expelled. The free expansion chamber results in higher velocities at lower pressures. A relieved expansion chamber can also be provided between the rear of the cartridge case and the gun chamber bore. This relieved expansion chamber functions to lessen the frictional drag of the cartridge case on the wall of the chamber bore to facilitate the expulsion of the cartridge case from the gun barrel.

3,527,138
APPARATUS FOR REMOVING ELECTRICAL INSULATION

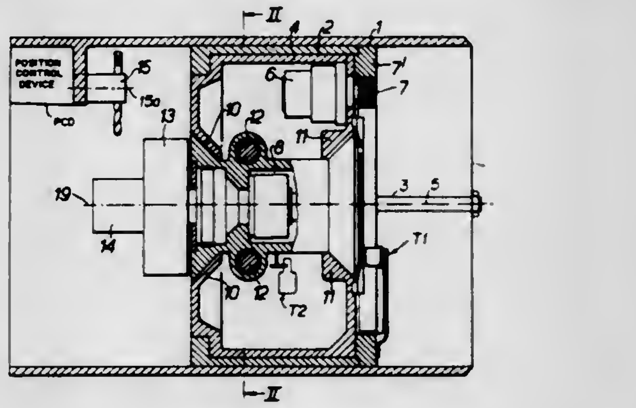
Howard A. Boltz, Saratoga, California, assignor to Lockheed Aircraft Corporation, Burbank, California
Filed March 24, 1969, Ser. No. 809,725
Int. Cl. B23c *3/00*
U.S. Cl. 90—11 **11 Claims**

Apparatus is described for removing electrical insulation such as that covering portions of conductive elements in flexible circuitry without damaging the conductive elements. The apparatus comprises an electric loop having inductive and variable capacitive means connected in series circuit, and a rotatable end mill forming both a conductive element in the electric loop and a functional element of the variable capacitive means. Drive means are provided for rotating the end mill in milling through insulation and thereby varying the capacitance of the variable capacitive means. Means are also provided for sensing the capacitance in the electric loop and in response to a predetermined value thereof to arrest drive imparted to the rotatable end mill by the drive means.



3,527,139
MACHINE TOOLS

Sinclair Upton Cunningham, East Kilbride, Glasgow, Scotland, and Ronald Graham McIntyre, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed June 7, 1968, Ser. No. 735,400
Claims priority, application Great Britain, June 12, 1967, 27,025/67
Int. Cl. B23c *1/14, 9/00;* **B23b** *39/00*
U.S. Cl. 90—15.1 **13 Claims**

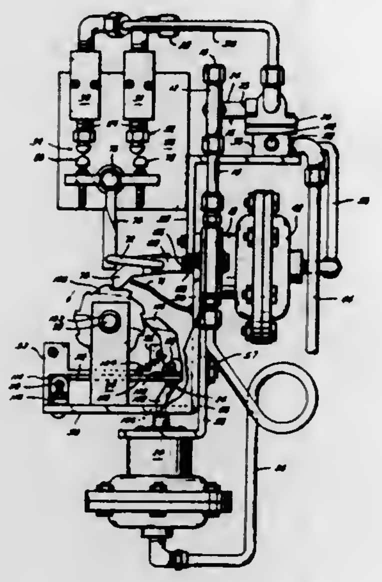


A machine tool in which a workpiece is carried in a holder capable of assuming any of an infinite number of positions within a generally cylindrical region the axis of which coincides with the axis of rotation of a cylindrical member carrying the holder. The holder can move over a rectilinear path normal to the axis of the cylindrical member to cooperate with a tool held in a second angularly positionable holder, the arrangement being such that the angular position of the second holder and the angular relationship of the rectilinear path can be put in a specific relationship to each other.

3,527,140
AUTOMATIC WINDING DEVICE

George M. Clark, Houston, Texas, and Horace V. Smith, Sr., Houston, Texas, assignors to Metrol Corporation, Houston, Texas a corporation of Texas
Filed Oct. 1, 1968, Ser. No. 764,063
Int. Cl. F01b *1/00*
U.S. Cl. 91—170 **18 Claims**

The present invention is directed to apparatus used to automatically impart rotary motion to an element such as a gear. The present invention utilizes a four-way valve to channel actuating fluid to a diaphragm actuator which reciprocates a pawl that contacts and turns the gear during one of its reciprocating strokes. A contact member moving with the first pawl actuates alternatively one of two button valves to vary the pressure differential within the four-way valve which shifts the flow of fluid to and from the actuator,



giving the pawl its reciprocal motion. A braking pawl is used to prevent undesired or accidental movement of the gear.

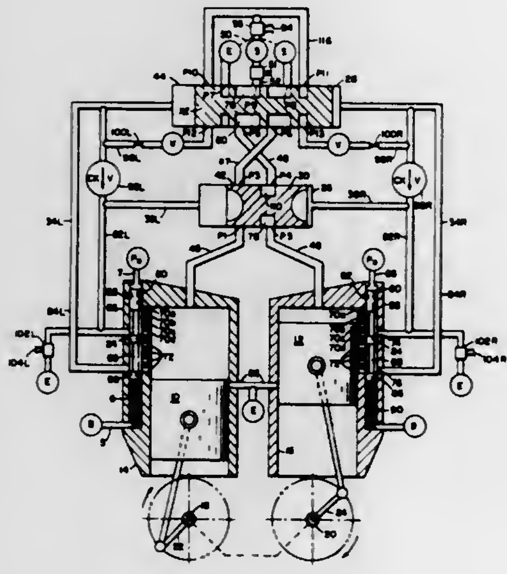
3,527,141
VALVING SYSTEM FOR RECIPROCATING ENGINE

Jerry A. Peoples, 2419 Greenhill Drive NE., Huntsville, Alabama

Filed Aug. 1, 1968, Ser. No. 749,534

Int. Cl. F01l *21/02;* **F15b** *13/042, 15/22*

U.S. Cl. 91—184 **9 Claims**



A reciprocating engine wherein two spool valves are used to commutate the engine, one controlling gas cut-off and the other providing pressure polarity.

3,527,142
FASTENER DRIVING TOOL

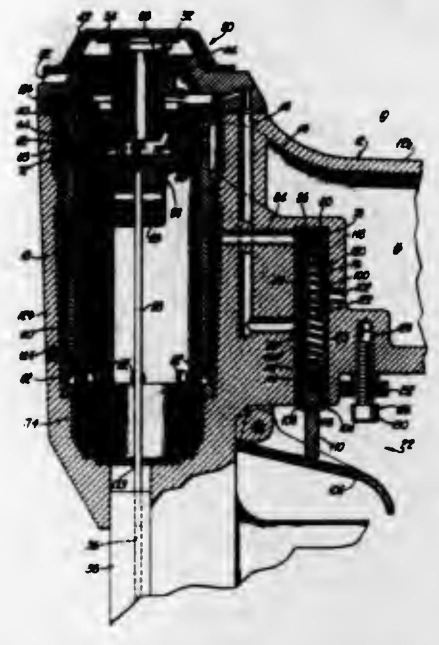
Allen R. Obergfell, Park Ridge, Illinois, assignor to Fastener Corporation, Franklin Park, Illinois a corporation of Illinois

Continuation of application Ser. No. 629,244, April 7, 1967. This application Aug. 21, 1969, Ser. No. 855,795

Int. Cl. B25c *1/04;* **F01l** *25/04*

U.S. Cl. 91—461 **14 Claims**

There is provided a pneumatic fastener driving tool having control means providing for successive fastener driving operations upon a single depression of the tool trigger. The control means includes a control piston responsive to a suitable pneumatic signal such as the pressure in the piston return chamber and effective to recycle the driving piston of the tool so long as the trigger is depressed. In addition means are



provided for varying the rate of recycling as a function of the displacement of the tool trigger.

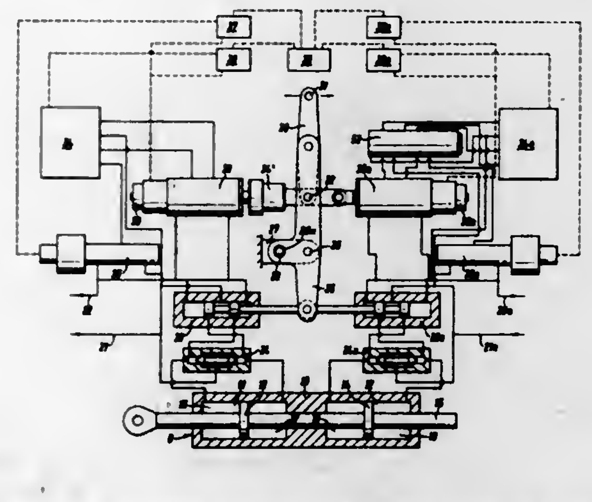
3,527,143
CONTROL SYSTEMS

Kenneth Hayter, Hale, Lancashire, England, assignor to Automotive Products Company Limited, Leamington Spa, Warwickshire, England a British company

Filed Sept. 3, 1968, Ser. No. 756,807

Int. Cl. F15b *13/06;* **B64c** *13/36*

U.S. Cl. 91—411 **6 Claims**



In a control system for aircraft flight controls having a fluid pressure motor supplied with fluid pressure from two separate sources having separate selector valves controlled by separate fluid pressure actuators controlled by an electrical system, the said actuators are coupled together through a spring box to enable either one to continue to operate if the other one fails.

3,527,144
HYDRAULIC MOTORS AND PUMPS

Donald Firth, Glasgow, Scotland, and Sinclair Cunningham, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a corporation of Great Britain

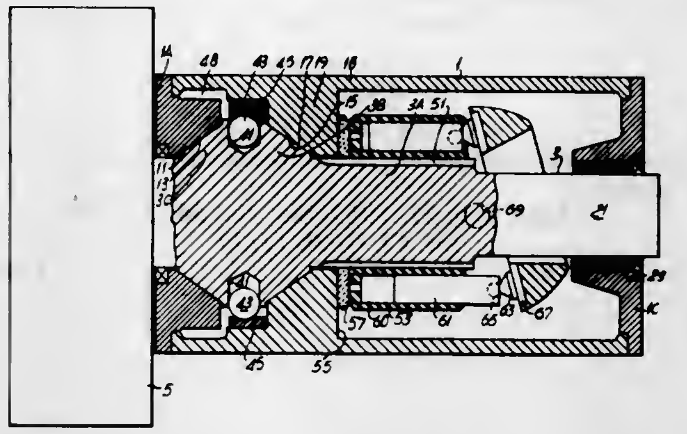
Filed Jan. 22, 1968, Ser. No. 699,410

Claims priority, application Great Britain, Jan. 27, 1967, 4,240/67

Int. Cl. F04b *1/10;* **F01b** *3/00, 13/04*

U.S. Cl. 91—498 **6 Claims**

The combination of a hydraulic motor of the kind which comprises a cylinder block containing a number of pistons adapted to bear against a multi-lobed cam track so as to cause a torque to develop between the block and the cam track, the motor being arranged to drive an output shaft, with a second motor arranged to drive the same output shaft, and including means to disengage the first motor from the output



shaft by lifting and holding all of the pistons of the first motor clear of the cam-track or by arresting movement of the pistons along the cam track.

3,527,145
AXIAL PISTON UNIT USABLE AS LIQUID PUMP AND/OR MOTOR

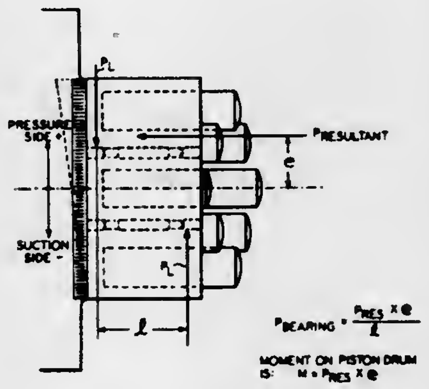
Kaspar Ritter, Kirchheim, Teck, Germany, assignor to Kopat Gesellschaft für Konstruktion, Entwicklung und Patentverwertung m.b.H. & Co. KG., Goppingen, Germany a corporation of Germany

Continuation-in-part of application Ser. No. 588,782, Oct. 24, 1966. This application Dec. 17, 1968, Ser. No. 784,458

Claims priority, application Germany, Oct. 20, 1966, K 60,506

Int. Cl. F04b *1/02, 9/00;* **F01b** *13/04*

U.S. Cl. 91—505 **3 Claims**


PRESSURE SIDE +
SUCTION SIDE -
P RESULTANT
e
ℓ
P BEARING = P RES × e / ℓ
MOMENT ON PISTON DRUM IS: M = P RES × e

An axial piston unit usable as liquid-pump and as -motor, respectively, which comprises an outer housing and a piston drum disposed in and rotatable relative to said housing. At least two ball or roller bearings guiding the piston drum and the latter has a plurality of cylinders arranged at equal distance from and parallel to the center axis of the piston drum. A piston is received and is sealingly guided in each of the cylinders. A drive shaft and holding shaft, respectively, are provided for the piston drum. An oblique disc is disposed in the housing operatively connected with the pistons such, that upon a relative rotation between the piston drum and the oblique disc, the pistons perform a reciprocating movement in the corresponding of the cylinders. The housing has control slots disposed on the opposite side of the piston drum for alternate connection of the cylinders with a suction-and pressure-conduit, respectively.

3,527,146
NON-SKID TRAFFIC BEARING SURFACES

Richard A. Garling, Louisville, Kentucky, assignor to Porter Paint Company, Louisville, Kentucky a corporation of Kentucky

No Drawing. Filed Feb. 10, 1969, Ser. No. 798,183

Int. Cl. E01c *11/24*

U.S. Cl. 94—5 **10 Claims**

Non-skid coatings are now widely used in a variety of applications, the non-skid surfaces consisting of a film containing particles of a mineral aggregate such as sand. When the aggregate particles spall off they abrade, scratch and wear the friction surface. For use on vehicle and pedestrian traffic bearing surfaces a non-skid friction coating is provided in which the aggregate is not abrasive.

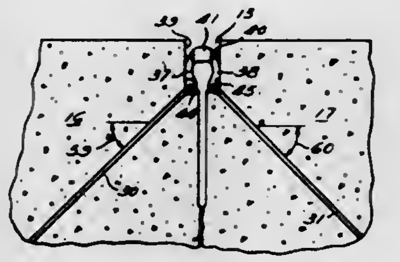
3,527,147
PAVEMENT JOINT SEALING DEVICE

John F. Feister, Silver Lake, Ohio (3008 Silver Lake Blvd., Cuyahoga Falls, Ohio)

Filed May 17, 1968, Ser. No. 730,077

Int. Cl. E01c *11/10*

U.S. Cl. 94—18 **12 Claims**



A seal for contraction joints between concrete pavement slabs in highways and the like, comprising an inverted, generally U-shaped, elastomeric sealing strip seated in a shouldered groove between the slabs with a strand of wire, plastic, or the like extending through each leg of the strip and secured under tension to the respective slab to hold the legs of the strip pressed downwardly against the shoulders and laterally against the sides of the groove. The elasticity of the strip also presses the legs apart and against the sides of the groove. The sealing strip may be an elongated strip folded about its centerline and the legs may be initially held together to facilitate installation by a weak adhesive which is broken apart when the strands are tensioned. The outer surfaces of the legs may also carry an adhesive to assist in sealing against the sides of the grooves. When used with crowned highway slabs, the crown cooperates with the tensioned strands to hold the sealing strip down in the groove throughout its length.

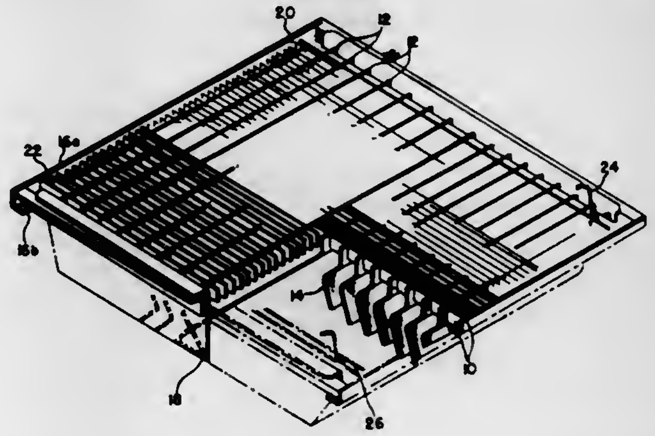
3,527,148
HINGE FOR AN ACCESS PANEL

John B. Schack, Auburn, Washington, assignor to Concrete Conduit Co., Auburn, Washington a corporation of Washington

Filed April 10, 1969, Ser. No. 814,940

Int. Cl. E02d *29/14*

U.S. Cl. 94—36 **6 Claims**



A hinge which is particularly useful in connecting a grating structure to an underground utility vault or other similar structure is disclosed as well as a lock mechanism for the grillwork structure. The hinges are flush mounted with the surface of the grill and are so constructed that the grill can be rotated at least 180° with the hinges being the pivot point, thus allowing the grate to lie flat on a surface adjacent the vault opening when access to the vault is necessary. The hinge comprises a lug member having a recessed slot therein and extending from the frame of the vault structure and a linking member linking the frame to cross bars of the grill-work structure of the grating.

3,527,149

PHOTOGRAPHIC CAMERA WITH AN ELECTRONIC TIMING DEVICE CONTROLLABLE BY LIGHT CONDITIONS

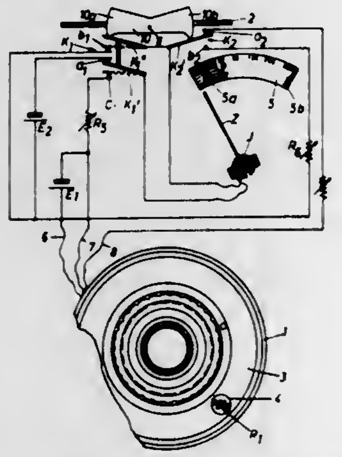
Franz W. R. Starp, Calmbach, Black Forest, Germany, and Carl Richter, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany

Filed May 23, 1968, Ser. No. 731,485

Claims priority, application Germany, May 29, 1967, P 42,229

Int. Cl. G03b *7/08;* **G01j** *1/46*

U.S. Cl. 95—10 **6 Claims**



A photographic camera having a circuit and an energy source associated with the circuit. A photo-resistance is associated with this circuit as is an electronic timing device for automatically controlling the exposure time. An indicating device is also associated with the circuit for indicating the light-dependent exposure time value, the indicating device being operable by current from said energy source or by another energy source. The circuit is provided with two circuits for testing the voltage and capacity of the energy sources and for indicating the attainable exposure time value with respect to a certain limiting value, the two circuits being actuatable by a single, manually operable test key.

3,527,150

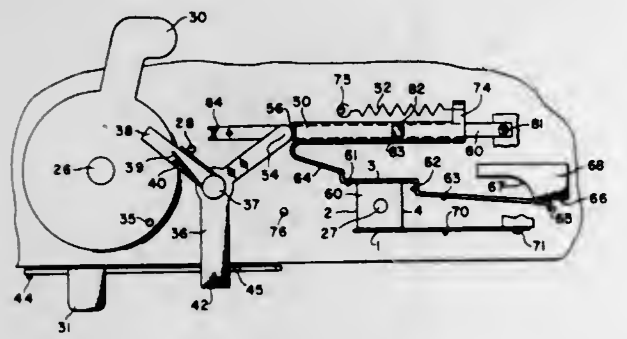
FLASH CAMERA

Michael S. Montalto, Rochester, New York; Chester W. Michatek, Rochester, New York and William H. Horton, Rochester, New York, assignors to Eastman Kodak Company, Rochester, New York a corporation of New Jersey

Filed May 31, 1968, Ser. No. 733,685

Int. Cl. G03b *15/03*

U.S. Cl. 95—11 **10 Claims**



In a photographic flashcube camera, an automatic flashcube indexing mechanism having a flexible drive member for engaging and indexing a flashcube receiving socket. The flexible drive member is coupled to a slidable member that is moved in a first direction in response to the winding of film in the camera and in a second direction in response to shutter operation. The flexible drive member engages and indexes the flashlamp after shutter operation and upon movement of the slidable member in the second direction.

3,527,151

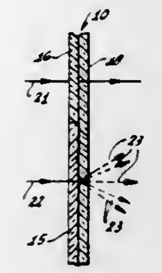
OPTICAL DIFFUSER

William H. Harrison, 6363 Santa Monica Blvd., Los Angeles, California

Filed Aug. 21, 1967, Ser. No. 662,141

Int. Cl. G03b *11/00*

U.S. Cl. 95—65 **5 Claims**



An optical filter intended to be attached to the lens of a camera, which forms a vignette of the portrait being taken. The filter includes a clear section which transmits the image of the subject, and a diffusing section that acts outside of the image area to diffuse the image to the point where it becomes an overall color or shade.

3,527,152

AIR CURTAIN MEANS FOR A PASSENGER VEHICLE

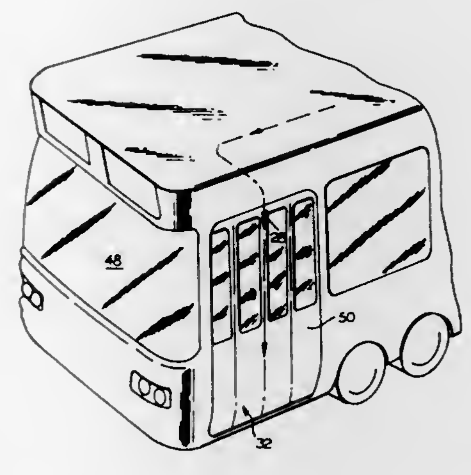
Albert Henry Hands, Quarry House, Hall Lane, Maghull, Liverpool, England, and Joseph McGowan, 57 Winkley Road, Preston, Lancashire, England

Filed July 3, 1968, Ser. No. 742,289

Claims priority, application Great Britain, July 5, 1967, 30,978/67; 30,980/67

Int. Cl. B60h *1/24*

U.S. Cl. 98—2 **1 Claim**



A passenger vehicle having a door and doorway and a distributing and delivery system arranged to form a curtain of heated air in motion across the doorway.

3,527,153

COFFEE MAKER

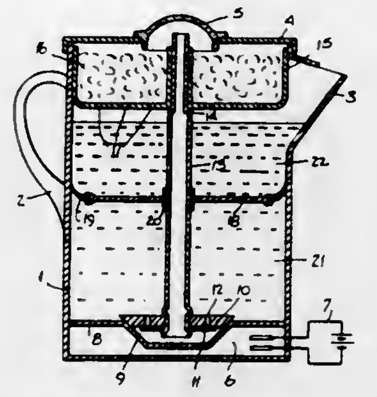
Carl Orlando, 47 Willow Road, New Shrewsbury, New Jersey

Filed Aug. 27, 1968, Ser. No. 755,593

Int. Cl. A47j *31/10*

U.S. Cl. 99—315 **7 Claims**

A device is described for use in percolator type coffee makers, comprising a more or less liquid tight movable divider which is placed under the solid coffee and on top of the water. The hot water percolating through the solid coffee drops on top of the divider which moves down as water is pumped from beneath it and hot brewed coffee collects above it. The brewed coffee is thus never recycled through the percolator and is able to retain a better taste and aroma.



3,527,154

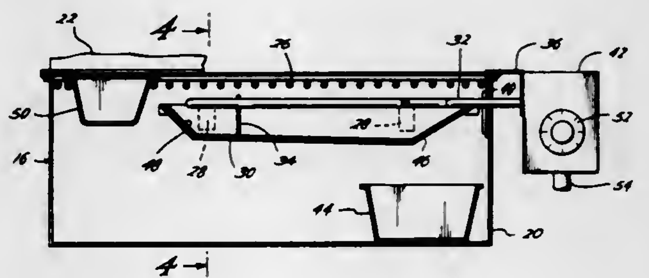
ELECTRIC GRILL

Charles H. Shaper, Houston, Texas; Milton W. Lowe, Houston, Texas; and John E. Germann, Houston, Texas, assignors to Char-O Corporation, Houston, Texas a corporation of Texas

Filed Nov. 6, 1967, Ser. No. 680,690

Int. Cl. A47j *37/07*

U.S. Cl. 99—400 **3 Claims**



This specification discloses an electric barbecue grill including a housing having a cooking grid, a unitized electric heating coil and control switch and a reflecting grease catching tray mounted therein which are readily removable therefrom; the components are so arranged that a portion of the drippings from heat being cooked is vaporized to smoke which provides the barbecue flavor to the meat; the components are provided with a relative spacing to assure that adequate heat is available at the cooking surface of the grid for usual barbecuing even when electricity is available only from a normal 110—120 volt, 15 amp house circuit.

3,527,155

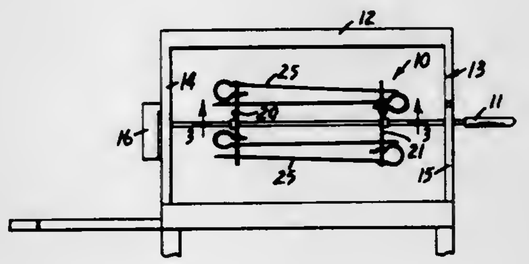
SKEWER ASSEMBLY FOR ROTISSERIES

Donald G. Renn, 1147 Ripon St., Lewiston, Idaho

Filed Dec. 4, 1968, Ser. No. 780,963

Int. Cl. A47j *37/04*

U.S. Cl. 99—421 **4 Claims**



A skewer assembly apparatus for a conventional rotisserie unit is disclosed having circular plates that are mounted on a rotisserie rod and fixed thereto by a suitable clamping means. The circular plates have a plurality of equally spaced apertures formed therein near the periphery. The apertures facilitate mounting of a plurality of skewer rods which mount the various foods to be cooked. The skewer assembly is rotated by a motor which drives the rotisserie rod.

3,527,156

BINDING MACHINE FOR OBJECTS SUCH AS BUNDLES OF LAMINATED METALLURGICAL PRODUCTS

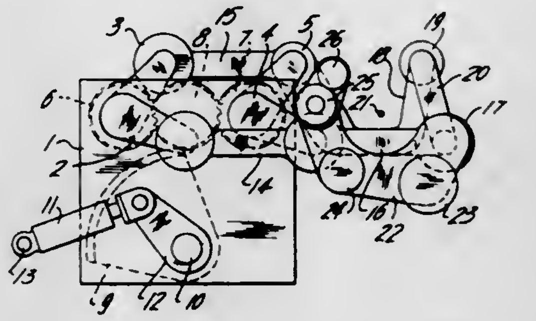
Hubert Elineau, Mont-Saint-Aignan, France, assignor to R. Senard et Fils, Maromme, Seine-Maritime, France

Filed Nov. 23, 1966, Ser. No. 596,680

Claims priority, application France, Nov. 23, 1965, 7,119

Int. Cl. B65b *13/28*

U.S. Cl. 100—27 **9 Claims**



A machine for binding and tieing of a stack of steel rods and similar metallurgical bar-shaped products. A crankshaft with staggered parallel cranks and push rods for rotating of a binding wire guide about the stack of the products, wire cutting and wire ends twisting mechanisms combined with the binding device.

3,527,157

MACHINE DESIGNED TO BIND LOADS

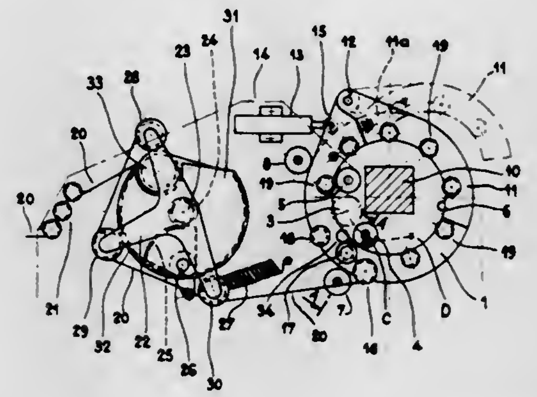
Hubert Jean Elineau, Versailles, France, assignor to R. Senard et Fils, Maromme, Seine-Maritime, France

Filed Feb. 21, 1968, Ser. No. 707,090

Claims priority, application France, Feb. 23, 1967, 7,173

Int. Cl. B65b *13/10*

U.S. Cl. 100—28 **8 Claims**



A machine for tying a load of elongated articles, such as lengths of rolled steel sections, with a steel wire, having a rotating crown wheel which, by encircling the load, wraps the steel wire tightly around the load under the tension provided by a separate tensioning device, cuts the wire off, and ties the free ends together. The tensioning device thereafter pulls the unused length of wire back from the reversely rotated crown wheel.

3,527,158

POSITIVE DISPLACEMENT PRESS

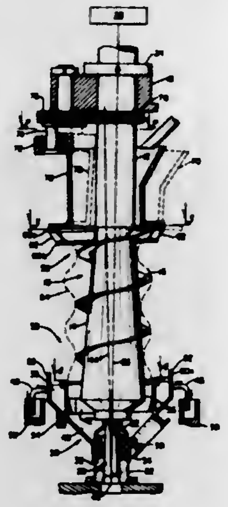
William O. Young, Sugar City, Colorado

Filed June 20, 1968, Ser. No. 738,514

Int. Cl. B30b *9/12, 9/18*

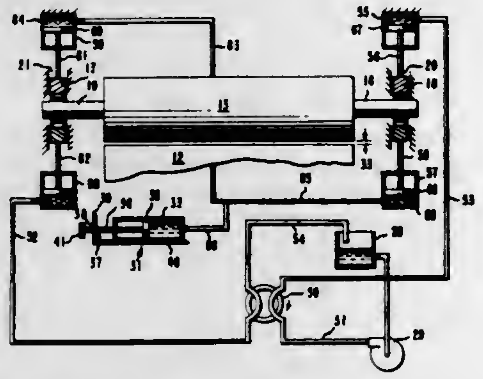
U.S. Cl. 100—117 **10 Claims**

Press for separating liquid from the pulp of vegetable matter which employs a movable screen surrounding a helical vane or screw type rotor, the screen being in the form of a helically twisted surface and gyrating in an orbit around the rotor axis to provide constant clearance between all points on the outer periphery of the vanes and corresponding laterally adjacent points on the inner periphery of the screen.



3,527,159
NIP ROLL APPARATUS

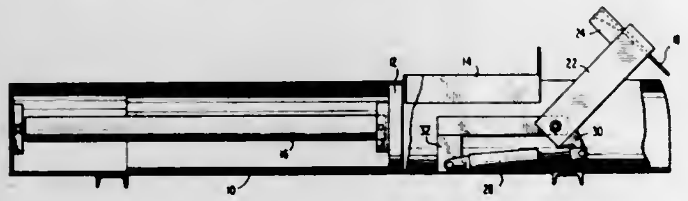
Bernard S. Edwards, Richmond, Virginia, assignor to E. I. du Pont de Nemours and Company, Wilmington, Delaware a corporation of Delaware
Filed March 27, 1968, Ser. No. 716,406
Int. Cl. B30b *3/04*
U.S. Cl. 100—170 **1 Claim**



A nip roll apparatus is provided having a rotatably mounted stationary roll and a cooperatively associated movable roll rotatably and slideably mounted having interconnected double-acting hydraulic cylinders operatively connected to each spindle or bearing shaft thereof whereby both ends of the movable roll may be raised or lowered synchronously without binding the roll assembly and, additionally, permit the movable roll to be canted to a predetermined degree to assure lineal contact between the stationary roll and the movable roll when one roll has a slight taper or to assure lineal contact across substantially the entire width of a product having a tapered transverse profile advancing therebetween.

3,527,160
TRASH COMPACTING APPARATUS

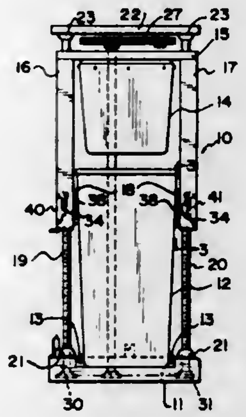
Carl S. Vollmer, 404 N St. SW., Washington, District of Columbia
Filed March 18, 1969, Ser. No. 808,212
Int. Cl. B30b *15/32*
U.S. Cl. 100—218 **3 Claims**



A trash compacting apparatus is disclosed which includes an elongated cylindrical housing with a piston reciprocably mounted therein, the housing having a loading port intermediate its ends and a pivoted end closure for removal of compacted material.

3,527,161
REFUSE COMPACTOR APPARATUS

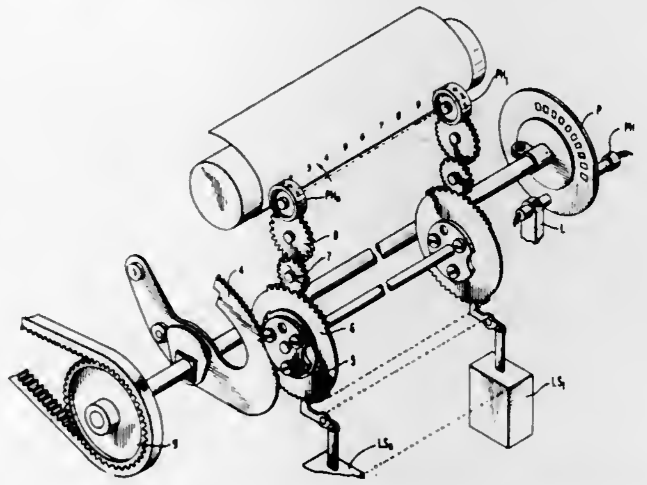
Gordon H. Brown, St. Joseph, Michigan and Robert M. Chandler, St. Joseph, Michigan, assignors to Whirlpool Corporation, a corporation of Delaware
Filed April 29, 1968, Ser. No. 725,058
Int. Cl. B30b *15/00*
U.S. Cl. 100—256 **6 Claims**



A domestic refuse compactor including a receptacle in which household refuse is compacted by a ram to a fraction of its former volume. The ram is operated to compact the refuse with a preselected maximum force by means of a pair of axially fixed rotatable screws axially driving a pair of nuts threadedly mounted thereon. The nuts are yieldably connected to the ram through a corresponding pair of coil springs coaxially about the respective screws. Switches are provided responding to a preselected contraction of the springs corresponding to the preselected maximum force to stop the compaction operation of the ram and cause the ram to be moved reversely to a retracted position completing the compacting operation.

3,527,162
PRINTER DRIVING CIRCUIT FOR ROCKABLY MOUNTED SETTABLE PRINT WHEELS

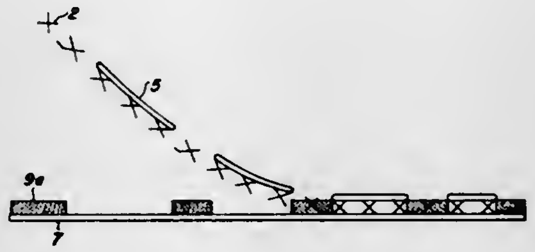
Toshio Kashio, Tokyo, Japan, assignor to Casio Computer Co., Ltd., Tokyo, Japan
Filed Feb. 26, 1968, Ser. No. 708,328
Claims priority, application Japan, March 13, 1967, 42/15,355
Int. Cl. B41j *23/00, 5/00;* **G06f** *1/04*
U.S. Cl. 101—93 **1 Claim**



A printer driving circuit for printing multi-digit decimal numbers stored in a shift register is disclosed. The circuit comprises a single controlling circuit capable of interrogating the rotary position of gang rotated printer wheels, and by this interrogation, each of the stored digits to be printed is interrogated in succession to determine whether the corresponding printer wheel is to be locked or not. By repeating the interrogation cycle for all the digits to be printed each of the printer wheels are locked in predetermined positions. Thus, the control circuit is minimized by using the time division principle.

3,527,163
SILK SCREEN MASTER

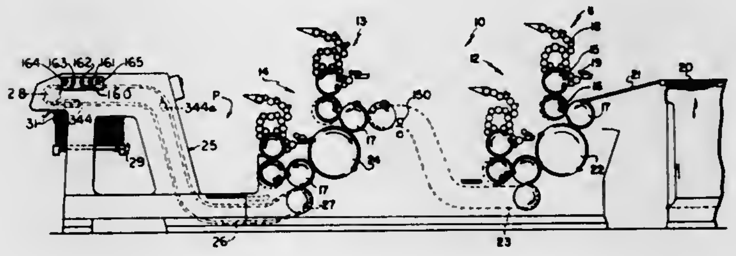
Lloyd F. Bean, Rochester, New York, assignor to Xerox Corporation, Rochester, New York a corporation of New York
Filed April 27, 1967, Ser. No. 634,268
Int. Cl. B41c *1/14*
U.S. Cl. 101—128.4 **6 Claims**



The subject matter of this application pertains to a method of preparing a stencil master utilizing xerographic techniques. A xerographic toner image is transferred to the surface of a screen substrate the interstitial spaces of which have been filled with a resinous filler material. The filler and toner material are selected such that each is soluble in a different solvent. Following fusing of the toner image to the screen the resinous filler material is selectively removed to produce a stencil master. The image sense of the screen may be reversed by applying a second material which will fill the pores of the screen in the non-image areas and then subsequently removing the toner image with a solvent which will not effect the second filler resin.

3,527,164
PROOFING CONTROL SYSTEM FOR A MULTIPLE COUPLE PRINTING PRESS

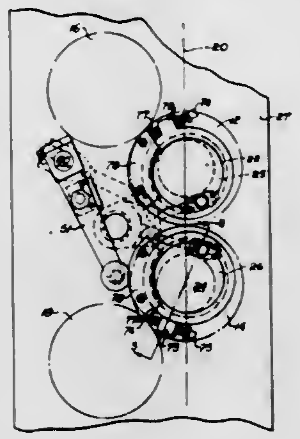
Robert A. Bulk, Seven Hills, Ohio, and Louis P. Toth, Broadview Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 461,795, June 7, 1965, now Patent No. 3,461,798. This application Nov. 15, 1967, Ser. No. 683,380
Int. Cl. B41f *7/06, 7/18, 13/40*
U.S. Cl. 101—137 **7 Claims**



The present invention relates to a multiunit printing press having a plurality of printing units through which material to be printed travels in sequence, and in particular, to a multiunit printing press controlled by an information carrying member having instructions thereon for controlling the operation of printing units between their print and nonprint position and preferably also for controlling a delivery mechanism to deliver sheets to an inspection station.

3,527,165
CYLINDER THROW MECHANISM FOR PRINTING PRESSES

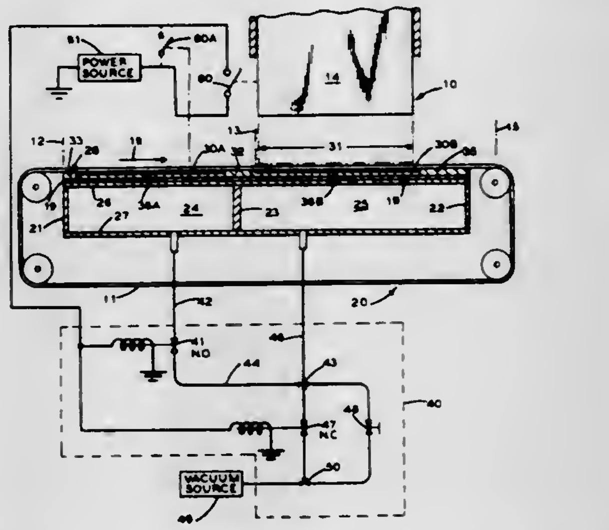
Charles A. Harless, Fort Worth, Texas, assignor to Harris-Intertype Corporation, Cleveland, Ohio a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,754
Int. Cl. B41f *13/28*
U.S. Cl. 101—143 **6 Claims**



An improved printing press includes a cylinder throw mechanism for moving a pair of printing cylinders between a throw on position in which they define a printing nip and a throw off position. The cylinder throw mechanism includes a first eccentric and toggle linkage for operating one of the printing cylinders between the throw on and throw off positions. A second eccentric and toggle linkage is provided for operating the other printing cylinder between the throw on and throw off positions. These toggle linkages are operated in response to operation of a third toggle linkage. This operation of the cylinder throw mechanism moves high points of eccentricity on the two eccentrics through a plane extending through the axes of rotation of the printing cylinders.

3,527,166
VACUUM TABLE SYSTEM FOR PRINTING MACHINE

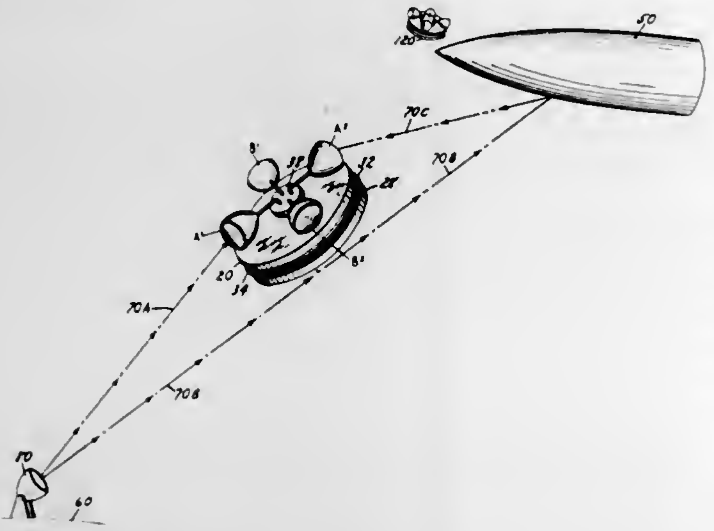
Matthew L. Jaffa, 92 Clark St., Rutherford, New Jersey and David Jaffa, 38–26 Allwood Place, Fairlawn, New Jersey
Filed June 6, 1968, Ser. No. 734,991
Int. Cl. B41f *1/32, 15/20*
U.S. Cl. 101—407 **9 Claims**



A multiple-suction area vacuum table system for use with a printing machine to hold sheet material to be printed against a porous, endless conveyor belt that carries the sheets from a feed station to a printing station and thence to a collection station. The vacuum levels of the suction areas are independently adjustable and are controlled in accordance with the movements of the belt and the printing head so that when the belt is indexed, the vacuum level along the table length is sufficient to hold the sheets flat against the belt without imposing an excessive suction drag thereon, and during the printing operation the vacuum level at the printing station is raised to more firmly grip the sheet being printed so as to prevent any rippling thereof by the action of the squeegee associated with the printing head.

3,527,167
ANTI-BALLISTIC MISSILE SYSTEM

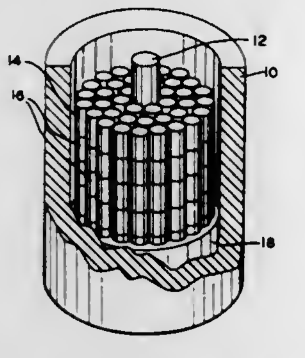
Milton Morse, Teaneck, New Jersey (41 Honeck St., Englewood, New Jersey)
Filed July 17, 1967, Ser. No. 653,725
Int. Cl. B64g *1/10*
U.S. Cl. 102—9 **3 Claims**



Anti-ballistic missiles are deployed in space above the atmosphere over the target area, said missiles omniversally rotate about two separate rotational axes. A radar beam from a direction substantially opposite the direction of an oncoming enemy missile is received by one of a pair of antennas on the anti-ballistic missile which has a shaped charge directed toward a ring of pellets. When the radar beam is reflected from an enemy missile back to another one of the pair of antennas, the shaped charge is detonated and one or more pellets strike the enemy missile, destroy its warhead, detonating mechanism, and/or guidance system far from its target or otherwise so damage the missile that it will fall as a dud.

3,527,168
SOLID PROPELLANT GRAIN CONTAINING METAL MACROCAPSULES OF FUEL AND OXIDIZER

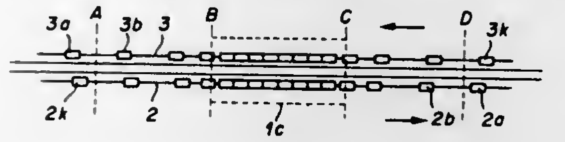
Richard M. McCurdy, East Oakdale Township, Washington County, Minnesota; Norman G. Carlson, White Bear Lake Township, Ramsey County, Minnesota and William S. Friedlander, Hudson, Wisconsin, assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minnesota a corporation of Delaware
Filed Dec. 5, 1960, Ser. No. 073,929
Int. Cl. F42b *5/16, 9/14*
U.S. Cl. 102—101 **14 Claims**



1. A solid composite propellant grain for rocket motors comprising a binder selected from the class consisting of a rubber and a non-brittle resin and, integrally bound in said binder, a multiplicity of individual impermeable metal walled macrocapsules, the contents of said macrocapsules being selected from the class consisting of propellant oxidizers and propellant fuels, the metal walls of said macrocapsules being selected from the class consisting of aluminum, magnesium, zirconium and beryllium.

3,527,169
CONTINUOUS AND ENDLESS PASSENGER TRANSPORT SYSTEM

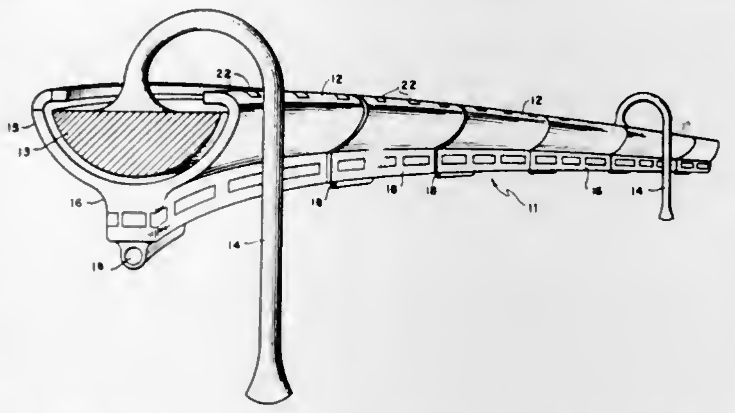
Gabriel Bouladon, Geneva, Switzerland and Paul Zuppiger, Geneva, Switzerland, assignors to The Battelle Development Corporation, Columbus, Ohio a corporation of Delaware
Filed May 8, 1968, Ser. No. 727,391
Claims priority, application Switzerland, May 10, 1967, 6,625/67
Int. Cl. A63g *1/00*
U.S. Cl. 104—25 **15 Claims**



System in which transport units are moved along at least one closed loop guide means with a speed varying between a low value during the journey portions inside the stations, where these units are in a close formation, each contacting the other end-to-end, and a high value during the journey portions outside the stations, where these units are in spaced relationship. Embodiment of the stations, of the transport units, which open and close automatically in these stations, and of the drive means that move the units.

3,527,170
SUSPENDED RAILWAY CAR AERODYNAMICALLY SUPPORTED

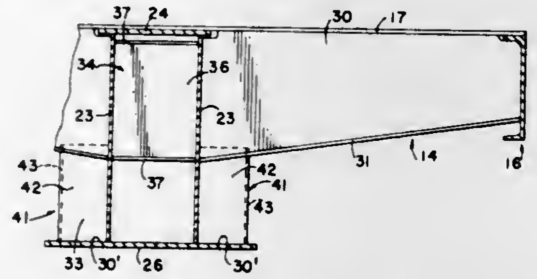
Warner H. Witmer, Apt. J107, Quakertown West Apartments, Quakertown, Pennsylvania
Filed March 26, 1968, Ser. No. 716,238
Int. Cl. B61b *3/02, 13/08;* **B60v** *3/04*
U.S. Cl. 104—89 **6 Claims**



A high speed guided flying transport vehicle for traveling along a guide rail in spaced relation to the guide rail and supported by aerodynamic lift.

3,527,171
RAILWAY CAR CONSTRUCTION

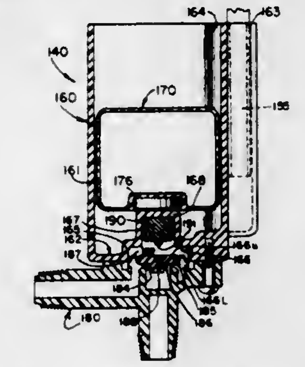
Marvin Stark, Michigan City, Indiana, assignor to Pullman Incorporated, Chicago, Illinois a corporation of Delaware
Filed April 17, 1967, Ser. No. 631,401
Int. Cl. B61f *1/02, 1/08*
U.S. Cl. 105—404 **5 Claims**



A railway car of the bulkhead flat deck type including an underframe having a center sill of generally fish-belly contour and having bolsters and crossbearers extending transversely from the center sill. The crossbearers are each of substantially identical structure and spaced lengthwise of the car and relative to each other in a manner resulting in distributing the stresses uniformly lengthwise of the vehicle. Fixed to the ends of the crossbearers are side sills and attached directly on the crossbearers and to the side sills is a floor formed from sheet metal. Fixed adjacent to the ends of the vehicle are bulkheads. Mounted on the floor overlying the side sills are cargo supporting structures for retaining lumber or the like spaced above and adjacent the side sills.

3,527,172
OVERFLOW CONTROL SYSTEM FOR AUTOMATIC BEVERAGE BREWER

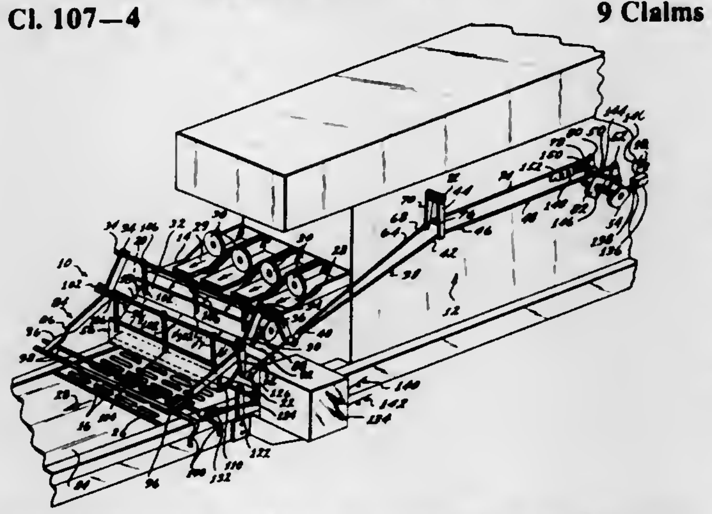
Harvey R. Krueger, Carpentersville, Illinois, and Arthur A. Morgan, Palatine, Illinois, assignors to Reynolds Products, Inc., Rolling Meadows, Illinois a corporation of Illinois
Continuation-in-part of application Ser. No. 708,121, Feb. 26, 1968, now Patent No. 3,443,508. This application Aug. 30, 1968, Ser. No. 756,592
Int. Cl. F16k *31/18*
U.S. Cl. 137—414 **4 Claims**



There is disclosed herein an overflow control system for use in an automatic beverage brewer or the like, comprising, in combination, a tank for holding fluid therein, discharge means associated with the tank for discharging fluid therefrom, fluid inlet means including first valve means for introducing fluid into the tank when the first valve means is in an open position, means for operating the first valve means to the open position, means for operating the first valve means to a closed position after a predetermined quantity of fluid has been introduced into the tank, and magnetically controlled valve means disposed in the fluid inlet means and having a normally open position permitting fluid to flow therethrough and into the tank so long as the first valve means is in the open position and having a closed position preventing the flow of fluid to the tank, the magnetically controlled valve means being operable to the closed position thereof in response to the introduction into the tank of a quantity of fluid in excess of the predetermined quantity, thereby to prevent flooding of the tank.

3,527,173
DOUGH PANNING DEVICE

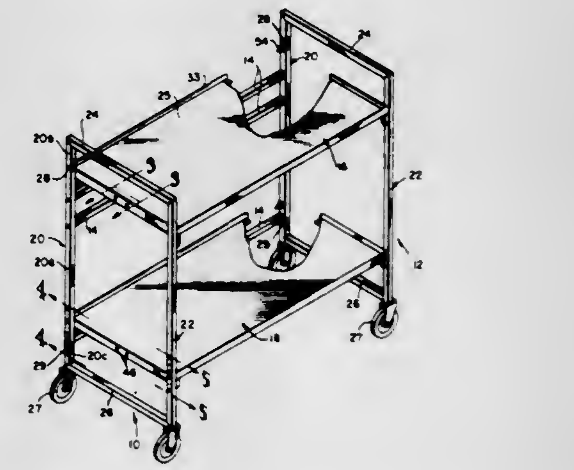
Wallace C. Mullvain, Sr. West Covina, California; John Joch, Jr. West Covina, California, and Norman R. Matheus, West Covina, California, assignors to J/G Researched Products, Inc., Los Angeles, California a corporation of California
Filed June 21, 1968, Ser. No. 738,921
Int. Cl. A21c *7/04*
U.S. Cl. 107—4 **9 Claims**



Open-topped mold means is rotatably mounted intermediate the discharge end of a panning-machine discharge chute and the baking pans for receiving dough pieces from the chute, vibrating the dough pieces to properly position them in the mold means and dropping the dough pieces into the pans.

3,527,174
FOLDABLE SERVING CART

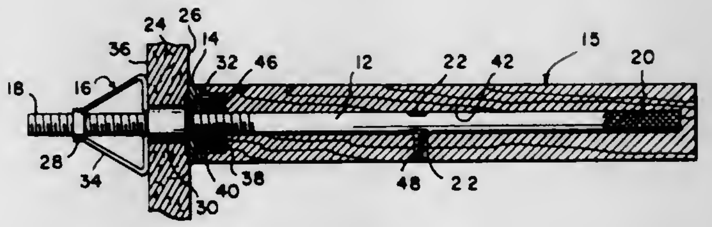
Ralph B. Lay, Columbus, Indiana, assignor to Hamilton Cosco, Inc., Columbus, Indiana a corporation of Indiana
Filed Oct. 11, 1968, Ser. No. 766,776
Int. Cl. A47b *3/00*
U.S. Cl. 108—115 **8 Claims**



A foldable serving cart in which there is provided a pair of end frames interconnected along one side of the cart and swingable about a pair of vertical axes between an overlapping retracted position and a parallel extended position. A pair of shelves are swingably interconnected to the end frames at said one side of the cart on vertically spaced horizontal axes. The shelves are swingable about said horizontal axes between an overlapping generally vertical retracted position and an erected position in which they are disposed in parallel horizontal planes and supported by the sides of said end frames remote from said one side of the cart.

3,527,175
SHELF

Bertram H. Kapnek, Wyndmoor, Pennsylvania (8106 Douglas Road, Philadelphia, Pennsylvania
Filed April 11, 1968, Ser. No. 720,617
Int. Cl. A47b *5/00*
U.S. Cl. 108—152 **14 Claims**

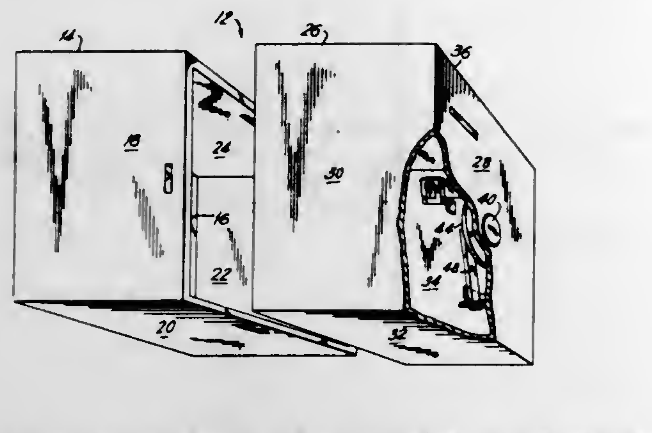


A shelf assembly wherein a shelf is supported by a plurality of rods secured to a wall by load distributing means in the rear side of the wall. The rods are received within channels in the shelf and are completely hidden in use.

3,527,176
SAFE FOR USE IN CONJUNCTION WITH A VEHICLE

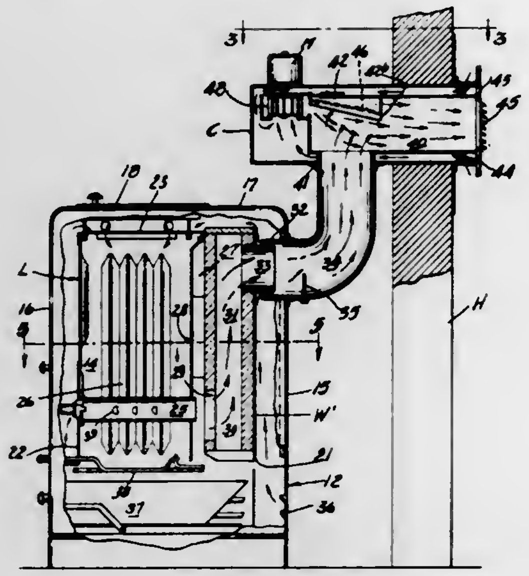
William M. Losapio, 181 Frederick St., Yonkers, New York
Filed Aug. 19, 1968, Ser. No. 753,427
Int. Cl. E05g *1/00*
U.S. Cl. 109—57 **7 Claims**

A safe for use in conjunction with a vehicle, such as a taxicab, wherein a first open box is secured to the frame of the vehicle and a second open box of a larger size is provided to nest over the first box, with a locking mechanism mounted on the outer box to lock the two boxes together. A slot is provided in the second box to allow the driver of the vehicle to deposit money in the safe while he is working.



3,527,177
SMOKELESS AND ODORLESS DOMESTIC INCINERATORS

Phillip G. La Rue, Bay City, Michigan, assignor to Calcinator Corporation, Bay City, Michigan a corporation of Michigan
Filed Jan. 4, 1968, Ser. No. 695,634
Int. Cl. F23g *3/00*; **F23l** *9/04*
U.S. Cl. 110—8 **12 Claims**

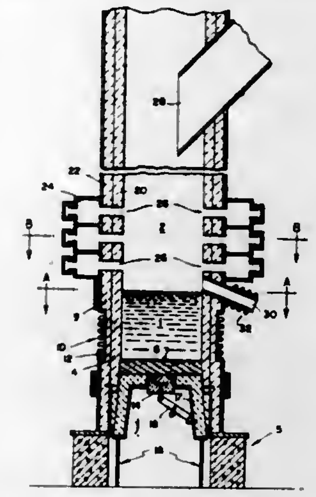


Smokeless and odorless domestic incinerators for burning garbage and other household refuse including means for limiting the stack temperature to an acceptable level, thereby eliminating the need for an overly insulated chimney. Means are provided to pass a cooling medium across the stream of combustion by-products, thereby tending to extinguish flame and cool the combustion by-products.

3,527,178
APPARATUS FOR THE DESTRUCTION OF REFUSE

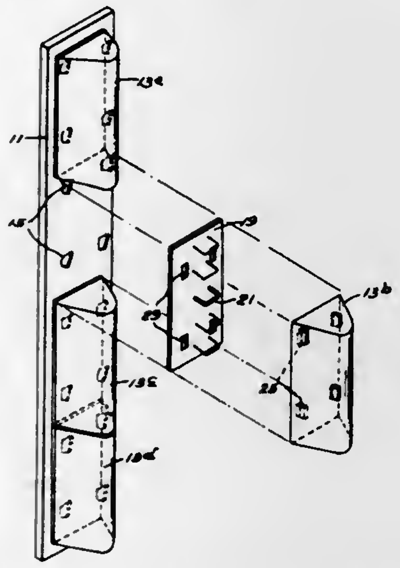
Kenneth J. Southwick, Quincy, Massachusetts, assignor to Pyro-Magnetics Corporation, Needham, Massachusetts a corporation of Massachusetts
Filed Dec. 24, 1968, Ser. No. 786,685
Int. Cl. F23g *5/08*
U.S. Cl. 110—8 **18 Claims**

A novel apparatus useful for the incineration of refuse material. Essentially, the apparatus involves an integration of structural elements to provide adjacent first and second zones. The first zone is a heat generating zone in which electrical heating means are employed to heat a mass of material disposed therein thereby providing a high temperature environment for a second zone communicating therewith. The second zone is the incineration zone and comprises means to introduce refuse material thereto and means to introduce fluids thereto which promote and/or support the incineration of the refuse material. The products of incineration are continuously discharged from the incinerator by way of either the gases flowing therefrom or by way of removal means located at or near the boundary of the first and second zones.



3,527,179
REFRACTORY LINERS AND METHOD FOR ATTACHING SUCH LINERS TO COKE OVEN DOORS

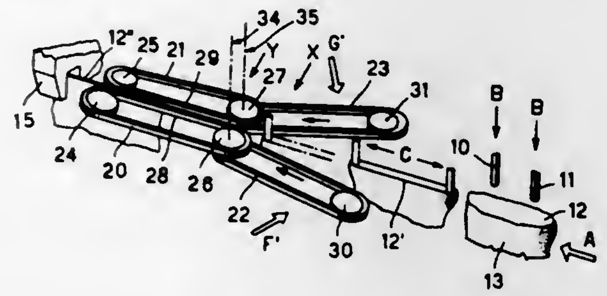
James D. Little, Pittsburgh, Pennsylvania, assignor to Koppers Company Inc., a corporation of Delaware
Filed Aug. 27, 1968, Ser. No. 755,695
Int. Cl. F23m *7/00*
U.S. Cl. 110—173 **2 Claims**



Refractory lining for a coke oven door is hung on the surface of the door facing the coke oven chamber in such a way that the weight of the lining maintains it in place.

3,527,180
DEVICES FOR TRANSPORTING AND FEEDING SACKS AND SIMILAR NONRIGID CONTAINERS INTO SEWING MACHINES FOR THEIR SEALING

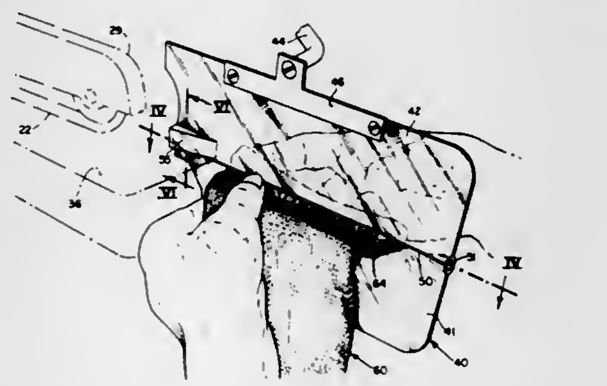
Renzo Giuseppe Cerioni, Corso Venezia 10, Milan, Italy
Filed Oct. 10, 1968, Ser. No. 766,576
Claims priority, application Italy, Feb. 28, 1968, 13,316/68
Int. Cl. D05b *13/02*
U.S. Cl. 112—11 **8 Claims**



A device for feeding sacks and nonrigid containers to sewing machines for the sealing of their mouths, ensuring a suitable stretching and flattening of the mouths for the sealing. The device comprises two sets of conveyors in sequence, with swingable mounting of the initial conveyor and spring biased to closed position, and a power drive to override the bias under control of sensing devices for the sack mouth.

3,527,181
FABRIC GUIDING MEANS FOR SEWING MACHINES

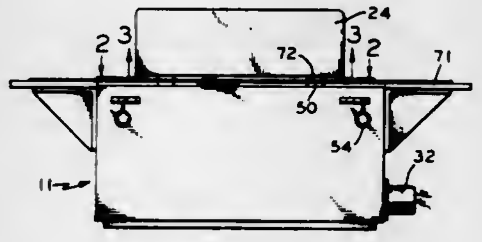
Howard L. Beamon, Winston-Salem, North Carolina, assignor to Hanes Corporation, Winston-Salem, North Carolina, a corporation of North Carolina
Continuation-in-part of application Ser. No. 700,424, Jan. 25, 1968. This application June 25. 1968, Ser. No. 744,249
Int. Cl. D05b *7/00, 27/00, 35/00*
U.S. Cl. 112—27 **3 Claims**



A method of closing the toe of ladies seamless stockings is disclosed in which a bead is knit circumferentially in the toe portion of the stocking inward of the ravel guard and parallel to a course. The operator flattens the toe so that one half (180°) of the bead is adjacent the other half. The operator inserts the adjacent bead halves into a slotted guide tube which leads to the working station. The working station may be the cutting and sewing positions of a sewing machine, or may be a looping position on a looping machine. In the case of the sewing machine, the cutter trims the stocking fabric along the bead on the inward side thereof, and the fabric is then immediately sewn together along the trimmed edge.

3,527,182
SEWING MACHINE

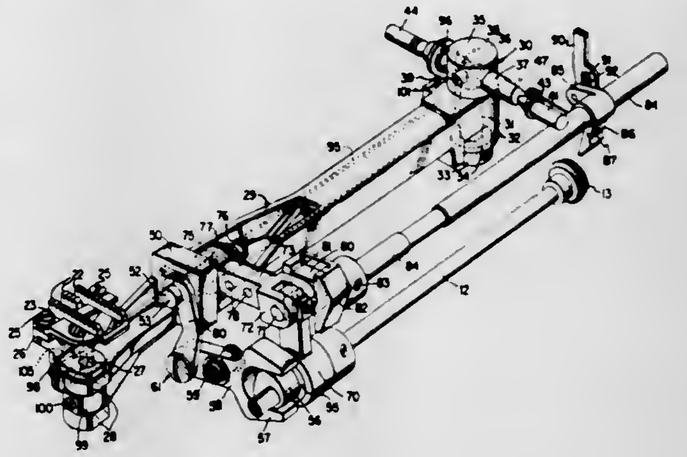
Michael Grundfest, 99-41 64th Ave., Forest Hills, New York
Filed Nov. 25, 1968, Ser. No. 778,595
Int. Cl. D05f *27/10*
U.S. Cl. 112—214 **5 Claims**



A sewing machine having a flat bed providing a work support and having sewing elements operating above and below the work, a top structure supporting the sewing elements above the work piece and which can be raised clear of all contact with a fixed lower structure, the structures having pairs of cooperating upper and lower rollers with the work piece positioned therebetween, the lower rollers driving the upper rollers by frictional contact while feeding the work piece, the upper rollers having a driving connection with the upper sewing elements, a motor driven shaft in the lower structure with a driving connection with the lower rollers and with the sewing elements below the base, and electromagnetic means for registering the movable structure with the fixed lower structure.

3,527,183
WORK FEEDING MECHANISMS FOR SEWING MACHINES

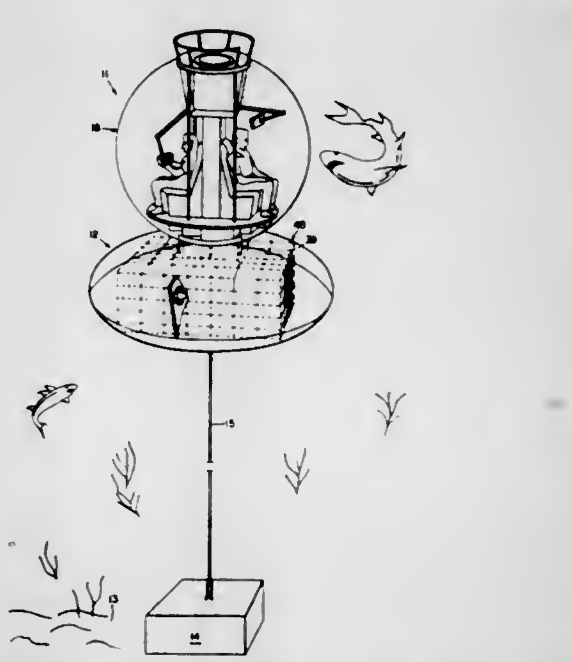
Jan Szostak, Linden, New Jersey, and Hilmar Wittler, Karlsruhe-Hagsfeld, Germany, assignors to The Singer Company, New York, New York a corporation of New Jersey
Filed Feb. 25, 1969, Ser. No. 801,951
Int. Cl. D05b *27/02*
U.S. Cl. 112—215 **5 Claims**



A sewing machine work feeding mechanism of the drop feed variety is disclosed in which an elongate feed bar is carried at one extremity in gimbals in the sewing machine frame and at the other extremity has a work engaging feed dog pivoted thereto. Connected to the feed dog is an anchor link extending substantially parallel to the elongated feed bar so that during work feed advance oscillation of the feed bar, the feed dog will be constrained substantially parallel with the direction of feed of the work.

3,527,184
EDREOBENTHIC MANNED OBSERVATORY FOR UNDERSEA RESEARCH

Richard G. McCarty, Sioux Falls, South Dakota; James G. Moldenhauer, Sioux Falls, South Dakota and Jerry D. Stachiw, Oxnard, California, assignors to the United States of America as represented by the Secretary of the Navy
Filed July 20, 1966, Ser. No. 566,694
Int. Cl. B63c *11/34, 11/00, 11/40*
U.S. Cl. 114—16 **16 Claims**



A self-contained positively buoyant observatory having panoramic visibility. It is formed of transparent wall material. Special strengthening members are provided and it is adapted to house personnel and equipment for sustained marine observation. It is normally anchored to the ocean floor. An anchor line is connected to a winch within the observatory and permits the same to be moved up or down at the discretion of the occupants.

3,527,185

METHOD OF JOINING FLOATING HULL STRUCTURES

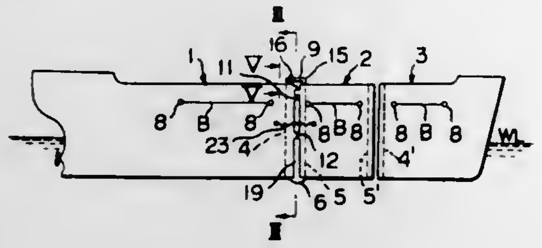
Kazuyoshi Yamada, Tokohama-shi, Japan, and Juro Doi, Tokohama-shi, Japan, assignors to Matsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed April 4, 1968, Ser. No. 718,661

Claims priority, application Japan, April 28, 1967, 42/27,262

Int. Cl. B63b *3/02*

U.S. Cl. 114—77 **1 Claim**



A plurality of hull parts of a structure floating on the water such as the hull of a ship are joined together when the parts are floated in the water by initially interconnecting the parts with the use of interfitting elements which permits transverse and vertical movement between the two parts but fixes the longitudinal positions. The hull parts are subjected to ballasting and alignment after the initial fittings have been effected in order to provide accurate final alignment of the two hull parts and thereafter the two hull parts are drawn together and then joined together by welding.

3,527,186

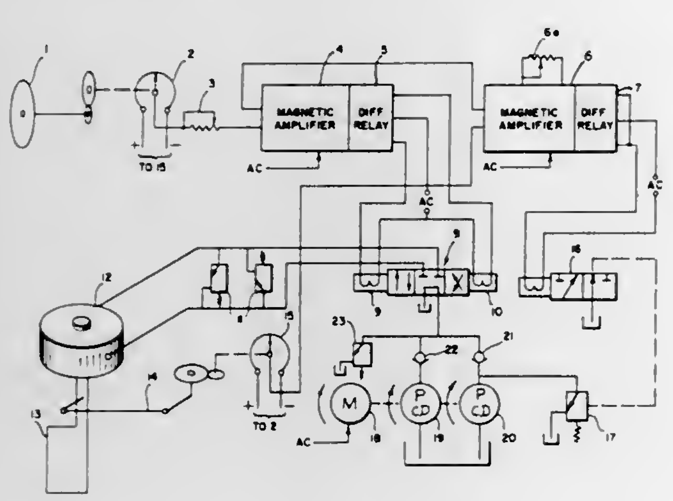
VARIABLE RATE ELECTROHYDRAULIC ACTUATOR SYSTEMS, PARTICULARLY FOR SHIP'S STEERING AND/OR PROPELLER PITCH CONTROL

Peder K. Wennberg, Sands Point, New York; Uffe Hornsyld, Huntington, New York and Francis West, Jr., Sea Cliff, New York, assignors to Propulsion Systems, Inc., Port Washington, New York a corporation of New York

Filed June 14, 1968, Ser. No. 737,224

Int. Cl. B63h *25/00*

U.S. Cl. 114—144 **22 Claims**



A variable rate electrohydraulic actuator system drives a ship's hydraulic steering motor and/or propeller pitch control motor at variable rates. Magnetic amplifiers of different output sensitivities have their inputs connected preferably in series with the command signal source but respond selectively thereto, such that each amplifier and its associated relay will cut in an associated constant delivery pump so as to drive the hydraulic motor at the rate indicated by the command signal. The amplifiers are arranged in a D.C. bridge circuit formed by command and feedback potentiometers. In the pitch changing system, the bridge further includes a rheostat which is set by a propulsion engine governor so as to be indicative of the load condition on the engine. Under overload conditions, the rheostat biasses the circuit in a pitch reducing sense. The electrical location of the rheostat in the circuit is automatically changed upon going from forward to astern pitch, or vice versa. A single command lever is operative to drive programmed cams which vary both engine speed and propeller pitch in accordance with a predetermined program. Especially in the pitch changing system, the distributor valve for the hydraulic motor comprises a servo valve which is hydraulically stroked by a pilot valve, and the spool of the servo valve is connected to the ported sleeve of the pilot valve so as to ensure precise followup.

3,527,187

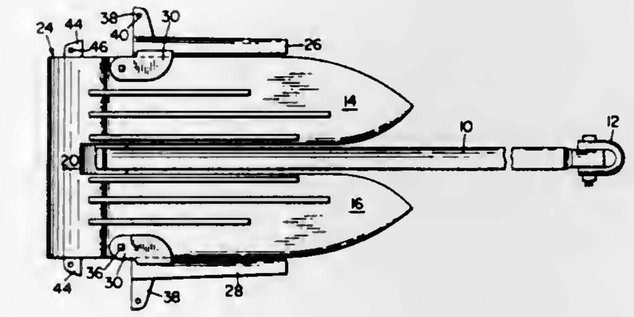
ANCHOR WITH FOLDING STABILIZERS

Richard C. Towne, 822 W. Roderick Ave., Oxnard and Johnnie V. Stalcup, 146 Alvarado St., Meiners Oaks, California

Filed Sept. 25, 1968, Ser. No. 762,552

Int. Cl. B63b *21/36*

U.S. Cl. 114—208 **3 Claims**



In an anchor construction of the type wherein a pair of fluke arms are journaled at the end of a shank the improvement which consists in providing stabilizers hinged to the outside edge of each fluke and constituting an extension of the tripping palm surfaces. Each stabilizer is moveable from a retracted shipping and storage position closely abutting the outer edge of the fluke to an extended operating position in substantial alignment with the fluke trunion. Means is provided to lock the stabilizer arms in their extended positions.

3,527,188

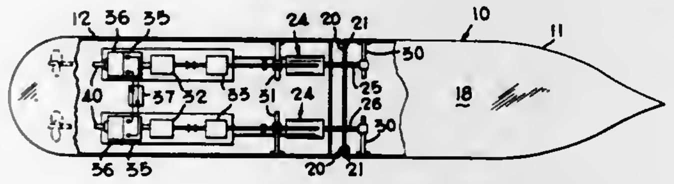
POWER-PRODUCING MEANS FOR VESSELS

John D. Shepard, Rte. 1 P.O., Box 10, Troy, Illinois, and Norman D. Shepard, Rte. 1 P.O., Box 10, Troy, Illinois

Filed June 13, 1968, Ser. No. 736,692

Int. Cl. B63h *19/02*

U.S. Cl. 115—4 **4 Claims**



The power-producing means includes front and rear hull portions of a vessel coupled together by a transversely disposed hinge member. A pair of plunger and cylinder assemblies are vertically spaced from the hinge, each plunger being attached to one portion of the hull and each cylinder being attached to the other portion of the hull. The plungers are received within the cylinders as the hull portions rotate about the hinge member in response to the undulating motion of the water whereby to translate such energy motion into useful work.

3,527,189

LOW PRESSURE TIRE INDICATING MECHANISM

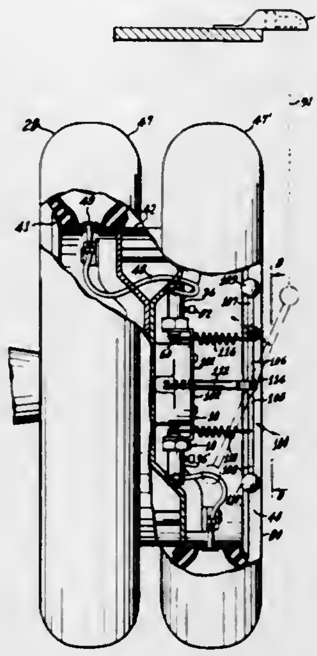
Mark J. Perry, Box 187, Star Rte., Fort George, Florida

Filed Nov. 14, 1967, Ser. No. 682,899

Int. Cl. B60c *23/04*

U.S. Cl. 116—34 **9 Claims**

A low pressure tire indicating mechanism for a vehicle pneumatic tire assembly including pressure responsive device attached thereto for rotation therewith and a flag movable between an inoperative position within the tire rim cavity and an operative position extending beyond the tire sidewall and into the view of the vehicle driver while operating the vehicle. A hose is connected between the pressure responsive device and the tire valve tube whereby the pressure therein is at the same pressure as the tire. The pressure responsive device includes a retractable plunger for releasably engaging the flag and a spring is provided to force the flag into its operative position when released by the plunger. The pressure responsive device includes a spring for biasing the plunger against a diaphragm and an adjustable means for altering the point at which the plunger releases the flag. A light is provided adjacent the tire assembly for illuminating the flag when in its operative position.



3,527,190

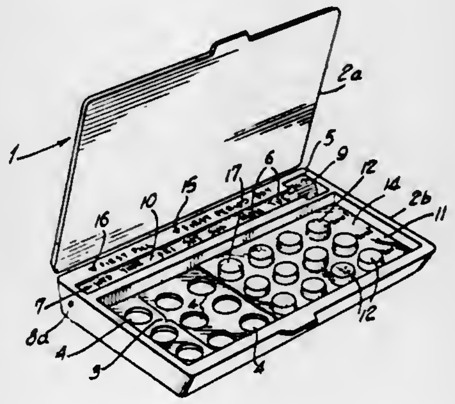
TABLET DISPENSING DEVICE

Charles M. Huck, Bound Brook, New Jersey, assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

Filed March 8, 1968, Ser. No. 711,683

Int. Cl. G09f *9/00;* **B65d** *83/04*

U.S. Cl. 116—121 **1 Claim**



A preferred embodiment of a series of tablet dispensers is disclosed having a base containing seven columns of tablet locations and a cylindrical member rotatably mounted in the base and containing on its surface seven series of indicia of time. Each series is axially disposed and includes an indicia for each day of the week arranged sequentially with respect to time. The indicia of each series are spaced so that each indicia is registerable with a column of tablet locations. The seven series of such indicia are arranged circumferentially of the cylindrical member and each series begins with an indicia representing a different day of the week.

In using the dispenser, the cylindrical member is rotated until the day on which the first tablet is to be taken registers with the first column of tablet locations. When the indicia representing the appropriate day is registered with the first column of tablet locations, the indicia representing subsequent days register with the other columns of tablet locations.

3,527,191

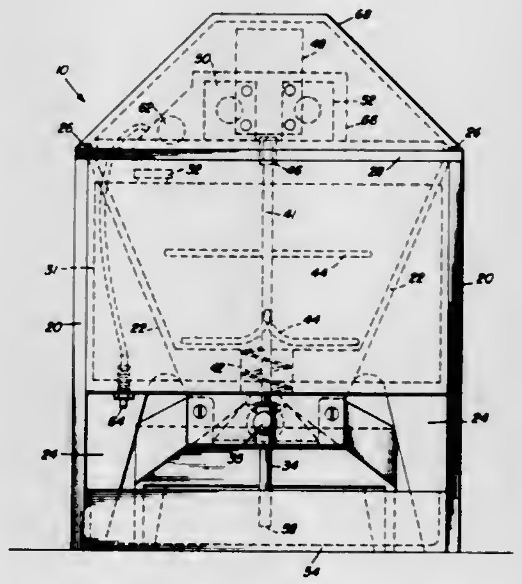
AUTOMATIC PET FEEDING AND WATERING DEVICE

Ralph E. Kawecki, 92 Pinehurst Ave., New Britain, Connecticut, and Carl Zimmitti, 47 Sbona Road, Kensington, Connecticut

Filed Dec. 2, 1968, Ser. No. 780,379

Int. Cl. A01k *5/00, 7/00*

U.S. Cl. 119—51.11 **9 Claims**



This invention is an automatic, stable, pet feeding and watering device that dispenses food and water at predetermined intervals, and that is very stable against being accidentally overturned by the feeding pet. It may be made in any size for any type of pet, whether a cat, dog, horse, or even small enough to be put inside a bird cage. It consists of a feed hopper, a water tank and a timed motor for feeding food and water from the hopper to a food pan and from the tank to a watering trough, the hopper having plane sides tapering inwardly and downwardly, with supporting legs at each corner, and the watering trough and food pans are each placed between two adjacent legs. Also, heating means may be present, actuated by a thermostat when the temperature drops.

3,527,192

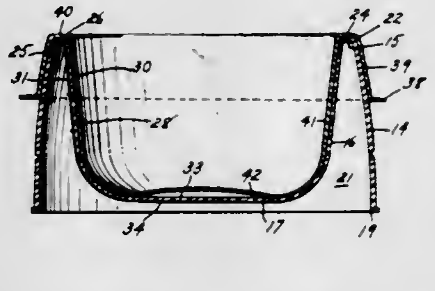
PET FEEDER BOWL HAVING REPLACEABLE INSERT

Thomas Ferrara, 1154 Webster Ave., New Rochelle, New York

Filed Sept. 25, 1968, Ser. No. 762,407

Int. Cl. A01k *5/00*

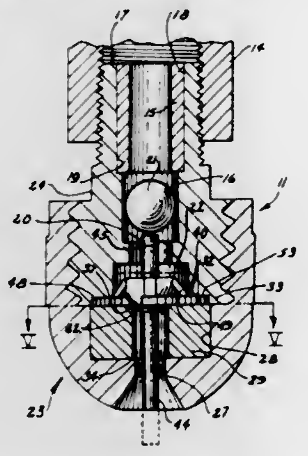
U.S. Cl. 119—61 **2 Claims**



A pet feeding bowl including a relatively rigid base element defining a cavity, and a replaceable insert or liner selectively engageable therewith, the liner being formed as a result of vacuum molding wherein a central portion thereof is of reduced thickness and increased flexibility as compared with side walls to which it is attached, insertion of the insert element into the cavity in the base element, causing air trapped therebetween to flex the thinner portion of the insert to form a pocket of air therebetween which facilitates removal of the insert element after use.

3,527,193
ANIMAL ACTUATED DRINKING VALVE WITH CHECK

William R. Smith, Kalamazoo, Michigan, assignor to The Upjohn Company, Kalamazoo, Michigan a corporation of Delaware
Filed Sept. 11, 1967, Ser. No. 666,788
Int. Cl. A01k *7/00*
U.S. Cl. 119—72.5 **5 Claims**



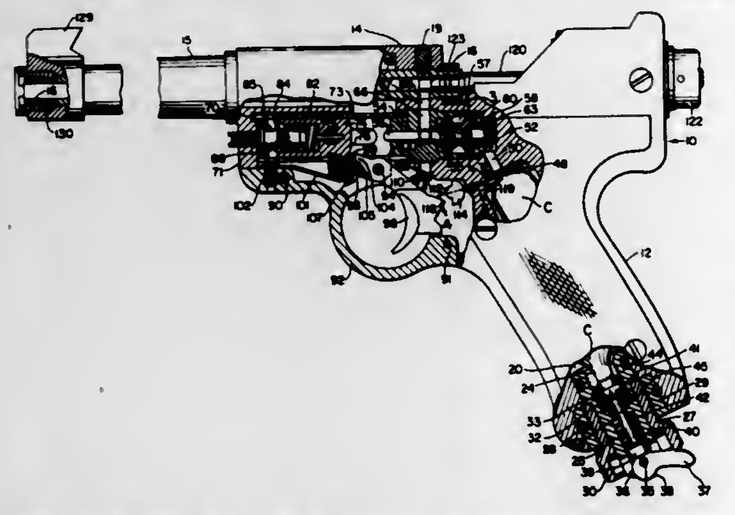
A valve assembly having first and second separable body parts with coaxial and communicating passageways therethrough and having a valve mechanism disposed within said passageways. The valve mechanism includes first and second annular and spaced checkvalve seats in the passageway of the first body part and checkvalve means therebetween adapted to engage and close one of said checkvalve seats at a time. Said valve mechanism also includes an annular valve seat in the passageway of the second body part and a valve means engageable with said valve seat for closing same. Means projecting from said valve means is engageable with said checkvalve means for obstructing its movement into a closed position in the checkvalve seat adjacent to said valve means when said first and second body parts are connected together.

ERRATA

For Classes 122—136 thru 123—149 see:
Patent Nos. 3,527,260 thru 3,527,266

3,527,194
GAS-POWERED PISTOL

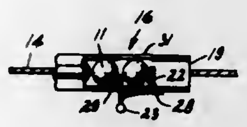
John F. Vadas, Webster, New York, and Donald A. Desrochers, Rochester, New York, assignors to Crosman Arms Company, Inc., Fairport, New York a corporation of New York
Filed March 20, 1967, Ser. No. 624,435
Int. Cl. F41b *11/06*
U.S. Cl. 124—11 **9 Claims**



The pistol hand grip has a chamber holding a gas cartridge. This chamber is connected to a valve chamber. The valve chamber is connected to the gun barrel to deliver the gas behind a projectile therein. When the valve is seated it stops flow of gas to the barrel. A spring-activated hammer aligned with the valve, when released, opens the valve. A primary sear pivoted on the trigger and spring-pressed to holding position, holds the hammer cocked. A secondary sear integral with the trigger prevents accidental firing until the trigger is positively tripped. A screw permits fine adjustment of the primary sear.

3,527,195
BOW DEVICE FOR SHOOTING PROJECTILES

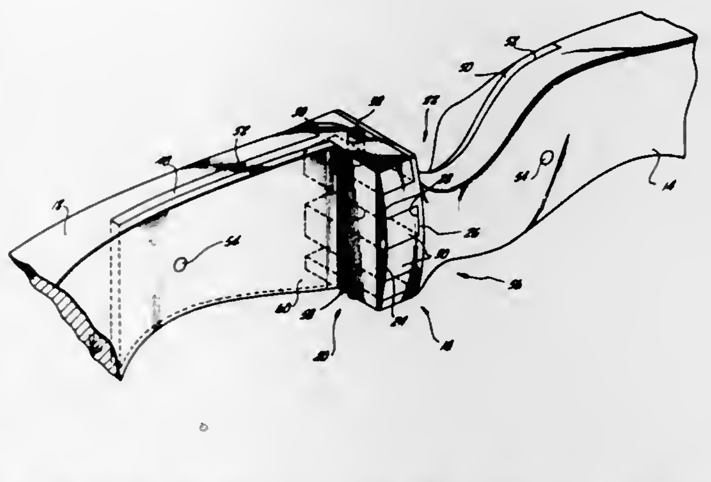
Martin L. Corio, 237 Princeton Ave., Jersey City, New Jersey
Filed May 31, 1967, Ser. No. 642,589
Int. Cl. F41b *5/00*
U.S. Cl. 124—23 **2 Claims**



A bow device for shooting projectiles such as pellets comprising a cross-bow having a double bow string connected across the ends thereof and stabilizing means joining the bow and string at intermediate points. A magazine is mounted between the double strings at a central point, the magazine holding a plurality of pellets for rapid feed to a firing position in the magazine. The magazine comprises a grip member which is retractable to allow a pellet to be moved by gravity into firing position.

3,527,196
DETACHABLY CONNECTED ARCHERY BOW LIMBS WITH ENGAGING BODY MEMBERS

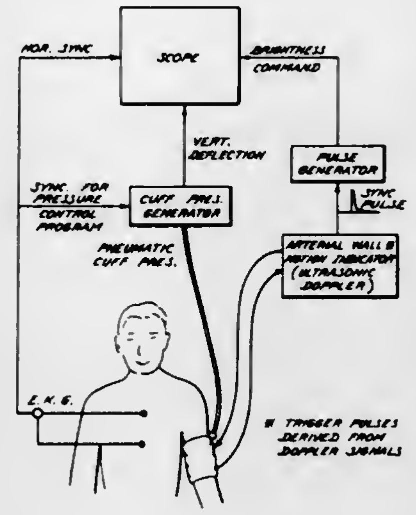
Richard S. Karbo, Whittier, California, assignor to The Leisure Group, Inc., Los Angeles, California a corporation of California
Filed Jan. 24, 1968, Ser. No. 700,080
Int. Cl. F41b *5/00*
U.S. Cl. 124—24 **12 Claims**



A two-piece archery bow having a pair of bow limbs disposed in an end-to-end relationship and joined together by a coupling member rigidly secured to each limb. The coupling members include alternating grooves and ribs with complementary configurations to engage each other. A mounting bolt is inserted in a bore extending through both members when they are aligned with each other to maintain the members and the limbs in alignment and prevent any movement between them. A pivot pin is provided through the coupling members to permit pivoting of the bow limbs with respect to each other when the mounting bolt has been removed.

3,527,197
INDIRECT BLOOD PRESSURE MEASUREMENT

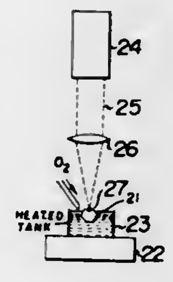
Ray W. Ware, San Antonio, Texas; Charles J. Laenger, San Antonio, Texas and Thomas E. Owen, San Antonio, Texas, assignors to Southwest Research Institute, San Antonio, Texas, a trust estate of Texas
Filed April 19, 1966, Ser. No. 543,569
Int. Cl. A611 *5/02*
U.S. Cl. 128—2.05 **11 Claims**


HOR. SYNC
SCOPE
BRIGHTNESS COMMAND
VERT. DEFLECTION
PULSE GENERATOR
SYNC. FOR PRESSURE CONTROL PROGRAM
CUFF PRES. GENERATOR
SYNC PULSE
PNEUMATIC CUFF PRES.
ARTERIAL WALL ※ MOTION INDICATOR (ULTRASONIC DOPPLER)
E. K. G.
※ TRIGGER PULSES DERIVED FROM DOPPLER SIGNALS

An indirect blood pressure measurement method and apparatus having a mechanism for externally occluding an artery with calibrated pressure, and detecting arterial wall motion coincident with the opening and closing of the artery in response to coaction of arterial pressure with occluding pressure. In the preferred embodiment, ultrasonic energy is directed to the artery and the ultrasonic Doppler technique is utilized for detecting the arterial wall motion.

3,527,198
METHOD AND APPARATUS FOR WORKING DIAMONDS BY MEANS OF LASER LIGHT BEAM

Takashi Takaoka, Kawasaki-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan a corporation of Japan
Filed March 23, 1967, Ser. No. 625,437
Claims priority, application Japan, Mar. 26, 1966, 41/18,488; Apr. 12, 1966, 41/22,684, 41/22,685, 41/22,686
Int. Cl. B28d *5/00;* **B23k** *9/16*
U.S. Cl. 125—30 **4 Claims**

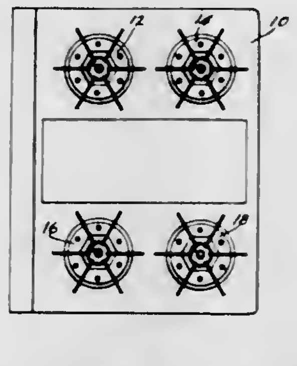


Method and apparatus for working diamonds wherein a diamond to be worked is disposed in a medium containing larger quantity of oxygen than air, and a concentrated laser light beam is projected upon the diamond.

3,527,199
GAS BURNER APPARATUS

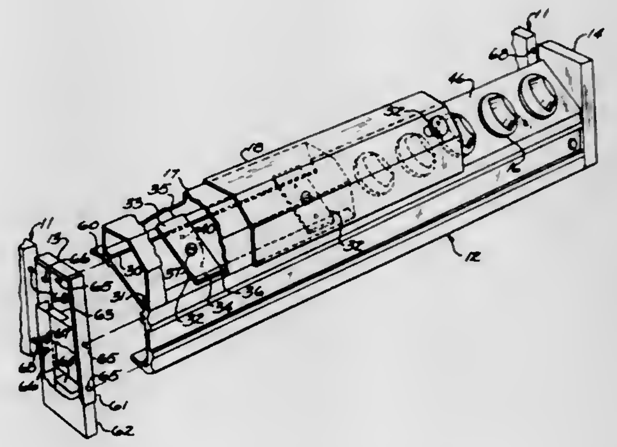
Edward H. Perry, Parma, Ohio; John P. Mackin, Jr., Fairview Park, Ohio; and Kenneth J. Harwood, Cleveland, Ohio, assignors to American Gas Association, Inc., New York, New York a corporation of New York
Filed April 19, 1968, Ser. No. 722,622
Int. Cl. F24c *3/04*
U.S. Cl. 126—39 **9 Claims**

A gas-range top burner apparatus in which the burner is located beneath the range-top heating area and comprises radiant burner means spaced about a chamber beneath the heating area and communicating therewith, the radiant surfaces of the burner means facing inwardly of the chamber and generally opposing each other so as to produce intense heat in and above the chamber. In one form, portions of the radiant surfaces of the burner means are subject to substantial contamination by spillage from above, and are positioned so as to be radiantly heated to incinerating temperatures by other portions of the radiant surfaces which are protected from spillage, thereby to provide self-cleaning. Preferably the interior of the radiant burner means comprises vertical or slanted porous ceramic tile surfaces supplied with gaseous fuel at their outer sides so as to be heated to radiance by gas combustion at their inner surfaces, the upper portions of the ceramic tiles being protected from food spillage by an intervening spillage shield, and the temperatures produced at the contaminated radiant burner surfaces by the uncontaminated radiant burner surfaces are high enough to cause incineration of the contaminating material and thereby provide self-cleaning. The burner configuration may also be used advantageously in applications in which the burner chamber is closed off from the source of contamination by glass or the like.



3,527,200
RANGE CONTROL PANEL ASSEMBLY

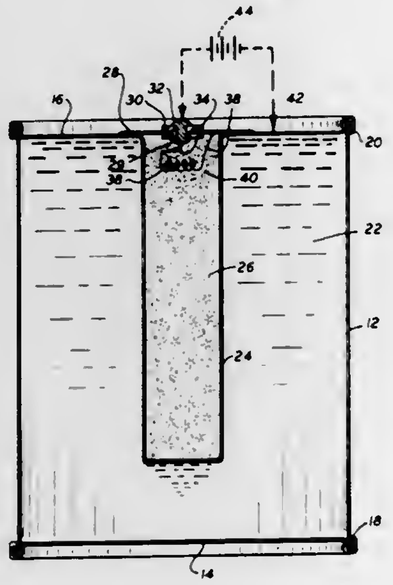
Albert L. Baltz, Millstadt, Illinois, and Elmer E. Voeke, Belleville, Illinois, assignors to Eagle Range & Manufacturing Company, Belleville, Illinois, a corporation of Illinois
Continuation-in-part of application Ser. No. 765,394, Oct. 7, 1968. This application April 10, 1969, Ser. No. 814,911
Int. Cl. F24c *3/12*
U.S. Cl. 126—42 **13 Claims**



The range control panel assembly includes an elongate control panel, and inner and outer covers mounted on the panel in telescopic relation to each other. The inner cover is frictionally held in place at one end of the control panel by a guide plate which overlaps seating lips provided on the inner cover. The outer cover is provided with tongues which are slidably engageable within compatible grooves provided on the control panel. End caps are attached to each end of the control panel and are adapted to mount the assembly to a range.

3,527,201
SELF-HEATING CONTAINER

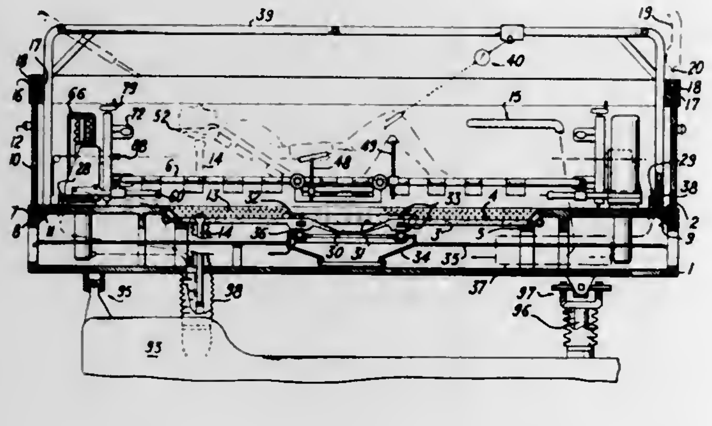
Isidore Epstein, New Hyde Park, New York (c/o Creatron Services, Inc., 32 Cherry Lane, Floral Park, New York)
Filed Oct. 24, 1968, Ser. No. 770,316
Int. Cl. A47g *23/04;* **F24j** *1/00*
U.S. Cl. 126—263 **3 Claims**



The present invention provides a self-heating container for food that is obtained by reacting an aluminothermic mixture enclosed in a well in the container. This mixture is ignited by passing an electromotive force through a metal filament in the well which is positioned in contact with a starter mixture.

3,527,202
MEDICAL APPARATUS FOR TRANSPORTATION, TREATMENT AND HOSPITALIZATION OF POLYTRAUMATIZED PERSONS

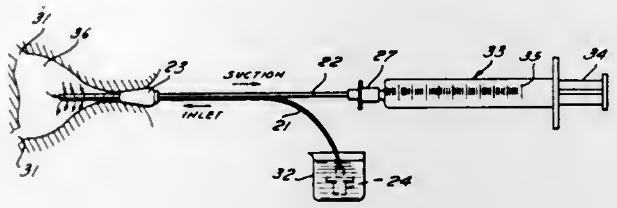
Gerald Donzelle, 109 Rue d'Ermont, 95 Saint-Prix, France
Filed May 2, 1968, Ser. No. 726,050
Claims priority, application France, May 8, 1967, 105,602
Int. Cl. A61b *11/00*
U.S. Cl. 128—1 **18 Claims**



A medical apparatus comprising a fluid-tight box-mattress unit, an enclosure which can be fitted around the periphery of said box-mattress unit, a system of leak-tight attachment of said enclosure to the box-mattress unit, means intended to supply said enclosure with liquids and gaseous mixtures, a removable stretcher which is placed on the box-mattress unit inside the enclosure, and lifting mechanisms intended to carry out different manipulations of said stretcher.

3,527,203
APPARATUS FOR CIRCULATING A FLUID WITHIN A BODY CAVITY

Leland C. Gravlee, 3508 Brookwood Road, Mountain Brook, Alabama
Continuation-in-part of application Ser. No. 421,013, Dec. 24, 1964. This application Dec. 7, 1967, Ser. No. 688,723
Int. Cl. A61b *10/00*
U.S. Cl. 128—2 **7 Claims**



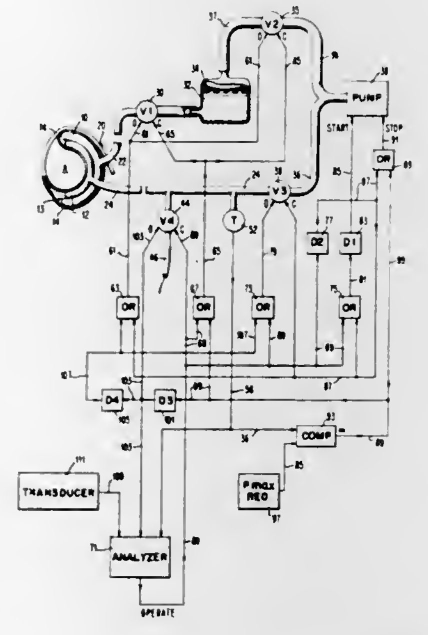
A washing apparatus for irrigating a body cavity having an inlet tube which is open at both ends, and is adapted to have its forward end extend into a body cavity and its rear end connected to a source of washing fluid. Additionally, an outlet tube, which is open at both ends forms part of the apparatus. The inlet tube has its forward end adapted to extend into the body cavity with its rear end connected to a source of suction. A sealing member is positioned on the outlet and inlet tubes intermediate their ends and is adapted to seal the entrance to the body cavity. In operation, the source of suction provides a negative pressure to the body cavity and washing solution will pass through the inlet tube into the body cavity, accumulate cells and matter therefrom and pass through the outlet tube to a collection point.

ERRATUM

For Class 128—2.4 see:
Patent No. 3,527,197

3,527,204
PRESSURE CUFF SYSTEM

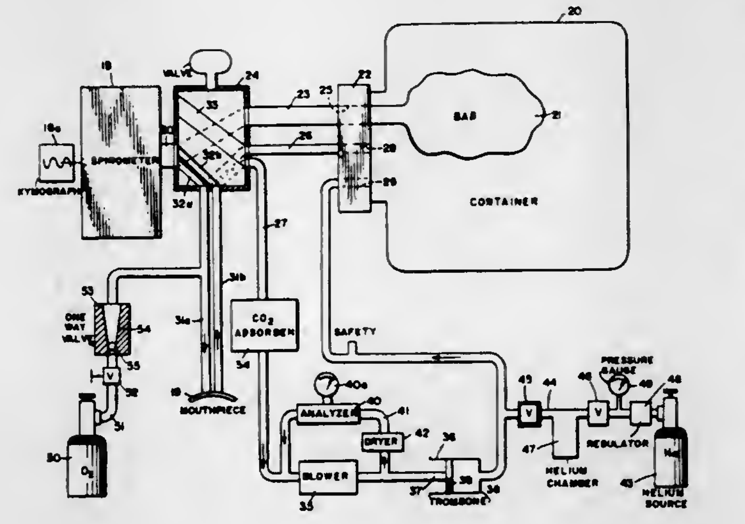
Donald J. Lem, Peekskill, New York, and Herbert D. Steinbeck, Chappaqua, New York, assignors to International Business Machines Corporation, Armonk, New York a corporation of New York
Filed May 28, 1965, Ser. No. 459,839
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **12 Claims**



A pressure cuff system for automatically standardizing the volume of fluid applied to the cuff and the tension applied by the cuff to body extremities. A pressure cuff having first and second flat inflatable chambers juxtaposed are formed in an annulus loosely around an extremity by an undistensible envelope. Initial inflation of either chamber provides automatic adjustment of the cuff to the extremity. A fixed volume of fluid is automatically pumped into the first chamber adjacent the extremity and fluid is automatically pumped into the second outer chamber until a predetermined pressure is reached and a predetermined tension is applied to the extremity. Control means responsive to the predetermined pressure vent the first chamber fluid to atmosphere while transducer means sense systolic and diastolic pressure points.

3,527,205
RESPIRATION TESTING APPARATUS

William C. Jones, 16 W. 328 Walnut Lane, Timber Trails, Elmhurst, Illinois
Filed April 2, 1968, Ser. No. 718,029
Int. Cl. A61b *5/08*
U.S. Cl. 128—2.08 **10 Claims**

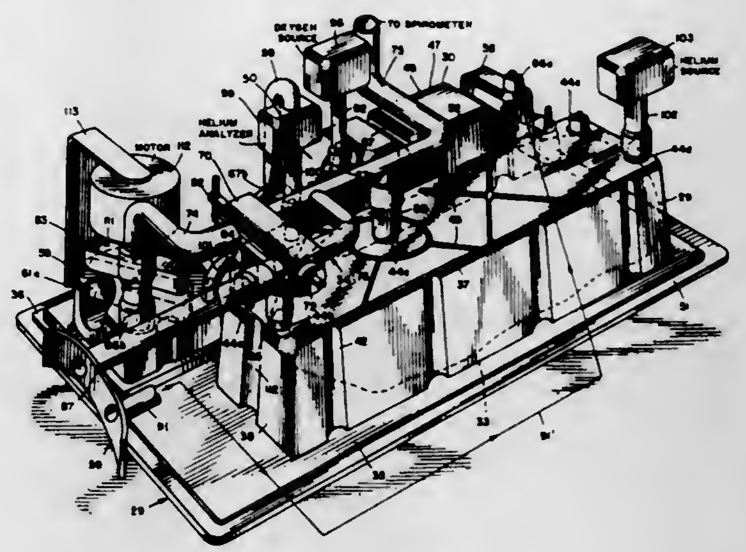


A device for measuring lung volume and capacity. The device includes a spirometer, a rigid sealed container, an inflatable bag within the container, and a mouthpiece. All of these components are connected to a valve so that the spirometer may be selectively connected to the bag while the mouthpiece is connected to the container, or to the mouthpiece while the bag and container are isolated. The device further includes a gas analyzer for measuring the concentration of a gas in the container.

3,527,206
RESPIRATION TESTING APPARATUS

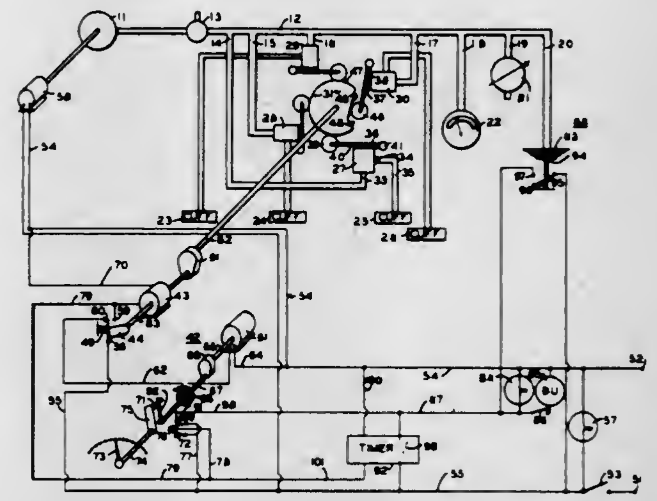
William C. Jones, 16 W. 328 Walnut Lane, Timber Trails, Elmhurst, Illinois
Continuation-in-part of application Ser. No. 718,029, April 2, 1968. This application Aug. 9, 1968, Ser. No. 751,475
Int. Cl. A61b *5/08*
U.S. Cl. 128—2.08 **10 Claims**

A compact, lightweight disposable apparatus for respiration testing particularly suitable for measuring lung volume and capacity which may be shipped as a sealed aseptic unit. The apparatus includes a first sealed housing providing a chamber, a sealed bag within the chamber, and a second sealed housing providing a carbon dioxide absorption chamber and a blower chamber. A bag access conduit communicates with the bag and extends outwardly from the first housing, and two access conduits which communicate with the first housing chamber extend outwardly from the second housing at the upstream and downstream ends thereof. The outer ends of the access conduits are closed but are adapted to be readily slit or snipped open. A valve and hose assembly is adapted to connect the housings, a spirometer, and a mouthpiece. A breathing circuit is thereby formed from the mouthpiece to the upstream end of the second housing, and from the downstream end of the second housing to the mouthpiece, and the valve selectively includes either the spirometer or the chamber of the first housing in this breathing circuit.



3,527,207
AUTOMATIC ROTATING TOURNIQUET CONTROL AND ALARM

Max Gottfried, Rossford, Ohio, and Ansis U. Tenteris, Toledo, Ohio, assignors to The Jobst Institute, Inc., Toledo, Ohio a corporation of Ohio
Filed June 4, 1968, Ser. No. 734,351
Int. Cl. A61h *7/00*
U.S. Cl. 128—24 **10 Claims**

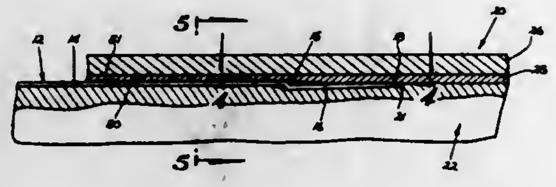


A control and safety mechanism for automatic rotating tourniquets including an adjustable timer for the treatment cycle interval. A wide range of treatment parameters are offered since the pressure applied to the patient and the time interval for the imposition of pressure to any limb are adjustable. The safety mechanism is actuated by means responsive to time cycle failures or pressure failures. It can include visual and audible alarms and can initiate operation of auxiliary treatment equipment in response to a failure of the rotating tourniquet.

3,527,208
INSTRUMENT FOR RELIEVING ITCHING UNDER CASTS AND SHIELDING BODY DURING CAST REMOVAL

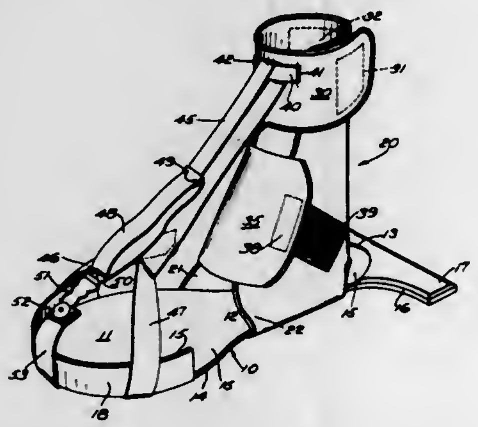
Henry J. Hoegerman, 44 El Arco Drive, Santa Barbara, California
Filed Jan. 12, 1968, Ser. No. 697,476
Int. Cl. A61h *7/00*
U.S. Cl. 128—62 **8 Claims**

An instrument for relieving an itching area of the skin under a cast, preferably constructed of a thin continuous strip of material having a body portion and an offset foot portion. The foot portion is inserted underneath the cast and sprung towards the skin so that reciprocation of the instrument causes a preferably textured surface of the foot portion to scratch and massage an area of the skin. During removal of the cast, the instrument can be inserted underneath the cast to protect the skin.



3,527,209
DROP FOOT SUPPORT

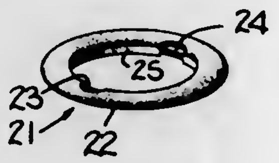
Jack R. Baker, Lincoln, Rhode Island, assignor to Jariba Corporation, a corporation of Delaware
Filed June 26, 1967, Ser. No. 648,784
Int. Cl. A61f *3/00*
U.S. Cl. 128—80 **6 Claims**



A drop foot support having a flexible portion embracing the ankle and lower leg with a relatively stiff plate attached to this flexible member to engage the bottom of the foot and a strap connecting the toe end of the plate to the flexible member adjacent its upper end to support the foot in a relation substantially at right angles to the leg portion.

3,527,210
MOLDED SPRING RETURN MEANS FOR PLASTIC ARTICLES

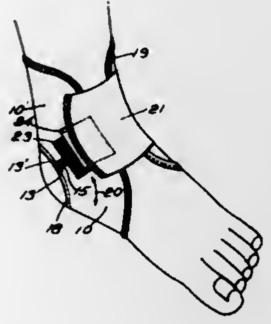
Edward J. Towns, Livingston, New Jersey, assignor, by mesne assignments, to Ortho Pharmaceutical Corporation, a corporation of New Jersey
Filed April 30, 1965, Ser. No. 452,072
Int. Cl. A61f *5/46*
U.S. Cl. 128—130 **5 Claims**



1. A ring-shaped molded plastic intrauterine device having an inside diameter substantially greater than its maximum cross-sectional dimension taken along a radius and adapted to be bent at at least one particular location, said device having molded therein at least one hinge comprising a web disposed on the inside perimeter of said device and at the location at which said device is intended to be bent, said web having a thickness in the plane essentially perpendicular to the plane of bending which is substantially less than the thickness of the adjacent portions of said device in the plane essentially perpendicular to the plane of bending and said web being of such thickness and such depth to initially resist deformation of said device in response to an externally applied force and to urge said device back to its original ring-shaped configuration after having been bent and upon release of externally applied force, whereby when said device is bent in the intended direction, said web bends in a plane essentially perpendicular thereto.

3,527,211
ANKLE SUPPORT

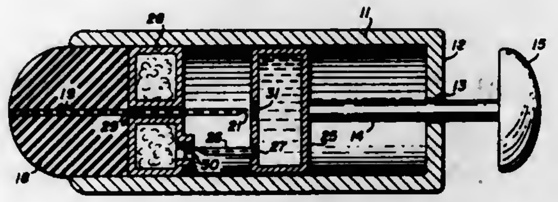
Jack R. Baker, 28 Kirkbrae Drive, Lincoln, Rhode Island
Filed July 8, 1968, Ser. No. 743,196
Int. Cl. A61f *13/05*
U.S. Cl. 128—166 **1 Claim**



An ankle supporter made from two similar pieces of elastic material which has joints at the ankle and comprises an arch member and a member encircling the Achilles' tendon with an elastic fastening means over the instep portion whereby the entire member may be tightened around the ankle and may be used on either the right or left foot.

3,527,212
DISPOSABLE NEEDLELESS HYPODERMIC INJECTOR

Wesley D. Clark, 877 W. Fremont Ave., Sunnyvale, California
Filed Sept. 13, 1967, Ser. No. 667,486
Int. Cl. A61m *5/30, 5/00*
U.S. Cl. 128—173 **9 Claims**

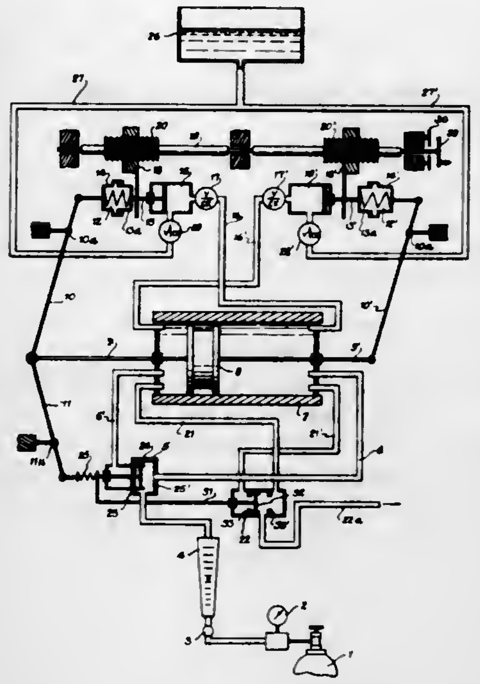


A needleless disposable hypodermic injector having a medicant containing ampule wherein the medicant is mixed with a high pressure propellant for injection into the body.

3,527,213
SUPPLY GAS DRIVEN NARCOSIS MIXING APPARATUS

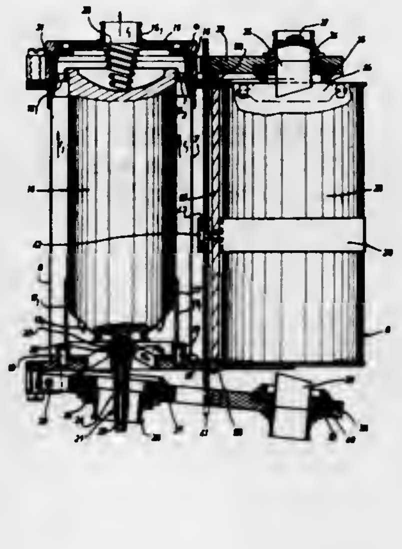
Peter Schreiber, Doylestown, Pennsylvania, assignor to Otto Heinrich Drager, Lubeck, Germany
Filed July 12, 1967, Ser. No. 652,850
Claims priority, application Germany, July 21, 1966, D 50,636
Int. Cl. A61m *17/00, 15/00*
U.S. Cl. 128—188 **13 Claims**

In an anesthesia apparatus, liquid narcosis is mixed with the breathing gas in a metering device. The metering device contains a piston which is driven by the compressed breathing gas, and the metering device further functions as a motor in which the piston drives pumps for forcing the liquid narcosis into the metering device. Finally the piston pumps the admixture of liquid narcosis and breathing gas through a tube leading to a patient.



3,527,214
APPARATUS FOR REGENERATING A BREATHABLE GAS IN INDIVIDUAL RESPIRATORY DEVICE OF THE CLOSED-CIRCUIT TYPE

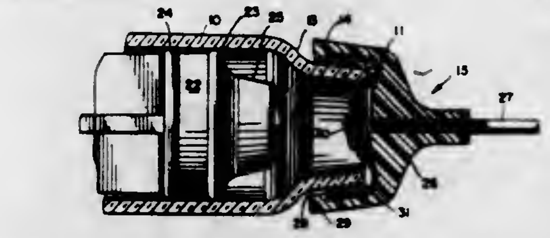
Michel Rio, Champigny, France, and Marcel Chevalier, Paris, France, assignors to l'Air Liquide, Societe Anonyme pour l'Etude et l'Exploitation des Procedes Georges Claude
Filed May 20, 1968, Ser. No. 730,269
Claims priority, application France, May 24, 1967, 107,671
Int. Cl. A61m *15/00;* **A62b** *21/00*
U.S. Cl. 128—191 **6 Claims**



Apparatus for regenerating a breathable gas in individual respiratory apparatus of the closed-circuit type, wherein the exhaled gases pass through a regenerating element and then, before re-inhalation, through a cooling element, all the active substances being kept ready for use in closed or sealed containers which will be made operative just at the moment of use, in such a way to instantaneously provide the wearer with cooled breathable gases.

3,527,215
SYRINGE CONSTRUCTION HAVING INTERNAL BLADDER

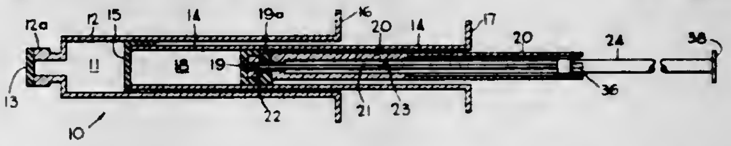
Harry K. De Witt, Winnetka, Illinois, assignor to American Hospital Supply Corporation, Evanston, Illinois a corporation of Illinois
Filed Feb. 20, 1967, Ser. No. 617,388
Int. Cl. A61m *5/18*
U.S. Cl. 128—218 **8 Claims**



A hypodermic syringe having a re-usable barrel and plunger and having a disposable needle-hub-bladder assembly, the bladder being formed of highly stretchable and contractable material and being constructed and arranged to assume an untensioned state spaced inwardly from the sides of the barrel and in a relatively small zone immediately adjacent the needle hub.

3,527,216
HYPODERMIC SYRINGE ASSEMBLY

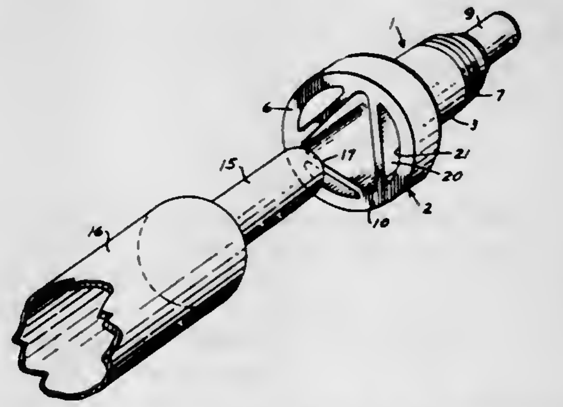
Herbert C. Snyder, Brockway, Pennsylvania, assignor to Brockway Glass Company, Inc., Brockway, Pennsylvania
Filed March 17, 1969, Ser. No. 807,570
Int. Cl. A61m *5/22, 5/32*
U.S. Cl. 128—218 **10 Claims**



A hypodermic syringe assembly including two axially-spaced compartments or chambers for storing drug and solvent prior to use. The needle is contained within the assembly but isolated from the chambers prior to mixing. Mixing occurs when the needle is moved axially through a penetrable seal by a push rod to a position where the piercing end thereof is in one chamber and an intermediate port or opening in the needle is in the other chamber. The needle functions as a conduit and both chambers are variable in axial length to facilitate transferring of the contents of one to the other. When mixing is completed the needle is moved further axially by the push rod, in the same direction, through another penetrable seal whereby the piercing end is exposed externally of the syringe assembly for injection and the needle opening is in the chamber containing the mixture.

3,527,217
HYPODERMIC HUB

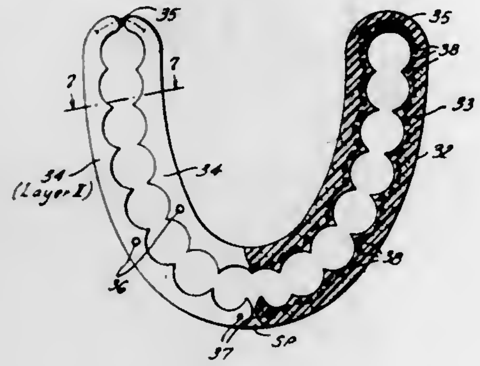
William A. Gettig, Linwood, Pennsylvania (Box 85, Spring Mills, Pennsylvania)
Filed Jan. 18, 1968, Ser. No. 702,495
Int. Cl. A61m *5/00*
U.S. Cl. 128—221 **4 Claims**



A hypodermic hub having an axial bore the peripheral walls of which include integral displaceable means adapted to be radially deflected upon the insertion of the elongated nose of a fluid-containing cartridge.

3,527,218
MEANS FOR CLEANSING TEETH AND GINGIVAL CREVICES

John R. Westine, 600 NW. 9th St., Delray Beach, Florida
Filed June 21, 1967, Ser. No. 647,731
Int. Cl. A61m *3/00*
U.S. Cl. 128—229 **3 Claims**

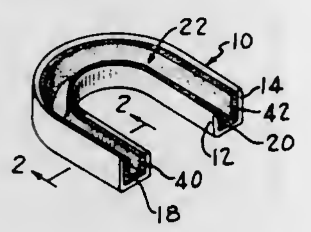


A device for cleaning teeth and their gingival crevices wherein a structure is provided which comprises a semi-flexible cuff like body member which embraces the teeth and gums.

The body member is provided with an inner chamber having perforations therein which are in communication with the teeth and their supporting structure and serve to introduce liquid under pressure to the subject area when said body member is connected to a suitable source of supply.

3,527,219
MEDICAMENT APPLICATOR FOR TREATMENT OF TEETH AND/OR GUMS

Samuel Greenberg, Philadelphia, Pennsylvania (Stump Road and Commerce Drive, Montgomeryville, Pennsylvania)
Filed Aug. 21, 1967, Ser. No. 662,114
Int. Cl. A61m *7/00*
U.S. Cl. 128—260 **10 Claims**

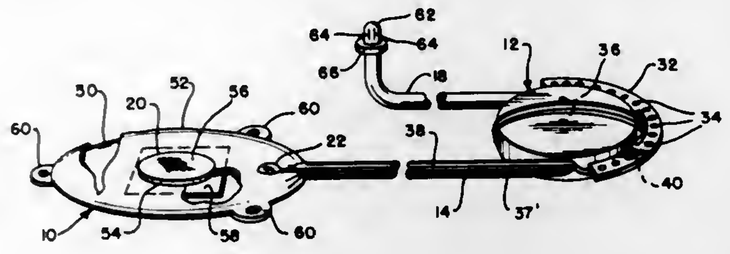


An applicator for the treatment of teeth and/or gums with fluorides or other medicaments and method of making the same wherein the applicator comprises a flexibly resilient substantially horseshoe-shaped tray of channel cross-section and a medicament carrier substantially coextensive therewith and also of channel cross-section secured in the tray so that when the applicator is applied to the teeth it can be readily accommodated thereto and when moderate pressure is applied to the applicator the medicament will invest the teeth and/or gums.

3,527,220
IMPLANTABLE DRUG ADMINISTRATOR

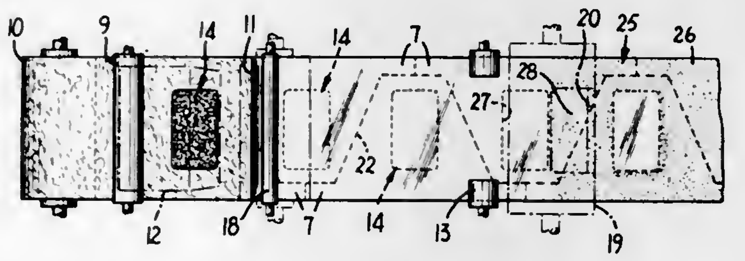
George Donald Summers, Stony Brook, New York, assignor to Fairchild Hiller Corporation, Farmingdale, New York, a corporation of Maryland
Filed June 28, 1968, Ser. No. 741,117
Int. Cl. A61m *7/00*
U.S. Cl. 128—260 **15 Claims**

An implantable drug administrator comprises a bladder having a self-sealing port through which it can be filled with a drug, a pump for selectively pumping the drug from the bladder into any desired area of the body, and an indicator for indicating when the desired amount of the drug has been injected.



3,527,221
DISPOSABLE DIAPER AND PROCESS AND APPARATUS FOR MAKING THE SAME

Ingemar Croon, Alfredshem, Sweden and Nils Blomqvist, Ornskoldsvik, Sweden, assignors to Mo och Domsjo Aktiebolag, Ornskoldsvik, Sweden a corporation of Sweden
Filed March 14, 1967, Ser. No. 622,960
Int. Cl. A61f *13/16*
U.S. Cl. 128—287 **10 Claims**

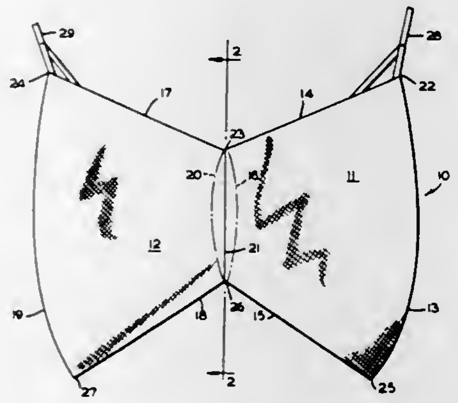


Disposable diapers are provided comprising an absorbent layer of cellulose fluff fibers enclosed between a water-impervious plastic sheet and a water-pervious sheet material, such as a non-woven fabric.

A process and apparatus are provided for manufacturing disposable diapers having an absorbent layer interposed between a water-impervious sheet and a water-pervious sheet in which the absorbent material is laid down on the water-pervious sheet material, the water-impervious sheet material then placed on top, and the composite bonded together by use of an adhesive binder or heat and pressure. In this way, a long endless strip of disposable diapers placed end-to-end is formed, from which the diapers can be cut off as required. Apparatus for continuously forming diapers of this type also is described.

3,527,222
TROUSERS SHIELD

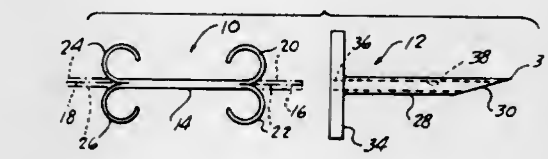
Mary C. June, Apt. 215, 1516½ Fifth Ave., Seattle, Washington
Filed June 2, 1967, Ser. No. 643,162
Int. Cl. A61f *13/16*
U.S. Cl. 128—287 **3 Claims**



The invention relates to an independent, non-permeable trousers shield which is contoured to fit the crotch area of trousers and is adapted to be attached to the waistband, crotch seam and leg inseams of the trousers. The shield is easily attached to the inside of trousers and is easily removable for cleaning.

3,527,223
EAR STUD AND HOLLOW PIERCER FOR INSERTION THEREOF

Melvin Shein, 103 S. Hubbard Lane, Louisville, Kentucky
Filed Sept. 1, 1967, Ser. No. 665,700
Int. Cl. A61b *17/34*
U.S. Cl. 128—329 **5 Claims**



A surgical instrument for piercing ears comprising a hollow, pointed needle having an axial bore extending through the point, an enlarged head transverse to the needle at the end opposite the point, and an opening through the head in alignment with the bore of the needle, in combination with an ear stud comprising a thin, wire-like, cylindrical body of plastic preformed with curled ends, said needle being adapted to pierce the lobe of an ear by thumb pressure on its head, and said ear stud being adapted to be inserted through the opening of the head into the hollow needle after straightening the forward curled end. The needle can then be withdrawn from the ear while holding the forward end of the stud. Complete withdrawal of the needle frees the rear end of the stud to curl and hold the stud in the pierced ear lobe.

3,527,224
METHOD OF SURGICALLY BONDING TISSUE TOGETHER

Robert Rabinowitz, Stamford, Connecticut, assignor to American Cyanamid Company, Stamford, Connecticut a corporation of Maine
No Drawing. Filed Sept. 5, 1967, Ser. No. 665,247
Int. Cl. A61b *17/04*
U.S. Cl. 128—334 **2 Claims**

A surgically acceptable adhesive composition comprising monomeric and polymeric n-pentyl alpha-cyanoacrylate obtained by in situ free-radical polymerization of monomeric n-pentyl alpha-cyanoacrylate, said composition containing a free-radical polymerization inhibitor and an anionic polymerization inhibitor in an amount sufficient to inhibit auto-polymerization; said composition having a viscosity at 25° C. of about **50** to about **50×10^5** centipoises. It relates further to the use of said adhesive for surgical purposes and to said adhesive sterily packaged in a dispensing container.

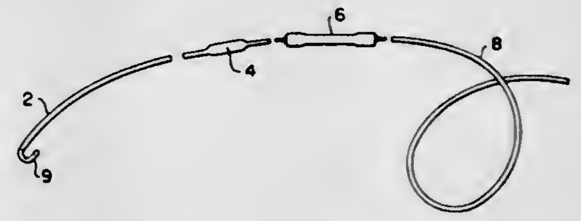
3,527,225
RESORBABLE SURGICAL SUTURES FROM FIBROUS PROTEINS

David F. Smith, 120 Grove St., Bay Head, New Jersey
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,208
Int. Cl. A61l *17/00*
U.S. Cl. 128—335.5 **33 Claims**

Resorbable surgical sutures are disclosed which are constructed of protein fibrils cross-linked by 1 to 6 percent of their weight of chemically bonded acids such as amino, polybasic polyamino and mucopolysaccharide acids, the fibrils being longitudinally oriented through polar groups so as to form relatively inextensible strands having tensile strengths at least 75 percent that of similar catgut strands.

3,527,226
VENTRICULAR CATHETER WITH VALVE AND PUMP FLUSHING MEANS

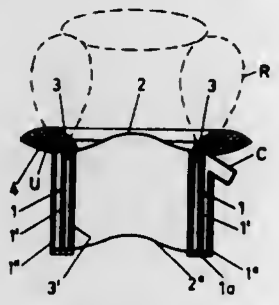
Salomon D. Hakim, Bogota, Colombia, assignor to Cordis Corporation, Miami, Florida a corporation of Florida
Filed Feb. 3, 1966, Ser. No. 524,807
Int. Cl. A61m *27/00*
U.S. Cl. 128—350 **5 Claims**



The invention is a drainage catheter system, particularly adapted for ventricular drainage, comprising a system in which a drainage catheter is connected to an elastically compressible antechamber, the outlet of which is connected to a one-way passage valve means. The outlet of the latter feeds via a catheter into the blood stream. The antechamber is upstream in respect to the valve means, and because of its resiliently collapsible nature, as well as the fact that the valve means may also be resiliently collapsed, the system is adapted for testing to make sure the drainage is proper, and also to clear out any obstructions in the system.

3,527,227
MICROWAVE ELECTRODES FOR MEDICAL THERAPY

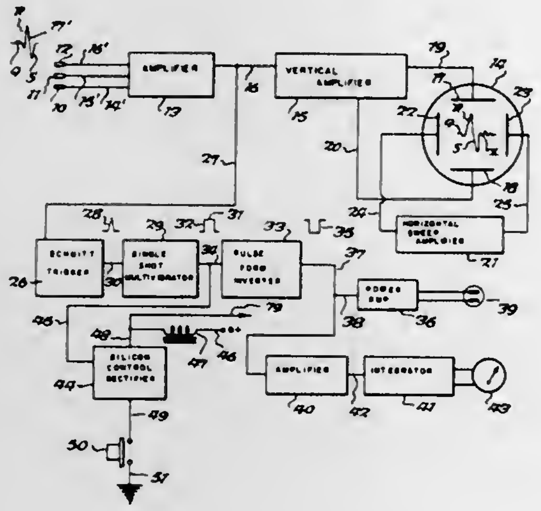
Karl Fritz, 26 Wendelsteinstr., 6200 Wiesbaden-Dotzheim, Germany
Filed Sept. 19, 1966, Ser. No. 580,534
Claims priority, application Germany, Sept. 17, 1965, F 47,222; Jan. 10, 1966, F 48,121; Feb. 28, 1966, F 48,540
Int. Cl. A61n */00;* **H05b** *9/06*
U.S. Cl. 128—410 **3 Claims**



A radiator element, for example in form of a pair of concentric cylinders, a cylinder with a wire therein, is formed such that a slot effect is obtained; the slot is dimentioned and arranged to be out of resonance with a supply frequency, so that radiation from one slot region will be superimposed upon the radiation of another slot region, to provide a radiation pattern in a well defined region of the body, to which the radiator element is applied.

3,527,228
CARDIAC APPARATUS AND SWITCHING CIRCUIT THEREFOR

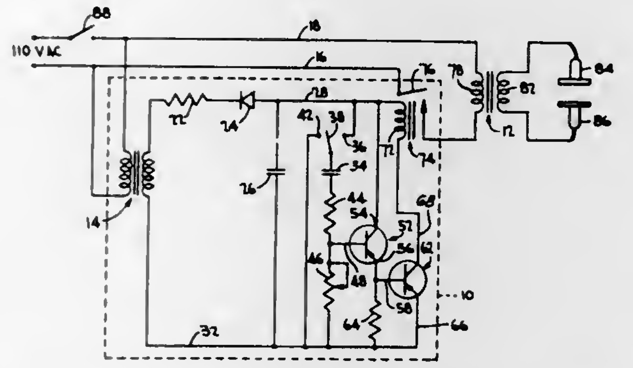
Joseph H. McLaughlin, Kenmore, N.Y., assignor to Cardiac Electronics, Inc., Clarence, N.Y., a corporation of New York
Filed Feb. 23, 1966, Ser. No. 529,410
Int. Cl. A61n *1/38*
U.S. Cl. 128—419 **10 Claims**



Cardiac apparatus for applying a countershock voltage to the chest of a cardiac patient in timed relationship to the heartbeat including a charging circuit having a capacitor therein and a defibrillating circuit, a slow acting relay for selectively coupling the capacitor to the charging circuit or to the defibrillating circuit, a fast acting relay for selectively coupling both of the circuits to ground or removing them from ground, circuit means coupled to the relays for sensing the heartbeat of a patient, the slow acting relay being of the high voltage vacuum type and including an inherent time delay therein which causes the defibrillating voltage stored on the capacitor to be discharged through the defibrillating circuit a predetermined time after the slow acting relay is actuated by the heartbeat of the patient, the fast acting relay uncoupling both of the circuits from ground prior to the discharge of the capacitor and keeping them off of ground until the slow acting relay recouples the capacitor to the charging circuit.

3,527,229
METHOD AND APPARATUS FOR CARDIAC DEFIBRILLATION

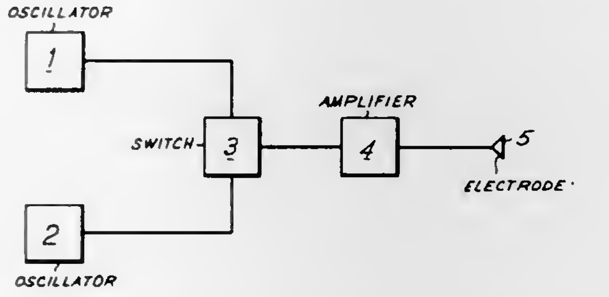
Rene R. Kempen, Foundation Apts. D–20, Galveston, Tex. 77550
Continuation-in-part of application Ser. No. 456,058, May 17, 1965. This application Jan. 5, 1968, Ser. No. 696,075
Int. Cl. A61n *1/38*
U.S. Cl. 128—419 **12 Claims**



A method and apparatus for cardiac defibrillation wherein as sinusoidal shock pulse of less than 100 milliseconds, and preferably approximately 20 milliseconds, in duration is derived from a single cycle of alternating current either by a manually operated, electronic timer and relay circuit or by an automatic, line voltage- synchronized timer and controlled rectifier circuit.

3,527,230
MEANS AND METHODS FOR CORRECTING VISUAL COLOR INSENSITIVITY WITH LOW FREQUENCY ELECTRIC CURRENT

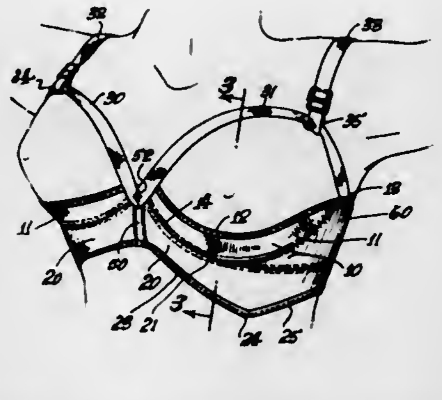
Tutomu Imamura, Amagasaki, Japan, assignor to Sharp Kabushiki Kaisha (Sharp Corporation) Osaka, Japan
Filed Dec. 28, 1964, Ser. No. 421,570
Int. Cl. A61n *1/32*
U.S. Cl. 128—421 **4 Claims**



The disclosure describes a system for correcting color blindness with the use of alternating electrical voltages. Deficiencies in red color and green color sensitivity are corrected by applying electrodes adjacent the eye so that the rods and cones associated with the retina may be stimulated by using a resonant frequency of 77 cycles per second for those lacking a red color sensitivity and 42.5 cycles per second for those lacking a green color sensitivity. The electrodes for applying the alternating electrical voltages are applied closely adjacent the eye and the voltages are turned on and off at repeated intervals to achieve the desired effect.

3,527,231
BUST SUPPORT

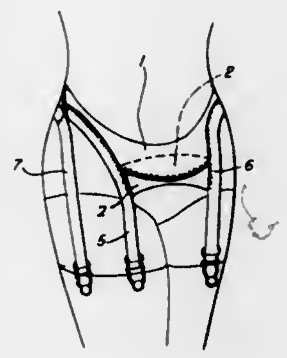
Frank S. Catanese and Georgia E. Catanese, both of 8662 Royer Circle, Huntington Beach, Calif. 92647
Filed Jan. 29, 1968, Ser. No. 701,333
Int. Cl. A41c *3/00*
U.S. Cl. 128—484 **4 Claims**



A bust support comprising a breast support band designed to support and thrust outward breasts of varying sizes which is joined to a chestband designed to prevent the bottom edge of said chestband from rolling under itself and chaffing the wearer.

3,527,232
COMBINED ABDOMEN-SUPPORTING MEANS AND GARTER BELT

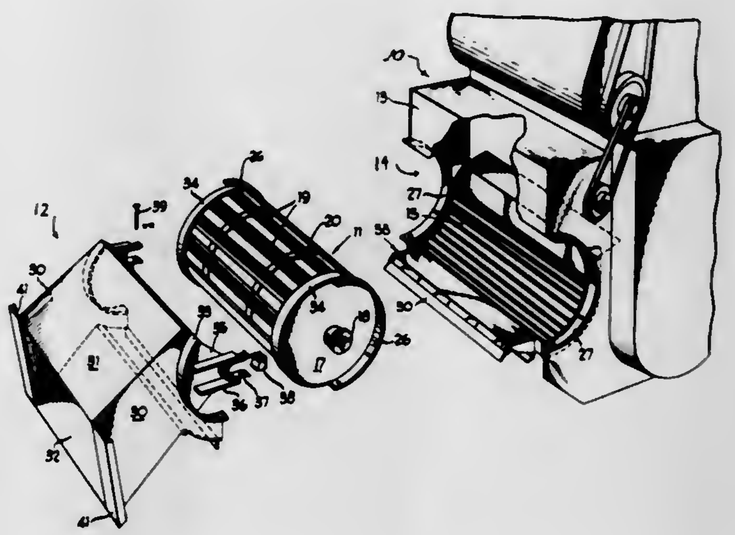
Paula Blatt Rocker, % Nu Vogue Creations, 812 Huron Road, Cleveland, Ohio 44113
Filed Aug. 28, 1968, Ser. No. 755,988
Int. Cl. A41c *1/00*
U.S. Cl. 128—547 **5 Claims**



The present invention comprises an improved form of band having a front portion that is adapted to extend beneath the wearer's abdomen in supporting engagement therewith and having a rear portion for engagement with the sacroiliac region of the wearer's body. These portions consist of strips of longitudinally elastic material that are, in each instance, arranged in such manner that they have maximum overlapping relation in the middle thereof so as to afford, at the front, maximum abdomen support without uncomfortable creasing during sitting position of the wearer and, at the rear, increased support and comfort in the sacroiliac region of the wearer's body; while at the same time these overlapping band members, in each instance, diverge laterally from the middle thereof towards the two sides of the wearer's body so as to provide increased vertical extent in the nature of a girdle for the side regions of the wearer's hips and abdomen. Also, the front and rear garters for each leg are so positioned upon the belt that, when under tension in operative position upon the wearer's body, they will tend to maintain the belt including the side portions thereof in firm engagement and position about her body and thereby ensure against the belt being dislodged from proper position.

3,527,233
MOUNTING MEANS FOR THRESHING CYLINDER AND HEADER SPOUT

Bernard C. Mathews, Box 70, Crystal Lake, Ill. 60014
Filed Feb. 14, 1968, Ser. No. 705,464
Int. Cl. A01f *12/28*
U.S. Cl. 130—27 **17 Claims**

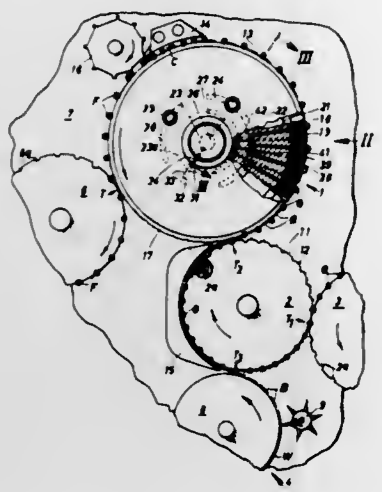


The threshing cylinder of a combine is located half in and half out of the front wall of the combine enclosure. The concave is located in the enclosure. The cylinder is a part of a cylinder assembly which includes circular end walls mounting the bearings for the cylinder shaft. The end walls of the cylinder assembly are removably bolted to semicylindrical flanges on the enclosure. A forwardly extending header spout is pivotally and removably mounted on said end walls, concentric to the cylinder. A hydraulic cylinder extending between the header spout and the enclosure provides angular adjustment of the header spout. The joints between the header spout and said end walls are made by overlapping arcuate flanges concentric with the pivot to permit said angular adjustment. A guide plate having a flexible sealing strip bridges the gap between the header spout and the concave. The flexible sealing strip bears against a wall portion of the header spout which is concentric to the pivot to permit said angular adjustment. The guide plate is hinged, and held in place by a detent so as to eject stones entrapped between it and the cylinder.

3,527,234
APPARATUS FOR CONVOLUTING UNITING BANDS AROUND ROD-SHAPED ARTICLES

Alfred Hinzmann, Richmond, Va., assignor to Hauni-Werke Koerber & Co. KG, Hamburg-Bergedorf, Germany
Filed May 18, 1967, Ser. No. 639,351
Claims priority, application Great Britain, May 20, 1966, 22,642/66
Int. Cl. A24c *5/52*
U.S. Cl. 131—94 **29 Claims**

Groups of coaxial rod-shaped articles are united by adhesive-coated bands which are convoluted around the respective articles during travel through an arcuate gap between a travelling rolling surface and a countersurface. The rolling surface is provided with transversely extending successive flutes spaced from each other by identical distances and which receive successive groups prior and subsequent to unidirectional travel of such groups through the gap. At least a portion of the gap has a width less than the diameter of a group throughout the length of the portion, and the length of the portion of the gap exceeds the distance between the centers of successive flutes. Each group completes more than a single revolution about its axis and enters and leaves at least one of the flutes during its travel through the aforementioned portion of the gap.



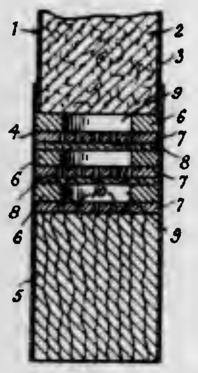
The countersurface is either stationary or is caused to travel at a speed which is different from the speed of the rolling surface.

3,527,235
TOBACCO SMOKE FILTER DEVICE
Paul H. Fidelman, Bayside, N.Y., assignor to Matra Corporation, New York, N.Y., a corporation of New York

Filed May 24, 1968, Ser. No. 731,866

Int. Cl. A24d *1/04;* **A24f** *7/04*

U.S. Cl. 131—264 **4 Claims**



A tobacco smoke filter device suitable for cigarettes, pipes and similar smoking devices comprising a laminated structure. The device structure includes a thick disk with a central opening forming a plenum chamber or smoke collection reservoir, an outlet disk in face-to-face contact with, and downstream of, the thick disk and providing a plurality of smaller smoke escape openings, and a fine-pore filter material disk in face-to-face contact with, and downstream of, the outlet disk, through which structure the smoke is drawn. The fine-pore filter material disk is thinner than the outlet disk.

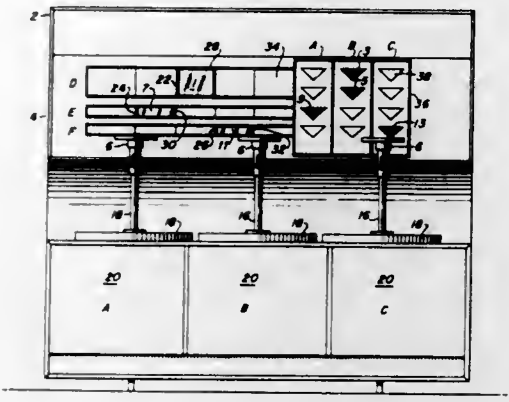
3,527,236
CUSTOM CONDITIONER
David Anthony, Norwell, Mass., and Robert Crane, Monsey, N.Y., assignors to Clairol Incorporated, New York, N.Y., a corporation of Delaware

Filed Oct. 6, 1967, Ser. No. 673,384

Int. Cl. A45d *19/02*

U.S. Cl. 132—7 **6 Claims**

This invention relates to a method and device for formulating and dispensing a treatment for the hair. The device includes an assembly of components and comprises a selector chart, a formulating chart, dispensing means, mixing means, and record charts. The device may be used to select a number of factors relative to hair conditioning, which factors when chosen and indicated on the selector chart, will automatically indicate the appropriate formula to be used on an individual having hair with that particular combination of factors. This automatically indicated formula may then be compounded by the device and applied to the individual's hair. The device further contemplates dispensing means for dispensing the correct amount of ingredients according to the indicated formula.

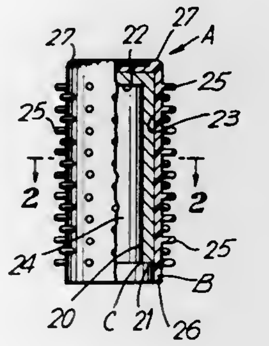


3,527,237
HAIR CURLER
Fumihiko Abe, 13–22 2-chome, Shihazaki-cho, Tachikawa-shi, Tokyo-to, Japan

Continuation-in-part of application Ser. No. 608,700, Jan. 11, 1967. This application Oct. 9, 1967, Ser. No. 673,876

Int. Cl. A45d *2/00*

U.S. Cl. 132—40 **5 Claims**



The present disclosure relates to a hair curler consisting of an inner shell of a heat retentive material and an outer shell of a hair contacting material which may be provided with outstanding prongs or other projecting members to engage a coil of hair.

3,527,238
PAY MACHINE
Charles Alexander Stamp, Surrey Hills, Victoria, Australia, assignor to Mayne Nickless Limited, South Melbourne, Victoria, Australia

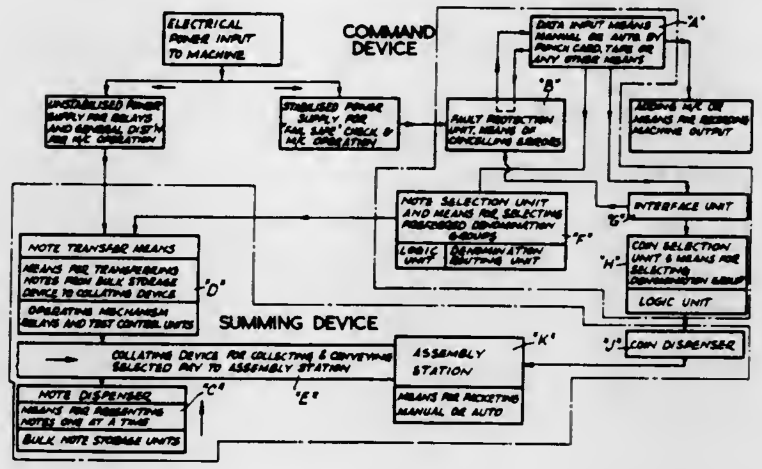
Filed Feb. 6, 1968, Ser. No. 703,339

Claims priority, application Australia, Feb. 8, 1967, 17,408/67

Int. Cl. G07d *1/00*

U.S. Cl. 133—4 **7 Claims**

A money dispensing machine having a command means which includes a data input means and with a summing means which is connected to the command means. The data input means controls the command means to provide a signal to the summing means which is representative of a selection of monetary elements which are to be paid out. The summing means includes a note dispenser which has a plurality of note storage boxes, each of which stores the notes for a respective denomination. A note transfer means includes a picker arm for each note storage box, and these picker arms are selectively controlled in response to the signal to selected ones of the note storage boxes and transfer selected notes in accordance with the sum to be paid out. Each picker arm places the note which it has selected into a respective cradle, and a conveyor is also provided for periodically collating the notes stored in the cradle and delivery such notes to an assembly station.

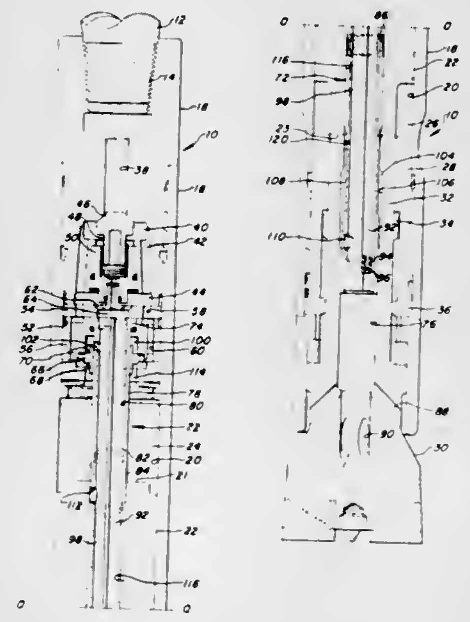

ELECTRICAL POWER INPUT TO MACHINE
COMMAND DEVICE
DATA INPUT MEANS MANUAL OR AUTO BY PUNCH CARD, TAPE OR ANY OTHER MEANS
"A"
UNSTABILISED POWER SUPPLY FOR RELAYS AND GENERAL DIST'N FOR M/C OPERATION
STABILISED POWER SUPPLY FOR "FAIL SAFE" CHECK & M/C OPERATION
"B"
FAULT PROTECTION UNIT, MEANS OF CANCELLING ERRORS
ADDING M/C OR MEANS FOR RECORDING MACHINE OUTPUT
NOTE SELECTION UNIT AND MEANS FOR SELECTING PRESCRIBED DENOMINATION GROUPS
LOGIC UNIT
DENOMINATION ROUTING UNIT
"F"
INTERFACE UNIT
"G"
COIN SELECTION UNIT & MEANS FOR SELECTING DENOMINATION GROUP
"H"
LOGIC UNIT
NOTE TRANSFER MEANS
MEANS FOR TRANSFERRING NOTES FROM BULK STORAGE DEVICE TO COLLATING DEVICE
"D"
OPERATING MECHANISM RELAYS AND TEST CONTROL UNITS
SUMMING DEVICE
COLLATING DEVICE FOR COLLECTING & CONVEYING SELECTED PAY TO ASSEMBLY STATION
ASSEMBLY STATION
"K"
"J"
COIN DISPENSER
NOTE DISPENSER
MEANS FOR PRESENTING NOTES ONE AT A TIME
BULK NOTE STORAGE UNITS
"C"
"E"
MEANS FOR PACKETING MANUAL OR AUTO

3,527,239
EXHAUST TUBE FOR DOWN-HOLE DRILL
Clarence O. Boom, Littleton, Colo., assignor to Gardner-Denver Company, Quincy, Ill., a corporation of Delaware

Filed Sept. 26, 1968, Ser. No. 762,803

Int. Cl. E21c *7/00;* **E21b** *1/00*

U.S. Cl. 173—67 **4 Claims**



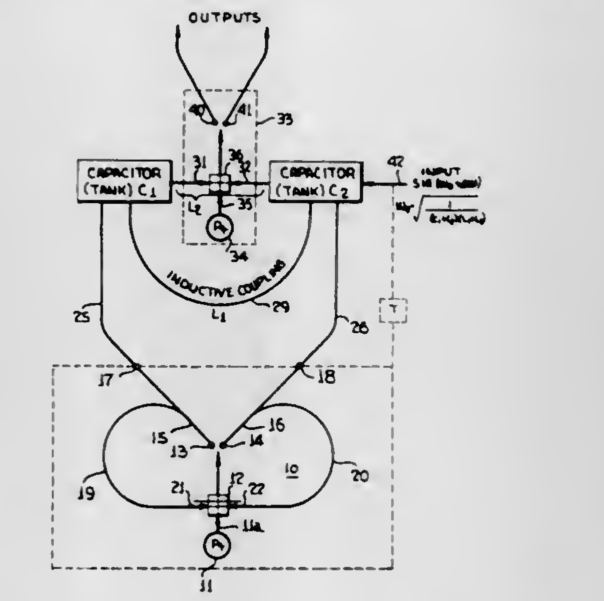
A combination exhaust, lifting air, and auxiliary hole-cleansing air tube for a down-hole percussion drill. The tube comprises a centrally positioned tubular element divided into parallel exhaust passages both in communication with the drill hammer driving and lifting air expansion chambers. A partition divides the tube into the parallel exhaust passages and also forms elongated conduits for conducting hammer lifting air, and auxiliary hole-cleansing air.

3,527,240
PARAMETRIC LUMPED CIRCUIT FLUID AMPLIFIER
Eric E. Metzger, Silver Spring, Md., assignor to Bowles Engineering Corp., Silver Spring, Md., a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,342

Int. Cl. F15c *4/00*

U.S. Cl. 137—81.5 **4 Claims**



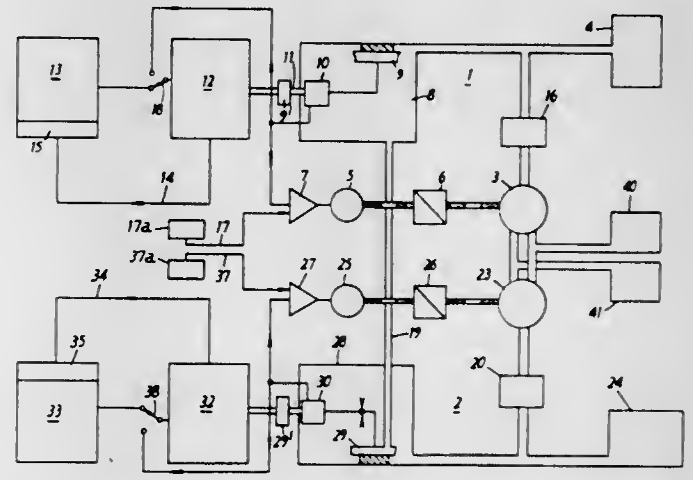
A parametric fluid amplifier employing fluid capacitance as signal responsive parameter, the fluid capacitance being resonated by fluid inductance to the frequency of a pump signal, the signal subject to amplification having less than half the pump frequency. The fluid amplifier is of the type having a deflectable jet of fluid proceeding through an interaction area to differential output passages, the input signal proceeding to a control nozzle through the variable fluid capacitance.

3,527,241
FLUID PRESSURE CONTROL SYSTEMS
Hubert R. Bristow, Maidstone, Kent, and John F. A. Parkes, St. Albans, England, assignors to Elliott Brothers (London) Limited, London, England

Continuation-in-part of application Ser. No. 365,652, May 7, 1964. This application Nov. 29, 1967, Ser. No. 686,607

Int. Cl. G01l *9/00;* **G05d** *11/00*

U.S. Cl. 137—98 **11 Claims**



A fluid pressure control system comprising pressure selecting means, a follow-up servo having a velodyne feedback path coupled to take its input from the pressure selecting means and apply its output to a differential unit which detects an error between the servo output and the actual pressure and applies a corresponding error signal to a closed loop servo system arranged to correct the actual pressure.

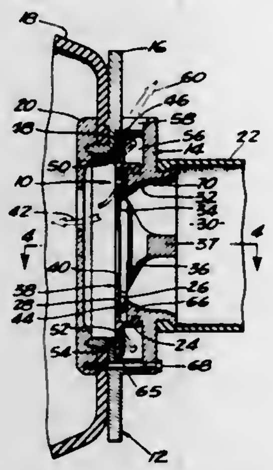
3,527,242
THREE-PHASE MONO-DIAPHRAGM BREATHING VALVE

William Kenneth Ansite, Altadena, Calif., assignor to Sierra Engineering Co., Sierra Madre, Calif., a corporation of California

Filed Sept. 16, 1968, Ser. No. 762,221

Int. Cl. F16k *15/14;* **A62b** *9/02*

U.S. Cl. 137—102 **6 Claims**



A breathing valve for use in pressurized oxygen breathing systems at high altitudes including a single resiliently flexible disk-shaped diaphragm mounted in a stationary supporting structure, which diaphragm has a central member containing an inlet port which collaborates with an inlet valve seat and a surrounding skirt which collaborates with an exhaust valve seat, the central member and the skirt being flexibly interconnected to permit the skirt and central member to move independently of one another, the diaphragm being flexibly responsive to the pressures developed during a normal breathing cycle so that the central member moves away from the inlet valve seat to permit the inflow of fluid without disturbing the sealed relationship between the skirt and the exhaust valve seat, the skirt moves away from the exhaust valve seat responsive to the exhale of breathing fluid without disturbing the relationship between the central member and the inlet valve seat, and the skirt flexes so as to open exhaust vents which pass through the edge of the valve seat to permit ambient air to enter the valve in the event of a failure of the supply of breathing fluid.

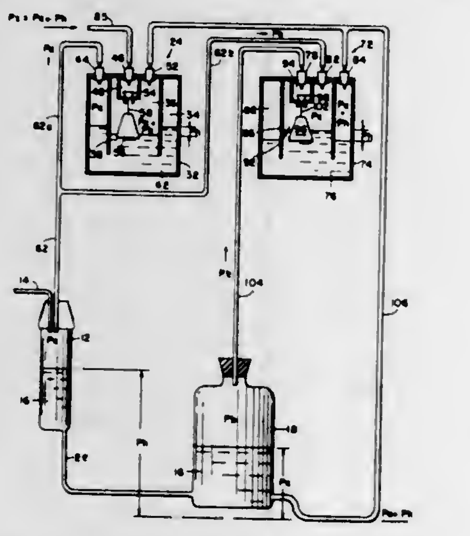
3,527,243
LIQUID LEVEL CONTROL

Mordechai Montag, Plainview, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 15, 1969, Ser. No. 816,238

Int. Cl. B67d *5/54*

U.S. Cl. 137—209 **4 Claims**



A liquid level control system for maintaining automatically the level of a liquid in a container. A pair of regulator functions maintain the level. One function provides for addition of liquid and the other for removal. The system relies on balancing liquid pressures and gaseous pressures above the liquids in the container and a reservoir.

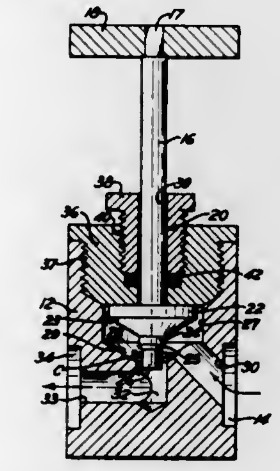
3,527,244
APPARATUS FOR TRAPPING AND CRUSHING SOLID PARTICLES ENTRAINED IN A LIQUID STREAM

James E. Stockman, Philadelphia, Pa., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 21, 1968, Ser. No. 769,304

Int. Cl. F16k *29/00*

U.S. Cl. 137—244 **8 Claims**



A device for trapping and crushing solid particles entrained in a liquid stream comprising an annular orifice defined by an outer fixed passageway and an inner moveable member. Upon operation of the moveable member, an enlarged portion thereof crushes the entrained particles held on the annular orifice, and congruous inclined surfaces extending outwardly of the passageway and on the moveable member further crush the particles.

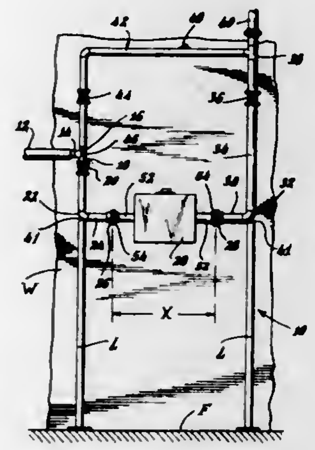
3,527,245
UNIVERSAL GAS METER INSTALLATION

Marcel Lamontagne, 59 S. View St., Waterbury, Conn. 06706

Filed Feb. 15, 1968, Ser. No. 705,711

Int. Cl. F17d *1/00;* **F16k** *31/12*

U.S. Cl. 137—269 **4 Claims**



A universal piping installation for accepting gas meters of various sizes having an inlet T, an outlet T and having two parallel flow paths connected therebetween. One of the flow paths includes spaced, aligned coupling members positioned a fixed distance apart to accept gas meters of various sizes having connecting piping secured thereto being selected to extend from one coupling member to the other. The other flow path is a meter bypass.

ERRATUM

For Class 137—414 see:
Patent No. 3,527,172

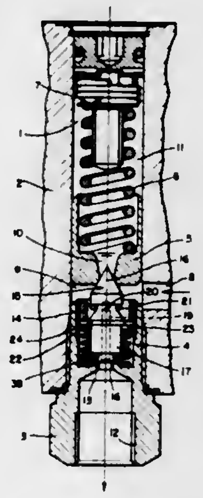
3,527,246
CUT-OFF VALVE FOR A HEATING OIL SUPPLY INSTALLATION

Jorgen Hartvig Petersen, Nordborg, and Leif Viggo Sturlason Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed Dec. 5, 1967, Ser. No. 688,045

Int. Cl. F16k *31/12*

U.S. Cl. 137—512.2 **1 Claim**



The invention relates to a cut-off valve of the type utilized between the pump and nozzle of a heating system oil burner unit.

The end face of the cut-off valve is provided, in prior art devices, with a sealing washer made of a resilient material such as rubber. High pumping pressures have a tendency to disengage a sealing washer from the valve surface to which it is attached and various prior art constructions have been devised in attempts to securely attach the sealing washer to the valve face.

In this invention a construction is provided for attaching a sealing washer to the end of a cut-off valve in a manner which minimizes the chances of the sealing washer becoming detached or dislodged by high oil pressures to which it is subjected. This construction involves the providing of a cut-off valve having a specially formed annularly shaped recess at one end thereof in which there is disposed a specially formed annularly shaped sealing washer.

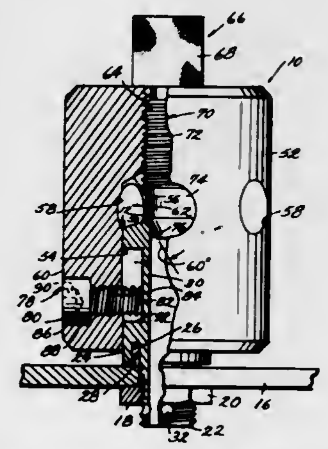
3,527,247
PRESSURE RELIEF VALVE

Arthur F. Pelster, Nashville, Tenn., assignor to Kentucky Fried Chicken Corporation, Nashville, Tenn., a corporation of Kentucky

Filed Jan. 15, 1969, Ser. No. 791,470

Int. Cl. F16k *17/00*

U.S. Cl. 137—523 **17 Claims**



A quick release pressure relief valve including a dead weight valve member seated upon a valve seat adapted to be secured in the lid of a pressure vessel. A flat on the valve seat permits axial, non-rotatable movement between the weight and the valve seat while a circumferential groove contiguous with the top of the flat permits rotatable, non-axial relative movement.

3,527,248
APPARATUS FOR STORING THE STATE OF FLUIDIC DEVICES

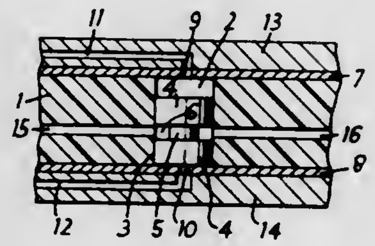
George C. Western-Pick, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company

Filed Jan. 14, 1969, Ser. No. 791,002

Claims priority, application Great Britain, Jan. 22, 1968, 3,337/68

Int. Cl. F16k *37/00, 11/07*

U.S. Cl. 137—552.5 **6 Claims**



A storage element for fluidic circuits comprises a bistable valve element which in one of its stable positions allows the passage of fluid through a duct and which by application of fluid pressure to one side is moved from the said one stable position to the other and by application of fluid pressure to the other side is returned from said other to said one stable position. Preferably the valve element is made of permanently magnetised material and is movable between two magnetisable plates so as to magnetically adhere to one plate in one end position and to the other plate in the other end position. Alternatively the valve element may be of a soft magnetic material and move between two permanently magnetised pole pieces, preferably between the north and south pole respectively of a permanently magnetised circuit.

3,527,249
WINDOW ASSEMBLY FOR USE IN A SYSTEM FOR QUANTITATIVE DETERMINATION OF VAPOR CONCENTRATIONS IN A CARRIER GAS

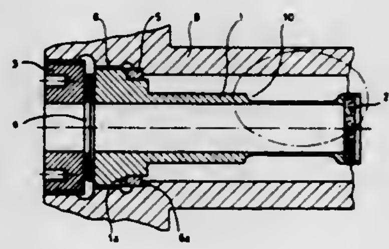
Luc Verheyden, Ispra, Klaus Klein, Taino, Varese, and Carlo Cappelletti, Varese, Italy, assignors to European Atomic Energy Community, Euratom, Brussels, Belgium

Filed Dec. 9, 1966, Ser. No. 600,452

Claims priority, application Germany, Dec. 20, 1965, E 32,702

Int. Cl. F16d *3/00;* **B23k** *31/02;* **F16l** *5/00*

U.S. Cl. 137—559 **3 Claims**

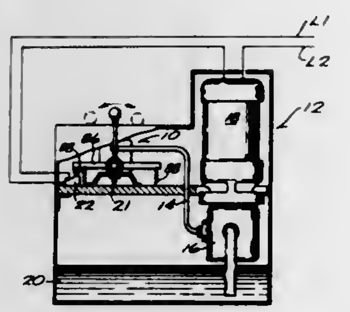


1. A system for quantitative determination of the concentration of vapours in a carrier gas, comprising a quartz window assembly mounted within a window holder tube

made of an Fe-Ni-Co alloy, said tube being suspended by one end in a stainless steel monitoring duct and having a wall thickness which diminishes towards its free other end, and including clamping means which engage the duct and the said one end of the holder tube in the axial direction of the duct wall, a quartz window being soldered to the free end of the holder tube along mating annular surfaces sloping conically at an angle of between 10° and 20°.

3,527,250
VALVE FOR MANUAL CONTROL OF HYDRAULIC CYLINDERS

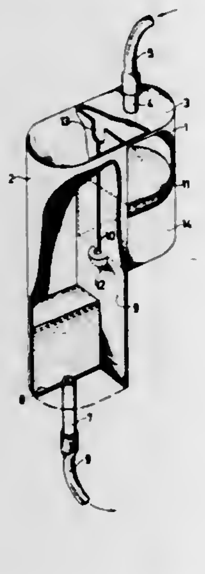
Vitas T. Thomas and Robert A. Lovdahl, Racine, Wis., assignors to Tomco, Inc., Racine, Wis., a corporation of Wisconsin
Filed May 24, 1968, Ser. No. 731,821
Int. Cl. F15b *15/18*
U.S. Cl. 137—565 **5 Claims**



Disclosed herein is a hydraulic fluid control valve including a housing having a main flow path with a one-way check valve positioned in the flow path, a return flow path connected to bypass the one-way valve in the main flow path with a pair of check valves in the return flow path to isolate a section of the return flow path and a valve actuating device in the isolated section to open one of the check valves in the return path.

3,527,251
DEVICE INTENDED FOR METERING THE FLOW OF A LIQUID PREFERABLY BLOOD

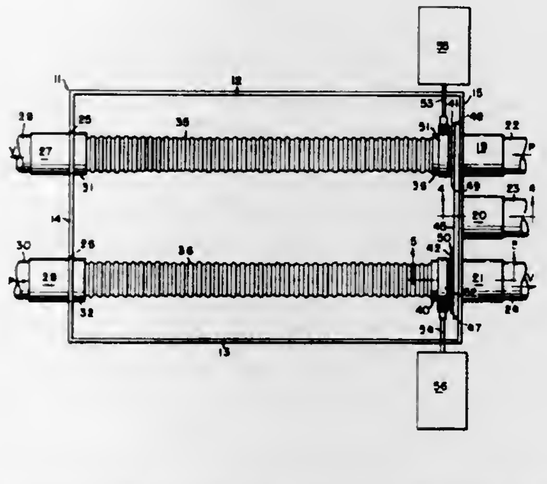
Nils Olov Wilhelm Hagstrom and Bo Lennart Ostergren, Lund, Sweden, assignors to Gambro AG, Munzgraben, Switzerland, a corporation of Switzerland
Filed Oct. 28, 1968, Ser. No. 771,069
Claims priority, application Sweden, Dec. 21, 1967, 17,569/67
Int. Cl. G01f *1/00*
U.S. Cl. 137—576 **4 Claims**



A metering device for viscous liquids, such as blood, is provided in which the liquid passes from an inlet chamber to an outlet chamber through a vertical slotted opening therebetween. Even flow of the liquid through the slot is obtained by maintaining a small amount of the liquid in the outlet chamber at the bottom of the slotted opening.

3,527,252
TUBE SWITCHING DEVICE

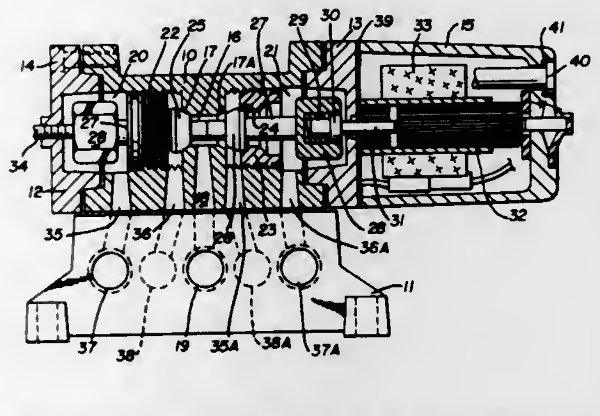
George Richard Cook and Marlowe A. Hain, Rochester, N.Y., assignors to Cutler Mail Chute Company, Inc., Rochester, N.Y., a corporation of New York
Filed Apr. 23, 1968, Ser. No. 723,544
Int. Cl. F17d *1/00*
U.S. Cl. 137—608 **11 Claims**



A tube switching device is provided between two tube sytems, one having a greater number of tubes than the other. The device comprises a flexible tube, such as of polyvinyl chloride resin connected between the two systems. One end of the flexible tube is mounted on a shiftable plate which permits changing its position relative to the open ends of tubes on the adjacent tube system to selectively establish continuity with any of said open end tubes. Flow through the tubes may be in either direction under pressure and/or vacuum. The plate may be shifted manually or by any conventional means, including pneumatic, hydraulic, electromagnetic, mechanical, or any other suitable means.

3,527,253
SELF-CLEANING POPPET SPOOL VALVE

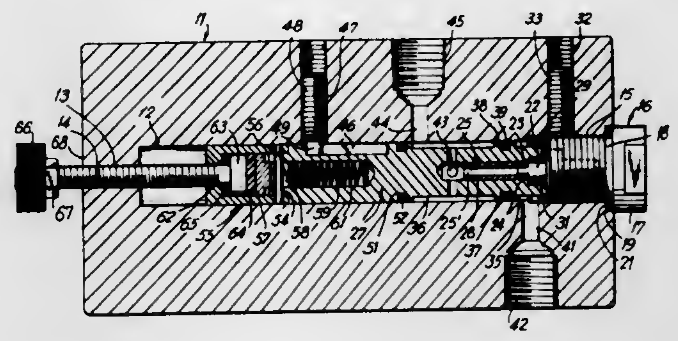
Webster B. Harpman, Youngstown, Ohio, assignor to King Valve Company, Alpena, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 471,027, July 12, 1965. This application Apr. 22, 1968, Ser. No. 723,226
Int. Cl. F16k *11/02, 31/02*
U.S. Cl. 137—625.27 **5 Claims**



A self-cleaning air valve having a single inlet part and wherein the valve elements are engaged in the manner of a spool valve and formed to act in the manner of a poppet valve, the spool being free floating for axial reciprocation and movable by the air pressure controlled by the valve.

3,527,254
FLOW CONTROL VALVE

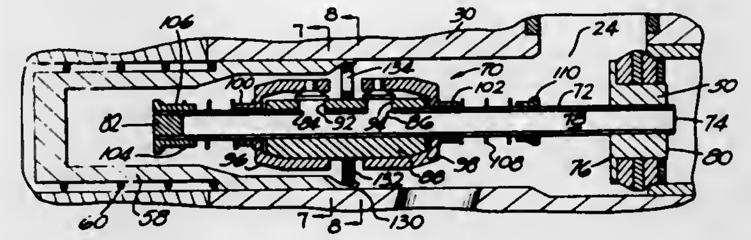
Lambert H. Mott 3rd, Hartford, Conn., assignor to Mott Metallurgical Corp., Hartford, Conn., a corporation of Connecticut
Filed July 10, 1968, Ser. No. 743,747
Int. Cl. F16k *1/06*
U.S. Cl. 137—625.3 **9 Claims**



This invention relates to the art of flow control valves, more particularly of the type which permits precise regulation of the quantity of fluid flowing therethrough, said valve comprising a longitudinally movable plunger which controls the longitudinal displacement of a seal between an inlet and outlet port, progressively to expose a porous metal sleeve for flow of fluid through such sleeve.

3,527,255
REVERSING VALVE

Fred A. Greenawalt, 4913 NE. 12th Ave., Fort Lauderdale, Fla. 33308
Filed Nov. 4, 1968, Ser. No. 773,223
Int. Cl. E03b
U.S. Cl. 137—625.29 **10 Claims**

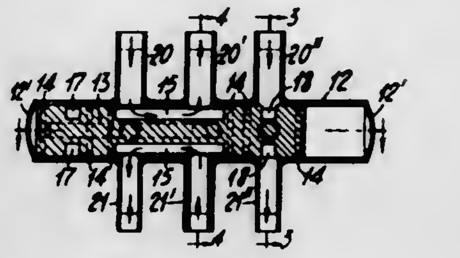


A reversing valve for refrigeration and air conditioning systems operable to selectively reverse the order of flow of refrigerant through the condenser and the evaporator, a solenoid actuated main valve being movable between two seated positions to effect reversal. A valve element assembly is associated with the main valve member so that in response to initial movement of the valve actuating mechanism, the valve element assembly operates to substantially equalize the fluid pressures on opposite sides of the main valve member to thereby enable reliable valve actuation with a small force.

3,527,256
NINE-WAY VALVE FOR INVERTING CYCLE PROVIDING BOTH A PERFECT HEAT PUMP AND A REFRIGERATOR PUMP CIRCUIT, AND CIRCUIT OBTAINED BY SAID VALVE

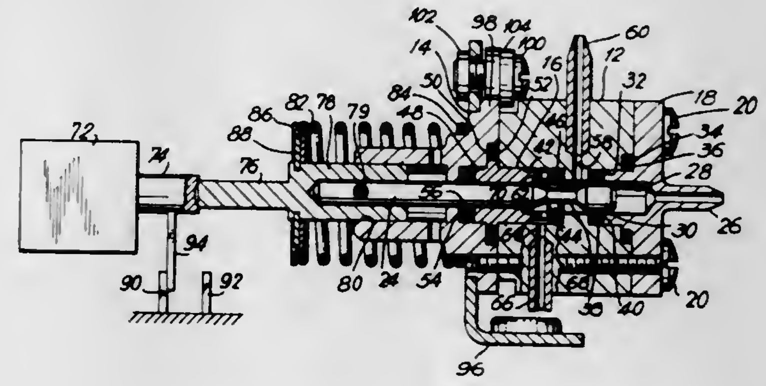
Angelo Colombo, Via Wildt 14, Milan, Italy
Filed Sept. 16, 1968, Ser. No. 769,468
Claims priority, application Italy, Sept. 15, 1967, 20,498/67
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.48 **8 Claims**

A cycle inverting nine-way valve providing a heat and refrigerator pump circuit, characterized in that said circuit is unidirectional for both cases. The valve comprises a cylinder in which a core can be moved to two extreme positions. In said core there are four longitudinal channels, two of which are peripheral and the other two internal, and four independent radial connecting passages, two of which communicate with the two inner channels. Nine radial unions connect the valve interior to the outer conduits.



3,527,257
PLUNGER TYPE SOLENOID VALVE

Nelson G. Kling, Ringwood, N.J., assignor to Technicon Corporation, Ardsley, N.Y., a corporation of New York
Filed Aug. 24, 1967, Ser. No. 663,025
Int. Cl. F16k *11/07, 31/06*
U.S. Cl. 137—625.65 **1 Claim**



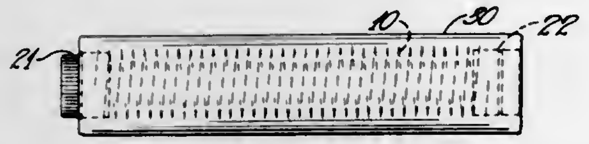
A valve has a valve body with a central longitudinal bore, a radial bore opening thereon, stationary O-ring fitted into a recess within the wall of the central bore on each side of said radial port, and a plunger member disposed within said bore and said stationary O-rings and reciprocable therein. An additional bore opens into said central bore on each side of the radial bore-two O-ring assembly. The plunger has a reduced portion to alternatively couple the central bore to one of the two additional bores, while at that time the plunger in conjunction with an O-ring seals the other of the two additional bores. The body and plunger are made of inert material, one softer than the other.

3,527,258
FLEXIBLE TUBING

Alfred S. Farr, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 636,113, May 4, 1967. This application Apr. 28, 1969, Ser. No. 824,726
Int. Cl. F16l *11/00*
U.S. Cl. 138—131 **11 Claims**

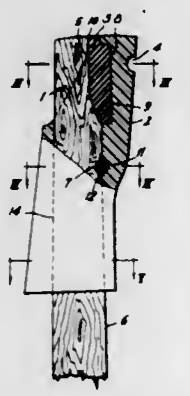
Flexible tubing comprising a helical coil of wire, connector members secured to each end of the helical coil and a flexible covering over the coil which has an inner layer including a lamina of insulating material and an outer layer including a lamina of vapor barrier material.

Unusually high unitary strength is achieved by providing in one of the layers high tensile strength material, such as glass fiber fabric, extending between the connectors in the axial direction of the tubing, and securing the high tensile strength material to the connector members.



3,527,259
PICKERS FOR PICKING STICK IN LOOMS

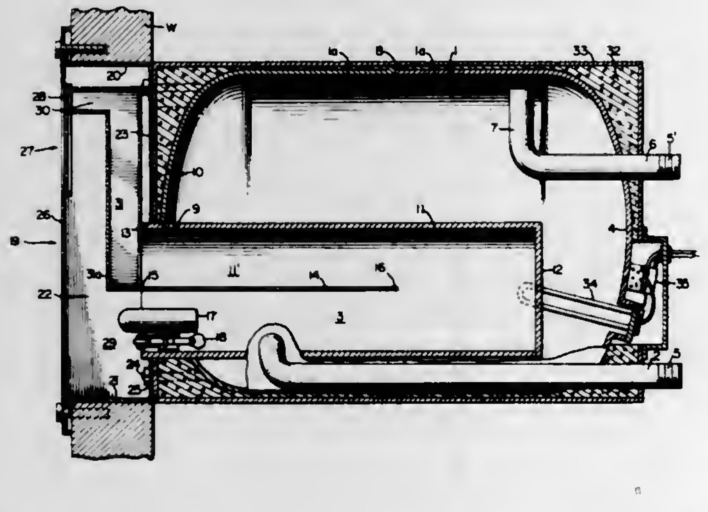
Jaime Picanol, Casa Pairal Catalunya, Zandberg, Zillebeke, near Ypres, Belgium
Filed Mar. 8, 1968, Ser. No. 711,703
Claims priority, application Belgium, Sept. 19, 1967, 704,024
Int. Cl. D03d *49/36, 49/38*
U.S. Cl. 139—159 **1 Claim**



A loom is provided with a picker made of a material having a good resistance and a damping device interposed between the picker and the adjoining portion of the picking stick and a guiding means are provided for the picking stick.

3,527,260
HOT WATER HEATER

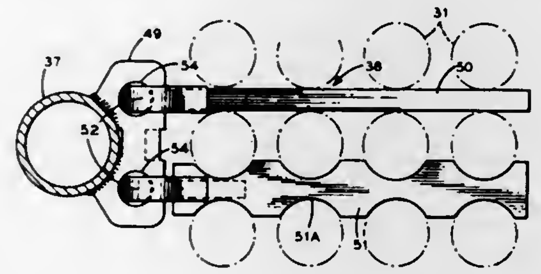
Merl J. Kimmel, Mishawaka, Ind., assignor to Instamatic Corporation, Elkhart, Ind., a corporation of Indiana
Filed Aug. 19, 1968, Ser. No. 753,657
Int. Cl. F22b *7/00*
U.S. Cl. 122—136 **10 Claims**



A water heater having an elongated water tank provided with a longitudinal heat exchanger tube extending the substantial length of the tank and including a combustion chamber therein defined by a baffle. A sealed vent assembly provides separate flue and combustion air chambers communicating with the heat exchanger tube and combustion chamber, respectively. Electrical elements provide independent water heating means.

3,527,261
TUBE GUIDE APPARATUS

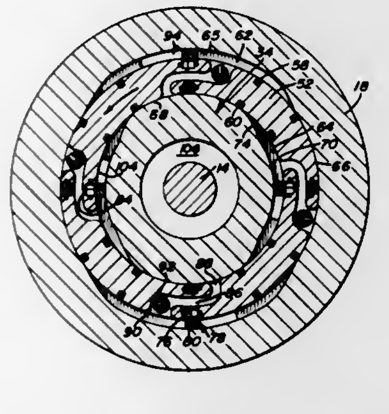
Bernhard Bigler, Rittaman, and Jules L. Louvet-Dronet, Barberton, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 12, 1968, Ser. No. 774,750
Int. Cl. F22b *37/24*
U.S. Cl. 122—510 **10 Claims**



A tube guide apparatus for maintaining the predetermined spacing between parallel rows of tubes of heat exchangers in a vapor generator, by restraining lateral movement of the tubes while permitting the longitudinal movement required for expansion. The apparatus comprises several individually detachable sections and is particularly well suited for use in hot, corrosive atmospheres where occasional guide replacement may be required. Replacement of the detachable sections is accomplished without affecting the tubes which support the tube guide apparatus.

3,527,262
ROTATING PISTON CHAMBER ENGINE

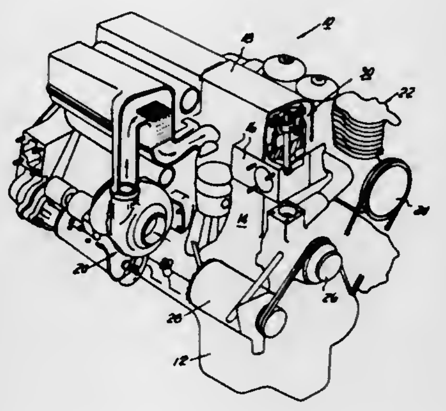
Jerry C. Fuchs, 1565 Glen Haven Drive, Merritt Island, Fla. 32952
Filed Apr. 16, 1968, Ser. No. 721,693
Int. Cl. F02b *53/08, 53/12, 55/16*
U.S. Cl. 123—8.43 **7 Claims**



A rotary combustion engine in which piston vanes are mounted by the rotor sequentially projecting into inner and outer chambers circumferentially spaced from each other and respectively intaking fuel charges rearwardly of the vanes and exhausting combustion products forwardly of the vanes in the direction of rotor rotation. On the opposite sides of the rotor vanes, fuel charges are compressed in the inner chambers and transferred to the outer chambers where they are expanded during combustion.

3,527,263
ROCKER SHAFT SUPPORT WITH FUEL NOZZLE SUPPORTING MEANS

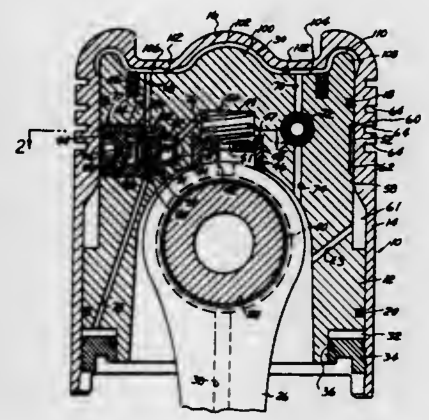
Roswell E. Carney, Grosse Pointe Woods, and Frank C. Druzynski, Birmingham, Mich., assignors to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Sept. 4, 1968, Ser. No. 757,277
Int. Cl. F01l *1/02*
U.S. Cl. 123—32 **14 Claims**



The invention discloses a novel rocker shaft support structure for an internal combustion engine by which the fuel nozzle is supported in substantially vertical position by the rocker shaft support and by the cylinder head of the engine and is further provided with fasteners to secure the rocker shaft support to the engine block.

3,527,264
COOLING MEANS FOR VARIABLE COMPRESSION RATIO PISTON ASSEMBLY

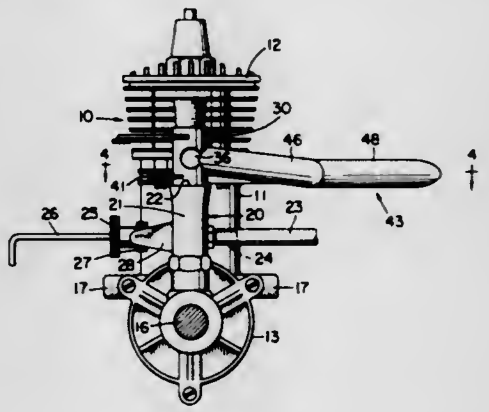
Carl F. Bachle, Grosse Pointe, Mich., assignor to Continental Aviation and Engineering Corporation, Detroit, Mich., a corporation of Virginia
Filed Mar. 14, 1968, Ser. No. 713,072
Int. Cl. F02b *75/04;* **F01p** *3/10*
U.S. Cl. 123—48 **10 Claims**



A two-part variable compression ratio piston assembly having an outer member movable relative to an inner member to vary the compression ratio of an internal combustion engine and a hydraulic system for automatically controlling relative movement of the members to maintain a predetermined maximum combustion chamber pressure. The hydraulic system includes an upper and a lower chamber which expand and contract conversely upon relative movement of the piston members and a system for supplying and discharging an incompressible fluid from these chambers in a manner which gradually increases the compression ratio of the engine until a predetermined maximum combustion chamber pressure has been achieved and which tends to maintain the maximum combustion chamber pressure after it has been achieved. The inner member is provided with a crown contoured to closely fit the top of the outer member to produce a scrubbing or pumping effect to reduce the operating temperatures of the piston assembly during an operational position in which the temperatures are most critical.

3,527,265
SPEED CONTROL DEVICE FOR A MODEL AIRPLANE ENGINE

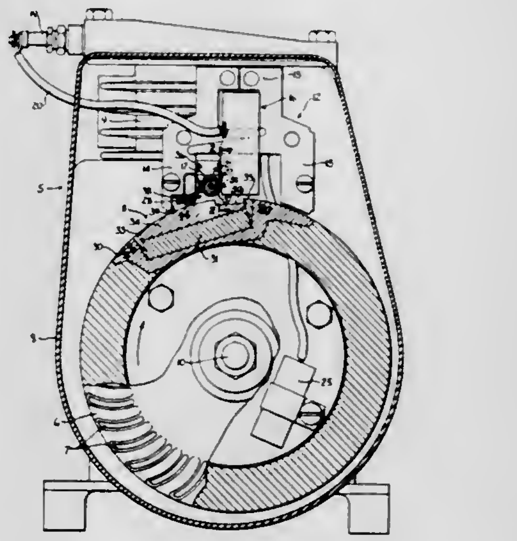
Luther K. Jennings, 2712 Summerfield Road, Winter Park, Fla. 32789
Filed Feb. 17, 1969, Ser. No. 799,661
Int. Cl. F02d *9/06, 33/00;* **F02m** *25/06*
U.S. Cl. 123—98 **5 Claims**



The carburetor air inlet of a model airplane engine is provided with relatively shiftable inner and outer sleeves for selectively effecting communication of the air inlet with the ambient air and the engine exhaust.

3,527,266
MAGNETO IGNITION SYSTEM, PARTICULARLY FOR SMALL ENGINES

John D. Santi, West Allis, Wis., assignor to Briggs & Stratton Corporation, Wauwatosa, Wis., a corporation of Delaware
Filed Apr. 28, 1969, Ser. No. 819,574
Int. Cl. F02p *1/00*
U.S. Cl. 123—149 **3 Claims**

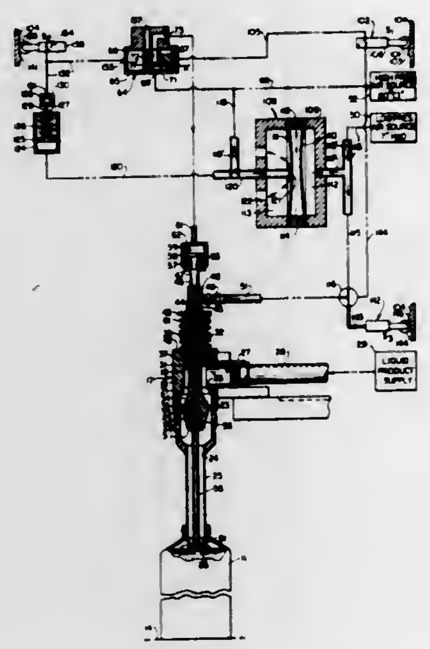


A magneto ignition system is provided with a magnetically actuated reed switch for controlling the magneto primary. Small shunt connected coils are wound around the switch and part of one core leg. At low engine speeds the switch is actuated mainly by leakage flux from the magneto energizing magnet; at high speeds the wave form of flux actuating the switch is brought by the coils nearly into coincidence with the reversing flux through the core. An arrangement for a battery ignition system is also disclosed.

3,527,267
AUTOMATIC CONTAINER FILLING APPARATUS

Alfred Moore, Jeffersonville, Ind., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1967, Ser. No. 675,959
Int. Cl. B67d *5/372*
U.S. Cl. 141—40 **16 Claims**



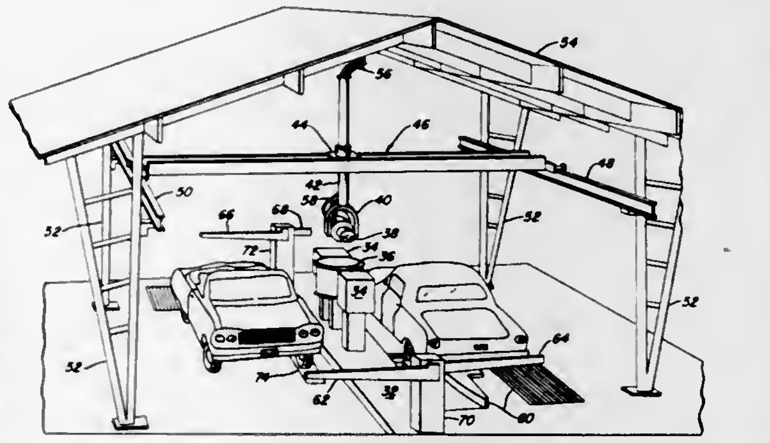
An automatic machine for filling continuously a moving row of containers with a fluent product comprises a filling head for each container having a product fill nozzle adapted to extend into the container during filling and adapted to be withdrawn after filling. The type of filling head with which the invention is concerned incorporates a low pressure air sensing tube within the nozzle, and when the product in the container reaches and blocks the lower end of the sensing tube to raise the pressure in the sensing tube a control device is actuated to shut off the product fill valve leading to the nozzle. The term low pressure air includes vacuum. The rise in pressure in the sensing tube when the lower end is blocked is relatively rapid and this rapid pressure or pulse is applied directly to one side of a primary flexible diaphragm in the control device which at the other side is adapted to produce a corresponding amplified pressure rise or pulse in a high pressure air control circuit, preferably by selective throttling of an open end of a conduit in the high pressure air control circuit. This pulse is in turn applied to control a pressure responsive device in a high pressure air operating circuit for the product fill valve.

The invention discloses two specific modes of isolating the effect of a gradual rise or other change in a set low pressure air level in the sensing tube, such as may be caused by product gradually restricting the tube opening over a period of time, to prevent premature shut off of the product fill control valve. In one embodiment, an intermediate pressure compensation chamber is provided between the primary diaphragm and a second flexible diaphragm that throttles the high pressure air conduit, and this intermediate chamber is restrictively vented to atmosphere so that a gradual rise in pressure at the one side of the primary diaphragm will not move or affect the throttling action of the second diaphragm, while a rapid rise or pulse will be transmitted to quickly operate the second diaphragm and effect fill valve shut off.

In the other embodiment the compensation for a gradual rise in air pressure in the sensing tube is accomplished in the high pressure air control circuit. Here the primary diaphragm directly throttles the conduit in the high pressure air control circuit and the high pressure air at the other side of the diaphragm is applied to opposite sides of a diaphragm assembly connected to control the high pressure air fill valve control circuit. A restriction is provided in the passage connecting the opposite sides of this diaphragm assembly. Thus a gradual rise in air pressure in the sensing tube will proportionately appear in the high pressure air control circuit, but it will not move or otherwise affect the diaphragm assembly, while a rapid rise or pulse will, due to the aforesaid restriction in the high pressure air passage, unequally apply the pulse to opposite sides of the diaphragm assembly and actuate the product fill valve.

3,527,268
DEVICE FOR AUTOMATICALLY FILLING VEHICLE TANKS WITH MOTOR FUEL

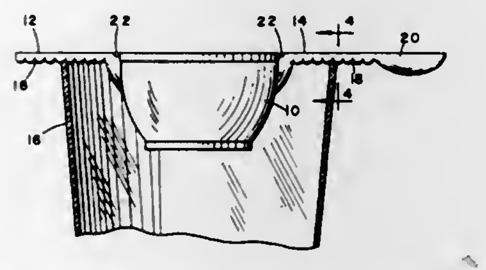
Irwin Ginsburgh, Morton Grove, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
Continuation-in-part of application Ser. No. 410,913, Nov. 13, 1964. This application July 26, 1967, Ser. No. 656,171
Int. Cl. B67d *5/14*
U.S. Cl. 141—98 **16 Claims**



Automatic fueling structure for motor vehicles having vehicle positioning means, fuel dispensing apparatus including means for opening any flap covering the fuel tank inlet and for removing any cap on said inlet, and control means for customer selection of fuel.

3,527,269
BEVERAGE MEASURING RECEPTACLE

Ralph P. Wilton, S. 4th St., Wrightsville, Pa. 17368
Filed Jan. 22, 1968, Ser. No. 699,602
Int. Cl. G01f *19/00*
U.S. Cl. 141—364 **3 Claims**

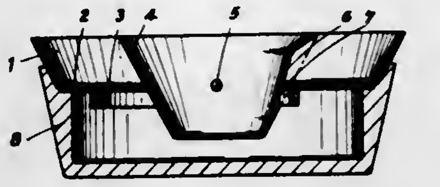


A cup-like beverage measuring receptacle having fingers projecting radially outward from opposite sides of the rim thereof for support by the opposite sides of the rim of a drinking glass, the lower surfaces of said fingers being semi-circular in cross-section to permit rolling the same smoothly to discharge the contents of the receptacle into the glass, means also being on the upper surfaces of said fingers adjacent said receptacle to prevent the flow of liquid along said fingers, and additional means on at least one finger engaging the rim of a glass to prevent accidental axial movement of said finger relative to said glass.

3,527,270
LIQUID MEASURER WITH A TIPPING CUP

Karl-Heinz Weli, Solingen-Hohscheid, Germany, assignor to Grasoli-Werk Gebr. Grah, Solingen, Germany, a firm

Filed Dec. 14, 1967, Ser. No. 690,458
Claims priority, application Germany, Mar. 4, 1967, G 36,618
Int. Cl. B67c *3/00*
U.S. Cl. 141—284 **5 Claims**

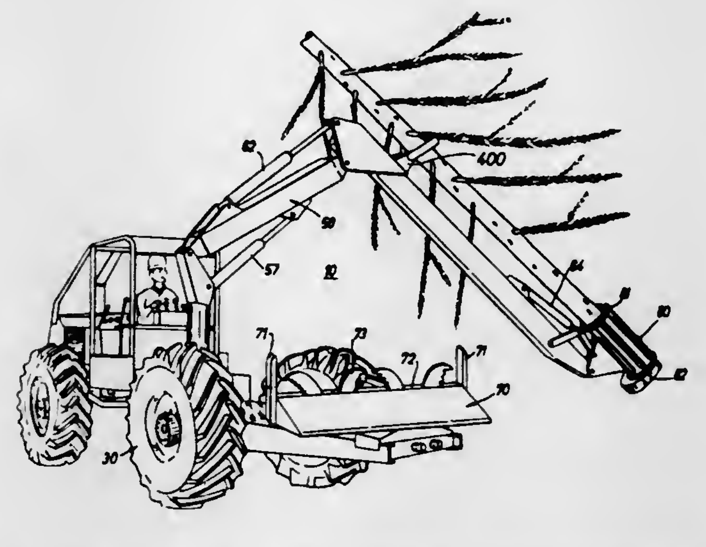


This invention provides a liquid measurer consisting of a mounting dish, the bottom of which is provided with an opening for a tiltably mounted tipping cup. After being filled with a predetermined amount of liquid, the tipping cup first loses its balance and empties, and then returns automatically to its original position.

3,527,271
FELLING SKIDDER COMBINATION INCLUDING HEELING DEVICE

Jean Y. Chateauneuf, Montreal, Quebec, Canada, assignor of one-third each to Canadian International Paper Company and Quebec North Shore Paper Company, both of Montreal, Quebec, Canada, and Anne Paper Ltd., Beaupre, Quebec, Canada, all corporations of Canada

Filed Jan. 3, 1968, Ser. No. 695,402
Claims priority, application Canada, Jan. 6, 1967, 979,734
Int. Cl. A01g *23/02*
U.S. Cl. 144—3 **19 Claims**

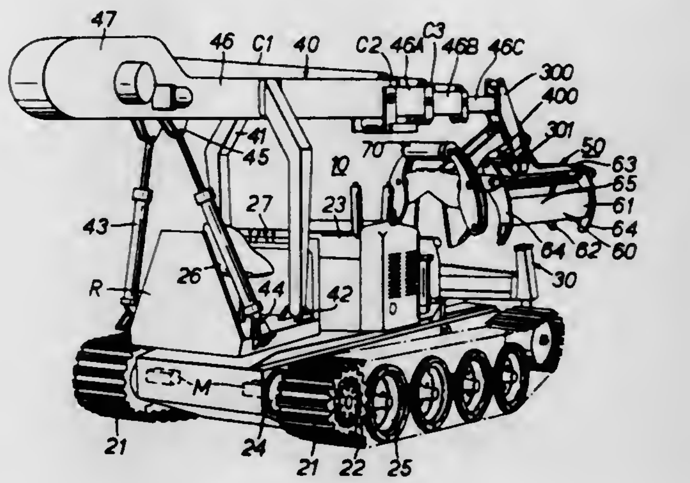


A machine for use in field logging operations and which includes a self-propelled tractor unit having an extendible and retractable boom pivotally mounted thereon for selected movement about a vertical axis. A felling head consisting of a grapple and a shear mechanism is mounted on the boom and selectively operable, respectively, to engage a standing tree and sever such engaged tree. A heeling device is secured to the boom in spaced relation with respect to the felling head for engaging the tree during slewing of the boom to manoeuver the severed tree into a position suitable for loading the same onto a bunk on the vehicle. The bunk includes means for anchoring individually the butt end of several trees or groups of trees such that the vehicle can readily collect sparsely located trees and skid such collected trees to a selected site.

3,527,272
MODIFIED FELLING HEAD

Douglas D. Hamilton, Mount Royal, Quebec, Canada, assignor of one-third each to Canadian International Paper Company and Quebec North Shore Paper Company, both of Montreal, Quebec, Canada, and Anne Paper Ltd., Beaupre, Quebec, Canada, all corporations of Canada

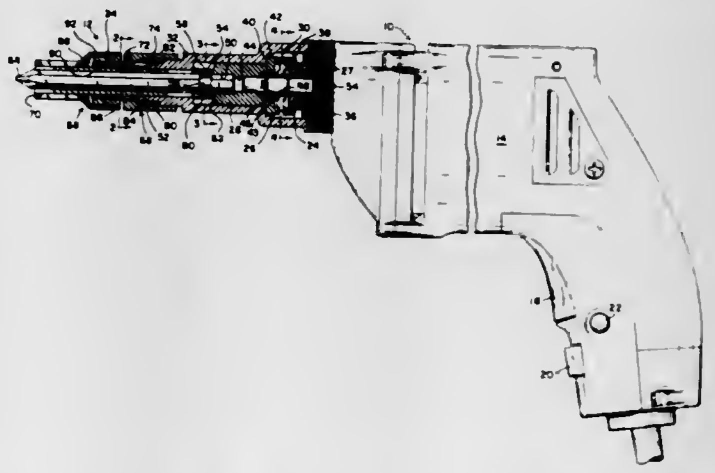
Filed Mar. 11, 1968, Ser. No. 712,053
Claims priority, application Canada, Mar. 14, 1967, 985,180
Int. Cl. A01g *23/02*
U.S. Cl. 144—3 **33 Claims**



A tree felling vehicle having a felling head attached to the free end of an extendible and retractable boom wherein the felling head consists of a grapple for engaging a tree to be felled and a shear mechanism having a pair of cutting members selectively movable with respect to one another along a particular path for severing the tree engaged by the grapple. The shear blades move in an arcuate path whereby the cutting edge has a component of motion parallel to such edge which reverses during the cutting operation.

3,527,273
ADJUSTABLE MEANS OF LIMITING DRIVING DEPTH WITH ATTACHABLE NOSEPIECE

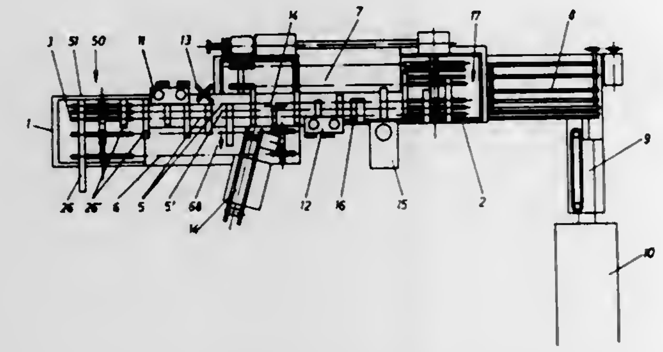
Ronald C. Falter, Columbia, S.C., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 585,824, Oct. 11, 1966. This application Jan. 24, 1968, Ser. No. 700,168
Int. Cl. B25b *23/00*
U.S. Cl. 144—32 **4 Claims**



A tool including a detachable housing, an axially movable, rotatable, work-performing component disposed in the housing, a clutch located in the housing which disengages to terminate rotation of the work-performing component when the work-performing component reaches a predetermined position longitudinally of the housing, a detachable stop member adjustable axially of the housing for varying the distance that the end of the work performing component protrudes from the housing when the clutch disengages, a keeper for retaining the stop member in the position to which it is adjusted, and a removable nosepiece which permits the work-performing component to be removed from the tool without disturbing the depth adjustment.

3,527,274
CONTINUOUS DOVETAILING MACHINE

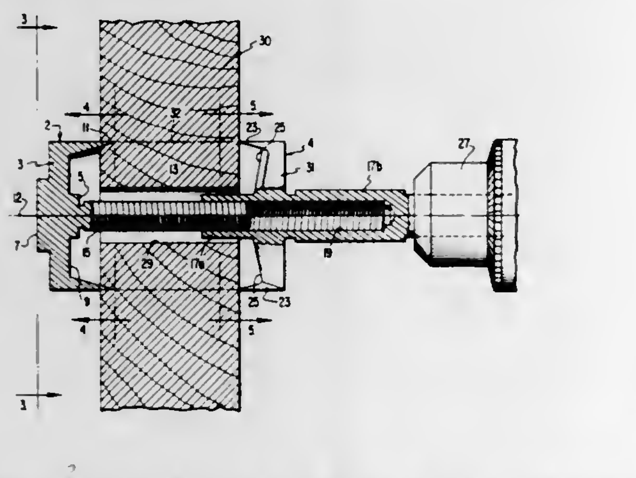
Kurt Kramer, Auerstr. 12, and Erwin Dimter, Rudolf-Diesel Str. 12, both of Illertissen, Germany
Filed Oct. 21, 1966, Ser. No. 588,409
Claims priority, application Germany, Oct. 22, 1965, D 48,473; Oct. 23, 1965, D 48,485; Oct. 13, 1966, D 51,293
Int. Cl. B27f *1/02*
U.S. Cl. 144—91 **2 Claims**



A continuous dovetailing machine in which workpieces are fed by means of holders to tools, and wherein the boards or workpieces are selectively advanced, the boards or workpieces adapted to be gripped by clasping holders while they are being carried past milling tools so that displacement or shifting cannot take place, and wherein the clamping holders are capable of accommodating boards of any desired width or thickness.

3,527,275
SINGLE OPERATION DOOR LOCK BORING DEVICE

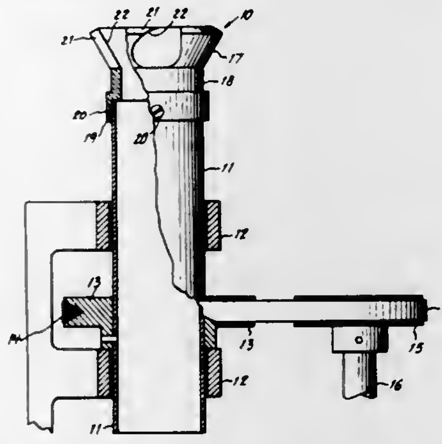
Herman A. Koehler, 3674 SW. 25th St., Miami, Fla. 33133
Filed Jan. 3, 1968, Ser. No. 695,470
Int. Cl. B23b *49/00;* **B27c** *3/08*
U.S. Cl. 144—93 **4 Claims**



A single operation door lock boring device comprising a locating and cutting part, and a drilling part, said locating and cutting part including a circular sharp edge portion defining a cup, and a peripherally threaded shaft normally projecting from the center of the cup, said drilling part comprising a drilling bit having a diameter identical to that of said cup and including two elongated shaft portions that normally project at opposite sides of said bit in longitudinal alignment therewith, said bit and shaft portions being internally threaded and having the same diameter as said peripherally threaded shaft, whereby, by means of an applied power source both parts come in close contact by telescopic approximation while drilling and cutting in a single operation a door lock bore from both sides of a door.

3,527,276
CAULIFLOWER LEAF TRIMMING MACHINE

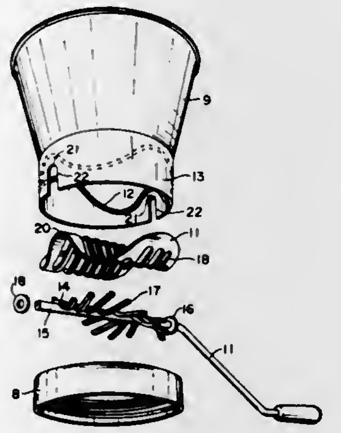
Thomas Harlan Guilford, Le Roy, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,191
Int. Cl. A01d *55/00;* **B02c** *13/00;* **A01f** *1/06*
U.S. Cl. 146—106 **2 Claims**



A cauliflower leaf trimming machine including cauliflower stem guiding means, cutting means which is coaxial with the guiding means, and rotary movement producing means whereby the leaves appended to the stem are cut away.

3,527,277
NUT MEAT CHOPPER AND METHOD OF MAKING SAME

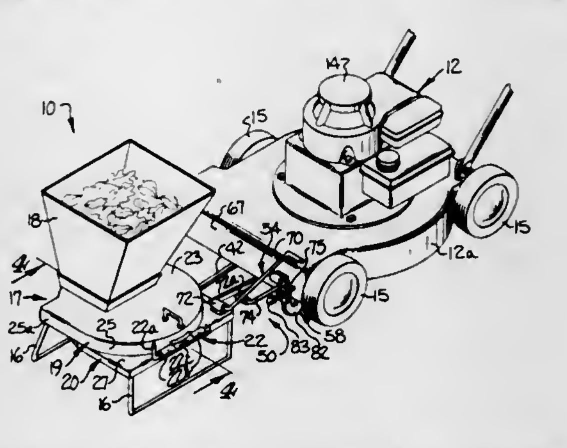
J. Walter Woods, Rockford, Ill., assignor, by mesne assignments, to Androck Incorporated, Worcester, Mass., a corporation of New York
Filed Nov. 17, 1967, Ser. No. 683,861
Int. Cl. A47j *42/24*
U.S. Cl. 146—123 **5 Claims**



This chopper, designed for use in the home, has a molded plastic hopper with a cylindrical lower end portion inside which is an integral undulated rib spaced a pre-determined distance from the lower end, against the bottom of which an undulated slotted metal plate for cutting purposes is located. Slots in diametrically opposed relation are provided in the lower end of the hopper to locate and provide bearing support for the shaft portion of a hand operable crank, the shaft carrying a toothed cutter plate, the teeth of which operate through the slots in the aforesaid plate to chop nut meats placed in the hopper. A cap ring of plastic material has a telescoping fit on the lower end of the hopper and has a rim which by engagement with the shaft from below locates the same and the cutter plate properly relative to the slotted plate. Both the hopper and cap ring are of thermoplastic material and are fused together by heat of friction by rotation of the ring relative to the hopper while these telescoped parts are pressed together.

3,527,278
APPARATUS FOR MULCHING VEGETATION

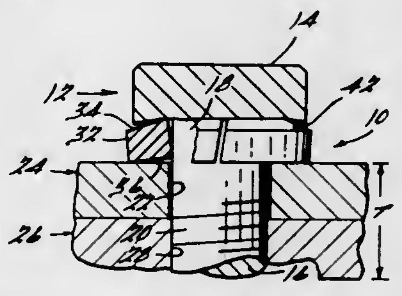
Mitchell A. Johnson, Jr., Rte. 5, Box 447, Taylorsville, N.C. 28681
Filed Feb. 28, 1968, Ser. No. 709,049
Int. Cl. A01d *55/00;* **B02c** *18/12*
U.S. Cl. 146—124 **12 Claims**



A mulching device driven by power from an adjacent power driven rotary lawn mower comprising a mulching chamber having rotatable cutting means therein for shredding vegetation, a rotatable drive shaft for the cutting means, means for connecting the mulching device to the lawn mower and for maintaining the respective shafts thereof in horizontally spaced relation, and means for connecting the drive shaft to a driven shaft of the lawn mower to operate the cutting means of the mulching device.

3,527,279
LOCKWASHER

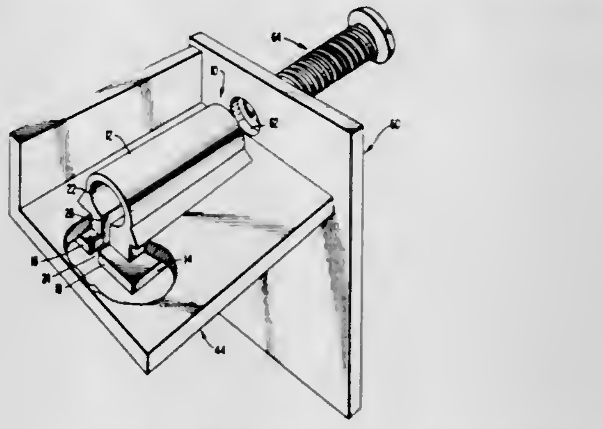
Harold R. Sparks, Phoenix, Ariz., assignor to Knocke and Associates, Inc., Birmingham, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 503,550, Oct. 23, 1965. This application June 3, 1968, Ser. No. 734,117
Int. Cl. F16b *39/24, 39/26*
U.S. Cl. 151—36 **13 Claims**



A lockwasher comprising a length of wire of substantially trapezoidal or parallelogram cross section formed into a helical configuration, the lockwasher having a radially directed slit at a predetermined angle to the axis thereof, whereby the ends of the lockwasher define inclined abuttingly engageable surfaces, the lockwasher having radially spaced inner and outer surfaces inclined relative to the axis thereof, and axially spaced upper and lower surface portions inclined radially inwardly and upwardly toward the axis thereof, whereby the lockwasher originally assumes a helical configuration but upon tightening of an associated bolt, stud, nut, or the like, the helix of the lockwasher is removed and the lockwasher assumes a generally conical configuration and is thereby adapted to exhibit the superior tightening characteristics of a conical lockwasher.

3,527,280
JOINERY INSERT

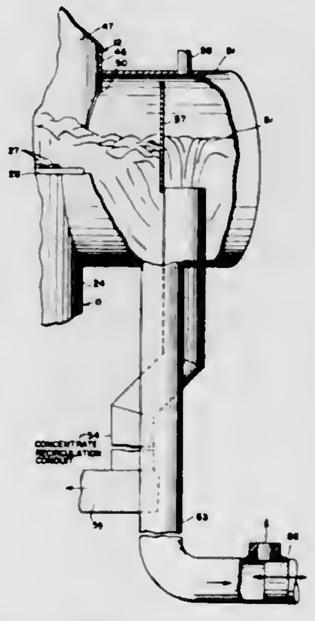
Bronislaus Joseph MacNorius, McComb, Miss., assignor to Croft Metal Products, Inc., McComb, Miss., a corporation of Mississippi
Filed Sept. 27, 1968, Ser. No. 763,154
Int. Cl. F16b *39/00*
U.S. Cl. 151—41.75 **6 Claims**



The body of a joinery insert is provided with flanges at one side and cooperating ribs which present channels for receiving the opening-defining edges of a member into which the body is inserted. The body is slotted along the flanged side to allow the insert to deform and then snap into positive engagement with the member, and the slot intersects a bore along the rounded side of the body so that a screw, upon entering the bore, may deform it only so far as the slot will allow the body to spread before the member prevents further spreading. The ribs are wedge shaped to facilitate insertion of the body.

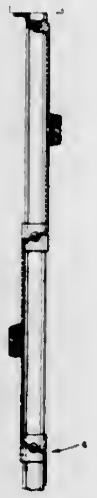
3,527,281
EVAPORATION SYSTEM

Thomas M. Hamill, P.O. Box 362, Kailua, Hawaii 96734
Filed July 20, 1967, Ser. No. 654,890
Int. Cl. B01d *1/08, 1/26, 3/42*
U.S. Cl. 159—17 **17 Claims**



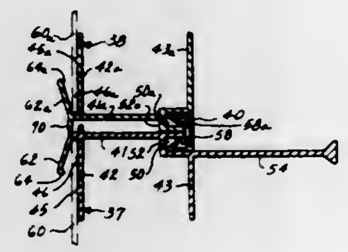
An evaporation system for concentrating a liquid in which the recirculation of the concentrated liquid is prevented during normal operation but in which the outfeed conduits, valves, etc., are arranged such that the liquid may be automatically recirculated in response to such predetermined conditions as flow stoppages, level variations, density, salinity and other factors. The evaporator includes a slanting tube calandria in which the tube sheets are at right angles to the tubes such that there is provided a sloping, generally annular path of gradually increasing capacity along the lower tube sheet for the discharge of condensed vapor. The structure above the calandria is offset to facilitate the removal of the tubes for cleaning purposes, for example.

3,527,282
GARAGE DOOR
Francis J. McCabe, Penns Park, Pa.
(Regency Woods H-16, Doylestown, Pa. 18901)
Filed Oct. 18, 1968, Ser. No. 768,720
Int. Cl. E06b *3/48;* **E05d** *15/26*
U.S. Cl. 160—207 8 Claims



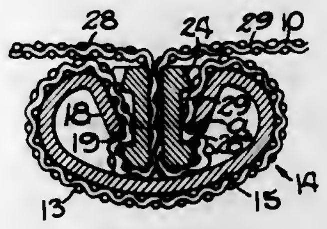
A door unit comprises a frame having channeled side members and a plurality of horizontally disposed slats. Alternate slats are Z-shaped in cross-section and are pivotally mounted at each end in means which are slideably disposed in the channeled side members. The remaining slats are connected to the edges of the Z-shaped slats.

3,527,283
UPWARD ACTING DOOR
Rollo R. Butler, Warren, Allen J. Olsen, Royal Oak, Andrew C. Pantaleo, St. Clair Shores, and Melvin H. Rosenblatt, Southfield, Mich., assignors to The Celotex Corporation, Tampa, Fla., a corporation of Delaware
Filed Oct. 29, 1968, Ser. No. 771,484
Int. Cl. E06b *3/48*
U.S. Cl. 160—229 6 Claims



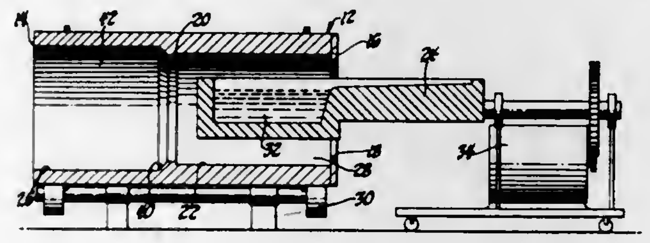
Sections of a hinged upward acting door are connected together economically and in weather-tight condition by a plastic hinge which can be easily inserted into pre-designed elongated channels in abutting sections.

3,527,284
CURTAIN PLEAT FORMER
Joseph L. Nelson and Laurell F. Roth, Freeport, Ill., assignors to Newell Mfg. Co., Freeport, Ill., a corporation of Illinois
Filed Dec. 20, 1968, Ser. No. 785,561
Int. Cl. A47h *13/14*
U.S. Cl. 160—348 9 Claims



For forming a pleat in a curtain, a pleater is locked into the upper edge of the curtain. The pleater has two basic parts that are locked together with the curtain between them to form a pleat and, at the upper end of the pleater is a ring for hanging the curtain.

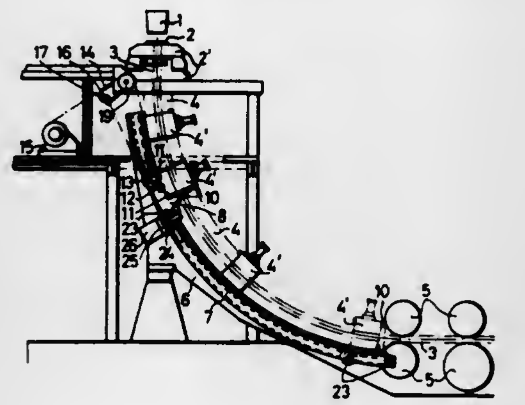
3,527,285
METHOD AND MOLD FOR CASTING THIN WALL CYLINDERS
Fred J. Webbere, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,236
Int. Cl. B22d *13/02, 29/00*
U.S. Cl. 164—114 3 Claims



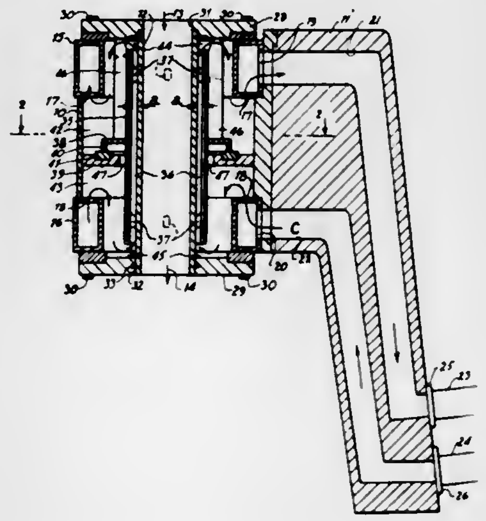
Thin wall cylinders wherein the thickness of the wall is approximately equal to one-half of the diametric solidification contraction of the material of construction or smaller are centrifugally cast in a suitable mold and removed therefrom without disassembly of the mold. An end plate is provided at one end only of the mold and a shallow weir is employed within the mold to retain the molten metal until it has solidified. The solidified article is removed over the weir through the open end of the mold.

3,527,286
CONTINUOUS CASTING APPARATUS HAVING A STRAND GUIDING ASSEMBLY WITH A TRACKWAY ALONGSIDE
Adolf Meitz, Ratingen-Tiefenbrolch, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany
Filed Mar. 28, 1967, Ser. No. 626,567
Int. Cl. B22d *11/12*
U.S. Cl. 164—282 8 Claims

A continuous casting apparatus includes an open ended mold, into which molten metal which is to be cast is directed and means for withdrawing a strand of the cast metal from the mold and a guiding assembly between the mold and the withdrawing means. The guiding assembly includes a curved guiding support upon which is placed a plurality of individual guide sections. Such individual guide section usually includes strand and guiding means such as rollers and means for cooling the strand, for example water spray nozzles. A plurality of these sections are spaced along the guiding assembly and positioned at those locations which are necessary in order to provide proper guiding of the strand. When it is desired to shift the position of one or more of the guiding sections, this may be done with a trackway which extends substantially parallel to the central line for the strand guiding. A wheel carriage is movable along the trackway and its movement is controlled by means of a pulley and winding drum lifting system. Each carriage has means for lifting the individual guide sections onto the carriage or off of the carriage and such means may comprise any well known lifting device such as a hydraulic lifting element.



3,527,287
CONTINUOUS-CASTING MOLD ASSEMBLY
Horst Huber, Westfield, N.J., assignor to Concast, Inc., New York, N.Y.
Filed Nov. 14, 1967, Ser. No. 683,394
Int. Cl. B22d *11/00, 27/04*
U.S. Cl. 164—283 2 Claims

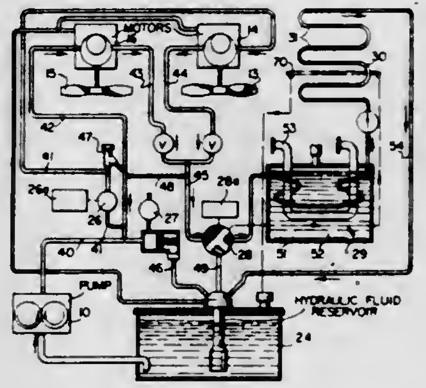


An open-ended casing on a support has a pair of conduits for fluid coolant around it opening into it. A tubular open-ended mold liner in the casing has a tubular baffle member around it with a space between. The ends of the mold liner open through caps on the ends of the casing and the baffle member is supported in the casing, with its ends spaced from the caps, by a flange around its outer wall extending outward and resting on a flange that projects inward from around the casing wall between the conduits. The flanges also separate the interior of the casing into two chambers so that fluid entering one chamber from one of the conduits circulates through the space between the baffle member and mold liner into the other chamber, and then out the other conduit. This structure enables the mold liner and baffle member to be readily replaced in the casing.

3,527,288
METHOD OF HEATING GASES
Joseph E. Guthrie, Florham Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed July 19, 1967, Ser. No. 654,369
Int. Cl. F28f *13/18*
U.S. Cl. 165—1 12 Claims

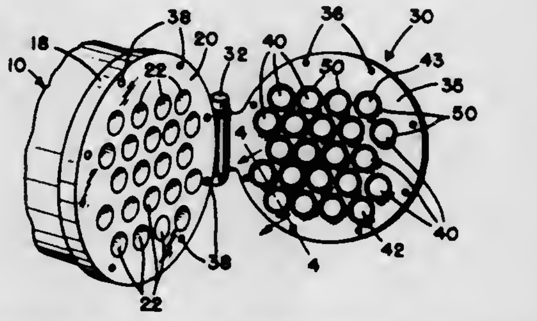
The reversion of carbon monoxide to carbon and carbon dioxide while heating it to temperatures above about 850° F. is avoided by heating it in equipment containing over 25 wt. percent aluminum or chromium in the surfaces contacting the carbon monoxide.

3,527,289
TEMPERATURE CONTROL UNIT
John K. Foessl, Montreal, Quebec, Canada, assignor to Galt Equipment Limited, Candiac, Quebec, Canada
Filed Dec. 16, 1968, Ser. No. 783,832
Claims priority, application Canada, July 26, 1968, 26,142
Int. Cl. F25b *29/00*
U.S. Cl. 165—29 13 Claims



A self-contained temperature control unit particularly adapted for fitting into a cargo container, incorporating a refrigeration unit of the vapor compression type, employing a hydraulic medium in a closed circuit, the hydraulic medium being employed to drive the fans for the evaporator, and condenser coils, one fan drawing air from the cargo container and over the evaporator coil to cool the air before returning the air back into the container.

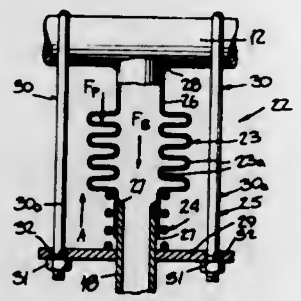
3,527,290
HEAT EXCHANGER
Alfred W. Lossing, Derby, N.Y., assignor to The Durion Company Inc., Dayton, Ohio, a corporation of New York
Filed Aug. 26, 1968, Ser. No. 755,360
Int. Cl. F28f *9/02;* **F16l** *5/00*
U.S. Cl. 165—70 8 Claims



The housing of a heat exchanger encloses multiple tubes each terminating at an end plate having a flat face, and a pivotally supported head member includes a mating flat face and multiple passages which align with the tubes. Resilient annular gaskets are located between the faces in surrounding relation with the ends of the passages, and each gasket includes a portion which projects into a corresponding annular recess formed within the face of the head member.

3,527,291
EXPANSION ACCOMMODATING MEANS AND METHOD

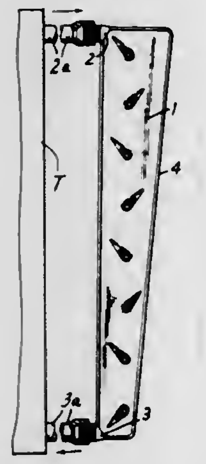
Robert J. Neary, Westfield, and Walter J. Markowski, Cranford, N.J., assignors to Aero-Flow Dynamics, Inc. (The Wing Co. Division), Linden, N.J., a corporation of New York
Filed May 16, 1968, Ser. No. 729,660
Int. Cl. F28f *7/00;* **F16l** *13/04*
U.S. Cl. 165—83 **5 Claims**



Banks of heater tubes of high slenderness ratio extending between fixed upper and lower headers in an air heater unit, each tube having independently functioning expansion joint formed by compressible bellows within its length at upper end thereof, and preloaded compression spring exerting bias on bellows in direction of tube expansion; cup element between spring and bellows transmits spring force to latter; fixed but vertically adjustable common plate support for lower ends of all said springs, plate being suspended by inverted U-bolts from upper header; method provides prevention of tube buckling while accommodating tube expansion by establishing compression spring force substantially equal in amount and opposite to the sum of certain forces exerted by said bellows on its associated tube during operation of heater unit.

3,527,292
RECIRCULATING THERMOSYPHONIC HEAT EXCHANGERS

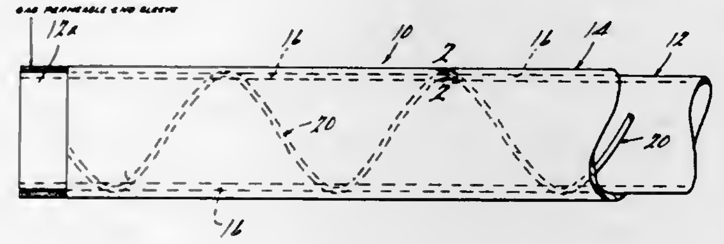
Ronald Rutherford, Sunderland, England, assignor to Washington Engineering Limited, Washington, Durham County, England
Filed Dec. 15, 1967, Ser. No. 690,968
Int. Cl. F28d *15/00;* **F28f** *13/08;* **H01f** *27/10*
U.S. Cl. 165—106 **5 Claims**



A heat exchanger comprising a top and bottom header and a plurality of spaced flat sections extending side by side between the headers. The internal cross section of each section varies along its length and is greatest at that end connected with the top header. Preferably the spacing between the side walls of each section is constant and the width of the section increases progressively along its length. The or each side of a section may be formed at spaced points with depressions of elongated shape, inclined to the longitudinal axis of the section, such that the side walls contact to form obstructions which cause liquid flowing through the section to follow a more or less tortuous path.

3,527,293
VENTED DUPLEX TUBE ASSEMBLY

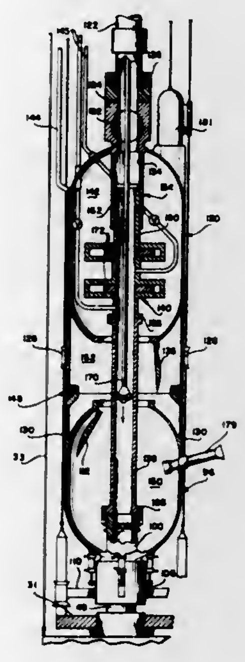
Louis A. Meisse, Jamestown, N.Y., and Gary Lloyd, Wheaton, Ill., assignors to Plymouth Tube Division of Van Pelt Corporation, Bloomingdale, Ill., a corporation of Michigan
Filed Nov. 13, 1968, Ser. No. 775,408
Int. Cl. F28f *1/36*
U.S. Cl. 165—178 **4 Claims**



A vented duplex tube assembly comprised of an inner metal tube, and an outer metal tube, said metal tubes being of dissimilar materials and being in generally telescoped position relative to one another, said duplex tube containing at least one or more wires located between the inner and outer metal tubes, said wire serving the function of permitting the venting of gas from between the tubular portions.

3,527,294
UNDERWATER EXPLORATION AND COMPLETION SYSTEM

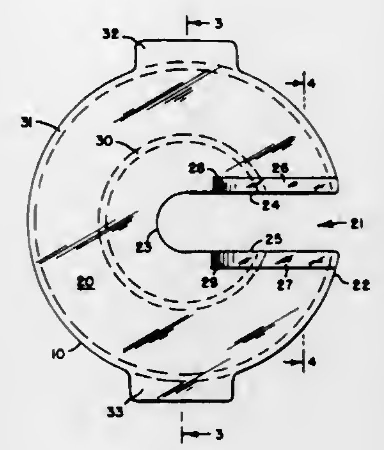
Folker H. Weiss, Los Altos, and Raymond O. Courtright, Jr., San Jose, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 24, 1968, Ser. No. 770,187
Int. Cl. E21b *7/12, 33/035*
U.S. Cl. 166—5 **5 Claims**



An atmospheric drill-through capsule arrangement is provided with a small number of blowout preventers and personnel in the capsule are utilized to interchange blowout preventer rams stored in the capsule as various diameter objects are passed into the well during a wildcat drilling operation. A dual-capsule arrangement is also provided for performing completion and production operations in a single trip from the water surface to the underwater well.

3,527,295
TOOL ARTICLE AND METHOD OF USE

William O. Gangl, 211 E. Owasso Lane, St. Paul, Minn. 55112, and William J. Gangl, St. Paul, Minn.; said William J. Gangl assignor to said William O. Gangl
Filed Nov. 12, 1968, Ser. No. 774,618
Int. Cl. E21b *33/03*
U.S. Cl. 166—85 **8 Claims**



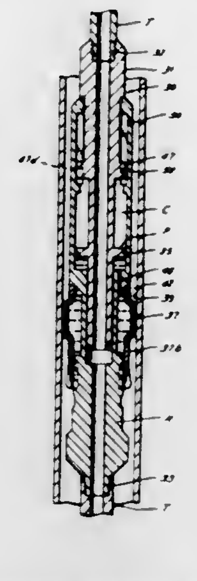
A new tool for installing drop-pipe in the casing of wells is taught. The tool is free of moving parts and consists essentially of a flat plate member having a pipe-receiving slot opening extending therein from the periphery thereof into the central area thereof. Along the upper surface of the plate member immediately adjacent the slot opening are flat-topped lugs. The slot opening is of a width which permits drop-pipes to be slipped laterally through the slot and then longitudinally through the portion of the opening located centrally in the plate member; but the width of the slot opening is insufficient to permit coupling members uniting separate lengths of drop-pipe to pass longitudinally through it. Thus, the shoulder of a pipe coupling member rests upon the upper surface portions of the tool immediately adjacent the slot opening. The pipe coupling member may be slid from a rested position on the flat top lugs to a downward position free of the lugs and centered over the central area of the plate member at the inner terminus of the slot opening. Skirt flanges depend from the plate member in concentrically spaced fashion about the central portion of the slot opening; and these flanges serve as guide elements for centering the tool on the top of a well casing.

In use, a drop-pipe with a coupling member at its upper end is lowered down a well casing through the slot opening of the tool and then held in resting position on the tool over the well casing by virtue of the fact that the shoulder of the coupling member does not pass through the slot opening of the tool. Then an additional length of drop-pipe with a coupling member at its upper end is affixed to the coupling member resting on the tool. The assembly of drop-pipe is slightly raised and the tool removed from below the lower coupling member and placed on the drop-pipe just above the lower coupling member, after which the aforenoted operations are repeated until the desired length of drop-pipe is installed in the well casing.

3,527,296
INFLATABLE SAFETY SHUT-OFF FOR WELL BORES OR OTHER OPENINGS

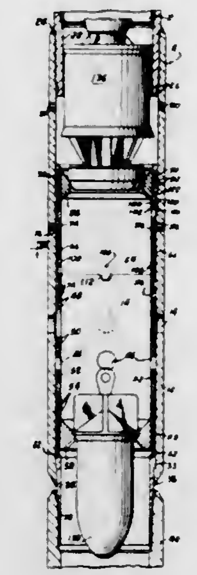
Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Sept. 20, 1968, Ser. No. 761,150
Int. Cl. E21b *33/127, 33/129*
U.S. Cl. 166—122 **27 Claims**

A tool incorporating a reinforced inflatable element to be carried on a tubular member within a well bore or other opening whereby the reinforced inflatable element can be expanded within the surrounding opening and seal off the opening when either tension is relieved from the tubular member or weight applied to the tubular member to place it under compression.



3,527,297
STAGE CEMENTER

William L. Todd, Los Angeles, Calif., assignor, by mesne assignments, to Jerry L. Pinkard, Fort Worth, Tex.
Filed Feb. 17, 1969, Ser. No. 799,718
Int. Cl. E21b *33/16*
U.S. Cl. 166—154 **11 Claims**



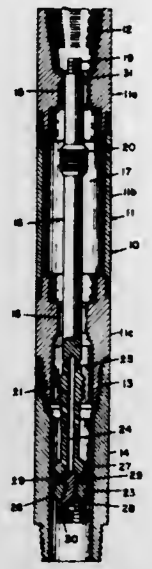
A stage cementer to be positioned in a well bore consisting of a tubular body with circulation ports extending through the sides thereof and an inner sleeve slideably disposed in the tubular body, said inner sleeve having circulation ports through the sides thereof, whereby the inner sleeve may be manipulated by applying pressure at the well head to open and close ports in the body.

3,527,298
BOTTOM HOLE SAMPLER

William M. Varty and Donald L. Zerb, Edmonton, Alberta, Canada, assignors to Drill Stem Testing & Coring Ltd., Edmonton, Alberta, Canada
Filed Feb. 11, 1969, Ser. No. 798,418
Int. Cl. E21b *27/00;* **F21b** *25/00*
U.S. Cl. 166—162 **5 Claims**

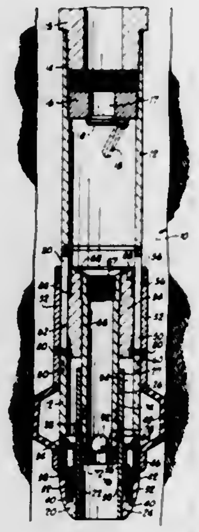
A tubular casing removably interposed in a string of drill pipe, as a removable component of the string. The casing is provided with a pair of longitudinally spaced valve passages and with a sampler chamber therebetween.

A valve stem, separably connectable to a drill rod, carries a pair of valve members for cooperation with the valve passages. The stem is axially movable relative to the casing between a valve-open position which permits free flow of fluid through the casing, and a valve-closed position in which fluid is trapped in the sampler chamber.



3,527,299
FLOAT SHOE APPARATUS

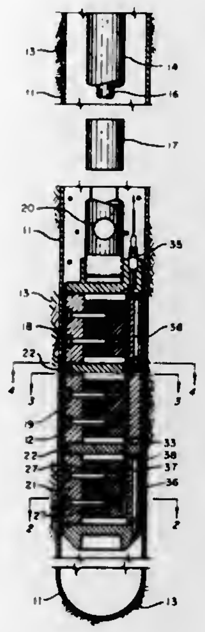
William R. Lewis, Wichita Falls, Tex., assignor, by mesne assignments, to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 25, 1968, Ser. No. 778,409
Int. Cl. E21b *23/00*
U.S. Cl. 166—184 **10 Claims**



A float shoe apparatus for cementing well casings which includes an outer tubular member connectable to the lower end of a string of well casing, a nose plug secured to the lower end of the tubular member, an outer sleeve movably mounted on, and concentrically surrounding a medial portion of, the tubular member, an inner tubular member secured in, and opening concentrically through, the nose plug, and a valve internal piston assembly mounted concentrically within the outer tubular member and slidable axially therein. The outer tubular member is axially slotted at a medial portion which underlies an inflatable rubber packing sleeve forming a portion of the outer sleeve, and downward movement of the internal piston in the outer tubular member forces fluid into the packing sleeve to expand it into contact with the walls of a well bore. Piston type pressure relief valves are disposed in the nose plug and vent fluid from the interior of the apparatus when the pressure acting to expand the packing sleeve exceeds a predetermined value.

3,527,300
ELECTRO-MECHANICAL TRANSDUCER FOR SECONDARY OIL RECOVERY AND METHOD THEREFOR

Edward H. Phillips, Los Altos, Calif., assignor to Electro-Sonic Oil Tools, Inc., a corporation of California
Filed Sept. 20, 1968, Ser. No. 761,139
Int. Cl. E21b *43/25*
U.S. Cl. 166—249 **14 Claims**



An electro-mechanical transducer for use in secondary recovery in oil wells which, in effect, produces a dipole type radiation field which extends along a single axis perpendicular to the axis of the oil well. This allows the surrounding liner to vibrate in a displacement mode rather than in a circumferential expansion mode, to increase the energy coupling to the surrounding oil-producing formation. In a specific form of the invention, the transducer includes two cylindrical masses, one inserted inside the other, which are coupled by a tubular piezoelectric element driven at an audio or sonic frequency by an external electrical power source.

3,527,301
OIL RECOVERY USING NEAT SURFACTANTS

Philip J. Raifsnider, deceased, late of Denver, Colo., by Dorothy E. Raifsnider, executrix, Denver, Colo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 29, 1968, Ser. No. 749,260
Int. Cl. E21b
U.S. Cl. 166—274 **3 Claims**

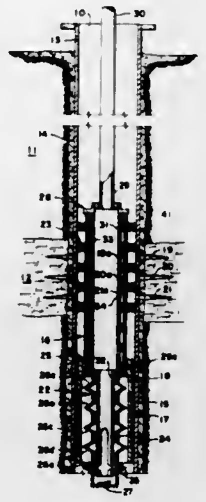
An improved process for recovering oil from oil-containing subterranean reservoir formations by pretreating the formations with neat nonionic surfactants having gellable properties when in contact with connate water and/or a fluid drive, said fluid drive being injected after the formation treatment with the neat surfactant.

3,527,302
APPARATUS AND METHOD FOR WORKING A WELL WITH PLURAL LEVELS OF PERFORATIONS

Leo P. Broussard, New Orleans, La., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1968, Ser. No. 752,106
Int. Cl. E21b *33/124, 43/25*
U.S. Cl. 166—297 **10 Claims**

A method and apparatus for completing a cased well extending into a hydrocarbon-bearing subterranean formation. A permanent indexer is set at a fixed distance below a producing zone in the formation and the well casing is perforated at various levels in a predetermined

pattern adjacent the producing zone. A straddle packing device having aperture means therein is extended into the well to a position straddling the level of perforations in a manner sealing off one level of perforations from the other while aligning the aperture means with each level of the patterned perforations. Finally, aperture sealing means having at least one opening therein is moved via a tubing string axially within the well to a position aligning the opening with one level of the perforations while sealing off the remaining axially displaced perforations.



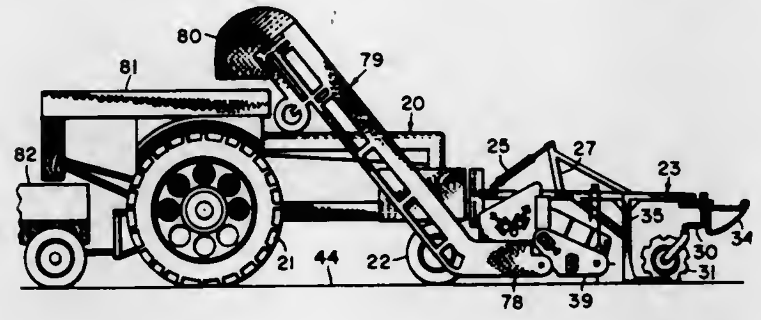
3,527,303
THERMAL SECONDARY RECOVERY

Robert W. Zwicky, Edmonton, Alberta, Canada, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 19, 1968, Ser. No. 714,345
Int. Cl. E21b *43/24*
U.S. Cl. 166—303 **3 Claims**

A steam soak process for the recovery of crude oil wherein a producing formation is first heated with steam and then produced. The process includes the adding of caustic or detergents to the steam to increase the affinity of the formation rock for water. When the steam condenses in the formation the water is imbibed in the rock interstices and becomes immobilized. This reduces the water that is produced when the well is returned to production and increases the oil recovery.

3,527,304
MACHINE FOR HARVESTING VINE CROPS

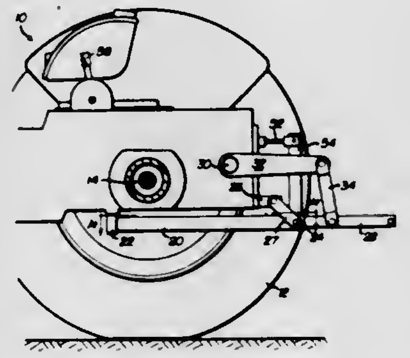
Bernard D. Wilde and Lewis L. Wilde, Bailey, Mich., assignors to Wilde Manufacturing, Inc., Bailey, Mich.
Filed Nov. 25, 1966, Ser. No. 596,912
Int. Cl. A01d *27/04*
U.S. Cl. 171—28 **2 Claims**



A machine for harvesting vine crops has picking rollers to strip the fruit from the vine. The vines are prepared for elevation and conveyance to the picking station by a root-severing unit which is positioned vertically by ground level independently of the remainder of the machine. The severing knife is disposed at a position in advance of the vine-elevating conveyor system, permitting an extensive slant of the cutting edge of the blade with respect to the direction of movement. Independent positioning of the knife prevents variations in depth and attitude resulting from a pitching action of the principal machine.

3,527,305
DRAFT CONTROL LINKAGE

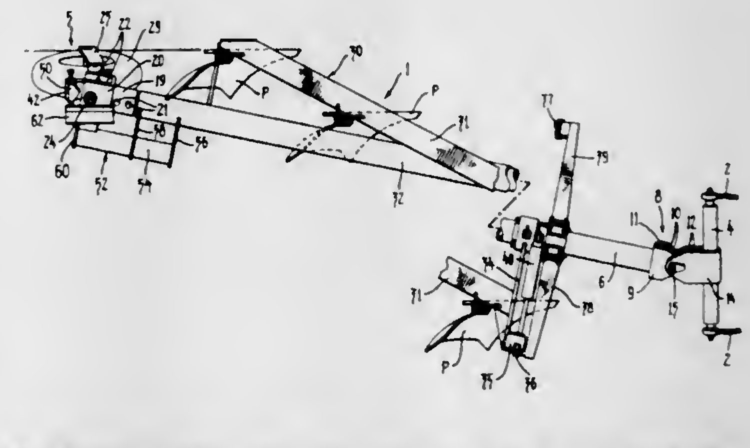
William R. Dollase, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 11, 1967, Ser. No. 666,781
Int. Cl. A01b *63/112*
U.S. Cl. 172—9 **5 Claims**



A vehicle having a draft-implement connected thereto with a fluid actuator moving, raising and lowering the implement on the vehicle and a valve that selectively supplies fluid to the actuator. A mechanism is interposed between the implement and the valve which is capable of selectively operating the valve through a manual control and variations in draft load on the implement as well as neutralizing the valve when a predetermined draft load is achieved.

3,527,306
SEMIMOUNTED PLOW WITH REAR CASTER WHEEL

Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.
Filed July 14, 1967, Ser. No. 653,545
Int. Cl. A01b *3/28, 3/46*
U.S. Cl. 172—212 **10 Claims**



A semimounted, two-way, turnover plow in which the trailing end is supported by a caster wheel. In the operative position of the plows, the caster wheel is locked in a steering position to steer the trailing end of the plow to one side of the longitudinal axis of the tractor in accordance with the forces acting on the plow bottoms. Movement of the plow bottoms from their working to transport positions releases the caster wheel and permits it to resume its swiveling action.

3,527,307

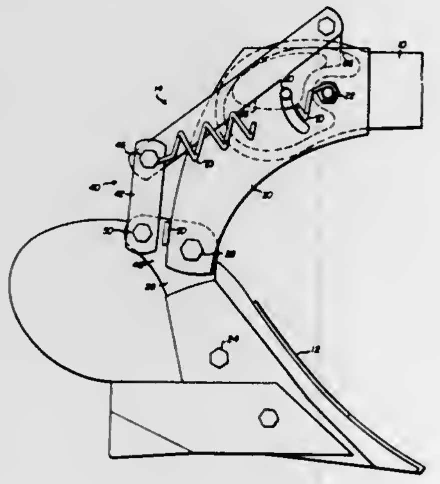
TRIPPING AND CUSHIONING MECHANISM FOR EARTHWORKING TOOLS

Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin

Filed Aug. 24, 1967, Ser. No. 663,131

Int. Cl. A01b *61/04*

U.S. Cl. 172—265 **10 Claims**



An implement having a ground engaging tool connected to a supporting frame by a tripping and cushioning mechanism. The tripping and cushioning mechanism includes biasing means for normally maintaining the tool in an earth working position. The biasing means has a motion transmitting mechanism incorporated therein for rotating the tripping and cushioning mechanism relative to the frame whenever an abnormal draft force is encountered by the tool.

3,527,308

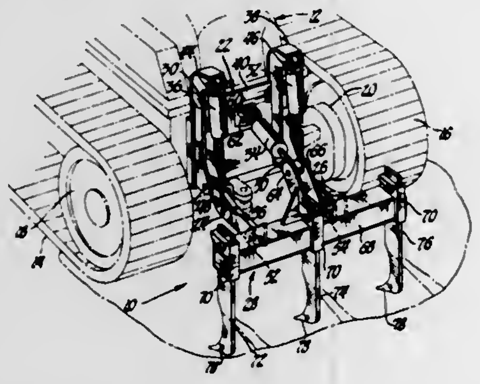
RIPPER ATTACHMENT FOR TRACTOR

Ralph J. Bernotas, South Euclid, Ronald M. Cheers, Timberlake, and Charles R. Holub, Solon, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,938

Int. Cl. A01b *63/32, 63/102*

U.S. Cl. 172—464 **1 Claim**



A ripper attachment having a parallelogram linkage that supports a ripper shank assembly for movement between a raised-carry position and a lowered-rip position. The linkage includes an extensible link which permits the shank assembly to be angularly adjusted about a transverse horizontal axis relative to the ground when located in either of the above-mentioned positions or any positions therebetween.

3,527,309

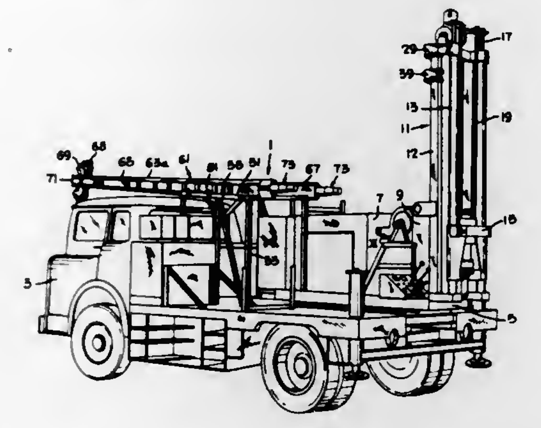
VEHICLE-MOUNTED EARTH DRILL WITH DETACHABLE TOWER

Charles L. Rassieur, University City, Mo., assignor to Central Mine Equipment Company, St. Louis, Mo., a corporation of Missouri

Filed Oct. 8, 1968, Ser. No. 765,849

Int. Cl. E21c *11/02*

U.S. Cl. 173—28 **7 Claims**



An earth drill mounted on a sliding bed at the rear of a truck and having a detachable tower part which may be detached from the main earth drill frame and mounted on a headache rack forward of the main earth drill frame by lowering the drill frame, clamping the tower to the rack and sliding the drill from a forward to a rearward position. Tapered pins on the lower end of the tower slide out of sockets on the drill frame when the drill frame is lowered to a horizontal position and the drill slides from its forward to its rearward position. The tower is attached by reversing the process.

3,527,310

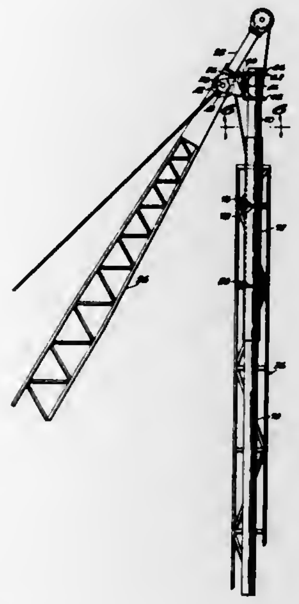
PILE DRIVING AND GUIDING APPARATUS

Frank P. Webber, Ronald W. Scholer, Paul J. Guptill, and Graham R. Sheely, Miami, and Clyde M. Rippy, Jr., Oklawaha, Fla., assignors of fifty percent to Webber Constructors, Inc., Miami, Fla.

Filed Sept. 9, 1968, Ser. No. 758,529

Int. Cl. E02d *7/14*

U.S. Cl. 173—43 **7 Claims**



An improved means to connect a pile driving apparatus to the upper end of a crane boom, which includes a first and a second horizontal pivot axis for effecting relative swinging movement of the pile driving apparatus through an angle of elevation and an azimuth angle so that a plurality of piles may be installed in a row and column relation while the crane remains in a fixed station.

ERRATUM

For Class 173—67 see:
Patent No. 3,527,239

3,527,311

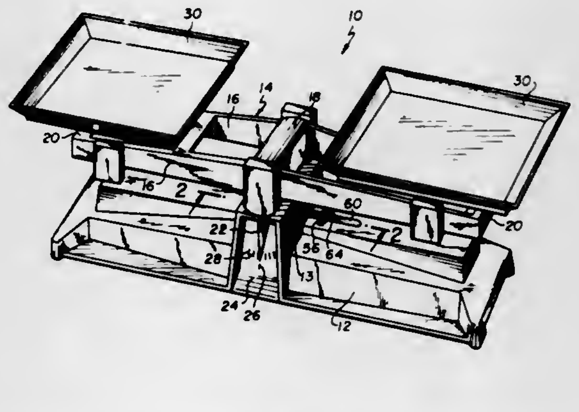
BEAM BALANCE HAVING UNITARY GRADIENT AND TARE ADJUSTMENT MEANS

William G. Ohaus, Short Hills, and John H. Landvater, South Berkeley Heights, N.J., assignors to Ohaus Scale Corporation, Union County, N.J., a corporation of New Jersey

Filed Apr. 12, 1968, Ser. No. 720,988

Int. Cl. G01g *23/14, 1/24, 3/08*

U.S. Cl. 177—168 **6 Claims**



A balance for school use has a base including a fulcrum on which is mounted a centrally pivoted balance beam having a weight indicating pointer movable in front of a dial scale. A damping spring wire is firmly secured to the balance beam and adjustably secured to the base for the dual purposes of providing a unitary gradient system and tare adjustment means.

3,527,312

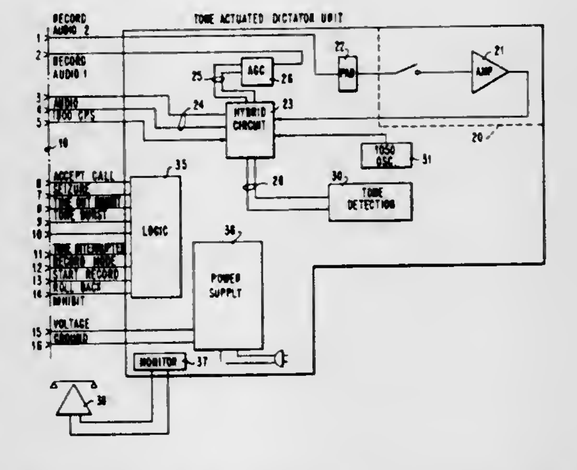
TONE ACTUATED DICTATION SYSTEMS

Thomas E. Dooley, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed June 17, 1968, Ser. No. 737,643

Int. Cl. G11b *19/08, 31/00;* **H04m** *11/10*

U.S. Cl. 179—6 **18 Claims**



The invention concerns dictation systems having facilities for selectively connecting remote stations to a central recording unit, and recognizing control tones generated at a connected remote station to effect all operations require including recording and playback of audio (speech) signals. The systems feature optimized circuitry for controlling the forward and reverse stepping of a magnetic head in relation to a magnetic record media and the generation of various advisory and warning signals required.

3,527,313

APPARATUS FOR WALKING GROUND-WORKING MACHINERY

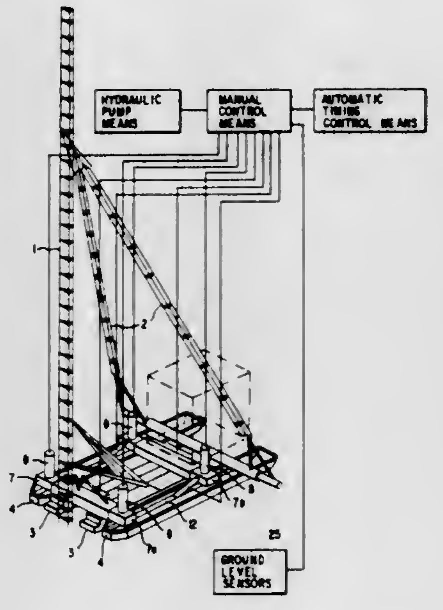
Otto Reimann, 18 Kaiserstrasse, 29 Oldenburg, Germany

Filed Aug. 1, 1967, Ser. No. 657,482

Claims priority, application Germany, Aug. 1, 1966, R 43,810

Int. Cl. B62d *57/02*

U.S. Cl. 180—8 **12 Claims**



An apparatus for walking machinery working adjacent to the ground, such as machinery handling or moving earth and construction materials, a steam shovel, pile driver, drill, concrete vibrator, excavator, mud suction machinery and similar equipment, having a platform positioned on or above the ground including uneven ground, snow covered ground or muddy surface, receiving, loading and unloading the machinery with means to raise and lower the platform, means to hold the machinery on the platform in a stationary operable position, means to walk the platform stepwise in all directions in one or more planes horizontal or at angles thereto parallel or not, forward, rearward and sideways, means to rotate the platform and means to control the movements of the platform manually, automatically, without and with program controls and without and/or with timing controls.

3,527,314

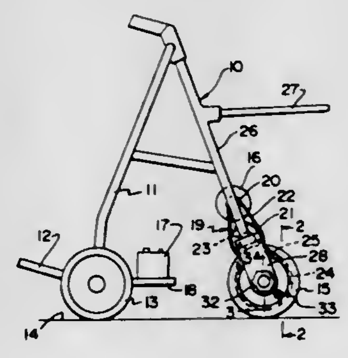
POWER DRIVEN VEHICLE ARRANGED FOR HAND PROPELLING

Robert J. Mistarz, Northbrook, Ill., assignor to Chicago Stainless Equipment, a corporation of Illinois

Filed May 10, 1968, Ser. No. 728,289

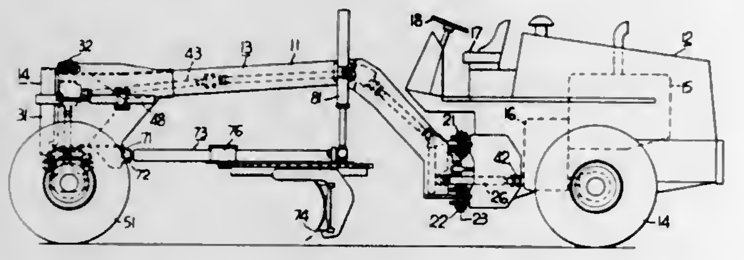
Int. Cl. B62d *51/04*

U.S. Cl. 180—19 **1 Claim**



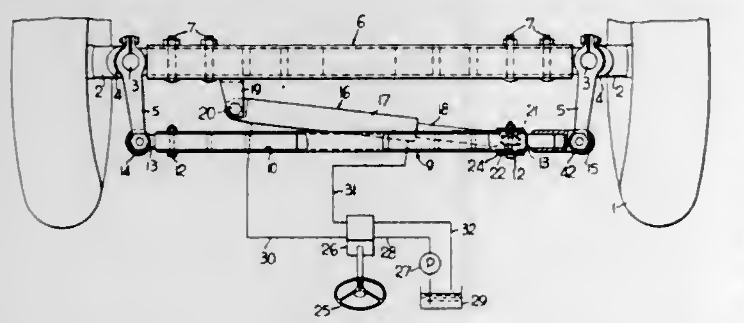
A power driven vehicle such as a golf cart that may also be hand propelled including a power driving means on the frame of the vehicle having a rotatable member, for example a sprocket wheel, a removable member extending between and interconnecting the rotatable member and one wheel of the vehicle for transferring driving power to this one wheel and means on the removable member for disengaging it from both the rotatable member and one wheel when the vehicle is being hand propelled so that the power driving means will not create a drag on the supporting wheels.

3,527,315
ARTICULATED MOTOR GRADER
Andrew V. Hampton, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 9, 1968, Ser. No. 727,983
Int. Cl. B60k *17/30*
U.S. Cl. 180—51 **2 Claims**



A motor grader having a rear two-wheel tractor unit is articulately connected to the rear end of a tool frame, and the front end of the tool frame is articulately connected to a front wheel drive unit. The front wheel drive unit includes an oscillating axle assembly with a pair of leanable drive wheels. The front wheel unit incorporates the features of articulated or wagon steer relative to the tool frame, oscillation of the axle thereof about a longitudinal axis, power driven wheels which are leanable.

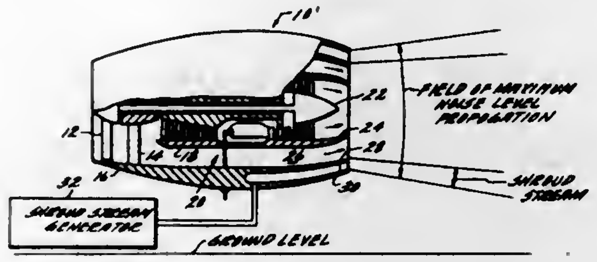
3,527,316
STEERING MECHANISM
Elborn William Jones, Jr., West Allis, and Robert E. Schott, New Berlin, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 19, 1968, Ser. No. 777,130
Int. Cl. B62d *7/16*
U.S. Cl. 180—79.2 **10 Claims**



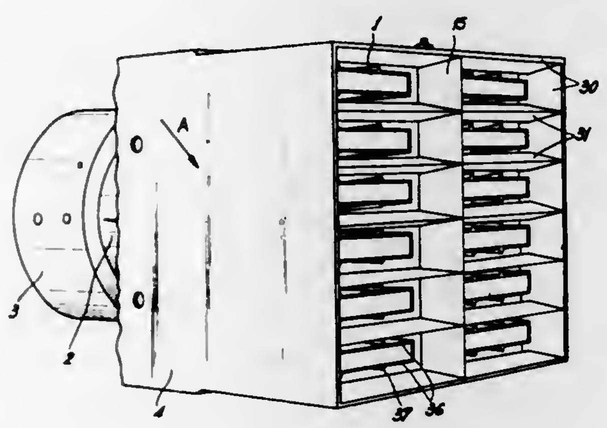
A steering mechanism having a modified ball joint connection on tie rod end. The ball carries a stem which rides in a slot of the socket to prevent rotational movement about the tie rod axis when operation of the actuator for the steering mechanism produces a couple tending to rotate tie rod about its own axis.

3,527,317
SOUND CONTROL OF TURBOFAN ENGINES
Russell E. Motsinger, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Apr. 18, 1969, Ser. No. 817,432
Int. Cl. B64d *33/06;* **F01n** *1/00, 1/14*
U.S. Cl. 181—35 **11 Claims**

In a turbofan engine, the angle of noise propagation from a fan stream propulsion nozzle is limited and controlled by a shrouding gas stream having a higher sonic speed than the fan stream. Three embodiments respectively show use of a high temperature gas stream, a water vapor gas stream, and the core engine gas stream as shrouding streams to control the angle of noise propagation.



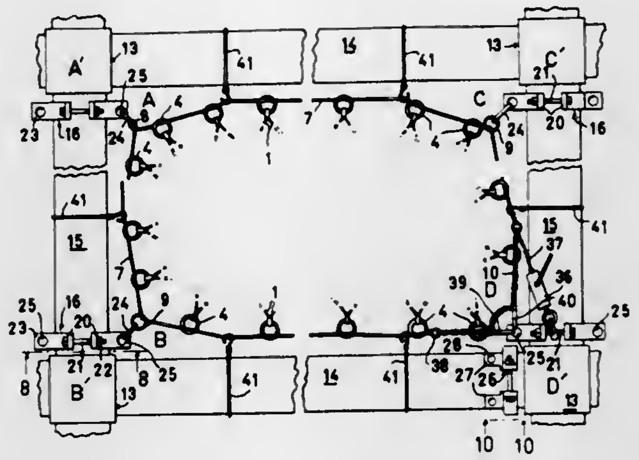
3,527,318
JET-ENGINE SILENCER
Louis Duthion, Paris, Arsène Marzouvanlian, Plaisir, Yvelines, and André E. R. Cabassut, Versailles, Yvelines, France, assignors to Bertin & Cie, Plaisir, Yvelines, France, a company of France
Filed July 29, 1969, Ser. No. 845,849
Claims priority, application France, July 31, 1968, 161,354
Int. Cl. B64d *33/06;* **F01n** *1/08, 1/14*
U.S. Cl. 181—51 **14 Claims**



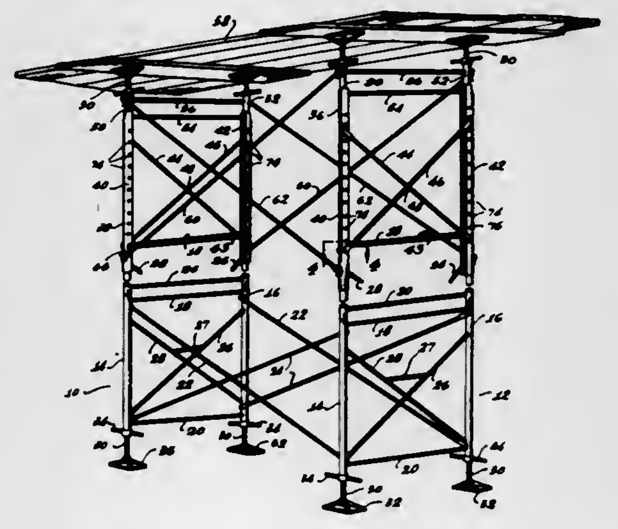
This invention relates to a jet-engine silencer, comprising essentially firstly a convergent element which is connected to the outlet pipe of the jet engine and branches into a plurality of parallel single convergent nozzles of elongate section through which the ejected gases issue in thin sheets mixing with secondary air drawn from the surroundings and, secondly, a ventilated divergent element which encloses the first element and whose upstream end is in the form of a frame provided with cores of elongate profile disposed at the exit of the respective convergent nozzles and forming single ventilated convergent-divergent nozzles.

3,527,319
SAFETY NET
Eric L. Pedley, Kentfield, Calif., assignor to Pedley-Knowles & Co., San Francisco, Calif., a corporation of California
Continuation-in-part of application Ser. No. 757,825, Sept. 6, 1968. This application Aug. 15, 1969, Ser. No. 850,523
Int. Cl. A62b *1/22*
U.S. Cl. 182—139 **17 Claims**

A rectangular safety net of diamond mesh that includes an edge rope, which edge rope is connected with the net along its edges. Means, including said edge rope is provided for suspending said net from the structural framework of a building across an area above which work is being done, and the construction of which net is such that its length or width may be increased or decreased to accommodate the net to variations on length or width of said area.

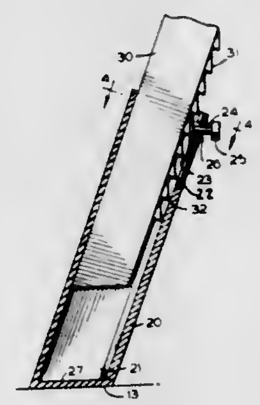


3,527,320
EXTENDABLE SHORING SCAFFOLD
Arthur L. Cunningham, Costa Mesa, Calif., assignor, by mesne assignments, to Bliss & Laughlin Industries Incorporated, Oak Brook, Ill., a corporation of Delaware
Filed July 19, 1968, Ser. No. 746,089
Int. Cl. E04g *1/14*
U.S. Cl. 182—178 **10 Claims**



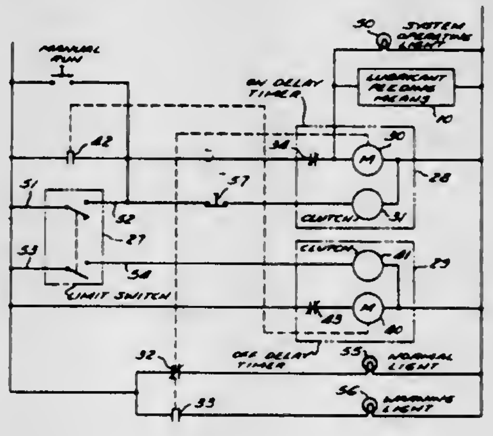
An extendable shoring scaffold comprising a pair of horizontally spaced base frames interconnected by removable bracing members and formed by spaced stanchions with reinforcing struts extending between the stanchions. The base frames may be superimposed upon each other, with an extension frame mounted on each topmost base frame, the extension frames also having horizontally spaced stanchions connected by struts. Either the extension frames or the topmost base frames have at least a portion of their stanchions U-shaped in cross section for telescopically receiving the cooperating stanchions of the adjacent base or extension frame with the reinforcing struts connected to the interior telescoping stanchions being received in the open portions of the U-shaped stanchions which face inwardly toward each other. The frames formed of the U-shaped stanchions have transverse struts attached substantially tangentially thereto so as to clear the struts attached to the interiorly telescoping stanchions. The extension frames are held in their extended positions by pins passing through transversely aligned holes through the walls of the U-shaped stanchions and are braced by standard length cross bracing members connected adjacent the upper ends of the extension frames. Provision is made for leveling and adjusting the frames and their supported structure by means of jack screws.

3,527,321
LADDER LEVELING DEVICE
Thomas J. Brown, Rte. 3, Ridge Road, Box 114, Yazoo City, Miss. 39194
Filed Mar. 17, 1969, Ser. No. 807,518
Int. Cl. E06c *7/44*
U.S. Cl. 182—205 **4 Claims**



A device which allows ladders to be quickly leveled and firmly placed on uneven ground. The device has a ratchet mechanism contained in a telescoping sleeve attached to the bottom of the ladder rail. A spring attached to the outer sleeve allows for the automatic extension and positioning of the leg and easy shorting of the leg.

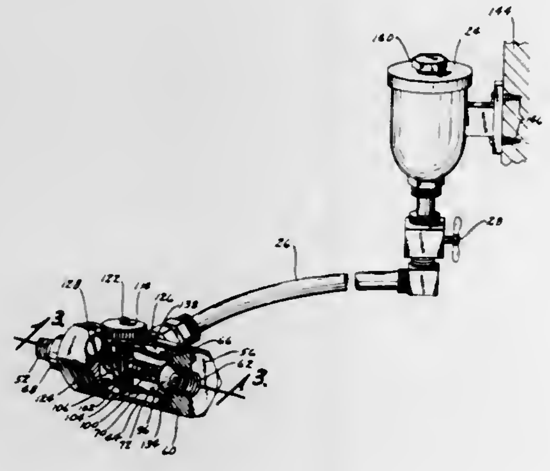
3,527,322
LUBRICANT DISTRIBUTOR CONTROL MEANS
Robert D. Roberts, Streetsboro, Ohio, assignor to Houdaille Industries, Inc., a corporation of Delaware
Filed Aug. 14, 1968, Ser. No. 752,572
Int. Cl. F16n *29/02*
U.S. Cl. 184—6 **3 Claims**



A control and monitoring system for initiating the operation of at least one cyclic type lubricant distributor having a plurality of plungers each of which travels back and forth once in the course of each cycle of operation of the distributor and for signaling the incompletion of an operating cycle within a timed interval. The control and monitoring system includes first and second timers whose timing periods are respectively relatively short and long, and whose input signals are timed respectively in their "on" and "off" states. When the second timer times out, the timing function of the first timer is initiated and the lubrication system is turned on to initiate the operating cycle period. The second timer is reset during the operating cycle and when the operating cycle is completed, the system is turned off, the first timer is reset, and the second timer begins its timing function. If the cycle is not completed, the first timer times out and operates a trouble indicating means.

3,527,323
REMOTE FILL AIR LINE LUBRICATOR

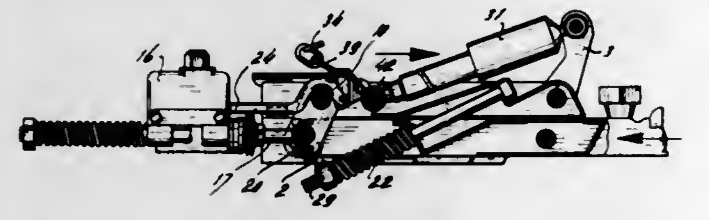
Jerry P. Malec, 2832 N. 70th Ave., Omaha, Nebr. 68106
Filed Apr. 18, 1968, Ser. No. 722,332
Int. Cl. F16n *7/34, 7/02*
U.S. Cl. 184—55 **4 Claims**



A remote fill air line lubricator having an air intake end connected to a source of air under pressure and an air discharge end connected to the machine or apparatus to be lubricated. The lubricator is fluidly connected to an oil reservoir which is remotely spaced from the lubricator, machine and source of air pressure. The reservoir supplies oil to the lubricator which injects a predetermined amount of oil into the air passage therethrough to cause the lubrication of the machine. The oil reservoir may be fluidly connected to a plurality of lubricators if desired. The lubricator may be oriented in any relative position and may be mounted within the machine or apparatus as desired.

3,527,324
TRAILER COUPLING SURGE BRAKE MECHANISM

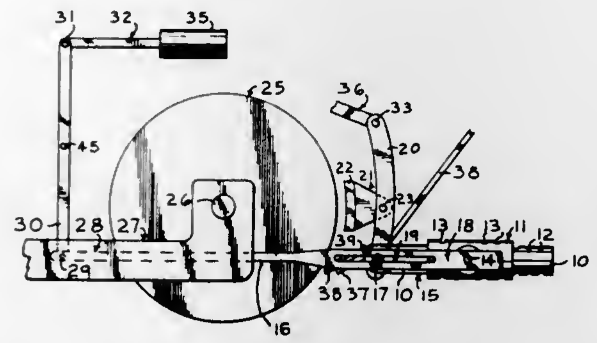
David W. Butler, Scottsdale, and Edwin L. Hobart, Mesa, Ariz., assignors to Arcoa, Inc., Phoenix, Ariz., a corporation of Oregon
Filed Jan. 2, 1969, Ser. No. 788,528
Int. Cl. B60t *7/20*
U.S. Cl. 188—112 **3 Claims**



Trailer couplings, particularly a surge brake construction mounted upon the coupling which applies the trailer brakes through a master hydraulic cylinder, as deceleration of the towing vehicle longitudinally foreshortens the trailer coupling.

3,527,325
SLACK ADJUSTOR

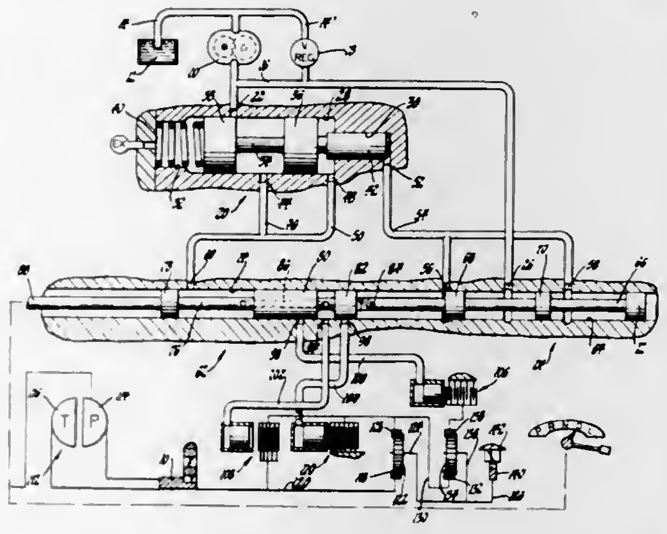
William H. Nolan, 2631 Main St., and Harold F. Stover, 1731 Forrest Ave., both of East Point, Ga. 30044
Filed June 24, 1968, Ser. No. 739,299
Int. Cl. F16d *65/44*
U.S. Cl. 188—197 **8 Claims**



A slack adjusting or compensating device and method of operation comprising a tubular housing, a movable, hollow cylinder slidably positioned in said housing, a plurality of openings or apertures in said housing and said cylinder in alignment with each other and a locking pin in said openings.

3,527,326
TRANSMISSION NEUTRAL START CONTROL VALVE

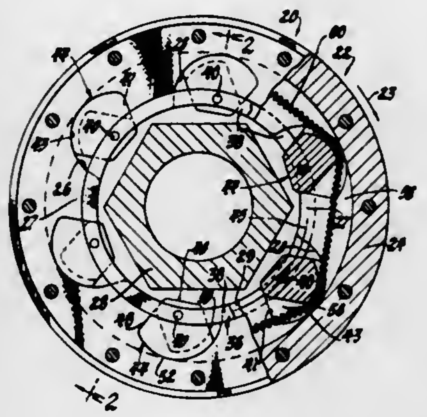
Thomas J. Griffen, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 779,517
Int. Cl. F16h *3/44, 57/10;* **G05g** *9/08*
U.S. Cl. 192—4 **12 Claims**



A transmission control in which the control fluid is directed to the manual selector valve through a line control valve. The line control valve is spring biased to the closed position thereby preventing fluid communication between the pressure source and the manual selector valve during start-up. Opening of the line control valve is controlled by a neutral-park control valve which is connected to the manual selector valve. The neutral-park control valve provides fluid communication between the source and an actuator portion of the line control valve which opens the line control valve spool only when the manual selector valve is in the neutral or park position. Once the line control valve is opened, fluid pressure between the line control valve and the manual selector valve is directed to one end of the line control valve spool to hold it open against the spring until the pressure source becomes inoperative.

3,527,327
OVERRUNNING CLUTCH

Charles H. McCreary, Oak Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 4, 1968, Ser. No. 781,004
Int. Cl. B25b *13/46;* **F16d** *11/00*
U.S. Cl. 192—46 **10 Claims**

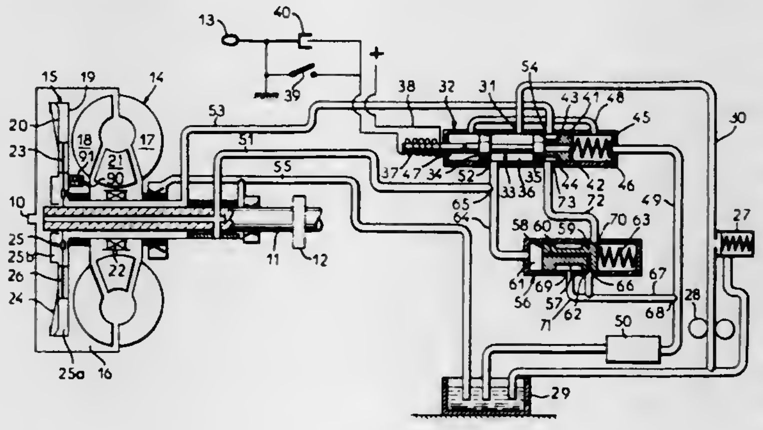


An overrunning clutch in which trapezoidal levers are pivotally mounted on a cage which in turn is journaled on the driving member of the clutch. The driving member has recesses which receive the levers for pivotal movement therein between a freewheel position and a lock-up position with a driven member of regular polygonal shape.

In a second embodiment, the trapezoidal levers are used in a one-way ratchet-type wrench with the ratcheting occurring between the levers and a hexagonal nut being tightened or removed.

3,527,328
FLUID OPERATED CLUTCH WITH MODULATED SPEED RESPONSIVE ENGAGEMENT

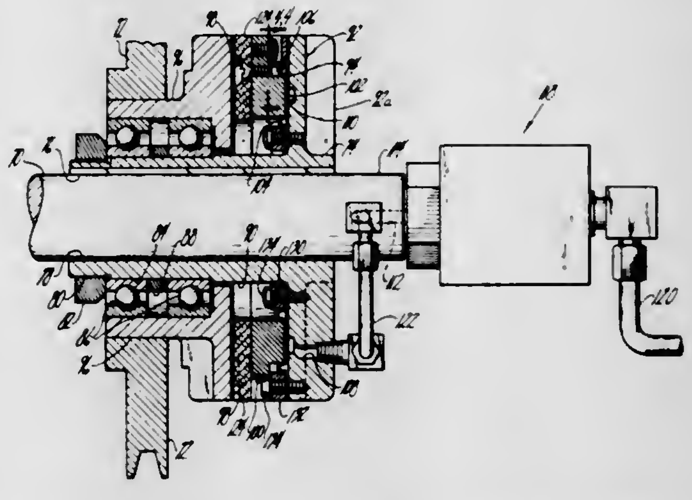
Jean Maurice, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France
Filed Nov. 25, 1968, Ser. No. 778,702
Claims priority, application France, Dec. 1, 1967, 130,544
Int. Cl. F16d *25/00*
U.S. Cl. 192—86 **9 Claims**



A transmission, especially for automobile vehicles, comprising at least one clutch having members adapted to be coupled by clamping together friction surfaces, and in which one part is a driving portion associated with an engine having a variable speed of rotation including an idling speed, while another part is a driven portion, said members being clamped together axially by an increase in volume of a hydraulic actuating chamber and by a reduction in volume of a hydraulic drainage chamber and being axially released by the reverse operation, conduits respectively connected to the two said chambers, distributor means associated with a source of fluid pressure and with a tank, the position of the distributor means effecting either the application of pressure to the conduit of the actuating chamber and the coupling to the tank of the conduit of the drainage chamber for the purpose of engaging the clutch, or the connection to the tank of the actuating chamber and the application of pressure to the conduit of the drainage chamber for the purpose of disengaging the clutch, the transmission comprising means for reducing the pressure in the actuating chamber of the clutch, means for throttling the return to the tank from the drainage chamber of the clutch, a control slide-valve actuated in dependence on the speed of rotation of the engine and co-operating with both of the two said means so that when the engine rotates at idling speed it occupies a first position in which it renders the two said means operative, and when the engine rotates faster than idling speed, the slide-valve occupies a second position in which the two said means are inoperative.

3,527,329
DIAPHRAGM OPERATED BRAKE OR CLUTCH UNIT

Donald E. Jordan, Charlestown, N.H., assignor, by mesne assignments, to Pneumatic Applications Company, a corporation of Connecticut, formerly known as Robert Hauser Inc.
Filed June 12, 1968, Ser. No. 736,388
Int. Cl. F16d *25/00*
U.S. Cl. 192—88 **8 Claims**

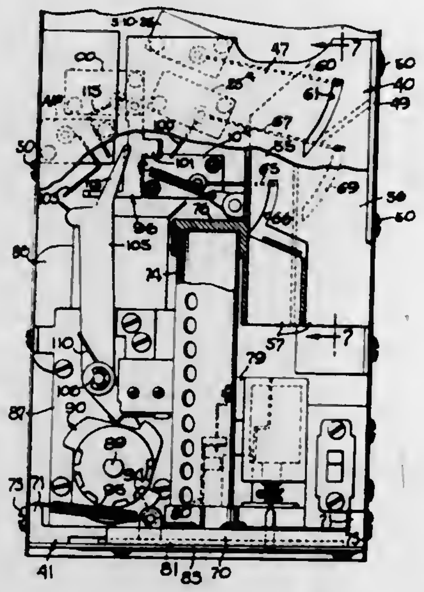


A shaft to be braked or clutched has a flanged hub keyed thereto, and an outer housing rotatably supports the hub on two spaced bearings to prevent wobble of the hub flange with respect to one end of the housing. A brake shoe is mounted on an annular piston, which piston is supported for limited axial movement in response to inflation of an annular rubber diaphragm acting between the piston and either the hub flange or the end of the fixed housing. Air under pressure is provided either through the housing or through the hub flange to one side of the diaphragm for moving the brake shoe against either the rotating hub flange or the end of the housing respectively, and leaf springs act between the piston and the housing, or the hub flange respectively, to react the torque from the shaft being braked, or clutched, and to hold the shoe out of engagement with the hub flange, or the end of the housing, when the unit is not operating.

3,527,330
COIN CHANGER WITH REMOVABLE COMPONENTS

Donald E. Schmitt, Samuel O. Smith, and Marvin R. Manzer, Rockford, Ill., assignors to Reed Electromech Corp., Rockford, Ill., a corporation of Delaware
Filed Oct. 8, 1968, Ser. No. 765,945
Int. Cl. G07f *11/00*
U.S. Cl. 194—10 **4 Claims**

An anti-jackpotting coin changer for a vending machine comprises a casing unit, a slug rejector unit, and two separately constructed primary operating units which are removable individually from the casing unit as unitary assemblies to facilitate servicing and maintenance of the changer.



3,527,331

REAGENT FOR ASSAYING ALDOLASE

Alfred Deutsch, Los Angeles, Calif., assignor to Calbiochem, Los Angeles, Calif., a corporation of California
No Drawing. Application June 30, 1966, Ser. No. 561,757, now Patent No. 3,413,198, dated Nov. 26, 1968, which is a continuation-in-part of application Ser. No. 320,004, Oct. 30, 1963. This application June 11, 1968, Ser. No. 735,999
Int. Cl. G01n *31/14*
U.S. Cl. 195—103.5 **4 Claims**

Substantially anhydrous, solid assay materials for the determination, inter alia, of reagent for assaying aldolase are rendered storage stable by the presence of certain polyhydric compounds preferably mannitol, sorbitol, lactose or polyvinyl alcohol.

3,527,332

METHOD FOR ASSAYING GLUTAMATE PYRUVATE TRANSAMINASE

Alfred Deutsch, Los Angeles, Calif., assignor to Calbiochem, Los Angeles, Calif., a corporation of California
No Drawing. Application June 30, 1966, Ser. No. 561,757, now Patent No. 3,413,198, dated Nov. 26, 1968, which is a continuation-in-part of application Ser. No. 320,004, Oct. 30, 1963. Divided and this application June 11, 1968, Ser. No. 736,001
Int. Cl. G01n *31/14*
U.S. Cl. 195—103.5 **2 Claims**

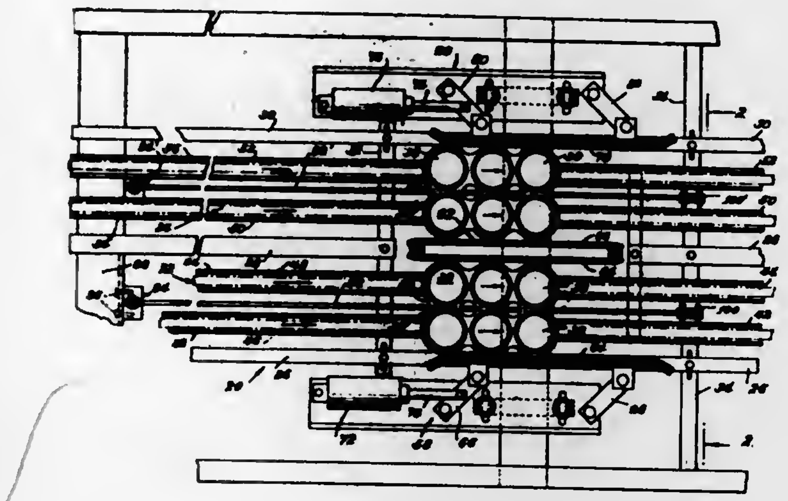
Substantially anhydrous, solid assay materials for the determination, inter alia, of reagent for assaying glutamate pyruvate transaminase, are rendered storage stable by the presence of certain polykydric compounds preferably mannitol, sorbitol, lactose or polyvinyl alcohol.

3,527,333

ARTICLE CONVEYOR MECHANISM

Wendell E. Standley, Lake Forest, and Lamar W. Sorensen, Des Plaines, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Filed Sept. 29, 1967, Ser. No. 671,797
Int. Cl. B65g *47/26*
U.S. Cl. 198—30 **9 Claims**

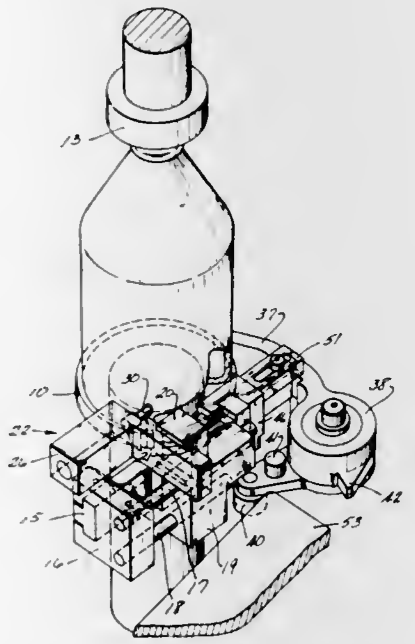
Article conveyor mechanism including movable pressure plate or divider means for guiding and retaining articles which are conveyed along a given path, such pressure plate means serving to separate two rows of articles and being particularly suitable for use in conjunction with a portion of a conveyor where a lateral force is applied to the articles whereby such movable pressure plate means will retain the articles in proper relative positions while such force is applied thereto without interfering with the application of such force to more than one side-by-side row of articles.



3,527,334

REGISTRATION DEVICE

Luther H. Wideman, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Aug. 30, 1968, Ser. No. 756,606
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **13 Claims**

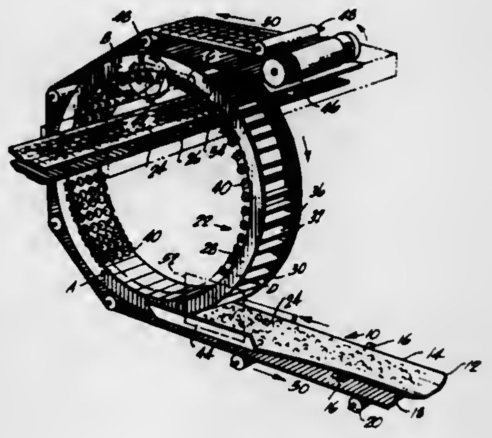


Apparatus for orienting and registering a glass container having registering indicium therein; the apparatus including means for supporting and rotating the container, a slide assembly including a lightly biased registration pin located at the elevation of the indexing indicium, and means for controlled movement of the slide whereby it is brought into proximate relation with the container, the pin thereby contacting the container surface in nonnormal fashion and serving to register the container upon contact with the registering indicium.

3,527,335

ROTARY ELEVATOR HINGED SUPPORT UNLOADING DOOR

Richard A. Myers, Rolling Hills Estates, Calif., assignor to Hewitt-Robins, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,153
Int. Cl. B65g *37/00, 47/00*
U.S. Cl. 198—103 **6 Claims**

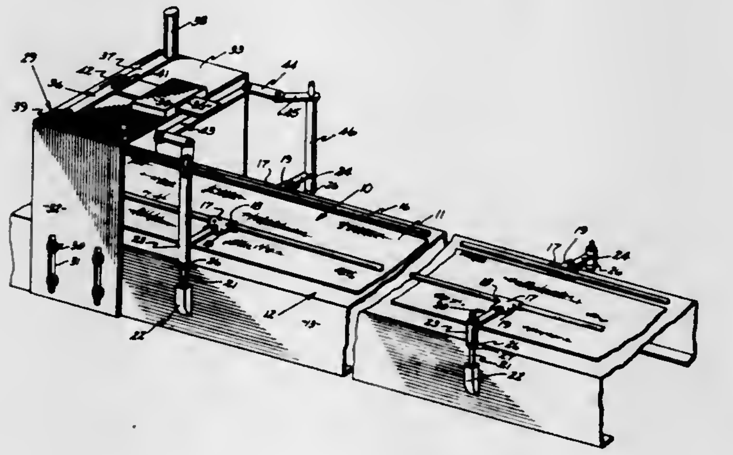


An elevating wheel in combination with a moving belt conveyor for elevating material carried by the conveyor. The wheel is supported by a plurality of resilient members and includes a plurality of storage compartments formed around its periphery, each including an exterior opening and an interior opening having a pivotal door which is held closed through the aid of the resilient members while the compartment is rotated from a loading location to a discharge location. The belt conveyor wraps around a section of the periphery of the wheel trapping the material in the storage cells and rotating the wheel.

3,527,336

GUIDE RAIL SYSTEM

Kenneth H. Johnston, Cleves, Ohio, assignor to Associated Millwrights, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 28, 1968, Ser. No. 708,883
Int. Cl. B65g *15/46*
U.S. Cl. 198—137 **4 Claims**

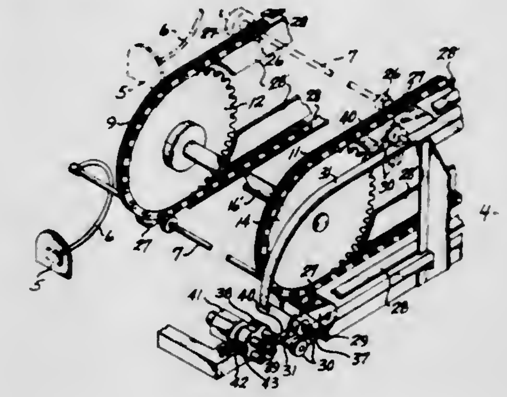


A guide rail system for use with conveyors that is readily adaptable to varying width packages comprising, in preferred form, (a) two guide rails, one on each side of a conveyor path, (b) at least two posts for supporting each guide rail, and (c) linkage means interconnecting each guide rail with its respective posts for varying simultaneously and equally the distance of each guide rail from all its support posts.

3,527,337

ARTICLE PUSHER MECHANISM FOR BAGGING MACHINES

Alvin C. Formo, Seattle, Wash., assignor to Formost Packaging Machines, Inc., Seattle, Wash., a corporation of Washington
Filed Apr. 26, 1967, Ser. No. 633,913
Int. Cl. B65g *19/02*
U.S. Cl. 198—170 **13 Claims**

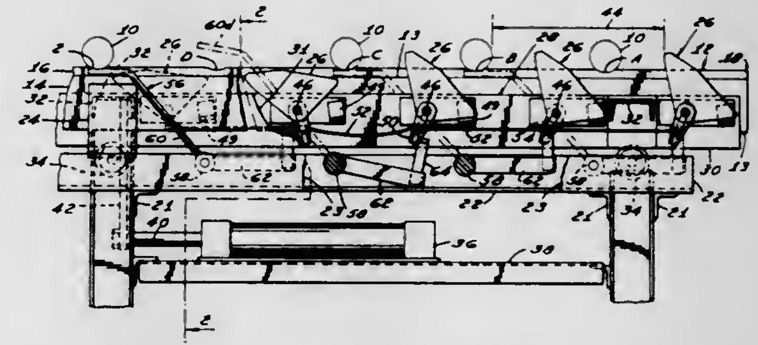


An article is pushed by a traveling paddle into the mouth of a bag held open by spreader fingers. A curved arm carrying the paddle is then swung backward withdrawing the paddle from the bag opening as its carrier moves upward around one end of a course having upper and lower straight stretches. A positioner rotatable unidirectionally is engaged by the arm carrier to swing the paddle arm into paddle-retracting position and to return it to its original attitude as the carrier is raised from the lower straight stretch of its orbit to its upper straight stretch. At the opposite end of its orbit a rotary arm synchronized with the travel of the paddle carrier engages such carrier to maintain the attitude of the paddle arm constant as it is lowered from the upper straight stretch of its orbit to its lower straight stretch for movement toward the bagging station.

3,527,338

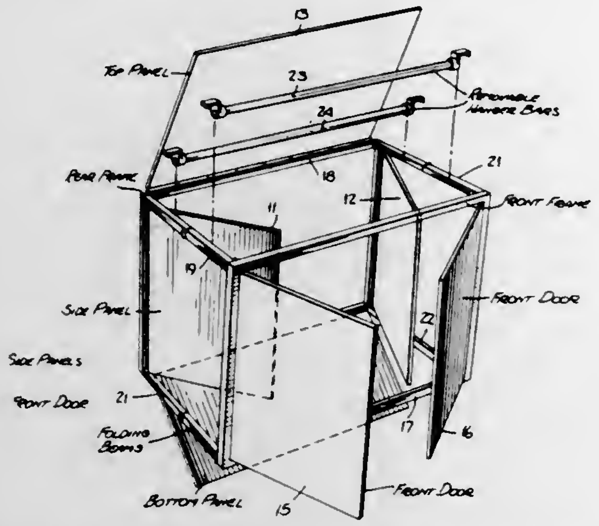
ACCUMULATING TRANSFER CONVEYOR

Fred I. Mita, 30571 Springland Drive, Farmington, Mich. 48024
Filed May 10, 1967, Ser. No. 637,573
Int. Cl. B65g *25/08*
U.S. Cl. 198—221 **4 Claims**



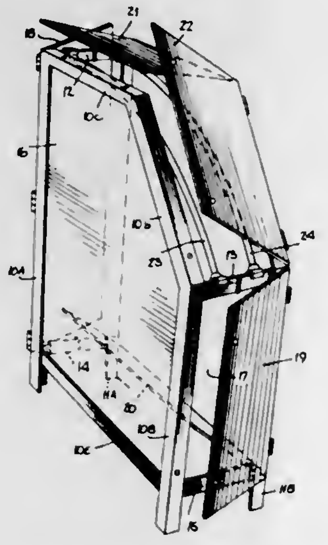
A conveyor for advancing and accumulating objects along a support from a receiving station to a plurality of successive stations, including a driving member reciprocated on forwarding and return strokes and having a plurality of pushers mounted thereon. The pushers are movable to non-driving position on the return stroke of the driving member, and pusher resetting mechanism including object detecting devices at each station is operative to return to driving position preceding a forwarding stroke any pushers at stations in advance of an empty station.

3,527,339
COLLAPSIBLE FREIGHT CONTAINER
Henry E. Cipolla, 245 W. 75th St.,
New York, N.Y. 10023
Filed Dec. 12, 1968, Ser. No. 783,341
Int. Cl. B65d *7/28, 9/18, 85/18*
U.S. Cl. 206—7 **5 Claims**



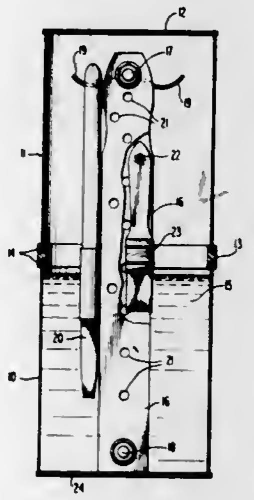
A collapsible freight container for shipping garments and the like, the container when empty, being capable of being reduced to a compact structure which may be transported at low cost. The container is constituted by a framework formed by identical rectangular front and rear frames whose corners are interconnected by foldable cross beams. A rear panel is fixedly supported on the rear frame, a floor panel being hinged to the bottom section of the rear frame and side panels being hinged to the end sections thereof, whereby in the collapsed state, the floor panel is folded against the inner wall of the rear panel and the side panels are folded against the floor panel. The ceiling panel of the container is hinged to the top section of the rear frame and in the collapsed state folds against the outer wall of the rear panel. Doors are hinged to the ends of the front frame, and in the collapsed state they lie adjacent the folded-in side panels, thereby providing a highly compact structure.

3,527,340
COLLAPSIBLE CONTOURED CONTAINER
Henry E. Cipolla, 245 W. 75th St.,
New York, N.Y. 10023
Continuation-in-part of application Ser. No. 783,341, Dec. 12, 1968. This application Feb. 26, 1969, Ser. No. 802,489
Int. Cl. B65d *7/26, 9/14, 85/18*
U.S. Cl. 206—7 **5 Claims**



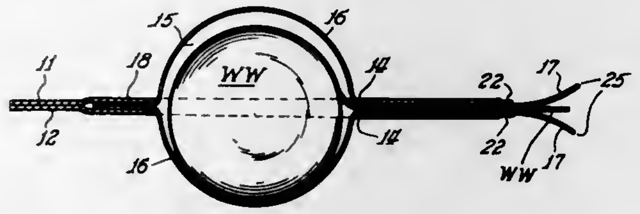
A collapsible contoured container for shipping garments and the like in a cargo plane igloo, the container when empty, being capable of being reduced to a compact structure which may be transported at low cost. The container is constituted by a framework formed by identical contoured front and rear frames whose corners are interconnected by foldable cross beams. Panels are mounted on the front and rear frames, while hinged thereto are floor, roof and end wall panels which are adapted to fold against the front and rear wall panels when the container is collapsed.

3,527,341
PAINT BRUSH AND SOLVENT CONTAINER
David Meade Peebles, 325 Marcy Ave.,
Oxon Hill, Md. 20021
Filed Jan. 2, 1969, Ser. No. 788,572
Int. Cl. A45d *44/18*
U.S. Cl. 206—15.2 **1 Claim**



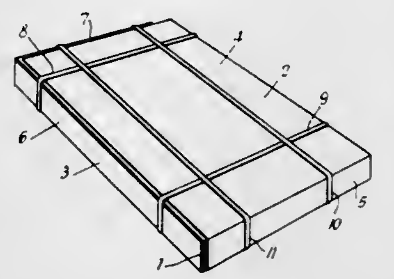
A container and supporting means for one or more paint brushes and a quantity of liquid solvent within which the brush bristles are immersed. The container is liquid tight and limits evaporation of solvent and is formed in two sections having a seal between them to allow ready separation as where paint brushes having different paint coloring thereon are to be received.

3,527,342
DISPENSER PACKAGE
Anthony R. Manzo, Elmhurst, Ill., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Feb. 24, 1969, Ser. No. 801,323
Int. Cl. B65d *75/36, 85/67*
U.S. Cl. 206—56 **2 Claims**



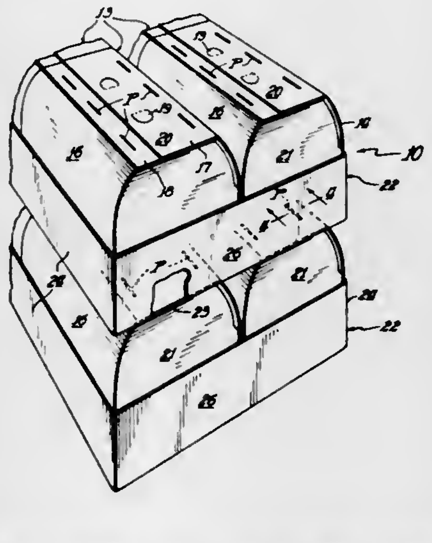
A dispenser package for a wound web of sterile material, said package being characterized by a pair of backing sheets joined to each other along a fold line, at least one of the backing sheets being provided with an aperture therein closed by a half blister to enclose the wound web, the aperture being surrounded by a film adhered to the backing sheets and extending toward said fold line, the film being adhered to the backing sheet along a side of said aperture remote from said fold line and along areas extending normally to said fold line and flanking opposed sides of said apertures, the web being led between unadhered portions of said film, and a tear line spaced from said fold line for tearing of the backing sheets to expose said film for removal of the webs between said backing sheets. The half blister is preferably formed unitarily with the film, and is heat shrinkable about the wound web if desired.

3,527,343
PACKAGES FOR FLAT FILMS
Peter William Rutter, Ilford, England, assignor to Ilford Limited, Ilford, England, a British company
Filed Dec. 31, 1968, Ser. No. 788,144
Claims priority, application Great Britain, Jan. 3, 1968, 394/68
Int. Cl. B65b *61/00;* **B65d** *85/30*
U.S. Cl. 206—62 **12 Claims**



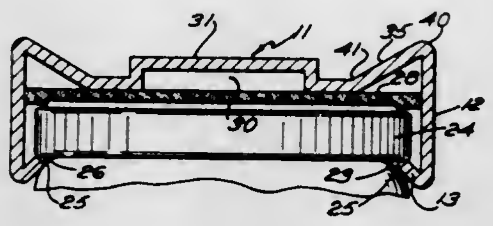
The application describes a method of packing a stack of sheet material which comprises applying to both the top and bottom faces of the stack an element which comprises a flat base sheet of rigid material of length and width slightly smaller than the sheet of material and which has upstanding walls on two adjacent sides of the said base sheet, said walls being of less height than the stack, binding the resultant pack with binding material so as to urge the upstanding walls of the two elements into close contact with the sides of the stack.

3,527,344
STACKING AND PACKING ARRANGEMENT FOR CONTAINERS UTILIZING HIGH FRICTION MATERIAL
Richard G. Taus, Berwyn, Ill., and William L. Bracken, Wabash, Ind., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Jan. 22, 1969, Ser. No. 792,929
Int. Cl. B65d *71/00*
U.S. Cl. 206—65 **5 Claims**



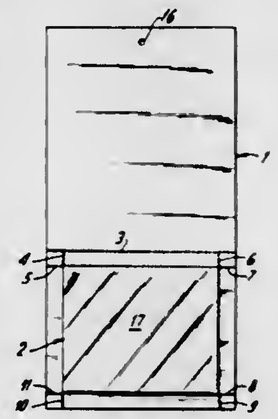
A packing arrangement for containers, the combination wherein containers having closures are wrapped in groups and are loaded as wrapped groups in a walled tray, and wherein the loaded trays are stacked one atop another, the frictional engagement between the wrappers of a tray and the bottom of a loaded tray superimposed thereon being increased by the application of discrete patches of a high friction material adhered to the wrapper in the portions thereof overlying the closures of said containers.

3,527,345
PORTABLE PACKAGE FOR CONTAINERS
Anthony J. Iorio, 126 Cottage Ave.,
North Providence, R.I. 02911
Filed Feb. 10, 1969, Ser. No. 797,936
Int. Cl. A47b *73/00;* **B65d** *21/02, 71/00*
U.S. Cl. 206—65 **8 Claims**



A row of containers held in assembled relation by generally channel shape strips of material with inturned flanges on the legs of the channel extending into the neck portion beneath the caps of bottles or and flanges of rows. A resilient crushable material is positioned between the tops of the containers and the base of the channel strip to compensate for irregularities inherent in the containers and to hold the containers under compression in the channel strip as a package unit. The channel strip also may be used as a storage support for the containers after they have been opened.

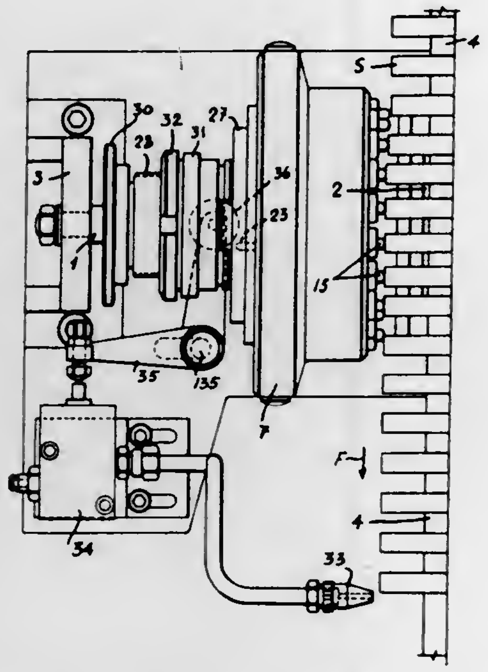
3,527,346
COMBINATION PACKAGING AND STORAGE UNIT
Simon D. Chalpin, 1310 Boston Post Road,
Larchmont, N.Y. 10538
Filed Feb. 13, 1969, Ser. No. 798,895
Int. Cl. B65d *25/22, 75/36*
U.S. Cl. 206—78 **7 Claims**



This invention relates to the packaging of items, and in particular, to a package enclosure which can be used as a protective shipping container by the manufacturer, as a display device by the retailer and converted by the consumer into a separate and distinct package enclosure which may be used as a storage means for the particular item of manufacture.

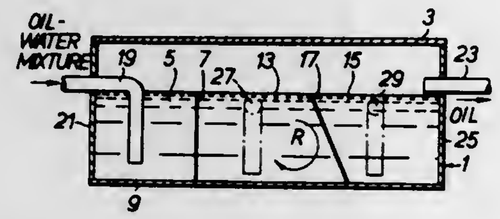
3,527,347
CIGARETTE END INSPECTION DEVICE
Renato Marradi, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 13, 1968, Ser. No. 705,155
Claims priority, application Italy, Feb. 18, 1967, 6,806A/67
Int. Cl. B07c *3/10*
U.S. Cl. 209—79 **10 Claims**

An arrangement for automatically checking up the filling of cigarettes and for discarding incompletely filled cigarettes, said arrangement comprising a fluted endless conveyor for advancing the cigarettes to be checked in parallel relation, a conveyor drum provided with flutings peripherically revolving at the speed of the endless conveyor, picking up the cigarettes therefrom and carrying same along its upper section and a pair of drums provided with spring urged pins and counterpin revolving sidewise of said conveyor drum at the same speed and with said pins urged against the cigarette ends, means being provided for discarding the cigarettes which permit an excessive penetration into their ends of the said feeler pins and/or counterpins.



3,527,348
METHOD AND APPARATUS FOR SEPARATING IMMISCIBLE LIQUIDS

Henri Joseph Lalonde and Shirley Isabelle Lalonde,
both of St. Andrews West, Ontario, Canada
Filed Nov. 21, 1968, Ser. No. 777,579
Int. Cl. B01d *21/10*
U.S. Cl. 210—84 5 Claims

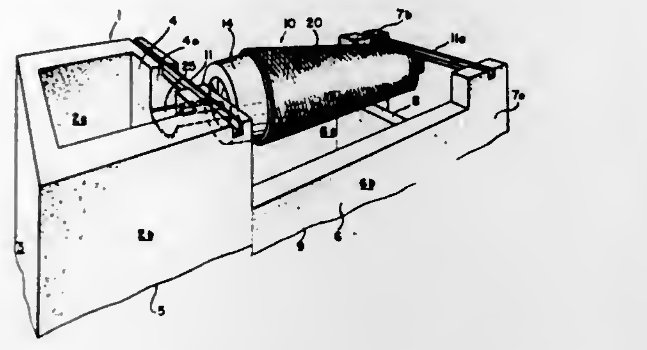


A rectangular tank having an inclined baffle plate across it such that when an oil-water mixture is made to flow from one end of the tank to the other, the mixture rotates against the plate in a toroidal fashion and the oil separates from the water. The separated oil and water are removed by suitably placed outlets.

3,527,349
SELF-POWERED SELF-CLEANING DEBRIS REMOVER

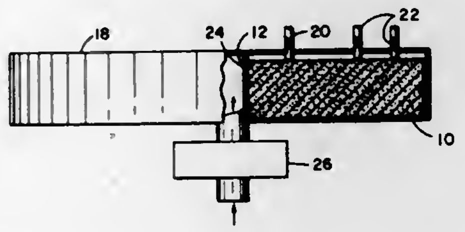
Thomas L. Lynch, Rte. 3, Box 711C,
Yakima, Wash. 98901
Filed Nov. 19, 1968, Ser. No. 777,031
Int. Cl. B01d *33/06*
U.S. Cl. 210—156 7 Claims

A self-cleaning, self-powered apparatus is disclosed for removing debris and other foreign matter from irrigation canals or conduits. The apparatus comprises a debris removing member resembling the frustrum of a cone mounted in a housing such as a concrete box for rotation about its axis just below the level of incoming water. The debris removing member includes a water turbine in its inlet end having blades adapted to receive the impact of water flowing therethrough for propelling the debris removing member. A fine mesh screen overlaid with a screen of larger mesh forms the peripheral surface of the debris removing member and allows the water flowing into it to pass through while retaining substantially all the debris. The debris processes through the debris removing member and is ejected at its outlet end.



3,527,350
APPARATUS FOR CONTINUOUS CHROMATOGRAPHY

Edwin J. Tuthill, Belle Terre, and Joseph Fedelem, Blue Point, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 25, 1969, Ser. No. 852,701
Int. Cl. B01d *15/08*
U.S. Cl. 210—198 3 Claims

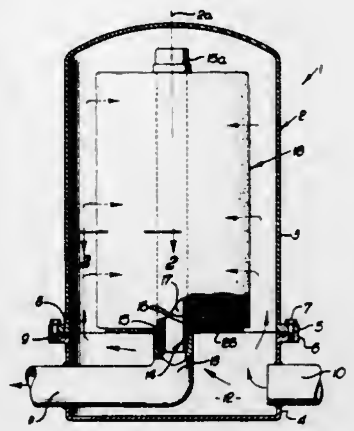


An apparatus for effectuating continuous chromatographic separations comprising a disc shaped rotating chamber filled with chromatographic material with the carrier fluid radiating outwardly through the chamber and sequentially spaced mixture entry and separate species exit ports orthogonally connected to the chamber between the center and edge of the disc. The orthogonally connected exits ports allow the slowest moving component to be removed before species intermixture can occur.

3,527,351
FLUID FILTERING APPARATUS

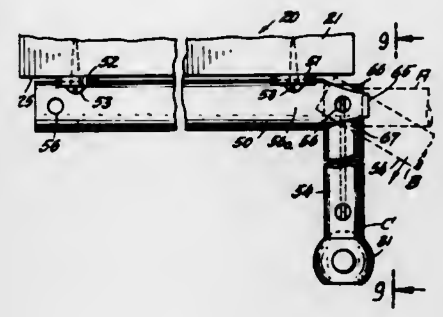
Charles E. Wade, Covina, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Jan. 9, 1969, Ser. No. 790,133
Int. Cl. B01d *25/20, 25/34, 33/30*
U.S. Cl. 210—356 20 Claims

Filter device for filtering swimming pool water and the like to separate finely divided matter therefrom over long periods without clogging or undue pressure drop which includes a filter element comprising a rigid liquid passing member such as an apertured pipe and a filter fabric supported by the element carrying a filter body adapted for separating finely divided matter from liquid passing therethrough and on which separated matter may accumulate. To prevent clogging accumulations multiple elongate and flexible strands secured at their inner ends to outwardly project from the filter fabric comprise the body and have responsive movement throughout their length to fluid pressure of liquid passing to the filter element. The strands by their movement operate to continually disrupt the integrity of separated matter accumulations on the filter body.



3,527,352
GARMENTS HANGER MEANS

Glovanni De Lapa, 682 J. F. Kennedy Blvd.,
Bayonne, N.J. 07002
Filed Nov. 14, 1967, Ser. No. 686,376
Int. Cl. A47b *29/00, 37/00*
U.S. Cl. 211—1.3 1 Claim

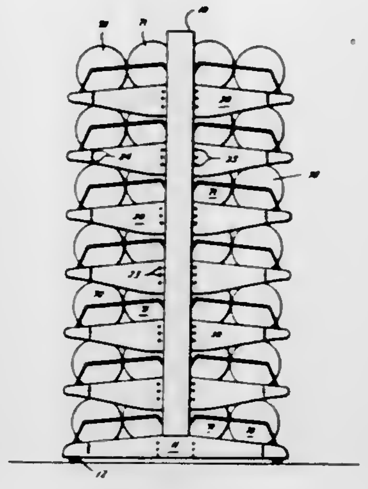


The present invention relates to a hanging device for supporting clothes articles in a tailor shop. The device in question may be formed of an elongated tubular member into which is mounted another slidable member smaller in diameter. The slidably mounted member moves in the first member lengthwise. Upon reaching the end of travel it can be hinged sideways. The sliding member has indexing spring detents which also serve as a bearing shaft upon which the sliding member can move in an arcuate path.

3,527,353
STORAGE DEVICE

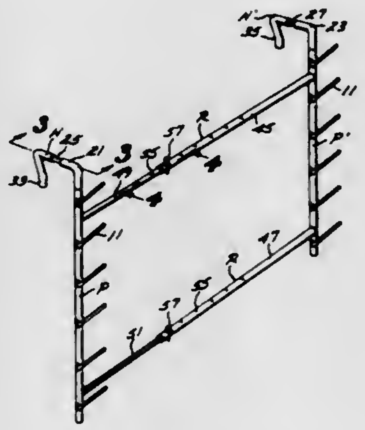
Paul L. Farren, 5603 S. Rice Ave.,
Houston, Tex. 77036
Continuation-in-part of applications Ser. No. 536,760, Mar. 23, 1966, and Ser. No. 664,323, Aug. 30, 1967. This application Aug. 13, 1968, Ser. No. 752,303
Int. Cl. A47b *43/00, 63/06, 57/28*
U.S. Cl. 211—40 3 Claims

Tray and tray support for tape reels, the tray support so positioning the tray that the reels riding therein may be biased toward one tray end. The support includes oppositely disposed groups of arms that extend, cantilever style, from opposite sides of vertical structural members. The trays are linked to such arms, and include portions dividing the tray into a plurality of side-by-side runways. The tray and support, independent of vertical structural members, may form a unitary and independently usable shelf.



3,527,354
WATER SKI RACK

Norton D. Sokolow, 3729 Woodcliff Road,
Sherman Oaks, Calif. 91403
Filed Mar. 7, 1968, Ser. No. 711,241
Int. Cl. A47f *7/00, 5/12*
U.S. Cl. 211—60 4 Claims

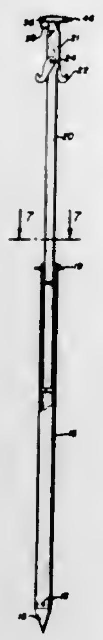


A water ski rack including a pair of vertical posts fastened together by telescopical horizontal rods. The posts include a plurality of pairs of aligned pegs which are pivotable from a lowered ski supporting position to a raised retracted position. The upper portion of the posts are in the form of hooks for being received over the gunwale of a boat to suspend the rack therefrom along the inside wall of the cockpit of the boat.

3,527,355
RETRACTABLE SUPPORT POST FOR CONTAINERS

Laurance E. Boyer, 902 Sidney Ave.,
Sterling, Colo. 80751
Filed Aug. 30, 1968, Ser. No. 756,495
Int. Cl. A47g *29/00*
U.S. Cl. 211—71 7 Claims

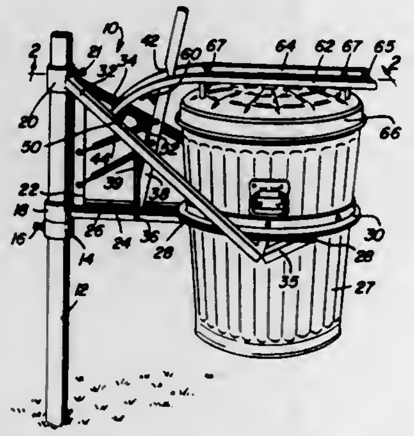
The invention comprises a container support including a ground embedded sleeve in which a support post is telescopingly mounted. A releasable friction clamp including a pair of jaws is mounted at the lower inserted end of the post to hold the post in extended position relative to the sleeve. Container supporting hooks are provided on the upper end of the post.



3,527,356
GARBAGE CAN RACK

John B. Herdy, 5323 McCullough,
San Antonio, Tex. 78212
Filed June 11, 1968, Ser. No. 736,066
Int. Cl. A47g *29/00*

U.S. Cl. 211—82 **7 Claims**



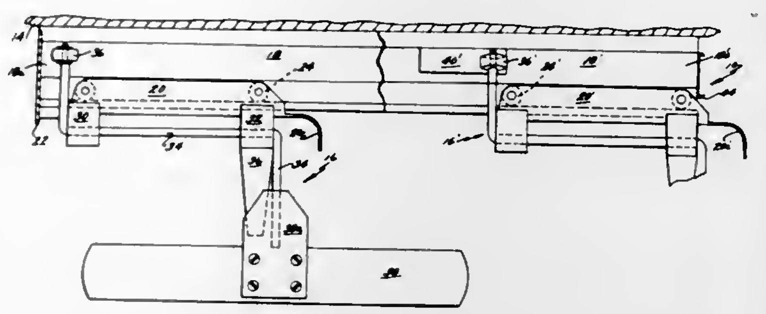
An anchor post mounts a refuse container rack. Actuator rods having a container cover mounted thereto are pivotally connected to the rack and are upwardly displaceable in response to a lifting force. The actuator rods include a latch member which is adapted to engage a keeper when the actuator rods are displaced to a predetermined vertical position. Thus, refuse may be deposited in a rack supported container without the necessity of holding a lid or cover. A gentle downward force on the actuator rods causes the lip to return to a container covering position.

3,527,357
DRAW OPERATED PANTS HANGER

Herbert W. Johnson, 4060 Harbor Point Drive,
Muskegon, Mich. 49441
Filed Sept. 27, 1967, Ser. No. 671,013
Int. Cl. A47j *51/14*

U.S. Cl. 211—113 **8 Claims**

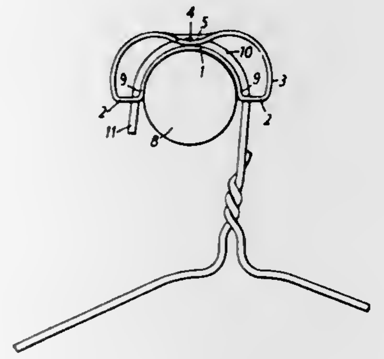
A pants hanger assembly employing fixed, elongated, mounted tracks having front and rear ends, with pants hanger carriages on the tracks, the pants hangers on said carriages being shifted between pants receiving or releasing condition at the track front end and pants gripping and retaining storage position at the track rear end by the action of cam surfaces on the tracks cooperating with cam followers on the carriage as the carriage is shifted between the front and rear track ends.



3,527,358
GARMENT HANGER ATTACHMENT

Raymond Ralph Wheeler, 514 Elk Drive,
Riverton, Wyo. 82501
Filed Apr. 10, 1968, Ser. No. 727,127
Int. Cl. A47j *51/09*

U.S. Cl. 211—119 **6 Claims**



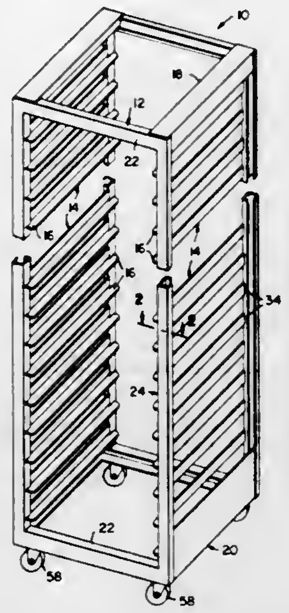
An attachment for engaging onto the hook of a garment hanger and including an arcuate bridge structure which extends on each side of the hook of the hanger so as to rest on a hanger rail at axially spaced points and so as to embrace the rail, and a cover portion which overlies the bridge portion, the hook being resiliently gripped between the bridge portion and a recessed or slotted area of the cover portion.

3,527,359
TRAY RACK CABINET WITH REMOVABLE GUIDES

Theodore C. Ambertson, Millbrae, Calif., assignor to Amrak Incorporated, Burlingame, Calif., a corporation of California
Continuation-in-part of application Ser. No. 674,372, Sept. 11, 1967, which is a continuation-in-part of application Ser. No. 639,702, May 19, 1967. This application Apr. 22, 1968, Ser. No. 733,744
Int. Cl. A47f *5/00*

U.S. Cl. 211—148 **17 Claims**

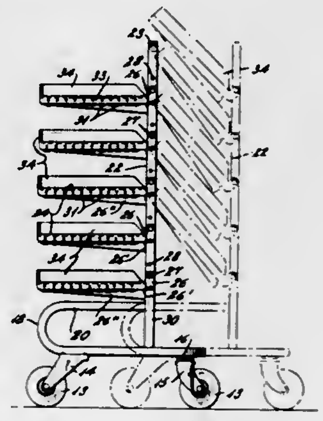
A mobile service or storage rack for supporting a plurality of trays or the like is comprised of pairs of main frame components and a plurality of similar interconnecting tray-supporting components, all of which connect together in a unique manner with a relatively few fasteners. The main frame components have upright members provided with spaced apart slots for receiving the ends of easily removable tray-supporting components in various arrangemnts. Pairs of locking frame members hold the main frame components together at their upper and lower ends. The invention covers a plurality of embodiments for accommodating different sizes and numbers of articles for carrying them from place to place or for storing them.



3,527,360
NESTABLE MULTIPLE-USE VEHICLE

Norman E. Thielking, 1116 Cousin St.,
Cape Girardeau, Mo. 63701
Filed May 24, 1968, Ser. No. 731,992
Int. Cl. A47f *5/00*

U.S. Cl. 211—150 **7 Claims**



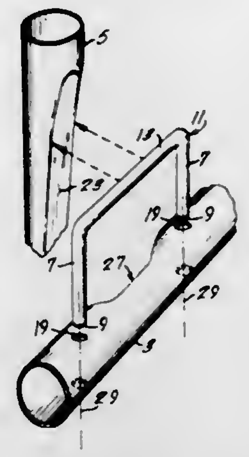
A roller-mounted nestable multiple-use vehicle having a base of a horizontal configuration to nest with another base of like configuration, post means mounted on said base and multiple shelf members mounted for variable spacing on said post means, said shelf members incorporating roller means for facilitating loading and unloading and also having marginal retention means for retaining articles on said shelf members.

3,527,361
LOCKING JOINT STRUCTURES FOR GARMENT RACKS

John Janetka, Ville d'Anjou, Quebec, Canada, assignor to New York Wire Works Limited, Montreal, Quebec, Canada
Filed Oct. 3, 1968, Ser. No. 764,790
Claims priority, application Canada, Sept. 9, 1968, 029,582
Int. Cl. A47f *5/14*

U.S. Cl. 211—182 **7 Claims**

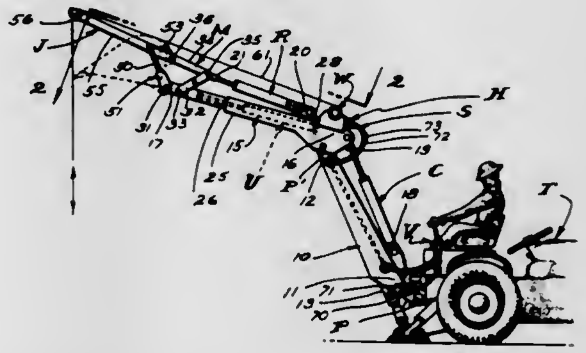
A releasable locking means for detachably connecting two tubular members together transversely to one another. The locking means comprises guide rods on one member received in guide holes in the other member for guiding the other member transversely with respect to one member to a locking position. Cooperating cam surfaces are provided on both members to wedge the members together as they are relatively moved to a locking position.



3,527,362
CRANE ATTACHMENT FOR BACKHOE

Kenneth W. Allen, 9034 E. Jeff St.,
Bellflower, Calif. 90706
Filed Apr. 18, 1968, Ser. No. 722,269
Int. Cl. B66c *23/06*

U.S. Cl. 212—59 **8 Claims**



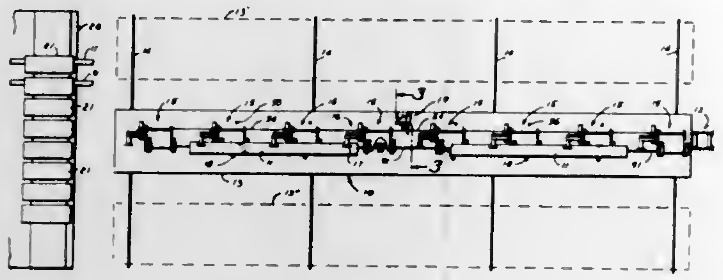
A backhoe to crane conversion means which comprises an elongate jib boom with inner and outer ends adapted to replace the bucket of a backhoe and to project longitudinally outwardly from the dipper or outer secondary arm of a backhoe, said jib boom having a sheave rotatably mounted at its outer end and having means at its inner end to be cooperatively engaged by the backhoe bucket mounting and operating means, a hydraulically driven winch fixed to and carried by the dipper or secondary arm of the backhoe, at the rear or inner end portion thereof, quick disconnect couplings on the fluid lines normally conducting fluid to and from the cylinder and ram unit for the backhoe bucket and carried by the upper arm and engageable with the winch whereby said cylinder and ram unit is hydraulically locked to hold the jib boom in position, through the bucket mounting means related to it and the fluid supply means therefor is utilized to operate the winch.

3,527,363
APPARATUS FOR ROTATING STRUCTURAL SHAPES

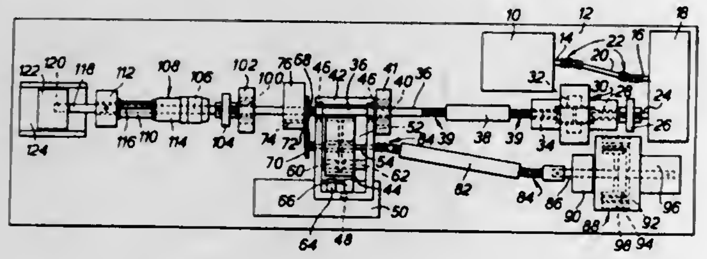
Russell S. Thatcher, Dallas, Tex., assignor to Kelso Marine, Inc., a corporation of Texas
Filed Aug. 26, 1968, Ser. No. 755,342
Int. Cl. B25j *3/00;* **B65g** *47/24*

U.S. Cl. 214—1 **14 Claims**

A series of guide roller assemblies are mounted on and positioned along an elongated support carriage for receiving and holding an elongated structural shape. Means are provided for rotating the guide roller assemblies and thereby rotating the structural shape about an axis parallel to a longitudinal dimension of the shape. Each guide roller assembly includes a driver subassembly adapted to engage the structural shape and to move it longitudinally along the path defined by the guide roller assemblies.



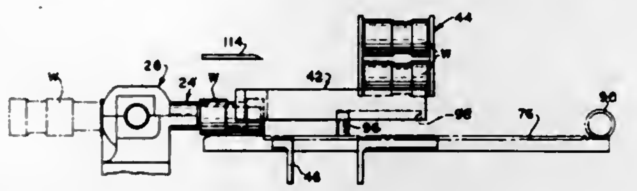
3,527,364
INDEXING MECHANISMS
Michael A. Lee, 8 W. Close, Greenford, Middlesex, England
Filed Jan. 27, 1969, Ser. No. 793,977
Claims priority, application Great Britain, Feb. 5, 1968, 5,632/68
Int. Cl. F16h *27/04*
U.S. Cl. 214—1 **16 Claims**



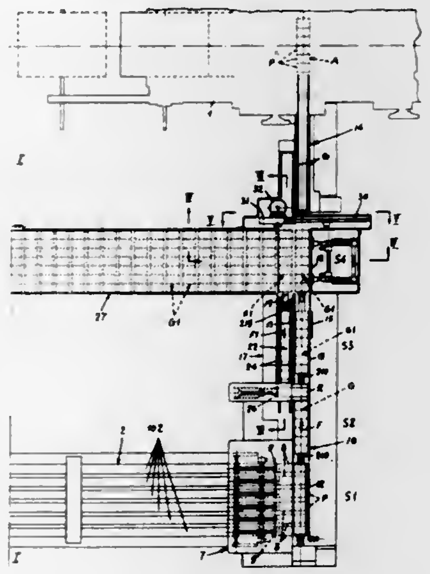
An indexing mechanism for linearly moving a workpiece in a series of equal steps includes a rotatable shaft on which is secured a first gear wheel of a gear train. A drum is coupled to a second gear wheel of the gear train for rotation therewith, the drum carrying a reference marking which is sensed by sensing means fixed in position relative to the axis of the second gear wheel. The mechanism includes drive means for rotating said shaft, and control means adapted to stop the rotation of said shaft, in response to the sensing of the reference marking, upon the second gear wheel reaching a predetermined angular position relative to the sensing means. A micrometer head mechanism connects said shaft to a linearly movable actuating member for moving the workpiece, whereby rotational movement of said shaft is converted into linear movement of the actuating member. In operation of the indexing mechanism, the second gear wheel undergoes a series of intermittent single complete revolutions each corresponding to a predetermined linear movement of the actuating member; the second gear wheel is readily replaceable by a further gear wheel having a different number of teeth so that the amount of each stepping movement of the workpiece can be varied.

3,527,365
WORKPIECE FEEDING MECHANISM
John E. Leonard, Waynesboro, Pa., assignor to Landis Machine Company, Waynesboro, Pa., a corporation of Pennsylvania
Filed Oct. 31, 1968, Ser. No. 772,142
Int. Cl. B23q *5/22*
U.S. Cl. 214—1.3 **3 Claims**

Apparatus for feeding workpieces to and removing workpieces from a work forming station which is typically located between a pair of opposed dies which rotate about parallel axes. A shuttle delivers workpieces to and removes workpieces from an arbor swingable between the forming station and a loading station, the shuttle receiving workpieces from an upper chute and delivering workpieces to a lower outlet chute after delivery of the workpieces to the arbor. The upper and lower chutes are automatically blocked except when the shutter receives or delivers a workpiece.

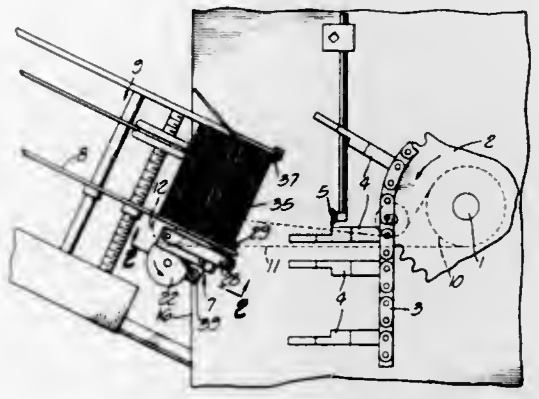


3,527,366
CIGARETTE PARCELLING MACHINE
Goffredo Gamberini, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Nov. 27, 1967, Ser. No. 685,743
Int. Cl. B65g *57/30*
U.S. Cl. 214—6 **5 Claims**



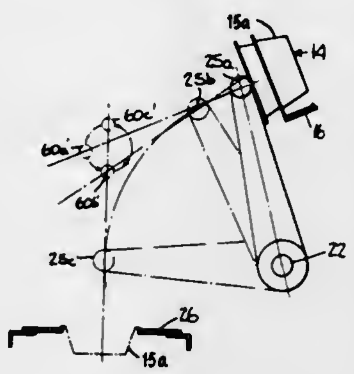
System for stacking and grouping packs, or the like, with storage unit and automatic recirculation, particularly suitable for feeding parcelling machines, or the like.

3,527,367
HOPPER ESCAPEMENT
Elbert L. Bivans, Glendale, Calif., assignor to Bivans Corporation, Los Angeles, Calif., a corporation of California
Filed Oct. 17, 1968, Ser. No. 768,331
Int. Cl. B65g *59/06*
U.S. Cl. 214—8.5 **5 Claims**



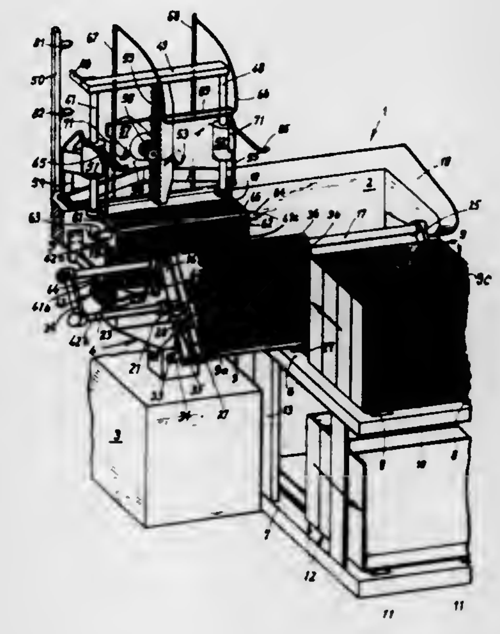
The disclosure relates to an escapement device for controlling the release of carton flats from a hopper in timed relation with the operation of a vacuum pickup which removes the carton flats one at a time.

3,527,368
METHOD FOR HANDLING BLISTERS OR THE LIKE
John D. Bambara, Paterson, N.J., assignor to Packaging Industries, Inc., Hyannis, Mass., a corporation of Massachusetts
Filed Apr. 4, 1968, Ser. No. 718,790
Int. Cl. B65g *59/04*
U.S. Cl. 214—152 **3 Claims**



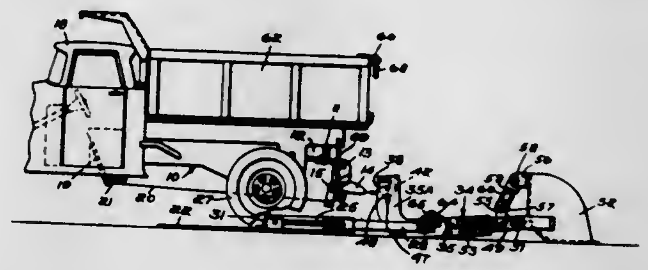
A pickup carrier plug type apparatus for use in handling and destacking blisters that are used in the packaging industry. When a pickup carrier with a plug type face plate is brought into engagement with a packaging blister a vacuum is caused to be developed between the side walls of the blister and the face plate of the plug whereby the blister is pulled into engagement with the face plate and caused to adhere thereto. In removing the blister from the pickup carrier the vacuum is terminated and air is allowed to seep into the area between the walls of the blister and the face plate of the vacuum plug thereby causing the blister to be released from the face plate.

3,527,369
APPARATUS FOR FEEDING ROD-SHAPED ARTICLES TO CONSUMING MACHINES
Ulrich Bornfleth and Fritz Selonke, Hamburg, Germany, assignors to Hauni-Werke Korber & Co. K.G., Hamburg, Germany
Filed June 17, 1968, Ser. No. 737,447
Claims priority, application Germany, June 21, 1967, H 63,069
Int. Cl. B65g *65/30*
U.S. Cl. 214—301 **18 Claims**



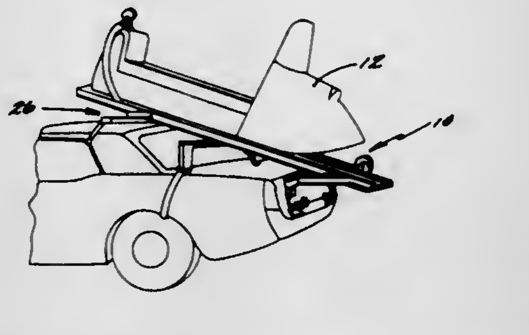
A feeding apparatus wherein a cage transfers filled cigarette trays from a platform to a delivery position on top of the hopper for a packing machine. An auxiliary magazine having walls extending between the panels of the hopper and the walls of a tray in delivery position accommodates that surplus of cigarettes which cannot immediately find room in the hopper. A filled tray is lifted with reference to the cage not later than when it reaches the delivery position and is lowered and inverted during movement with the cage away from such delivery position.

3,527,370
LOADING ATTACHMENT FOR TRUCKS
Ralph E. Allen, 56 Elmwood Ave., South Portland, Maine 04106
Filed Dec. 4, 1968, Ser. No. 781,039
Int. Cl. B60p *1/48*
U.S. Cl. 214—354 **16 Claims**



An attachment for trucks is disclosed that consists of a base to which telescoping members are pivotally connected. A frame having a bucket at its rear end is transversely pivoted to the free ends of the telescoping members. In use, the truck is backed over the base and coupled to the frame. After the truck is backed into the material to be loaded, it is driven forwardly and as its rear wheels pass over the base, the frame is swung upwardly to bring the bucket into a dumping position over the truck body. Means are provided to prevent pivoting of the frame, rearwardly when the bucket is in a dumping position and forwardly when the attachment is to be moved over the highway.

3,527,371
SNOWMOBILE CARRIER APPARATUS FOR MOTOR VEHICLES
Warren R. Townsend, Jr., 1200 S. 96th Ave., Zeeland, Mich. 49464
Filed Oct. 16, 1968, Ser. No. 768,141
Int. Cl. B60r *9/06, 9/08*
U.S. Cl. 214—450 **25 Claims**

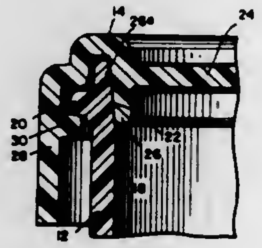


A generally flat and rigid support deck and means for mounting the same atop the rearward extremity of an automobile, at a downward slope toward the rear of the auto, so that the heavy forward part of the snowmobile is disposed low and well toward the rear of the vehicle carrying the same; also, the support deck is hinged intermediate its ends and is pivotally attached to the rear of the auto, so that it may be swung out of the way of the luggage compartment. The support deck includes trackways for the runner portions of the snowmobile and a trackway for the drive belt or other such member thereof, and rails are provided atop the support deck for guiding the snowmobile runners and drive member into place on their respective trackways, and for maintaining such positioning during movement of the auto.

3,527,372
CONTAINER

James P. Manning, Deerfield, Ill., assignor to Republic Molding Corporation, Niles, Ill., a corporation of Illinois

Filed Dec. 2, 1968, Ser. No. 780,336
Int. Cl. B65d *41/06*
U.S. Cl. 220—40 4 Claims

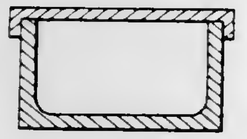


A container of molded plastic material comprising an open top receptacle and a removable cover therefor, said receptacle including a plurality of elongated thread segments and a substantially frustoconical sealing surface extended downwardly of an upper edge portion on the internal sidewall thereof, said cover including a top wall and a pair of inner and outer concentric annular flanges depending therefrom, a plurality of elongated thread segments on the inner side of said outer flange for engagement with the thread segments on said receptacle, and a substantially frustoconical sealing surface formed on an outer side surface of said inner flange for airtight sealing engagement with said sealing surface of receptacle and said cover when the cover is in closed threaded engagement therewith.

3,527,373
MOULDED CONTAINER HAVING INTEGRAL REINFORCING

Pierre Jean Gabriel Giraudet, 130 Place Vela Republique, 44 Ancenis, France, and Jean Eugene Raphael Giraudet, La Grand Vue, Saint-Herblon, France

Filed Nov. 6, 1968, Ser. No. 773,901
Claims priority, application France, Nov. 8, 1967, 127,329
Int. Cl. B65d *43/12*
U.S. Cl. 220—41 6 Claims



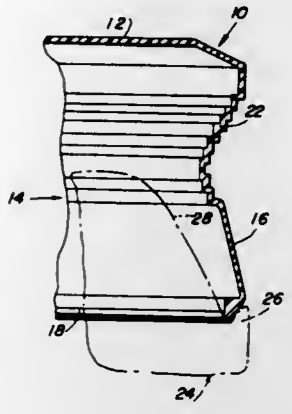
Moulded container having improved tearing and buckling strength properties, wherein reinforcements are provided on at least a portion of the inner surface of the container side walls, so as to construct strengthening beams adjacent the upper and lower edges of said side walls.

3,527,374
CONTOURED CAP

David L. Thor, Wilmington, Del., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed Dec. 9, 1968, Ser. No. 782,167
Int. Cl. B65d *41/00*
U.S. Cl. 220—42 6 Claims

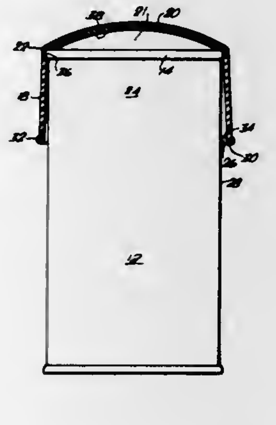
A unitary cap, formed from moldable material, is adapted for use on aerosol container, or the like, and has a top and a skirt integrally formed with the top and depending downwardly therefrom thereby presenting a hollow, tubular member having an open bottom. The skirt has a side wall formed with non-uniform cross-section while retaining substantially uniform thickness of the side wall throughout the skirt.



3,527,375
COVER FOR BEADED CYLINDRICAL BEVERAGE CONTAINER

Louis M. Klein, 22 Park Place,
Great Neck, N.Y. 10020

Filed Oct. 20, 1969, Ser. No. 867,608
Int. Cl. B65d *41/00*
U.S. Cl. 220—42 10 Claims



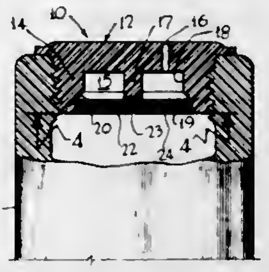
A cover of plastic material for cylindrical beverage cans from which part of the contents have been removed which comprises a hood-shaped member of truncated cone form having a tapered skirt and end wall to receive the open end of the can in generally co-axial relation within the hood, and with the tapered skirt wall being adapted to guide the leading edge of the open can end in co-axial relation to a position of nesting at a yieldable seat at the zone of juncture of the skirt and hood end wall, the seat being sized to yieldingly expand on insertion of the can and to sealingly engage the outer cylindrical surface of the can about the open end.

3,527,376
SELF-VENTING CLOSURE

Charles J. Brooke Young, Jr., 512 Askin Road,
St. Davids, Pa. 19087

Filed Aug. 6, 1968, Ser. No. 750,546
Int. Cl. B65d *51/16*
U.S. Cl. 220—44 3 Claims

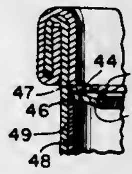
A self-venting closure includes a flexible diaphragm having a normally closed slit therein. The diaphragm is mounted in a cap, plug or body designed to provide a closure for a container. A protruding element is disposed in close proximity to the diaphragm to restrict the movement of the portion of the diaphragm having the slit. When pressure is exerted against the diaphragm, the portion of the diaphragm away from the central portion is flexed causing the slit to first open on the side of the diaphragm away from the protruding element.



3,527,377
PROTECTIVE MEMBER FOR SHARP-EDGE DISPENSING OPENINGS

Edward E. Colby, Cincinnati, and David C. O'Neill, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Sept. 27, 1968, Ser. No. 763,223
Int. Cl. B65d *17/00, 17/24*
U.S. Cl. 220—54 5 Claims

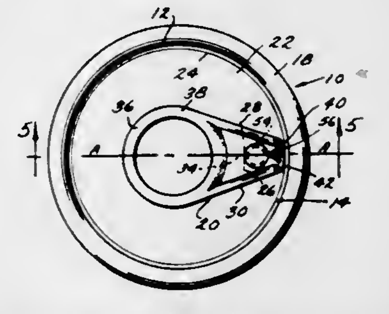


A protective member positioned adjacent the inner surface of a container wall and surrounding a dispensing opening defined by a score line. The protective member has a blunt edge which extends into the dispensing opening in order to prevent direct contact with the sharp residual edge of the dispensing opening when product is being manually withdrawn from the container.

3,527,378
EASY-OPENING CLOSURE

Jerry F. Scharf, Havertown, and William J. Lohr, Philadelphia, Pa., and Vinson S. Potts, Camden, N.J., assignors to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York

Original application Oct. 24, 1966, Ser. No. 589,018. Divided and this application Aug. 28, 1969, Ser. No. 853,885
Int. Cl. B65d *17/24, 51/16*
U.S. Cl. 220—54 2 Claims

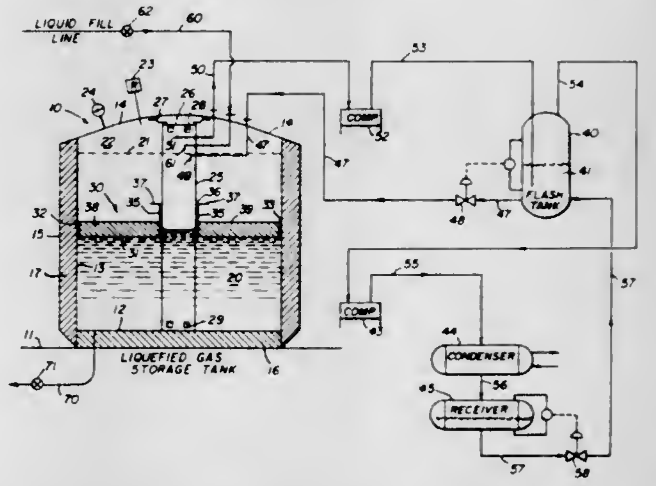


A container closure having a tear strip opener wherein the removable panel which is defined by a primary score line includes a secondary score line and a pull tab which is secured to the removable panel at the collar portion formed by the primary and secondary score lines. The pull tab extends transversely with respect to the primary and secondary score lines and includes a longitudinally extending bearing rib which engages the collar when the handle portion of the tab is lifted to rupture the secondary score line and initiate rupture of the primary score line and twist the collar portion to facilitate subsequent rupture of the primary score line.

3,527,379
SYSTEMS AND TANKS THEREFOR FOR STORING PRODUCTS IN THE LIQUID PHASE THAT ARE NORMALLY IN THE GAS PHASE

James Mair, Chicago, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York

Filed May 9, 1968, Ser. No. 727,813
Int. Cl. B65d *25/00;* **F17c** *1/00*
U.S. Cl. 220—85 19 Claims

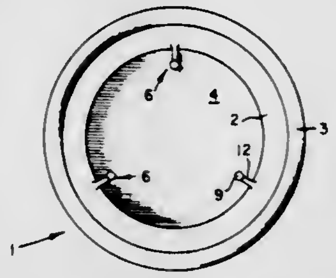


There is disclosed a system for storing in the liquid phase a product that is entirely in the gas phase under atmospheric pressure and ambient temperature conditions, including an upstanding storage tank that is hermetically sealed and is heat-insulated on the bottom wall and side wall thereof, an upstanding tube centrally of the tank guiding a floating roof that is heat-insulated and is adapted to float upon the liquefied product, and auxiliary equipment outside the tank for removing vapors therefrom and returning liquefied product thereto so as to maintain the atmospheric pressure while cooling the contents of the tank.

3,527,380
STOCKABLE CONTAINER AND APPARATUS FOR ITS MANUFACTURE

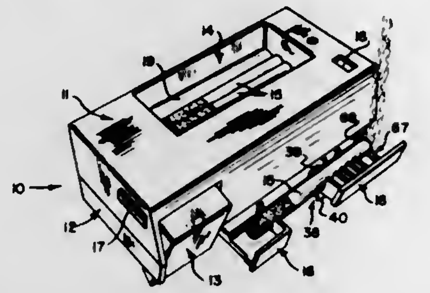
Gaylord W. Brown, Beaverton, Mich., assignor to Brown Machine Company of Michigan, Inc., a corporation of Michigan

Original application June 27, 1966, Ser. No. 560,534. Divided and this application Feb. 6, 1969, Ser. No. 822,770
Int. Cl. B65d *21/02*
U.S. Cl. 220—97 3 Claims



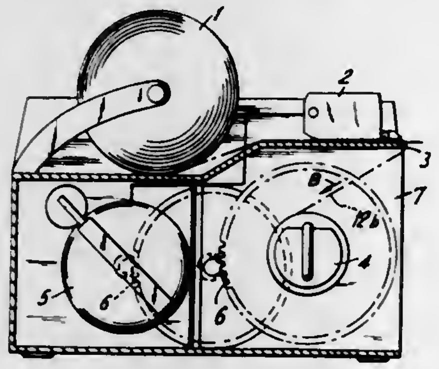
A nestable container part having a plurality of angularly spaced protuberances spaced inwardly from its annular sidewall and extending from its closed end wall into the interior of the container to provide supports adjacent, but spaced from, the end wall for the closed end of a similarly formed nested container part. A double wall web connects each of the projections with the annular sidewall.

3,527,381
AUTOMATIC CIGARETTE LIGHTER-DISPENSER
William D. Taylor, Etobicoke, Toronto, Canada, assignor to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed June 6, 1968, Ser. No. 735,056
Int. Cl. A24f *15/10*
U.S. Cl. 221—15 2 Claims



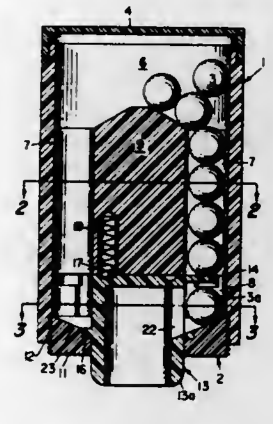
An apparatus for containing a plurality of cigarettes and igniting and dispensing one cigarette at a time, including an ignition means, a timer for operating the ignition means for an appropriate time period, an actuator for starting the ignition means and the timer, and a movable drawer which when opened dispenses a lit cigarette and when closed winds the timer.

3,527,382
DEVICE FOR DISPENSING STRIP ELEMENTS
Erwin Knoll, Reinach, Switzerland, assignor to Guhl & Schreibler A.G., Basel, Switzerland
Filed Sept. 27, 1967, Ser. No. 671,074
Claims priority, application Switzerland, Sept. 29, 1966, 14,053/66
Int. Cl. B65h *5/28, 17/04*
U.S. Cl. 221—73 7 Claims



An apparatus for dispensing self-adhesive tickets and similar elements from a protective paper backing is formed of a housing for mounting a ticket supply roll thereon and having a releasing edge over which the combined ticket and backing strip are drawn for separating the ticket from its backing strip. A sensing device is mounted on the housing having a feeler element for engagement with the surface of the ticket strip as it approaches the releasing edge. The feeler element is arranged to sense openings between individual tickets and to discontinue the passage of the ticket strip each time one of the openings is sensed. The sensing device includes a lever mechanism for positioning a permanent magnet within an electric coil, when the feeler element senses a space between the tickets, it deflects and the lever mechanism which is connected to it moves the permanent magnet in the coil either upwardly or downwardly and a voltage pulse is induced in the coil. The pulse serves to control the dispensing device and halts the movement of the ticket strip. The sensing device also includes a lever extending forwardly of the releasing edge, this lever is pivoted for movement upon the removal of a ticket and activates a contact in the sensing device for restarting the ticket passage. The underside of the sensing device also serves as a brake for the moving ticket strip and an adjusting device is provided on the dispensing apparatus for assuring that the sensing device is securely held in place against the moving ticket strip. When replacing the ticket supply roll, the adjusting means for holding the sensing device in place is released and the sensing device is pivoted upwardly out of the path of the ticket strip.

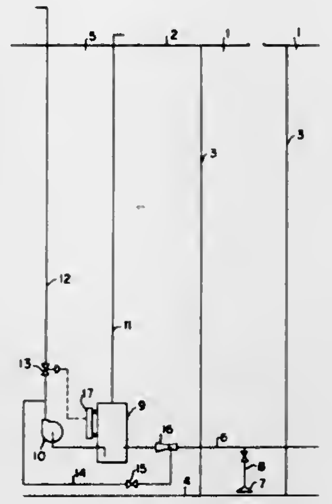
3,527,383
APPARATUS FOR DISPENSING PILLS OR THE LIKE
Adolph W. Borsum and William K. Borsum, both of 521 Pacific Ave., Solana Beach, Calif. 92075
Filed Oct. 17, 1968, Ser. No. 768,272
Int. Cl. B65g *59/00*
U.S. Cl. 221—112 6 Claims



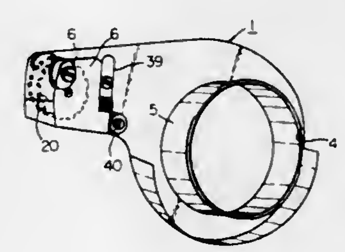
The dispensing container is formed of a stationary cylindrical casing member and a rotatable top member mounted in an open upper end of the casing. Interiorly, the casing is formed with three distinct sections, the bottom one of which is a reservoir or chamber in which the pills normally rest. A top section is formed into a so-called pill-delivery chamber from which the pills are dispensed outwardly through the rotatable top. Stops are provided for holding the pills in fixed positions prior to actual delivery. Between the reservoir and the pill-delivery chamber are a plurality of longitudinal pill-delivery passageways sized to guide the pills from the reservoir into the delivery chamber when the casing is inverted. The rotatable top has a post portion extending axially into the pill-delivery chamber, the bottom end of the post portion having a radial flange sized to cover the pill-delivery passageways as the top is rotated. The pill-dispensing opening preferably is formed in the post portion and dispensing is accomplished by inverting the container and rotating the top member of the casing to bring the radial flange into a position in which it lies beneath one of the fixed pills in the delivery chamber and over such pills as may be contained in the passageway beneath the fixed pill. The fixed pill then is free to drop by gravity through the opening in the post portion of the top end.

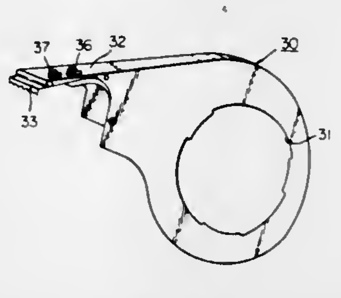
3,527,384
EQUIPMENT AND METHOD FOR UNLOADING LIQUIDS
Susugu Koyama and Takeji Kyogoku, Kobe-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed May 10, 1968, Ser. No. 728,277
Claims priority, application Japan, May 24, 1967, 42/32,934
Int. Cl. B67d *5/52*
U.S. Cl. 222—1 4 Claims

Equipment for unloading liquids, such as oil from oil tankers, is comprised of an auxiliary tank disposed near the bottom of the tank to be unloaded. A piping system containing a jet pump connects the auxiliary tank and the tank to be unloaded. Liquid flows from the tank into the auxiliary tank and is withdrawn by means of a main pump and discharged to another vessel or point of use. The auxiliary tank is provided with control means for regulating the level of liquid within it which in turn regulates a control valve in the line discharging liquid from the main pump. Liquid can be by-passed from between the main pump and the discharge control valve and is used as the driving fluid for the jet pump. The jet pump is used for completely unloading the liquid from the tank.



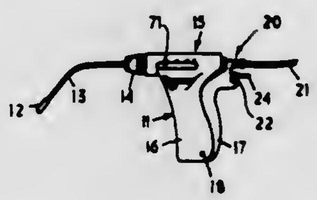
3,527,385
TAPE DISPENSING DEVICE
Seiichi Komura, Osaka, Japan, assignor of one-half to Muto Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 21, 1967, Ser. No. 692,359
Claims priority, application Japan, Jan. 14, 1967, 42/2,621
Int. Cl. B26f *3/02*
U.S. Cl. 225—24 3 Claims





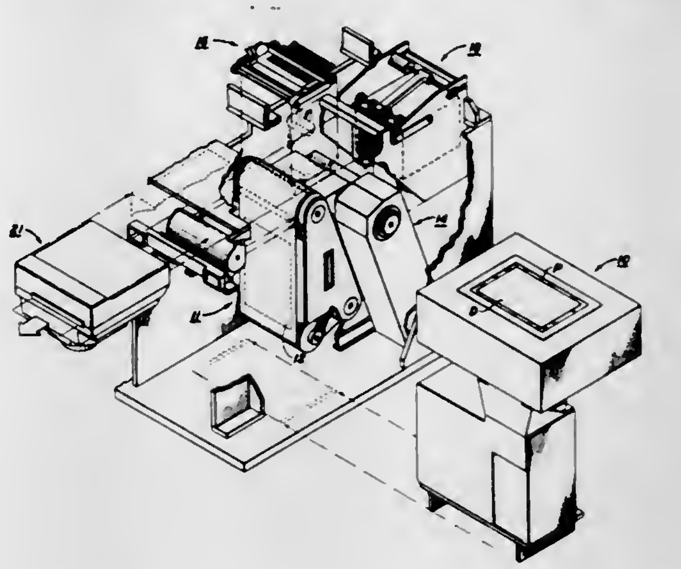
The device includes at least one tape delivery roller having a plurality of transverse lugs on its circumferential surface, and a smaller tape guide roller having a plurality of transverse lugs on its circumferential surface and associated with the tape delivering roller to receive and guide a tape from the tape delivery roller to an outlet opening of the dispensing device. The delivery roller is keyed to the shaft of a manually driven element such as a disc or lever. The top surface of the lug of the delivery roller is positioned to contact with the tip of the tacky rolled tape. The guide roller is designed to have a circumferential speed greater than that of the tape delivery roller so that the tape received from the delivery roller by the lugs of the guide roller is easily separated from the lugs of the delivery roller without manual pull thereof and guided to the outlet opening of the dispensing device. The tape is cut off when a desired length of the tape is delivered out of the outlet opening.

3,527,386
PISTON UNIT
John F. C. Close, Lane Cove, and Roy A. Williams, Lugarno, New South Wales, Australia, assignors to Unisearch Limited, Kensington, New South Wales, Australia, a company of New South Wales
Filed Oct. 8, 1968, Ser. No. 765,832
Claims priority, application Australia, Oct. 19, 1967, 28,710/67
Int. Cl. F01b *13/06;* **G01f** *11/00*
U.S. Cl. 222—50 9 Claims



A drench gun for dosing animals is made substantially wholly of plastic, and for use with such a gun there is provided a composite piston unit that is largely made of plastic, that is effective, simple and inexpensive, that is readily adaptable to the manufacturing tolerances encountered in the production of plastic parts, and that is readily adjustable to compensate for wear of the plastic piston ring as a result of the reciprocating movement of the piston unit in the drench gun cylinder, so that the drench gun, with the improved piston unit, in addition to being relatively inexpensive and fully effective, has a long, useful life.

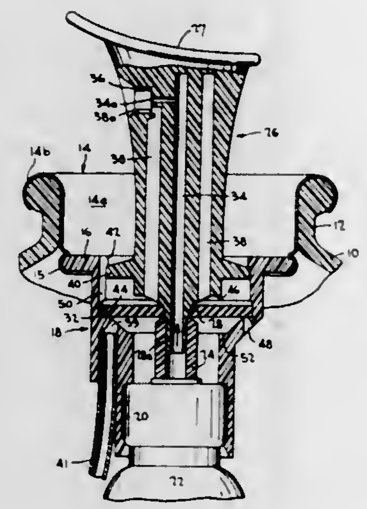
3,527,387
DEVELOPER REPLENISHING PROGRAMMING SYSTEM
Charles D. Wilson, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 24, 1968, Ser. No. 731,966
Int. Cl. B67d *5/08*
U.S. Cl. 222—57 8 Claims



A toner dispensing and control system therefor having means for periodically accumulating toner for a predetermined time interval and for periodically measuring the accumulation thereof for another predetermined time interval wherein the time intervals are asymmetrical. In the event toner accumulation falls below a predetermined value, a predetermined amount of toner is dispensed in the developing system using the dispensing and control system.

3,527,388
ASPIRATION-TYPE LIQUID DISPENSER

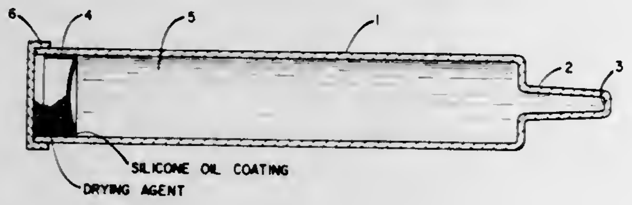
Rex C. Cooprider, Hacienda Heights, Calif., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,501
Int. Cl. B67d *5/54*
U.S. Cl. 222—193 **7 Claims**



An aerosol dispenser of the type in which propellant discharged from a cartridge within the product container exerts an aspirating effect for discharging the product, there being a product control valve in the form of a resiliently deformable annulus having its inner and outer peripheral portions respectively cooperating with separate valve seats to control the discharge of the product and the venting of air from the atmosphere into the product container. The same valve is adapted to be raised off of its seat by excess pressures occurring within the product container to release the same. Also, the valve is arranged so that when deformed beyond its normal discharge position, it will engage concentric annular sealing ribs or edges on opposite radial sides of the product and vent openings to seal same, while at the same time the propellant discharge passage and propellant valve are opened to permit charging of the propellant cartridge with compressed propellant through the discharge head.

3,527,389
CAULKING CARTRIDGE WITH SILICONE FLUID SEAL

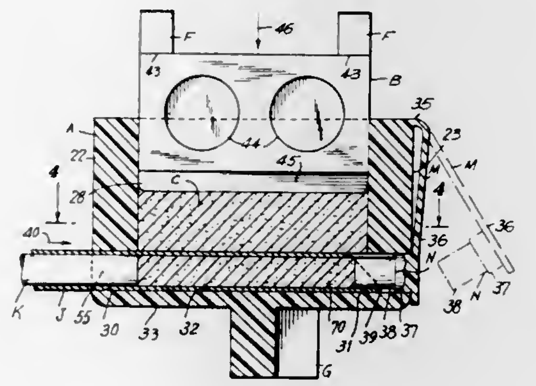
James C. Farmer, Greensboro, N.C., assignor to Dow Chemical Corporation, Midland, Mich., a corporation of Michigan
Filed Oct. 25, 1968, Ser. No. 770,630
Int. Cl. G01f *11/06*
U.S. Cl. 222—327 **3 Claims**



There is described a caulking cartridge comprising a tubular body, a nozzle at one end and a movable plunger designed to slide within the cartridge to eject compound from the nozzle. The improvement resides in the interior position of a coating of silicone oil between plunger and cartridge and the provision of a removable end cap behind the plunger to enclose a quantity of drying agent, such as calcium chloride.

3,527,390
FLAVOR AND SPICE INJECTOR FOR FOOD PRODUCTS

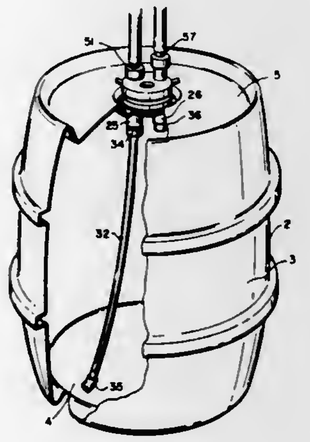
Myron Jenner, Bethel, Vt. 05032
Filed Sept. 17, 1968, Ser. No. 760,134
Int. Cl. B67d *5/42*
U.S. Cl. 222—388 **7 Claims**



The disclosure of the present invention relates to a hand operated injector for injecting materials into meat products and other food before, during and after baking, in which a container is provided for material, through the lower portion of which is inserted a tubular member which is inserted a tubular member which will take up a portion of the material and which is provided with a plunger for injecting the same into the food product. Among the materials which may be injected are tenderizing powders, spices, condiments, butter, flavoring and preparation materials in general.

3,527,391
MEANS FOR EXPELLING LIQUID FROM A CONTAINER BY APPLIED EXTERNAL PRESSURE

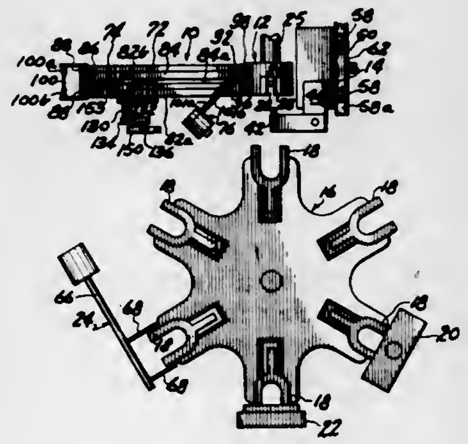
Anthony George DiMuria, 5717 W. Coolidge, Phoenix, Ariz. 85031
Filed Feb. 15, 1968, Ser. No. 705,675
Int. Cl. B65d *83/14*
U.S. Cl. 222—400.7 **5 Claims**



A liquid container having two generally side by side openings, one for ingress of pressure applying medium and the other for egress of liquid, valve means normally maintaining said openings closed and a unit having a connection to a source of pressure applying medium and a liquid dispensing connection adapted to be applied to the container, the unit having means for operating the valve means to open said openings and thus put said container in communication with said connections respectively. Each opening may have a valve seat with a valve element normally maintained resiliently seated thereon and each connection is dimensioned to project through its corresponding valve seat and to unseat the valve element associated therewith when the unit is applied to the container, said connections sealingly engaging said valve seats before unseating the respective valve elements whereby each valve seat also acts as a seal for one of said connections.

3,527,392
METHODS AND MACHINES FOR FORMING DECORATIVE ARTICLES

Josephus J. Thayer, West Lafayette, Ind., assignor to Thayer, Inc., Wolcott, Ind., a corporation of Indiana
Filed Mar. 7, 1966, Ser. No. 532,330
Int. Cl. A41h *43/00*
U.S. Cl. 223—46 **11 Claims**



A decorative article comprising a pompon-type bow formed from a coil of wound, juxtaposed ribbons, with free end portions of the ribbons extending from the body of the bow as streamers.

Apparatus and method for forming hanks from juxtaposed ribbons to form the above-mentioned type of bow, the ribbons being coiled by winding on a mandrel, the ribbons being severed at a point spaced from the mandrel, and the resulting hank being moved to a succeeding work position on the side of the mandrel opposite the side from which the ribbon is fed.

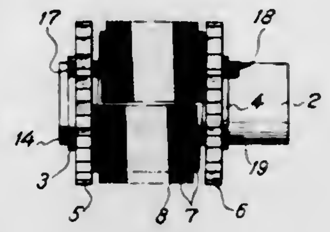
ERRATUM

For Class 225—24 see:
Patent No. 3,527,385

3,527,393
SPLITTER

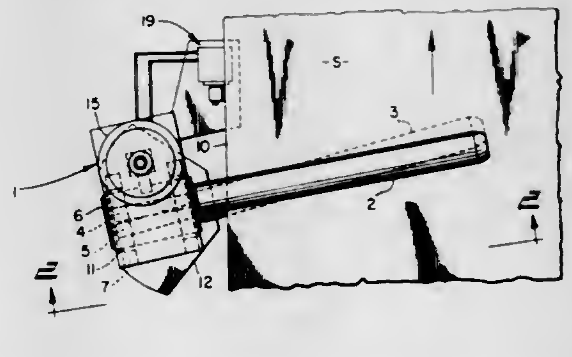
Mitsuo Matsui, Ashikaga-shi, Tochigi-ken, and Chuji Shimizu, Tokyo-to, Japan, assignors to Chori Company, Ltd., Osaka-shi, Japan, a corporation of Japan
Filed July 23, 1968, Ser. No. 746,830
Int. Cl. B26f *3/00;* **B26d** *1/12*
U.S. Cl. 225—97 **3 Claims**

A splitter for splitting film comprising a plurality of toothed cutter disks and washers alternately mounted on a common shaft. Each disk and washer have a radial cut gap arranged in axial alignment. Means are provided to twist the disks at the gap and thus modify the arrangement of teeth of the cutter disk so as to vary the split pattern to be formed on the film.



3,527,394
WEB GUIDING APPARATUS

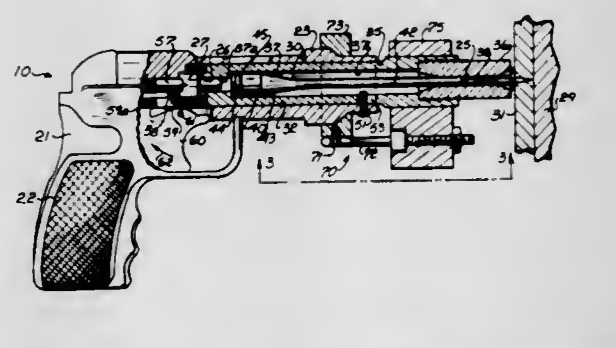
Alexander V. Alexeff, Cleveland, Ohio, assignor to Alexeff-Snyder Enterprises, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 23, 1968, Ser. No. 754,790
Int. Cl. B65h *25/26*
U.S. Cl. 226—17 **6 Claims**



A web guiding apparatus including a pair of guide rolls adjacent one or both edges of the web material carried by a cylindrical mounting block journaled in a support stand, such guide rolls being angularly disposed in the mounting block in such a fashion that rotational movement of the cylindrical mounting block will effect angular displacement of the guide rolls into and out of engagement with the web material.

3,527,395
EXPLOSIVELY ACTUATED FASTENING TOOL

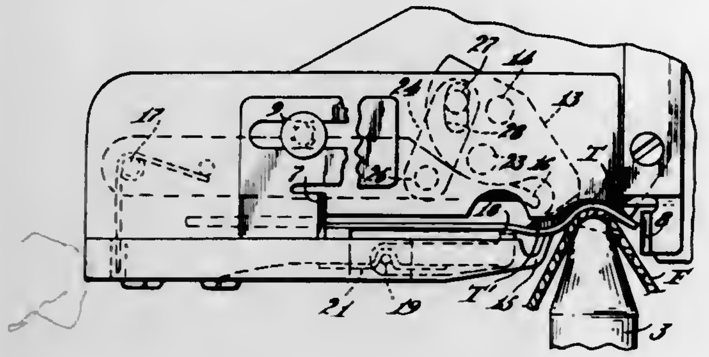
John E. Jackson, Beachwood, and James F. Boehm, Brookpark, Ohio assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,802
Int. Cl. B25c *1/12*
U.S. Cl. 227—10 **8 Claims**



An improved powder actuated fastening tool is adapted to be mounted on one end portion of an elongated support member to facilitate the attaching of insulating panels to a wall of an ingot mold. A locking assembly is provided for holding the fastening tool in a cocked condition to enable the tool to be remotely actuated by a mechanism mounted on the support member. In addition, the locking assembly insures that parts of the barrel assembly of the fastening tool are not separated if an impact or driving member should strike the barrel assembly.

3,527,396
PINNING MACHINE

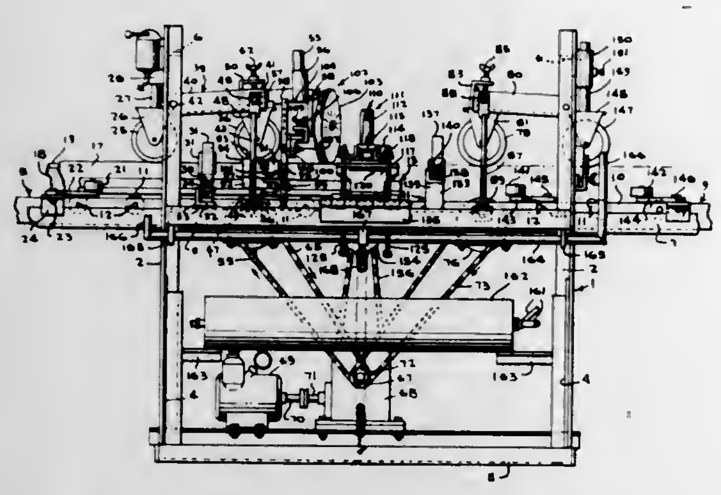
John S. Dudley, Douglas, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed May 17, 1968, Ser. No. 730,060
Int. Cl. B27f *7/06*
U.S. Cl. 227—25 **4 Claims**



Apparatus for pinning tags to an article comprising means for placing the point of the pin between the tag and article and means for crimping the point of the pin toward the back of the tag.

3,527,397
ASSEMBLING COVERED CUSHIONED ARTICLES

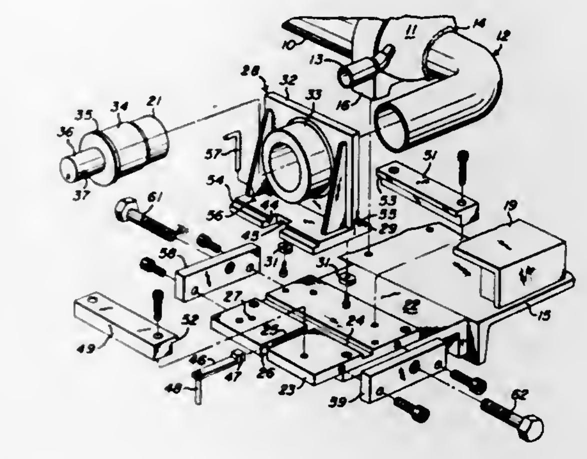
Harrigan E. Wortsmith, Sr., 4270 E. 43rd St., North Little Rock, Ark. 72117
Filed Nov. 26, 1968, Ser. No. 778,944
Int. Cl. B25c *1/00*
U.S. Cl. 227—13 **19 Claims**



A machine for completing kneeling benches, or like articles, wherein components of the article, including a rigid base member, a cushion and a flexible cover member, are freely assembled in inverse order on a tray which is automatically driven along a conveyor path to means to fold the edges of the cover member over the longitudinal side edges of the base member, means to smooth and tension the folded-over side edges, and then to staplers that drive staples through the folded-over cover edges into the base member to complete the assembly. The tray is guided to prevent transverse movement, and the assembled components are compressed vertically with the base member held in the predetermined horizontal plane through the machine. All parts are freely adjustable for different widths and heights of articles.

3,527,398
LOW DIMENSIONAL TOLERANCE WELDING APPARATUS

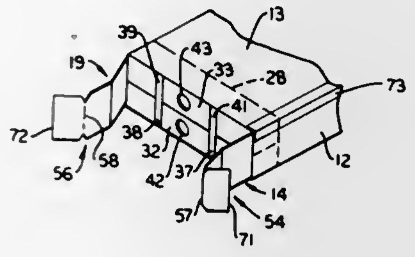
Harry C. Gersbacher, Dayton, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Original application Sept. 19, 1966, Ser. No. 580,349, now Patent No. 3,408,729, dated Nov. 5, 1968. Divided and this application July 3, 1968, Ser. No. 810,392
Int. Cl. B23k *19/00*
U.S. Cl. 228—44 **6 Claims**



An apparatus including a base plate secured to a support table, a body member freely slidable in one direction on the base plate, a key attached to the body member movable in a keyway formed in the base plate and a piston cylinder plug member. The parts to be welded are placed on the support table, one securably fixed while the other is attached to the plug member and body member so that during welding the body member can move in only one direction, 90° to the weld joint, the movement caused by the expansion and contraction of the heated parts.

3,527,399
BOOK SHIPPING CONTAINER WITH RELEASABLE CLOSURE

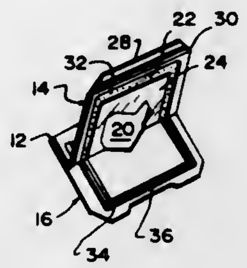
Harold W. Layne, Sr., Beech Grove, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Nov. 4, 1968, Ser. No. 772,902
Int. Cl. B65d *5/10*
U.S. Cl. 229—39 **3 Claims**



Disclosed is a container in which end flaps, extending from the container top and bottom panels, are folded to provide a cushioning structure for the container contents. Slots are presented for insertion of end flap portions, extending from the container side panels. The end flap portions have locking tabs and the top and bottom panel end flaps have access openings for finger release of the locking tabs.

3,527,400
PACKAGE FOR STERILIZED ARTICLE

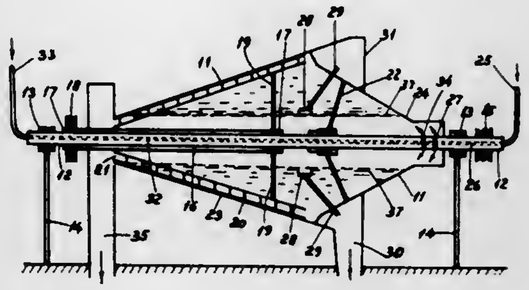
Kenneth M. Shepherd, Arlington Heights, and Ronald L. Whipperman, Lisle, Ill., assignors to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Nov. 13, 1968, Ser. No. 775,345
Int. Cl. A61b *19/02;* **B65d** *33/16*
U.S. Cl. 229—48 **2 Claims**



A package, formed from a blank of foldable paperboard, has top and bottom panels adapted to be folded into a face-to-face relationship to enclose an article to be positioned therebetween. The bottom panel has a coating compound applied to the inner surface thereof while the inner surface of the top panel has flexible material secured thereto. The flexible material is sealed to the coated surface along predetermined lines of seal when the panels are folded to enclose the article. A portion of the coating compound on the inner surface of the bottom panel is releasable from that surface in the areas of the lines of seal upon opening of the package so that it adheres to the flexible material at the lines of seal and is pulled away from the bottom panel without tearing the paperboard and thereby preventing contamination of the article by loose particles of torn paperboard.

3,527,401
DRUM CENTRIFUGE WITH ROTATING WORM CONVEYOR

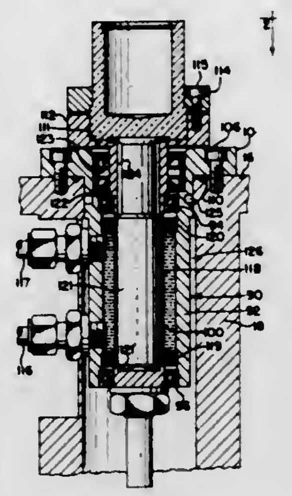
Jørgen S. Bye-Jørgensen, Humlebaek, and Gunnar H. Larsen, Rungsted Kyst, Denmark, assignors to I. Kruger A/S, Copenhagen, Denmark, a firm
Filed July 11, 1968, Ser. No. 744,220
Int. Cl. B04b *1/20, 3/04*
U.S. Cl. 233—7 **4 Claims**



This invention relates to a drum centrifuge for waste-water-sludge comprising a drum having two sections therein. Worm conveyor means mounted for free relative rotatable movement in one of said drum sections conveys moist solids which have been separated from the liquid. The other drum section has an oblique guiding surface along which the separated solids are guided and passed to the worm conveyor means. The worm conveyor means are disposed entirely within said one section and said other section is substantially free of obstructions to provide free axial and radial movement of the solids and liquids therethrough.

3,527,402
SPINDLE ASSEMBLY

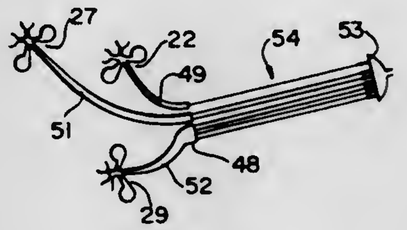
Robert G. Kobetsky, Chicago, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 5, 1969, Ser. No. 796,664
Int. Cl. B04b *9/00*
U.S. Cl. 233—23 **10 Claims**



Spindle assembly for rotatable centrifuge cup adapted to be spun in a controlled pressure atmosphere in a reaction chamber covered by a bell jar. The spindle assembly has precision bearings, vacuum seals, and a vibration absorbing coupling which engage and surround a spindle shaft. The assembly is formed as a flanged top tubular cartridge which may be quickly and readily mounted in a housing and coupled to a drive shaft. To insure that vapors within the reaction chamber will condense only on the inner surface of the cup, the spindle shaft may be selectively cooled so as to lower the temperature of the cup which it supports.

3,527,403
COUNTER-COMPARATOR SYSTEM

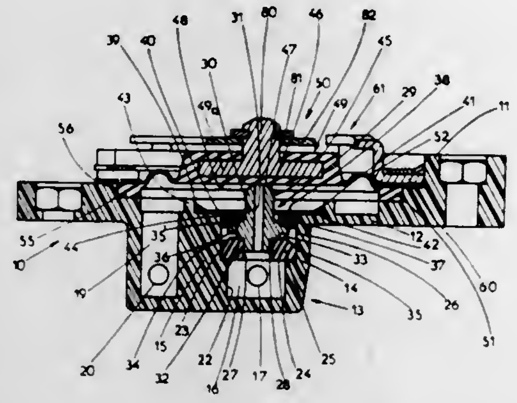
William C. O'Neill, Washington, D.C., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Original application Oct. 22, 1965, Ser. No. 500,672. Divided and this application May 24, 1968, Ser. No. 774,550
Int. Cl. G06d *1/10;* **G06g** *5/00*
U.S. Cl. 235—201 **3 Claims**



A capillary adder comprises a plurality of groups of capillary passages, each passage having the same resistance to fluid flow, distinct sources of fluid signal being connected to respective groups so as to produce equal flows in each passage. A summing volume is connected to receive flows from all of the passages. The number of passages in each group is determined by the weight assigned to the source of signal applied to that group.

3,527,404
DEVICE FOR REGULATING A REDUCED PNEUMATIC DEPRESSION

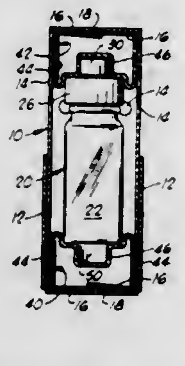
Walter Fieni, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France
Filed Apr. 16, 1968, Ser. No. 721,782
Claims priority, application France, Apr. 20, 1967, 103,545
Int. Cl. G05d *27/00*
U.S. Cl. 236—92 **10 Claims**



A device for regulating a reduced pneumatic pressure comprising an inlet connected to a source of reduced pneumatic pressure and an outlet connected to a device actuated by reduced pressure, the output reduced pressure prevailing in a chamber adapted to be connected to the source of reduced pressure or to the atmosphere according to the position of a movable diaphragm forming a portion of the wall of said chamber and on which the adjustable action of a spring is exerted in the opposite direction to that of the action of the output reduced pressure, the bringing of said chamber into communication with the source of reduced pressure or with the atmosphere being controlled by a valve traversed by a passage which affords the communication between the chamber and said source, the seat of the valve controlling the communication between the chamber and the atmosphere.

3,527,405
PACKAGE FOR VAPOR DISPENSING DEVICE

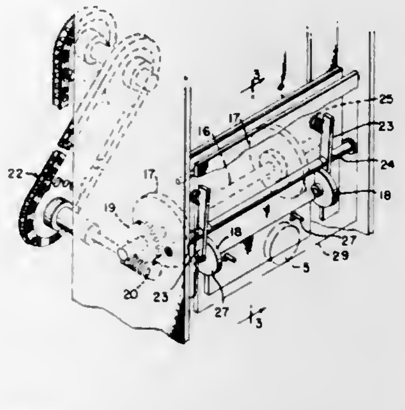
Jack Harding, Oklahoma City, Okla., assignor to Big "D" Chemical Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed Feb. 19, 1968, Ser. No. 706,280
Int. Cl. A24f *25/00*
U.S. Cl. 239—51.5 **1 Claim**



A package for containing, advertising, shipping, and using a vapor dispensing container of the type which carries a liquid material which is to be vaporized through a wick extended from the top of the container and exposed to circulating air. The package includes a parallelepiped-type box having closure flaps at each end thereof, and having a plurality of air circulation apertures formed in the upper end portion thereof. A container support and spacer insert is frictionally retained inside the lower end portion of the box for supporting and fixing the position of the vapor dispensing container inside the box. A second insert which engages the cap of the container is frictionally pressed into the upper end portion of the box. A sleeve which is configured to mate with the external surface of the box is slidably positioned around the outside of the box and may be slid along the box to remove the sleeve from the box, or to cover the apertures in one end of the box.

3,527,406
CARD READER APPARATUS

Donald L. Snellman, Seattle, Wash., assignor to Norfin, Inc., Seattle, Wash., a corporation of Washington
Filed Aug. 30, 1968, Ser. No. 756,597
Int. Cl. H01h *43/08;* **G06k** *7/00;* **B65h** *3/06*
U.S. Cl. 235—61.11 **7 Claims**



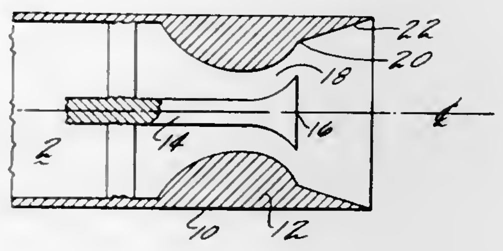
A card reader designed to translate information on an EAM card into electrical commands. The electrical commands are routed throughout the system within which the reader is used for performing various functions including controlling the advancement of the EAM card through the reader.

ERRATUM

For Class 239—51.5 see:
Patent No. 3,527,405

3,527,407
BASE-THRUST NOZZLE

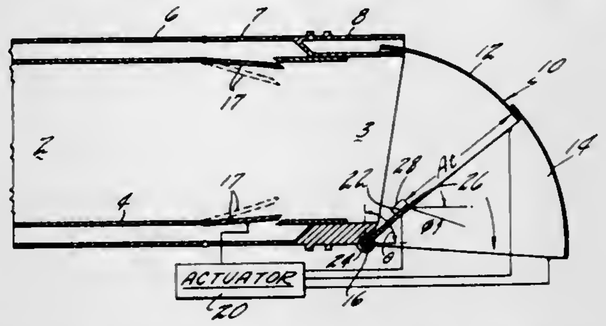
Keith L. Mueller, East Hartford, and Thomas A. Wynosky, Hazardville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 23, 1968, Ser. No. 746,996
Int. Cl. B64d *33/04*
U.S. Cl. 239—265.19 **9 Claims**



The present invention relates to a base-thrust nozzle for use in a jet propulsion system of supersonic vehicles. The nozzle includes a base member and plate within the nozzle having a surface on its downstream end that is capable of receiving upstream thrust pressure during operation of the propulsion system. In addition, means are provided for providing a pressure rise downstream of the base plate, causing pressurization of the base which in turn creates a thrust gain.

3,527,408
CURVED EXHAUST DEFLECTION SYSTEM

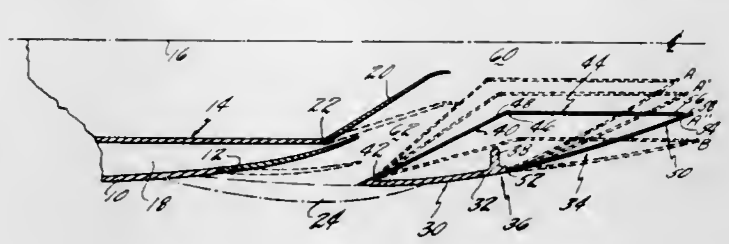
Stanley J. Markowski, East Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 6, 1968, Ser. No. 735,130
Int. Cl. B64c *15/04*
U.S. Cl. 239—265.27 **10 Claims**



A deflection system for an aircraft gas engine wherein a plurality of pivotally mounted deflector segments cooperate to define a vertically directed flow path for jet engine exhaust gases and wherein a movable body cooperates with one or more of the deflector segments to define a discharge area for the deflected gases. Additionally, a translatable liner is positioned at the deflector inlet to prohibit flow separation in the deflection system.

3,527,409
EJECTOR SHROUD SYSTEM

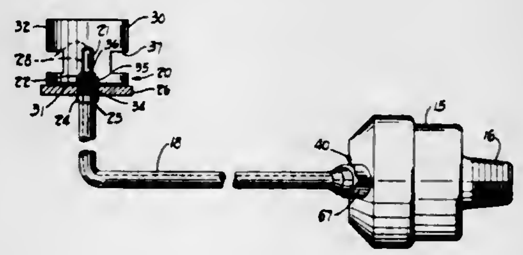
Thomas F. Tumicki, Yantic, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 766,850
Int. Cl. B64c *15/06*
U.S. Cl. 239—265.39 **7 Claims**



An exhaust nozzle of the ejector type which operates over the entire flight regime of a gas turbine powered aircraft. The construction of the exhaust nozzle being such that it provides optimum performance for each Mach speed condition and provides the various exhaust configurations substantially automatically.

3,527,410
PILOT LIGHT

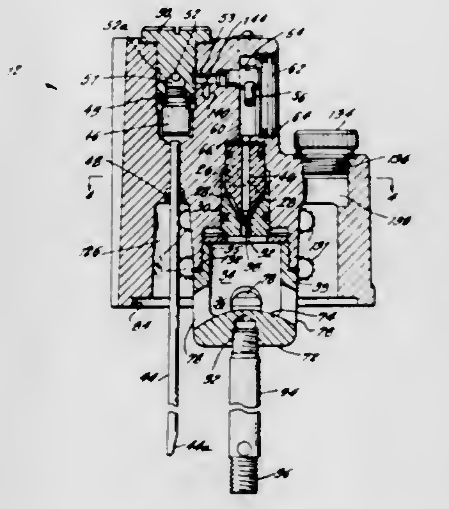
Albert J. Balon, 9717 Greenhaven Parkway, Brecksville, Ohio 44141
Original application Oct. 22, 1965, Ser. No. 501,545. Divided and this application Dec. 20, 1967, Ser. No. 692,061
Int. Cl. B05b *1/28*
U.S. Cl. 239—288.5 **3 Claims**



A pilot light for a gas stove including a gas supply tube having a threaded end with an orifice and a shoulder inwardly of the threads and a housing threaded on said tube and having an aperture disposed intermediate the shoulder and the orifice.

3,527,411
HIGH OUTPUT MIST PRODUCING UNIT

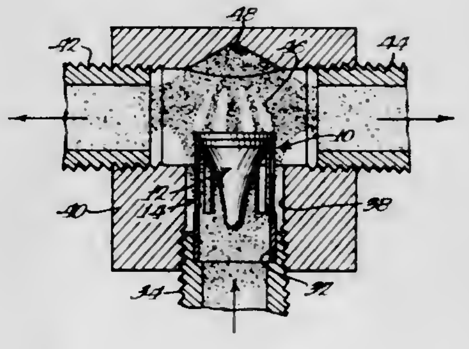
Francis E. Colgan, Midland Park, N.J., assignor to Auto Research Corporation, Boonton, N.J., a corporation of Delaware
Filed Mar. 5, 1968, Ser. No. 710,495
Int. Cl. A61m *11/06*
U.S. Cl. 239—338 **6 Claims**



Liquid is forced from a reservoir through a nozzle that mixes it with air; and the liquid breaks up into droplets that become suspended in air in mist form; the mist moves directly into an annular chamber surrounding the outlet of the nozzle; an extra air supply is passed through the chamber in the vicinity of the nozzle; the extra air picks up additional mist particles which would otherwise settle out, thereby increasing the mist output capacity of the mist producing unit without having to unduly increase the size of the unit, in addition, the extra air supply increases the air pressure around the mist nozzle outlet improving nozzle efficiency.

3,527,412
DISPERSER FOR POWDERED SPRAY SYSTEM

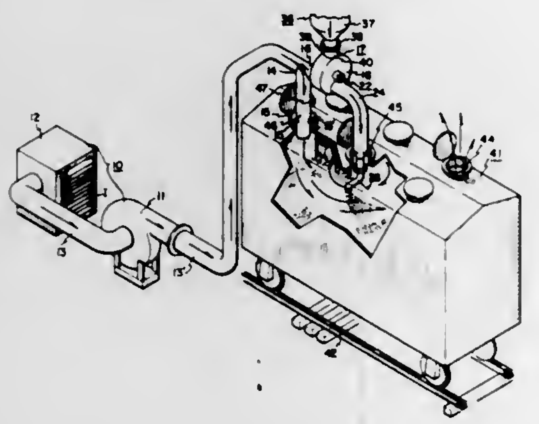
James A. West, Elmhurst, Ill., assignor to Binks Manufacturing Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,309
Int. Cl. B05b *1/26*
U.S. Cl. 239—524 **8 Claims**



A dispersing device for use in a powder spray system including a generally conical deflector member surrounded by a peristome or the like and normally arranged in a powder conduit of a manifold assembly at a location where the powder is divided so as to be conducted through two or more branch conduits, the disperser serving to distribute the powder in a uniform manner and assure that the powder is uniformly supplied to the several branch conduits.

3,527,413
PROCESS FOR LOADING FLOUR INTO CONTAINERS

Junius L. Crowther, 460 Mill St., Malad, Idaho 83252
Filed Jan. 22, 1968, Ser. No. 699,610
Int. Cl. B02b *3/14, 7/02;* **B02c** *11/08*
U.S. Cl. 241—12 **7 Claims**



Process of loading flour into containers such as storage bins, for example, or even into freight vehicles, such as railroad freight cars, in such a manner as to preclude the formation of flaking or crust, and the sticking of flour onto the inner wall of the container as results through moisture condensation therewithin. This is done by using one and preferably two incoming streams of air within the container, the air being pre-cooled and/or dehumidified, preferably both. In the latter case, especially, the flour is cooled and moisture is substantially reduced if not eliminated. In this way condensate will not tend to form on the inner walls of the loaded container, which condensate would otherwise cause undesired flaking, crust formation, or sticking of the flour at the wall surfaces of the containers.

3,527,414
METHOD AND APPARATUS FOR STRIPPING THE INSULATION FROM METALLIC WIRE

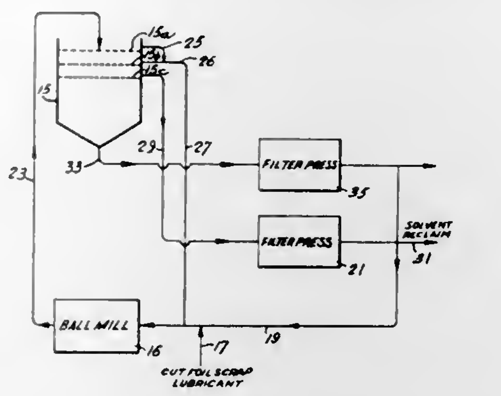
John B. Schorsch, Rydal, Pa., assignor to The Union Corporation, Verona, Pa., a corporation of New Jersey
Filed Nov. 14, 1967, Ser. No. 682,826
Int. Cl. B02c *11/08*
U.S. Cl. 241—23 **2 Claims**

A low temperature refrigerating tank; means feeding insulated wire staples into the tank to render the insulation brittle; crushing rolls for pulverizing the insulation, and a separating screen for separating the metallic from the insulation components.

3,527,415
FLAKE METALLIC PIGMENT MILLING

Donald S. Jackson, Hudson Heights, Quebec, Canada, assignor, by mesne assignments, to International Bronze Powders Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed May 15, 1967, Ser. No. 638,317
Int. Cl. B02c *17/00, 23/00;* **C09c** *1/62*
U.S. Cl. 241—24 **4 Claims**

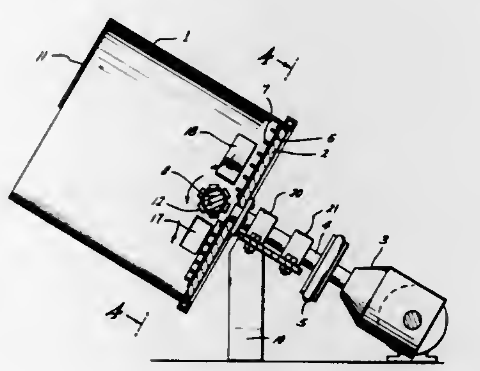
To produce classified flake metallic pigments, coarse particles of metal are comminuted continuously in an inert liquid and the comminuted product separated into at least three fractions, and at least the separated fraction containing the coarsest size particles and liquid recycled to the comminuting operation and the remaining fractions either processed to recover the flake metallic particles from the liquid or recycled. The particle size of the separated fractions below the coarsest is preferably below



the range from 300 to 100 mesh. At least one of the fractions not recycled to the comminuting operation may be sub-classified into at least two fractions of different particle size distribution, from which flake metallic particles are recovered.

3,527,416
SHREDDING DEVICE

Kenneth R. Detjen, 1100 N. Peggy Drive, Waco, Tex. 76706
Filed Jan. 4, 1967, Ser. No. 607,276
Int. Cl. B02c *7/00, 15/00, 23/00*
U.S. Cl. 241—60 **8 Claims**



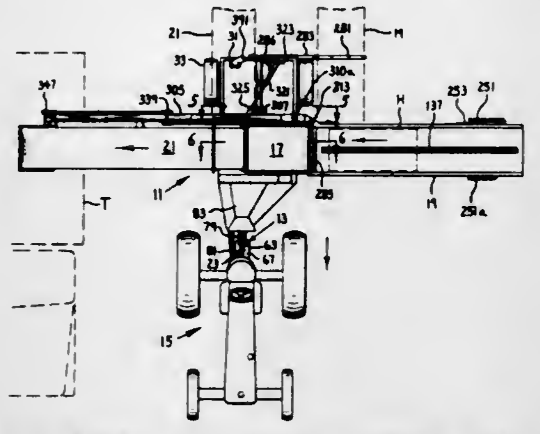
A device for shedding or disintegrating cardboard, paper, or like material has a heavy rotatable plate mounted with teeth to provide a first planar cutting means. A feeder bar disposed above and across the plate as a diameter of the plate is rotatable about an axis parallel to the plate and also is provided with teeth which extend into the spaces between the teeth on the inertial plate. The relative velocities of these two components of the structure is such that the teeth on the inertial plate move rapidly past the teeth on the feeder bar and thereby disintegrate material caught therebetween. The rotation of the feeder bar cooperating with the movement of the plate serves to draw the material to be shredded between the two members for the shredding operation.

3,527,417
WHEELED COMMINUTING MACHINE

Eldon L. Tompsett, Rte. 1, Box 464, Madras, Oreg. 97441
Filed Feb. 1, 1968, Ser. No. 702,368
Int. Cl. B02c *18/22*
U.S. Cl. 241—101 **7 Claims**

A wheeled comminuting machine mainly for field use having either a discharge conveyor or an infeed conveyor,

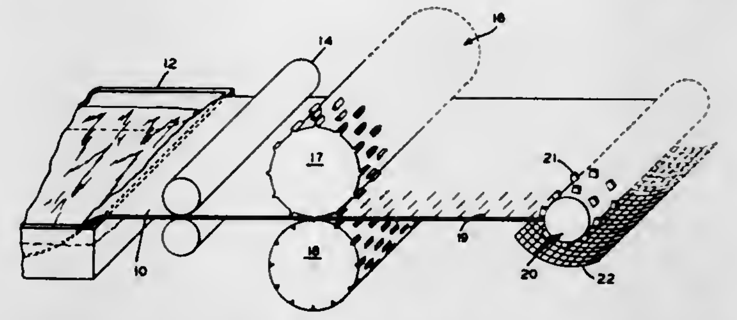
and preferably both, which in their operative positions extend transversely of the machine but are foldable to



back to out-of-the-way trailing poositions when the machine is moved from one place to another.

3,527,418
APPARATUS OF SEPARATING A SHEET INTO CHIPS

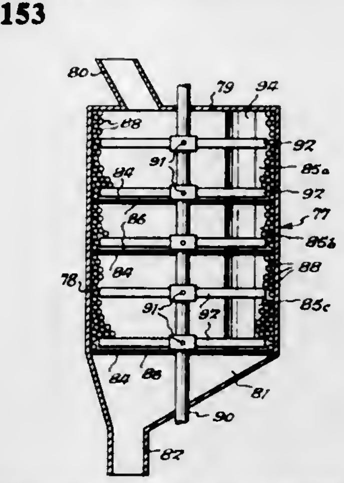
Virgil Spencer, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Aug. 7, 1967, Ser. No. 658,675
Int. Cl. B02c *19/10*
U.S. Cl. 241—101 **4 Claims**



Apparatus for separating a sheet into chips for use in the formation of a floor covering. Plastic particles are calendered into a sheet which is cooled by a cooling bath. The sheet is fed into a slitter which places intermittent cross-machine direction slits in the sheet. The sheet is then fed into a grinder where the knife-hammers traveling at high speed fracture the sheet into irregularly shaped chips.

3,527,419
APPARATUS FOR GRINDING

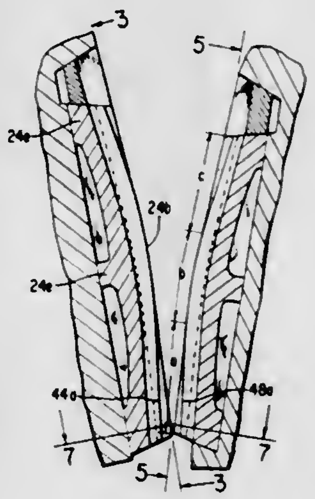
Fritz Otto Wienert, Lewiston, N.Y.
(394 Roosevelt Ave., Niagara Falls, N.Y. 14305)
Application June 16, 1965, Ser. No. 467,187, now Patent No. 3,471,093, dated Oct. 7, 1969, which is a continuation-in-part of application Ser. No. 253,158, Jan. 22, 1963. Divided and this application May 7, 1969, Ser. No. 822,419
Int. Cl. B02c *17/06, 17/16, 17/18*
U.S. Cl. 241—153 **11 Claims**



Grinding apparatus comprising a vessel with a peripheral wall having a continuous, curved inner surface, a plurality of freely movable griding bodies, and means for imparting centrifugal motion to said bodies. Said inner surface is so shaped that the moving grinding bodies are forced to deviate from a circular path at least once during each orbit.

3,527,420
JAW CRUSHER

Archie N. Maurer, Milwaukee, Wis., assignor to Hewitt-Robins Incorporated, Stamford, Conn., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,564
Int. Cl. B02c *1/10*
U.S. Cl. 241—217 **10 Claims**

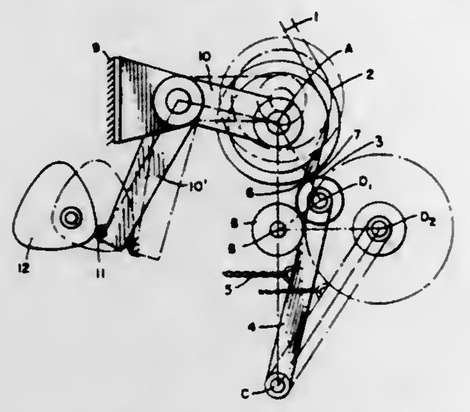


The crushing surface of jaw dies of the present design are formed with two sets of teeth which are substantially parallel and which extend from top to bottom of the die. A set of first or coarse teeth extend along a curved path in a center zone of the die and thereafter are formed so as to gradually increase in height as they extend from this center zone to the adjacent top and bottom zones of the die. A set of second or fine teeth extend from the top to the bottom of the die along a curved path. This crushing surface design provides jaw dies which are reversible, have a relatively uniform wear characteristic, have a relatively high crushing capacity, and prevent slabs of material from falling uncrushed through the crushing chamber of a jaw crusher.

3,527,421
PROCESS AND APPARATUS FOR WINDING THREADS

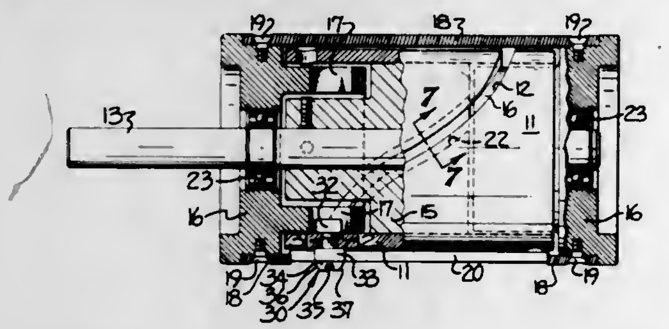
Heinz Schippers, Remscheid-Lennep, and Wolfgang Weber, Wuppertal-Elberfeld, Germany, assignors to Barmer Maschinenfabrik AG., Wuppertal-Oberbarmen, Germany
Continuation-in-part of application Ser. No. 470,971, July 12, 1965. This application May 13, 1968, Ser. No. 733,215
Claims priority, application Germany, July 14, 1964, B 77,663
Int. Cl. B65h *54/02*
U.S. Cl. 242—18 **4 Claims**

Apparatus and process for forming slightly biconical cross-wound bobbins. In the process, the free thread interval between the exit opening of the thread guide element and the run on point of the thread on the spool body circumference, which initially is as small as possible, is lengthened during the winding process. The lengthening of the free thread interval causes a thread lag



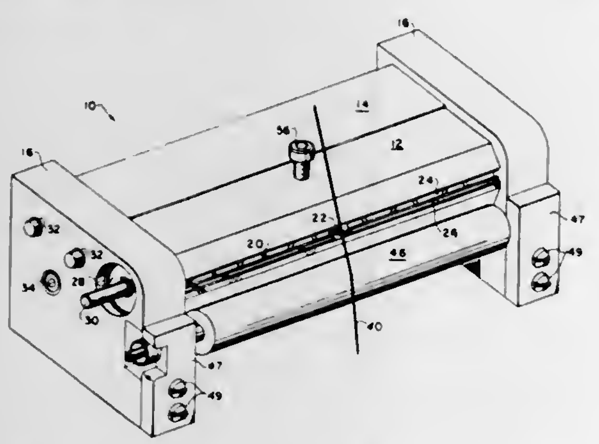
which produces the desired biconical shape. The subject process provides a simplified means of producing slightly biconical cross-wound bobbins which process can be carried out with considerably higher stroke numbers.

3,527,422
HIGH SPEED TRAVERSE MECHANISM
Peter Conrad, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 602,667, Dec. 19, 1966. This application Dec. 31, 1968, Ser. No. 791,857
Int. Cl. B65h *54/30, 57/00*
U.S. Cl. 242—43 9 Claims



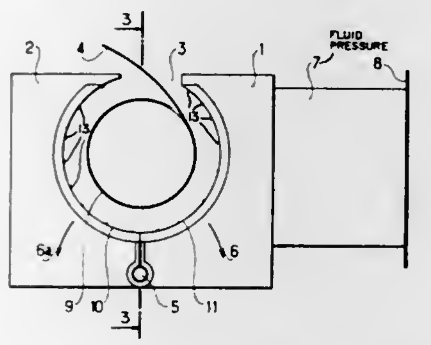
A traverse mechanism of the barrel cam and follower type, having a housing for the barrel cam, a pair of guide rails carried by the housing and disposed exteriorly of said barrel cam and a pair of guide rails disposed interiorly of said barrel cam and a rail traversing follower.

3,527,423
QUICK CHANGE BARREL CAM TRAVERSE WINDING HOUSING
Richard W. Burow, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 30, 1969, Ser. No. 795,180
Int. Cl. B65h *54/28*
U.S. Cl. 242—43 5 Claims



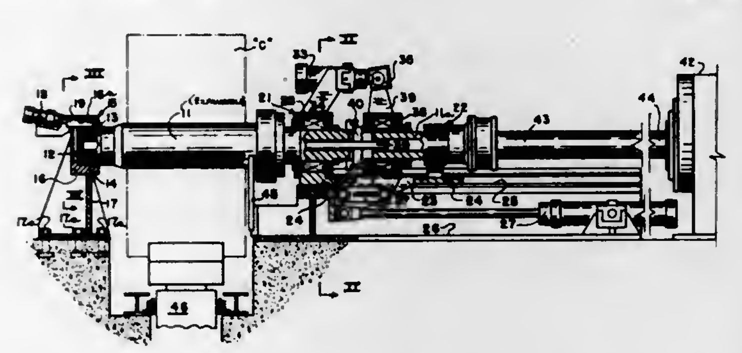
Barrel cam high speed traverse winding appartus having a yarn guide cam follower for guiding yarn onto a bobbin. Spaced parallel guide rails confine the cam follower for movement in a linear path, and may be formed integral with the two housings of the apparatus. The guide rails are readily separated so as to replace a worn or defective yarn guide cam follower by an adjustment means which causes rapid movement of one of the housings from the other.

3,527,424
APPARATUS FOR WINDING ONTO A MANDREL
Jean-Michel Goldman, Brunoy, France, assignor to Societe Nouvelle Spidem, Paris, France, a French corporation
Filed July 1, 1968, Ser. No. 741,796
Claims priority, application France, June 29, 1967, 112,535
Int. Cl. B65h *75/28*
U.S. Cl. 242—74 11 Claims



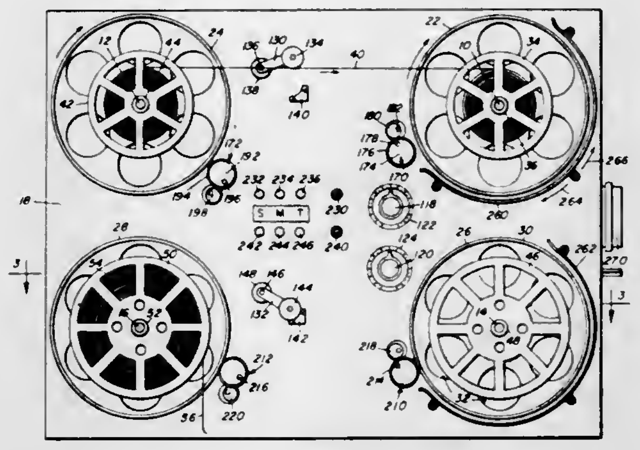
The invention contemplates the winding of sheet or strip material about a power-driven mandrel which in one embodiment may be perforated and disposed so as to cooperate with a negative source of pressure for attracting the material to the surface of the mandrel or in another embodiment converging jets of fluid may be emitted radially inward toward the sheet material as it enters an expansible housing surrounding the mandrel, the jets of fluid thus urging the sheet material toward the rotating mandrel and about which it will be wound.

3,527,425
RETRACTABLE TENSION REEL
Charles Storer Shumaker, Glenshaw, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 19, 1968, Ser. No. 760,898
Int. Cl. B21c *47/02*
U.S. Cl. 242—78.1 5 Claims



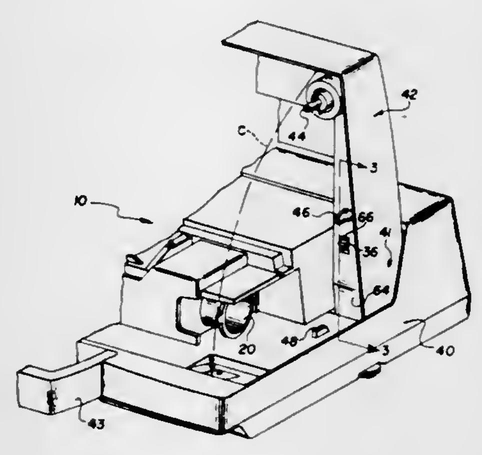
The tension reel disclosed is designed to minimize deflection of the expandable mandrel employed to impose tension on metallic strip being coiled. The mandrel rotatably supported by bearing block assemblies located at the outboard and inboard ends of the mandrel. These bearing block assemblies are rigidly held to foundation mounted structures by wedges which, when released by piston cylinder assemblies, allow the mandrel, including its expanding mechanism, to be completely retracted on a sled from a newly formed coil to one side thereof. During this time the coil is supported by a coil transfer car. The mandrel is connected to a gear drive by an elongated splined shaft that telescopes into the drive when the mandrel is retracted from the coil.

3,527,426
DUAL DEWINDER AND REWINDER MACHINE
Donald J. Morrow, Cottage 208, Intermountain School, Brigham City, Utah 84302
Filed June 4, 1968, Ser. No. 734,475
Int. Cl. B65h *59/38;* **G03b** *1/04;* **G11b** *15/32*
U.S. Cl. 242—190 14 Claims



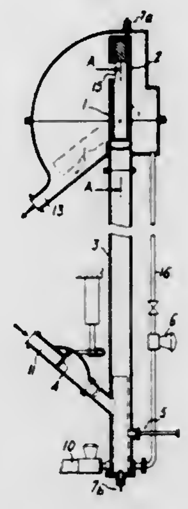
A machine is disclosed for processing and inspecting motion picture film. The machine includes two sections, each including a pair of reel spindles, one of which is driven by an electric motor to draw the film from a feed reel to a take-up reel. A dancer roll rides on and is supported by the film in a position between the two reels. Upon film breakage or at the end of the film, the dancer roll drops, activating a switch which cuts the power to the drive motor and operates friction brakes on both reel spindles to stop the reel rotation instantaneously, thus preventing damage to the film or film leader strips.

3,527,427
FILM TRANSPORT CONTROL DEVICE
Miles C. O'Donnell, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 3, 1969, Ser. No. 795,836
Int. Cl. B11b *15/32;* **G03b** *1/04*
U.S. Cl. 242—205 10 Claims



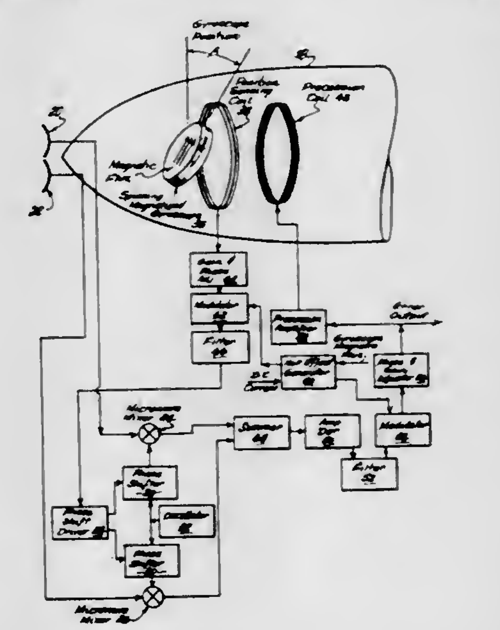
In an apparatus having a mechanism capable of bimodal operation and having a movable cover member, a device is provided for shifting the mechanism from one mode of operation to the other. In the preferred embodiment, the apparatus is a motion-picture projector operatable in a projection mode of operation and a film-rewind mode of operation and having a cover member movable from an open position to a closed position, the device being operative, in response to movement of the cover member from its open position to its closed position, to shift the projector mechanism from the film-rewind mode to the projection mode.

3,527,428
DEVICE FOR TRANSFERRING GRANULAR MATERIALS
Zygmunt Skibicki, Varsovie, Poland, assignor to Commissariat a l'Energie Atomique, Paris, France, and Instytut Badan Jadrowych, Varsovie, Poland
Filed Oct. 7, 1968, Ser. No. 765,356
Claims priority, application Poland, Oct. 14, 1967, P 123,014
Int. Cl. B65g *51/04*
U.S. Cl. 243—1 5 Claims



A device for transferring granular materials comprising a reservoir-plunger which is adapted to slide within a vertical guide tube and which is provided with an internal chamber for receiving said material, pneumatic means for causing the displacement of said plunger between a bottom position in which an opening of said chamber is located opposite to a pipe for the supply of granular material and a top position in which said reservoir-plunger is wholly contained in an extension of said guide tube which is pivoted about a fixed axis and means for locking said reservoir-plunger within said extension, said means being actuated prior to initiating the pivotal movement of said extension.

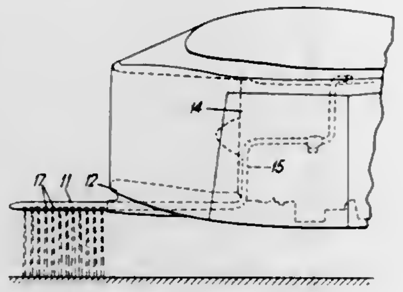
3,527,429
BODY MOTION DECOUPLER
Ralph E. Hawes, Jr., Claremont, Charles C. Durand, Jr., Upland, Kazuyuki Hiroshige, Glendora, and Leonard Buchanan, Pomona, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Mar. 15, 1968, Ser. No. 713,483
Int. Cl. F41g *7/18, 9/00, 11/00*
U.S. Cl. 244—3.14 10 Claims



A body motion decoupler for a vehicle having a body fixed receptor to receive energy reflected from a target. The vehicle body motion sensed by the receptor is cancelled by relating it to a space stable reference.

3,527,430
PROTECTIVE AIR CURTAINS FOR AIRCRAFT ENGINE INLETS

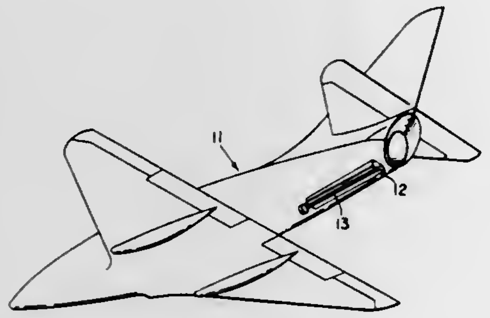
John Phillip Smith, Harpenden, England, assignor to Hawker Siddeley Aviation Limited, Kingston-upon-Thames, Surrey, England, a British company
Filed Oct. 25, 1968, Ser. No. 770,617
Claims priority, application Great Britain, Oct. 25, 1967, 48,560/67
Int. Cl. B64d *33/02*
U.S. Cl. 244—53 **8 Claims**



An aircraft jet engine air intake arrangement in which, in order to avoid stones and debris being ingested when the aircraft is on the ground, an air curtain is blown from a forwardly-projecting tube to isolate from the general intake air flow that region of the ground from which loose material might otherwise be lifted.

3,527,431
DISPENSER

Robert L. Wright, 127 Palomares Ave., Ventura, Calif. 93003
Filed June 2, 1966, Ser. No. 554,903
Int. Cl. B64d *1/16*
U.S. Cl. 244—136 **7 Claims**

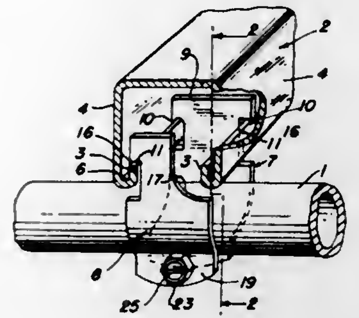


A shallow elongated tray containing bundles of radar reflecting chaff is supported above the tail hook of a carrier based aircraft. Release of the hook opens the tray and deploys the chaff. The tray may be bolted to the tail hook, or may be expendable.

3,527,432
PIPE OR TUBING SUPPORT

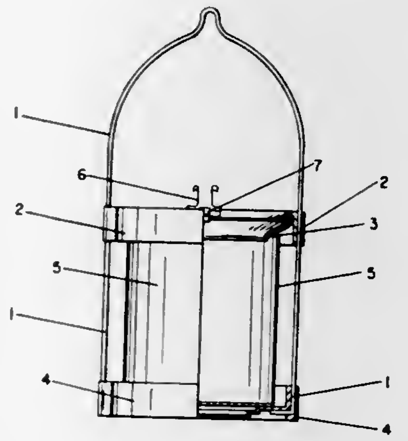
Walter W. Lytle, San Francisco, Calif., assignor to Superior Strut & Hanger Co. Inc., a corporation of California
Filed June 3, 1968, Ser. No. 734,038
Int. Cl. F16l *3/10*
U.S. Cl. 248—62 **2 Claims**

A pair of complementary clamping plates, each plate curved near one end to accommodate pipe or tubing, and hooks on the edges at the other end to hook into inturned flanges in a supporting channel, thereby to clamp the pipe or tubing to the supporting channel; the ends adjacent to the curved portions of the clamping plates being formed into parallel flanges with registering holes to accommodate a threaded fastening element whereby the clamping plates can be tightened onto the pipe; one of the clamping plates is provided with two opposite hanging hooks on opposite edges, the other plate being provided with one hanging hook so as to facilitate the insertion of the pre-assembled complementary plates over the pipe and into engagement with the inturned flanges of the channel.



3,527,433
CONTAINER HOLD

Richard Sibson, 36/38 High St., Kegworth, near Derby, England
Filed Sept. 5, 1967, Ser. No. 665,436
Claims priority, application Great Britain, Sept. 9, 1966, 40,269/66
Int. Cl. B44d *3/14*
U.S. Cl. 248—154 **3 Claims**

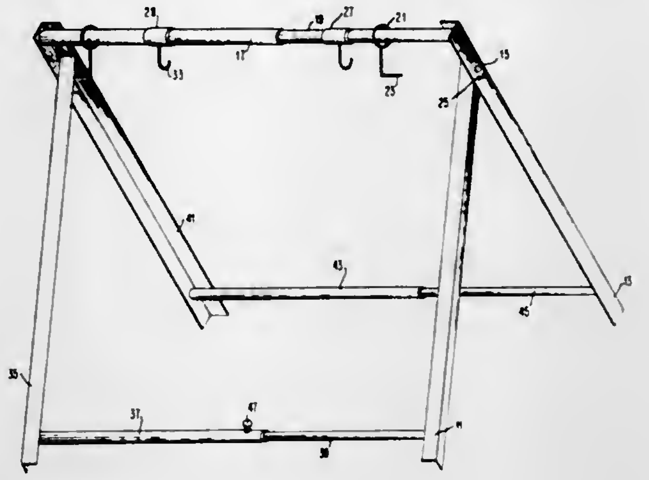


A container hold is provided with a base having locations on which containers of different diameters and different heights can rest, a stirrup-like handle being connected to the base and having straight parallel side portions on which an upper member is slidably adjustable in a friction-tight manner, a funnel capable of fitting into the upper end of a container being engageable by the upper member and the arrangement being such that the upper member can clamp the base, the container and the funnel tightly and rigidly together.

3,527,434
ADJUSTABLE SIGN FRAME AND/OR QUICK ASSEMBLY BARRICADE

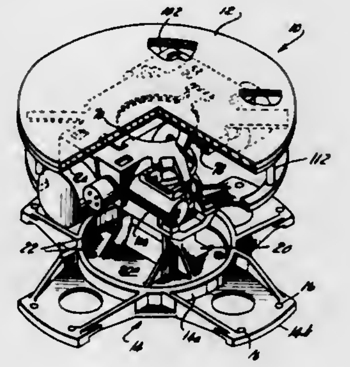
Frank M. Mauro, North Flatbush, N.Y. (R.F.D. 4, Box 190, Saugerties, N.Y. 12477)
Filed Oct. 3, 1967, Ser. No. 672,652
Int. Cl. F16m *11/00*
U.S. Cl. 248—166 **3 Claims**

A frame assembly for supporting a sign comprising two A-frame side supports interconnected by a horizontal support member which is laterally adjustable to accommodate signs of varying dimensions. The apparatus is collapsible to facilitate handling and storage, while providing rear legs of longer dimensions than the front to afford additional stability.



3,527,435
ANTENNA SUPPORTING AND POSITIONING DEVICE

Roger H. Lapp, Silver Spring, Md., and Alexander Yorkins, New Hyde Park, N.Y.; said Lapp assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 17, 1969, Ser. No. 807,692
Int. Cl. F16m *11/12*
U.S. Cl. 248—184 **9 Claims**

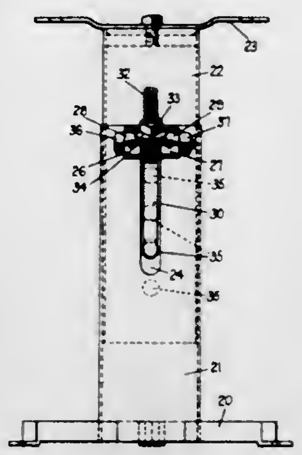


An improved antenna supporting and positioning device is disclosed having a mass balanced member rotatable about first and second axes intersecting normal to one another, the positioning being effected about one axis by a first torque motor driven pinion gear meshing with a mass balanced gear sector to which is fixed shafting defining the other axis, positioning about that other axis being effected by two additional motors mounted on the member and connected through planetary gearing to the shafting, whereby operation of the two additional motors effects rotation thereof and of the member.

3,527,436
ADJUSTABLE SUPPORT

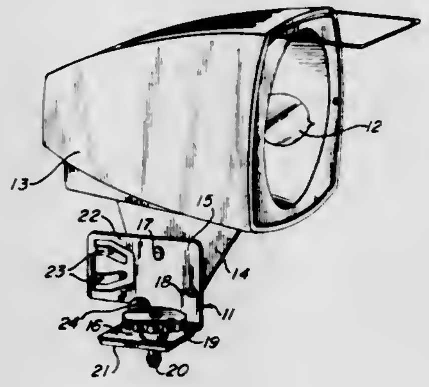
Guthrie B. Stone, Honeoye, and Paul S. Huber, Naples, N.Y., assignors, by mesne assignments, to Murray Company of Texas, Inc., a corporation of Delaware
Filed Mar. 12, 1968, Ser. No. 712,423
Int. Cl. F16m *11/28*
U.S. Cl. 248—188.4 **2 Claims**

A supporting device for a vertically extensible standard which allows rough and fine height adjustments by providing a hook-like member, for insertion into a series of openings, with a threaded shank movably held by a take-up nut. A locking action at any position is effected by tightening the outer sleeve against the telescoping inner sleeve at a downwardly extending slot.



3,527,437
BRACKET FOR MOUNTING A LIGHT ON A CAMERA

Jordan H. Lippman, Glencoe, Ill., assignor to Harwood Electronics Co., Inc., Chicago, Ill., a corporation of Illinois
Filed June 10, 1968, Ser. No. 735,607
Int. Cl. G03b *15/03*
U.S. Cl. 248—205 **2 Claims**

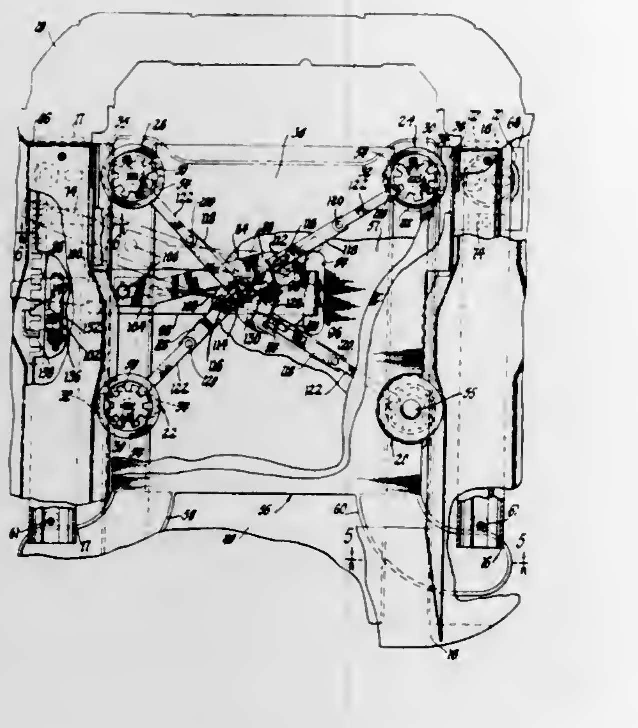


A bracket for mounting a light on a camera is permanently affixed to a housing in which a light bulb is enclosed. The bracket may be swiveled between two different positions. In one position, one section of the bracket is interengageable with one type of attachment means on a camera, and in the other position, a different section of the bracket is interengageable with a different type of attachment means on a camera. The most popular cameras are provided with either a slot or a threaded socket as a means for attaching a housing in which a light bulb is enclosed. One section of the bracket has a tongue adapted to be interengaged with the slotted structure of one make of cameras, and the other section of the bracket has a screw adapted to be threaded into the socket of other cameras.

3,527,438
MANUALLY OPERABLE VEHICLE SEAT ADJUSTER

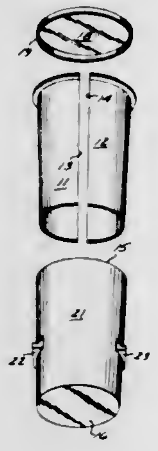
Robert L. White, Frankenmuth, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 8, 1968, Ser. No. 743,141
Int. Cl. B60n *1/02*
U.S. Cl. 248—396 **3 Claims**

A manually operable seat adjuster having screw means located adjacent to the forward end and rearward end of the seat for providing independent vertical adjustment of the seat to a plurality of positions. Each screw means has the screw portion thereof formed with a wheel for rotation therewith when the associated seat end is being adjusted in position. Locking means in the form of a spring biased lock bar are provided for holding the wheel from rotation and thereby maintaining the seat in an adjusted position. A manually operable actuator is connected to the lock bar for releasing the latter and freeing the wheel so that the shifting weight of the occupant will cause rotation of the associated screw portion to permit vertical adjustment of the seat.



3,527,439
MOLD FOR CASTING TEST SAMPLES

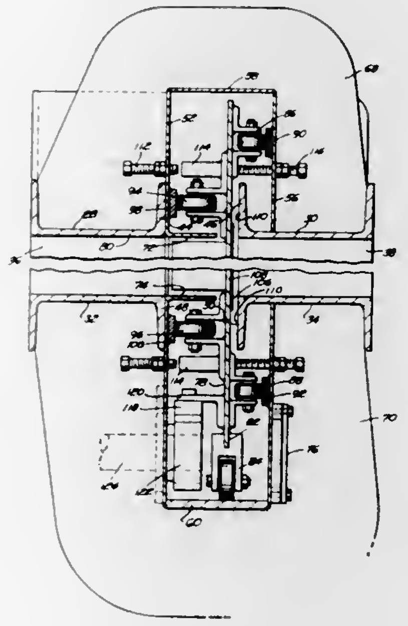
Holly V. Lawmaster, 1949 S. Manchester Ave., Apt. 73, Anaheim, Calif. 92802
Filed July 15, 1968, Ser. No. 744,859
Int. Cl. B41b *11/60*
U.S. Cl. 249—164 1 Claim



A reusable plastic mold for casting cylindrical concrete test samples, the mold including a pair of complementary mold sections which abut and define a cylindrical mold cavity, the outer surface of the mold sections being frusto-conical and fitting within a frusto-conical sleeve having a base. The mold also includes a cover plate for closing the open upper end of the mold cavity, and the assembled mold is upended to enable the sleeve to be upwardly separated from the mold sections so that the mold sections can in turn be separated from the set concrete test sample.

3,527,440
BLANKING PLATE FOR GAS FLOW PASSAGES

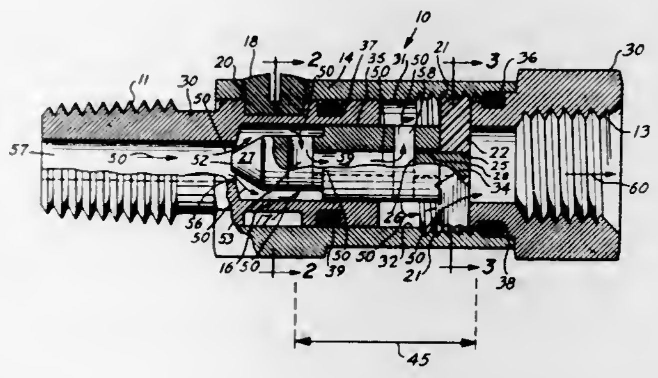
Siegfried Presslauer, Seekonk, Mass., assignor to Tower Iron Works Inc., Seekonk, Mass., a corporation of Rhode Island
Filed June 17, 1968, Ser. No. 737,518
Int. Cl. F16k *3/10*
U.S. Cl. 251—187 3 Claims



A blanking plate assembly for gas flow passages, such as turbine passages and the like, movable from a completely open position wherein the gas is free to flow through the passage to a heat exchanger, boiler or the like to a completely closed position wherein the gas-flow is completely blocked and diverted to permit complete and safe isolation of a heat exchanger, boiler or any other equipment located downstream from the blanking plate without shutting down the entire system.

3,527,441
EXTERNAL VALVE ADJUSTMENT MEANS

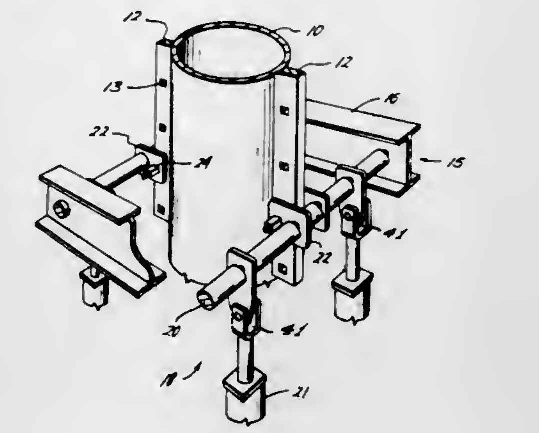
Robert M. Fisher, 20966 Las Flores Mesa Drive, Malibu, Calif. 90265
Filed Oct. 6, 1967, Ser. No. 673,355
Int. Cl. F16k *31/44*
U.S. Cl. 251—347 4 Claims



This invention provides a means for externally adjusting the internal parts of a pressurized in-line valve.

3,527,442
JACK-UP APPARATUS

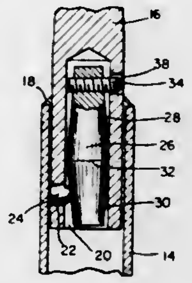
Mehmet D. Korkut, 2801 N. Turnbull Drive, Metairie, La. 70002
Filed July 24, 1967, Ser. No. 655,470
Int. Cl. B66f *1/00*
U.S. Cl. 254—106 3 Claims



In jack-up barge apparatus, means preferably comprising a support frame attached to a vessel near a spud well, a plurality of torsion bars in near proximity to the well, connector means on the torsion bars for engagement with the spud, means for joining the connector means to the spud to thereby transfer the loading of the spud to the torsion bars and thence to the vessel whereby the offset between the axis of the spud and the vessel, impacts on the spud, and bending of the spud do not interfere with routine use of the spud.

3,527,443
HANDRAIL POST FITTING

Louis Blum, 1297 Folkstone Drive 15243, and William J. Horgan, Jr., 15 Darlington Court 15217, both of Pittsburgh, Pa.
Original application June 18, 1968, Ser. No. 738,025. Divided and this application Jan. 16, 1969, Ser. No. 842,035
Int. Cl. E04h *17/14*
U.S. Cl. 256—65 2 Claims

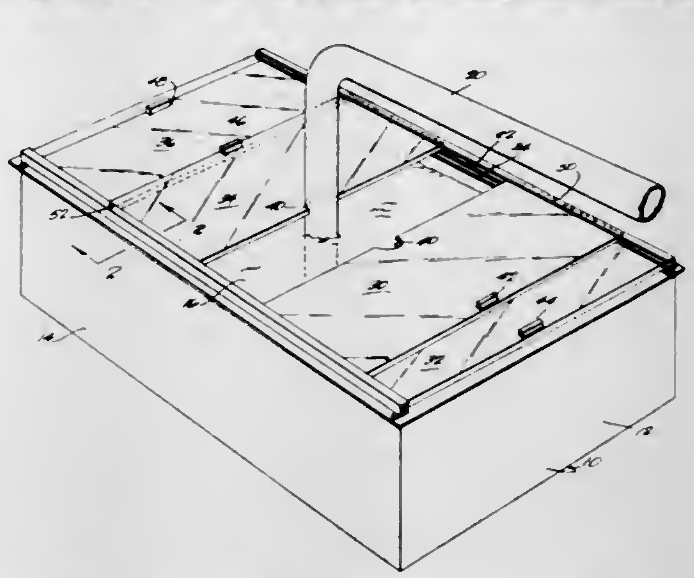


A telescoping post for handrail may be fixed at adjusted heighths by means of a friction member which passes through the hollow wall of the inner-telescoping member and bears against the inner wall of the outer member. The friction member is acted upon by means disposed in the hollow of the inner member; which means is fixed by a set screw.

3,527,444
AIR CONDITIONER COOLING TOWER OPEN WATER PAN COVER APPARATUS

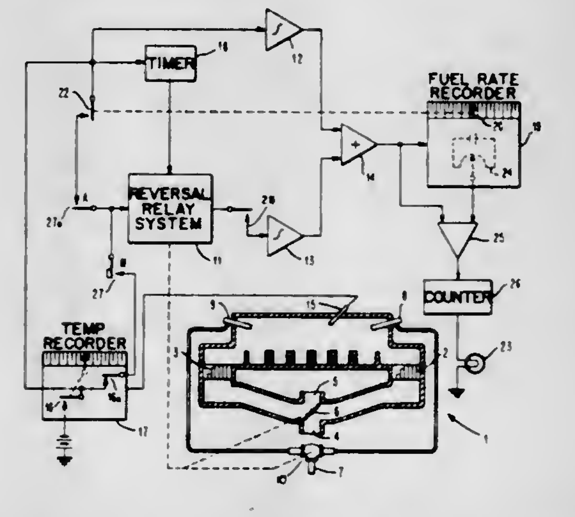
Robert C. Schultz, 12409 Ellen Center, Silver Spring, Md. 20904
Filed Dec. 12, 1968, Ser. No. 783,303
Int. Cl. B05b *1/26*
U.S. Cl. 261—108 4 Claims

An air-conditioner cooling tower-open water pan cover apparatus having a set of paired sliding door panels which are disposed to slide along a set of tracks on top of a tower, in which a tower pan feed water pipe passes through one set of the doors and in which the doors may be slid off the tracks for maintenance, repair and cleaning of the air-conditioning and cooling equipment.



3,527,445
FURNACE REVERSAL SYSTEM

James Stewart, Jr., Philadelphia, Pa., and Vincent J. Cucuzzella, Silver Spring, Md., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 8, 1968, Ser. No. 743,176
Int. Cl. F27d *17/00*
U.S. Cl. 263—15 7 Claims

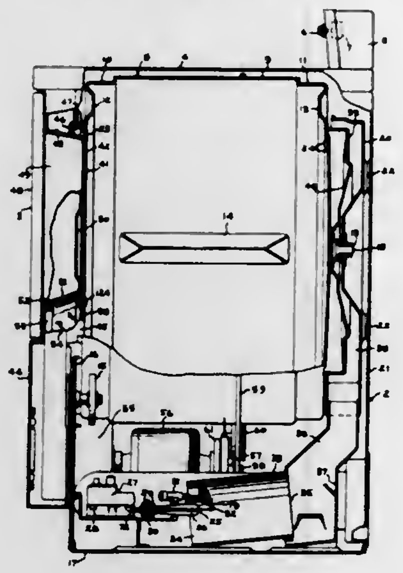


In a regenerative furnace the reversal is actuated each time that the burners are turned off. This criteria for reversal is used when the signal representing the ratio of fuel on time to total cycle time is below a preset, adjustable point. When the signal is above this point, the furnace is reversed when the burners have been on for a given time interval. Uniform heating of the steel to the desired temperature is indicated when an electrical signal representing the rate of change of fuel flow to the furnace is substantially constant.

3,527,446
DUAL VALVE CONTROL

Frederick M. White, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Sept. 12, 1968, Ser. No. 759,450
Int. Cl. F27b *7/00*
U.S. Cl. 263—33 12 Claims

A fluid flow control includes two valves, one of which is bimetal actuated, arranged in series in the fluid flow path. The actuator for one valve is connected in series with a dropping resistance and the actuator for the other valve is connected to an intermediate terminal of the resistance. A shunt is initially connected across at least part of the resistance to give fast opening of the valves



and then is removed to reduce the applied voltage to a lower holding value.

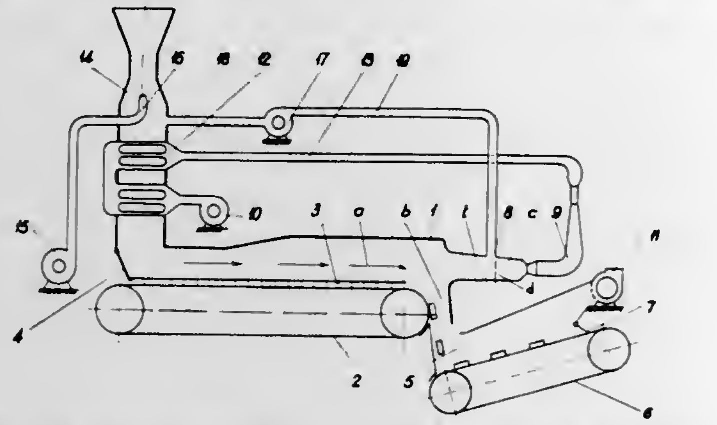
3,527,447
PROCESS FOR THE PREPARATION OF CALCINED GYPSUM

William A. Kinkade, Lisle, and Robert E. McCleary, Geneva, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 23, 1968, Ser. No. 786,450
Int. Cl. C04b *1/14*
U.S. Cl. 263—53 **9 Claims**

In a process for producing a calcined gypsum to produce a calcium sulfate hemihydrate having properties which are resistant to change on aging which comprises treating a mass of hot calcined gypsum by adding thereto, with agitation, liquid water in an amount sufficient to reduce a portion of the mass to a temperature below the boiling point of water and thereafter removing the free moisture from the mass, the improvement which comprises subjecting the admixture to sub-atmospheric pressures for a time sufficient to reduce the combined moisture content of the mass to an amount approximately that calculated for the hemi-hydrate while maintaining the temperature below about the boiling point of water.

3,527,448
INSTALLATION FOR HEATING METAL PARTS

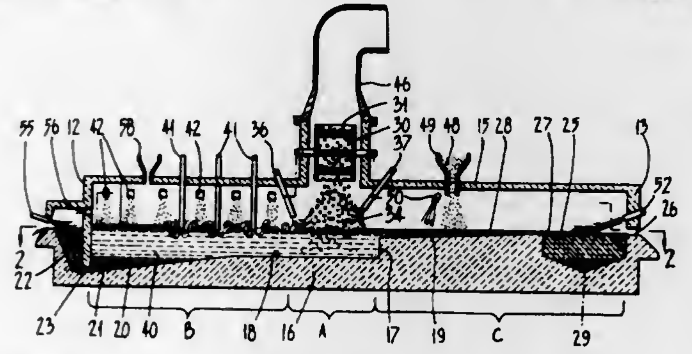
Victor Ghiea, 29 Str. Turbinei, Bucharest, Rumania
Filed Jan. 24, 1967, Ser. No. 611,362
Int. Cl. C21d *1/28*
U.S. Cl. 266—5 **4 Claims**



A heat treating furnace containing a heating chamber, a conveyor for continuously feeding articles into the heating chamber to be heated therein and for continuously removing the articles from the heating chamber, a two-stage burner for burning fuel to produce hot gases within the heating chamber and for mixing the hot gases with recirculated exhaust gases, a blower for providing input air to the burner and for moving hot gases from the burner across the conveyor in the direction opposite to the movement of the conveyor, an exhaust stack coupled to the heating chamber for removing exhaust gases therefrom, a recirculator coupled between the exhaust stack and the second stage of the two-stage burner for recirculating at least a portion of the exhaust gases, and a heat exchanger adjacent to the exhaust stack and coupled between the blower and the burner for preheating the air input to the burner.

3,527,449
REVERBERATORY SMELTING OF COPPER CONCENTRATES

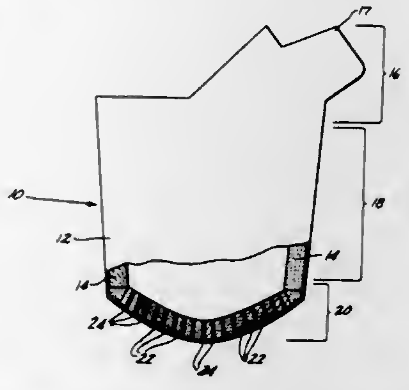
Howard Knox Worner, North Balwyn, Victoria, Australia, assignor to Conzinc Riotinto of Australia Limited, Melbourne, Victoria, Australia
Filed Nov. 18, 1966, Ser. No. 595,510
Claims priority, application Australia, Nov. 22, 1965, 66,820/65
Int. Cl. C22b *15/04*
U.S. Cl. 266—11 **17 Claims**



The invention concerns apparatus for continuously smelting and converting copper concentrates including a furnace having copper and slag outlets at remote ends of the furnace, a smelting zone, a converting zone between the smelting zone and the copper outlet and a slag separation zone between the smelting zone and the slag outlet. The smelting zone is provided with a restricted passage, and means for feeding concentrates thereto. Means for jetting oxidising gas into the molten material are provided in the smelting and converting zones and the furnace floor is sloped downwardly from the smelting zone towards the copper outlet and upwardly from the smelting zone towards the slag outlet.

3,527,450
IRON AND STEEL LADLES

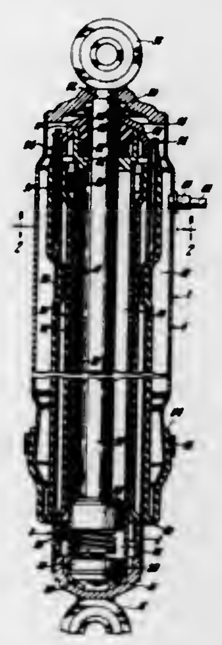
Berhl E. Wisbon, Bethel Park, and Donald P. Crosby, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed June 4, 1968, Ser. No. 734,268
Int. Cl. F27d *1/00;* **C21b** *9/06*
U.S. Cl. 266—39 **7 Claims**



An iron or steel ladle consisting of an outer metal shell and an interior substantially nonwettable refractory lining consisting of fireclay refractory shapes bonded with alumina trihydrate and phosphoric acid.

3,527,451
SHOCK ABSORBER WITH PRESSURIZABLE RESERVOIR CHAMBER

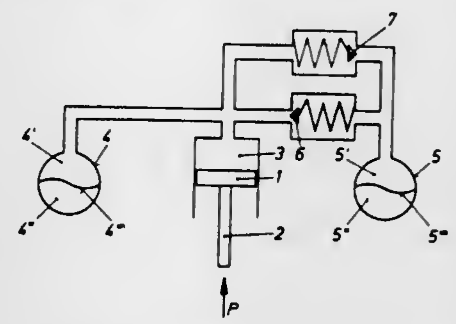
Paul J. Long, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 13, 1968, Ser. No. 728,662
Int. Cl. B60g *11/26;* **F16f** *5/00*
U.S. Cl. 267—64 **3 Claims**



In preferred form, a shock absorber and air booster spring unit having a piston rod seal biased by a spring against the outer surface of a reciprocating piston rod. Pressurized air in an air spring chamber is vented to act on an elastic bladder that forms part of a fluid filled shock absorber reservoir chamber. In response to the force of pressurized air the bladder deforms and forces reservoir fluid against the piston rod seal in opposition to forces on the piston rod seal caused by direct contact with pressurized air from the air booster spring chamber. This balancing of forces precludes blow-by of pressurized air from the air booster spring chamber around the piston rod seal.

3,527,452
CONNECTING DEVICE FOR A HYDROPNEUMATIC SPRING MEMBER HAVING AN ADDITIONAL GAS BUBBLE

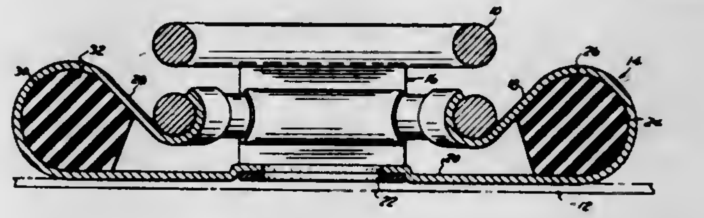
Helmut Hausenblas, Kassel, and Karl Schindler, Frankfurt am Main, Germany, assignors to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Filed Sept. 29, 1967, Ser. No. 671,852
Claims priority, application Germany, Oct. 8, 1966, R 44,310
Int. Cl. F16f *5/00*
U.S. Cl. 267—126 **3 Claims**



This invention relates to an improved connecting device for a hydropneumatic spring member comprising a piston and cylinder, a first gas bubble connected to the cylinder and being operative in the vicinity of the static value of the wheel force, and at least one additional gas bubble adapted to be connected to the cylinder in case of higher values of the wheel force, the improvement comprising means operative in dependence upon a specific pressure in the first gas bubble or the cylinder for connecting the additional gas bubble to the cylinder.

3,527,453
INERTIA-OFFSET VEHICLE RIDE DAMPER

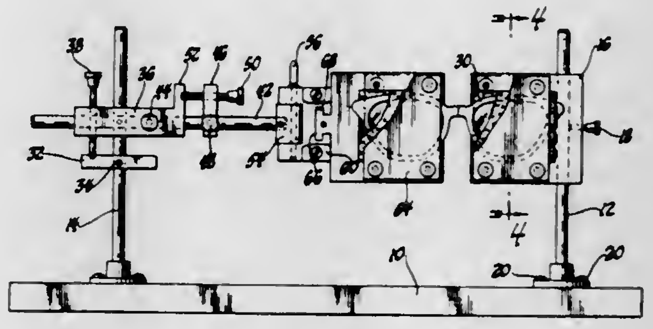
Herbert C. Rice, 16940 Log Cabin, Detroit, Mich. 48203
Filed Sept. 6, 1968, Ser. No. 757,820
Int. Cl. F16f *1/12*
U.S. Cl. 267—140 **4 Claims**



An inertia-offset vehicle ride damper is disclosed constructed to be inserted between a given vehicle structure and a coil suspension spring to be mounted thereby and to absorb impact from road energy which would otherwise be transmitted to the vehicle chassis, said ride damper comprising a spring metal energy absorbing plate having a supported end and a free end, said free end constructed to hold a coil of said spring to have transmitted thereto offset in respect to said supported end the inertia of said spring, a spring metal supporting plate beneath and spaced from said energy absorbing plate, said supporting plate having attaching means by which said ride damper can be attached to said vehicle structure, and means at said supported end which include a reverse circular bend of metal integrally joining said energy absorbing plate and said supporting plate, and a solid rubber energy absorbing member captured in place in, and filling the space formed by said reverse bend, said rubber member in energy absorbing contact with said energy absorbing plate and said supporting plate, said free end being bent and curved so as to wrap about a run of an end coil of said spring, said free end disposed closer to said supporting plate than the height of said reverse bend.

3,527,454
REPAIR FIXTURE

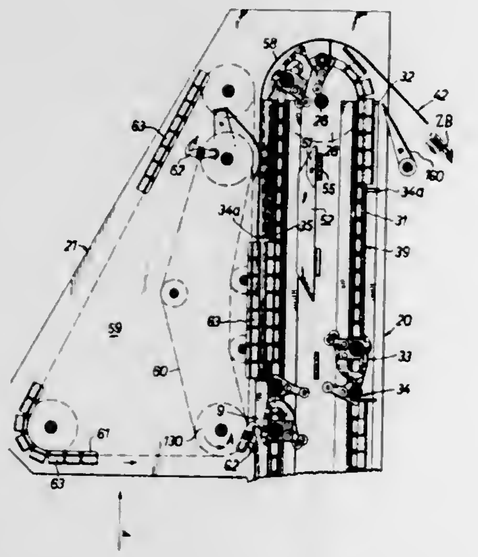
Vic D. Humm, 801 Plate St., Apt. A203, Rochester, Mich. 48063
Filed Nov. 15, 1967, Ser. No. 683,402
Int. Cl. B25b *5/14;* **B23k** *37/04*
U.S. Cl. 269—45 **13 Claims**



In a preferred form the present invention relates to fixturing apparatus especially adapted for the repair of eyeglasses whose frames have been fractured. The fixturing device herein described includes a movable master reference plate holding one portion of the eyeglasses supported on a vertical standard, said master reference plate being positioned relative to a second vertical standard supporting secondary reference means which are incrementally adjustable relative to said master reference means. In this manner, precise alignment along the fracture line of a set of eyeglasses can be achieved for repair purposes.

3,527,455
APPARATUS FOR OPENING MULTIPLE SHEET PAPER ARTICLES AND FOR INSERTION OF SUPPLEMENTAL SHEETS INTO THE OPENED ARTICLE

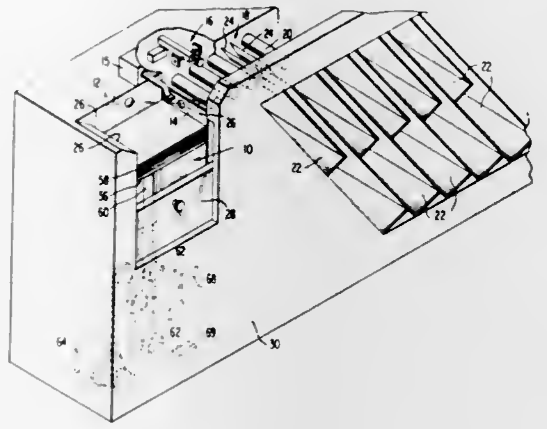
Walter Reist, Hinwil, Zurich, Switzerland, assignor to Ferag, Fehr & Reist AG., Hinwil, Zurich, Switzerland
Filed June 1, 1967, Ser. No. 642,769
Claims priority, application Austria, June 3, 1966, 5,311/66
Int. Cl. B65h *5/30*
U.S. Cl. 270—55 **14 Claims**



An apparatus for opening multiple sheet paper articles, such as folded newspapers, stitched or bound booklets, prospectus, catalogues and like articles, and for insertion of supplemental sheets into the opened article comprises a series of gripper units attached at equally spaced intervals to a pair of endless travelling conveyor chains, said gripper units comprising two pairs of grippers each having a movable jaw coacting with a fixed jaw which is common to both pairs of grippers, one of said movable jaws being movable in a direction at right angles to the gripping surface of the fixed jaw and in a direction transverse to this gripping surface, whereby said movable jaw upon moving transversely of the gripping surface of the fixed jaw clamps a marginal portion of the multiple sheet paper article to be opened, and upon moving parallel to the gripping surface of the fixed jaw displaces a portion of the clamped sheets of the multiple sheet paper article at a location at which previously the friction between two adjacent sheets had been reduced, said other movable jaw then acting as separator to open the article between the sheets of the displaced and the not displaced portion of the article, means being provided to insert the supplemental sheet into the opened article. The operations of opening the multiple sheet paper article and of insertion of the supplemental sheets being effected during the travelling movement of said gripper units with the conveyor chains, said movable jaws being controlled by stationary cam bars associated with the conveyor.

3,527,456
ARTICLE DELIVERY AND SENSING FOR ARTICLE SORTING MACHINES

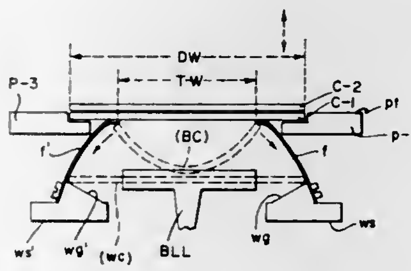
Richard L. Swartz, Columbia, S.C., assignor to Universal Business Machines, Inc., Columbia, S.C., a corporation of South Carolina
Filed May 21, 1968, Ser. No. 730,754
Int. Cl. B65h *5/22*
U.S. Cl. 271—3 **6 Claims**



There is disclosed in the hereinafter specification improved means for delivering articles such as documents and the like to the conveying guideway of an article sorting machine. The said means include an improved article delivery station including an article delivery bin provided with a movable article guiding sidewall. Improved means are provided for detecting articles as they are brought to an article delivery position such that movement of an article supporting member within said bin is controlled. Finally, means are provided at or adjacent to said station for detecting articles as they are delivered such that a signal, alarm or the like is provided in the event that more than one article is delivered in a single delivery operation.

3,527,457
DOCUMENT PICKER

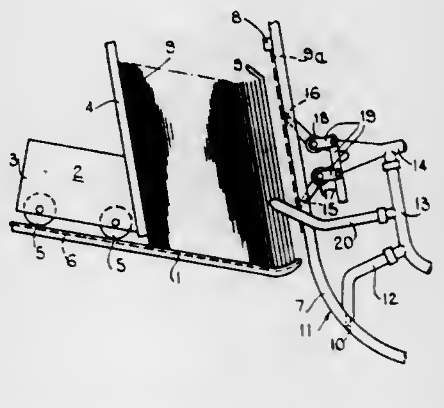
Frank H. Schaller, Needham Heights, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,114
Int. Cl. B65h *3/30, 3/32;* **G07f** *11/16*
U.S. Cl. 271—19 **15 Claims**



A card picker arrangement which, in a preferred embodiment, is adapted to pick cards, singly, from a pack by buckling them away from the stack, i.e. by squeezing (one or both) opposed long edges together with picker knives and then, snapping the card down through a one-way gate constriction onto a nearby (packed registered) wait-station support from whence it may be demand-fed (asynchronously) in serial mode with complete isolation from the pack and picking elements, the gate preferably being defined by opposed diverter (flexure blade) segments biased against the up-coming card in the pack, these segments preferably having their edges oblique to the adjacent picked edges of the cards.

3,527,458
DOCUMENT FEEDING APPARATUS

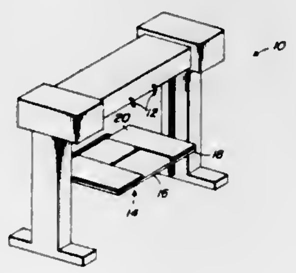
William Percy Bond, Langford, England, assignor to International Computers and Tabulators Limited, London, England, a British company
Filed May 9, 1968, Ser. No. 727,886
Claims priority, application Great Britain, May 16, 1967, 22,614/67
Int. Cl. B65h *3/08*
U.S. Cl. 271—30 **7 Claims**



A stack of documents is supported, with the documents on edge, on a sloping support member having a slightly upturned lower end. A weighted carriage, moveable down the slope under gravity, supports the upper end of the stack and the weight of the carriage is such that it cooperates with the upturned end of the support member to maintain the lower end of the document stack in a substantially constant position relative to the lower end as documents are fed in succession off the lower face of the stack. An air-jet feeding arrangement is used to select and feed these documents. Where the documents have more resistance to movement down the slope, the slope and/or the carriage weight may be increased, and in this case a spring-biassed electromagnetically-released brake may be controlled by a switch at the upturned end to alternately operate and release the carriage in dependence upon the presence or absence of documents at the upturned end.

3,527,459
ADJUSTABLE FEED TABLE FOR PRINTING PRESSES AND THE LIKE

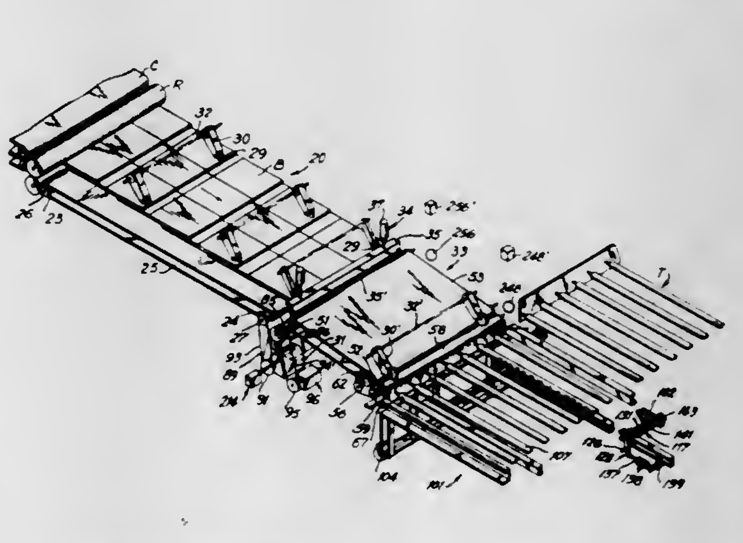
Robert G. Zeman, Box 203, Ely, Iowa 52227
Filed July 17, 1968, Ser. No. 745,503
Int. Cl. B65h *1/04*
U.S. Cl. 271—61 **10 Claims**



A table for supporting a stack of paper stock in the feeding position of an offset printing press so that even the last sheet in the stack will be fed into the press. The table has adjustable members which allow the same supporting table to be used for different sizes of paper stock.

3,527,460
SHEET CONVEYING, STACKING AND DISCHARGE EQUIPMENT

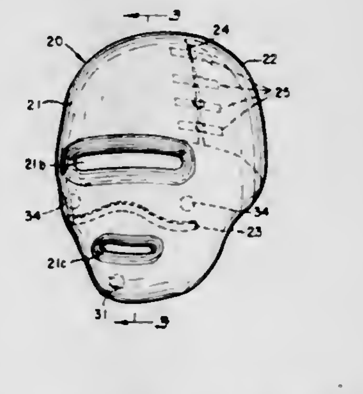
John Lopez, Westfield, N.J., assignor to Universal Corrugated Box Machinery Corporation, Cranford, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 702,717, Feb. 2, 1968. This application Feb. 7, 1969, Ser. No. 797,566
Int. Cl. B65h *29/68*
U.S. Cl. 271—69 **10 Claims**



This invention relates to the art of sheet conveying, stacking and discharge equipment and more particularly to an equipment which will receive flat sheets of corrugated board which are individually delivered at a high rate of speed and thereupon slow down the rate of speed of such sheets without reducing their speed of delivery, and then will form uniform stacks of such sheets and discharge such stacks.

3,527,461
FACE AND HEAD PROTECTOR

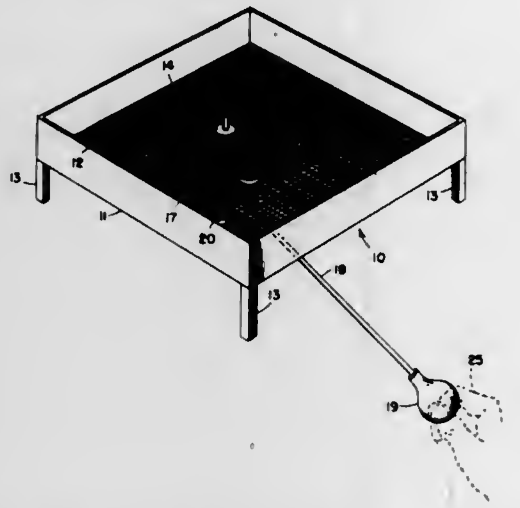
Lloyd L. Prater, Rte. 10, Box 1326, Springfield, Mo. 65803
Continuation-in-part of application Ser. No. 537,346, Mar. 25, 1966. This application Nov. 22, 1968, Ser. No. 778,240
Int. Cl. A63b *71/10;* **A41d** *13/00*
U.S. Cl. 273—1 **3 Claims**



A protector is provided for the face and head of a wearer who is participating in a game which involves being struck at these portions of the anatomy, the same including means for rendering an audible signal which indicates a blow and the approximate location thereof.

3,527,462
COMBINED BLOWPIPE PROJECTOR AND MESH SCREEN GAME BOARD

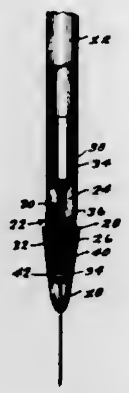
Samuel Span, Teaneck, and Walter Thum, Fairlawn, N.J. (both of 93 Belmont Ave., Paterson, N.J. 07522)
Filed Mar. 23, 1967, Ser. No. 625,475
Int. Cl. A63b *65/10, 69/40*
U.S. Cl. 273—95 3 Claims



A game with a game board, the board being made of a mesh screen on which light-weight game pieces are placed, and a blowpipe with which puffs of air can be directed through the screen against the game pieces for moving them according to the rules of the game. The blow pipe is used by placing it under the screen and directing a puff of air at the overhead projectile to cause it to jump. The projectile or game piece may take the form of a ring that jumps onto a vertical rod or may take the form of a light ball that jumps over a wall. The blowpipe may have at one end a bulb and at the other end a ball shaped hollow section larger in diameter than the meshes of the screen to prevent it from being inserted therethrough.

3,527,463
ARROW HAVING A FREELY SHIFTABLE ARROWHEAD

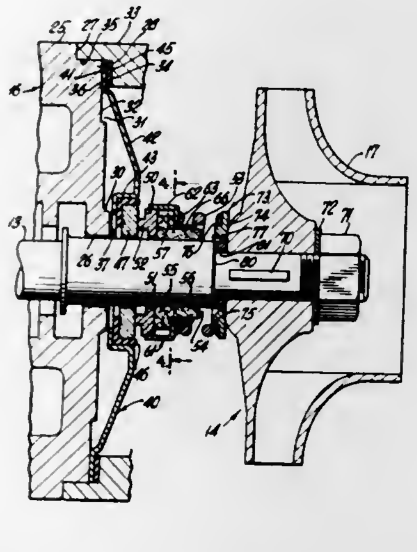
Manning Lee Turner, Charlotte, N.C., assignor of twenty percent each to Channing L. Richards and Howard C. Simpson, twelve and one-half percent to Beuna S. Shumate, and seven and one-half percent to Armand L. Zavitz, all of Charlotte, N.C.
Filed Nov. 28, 1967, Ser. No. 686,099
Int. Cl. A63b *65/02;* **A01k** *81/04;* **F41b** *5/02*
U.S. Cl. 273—106.5 8 Claims



An arrow used primarily for game hunting comprising an elongated shaft member having a generally flat arrowhead mounted at one end thereof by an attachment fixture which allows the arrowhead to shift freely with respect to the shaft member about the longitudinal axis of the arrow when the arrow is in flight. Preferably, the fletching secured to the arrow extends parallel to the longitudinal axis thereof.

3,527,464
SEAL DEVICE FOR DRIVING SHAFT OF PUMP UNIT

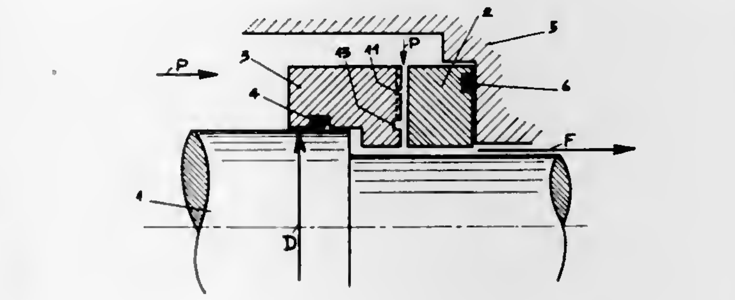
Irwin C. Goldberg, 171 Whitman Drive, Brooklyn, N.Y. 11234
Filed Oct. 17, 1967, Ser. No. 675,924
Int. Cl. F16j *9/00, 15/00*
U.S. Cl. 277—9 8 Claims



The invention pertains specifically to a seal device for a booster pump unit of the type having a cast iron bearing bracket for the pump shaft. The bearing bracket may be of conventional construction now in use, presenting a seal face at one end against which a seal assembly presses. The seal device of the present invention dispenses with the use or the necessity of servicing the seal face on the bearing bracket, and for that purpose includes a shield plate of non-corrosive material, which can be sealably clamped to protectively cover the seal face of the bearing bracket. This shield plate has retainer means for the base section of the seal device, and in place of the metal seal face described, the seal device of the present invention includes a seat member in the form of a ring, fitted in the seal retainer means around the pump shaft and presenting a seal face taking the place of the metal seal face.

3,527,465
ROTARY PACKING FOR USE IN ROTARY MACHINES AND MORE PARTICULARLY IN PUMPS

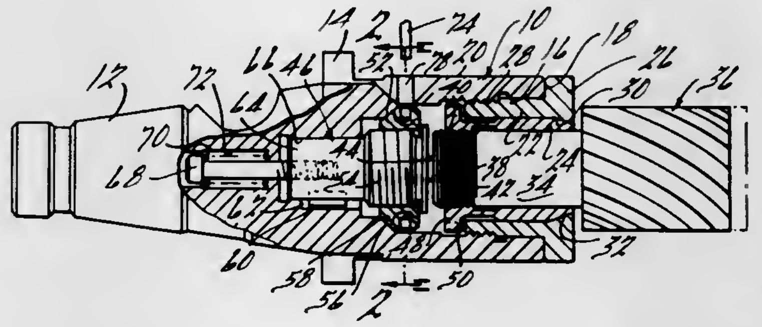
Paul André Guinard, Saint-Cloud, France, assignor to Etablissements Pompes Guinard, Societe Anonyme, Saint-Cloud, France, a company of France
Filed Oct. 16, 1967, Ser. No. 675,627
Claims priority, application France, Oct. 28, 1966, 81,930
Int. Cl. F16j *15/42, 15/40, 15/54*
U.S. Cl. 277—27 4 Claims



A rotary packing for use in rotary machines and more particularly but not exclusively in pumps, compressors and the like comprising a rotary and a stationary bush in which at least one of the faces of one of the bushes contains at least one spiral feed passage extending from the marginal edge, exposed to a pressure, to at least one injection passage situated substantially in the vicinity of an equilibrium diameter to control the leakage of liquid from between the bushes.

3,527,466
AXIALLY ADJUSTABLE CHUCK

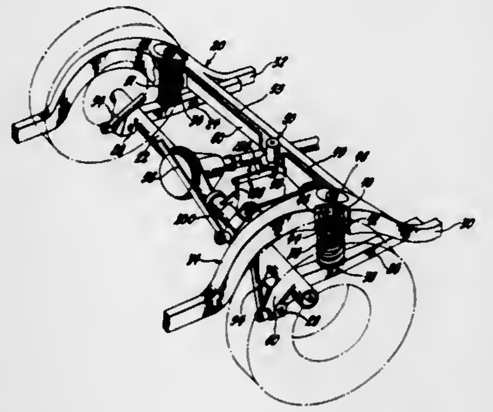
Allen N. Sweeny, Grosse Pointe Farms, Mich., assignor to Devlieg Machine Company, Royal Oak, Mich., a corporation of Michigan
Filed Nov. 25, 1968, Ser. No. 778,719
Int. Cl. B23b *31/20*
U.S. Cl. 279—53 7 Claims



A chuck having a collet for gripping the cylindrical shank of a rotary metal cutting tool. Any slippage or rotation of the tool within the chuck is operable to increase the gripping force of the collet on the tool shank. The tool is seated in the chuck body against an adjustable seat.

3,527,467
SUSPENSION ACTUATED VEHICLE LEVELING SYSTEM

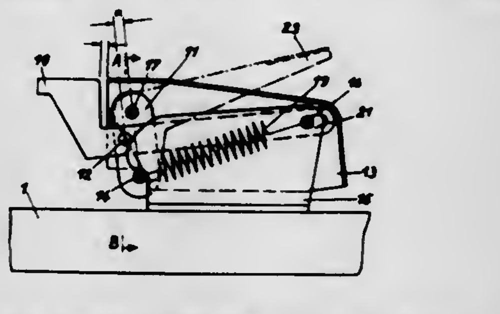
Robert N. Scott, Saginaw, and Robert L. White, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 30, 1968, Ser. No. 763,834
Int. Cl. B60g *9/00*
U.S. Cl. 280—6 6 Claims



An automatically operated vehicle leveling system has a pair of extensible hydraulic cylinder and piston units, each including a fixed spring seat thereon supportingly receiving the upper end of a main coil spring having its opposite end fixed with respect to the rear axle housing. A cam operated reciprocating piston cylinder pump supplies fluid to the extensible units to adjust the vehicle chassis position with respect to the spring seat to level the vehicle. The cam is connected to means causing it to oscillate in response to vehicle road movements. The cam is configured to vary the pumping rate in accordance with vehicle loading.

3,527,468
HEEL-RELEASING DEVICE FOR SAFETY SKI BINDINGS

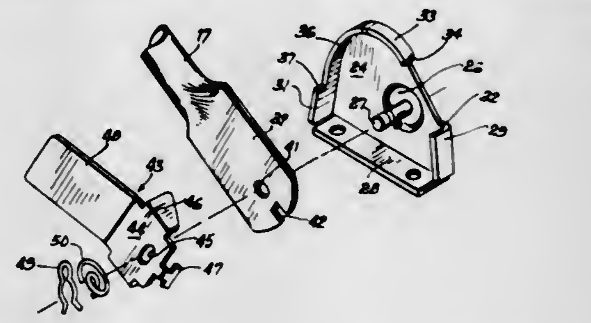
Ludwig Berchtold, Munich, Germany, assignor to Hannes Marker, Garmisch-Partenkirchen, Germany
Filed Nov. 27, 1967, Ser. No. 685,909
Claims priority, application Germany, Dec. 5, 1966, B 90,155; May 30, 1967, B 92,786
Int. Cl. A63c *9/084*
U.S. Cl. 280—11.35 11 Claims



A soleholder is provided at the free end of a lever, which is pivoted to a part that is fixed to the ski. The soleholder is spring-urged into its locking position. The spring force is applied to the soleholder by means of a connecting lever, which has pivotal connections on different axes to the soleholder and to the carrying member, respectively. The carrying member is pivotally movable about a fulcrum axis, which is parallel to the surface of the ski and transverse to the longitudinal direction of the ski. The distance from the axis of the pivotal connection between the connecting lever and the soleholder to an imaginary straight line connecting the fulcrum axis of the carrying member to the axis of the pivotal connection between the carrying member and the connecting lever increases as the soleholder is pivotally moved away from its locking position.

3,527,469
FOLDABLE HANDLE CONSTRUCTION FOR A PUSH TYPE APPARATUS

Donald L. Gobin, Newark, Ohio, assignor to Roper Corp., Kankakee, Ill., a corporation of Delaware
Filed Dec. 6, 1968, Ser. No. 781,760
Int. Cl. B62b *3/00*
U.S. Cl. 280—47.37 11 Claims

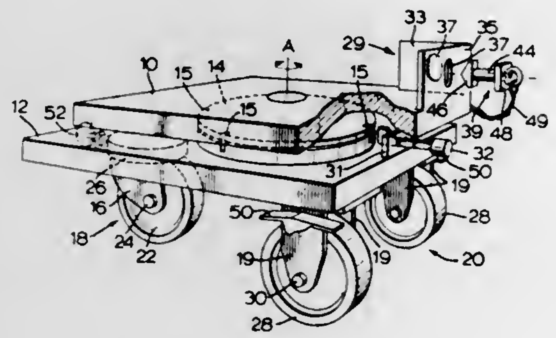


A foldable handle construction and mounting means for a push-type apparatus in which the handle includes upper and lower generally U-shaped tubular sections with the end portions of the legs of the upper section being arcuate in cross-section and receiving in nesting relation corresponding legs of the lower section. Corresponding legs of the sections are secured by bolts so that the two sections may be made rigid in co-planar relationship or may be arranged in folded relationship.

The end portions of the legs of the lower section are generally flat and each is pivotally supported on a pin extending laterally from a vertical wall portion of a respective bracket mounted on the apparatus. Each bracket has spaced abutments defining a space locating the operative position for the handle. A lever provided with camming means is connected to each flat end portion of a leg and manipulation of the levers will withdraw the respective end portions from respective spaces so as to permit rocking of the handle to non-operative position.

3,527,470
FREIGHT DOLLY

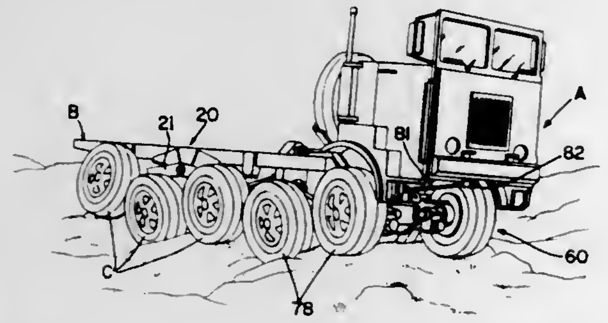
Lewis R. Ord, 23 Prince George Drive, Islington, Ontario, Canada
Continuation-in-part of application Ser. No. 676,862, Oct. 20, 1967. This application Feb. 13, 1969, Ser. No. 801,926
Claims priority, application Great Britain, Feb. 24, 1967, 9,009/67
Int. Cl. B62b *5/00*
U.S. Cl. 280—79.2 **12 Claims**



The disclosure of this application relates to a novel freight dolly construction particularly suitable for supporting and conveying unit containers. The dolly comprises a load-supporting platform rotatably mounted on a plate by a central swivel, means to lock the platform on the plate, and a plurality of wheels and castors disposed about the axis of the swivel on the underside of the plate.

3,527,471
HEAVY DUTY MULTIPLE AXLE VEHICLE

Edmund G. Clark, Los Altos, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Original application Oct. 12, 1967, Ser. No. 674,949, now Patent No. 3,471,166, dated Oct. 7, 1969. Divided and this application Mar. 3, 1969, Ser. No. 816,866
Int. Cl. B62d *7/04*
U.S. Cl. 280—81.5 **6 Claims**

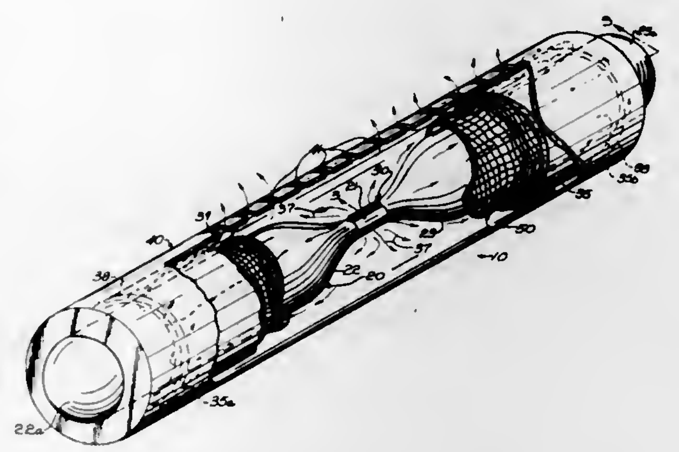


An off-the-highway, heavy duty vehicle having a rigid frame supported by a three-rear-axle suspension and a two-axle front quad or bogie, any or all of the axles of which may be either dead or live at the discretion of the designer of a particular vehicle embodying the invention, the wheels of the front quad being dirigible.

3,527,472
VEHICLE SAFETY APPARATUS

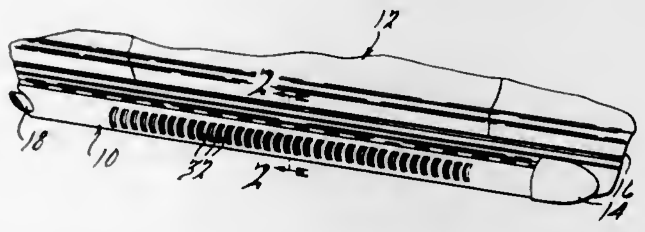
Richard Chute, Huntington Woods, and David Peter Hass, Detroit, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 23, 1968, Ser. No. 699,924
Int. Cl. B60r *21/00*
U.S. Cl. 280—150 **7 Claims**

A vehicle safety apparatus includes an inflatable confinement. The confinement is inflated to protect an occupant of a vehicle from forceful impact with a structural part of the vehicle during a collision. The confinement is inflated by the flow of fluid from a fluid reservoir to the confinement, and means is disposed in the flow of fluid to provide a turbulent fluid flow to thereby minimize the noise created by the fluid flow.



3,527,473
SIDE EXHAUST COVER ASSEMBLY

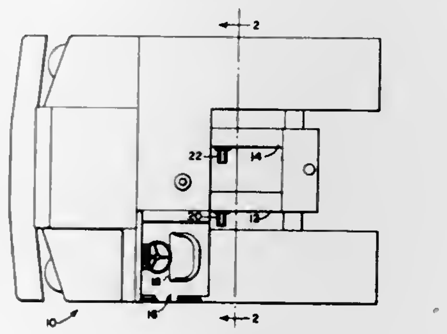
Donald H. Bailey, Livonia, Mich., assignor to U.S. Automotive Products, Inc., Detroit, Mich., a corporation of Michigan
Filed June 5, 1968, Ser. No. 734,594
Int. Cl. B60r *27/00*
U.S. Cl. 280—150 **4 Claims**



A cover assembly for the exhaust pipe of vehicles having side exhaust systems which cover assembly includes a pivot hinge construction whereby a portion of the cover assembly can be pivoted to accommodate dimensional variations between different vehicle bodies.

3,527,474
PIVOTALLY MOUNTED TRACTOR ROLL BAR

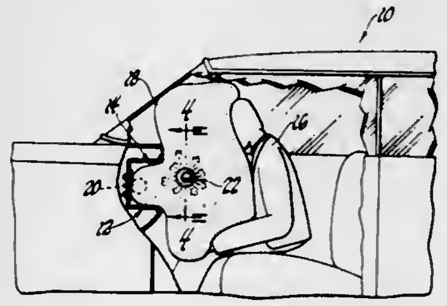
Richard Fred Boersma, Moline, Ill., assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 19, 1969, Ser. No. 800,483
Int. Cl. B60r *21/02*
U.S. Cl. 280—150 **11 Claims**



A tractor roll bar which includes a pair of transversely spaced upright posts connected at their tops and bottoms by beams and wherein a pair of longitudinally extending pivotal connections are offset from imaginary vertical extensions of the posts and connect the bottom beam of the roll bar to the main frame of the tractor. Two forms of roll bars are disclosed, one form is connected to a tractor which has the operator station centered with respect to the main support frame and has a bottom beam which extends only from one post to the other post and is centered directly behind the operator station and the other form is connected to a tractor which has the operator's station offset laterally from the main support frame and has a bottom beam which extends laterally beyond one of the posts and is connected to the tractor main frame and supports the post directly behind and in centered relationship to the operator's station.

3,527,475
VEHICLE SAFETY SYSTEM

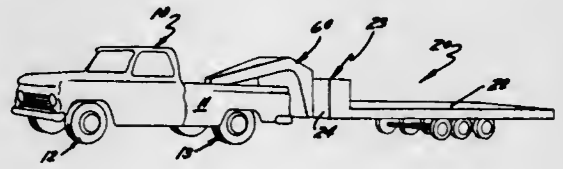
William R. Carey, Farmington, and David Charles King, Plymouth, Mich., assignors to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 621,846, Mar. 9, 1967. This application Mar. 7, 1969, Ser. No. 806,049
Int. Cl. B60r *21/00*
U.S. Cl. 280—150 **2 Claims**



A vehicle including a body with an inflating means supported by the body and in communication with a bag for inflating the bag with a fluid in response to a predetermined condition of the vehicle, such as a crash. The inflated bag prevents an occupant of the vehicle from impacting with the vehicle body and includes exhaust means comprising a patch secured over an aperture in the inflatable bag. The patch ruptures and exhausts fluid from the bag to automatically dissipate energy resulting from the movement of an occupant against the inflated bag during a crash, thus minimizing rebound of such an occupant.

3,527,476
COMBINATION TOWING VEHICLE AND TRAILER AND HITCH ASSEMBLY THEREFOR

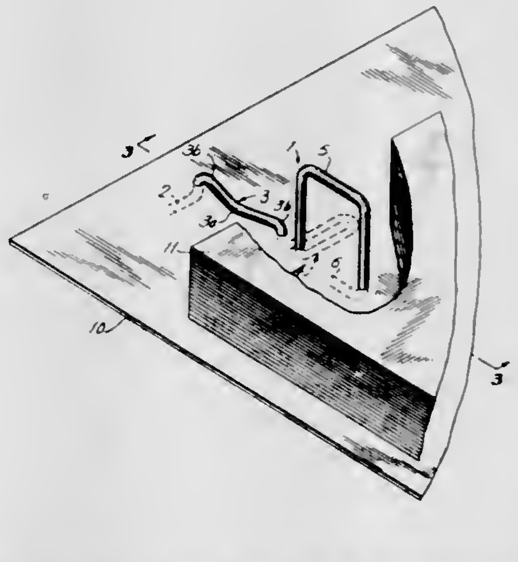
Elmer R. Winckler, Mitchell, S. Dak., assignor to Dakota Manufacturing Company, Mitchell, S. Dak., a corporation of South Dakota
Original application Apr. 20, 1966, Ser. No. 544,356, now Patent No. 3,406,852. Divided and this application Oct. 14, 1968, Ser. No. 767,156
Int. Cl. B62d *53/06*
U.S. Cl. 280—423 **7 Claims**



A hitch assembly adapted for joining a pickup truck and a trailer comprising an arch-shaped tongue pivotably affixed to a removable base in the truck bed, the base being positioned over or forward of the rear wheels thereof. The hitch is pivotably affixed, additionally, to the trailer and powered means are provided for pivoting the hitch with respect to its point of attachment with the truck and, thus, pivoting the rear end of the trailer downwardly or upwardly. Alternatively, the hitch may be detachably affixed to the trailer and the power means utilized to lift the forward end of a trailer into pulling position.

3,527,477
STAPLE FASTENER

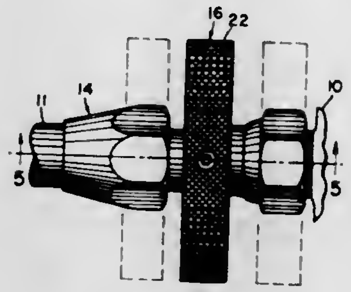
John D. Langwell, Freeport, N.Y., assignor, by direct and mesne assignments, to Louis Witrick, Oceanside, N.Y.
Filed Apr. 29, 1968, Ser. No. 724,801
Int. Cl. B42b *5/08, 3/04*
U.S. Cl. 281—25 **7 Claims**



A staple fastener constituted as a continuous length of material with three spaced portions clinched to the back surface of a backing member, the middle portion being a loop extending parallel to one of the other portions and in a direction opposite thereto and perpendicular to a bridge joining the loop and said one portion. The bridge lies against the front surface of the backing member. The remaining clinched portion of the fastener is joined to the loop by another loop which is disposed at the front of the backing member and serves to hold a stack of sheets against the backing member.

3,527,478
CONDUIT COUPLING MANIPULATOR

Bruno E. Enssle, P.O. Box 422, Lander, Wyo. 82520
Filed Nov. 18, 1968, Ser. No. 776,542
Int. Cl. F16l *35/00*
U.S. Cl. 285—38 **3 Claims**

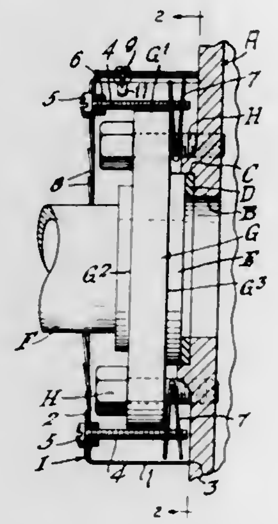


A semi-permanent manipulator for a component of a conduit coupling fitting, the manipulator being engageable axially over an axial sequence of such fittings and components whether or not they are in rotative alignment, and providing a shield for the operator, a means for aligning fitting components attached to flexible tubing, and means for axially and rotatively interengaging the components in close quarters.

3,527,479

LEAKAGE INTERCEPTOR FOR FLANGED PIPE TO HOUSING COUPLINGS

Roy A. Matthiessen, 30 Sandy Hill Road, Westfield, N.J. 07090
Filed Apr. 3, 1969, Ser. No. 812,981
Int. Cl. F16l *11/12*
U.S. Cl. 285—45 **10 Claims**

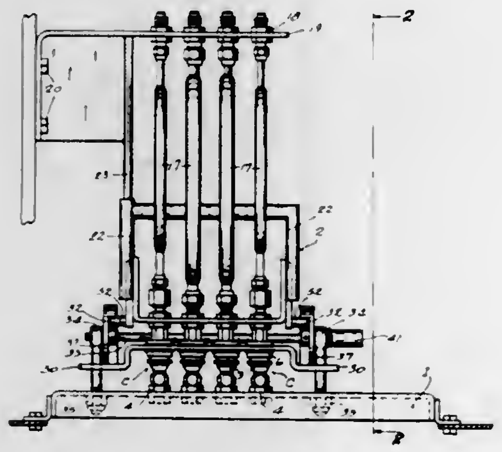


The invention is a leakage interceptor for a pipe and wall joint wherein a pipe flange having a circumferential surface and side surfaces is secured to said wall with one side surface in spaced opposed relation to the wall. The leakage interceptor comprises a body of a diameter greater than said circumferential surface and having a circumferential inwardly projecting flange at one edge thereof. Means is provided for separably fastening said body on said pipe flange with said inwardly projecting flange in spaced opposed relation to the other side surface of the pipe flange and with the other edge of the body abutting said wall. Preferably said means comprises a plurality of part assemblies spaced apart circumferentially of said inwardly projecting flange and each assembly includes a part mounted on said inwardly projecting flange and movable relatively to another part for engaging the first-mentioned side surface of the pipe flange.

3,527,480

MULTIPLE FLUID COUPLING CONNECTION MECHANISM

Thomas M. Larson, Milwaukee, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 17, 1969, Ser. No. 807,598
Int. Cl. F16l *39/00*
U.S. Cl. 285—85 **12 Claims**

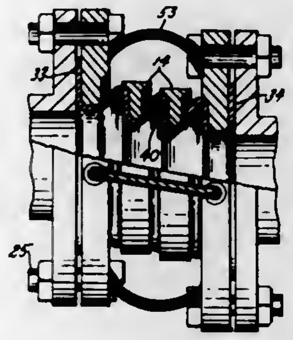


Quick releasable connection mechanism for multiple couplings for fluid handling, including a common operator for all of the disconnectable couplings.

3,527,481

FLEXIBLE COUPLING HAVING EXPANSION AND CONTRACTION LIMITING MEANS

Douglas R. Lewis, Summit, N.J., assignor to Ethylene Corporation, Murray Hill, N.J., a corporation of New Jersey
Filed Feb. 10, 1969, Ser. No. 797,982
Int. Cl. F16l *13/04, 27/10*
U.S. Cl. 285—114 **2 Claims**

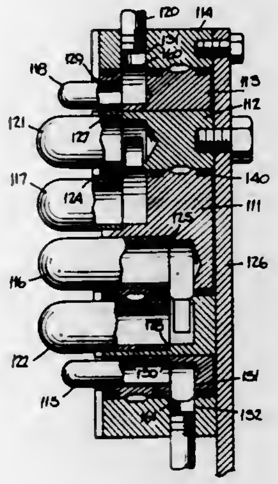


A flexible coupling for interconnecting abutting sections of flanged rigid pipe. First means is provided in the form of flexible cable for preventing excessive axial expansion of said coupling. Second means is provided in the form of annular rings preventing excessive axial contraction of said coupling and also preventing excessive radial expansion of the flexible element. Neither means prevents relative angular or parallel adjustment of the rigid components of said coupling.

3,527,482

HYDRAULIC COUPLING

Lesley C. Casterline, Hurst, and Francis E. De Pauw, Fort Worth, Tex., assignors to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,705
Int. Cl. F16l *39/00*
U.S. Cl. 285—136 **7 Claims**

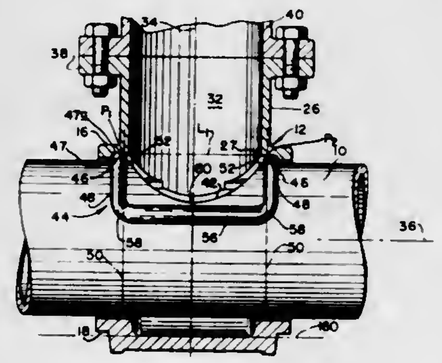


A hydraulic coupling is disclosed for hydraulically linking hydraulic systems on two adjacent bodies that rotate relative to each other along a surface of revolution. The coupling includes a port in a first one of the bodies and a cutaway portion in the second body, the port and the cutaway portion being in communication with one another at the surface of revolution. The cutaway portion on the second body is larger than and spans the port on the first body to maintain communication between the port and cutaway as the bodies rotate relative to each other. A fluid conduit communicates with the port in the first body and a separate conduit communicates with the cutaway portion of the second body member. The adjacent paired concentric members may each be fixed to separate relatively movable bodies with the conduits on each concentric member fixed to the hydraulic systems on the relatively movable bodies to hydraulically link these systems.

3,527,483

TAPPING SLEEVES

James William Dashner, Elmira, N.Y., assignor to Kennedy Valve Mfg. Co., Inc., Elmira, N.Y., a corporation of New York
Continuation of application Ser. No. 564,365, July 11, 1966. This application Sept. 30, 1968, Ser. No. 766,376
Int. Cl. F16l *5/00*
U.S. Cl. 285—197 **30 Claims**

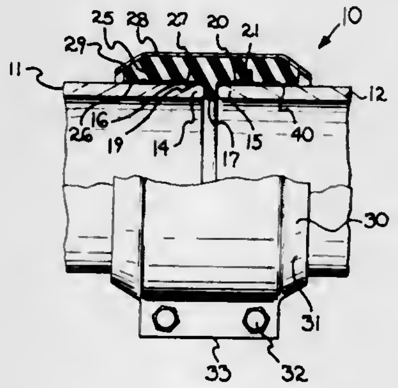


This specification discloses a tapping sleeve which can be attached on a pipe carrying fluid under pressure and which permits an opening to be cut in the pipe and the connection of a branch pipe thereto. The tapping sleeve comprises of a branch member, a back-up member and a single, continuous sealing ring which is positioned on a recess surface of the branch member and which surrounds an opening in the branch member. The sealing boundary which is formed between the sealing ring and the recessed surface is non-concentric with respect to the edge of the opening in the branch member, being positioned closely adjacent to the opening along its axial diameter and diverging therefrom. The back-up portion includes resilient pads which are positioned adjacent to opposite circumferential ends to engage circumferentially spaced portions of the pipe. A relieved area is provided between the pads.

3,527,484

APPARATUS FOR INCREASING THE PRESSURE RATING OF COUPLINGS

John R. B. Walkden, Vineland, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Mar. 17, 1969, Ser. No. 807,722
Int. Cl. F16l *21/06*
U.S. Cl. 285—236 **7 Claims**

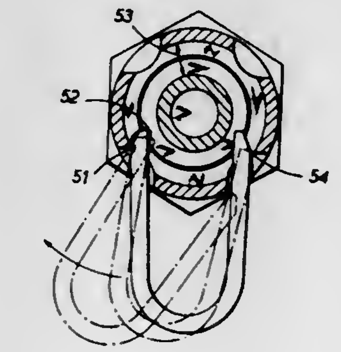


A pipe coupling for joining the plain ends of glass pipes comprising a deformable sealing gasket positioned between the abutting ends of said pipes, a post-cured elastomeric sleeve placed exteriorly around said sealing gasket and in contact with substantially the entire external surface of said sealing gasket, a coating of a high friction material placed between the pipe and the internal surface of the elastomeric sleeve extending beyond the ends of the sealing gasket and an external clamp ring positioned exteriorly of said elastomeric sleeve to tighten said clamp, thereby increasing the pressure rating of the coupling.

3,527,485

RELEASABLE PIPE COUPLING

Stanley Harold Goward and Michael Robert Goddard, London, England, assignors to BTR Industries Limited, London, England, a British company
Filed July 26, 1968, Ser. No. 748,035
Int. Cl. F16l *37/14*
U.S. Cl. 285—305 **3 Claims**

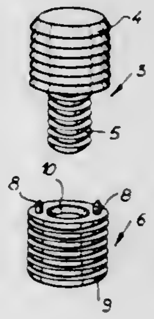


A releasable spigot and socket type pipe coupling having co-operating grooves on the spigot and socket members and a U-shaped member which co-operates with the groove through holes in the socket member in which coupling the holes are of frusto-conical form and the U-shaped member is provided with a saw-toothed abutment which engages the holes to prevent accidental dislodgement of the U-shaped member.

3,527,486

DOWEL-SLEEVE ASSEMBLY

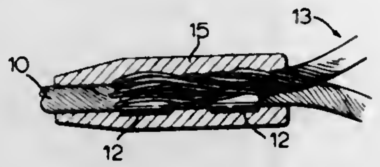
Anton Gamp, Mariazellerstr. 36 NO., Traisen, Austria
Filed June 24, 1968, Ser. No. 739,267
Claims priority, application Austria, June 27, 1967, A 5,956; Mar. 8, 1968, A 2,328/68
Int. Cl. F16b *13/00*
U.S. Cl. 287—20.92 **3 Claims**



The dowel sleeve has an outer end face formed with pointed marking extensions which are adapted to be impressed into said first part when said sleeve is in position in said second part. The first part is thus formed with a marking which facilitates the finding of a center of a bore to be drilled into said first part and serving to receive said dowel pin which is receivable by said sleeve in said second part. A punch sleeve has an end face which is formed with extensions that are receivable by said marking. A center punch slidably mounted in said punch sleeve serves to mark out the center of said bore.

3,527,487
MECHANICAL SPLICE

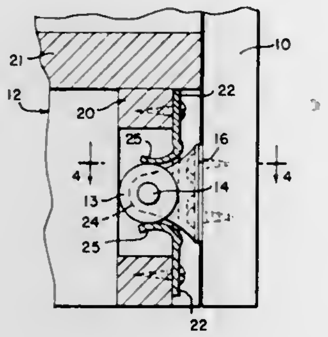
Harvey Thomas Payne, Midland, Ontario, Canada, assignor to Greening Donald Ltd.
Filed Nov. 24, 1967, Ser. No. 685,637
Int. Cl. F16b *7/04;* **A44b** *11/00*
U.S. Cl. 287—78 **6 Claims**



A mechanical splice for forming a turn-back loop-end in wire strand—as opposed to wire rope—including at least one thin-walled sleeve placed over the live end of the loop, and a compressible ferrule swaged over the sleeve, live end and dead end of the loop.

3,527,488
SELF-ALIGNING DOOR CATCH

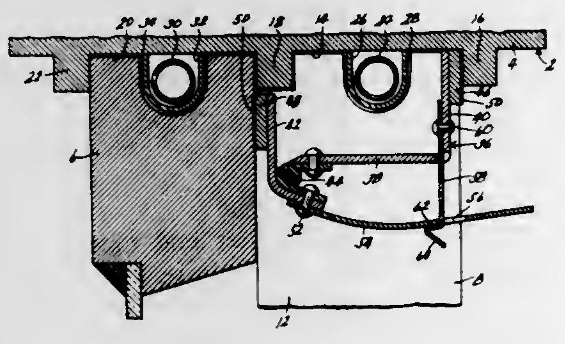
Robert M. Courtwright, Tacoma, Wash., assignor to Educators Manufacturing Company, Tacoma, Wash., a corporation of Ohio
Filed May 17, 1968, Ser. No. 730,018
Int. Cl. E05c *7/04;* **E05b** *15/02*
U.S. Cl. 292—23 **3 Claims**



A door catch providing a Teflon roller carried by the door and lodging, when the door is closed, in a stall defined by opposed spring arms which yieldingly grip the roller at diametrically opposite sides of its circumference.

3,527,489
WINDOW LOCK

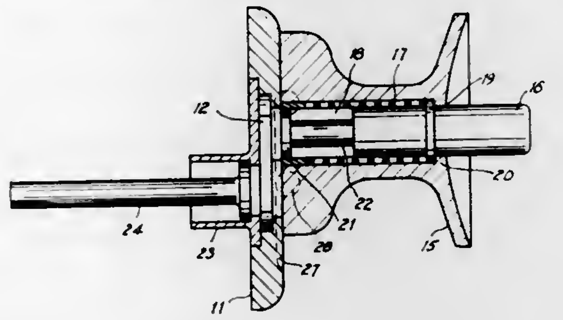
Nicholas C. Nemeth, 7324 Beverly St., Overland Park, Kans. 66204
Filed Sept. 3, 1968, Ser. No. 756,823
Int. Cl. E05c *19/18*
U.S. Cl. 292—288 **2 Claims**



A window lock for use in connection with sash-type windows having upper and lower sashes slidably movable in parallel vertical grooves of a window frame, said lock comprising a bracket having a pair of oppositely facing jaws adapted to be engaged respectively with one of said sashes and with the distal face of the frame groove of the other sash, whereby to secure the sash so engaged against movement, and by obstructing the groove of the other sash, to prohibit or limit movement of said other sash.

3,527,490
DOOR FASTENER

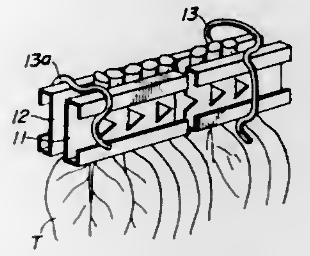
Ian Crichton Miller, 9 Beverley Terrace, South Guildford, Western Australia, Australia
Filed Mar. 15, 1968, Ser. No. 713,485
Int. Cl. E05b *3/06*
U.S. Cl. 292—336.3 **8 Claims**



A door fastener which is substantially childproof in that it cannot be released by a single movement of an operating plunger, the fastener having a handle slidably mounted on a supporting plate secured to one side of a door, a slot being formed in the supporting plate, one portion of the slot being larger than the remainder. A push button operated plunger is mounted in the handle the plunger having an enlarged end capable of passing through the larger portion of the slot. The plunger after the enlarged end has passed through the slot is capable of movement relative to the slot to a position where depression of the push button results in the release of latching means on the other side of the door.

3,527,491
TOBACCO LEAF HANGER

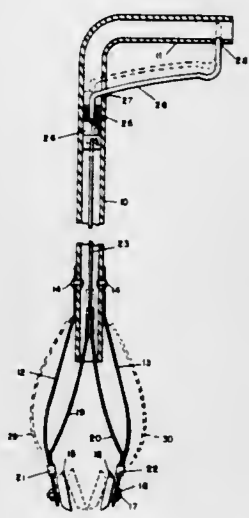
Kichitaro Sakamoto, Okayama-shi, Japan, assignor to Taiki Sangyo Kabushiki Kaisha, Okayama-shi, Japan, a corporation of Japan
Filed Apr. 19, 1968, Ser. No. 722,797
Int. Cl. A24b *1/08*
U.S. Cl. 294—5.5 **2 Claims**



The present tobacco leaf hanger can be effectively used to hold a number of tobacco leaves when they are intended to be dried. The present hanger comprises a first elongate member, a second elongate member and a plurality of spring clips to releasably secure the first and second elongate members in side by side relation with a layer of tobacco leaves to be dried held therebetween. At least one of the first and second elongate members forms a straight elongate channel-like body of very thin metal sheet comprising a bottom wall and two side walls connected with the bottom wall along their longitudinal edges and the bottom wall having a series of prongs provided thereon and aligned longitudinally with the bottom wall. According to the present invention, the tobacco leaves may be not only effectively dried without falling off of the leaves, but also may be readily applied on and removed from the present tobacco leaf hanger.

3,527,492
TRASH PICK-UP DEVICE

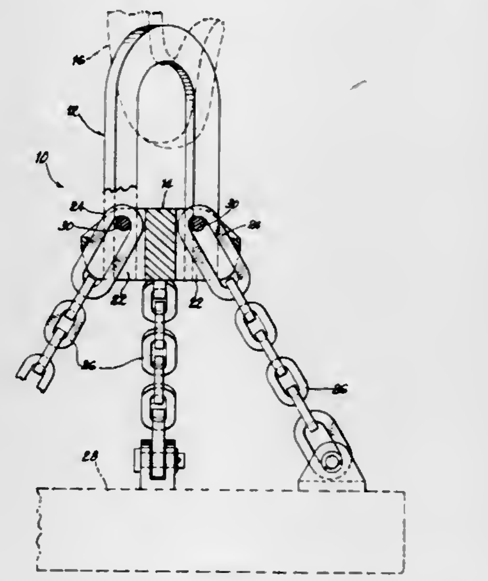
Grady W. Hollis, Spearsville, La., assignor to Jimmy L. Davis, West Monroe, La.
Filed June 25, 1968, Ser. No. 739,696
Int. Cl. A47f *13/06*
U.S. Cl. 294—19 **2 Claims**



A tool similar to a walking cane for pickup up refuse, trash, and the like, having jaw members on the lower end thereof capable of clutching or grasping the object to be retrieved and retain it therebetween while being lifted and carried about, yet permitting full release of the object when the jaws are moved to open position by actuating means positioned in the vicinity of the upper end portion of the tool.

3,527,493
MAGNET BAIL CONSTRUCTION

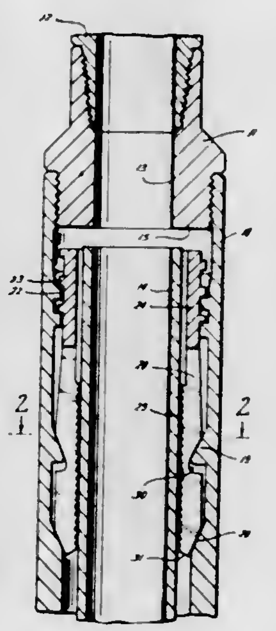
Earl Knowles Phares, Hammond, Ind., assignor to S. G. Taylor Chain Company, Inc., Hammond, Ind., a corporation of Indiana
Filed May 8, 1968, Ser. No. 727,468
Int. Cl. B66c *1/12*
U.S. Cl. 294—74 **3 Claims**



A bail construction for supporting a magnet wherein a chain is secured between the magnet and the bail. The bail comprises a two-part assembly consisting of a U-shaped upper portion, and a cast section. A pair of vertically extending openings are provided in the cast section for receiving the downwardly extending legs of the U-shaped portion. Additional openings are provided in the casting for receiving the ends of the chain. The means securing the bail and the chain to the cast section preferably comprise bolts and cotter pins.

3,527,494
WELL FISHING TOOL

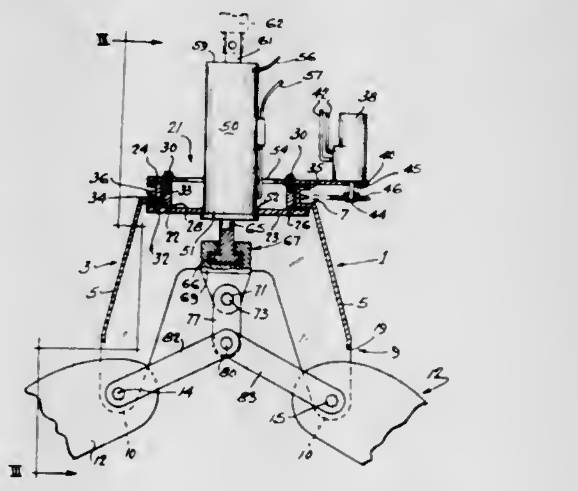
Furman B. Young, 1134 Graystone Drive, Shreveport, La. 71107
Filed June 6, 1968, Ser. No. 742,115
Int. Cl. E21b *31/02;* **E21c** *19/00*
U.S. Cl. 294—86.25 **10 Claims**



A well fishing tool for retrieving a fish, such as stuck or dropped pipe, from a well bore. The invention includes fishing tools of both over-shoot and spear type. The tool is arranged for connection to the lower end of a string of pipe for lowering into the well bore and for imparting relative rotation to certain portions thereof to effect engagement of the tool with the fish. It is particularly arranged to control the extent of wedging of the slips of the fishing tool with the fish, to thereby prevent rupture or breaking of the fish, which would further compound the fishing operation. It is also arranged such that the tool may be disengaged from the fish while it remains in the well bore, should that become necessary.

3,527,495
GRAPPLE

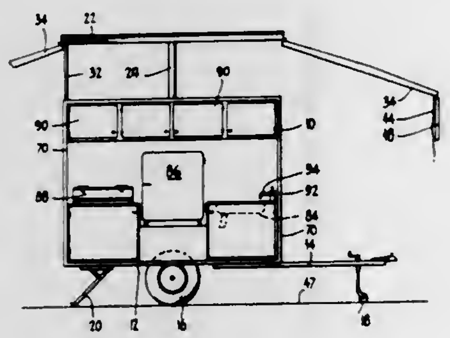
Edward D. Maradyn, Fort William, Ontario, Canada, assignor to The Northern Engineering & Supply Co. Limited, Fort William, Ontario, Canada
Filed May 1, 1968, Ser. No. 725,775
Claims priority, application Canada, Apr. 3, 1968, 16,608
Int. Cl. B66c *1/10*
U.S. Cl. 294—88 **2 Claims**



A grapple having a jaw structure which is rotatable as a unit through an unlimited arc about a vertical axis by a first hydraulically operated mechanism. The parts of the jaw structure are also movable between an open and a closed condition by a second hydraulically operated mechanism. The two hydraulically operated mechanisms are mounted on a non-rotatable platform about which the jaw structure rotates.

3,527,496
TRAILER

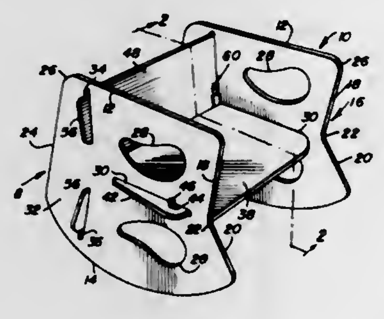
Brian James Gilligan, 24 Victoria St.,
Box Hill, Victoria, Australia
Filed Nov. 1, 1968, Ser. No. 772,623
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **9 Claims**



A trailer having a rectangular roof mounted on a central post for vertical adjustment and having a flap pivoted to each roof edge and four foldable corner roof sections connected to each adjacent pair of said flaps.

3,527,497
PORTABLE MULTIPURPOSE CHAIR

Raymond L. Self, Amarillo, Tex. (531 W. Spurgeon St.,
Fort Worth, Tex. 76115)
Filed June 28, 1968, Ser. No. 741,059
Int. Cl. A47c *4/02*
U.S. Cl. 297—442 **5 Claims**

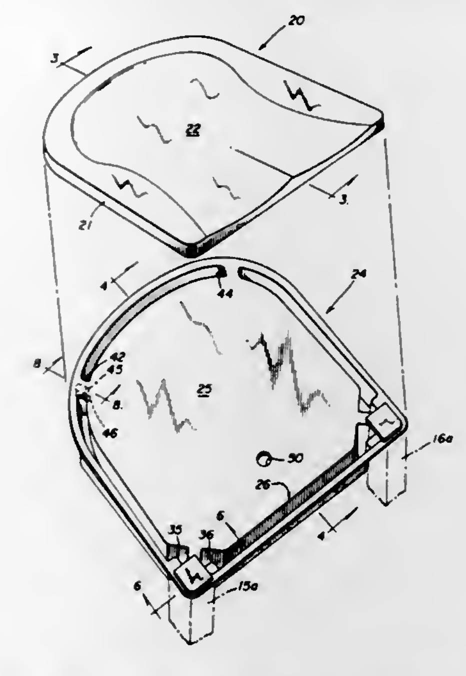


A multipurpose convertible knockdown chair for use by children. It comprises five cooperatively delineated flat-faced panels. The two vertical end panels have adapter slots for insertable and removable interlocking members on the respective ends of several complemental panels which, when installed between the end panels, provide a seat and selectively usable backrests for said seat. Metal or plastic clips are employed between coacting edges as stabilizing clips.

3,527,498
METHOD AND APPARATUS FOR CONSTRUCTING FURNITURE PIECES OF PLASTIC

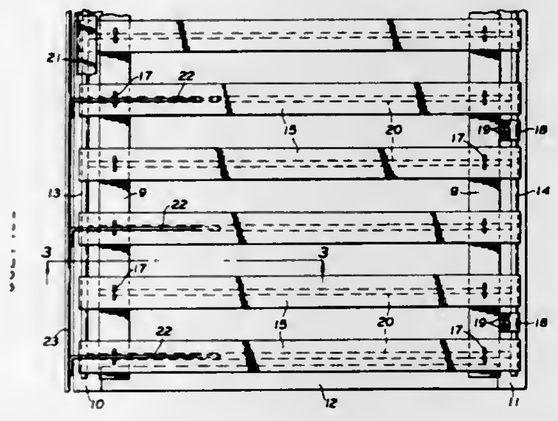
Wilbert A. Werner, 322 Blackstone,
La Grange, Ill. 60525
Filed Apr. 9, 1968, Ser. No. 719,960
Int. Cl. A47c *7/14, 7/20*
U.S. Cl. 297—452 **7 Claims**

A furniture piece including a top and a bottom shell, respectively, assembled to form a load bearing surface, for example a seat of a chair, and having integrally molded joint means in the bottom shell permitting attachment of legs, the assembled joints being held by dowels adapted to fit into registering openings of said shell and said leg at each of the respective joints, with cellular plastic forced into the cavity between the respective shells.



3,527,499
SPRING SEAT FRONT EDGE CONSTRUCTION

Alan E. Rathbun, 3135 Highland Drive, Cuyahoga Falls, Ohio 44224, and Donald W. Burtner, Newton Falls, Ohio; said Burtner assignor to said Rathbun
Filed Dec. 4, 1968, Ser. No. 781,144
Int. Cl. A47c *27/14, 27/22*
U.S. Cl. 297—452 **6 Claims**



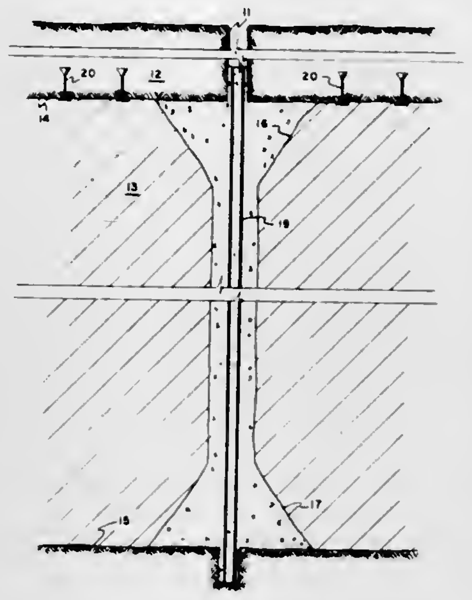
A spring seat suspension having front and rear frame rods supported on a base frame with spaced band means extending between and connected to said rods, at least one bowed compression spring rod extending between the frame rods with its ends abutting said rods, and a border wire above the front frame rod supported by supplementary spring wires atached at their inner ends to said band means.

3,527,500
METHOD OF MINING RELATIVELY THICK MINERAL DEPOSITS

Cullen R. Thompson, Denver, Colo., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 27, 1969, Ser. No. 802,835
Int. Cl. E21c *41/04*
U.S. Cl. 299—11 **5 Claims**

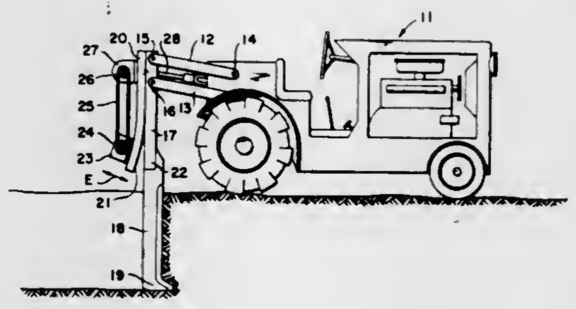
A method of mining a relatively thick subterranean mineral deposit by extending a borehole into the deposit through the roof and floor thereof. The borehole within

the deposit is enlarged and tapered pillar roof and floor support forms are formed extending outwardly from the enlarged borehole to the roof and floor, respectively, of the deposit. The enlarged borehole, including the tapered pillar roof and floor support forms, is then filled with solidifying material and mineral is mined from the deposit.



3,527,501
RESONANT VIBRATORY IMPULSE PLOW

Howard L. Shatto, Jr., La Jolla, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,745
Int. Cl. A01b *35/00;* **E21c** *23/00*
U.S. Cl. 299—37 **6 Claims**

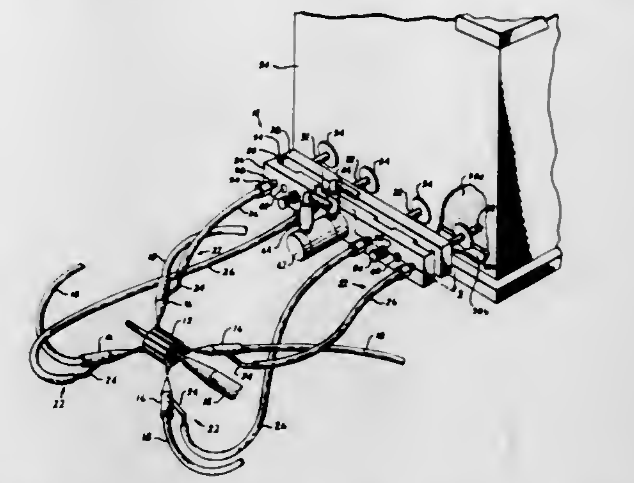


Non-linear elastic means is utilized to operatively connect an oscillator to a work member to provide a non-sinusoidal resonant vibratory system having a high velocity work stroke and a low velocity return stroke for greatly reducing draft or propulsive load on a work member.

3,527,502
POWDER DISPENSING

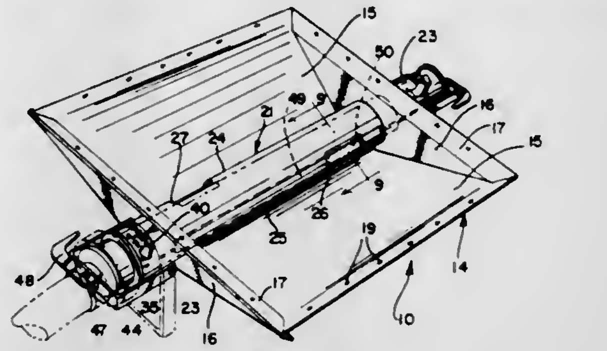
Billy J. Graham, New Carlisle, Ohio, assignor to The Globe Tool and Engineering Company, Dayton, Ohio, a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 679,084
Int. Cl. B65g *53/40*
U.S. Cl. 302—42 **12 Claims**

Epoxy powder drawn through feed lines from a fluidized bed by venturi nozzles is sprayed onto a heated workpiece. At the end of a spray operation, sections of each feed line are separated so that air from ambient atmosphere is drawn through the open ends of the sections of the feed lines connected to the spray nozzles. Even spraying of powder is obtained by maintaining a minimum separation between the separate sections of the feed lines. In one embodiment air under pressure blows powder back into the fluidized bed from some sections of the feed lines at the same time as air from atmosphere is drawn through the other sections of the feed lines.



3,527,503
PNEUMATIC OUTLET ASSEMBLY FOR HOPPERS

William D. Mundinger, Highland, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Aug. 5, 1968, Ser. No. 750,224
Int. Cl. B65g *53/40*
U.S. Cl. 302—52 **10 Claims**

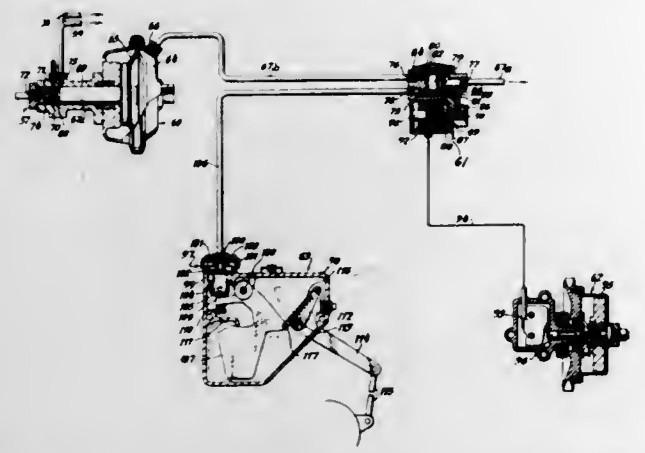


A pneumatic outlet assembly includes a pan which is connected to the discharge end of a hopper and comprises a stationary tube with an inner section disposed within the pan and having sections projecting outwardly with respect thereto. The inner section is slotted on its bottom surface and is further cut out on opposite sides to provide apertures adjacent opposite ends of the pan. A control tube is rotatably mounted in the stationary tube and includes an elongated intake slot and separate clean-out slots which provide for effective cleanout of the pan and tubes after most of the material has been removed by suction. The control tube is movable to a plurality of indexed positions to provide for the most efficient and rapid discharge of material from the hopper.

3,527,504
ANTI-LOCK MEANS FOR FLUID PRESSURE-OPERATED BRAKING SYSTEMS

Leslie C. Chouings, Mervyn B. Packer, and David Parsons, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England
Continuation of application Ser. No. 704,310, Feb. 9, 1968. This application May 9, 1969, Ser. No. 835,856
Claims priority, application Great Britain, Feb. 10, 1967, 6,442/67; July 13, 1967, 32,343/67
Int. Cl. B60t *8/12, 8/18*
U.S. Cl. 303—21 **12 Claims**

An anti-lock system for incorporation in a fluid pressure-operated braking system of a vehicle wherein a relief valve is disposed in the exhaust line of the anti-lock system, the exhaust pressure acting on the valve to open the same being opposed by a force created by the com-

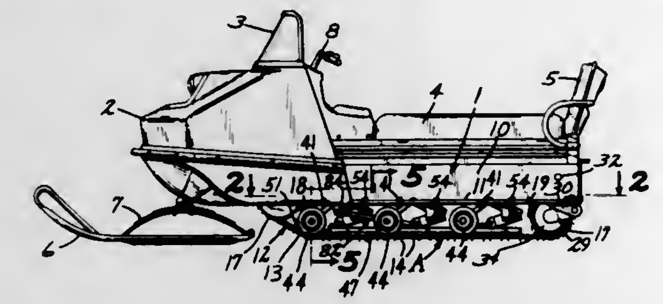


bined action of means actuated by vehicle deceleration and means actuated by vehicle loading.

3,527,505

SNOWMOBILE TRACK SUSPENSION SYSTEM

Allan E. Hetteen, Roseau, Minn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Jan. 24, 1969, Ser. No. 793,705
Int. Cl. B62d *55/16*
U.S. Cl. 305—27 2 Claims

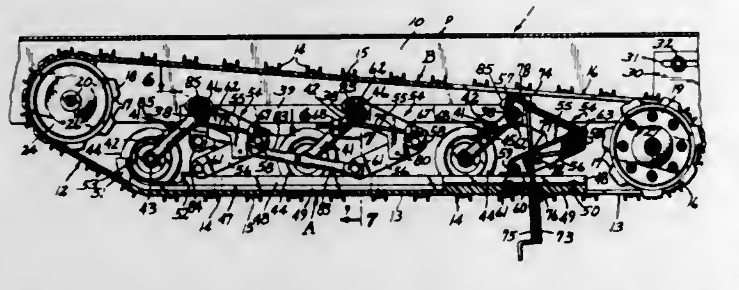


A suspension system for an endless drive track utilizing both a track-engaging slide bar and a plurality of bogie wheels. Mounting means for the slide bar and bogie wheels provides for independent generally upward and downward movement of the slide bar and engagement wheels, and for raising of the slide bar out of engagement with the lower ground-engaging run of the drive track.

3,527,506

SNOWMOBILE TRACK SUSPENSION SYSTEM

Albin R. Erickson, Roseau, Minn., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Jan. 24, 1969, Ser. No. 793,706
Int. Cl. B62d *55/16*
U.S. Cl. 305—27 11 Claims

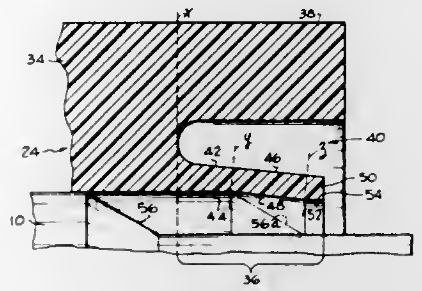


A suspension system for an endless drive track utilizing both a track-engaging slide bar and a plurality of bogie wheels. Mounting means for the slide bar and bogie wheels provides for independent generally upward and downward movement of the slide bar and bogie wheels, and for raising of the slide bar out of engagement with the lower ground-engaging run of the drive track.

3,527,507

UNITARY BEARING ELEMENT WITH IMPROVED, INTEGRAL SCRAPER-SEALING LIP

Norman E. Clark, Macedon, and Theodore Eskild, Palmyra, N.Y., assignors to Garlock Inc., Palmyra, N.Y., a corporation of New York
Filed Feb. 12, 1968, Ser. No. 704,628
Int. Cl. F16c *17/00, 21/00, 29/00*
U.S. Cl. 308—3.5 1 Claim

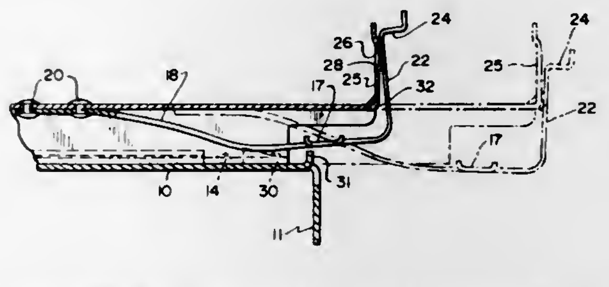


A unitary, cylindrical bearing element for a reciprocating or rotating rod or piston or the like is formed of relatively stiff plastic material with a clindrical body portion having an integral, annular axially extending, scraper-sealing lip at one end thereof; the lip having a flaring portion distal from said body portion, and being relatively thin and of substantial axial dimension, thereby enabling the flared lip portion to be flexed from flared condition to cylindrical condition easily and without deleterious strain upon the lip and its junction with the remainder of the bearing element.

3,527,508

SLIDE ASSEMBLY

Anthony T. Monaco, Skokie, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 5, 1968, Ser. No. 773,522
Int. Cl. F16c *29/00*
U.S. Cl. 308—3.6 16 Claims

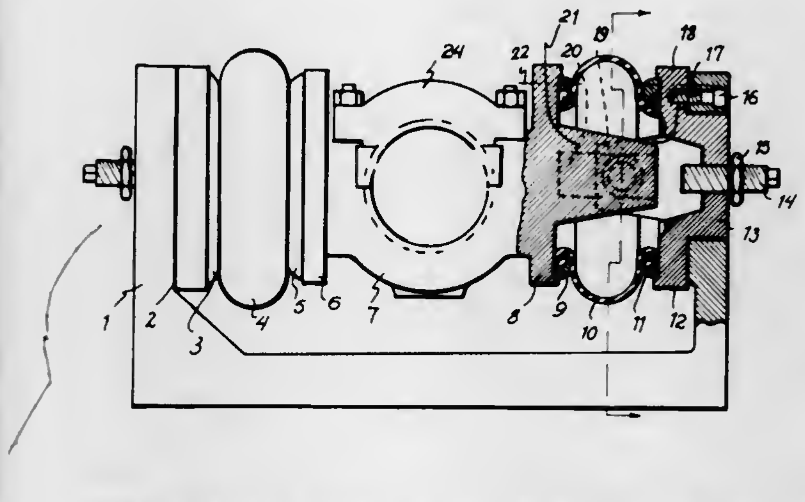


A slide assembly, for supporting a chassis in a cabinet, is adapted to be locked in a closed position and includes a first elongated channel section having longitudinally extending edges bent to define a pair of tracks, with a notch cut out of each of the bent edges at the forward end of the channel shaped section. A second elongated channel section has opposite edges that slide in the tracks formed in the first channel section, and a spring is attached to, and carried within, the second channel section and is resiliently biased toward engagement with the first channel section. A pair of extensions on the spring drop into the notches on the first channel section whenever the slide assembly is in its closed position, so that the extensions in the notches lock the two channel sections against movement in either direction. The second channel section has a vertical extension on its forward end, and the extension has a detent hole located in it. A corresponding vertical extension is carried by the spring and it is resiliently biased against the vertical extension of the second channel member and has a detent engaging tab located in it. When the tab engages the hole, the notch engaging extensions on the spring are lifted out of engagement with the notches in the first channel section to permit sliding movement of the two channel sections.

3,527,509

ADJUSTABLE BEARING FOR LATERAL CONTROL OF TRAVELLING WEBS

Erlend Eikenes, Oslo, Norway, assignor to Aktieselskabet Thunes Mekaniske Vaerksted, Oslo, Norway
Filed Dec. 2, 1968, Ser. No. 780,524
Int. Cl. F16c *33/78*
U.S. Cl. 308—6 2 Claims

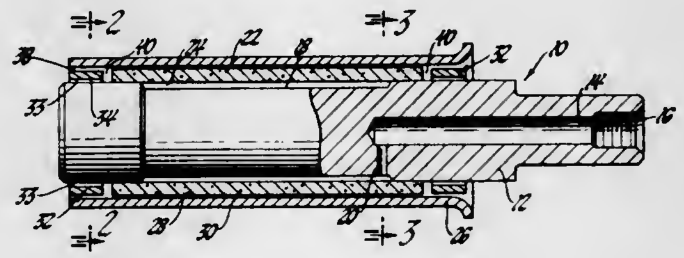


The invention relates to an adjustable bearing for lateral control of travelling webs. The bearing is displaceably mounted in the base by means of linear displacement bearings encapsulated in bellow means on either side of the adjustable bearing, thereby ensuring linear movement of the adjustable bearing and a protection of the displacement bearings from external influence, e.g. soiling.

3,527,510

ANTIHAMMER DEVICE FOR AIR SPINDLES

Paul J. Christiansen, Sandusky, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 5, 1968, Ser. No. 781,415
Int. Cl. F16c *1/24*
U.S. Cl. 308—107 13 Claims



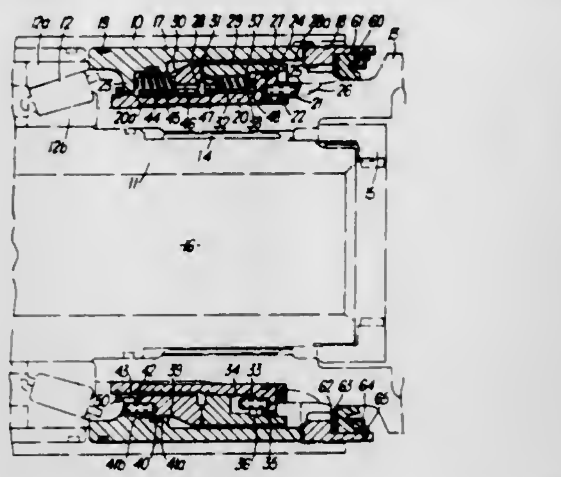
A porous sleeve air bearing separator roll used in textile drawing or spinning machinery is provided with flats in the margins of its thrust rings to provide a passage for the escape of air from the annular clearance between the porous sleeve and the outer rotatable shell to eliminate air hammer.

3,527,511

SEALS BETWEEN ROTATING PARTS

Frank Wittle, Walland Hill, Chagford, Devonshire, England
Continuation-in-part of application Ser. No. 381,832, July 10, 1964. This application July 17, 1969, Ser. No. 842,544
Claims priority, application Great Britain, July 12, 1963, 27,753/63
Int. Cl. F16c *33/78;* **F16j** *15/54*
U.S. Cl. 308—187 3 Claims

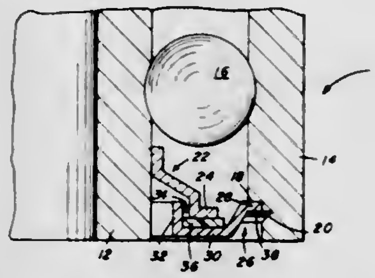
In a fluid-tight seal between two relatively rotatable parts, e.g., in down-the-hole rock drills, each part carries a sealing element able to shift axially a limited distance. The elements are urged together into face contact by springs. The preloadings and rates of the springs are selected to maintain contact of the faces when major axial shocks occur, e.g. 10*g* acceleration of the parts.



3,527,512

HIGH TEMPERATURE BEARING SEAL CONSTRUCTION

Cort L. Miller, Webster, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 27, 1968, Ser. No. 763,191
Int. Cl. F16c *33/26*
U.S. Cl. 308—187.2 1 Claim

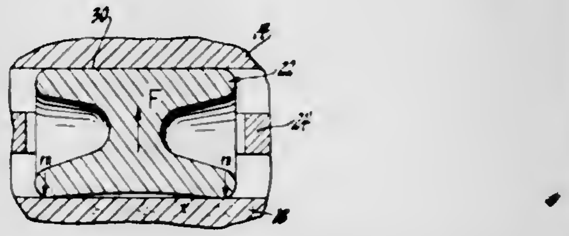


A ball or roller bearing seal comprising a pair of mating seal rings, one connected to the inner bearing race and one connected to the outer bearing race and radially overlapping. An annular poly(tetrafluoroethylene) ring is disposed in contact with and between both seal rings.

3,527,513

SELF-PRELOADING BEARING FOR HIGH SPEED APPLICATION

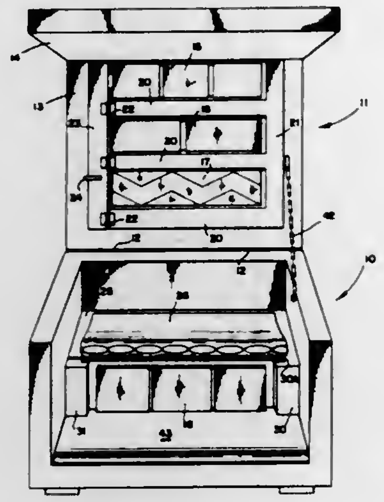
Lubomyr O. Hewko, Port Clinton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 16, 1968, Ser. No. 784,110
Int. Cl. F16c *19/00*
U.S. Cl. 308—215 3 Claims



A roller bearing in which the rollers have hollow ends and a reverse crown. The maximum diameter at the roller ends is sufficiently larger than the annular space between the races so that there is always a driving force transmitted to the cage from the inner race through at least one roller.

3,527,514
DISPLAY CASE

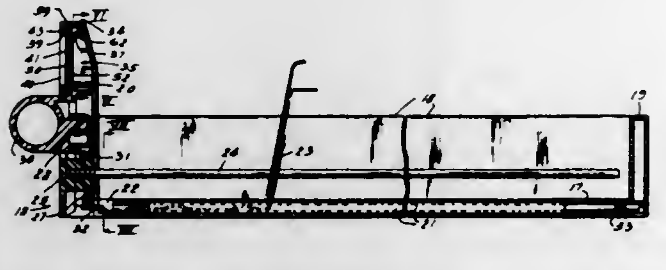
Leslie N. Jefferson, Rte. 3, Box 357, Canby, Oreg. 97013
Filed Oct. 24, 1968, Ser. No. 770,197
Int. Cl. A47b *67/02, 81/00*
U.S. Cl. 312—234 **4 Claims**



The present disclosure relates to portable display cases, particularly for use in the display of components associated with swimming pool structures such as border tile and coping for the pool wall. A selection of tile samples are removably carried within the case lid while the base of the case mounts a pool wall coping sample beneath which a selected tile sample may be inserted for a complete visual presentation to a viewer.

3,527,515
IN-WALL IDENTIFICATION LABEL MOUNTING FOR CATALOGUE CARD TRAYS AND THE LIKE

Lorraine Jensen Grau, 5819 N. Sacramento Ave., Chicago, Ill. 60645, and Neil S. Collins, 9028 N. Cumberland, Niles, Ill. 60648
Continuation-in-part of application Ser. No. 662,656, Aug. 23, 1967. This application Mar. 4, 1969, Ser. No. 804,250
Int. Cl. A47f *63/00;* **A47b** *88/00*
U.S. Cl. 312—234.1 **14 Claims**

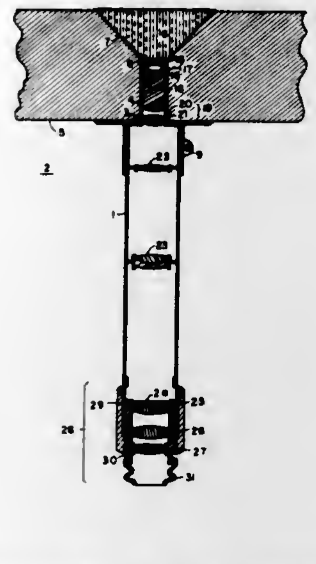


Identification label mounting for card trays and the like is effected by supporting identification label in a cavity of an upright wall having a sighting aperture therein aligned with the cavity, with back-up means in the cavity acting to retain the label releasably in a position for ready inspection through the aperture and against unintentional displacement.

3,527,516
RESTRICTED APERTURE WIDE ANGLE VIEWING SYSTEM

Carl Verne Muffoletto, 6100 Everall Ave., Baltimore, Md. 21206
Filed Jan. 5, 1968, Ser. No. 696,080
Int. Cl. G02b *21/00, 21/06*
U.S. Cl. 350—54 **1 Claim**

A lens viewing system for wide-angle reception and efficient transmittal of optical information through the smallest practicable hole in a bulkhead of given thickness, and for relaying the information to an observer, comprising a thick tripartite objective lens assembly and a relay lens assembly, both assemblies being of minimal diameter and composed of lens elements individually similar in refractive index but disparate in dispersive power, and associated relay and eyepiece lenses of less restricted diameter.



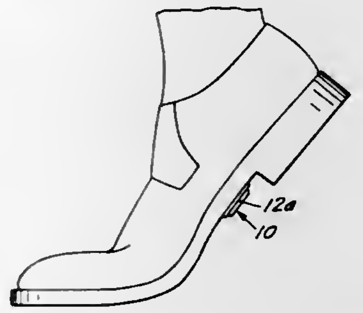
3,527,517
BIS-INDOLYL-ARYL-METHANE LIGHT SENSITIVE COMPOSITIONS

Ernst-August Hackmann, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
No Drawing. Filed Aug. 30, 1966, Ser. No. 575,979
Claims priority, application Germany, Sept. 1, 1965, K 57,013
Int. Cl. G03c *1/72*
U.S. Cl. 96—90 **8 Claims**

Material useful for the preparation of re-enlargement copies of microfilm negatives includes a light-sensitive bis-indolyl-aryl-methane and an activator compound selected from carboxylic acids, -acid esters, and -acid amides, aldehydes, ketones, and thio-compounds. Heating the material to about 70–110° C. during imagewise exposure to visible light provides more rapid image formation. Reenlarged images resulting from light-exposure are fixed by removing the activator with selective solvents comprising aqueous alkaline solutions or liquid aliphatic hydrocarbons.

3,527,518
SHOE INSTEP REFLECTOR

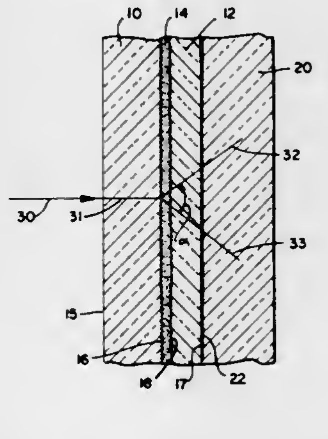
John D. Tomlinson, St. Paul, and Charles V. Sevelin, St. Paul Park, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,842
Int. Cl. G02b *5/12*
U.S. Cl. 350—98 **4 Claims**



A reflex-reflector for attachment to the depressed instep portion of the sole of a shoe. When attached on the shoe, the reflector presents an exposed three-dimensional reflex-reflective face that includes side, front, rear, and top reflex-reflective surfaces which together provide a warning signal in all directions as a pedestrian wearing the shoe walks.

3,527,519
REAR PROJECTION SCREEN

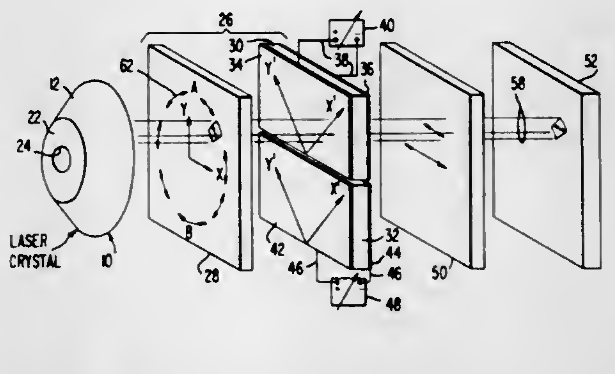
Arnold Reitman, Deer Park, N.Y., assignor, by mesne assignments, to Microform Data Systems, Inc., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 691,593
Int. Cl. G03b *21/56*
U.S. Cl. 350—117 **3 Claims**



A rear projection viewing screen comprises a laminate consisting of two glass sheets having opposed satin ground surfaces which are bonded together by an adhesive medium having a refractive index which is less than that of the glass sheets. The laminate may be used by itself as a rear view projection screen or it may be placed directly behind and contiguous with a standard rear projection screen.

3,527,520
LASER ROTARY SCANNER

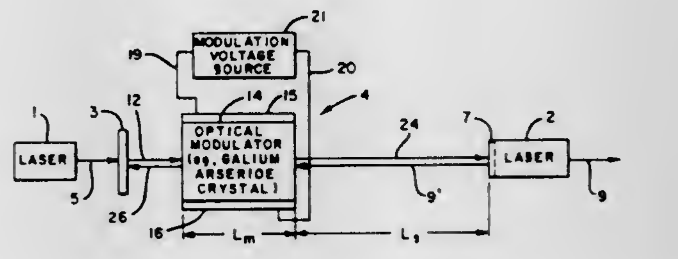
Thomas J. Harris, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,354
Int. Cl. G02f *1/26;* **H01s** *3/00*
U.S. Cl. 350—150 **10 Claims**



A rotary light scanner including a light source for transmitting along a path the linearly polarized rays of a light beam produced by the source, optic rotator means in the path for selectively rotating the direction of polarization of each of the rays through a plurality of angles, and analyzer means for passing without loss only rays having a predetermined direction of polarization after rotation. The light source may be a uniaxial laser crystal or a source of collimated light and a birefringement crystal. The crystals may be in the shape of a truncated right circular cone having an optic axis parallel to its geometric axis or a cylindrical rod having an optic axis transverse to its longitudinal centerline.

3,527,521
ELECTRO-OPTIC OPTICAL ISOLATOR

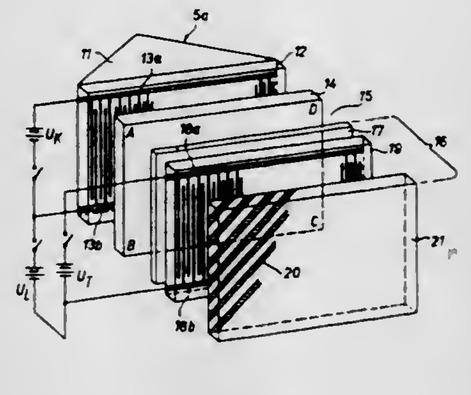
Larry M. Osterink, Mountain View, and Paul J. Titterton, Palo Alto, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,338
Int. Cl. G02f *1/26*
U.S. Cl. 350—150 **5 Claims**


MODULATION VOLTAGE SOURCE
OPTICAL MODULATOR (eg. GALLIUM ARSENIDE CRYSTAL)
LASER
LASER
Lm
L1

Isolation between a pair of pulsed lasers wherein light from one laser is injected into the cavity of the other laser is provided by locating a wire grid polarizer and an electro-optic modulator between them. The pulse repetition frequency of the injected light and the modulation frequency are synchronized so that the injected light is passed by the modulator without change in polarization when the modulation voltage is zero. Light from the locked laser that is traveling toward the one laser is passed by the modulator when the modulation voltage is maximum so its polarization is rotated 90° and blocked by the polarizer.

3,527,522
IMAGE INTENSIFIER FOR OPTICALLY PRODUCED IMAGES

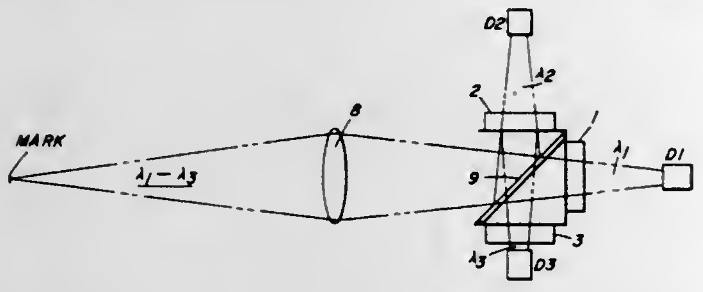
Willy Baumgartner, Zurich, Switzerland, assignor to Gesellschaft zur Forderung der Forschung an der Eidg. Techn. Hochschule, Zurich, Switzerland
Filed Mar. 11, 1968, Ser. No. 711,961
Claims priority, application Switzerland, Mar. 17, 1967, 4,068/67
Int. Cl. G02f *1/28*
U.S. Cl. 350—161 **9 Claims**



An image intensifier for images that are optically produced in rastered form on a photo-conductive layer through an optical grid, the photo-conducting layer being adapted to control electrostatic forces used to deform a reflecting surface in accordance with the pattern of the rastered image. The reflecting surface is incorporated in a schlieren-optical light projection system having at least one diaphragm strip. The reflecting surface and the schlieren-optical system together serve to modulate a beam of a strong light source in accordance with the pattern of the rastered image in order to produce a similar intensified image. A first electrode grid which is associated with the photo-conductive layer, comprises an array of spaced parallel electrically conductive strips whose longitudinal edges extend perpendicular to the longitudinal edges of the diaphragm strip or strips and which are connected in alternating sequence to the poles of an electric voltage source. A second electrode grid comprises an array of spaced parallel electrically conductive strips whose number, length, orientation and spacing of their longitudinal center-lines is the same as for the first electrode grid, and which likewise are connected in alternating sequence to the poles of a second electric voltage source. The second electrode grid is arranged spaced from the reflecting surface in such a manner that it compensates, by means of electrostatic forces, at least approximately for a basic deformation of the reflecting surface caused by the first electrode grid.

3,527,523
BEAM SPLITTING CUBE UTILIZING INTERFERENCE FILTERS FOR COLOR SEPARATION

David Neil Travis, Glenbrook, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Mar. 26, 1969, Ser. No. 810,476
Int. Cl. G02b *27/14, 5/28*
U.S. Cl. 350—171 3 Claims

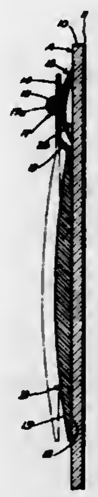


Polychromatic beams are separated into component colors or wavelength bands by wavelength selective filters combined with a beamsplitter. These filters are arranged on three sides of a cubic space, with a beamsplitter on the diagonal. At least one filter which encounters a beam split by the beamsplitter, that is to say, either the filter which receives the transmitted beam or the reflected beam, must be an interference filter which reflects the wavelengths that are not transmitted. If more than three colors are to be separated, a second cube in addition to the first is used with an auxiliary beamsplitter. This auxiliary beamsplitter divides the beam into the colors which strike the first cube and reflects the other colors which strike the second cube. If the wavelength bands passing through the filters are to be transformed into electrical signals detectors responsive to the wavelengths in question should be used. The invention is particularly useful for readouts for coded marks using photoluminescent components to form the code.

3,527,524
LENS FOR CONVERTING A FLAT MIRROR TO A MAGNIFYING MIRROR

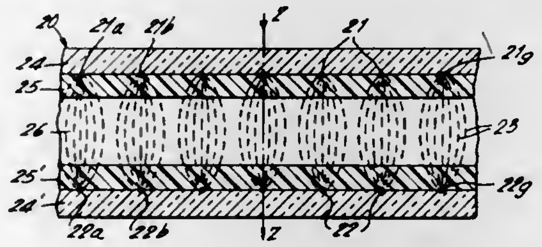
Thomas Pace, San Jose, and Dominic A. La Barbara, Santa Clara, Calif., assignors to John E. Johns, Campbell, Calif.
Continuation of application Ser. No. 488,890, Sept. 21, 1965. This application Apr. 17, 1969, Ser. No. 817,293
Int. Cl. G02b *17/08, 7/02*
U.S. Cl. 350—202 2 Claims

Presented is a plano-convex attachment for panel type mirrors embodying a detachable suction cup that is attached to the periphery of the circular plano-convex lens in a manner to preclude the interference with the transmission of light through the lens. Additionally, the lens may be detachably secured to the mirror in a manner to permit the lens to lie contiguously against the face of the mirror, thus eliminating any space therebetween, or, in the alternative, permitting attachment of the lens in a manner to be spaced from the face of the mirror and capable of being swung from side to side to permit cleaning of both the mirror and the lens.



3,527,525
FORCED CLOSURE DIPOLAR ELECTRO-OPTIC SHUTTER AND METHOD

Alvin M. Marks, 153–16 10th Ave., Whitestone, N.Y. 11357
Filed June 8, 1966, Ser. No. 556,113
Int. Cl. G02f *1/28*
U.S. Cl. 350—267 10 Claims



Electro-optical devices are disclosed which employ a layer of minute dipolar particles in a suspension carried between two transparent sheets. A series of spaced wire-like electrodes are carried by the transparent sheets on each side of the dipolar layer. Electrical circuits including switching means and a source of electrical alternations are connected to the electrodes to set up and control electric field patterns within the dipole suspension to positively randomize or orient the dipoles.

3,527,526
CATOPTRIC IMAGE-FORMING SYSTEM IN WHICH LIGHT IS REFLECTED TWICE FROM EACH SURFACE

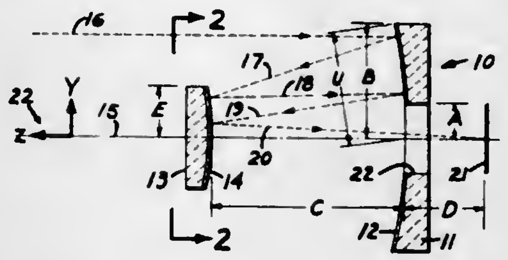
Ernest W. Silvertooth, 974 Flintridge Ave., Pasadena, Calif. 91103
Filed May 26, 1965, Ser. No. 458,980
Int. Cl. G02b *17/06, 17/08*
U.S. Cl. 350—294 2 Claims

A self-baffling optical system of the Cassegrainian type, in which the rays are reflected twice from one or more of the reflecting surfaces, which may be either spherical or aspherical. Forms are shown with refracting elements in combination and on refracting elements, with the image plane either ahead of or behind the primary reflector, and in which the system may be focussed by moving elements axially with respect to each other. A

specific example is disclosed having a particularly advantageous aspheric conformation according to the equation:

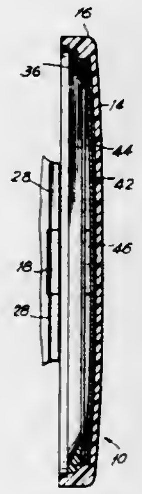
$$Z=A_1U+A_2U^2+A_3U^3+A_4U^4+\ldots$$

where $U=Y^2+Z^2$, U being the square of the chord from the midpoint of the mirror to the defined point, with specific values being listed for the constants A_n. A specific example of spherical conformation is also shown. A method is shown for producing aspheric reflecting surfaces on spherical substrates by first evaporating on a silver film of nonuniform thickness followed by an aluminum film of uniform thickness.



3,527,527
MAGNIFYING OR DIMINISHING GLASS MIRROR

Jacob William Manowitz, 83—20 141st St., Jamaica, N.Y. 11435
Filed Sept. 28, 1967, Ser. No. 671,445
Int. Cl. G02b *5/10*
U.S. Cl. 350—295 5 Claims

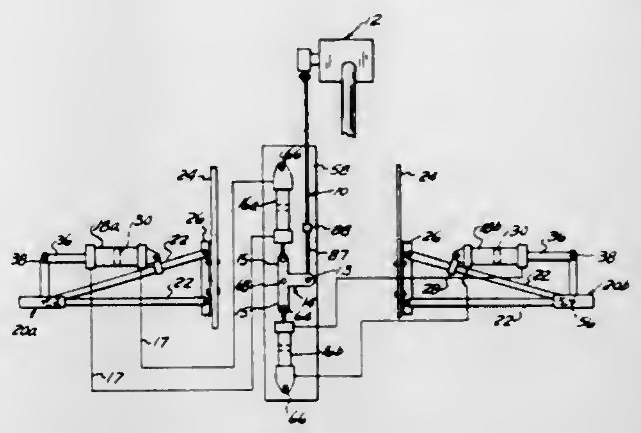


A glass mirror assembly includes a cup shaped member serving as a support plate and an annular flange, a normally rectilinear flat mirror disposed within the cup, and a bezel frame secured within the cup to the flange and overlying the margin of the mirror. The bezel presses against said margin of the mirror and a plurality of spacing elements, variously disposed between the frame and the mirror, and/or the mirror and the plate, deflects the mirror into a concave, or convex, curvilinear shape.

3,527,528
AUTOMATICALLY CONTROLLED MIRROR

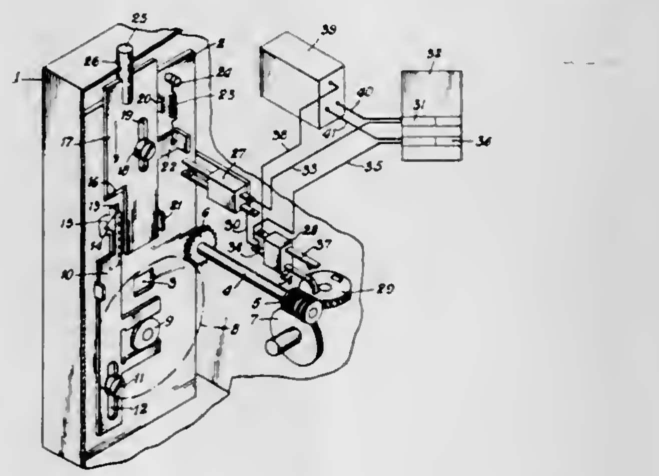
Clyde M. McKee, 22175 Bernard, Taylor, Mich. 48180; Andrew V. Provenzino, 16356 Cameron, Southgate, Mich. 48192; and Ward Scott, 429 Rochdale Drive, Rochester, Mich. 48063
Continuation-in-part of application Ser. No. 706,953, Feb. 20, 1968. This application July 17, 1968, Ser. No. 745,434
Int. Cl. G02b *5/08*
U.S. Cl. 350—307 11 Claims

A mirror assembly for trucks or a like actuated in response to movement of the steering wheel to move to a position providing maximum visibility. Means are clamped to a member which is a part of the steering mechanism and which is pivotally movable upon rotation of the steering wheel in such a way that pivoting of the member is translated through the means to a T-shaped pivotal member. The T-shaped pivotal member is connected to a hydraulic system to produce rotation of the mirrors upon pivotal movement of the T-shaped member.



3,527,529
MOTION PICTURE CAMERA WITH SYNCHRO-IMPULSE TRANSMITTER

Rudolf Taesler, Stuttgart, Germany, assignor to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany, a corporation of Germany
Filed Jan. 18, 1968, Ser. No. 698,946
Claims priority, application Germany, Jan. 28, 1967, Z 12,680
Int. Cl. G03b *31/00*
U.S. Cl. 352—19 5 Claims

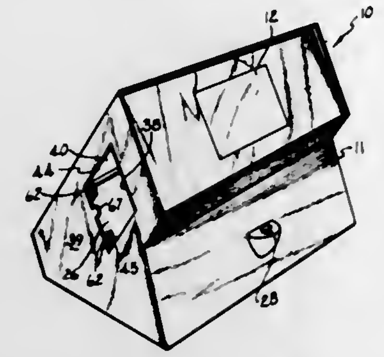


A motion picture camera with a synchro-impulse transmitter forming a part of a device for recording a pilot sound track on a sound carrier which is separated from the picture film. Structure is provided for stopping the picture film advancing mechanism while the synchro-impulse transmitter continues to operate so that a desired pause in picture taking can be recorded in the form of an additional impulse track on the separate sound carrier. This permits an easy determination of the places where the picture film is to be cut for the insertion of intermediate picture scenes.

3,527,530
SLIDE VIEWER

Robert L. Hughes, Saratoga, Calif., assignor to General Electric Company, a corporation of New York
Filed Jan. 12, 1967, Ser. No. 608,804
Int. Cl. G09f *13/10*
U.S. Cl. 353—112 5 Claims

A slide viewer apparatus with a simple, motor-driven slide pusher for automatically stripping the lowermost slide from a stack of slides in a compartment and transporting this slide to a viewing position in which the slide is illuminated for observing through a magnifying lens.

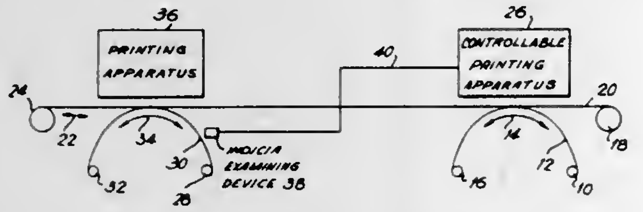


Each subsequent slide abuts the trailing edge of a preceding slide and ejects the same from the viewing station to drop by gravity to form a stack in a collecting compartment.

3,527,531
METHOD AND APPARATUS FOR PHOTOGRAPHIC PRINTING

Saul Jeffee, Scarsdale, N.Y., and John Kowalak, River Edge, N.J., assignors to Movielab, Inc., New York, N.Y.

Filed Jan. 4, 1967, Ser. No. 607,252
Int. Cl. G03b *27/04*
U.S. Cl. 355—89 **1 Claim**

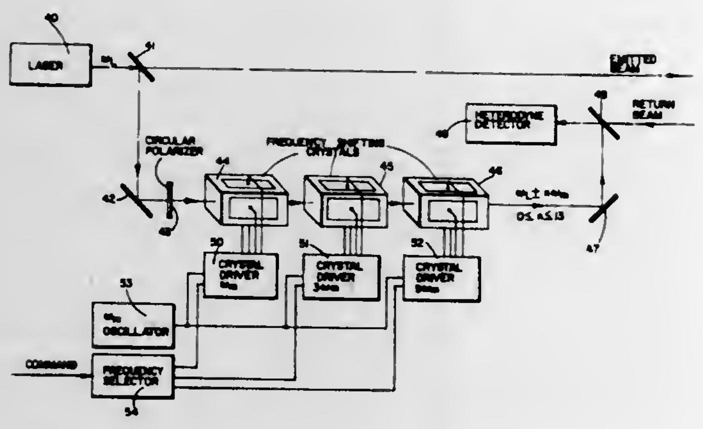


Marks are placed on sound track negative in correspondance with transition between scenes on corresponding preprint film to control lighting during printing on raw stock.

3,527,532
DIGITAL OPTICAL FREQUENCY SHIFTER

John A. Macken, Orange, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,943
Int. Cl. G01c *3/08;* **G02f** *1/26;* **H01s** *3/10*
U.S. Cl. 356—4 **6 Claims**

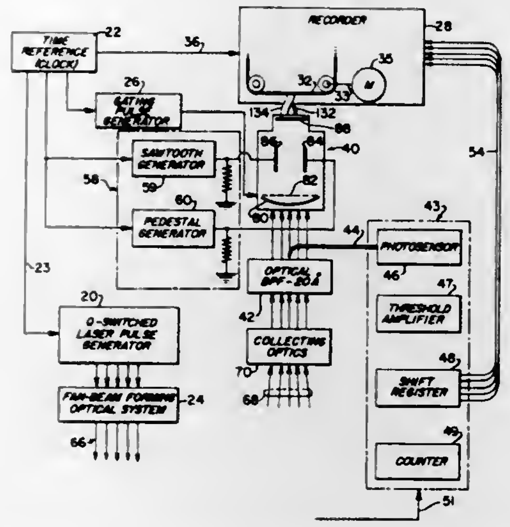


The frequency of a beam of light is shifted in a stepwise manner by transmitting the beam of light serially through a plurality of rotating half-wave plates or electro-optic crystals which simulate rotating halfwave plates. A stepwise addition or substraction of frequencies in increments determined by the rotation rate of the half-wave plates results.

3,527,533
METHOD AND APPARATUS FOR DERIVING AND PROCESSING TOPOGRAPHICAL INFORMATION

William R. Hook, Los Angeles, and Roland H. Dishington, Pacific Palisades, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Aug. 25, 1964, Ser. No. 391,958
Int. Cl. G01c *3/08;* **G03b** *29/00*
U.S. Cl. 356—5 **15 Claims**

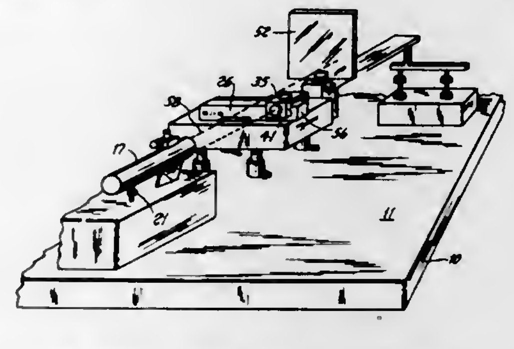


A method of topographical surveying from an airborne vehicle whereby optical frequency radiation pulses of varying short time duration are propagated toward the surface to be surveyed in a manner to time successively illuminate a plurality of successive areas of said surface, with each pulse illuminating an area at least several times larger than the spacing between different points with respect to which it is desired to obtain differential elevational information. When said radiation pulses arive at said surface, the radiation is reflected at different times depending on the relative elevations, with the highest surface being the first to reflect a "return pulse." A receiver system then collects the reflected radiation from each elevation in an incremental manner whereby a contour map or some other form of readout is produced.

3,527,534
APPARATUS AND METHOD FOR MEASURING THE ANGULAR DISTORTION DISPLACEMENT OF A SPECIMEN BY AUTOCOLLIMATION

Giulio DiGiacomo, Brooklyn, N.Y., and Irving Canner, Brookline, Mass., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 8, 1968, Ser. No. 743,191
Int. Cl. G01b *11/16, 11/27*
U.S. Cl. 356—32 **6 Claims**

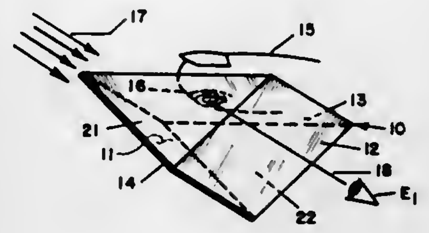


Autocollimated light is used in conjunction with a penta-prism, an adjustable specimen supporting platform and a novel optical jig attachable to the ends of the specimen, to measure any angular displacement or distortion between said ends of said specimen.

3,527,535
FINGERPRINT OBSERVATION AND RECORDING APPARATUS

John N. Monroe, Hollywood, Calif., assignor, by mesne assignments, to EG & G, Inc., Bedford, Mass., a corporation of Massachusetts

Filed Nov. 15, 1968, Ser. No. 776,076
Int. Cl. G06k *9/08;* **G01b** *11/00, 9/08*
U.S. Cl. 356—71 **8 Claims**

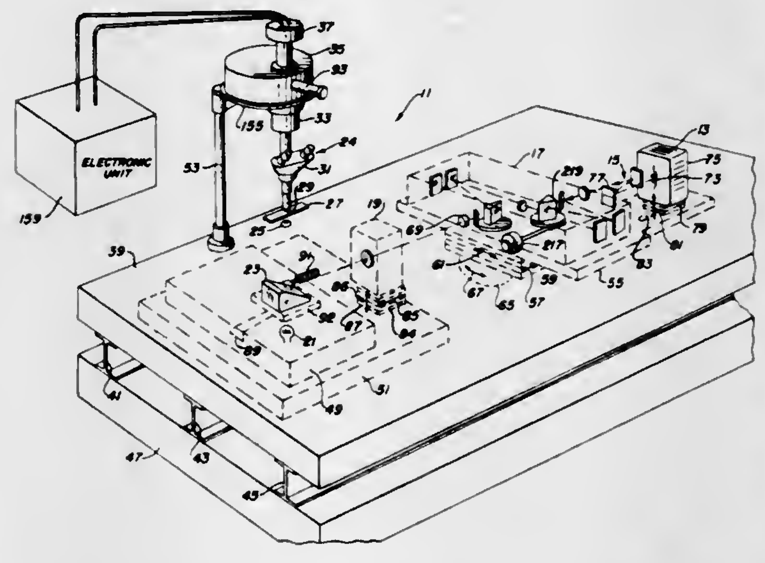


An internal reflecting optical prism with two nonparallel, plane faces defining an acute angle. The prism is illuminated internally by directing light into a side, in a direction substantially parallel to the two faces, so that when a finger contact is made with one of the two faces, the fingerprint may be observed or photographed through the other of the two faces as a bright illuminated image of the fingerprint against a dark background.

3,527,536
MICROSPECTROPHOTOMETER DEVICE

Edward L. Alpen, Burlingame, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Mar. 8, 1967, Ser. No. 621,716
Int. Cl. G01n *21/26;* **H01j** *31/50*
U.S. Cl. 356—72 **1 Claim**

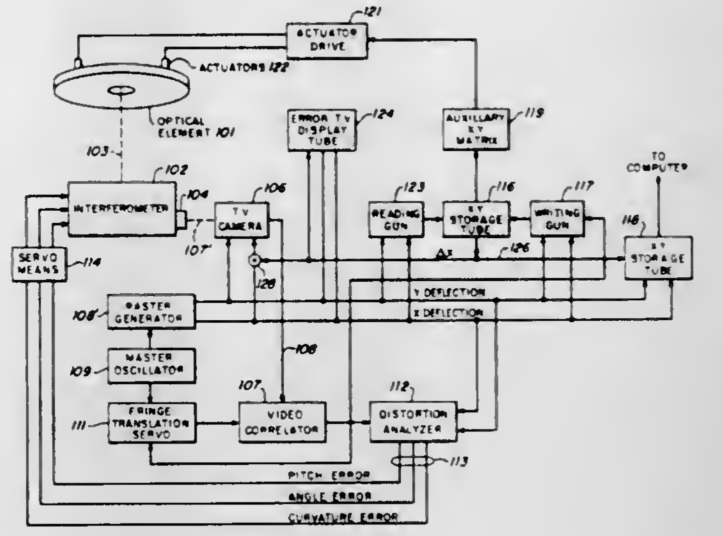


An optical unit comprising a light source, a filter system, a movable stage and a microscope that are mounted on stabilizing platforms and adjustable stages. The stabilizing platforms and adjustable stages provide a high degree of flexibility and precise adjustment for the components mounted thereon. The object being investigated may be observed directly with the optical unit or with a photometer head, photomultiplier, and electronic unit combined with the optical unit. The photometer head provides variable selection of fields of view and either visual or electronic observation of the object. The electronics unit includes a variable current to voltage conversion system that provides a common reference when different fields are selected by the photometer head.

3,527,537
AUTOMATIC CORRELATING INTERFEROMETER

Gilbert L. Hobrough, Woburn, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Feb. 9, 1968, Ser. No. 704,440
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **21 Claims**

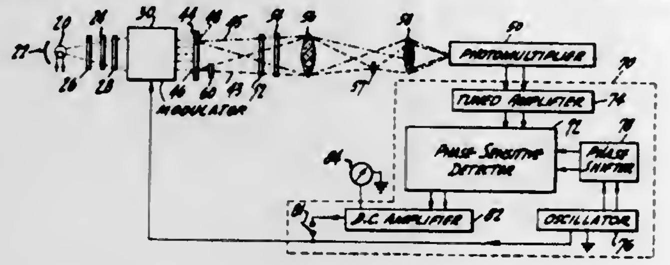


This invention concerns the automatic reading and interpretation of the fringe pattern obtained from an interferometer in the testing of an optical component. Electronic techniques are used with the interference patterns being scanned using a television type camera. The signals derived from the television camera are analyzed by electronic circuitry to be described, and the resulting error signals are used to modify both the settings of the interferometer and the shape of the scanning raster waveform in such a manner that the video signal from the TV camera becomes identical to the signal that would be produced if the optical component under test were of precisely the required shape. The transformation of the raster required to produce this condition is thus directly related to the perturbations of the optical surface under test. An alternative application of the automatic correlating interferometer is in the use of the so-called active-mirror systems. In such a system the surface of a large reflecting objective is examined by means of an unequal-path-interferometer while the objective is in use, forming an image on a photosensitive surface. The automatic correlation system senses perturbations in the surface of the mirror and delivers error-signals to mechanical actuators that are attached to the mirror and which exert corrective forces on the mirror in response to the error signals. In this way peturbations are reduced to a negligible level through a multiple closed-loop feedback process. Observation of the interference pattern is by means of the television camera and a TV type raster is employed with the scanning lines perpendicular to the direction of the fringes. The correlator performs two separate functions in the interpretation of the interferometer fringe pattern. Firstly, the fringe patterns is normalized for pitch, orientation with respect to the scanning raster, and for straightness of the fringes. Such normalizing is accomplished through feedback to the X, Y and Z adjustments of the interferometer or their equivalents. The interferometer adjustments are equipped with servo-motors for this purpose, which motors respond to the amplified error signals derived from the correlation circuitry. After normalization, the fringes, as seen by the TV camera, will be straight, of predetermined pitch, and will lie perpendicular to the direction of the scanning lines. Irregularities in the pattern owing to perturbations in the mirror surface from the ideal form required for the production of straight fringes will remain however. The second function of the automatic correlating interferometer (ACI) is the conversion of the residual pattern irregularity signals into an error matrix representing the perturbations of the miror surface causing the irregularities.

3,527,538
ABSORPTION SCATTERING AND FLUORESCENCE MEASURING METHOD AND APPARATUS

Robert D. Allen, Princeton, N.J., and James Brault, Tucson, Ariz., assignors to Princeton Applied Research Corporation, Princeton Junction, N.J., a corporation of New Jersey

Filed Aug. 6, 1965, Ser. No. 477,913
Int. Cl. G01j *3/42;* **G01n** *21/00*
U.S. Cl. 356—117 14 Claims

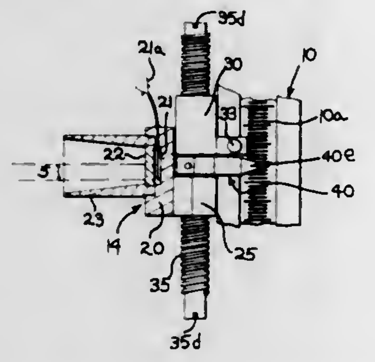


A method for determining an optically determinable property of a specimen and the apparatus therefor is provided in accordance with the teachings of this invention. According to one embodiment of the invention as disclosed herein, a first beam of radiation having a first preselected state of polarization is provided along a reference path and a second beam of radiation having a second preselected state of polarization, different from said first state, is provided along a specimen path. Each of said first and second beams of radiation is then modulated to produce two different modulation patterns related to said respective states. The modulation patterns are then detected and relied upon to develop a feedback signal which is used to vary the modulation patterns until a desired relationship therebetween is obtained. In operation, the desired relationship between the two different modulation patterns is first obtained in the absence of a specimen in said specimen path, and thereafter, the desired relationship between said two different modulation patterns is re-established with a specimen present in said specimen path. The difference in the values of the feedback signals necessary to establish said desired relationship in each case being a measure of the optically determinable property of the specimen.

3,527,539
METHOD AND APPARATUS FOR INDICATING CENTER OF RADIANT ENERGY BEAM

Robert H. Studebaker, Dayton, Ohio, assignor to Process Equipment Co. of Tipp City, Tipp City, Ohio, a corporation of Ohio

Filed Mar. 9, 1966, Ser. No. 532,944
Int. Cl. G01b *11/00*
U.S. Cl. 356—156 4 Claims

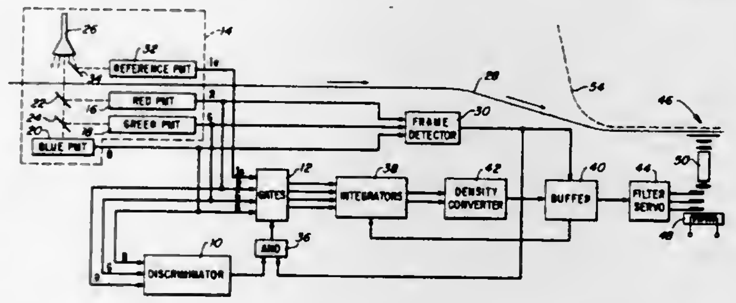


A method of and apparatus for determining the precise center location of a beam of light at a finite distance from the point of origin of the beam. Preferably, the beam is emitted by a laser and the center location is determined by intercepting the two extremities of the beam by a movable beam-responsive device movable between the points of interception. The extent of movement of the beam-responsive device between the two interception points determines the beam dimension and a visual indication of the center of such movement indicates the beam-center location.

3,527,540
COLOR CONCENTRATION DISCRIMINATORS

John Kent Bowker, Marblehead, Jerry Glenn Hughes, Waltham, and Charles Marshall Stasey, Westwood, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed May 8, 1967, Ser. No. 636,734
Int. Cl. G03b *27/78;* **H01s** *3/50*
U.S. Cl. 356—175 19 Claims

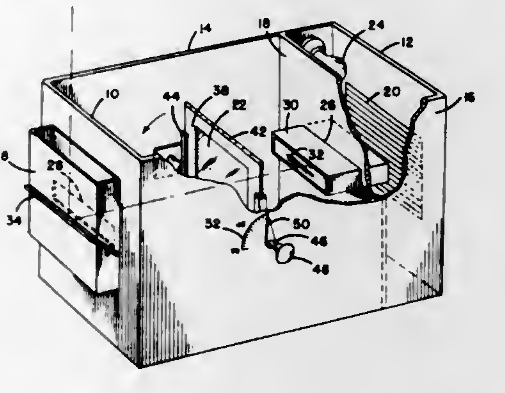


Apparatus for discriminating a concentration of a color on a film containing many colors including a photomultiplier for sensing each of the three primary color components, red, blue and green, radiated from contiguous portions of the film, a logarithmic converter responsive to each of the photomultipliers for determining the amount of the color component present as a function of the density of the color component independent of the intensity level, a first differencing amplifier responsive to the red and green density signals and a second differencing amplifier responsive to red and blue density signals, for producing red-green difference signals and red-blue difference signals, a differentiator responsive to each of the differencing amplifiers for determining whether the primary color densities represented by the difference signals change at successively sensed portions, and level detectors responsive to the differentiators for indicating positive and negative changes from a predetermined level.

3,527,541
METHOD AND APPARATUS FOR TESTING FILM CLARITY

Abraham Lewis Boughner, Aston Township, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 23, 1968, Ser. No. 723,375
Int. Cl. G01n *21/20*
U.S. Cl. 356—202 6 Claims

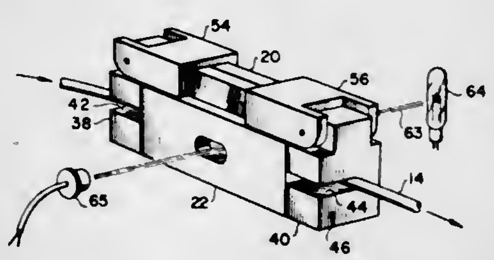


A method and apparatus for testing the clarity of transparent film and assigning a definitive value thereto whereby the relative clarity of a film may be objectively compared with any other film or with a preselected standard. The clarity value is determined by viewing a lined background along a line of sight that passes through the film in a direction normal to the plane of the film, rotating the film about an axis parallel to the lines of the background until the film is at such an angle to the line of sight that the lines of the background are substantially invisible, measuring the angle and assigning the measurement as the film clarity value.

3,527,542
CARDIAC OUTPUT APPARATUS

Harry A. Penhasi, Cupertino, and Con D. Rader, San Jose, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed June 15, 1966, Ser. No. 557,823
Int. Cl. G01n *21/16, 33/16;* **A61b** *5/02*
U.S. Cl. 356—244 2 Claims



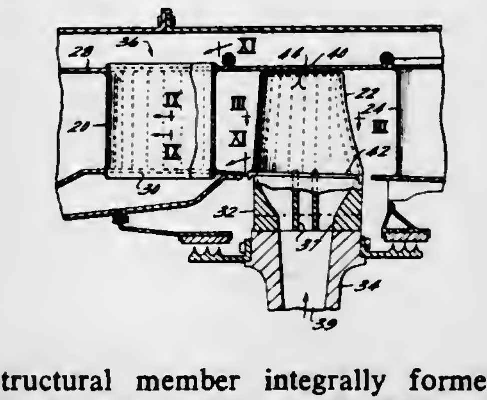
A cuvette housing including a first plate having an interior surface with a recessed portion extending the length of the plate and an aperture through the plate in communication with the recessed portion, a second plate having an interior surface and an aperture and means for clamping the plates together with the interior surfaces in contact whereby the recessed portion in the first place defines a through-passage and the apertures are brought into alignment.

3,527,543
COOLING OF STRUCTURAL MEMBERS PARTICULARLY FOR GAS TURBINE ENGINES

Werner E. Howald, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 325,508, Nov. 21, 1963. This application Aug. 26, 1965, Ser. No. 483,389

Int. Cl. F01d *5/08*
U.S. Cl. 416—90 14 Claims



1. A structural member integrally formed of high strength material and having a wall, the "outer" surface of which defines, at least in part, a flow path for a hot gas stream moving therepast at a relatively high velocity, said gas stream having a boundary layer contiguous with said "outer" surface in which the gas velocity is substantially reduced,

the opposite inner surface of said wall defining, at least in part, a plenum chamber,

said wall having a plurality of discrete, relatively small holes therethrough, said holes being essentially circular in cross section and divergently tapered, throughout their lengths toward said "outer" surface,

means for pressurizing gas coolant within said plenum chamber to a pressure somewhat greater than the maximum hot gas static pressure on said "outer" surface and sufficient to discharge coolant gas from said holes,

said holes being oriented so that the coolant gas flowing therefrom has a substantial inertia vector component in the plane of said "outer" surface and substantially no inertia vector component in a direction counter to that of the hot gas flow,

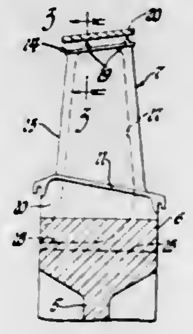
whereby substantially all of the coolant gas from a given hole is entrained in said boundary layer and spread over a much wider area than the opening of that hole onto said "outer" surface,

said holes further being disposed relative to one another so that the coolant streams entrained in said boundary layer cover substantially the entire "outer" surface with coolant air in said boundary layer.

3,527,544
COOLED BLADE SHROUD

Robert L. Allen, Greenwood, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 12, 1968, Ser. No. 783,178
Int. Cl. F01d *5/22*
U.S. Cl. 416—90 15 Claims



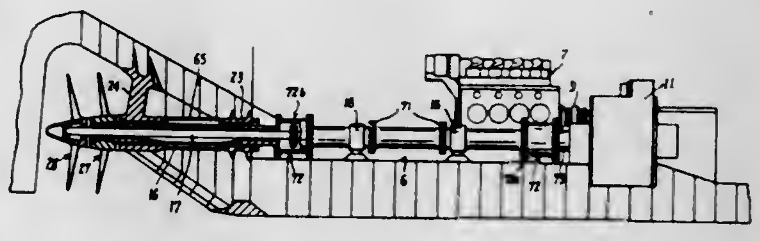
A turbine has air-cooled blades with hollow blade tip shrouds on the blades. The shrouds are defined by inner and outer walls between which air is admitted from a passage extending spanwise of the blades. The inner and outer walls and edges of the shroud have air discharge openings of controlled size and distribution.

3,527,545
CONTRAROTATING PROPELLER DRIVE

George T. R. Campbell and Norman V. Laskey, Montreal, Quebec, Canada, assignors, by mesne assignments, to Algoship International Limited, Nassau, Bahamas, a body corporate of the Bahamas

Original application Feb. 6, 1968, Ser. No. 703,323. Divided and this application Apr. 14, 1969, Ser. No. 815,559

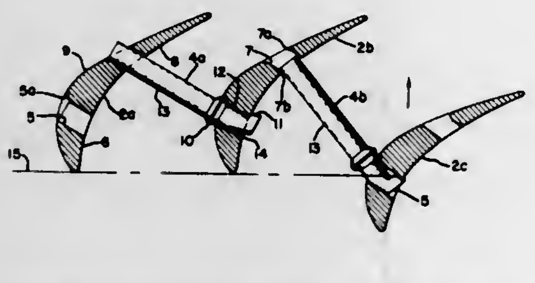
Int. Cl. B63h *5/10*
U.S. Cl. 416—125 4 Claims



A pair of coaxial tail shafts mounted in a stern tube and provided with a pair of coaxial propellers. Intermediate coaxial drive shafts connect the tail shafts to concentric output drive connections of a pair of power-driven reduction gear units. The intermediate drive shafts consist of longitudinal sections which are coupled together, the couplings of the outer drive shaft being movable axially to expose couplings of the inner shaft.

3,527,546
TIE PINS FOR TURBINE BUCKETS

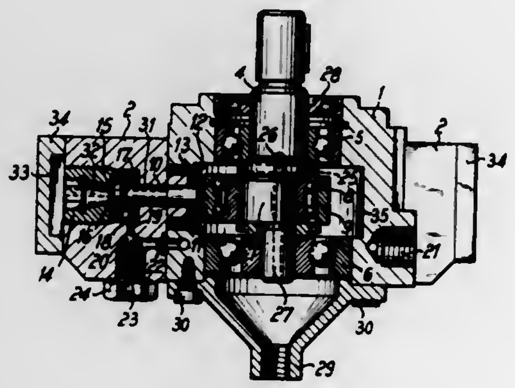
Kenneth P. Zeman, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 2, 1969, Ser. No. 788,538
Int. Cl. F01d *5/10, 5/24*
U.S. Cl. 416—196 **6 Claims**



A turbomachine rotor having buckets with loosely disposed diagonal tie pins connecting adjacent buckets so as to damp out torsional vibration. One end of each tie pin has a tapered hook portion so as to allow easy assembly but providing a locked orientation after final assembly.

3,527,547
RADIAL PISTON PUMP

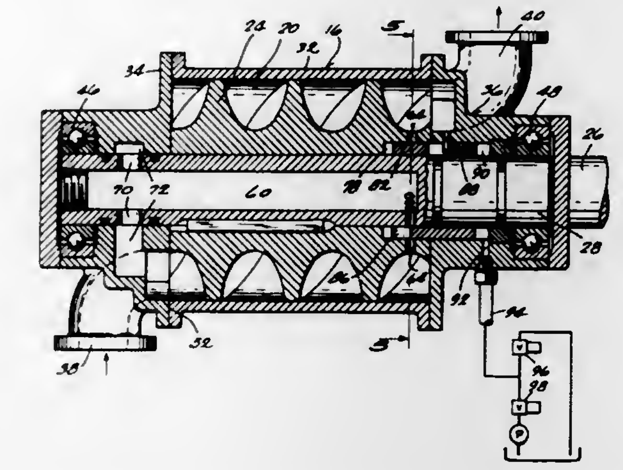
Werner H. Dieter and Horst Kramer, Lohr (Main), Germany, assignors to G. L. Rexroth GmbH, Lohr (Main), Germany
Filed Mar. 13, 1968, Ser. No. 712,718
Claims priority, application Germany, Mar. 15, 1967, R 45,503
Int. Cl. F04b *1/04, 21/02, 23/04*
U.S. Cl. 417—203 **1 Claim**



A self-priming radial piston pump wherein the shaft whose eccentric drives the pistons carries an impeller serving to draw oil from an inlet into a compartment in the housing which accommodates the eccentric. The impeller forces liquid into spaces provided at the outer ends of pistons in the cylinder blocks which are secured to the housing. The pressure of such liquid assists the action of pistons when they perform suction strokes to open the valves in the cylinder blocks and to permit flow of liquid into chambers which supply liquid to the outlets.

3,527,548
SCREW COMPRESSOR WITH CAPACITY CONTROL

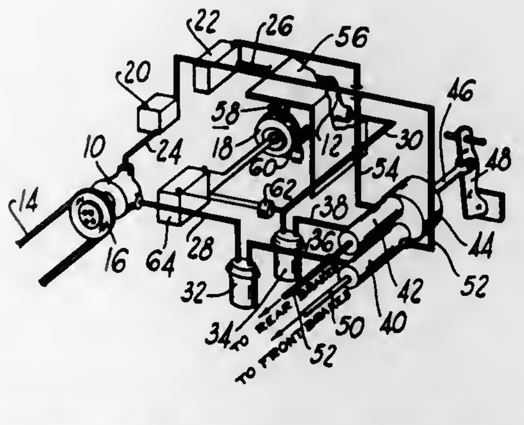
Erich J. Kocher, Milwaukee, and Whitney I. Grant, Muskego, Wis., assignors to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 10, 1969, Ser. No. 815,172
Int. Cl. F04c *29/08, 17/12*
U.S. Cl. 417—310 **10 Claims**



A screw compressor having means for controlling the capacity thereof to variable extents dependent upon the demand and for unloading the compressor during periods of no demand.

3,527,549
MOTOR PUMP SUSPENSION

Charles I. Seward and Deane K. Jenney, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Aug. 29, 1968, Ser. No. 756,244
Int. Cl. F04b *21/00;* **F16f** *15/00;* **H02k** *7/14*
U.S. Cl. 417—363 **2 Claims**

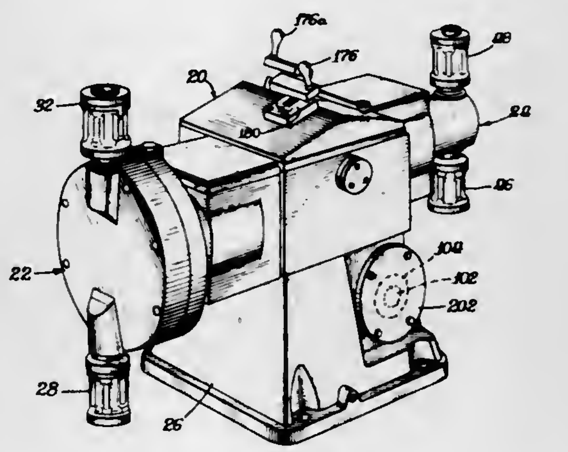


A means to suspend a motor pump having at least two spaced points of attachment to the motor pump with flexible members thereat to absorb vibration and noise of operation.

3,527,550
ADJUSTABLE STROKE RECIPROCATING PUMP

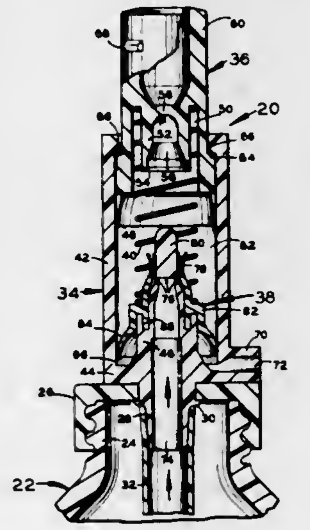
Jac Flynn, Elgin, and Werner K. Priese, Barrington, Ill., assignors to Hills-McCanna Company, Carpentersville, Ill., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 785,903
Int. Cl. F04b *49/00, 43/00*
U.S. Cl. 103—383 **15 Claims**

A controlled volume metering pump utilizing reciprocable pumping means to pump liquids at pumping rates that are precisely accurate even at high pressures and adjustably variable under precise, accurate control from zero to maximum pumping capacity by adjustment of the pumping stroke. The avoidance of force reversals on the pumping mechanism during output strokes is achieved and the capability is afforded for pumping liquid at a volumetric rate that is precisely accurate, even for high output pressures, at all rate settings, including those that are very low in relation to maximum output capacity, by an improved crosshead, adjustable trunnion, and power lever construction that assures movement of the pumping plunger to its maximum forward position for all degrees of adjustment of the pumping stroke thereby affording the additional advantage of avoiding encrustment of pumping plunger slide surfaces even though the pump is operated indefinitely at reduced output rates. Pumping plungers are reciprocated by crossheads driven by an oscillating power lever through trunnions operatively engaging transverse actuating tracks on the respective crossheads and being adjustable along support tracks on the lever that are parallel to the actuating tracks on each crosshead when the power lever is in its corresponding full forward position. A strong, compact, and wear resistant construction is provided by crossheads slidably supported by wear resistant bearings and interleafed between legs of a pivoted power lever interconnected with the crossheads by wear resistant, adjustable trunnion units and oscillated by an underlying slide block orbited in oil in driving engagement with a lower slot in the lever. The load of working force on each trunnion unit is divided into two equal parts and carried by opposite ends of the trunnion unit, which has a medial swivel support on the power lever, with the consequence that bending loads on the parts are eliminated and minimized to advantage.



3,527,551
VALVE SYSTEM FOR PUMP

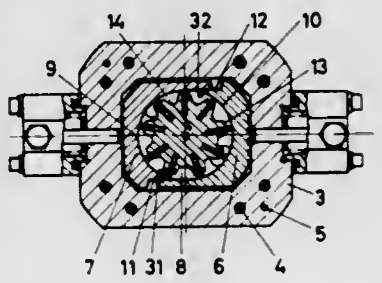
Louis F. Kutik, 8720 SW. 23rd Place 33312, and Erich W. Gronemeyer, 2100 S. Ocean Lane, Apt. 206 33316, both of Fort Lauderdale, Fla.
Filed Aug. 5, 1968, Ser. No. 750,214
Int. Cl. F04b *21/02;* **B67b** *5/40;* **F16k** *17/26*
U.S. Cl. 417—560 **4 Claims**



In a pump for dispensing liquids and semi-liquids from a container as a stream or a spray, a valve unit which includes both an intake valve and an exhaust valve formed as integral parts of the valve unit. The valve unit is mounted in a compartment, and an actuator is depressible to expel fluid from the compartment past the exhaust valve out an outlet passage and returnable to suck fluid through an inlet passage past the intake valve into the compartment. The exhaust valve is a circular yieldable flap having its edge in contact with a circular surface of the compartment, and the intake valve is a yieldable seal normally closing the inlet passage, both the flap and the seal being integral portions of the one-piece valve unit.

3,527,552
ADJUSTABLE ROTARY PUMP WITH PRESSURE RELIEF

Hans Lincks and Hans Muller, Munich, Germany, assignors to Entwicklungsring Sud G.m.b.H., Munich, Germany
Filed Oct. 22, 1968, Ser. No. 769,651
Claims priority, application Germany, Oct. 23, 1967, E 35,001; Oct. 31, 1967, E 35,075; Nov. 30, 1967, E 35,286; Mar. 11, 1968, E 35,943
Int. Cl. F04c *15/02, 1/02, 5/00*
U.S. Cl. 418—24 **11 Claims**

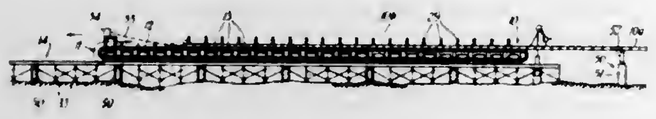


A rotary pump which includes means for varying the size of the intake and discharge zones so as to facilitate adjustment in the delivery flow of the pump. Surrounding the rotor are two concavely shaped adjustable jaws which are positionable relative to each other and to the axis of rotation of the rotor. Relative movement of each of these jaws produces a corresponding change in the volume of the intake and discharge zones. Means are provided for initiating such movement within relatively close tolerances. The pump additionally includes a pressure relief groove which extends along the inner surface of the jaws adjacent the intake zone of the pump. This relief groove serves to provide a means of equalizing the pressure distribution across the impeller blades. In this manner the hammering which such blades subject to the walls defining the pump zones during their transition from high to low pressure zones is minimized.

3,527,553
APPARATUS FOR THE CONSTRUCTION OF ELEVATED WAYS

Felix M. Adler, Woodlands, Birds Hill Road, Oxshott, Surrey, England
Filed Feb. 4, 1969, Ser. No. 796,465
Claims priority, application Great Britain, Feb. 6, 1968, 5,920/68
Int. Cl. E01c *21/00*
U.S. Cl. 94—22 **9 Claims**

The invention is concerned with a method of forming an elevated structure, for instance a motor way, continuously, and the apparatus for carrying out this method. The apparatus comprises a material supporting member mounted on and supported by a movable member which is movable beneath and relative to the material support member and in that the material supporting member has an upper surface which is stationary relative to the material which it supports and which is continuously and endlessly extensible in the direction of movement of the movable member and continuously removable from the hardened material at the trailing end of the apparatus. The point at which the hardenable material is laid on the support



member is stationary relative to the movable member and moves forwardly relative to the support member. This facilitates the continuous laying of the hardenable material in a fluid state although the process can be carried out step-wise.

3,527,554
FEED SUPPORTS FOR MINK CAGES

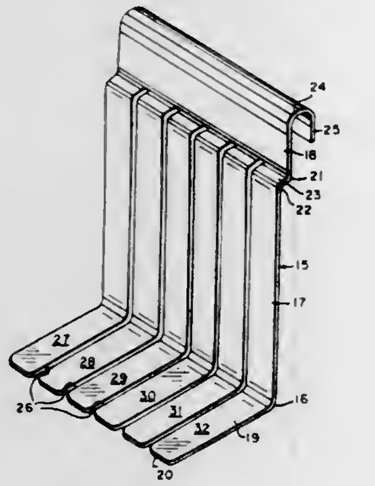
Fritz Peterson, 27703 Fraser Highway, R.R. 2, Aldergrove, British Columbia, Canada

Filed Oct. 11, 1968, Ser. No. 766,689

Claims priority, application Canada, Aug. 29, 1968, 028,754

Int. Cl. A01k *5/00*

U.S. Cl. 119—18 **7 Claims**



Disclosed is a feed support for a mesh wire cage, such as a mink cage, comprising an L-shaped sheet including a normally horizontal table portion and a normally vertical hanger portion having an upper margin providing a handle, the hanger portion being bent to provide a laterally offset portion subjacent the handle. In order to permit insertion in and removal of the feed support from a mesh wire cage, the feed support is provided with parallel slits extending from the forward edge of the tray portion through the hanger portion and laterally offset portion, the slits being spaced to match the spacing of the mesh wire of the cage and the presence of the slits in the laterally offset portion permitting insertion of the feed support either at the cage top or at any one of a number of elevations at the side of the cage.

3,527,555
BREATHING APPARATUS

Peter Schreiber, Doylestown, Pa., assignor to Otto Heinrich Drager, Lubeck, Germany

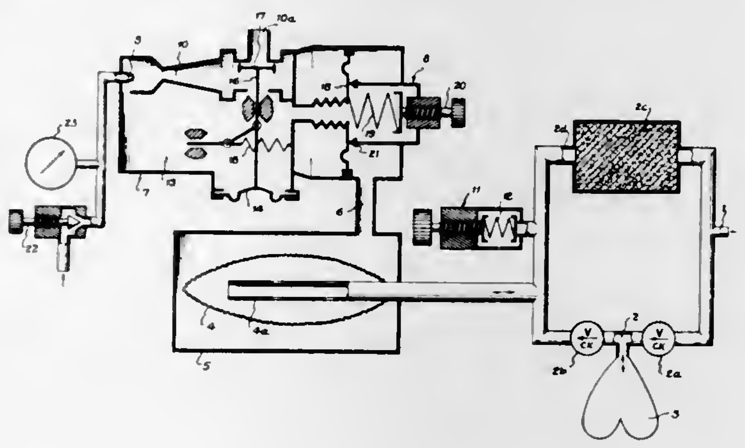
Filed July 12, 1967, Ser. No. 652,851

Claims priority, application Germany, July 22, 1966, D 50,655

The portion of the term of the patent subsequent to Aug. 13, 1985, has been disclaimed

Int. Cl. A61n *16/00, 17/00*

U.S. Cl. 128—145.8 **4 Claims**



In a closed breathing system using a breathing bag and gas pressure supply means for producing alternately greater than and less than atmospheric pressures on the bag, a gas pressure adjusting valve is used for blocking the flow of gas between the supply means and the bag until a predetermined pressure has been reached.

CHEMICAL

3,527,556
DYEING POLYESTER SUTURES WITH INDIGO AND THE COATING OF THE DYED SUTURES

Herbert Joseph Riley, New Milford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Dec. 8, 1966, Ser. No. 600,029

Int. Cl. D06p *5/16*

U.S. Cl. 8—17 **4 Claims**

Surgical sutures of poly (glycol terephthalate) are dyed with natural or synthetic indigo, at about the boil, in an aqueous bath between about pH 4 and 6 in the presence of sufficient sodium ion and sodium hydrosulfite to transform the indigo into the yellow sodium leuco form, followed by oxidizing the indigo to its blue form. Releucoing and silicone coating may be used.

3,527,557
BASIC DYE ACCEPTANCE OF ACRYLONITRILE-POLYMER CONTAINING FIBERS

Dudley W. Cheape, Jr., and Ernest F. Stroh, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,560

Int. Cl. D06m *11/00;* **D06p** *5/04*

U.S. Cl. 8—100 **4 Claims**

Basic dye acceptance of acrylonitrile-polymer containing fibers is improved by contacting the fiber with and reacting thereon an aqueous solution comprised of a phosphate ester and a substituted carbamyl compound. The reaction product formed on the fiber is water-insoluble and improves the basic dyeing of acrylic fibers.

3,527,558
PROCESS FOR TREATING CELLULOSIC TEXTILES

Charles Tomasino and Ray S. Smith, Greensboro, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

No Drawing. Filed Jan. 18, 1966, Ser. No. 521,443

Int. Cl. D06m *13/34*

U.S. Cl. 8—116.2 **2 Claims**

A process for imparting durable press effects to cellulosic-containing fabrics and especially garments with a curable resin in which a curing agent is used which is catalytically inactive in the dry unhydrolyzed state, the fabric being heated to effect the cure while initially moist enough to hydrolyze the curing agent and liberate a strong acid catalyst but being dried during the process and the catalyst reverting to inactive curing agent on return to ambient conditions. The curing agent is a hydrolyzable amine or imine salt of the strong acid catalyst.

3,527,559
DENSE AQUEOUS AEROSOL FOAM DEPILATORY COMPOSITIONS CONTAINING A MIXTURE OF ALKALINE METAL AND ALKALI METAL THIOGLYCOLATES AND A FATTY ALCOHOL-ALKYLENE OXIDE WAX EMULSIFYING AGENT

Robert A. Sliwinski, Elgin, Ill., assignor to Standard Pharmacal Corporation, Elgin, Ill., a corporation of Illinois

No Drawing. Filed Jan. 5, 1967, Ser. No. 607,398

Int. Cl. A61k *7/14*

U.S. Cl. 8—161 **6 Claims**

An aqueous formulation of an alkaline earth metal thioglycolate and an alkali metal thioglycolate with a fatty alcohol-alkylene oxide wax which, in combination with a volatile liquid propellant, forms an aerosol foam of relatively high density which is effective as a depilatory.

3,527,560
COMPOSITION OF SODIUM CHLORIDE, POTASSIUM CHLORIDE, OR MIXTURES THEREOF, CONTAINING ANTI-CAKING ADDITIVE OF IRON CYANIDE COMPLEX AND ALCOHOL

Glen E. Binsley, Marysville, Mich., assignor to Diamond Crystal Salt Company, St. Clair, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 506,599, Nov. 5, 1965. Application Ser. No. 740,398, Mar. 14, 1968, is a division of said continuation-in-part. This application June 3, 1968, Ser. No. 733,813

Int. Cl. C01d *3/04;* **C09k** *3/18*

U.S. Cl. 23—89 **16 Claims**

A particulated salt composition including an anti-caking additive solution containing a water soluble iron cyanide complex and an alcohol, preferably for example sodium ferrocyanide (YPS) and glycerine.

3,527,561
PROCESS FOR PRODUCING CHLORIDES OF CHROMIUM AND IRON FROM CHROME ORE

Tagayasu Uno, Shiga-ken, and Hiromitsu Kiyata, Chigasaki-shi, Japan, assignors to Kiyoshi Miyazaki, Tokyo, Japan

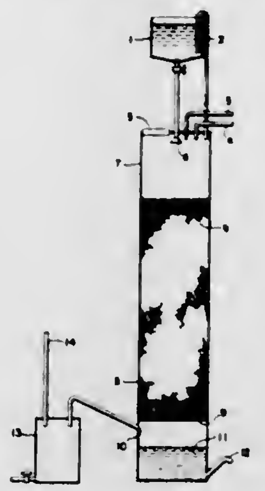
Filed Feb. 1, 1968, Ser. No. 702,352

Claims priority, application Japan, Feb. 4, 1967, 42/6,889

Int. Cl. C01g *37/04, 49/10*

U.S. Cl. 23—87 **2 Claims**

A process for producing chlorides of chromium and iron from chrome ore which comprises the steps of quenching a melt of chromium and iron obtained by fusing and reducing chrome ore together with fluxes and carbon into the form of metal pellets in shot form, packing a reaction column with the pellets, airtightly enclosing the upper portion of the reaction column, flowing hydrochloric acid downward from the top of the column which is kept at an elevated temperature and under pressure with or without simultaneous introduction of hydrogen chloride gas from the top of the column, and collecting the metal pellets in shot form as a mixed solution of chromic chloride and ferrous chloride and, at the same time, exhausting the waste gas from the bottom of the reaction column.



3,527,562
PROCESS AND APPARATUS FOR THE PRODUCTION OF SUPERPHOSPHORIC ACID

Marco Olper, Siracusa, Italy, assignor to SINCAT—Societa Industriale Catanese S.p.A., Palermo, Italy

Continuation of application Ser. No. 559,130, June 21, 1966. This application Aug. 13, 1969, Ser. No. 850,344

Claims priority, application Italy, June 18, 1965, 13,716/65

Int. Cl. C10b *25/24*

U.S. Cl. 23—165 **5 Claims**

A process for the preparation of superphosphoric acid by direct heat exchange, comprising establishing an ascending stream of gaseous drying medium of upwardly decreasing velocity and temperature; introducing an aqueous solution of orthophosphoric acid into the said gaseous stream at a zone thereof of relatively high tempearture, whereby said aqueous solution of orthophosphoric acid is subdivided into a state of minute droplets, which droplets are progressively upwardly carried by the gaseous stream into zones of decreasing velocity and temperature until upward movement thereof ceases and there is formed a static dimensionally-stable fluidized bed of aqueous orthophosphoric acid droplets dehydrating to superphosphoric acid, at which level dehydration continues to the desired extent and such that the further dehydrated droplets comprising superphosphoric acid are again carried upwardly by the gaseous stream to a progressively higher level; and thence separating the gaseous stream and the droplets comprised of superphosphoric acid exhibiting the desired degree of concentration.

3,527,563
PROCESS FOR PREPARING SILICA GEL GRANULES

Dunbar L. Shanklin, 12 Everett Ave., Winchester, Mass. 01890

No Drawing. Original application Apr. 19, 1965, Ser. No. 449,325, now Patent No. 3,350,244, dated Oct. 31, 1967. Divided and this application May 1, 1967, Ser. No. 645,086

Int. Cl. C01b *33/18*

U.S. Cl. 23—182 **4 Claims**

A process for producing porous and regularly shaped silica gel by reacting a finely divided ammonium salt with regularly shaped granules of an alkali metal metasilicate hydrate at a temperature below 110° F. The reaction is carried out in the absence of more than about one percent added water.

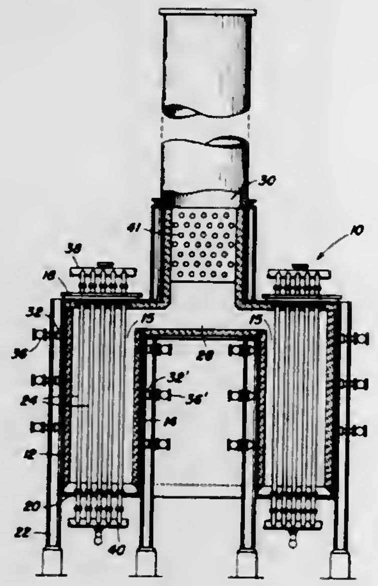
3,527,564
PROCESS FOR CARBONIZING FIBROUS MATERIALS

Donald R. Moore, Rutherford, and Stanley E. Ross, Passaic, N.J., and Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 15, 1968, Ser. No. 721,145
Int. Cl. C01b *31/07*
U.S. Cl. 23—209.5 15 Claims

A process for improving the thermal carbonization of carbon-containing substrates comprising treating said substrates prior to carbonization with at least a catalytic amount of a catalyst selected from esters of phosphoric acid, esters of phosphorothioic acid, phosphoramidic acids, alkylphosphoramidic acids, alkylphosphonic acids alkylphosphonothionic acids, and phosphonitrile amide derivatives, and heating said treated substrates until a carbonized product having a carbon content of at least 50% by weight carbon is produced.

3,527,565
STEAM REFORMING OF CARBON MONOXIDE RICH HYDROCARBON FEEDS

Ira N. Banchik, Brooklyn, and Morgan C. Sze, Garden City, N.Y., and Maldwin J. Maddock, Elizabeth, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,021
Int. Cl. C01b *1/16*
U.S. Cl. 23—212 3 Claims

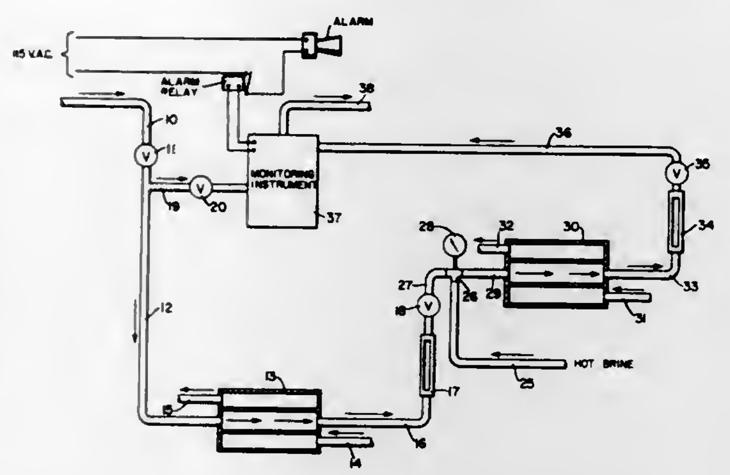


A process and apparatus for steam reforming a hydrocarbon feed, rich in carbon monoxide wherein the feed is rapidly preheated to a temperature of above about 1300° F., in the absence of a reforming catalyst, and then heated in the presence of a reforming catalyst to produce a hydrogen containing effluent. The preheating is effected in the radiant heating section of a reformer furnace, by providing the upper portion of the tubes of the radiant heating section with a plug to increase the mass velocity of the feed flowing therethrough and thereby increase the heat transfer rate.

3,527,566
PROCESS AND APPARATUS FOR MONITORING CALCIUM CONTENT OF BRINE TO ELECTROLYTIC CELLS

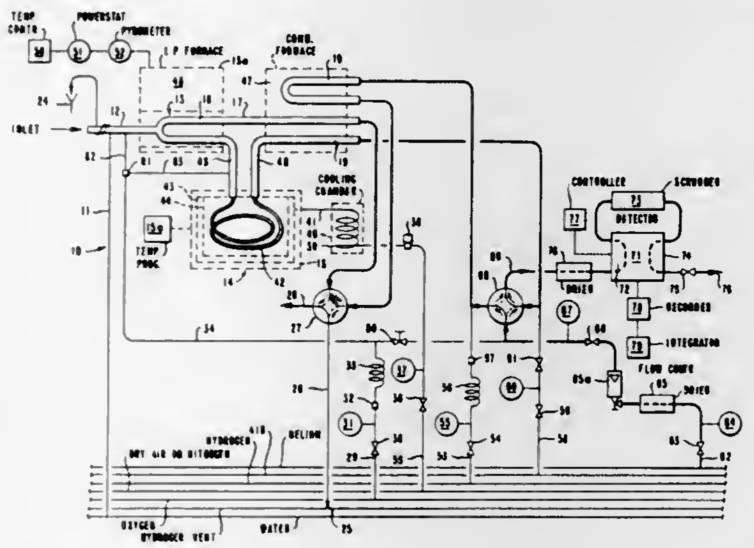
Clarence I. Glassbrook, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Mar. 31, 1966, Ser. No. 539,108
Int. Cl. B01k *3/00;* **G01n** *31/22, 33/18*
U.S. Cl. 23—230 11 Claims

Process for monitoring the calcium content of an aqueous solution of sodium chloride without precipitating any of the sodium chloride by continuously controlling the flow rate of zero-hardness water to a mixing means supplied with a continuous source of saturated aqueous brine solution and continuously controlling the flow rate of the resulting mixture of saturated aqueous brine solution and zero-hardness water at a flow rate greater than said flow rate of zero-hardness water and analyzing the resulting mixture for calcium content.



3,527,567
ANALYTICAL DISTILLATION BY GAS CHROMATOGRAPHY

Larry E. Philyaw, Austin, and Milburn J. O'Neal, Jr., Pasadena, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,075
Int. Cl. B01d *15/08;* **G01n** *31/08*
U.S. Cl. 23—230 10 Claims



A gas-liquid chromatographic method and apparatus for analyzing organic samples containing both volatile and non-volatile materials. The sample desired to be analyzed is passed through an injection port and into a gas-liquid chromatograph column. The temperature of the port is set so as to flash any volatile materials within the sample. The flashed material is analyzed by temperature-programming of the column. If any residue remains in the column or the port, the port and column are back-flushed. The inlet port temperature is increased and oxygen is introduced in order to oxidize the heavy residue of the sample to carbon dioxide. After combustion, the excess oxygen is removed and the remaining carbon dioxide is detected, thereby measuring the non-volatile residue of the sample.

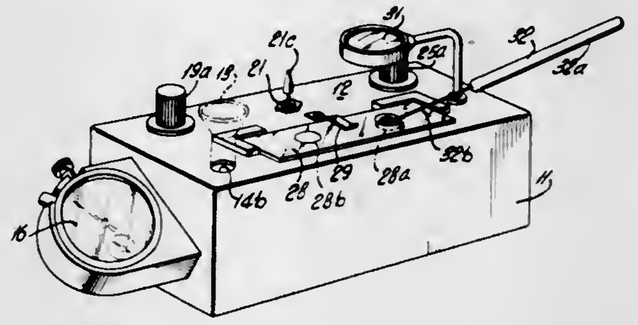
3,527,568
PROCESS FOR THE PREPARATION OF LACTAMS

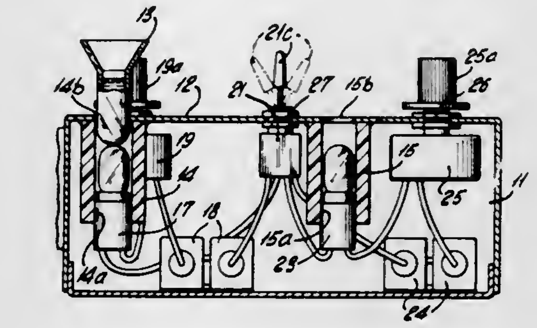
Otto Immel and Hermann Schnell, Krefeld-Uerdingen, and Hans Helmut Schwarz and Manfred Mansmann, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,325
Claims priority, application Germany, Dec. 16, 1966, F 50,974
Int. Cl. C07d *41/06*
U.S. Cl. 260—239.3 11 Claims

The invention relates to a process for the production of lactams by catalytic rearrangement of cycloketoximes in the gaseous phase using as a catalyst a composition consisting of a mixture of boron trioxide or boric acid with a sulfate, a sulfite or a phosphate of an element of the second main group of the Periodic Table. The lactams are obtained in higher yields than with known processes.

3,527,569
PROTHROMBIN TIMER

Morris Mass, Kew Gardens, N.Y., assignor to Haematronics, Inc., New Rochelle, N.Y., a corporation of New York
Filed Oct. 6, 1967, Ser. No. 673,511
Int. Cl. G01n *33/16, 11/00*
U.S. Cl. 23—253 4 Claims

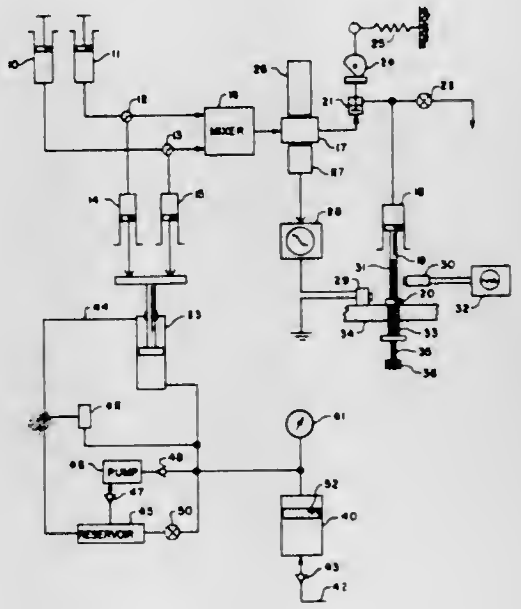




Includes first and second channels each having a first end opening in a housing and a second end opening in a principal surface of the housing. The second end opening of each of the first and second channels is adapted to accommodate a receptacle for blood and reagent. A timer is on the housing. A heater is in the housing at the first end of the first channel and a light is in the housing at the first end of the second channel. Low voltage batteries energize the heater and the light and a first variable resistor is connected in a first circuit portion in the housing with the heater and the batteries for varying the magnitude of electrical energy supplied to the heater and a second variable resistor is connected in a second circuit portion in the housing with the light and the batteries for varying the magnitude of electrical energy supplied to the light. A switch is connected in the first and second circuit portions and selectively energizes and deenergizes the heater and the light.

3,527,570
STOPPED FLOW REACTION KINETIC SYSTEM

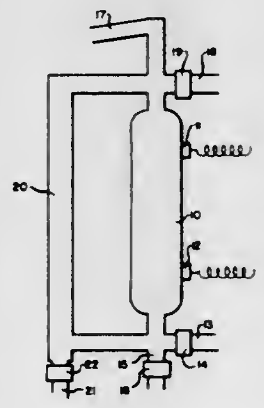
Harry A. Penhasi, Cupertino, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 19, 1968, Ser. No. 706,351
Int. Cl. G01n *21/24*
U.S. Cl. 23—253 7 Claims



A stopped flow reaction kinetic system employing a hydro-pneumatic drive against reaction drive cylinders for forcing reactants stored therein under substantially uniform pressure through a mixer the outlet port of which is connected to an observation cell. An outlet port of said cell is connected through a normally closed valve to a stopping cylinder. Upon the valve being opened, reactants from the drive cylinders flow through the mixer and cell until the piston of the stopping cylinder is forced against a preset stop. In that manner, the system remains pressurized at all times at a substantially uniform level.

3,527,571
CONDUCTIVITY SYSTEMS

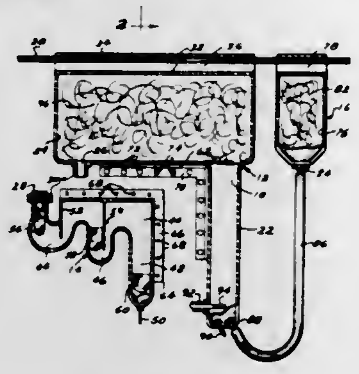
Edmond D. Neuberger, Mount Lebanon Township, Allegheny County, and Hubert M. Rivers, Upper Saint Clair Township, Allegheny County, Pa., assignors to Calgon Corporation, a corporation of Delaware
Filed July 23, 1968, Ser. No. 746,794
Int. Cl. B01k *3/00*
U.S. Cl. 23—253 8 Claims



A conductivity system having a main cell chamber and a by-pass connected at top and bottom, an inlet to the chamber, a pair of spaced outlets and an overflow and a fluid neutralizing agent inlet into the by-pass whereby a sample in the chamber may be neutralized.

3,527,572
APPARATUS FOR TREATING BLOOD

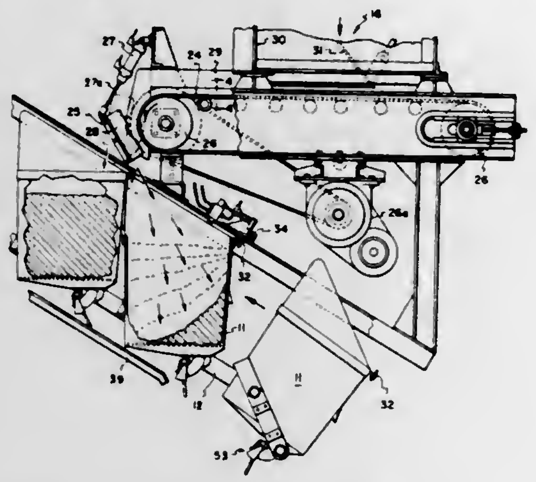
A. Edward Urkiewicz, Box 188, Wakefield, Mass. 01880
Filed Oct. 11, 1965, Ser. No. 513,607
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. A61m *1/03*
U.S. Cl. 23—258.5 **10 Claims**



An extracorporeal oxygenating device for temporarily assuming the function of the lungs during cardiac and related surgery made up of at least two peripherally sealed flexible plastic envelopes within which chambers are formed for oxygenating, defoaming, filtering and reservoiring blood along a passageway extending through the envelopes. The envelopes are detachably fastened together along an edge of each and a disconnectable coupler interconnects the chambers of one envelope with the chambers of the other envelope to form the blood conditioning passageway. The passageway has inlets for oxygen and blood in one envelope and an outlet for reservoired oxygenated blood in the other envelope.

3,527,573
WASHING APPARATUS FOR FINELY DIVIDED MATERIALS

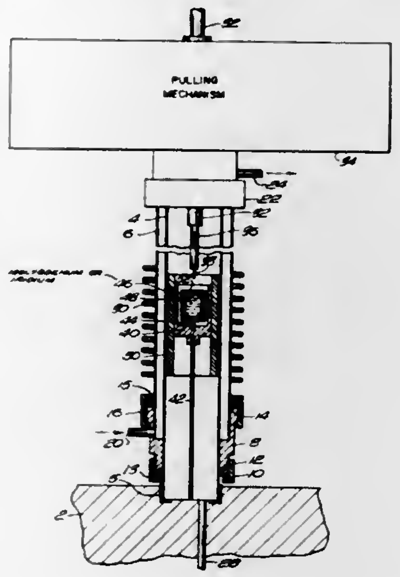
Robert C. Emmett, Jr., East Dundee, Ill., Robert B. Thompson and Willi A. Wegener, Salt Lake City, Utah, and Leo M. Abell, Morenci, Ariz., assignors to Envirotech Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Feb. 1, 1967, Ser. No. 613,147
Int. Cl. B01d *11/02*
U.S. Cl. 23—270 **6 Claims**



Apparatus for counter-current wash of particulate solids including a plurality of false bottomed pans arranged as an upwardly inclined endless conveyor. Pan movement actuates a feed distributor to fill successive pans with a level bed of solids. Each pan passes successively through a plurality of wash-drain stages. At each stage a wash distributor controlled by pan movement applies liquid to the surface of the bed of solids in the pans. Pan movement also controls a drainage valve on each pan and the controls are arranged so that at each stage the solids are submerged before draining. Liquid drained from the pans gravity flows through a launder system to the next lower stage. The sprocket driving the pans is formed from a series of flat plates.

3,527,574
GROWTH OF SAPPHIRE FILAMENTS

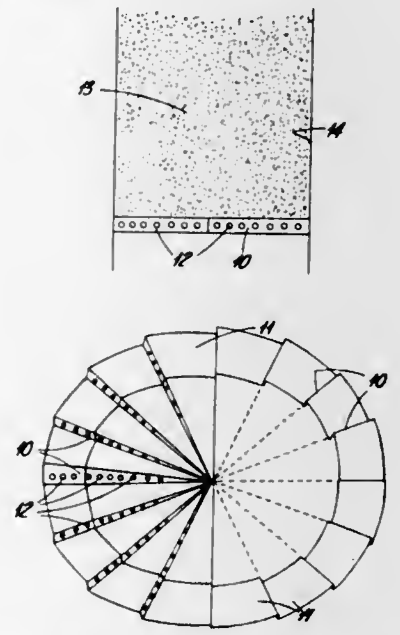
Harold E. La Belle, Jr., Billerica, Mass., assignor to Tyco Laboratories, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Sept. 27, 1966, Ser. No. 582,420
Int. Cl. B01j *17/18*
U.S. Cl. 23—273 **12 Claims**



Method and apparatus for growing elongate filaments of alpha-alumina from an alumina melt contained in a crucible. The invention comprises use of a floating plate to help establish the necessary thermal distribution in the melt, with the plate having an aperture through which a seed is introduced to the melt and the filament is pulled. The plate is made of a material that reduces radiative heat loss from the melt surface.

3,527,575
DISTRIBUTORS OF FLUIDIZING MEDIA FOR FLUIDIZED BEDS

Brian Hoyle Thompsón, Solihull, England, assignor to The Gas Council, London, England, a British body corporate
Filed Mar. 24, 1967, Ser. No. 625,875
Claims priority, application Great Britain, May 31, 1966, 14,290/66
Int. Cl. B01j *9/18*
U.S. Cl. 23—284 **7 Claims**



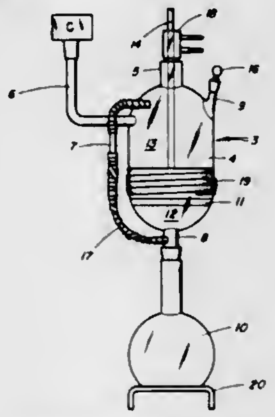
Apparatus for use in producing a fluidized bed of solid particles, which apparatus comprises a chamber for the particles to be fluidized, said chamber having a floor of multi-stepped formation with apertures for the passage of the fluidizing medium in the step risers.

Preferably, the steps radiate from a common centre or are arranged around an annulus.

In use, the particles are swept off the treads and a swirling motion imparted to them. The apertures do not become blocked when the bed slumps.

3,527,576
EXTRACTION-CRYSTALLIZATION METHOD

Lloyd A. Kaplan, Silver Spring, and Joshua D. Upton, Jr., Beltsville, Md., assignors to the United States of America as represented by the Secretary of the Navy
Original application Sept. 9, 1966, Ser. No. 579,184, now Patent No. 3,420,746, dated Jan. 7, 1969. Divided and this application June 11, 1968, Ser. No. 751,641
Int. Cl. B01d *3/00, 9/02, 11/02*
U.S. Cl. 23—299 **2 Claims**



A method for recrystallizing and purifying compounds which have limited solubility in hot solvents wherein an extractor having a condenser and a stirrer is divided into two chambers by a sintered disc. A distillation flask is mounted below the extractor. The extractor and flask are in fluid flow relationship by the means of two tubes one connected above and one connected below the extractor disc. The material to be extracted is placed on the disc and solvent is distilled from the flask into the extractor and condensed on the disc. The solvent and the dissolved material flow through the disc into the distillation flask and this operation is continued until crystalline solid appears in the solvent in the flask.

3,527,577
MAGNETO-OPTICAL MATERIALS

George J. Fan, Ossining, and Thomas R. McGuire and Merrill W. Shafer, Yorktown Heights, N.Y., and Bernell E. Argyle, North Haven, Conn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 3, 1968, Ser. No. 726,282
Int. Cl. C01g *53/08;* **G02f** *1/22;* **H01f** *1/00*
U.S. Cl. 23—315 **14 Claims**

When part of the nickel of $RbNiF_3$ is replaced by cobalt, manganese, iron, cadmium, zinc, strontium or cobalt mixed with calcium, or with calcium and iron, the hexagonal structure and ferromagnetic order of $RbNiF_3$ are maintained, but the easy axis of magnetization is rotated from being perpendicular to the optic axis to being parallel to it. Such rotation allows the new composition to be highly suited as a magneto-optic modulator of light or as a memory element.

3,527,578
PRODUCTION OF URANIUM-NITROGEN COMPOUNDS

Yumi Akimoto, Omiya-shi, Japan, assignor to Mitsubishi Kinzoku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
No Drawing. Filed Sept. 28, 1967, Ser. No. 671,215
Claims priority, application Japan, Oct. 6, 1966, 41/65,578
Int. Cl. C01g *43/00*
U.S. Cl. 23—347 **8 Claims**

A process for producing, by use of uranium carbide material as a starting material, uranium nitrides and/or uranium nitride-carbides without a metal uranium process step, in which the uranium carbide material is heated and caused to undergo contact reaction with dried ammonia thereby to separate and remove all or a part of the carbon content in the uranium carbide material as a hydrocarbon gas, and the resulting product of the ammonia reaction is further heat-treated.

3,527,579
ELECTROPLATED PREFORMED POLYMERIC ARTICLES OF MANUFACTURE

Martin R. Cines, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 19, 1967, Ser. No. 610,226
Int. Cl. B32b *15/08;* **C23c** *3/02;* **B44d** *1/16*
U.S. Cl. 29—195 **4 Claims**

Aliphatic 1-olefins are polymerized with sufficient quantities of a diolefin so that at least 2 trans-internal double bonds per 1,000 carbon atoms exist in the resulting polymer. The resulting polymer can be preplated with conventional electroless plating techniques presently being used for acrylonitrile-butadiene-styrene resins and then electroplated by conventional electrolytic techniques to produce new metallic-plated plastic products.

3,527,580
CHARCOAL BRIQUETTE AND MANUFACTURE THEREOF

Russell W. Bonlie, 4360 Philomath Road, Corvallis, Oreg. 97330
Filed Mar. 6, 1967, Ser. No. 620,970
Int. Cl. C10l *5/06, 5/32*
U.S. Cl. 44—11 **16 Claims**

Charcoal briquettes are coated with a fibrous material, e.g. paper pulp impregnated with an oxidant for enhancing their ignition and ease of handling. The pulp and oxidant mixture may be sprayed onto individual pressed briquettes, or applied thereto in the form of paper mat impregnated with oxidant and pressed onto the briquettes.

3,527,581
MICROEMULSIONS OF WATER IN HYDROCARBON FUEL FOR ENGINES

Darrell W. Brownawell, Scotch Plains, and Max L. Robbins, South Orange, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 305,859, Aug. 30, 1963. This application Oct. 17, 1966, Ser. No. 586,978
The portion of the term of the patent subsequent to Oct. 18, 1983, has been disclaimed
Int. Cl. C10l *1/22*
U.S. Cl. 44—51 **9 Claims**

A fuel composition that is capable of improving the operating efficiency of an internal combustion engine comprises a hydrocarbon fuel whose boiling range is within the limits of 70° to 600° F., such as gasoline, diesel fuel or jet fuel, in which 1 to 30 wt. percent of water has been dispersed as a microemulsion wherein the size of the droplets of water does not exceed about 400 A. The microemulsion is formed by using a surfactant that comprises a mixture of at least two components, one of which is predominantly hydrocarbon soluble and the other is predominantly water soluble and the surfactant mixture is so balanced that the interfacial tension between the hydrocarbon and water phases is at least substantially zero. The balanced surfactant mixture is exemplified by a mixture of a fatty acid, an alkyl phenol and an alkylene polyamine or an alkanolamine. It is also exemplified by a mixture of alkyl phenyl polyethoxy alkanols.

3,527,582
REVERSIBLE GELATIN OF LIQUID HYDROCARBON FUELS

Daniel H. Haigh, Beaverton, and Richard H. Hall and William E. Cohrs, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 26, 1967, Ser. No. 641,450
Int. Cl. C10l *1/10*
U.S. Cl. 44—56 **4 Claims**

The method concerns converting a gelled or thickened normally liquid hydrocarbon fuel into an easily pumpable liquid fuel by intimately incorporating therewith an effective amount of a polar compound, the fuel containing as a gelling or thickening agent a crosslinked latex polymer of an alkylstyrene. The method is useful for reducing aircraft fire hazards due to fuel tank rupture and ignition.

3,527,583
MOTOR FUEL MULTIPURPOSE AGENTS

Helen I. Thayer, Oakmont, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,838
Int. Cl. C10l *1/26*
U.S. Cl. 44—58 **5 Claims**

The mixture and reaction product of lecithin and certain 1,2-disubstituted imidazolines are useful as gasoline antiwear and antifilter-clogging agents.

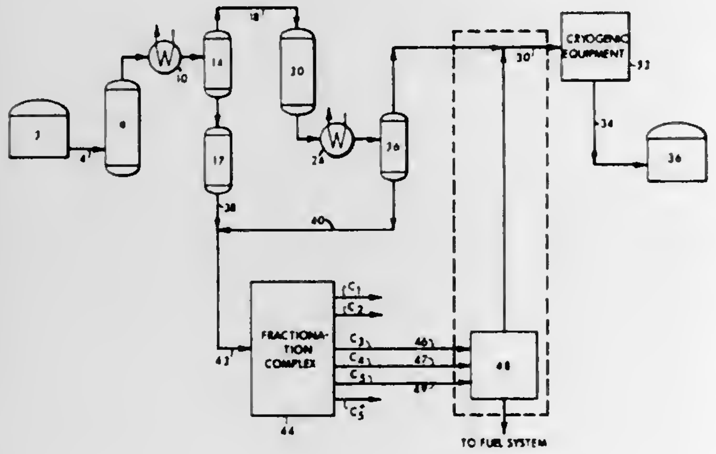
3,527,584
MOTOR FUEL MULTIPURPOSE AGENTS

Helen I. Thayer, Oakmont, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,839
Int. Cl. C10l *1/26*
U.S. Cl. 44—58 **4 Claims**

Motor fuel multipurpose additives comprising ethoxylated or propoxylated 1,2,4- or 1,2,5-trisubstituted imidazolines or the mixtures of lecithin with said imidazolines or the reaction product of lecithin with said imidazolines.

3,527,585
METHOD AND APPARATUS FOR THE CONTROL OF THE HEATING VALUE OF NATURAL GAS

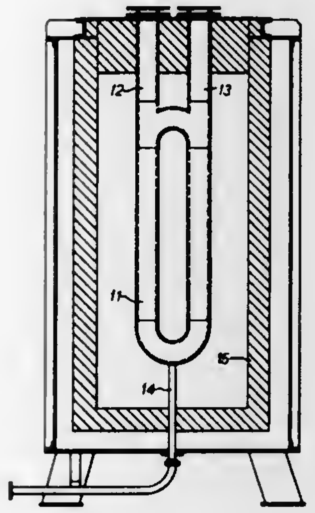
Gerald M. Ungerleider, Succasunna, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 1, 1967, Ser. No. 687,345
Int. Cl. F25j *3/00*
U.S. Cl. 48—196 **8 Claims**



Automatic control of the heating value and composition of a liquefied natural gas product derived from a natural gas and a condensate feed comprising light hydrocarbons produced with the natural gas and existing as liquid at pipeline transmission pressures. These light hydrocarbon streams which enter the plant as part of the feed are fractionally distilled and are then automatically added in desired quantities to the natural gas at a point just prior to liquefaction.

3,527,586
PRODUCTION OF FUEL GAS

Cecil G. Pettit, Smethwick, England, assignor to Wellman Incandescent Furnace Company Limited, a British company
Filed Nov. 3, 1966, Ser. No. 591,770
Claims priority, application Great Britain, Nov. 3, 1965, 46,670/65
Int. Cl. C01b *2/14*
U.S. Cl. 48—214 **6 Claims**

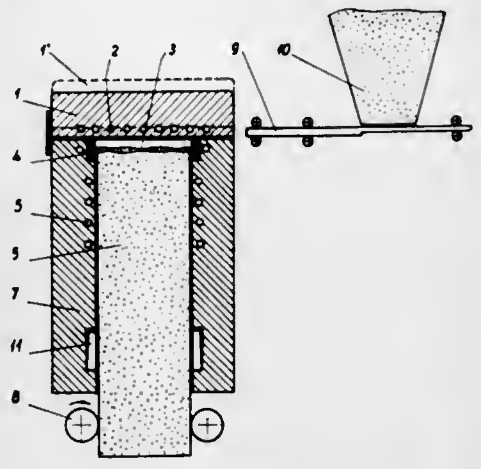


Process and apparatus for the production of fuel gases from a hydrocarbon feed which comprises introducing the hydrocarbon feedstock and steam into a loop reactor such that the mean number of circulations of the material fed to the reactor is in the range of from about 1 to about 6. The parameters of the reactor, e.g. loop length and cross-section, injection velocities, are such that the mean residence time of the material fed to the reactor is at least about 0.5 second. The reaction temperatures employed to effect the chemical conversion of the feedstock to a fuel gas are in the range of up to about 900° C.

3,527,587
METHOD AND APPARATUS FOR THE CONTINUOUS PRODUCTION OF FOAM GLASS

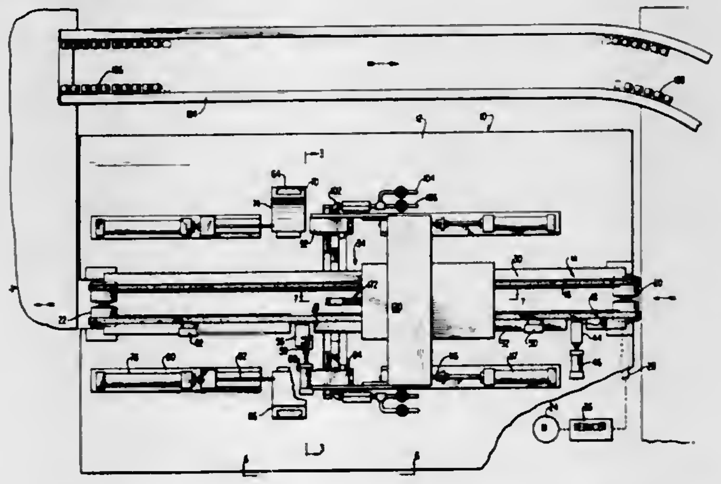
Dimiter Spassov Velev, Russe, and Svetlan Zivkov Batchvarov, Sofia, Bulgaria, assignors to Nautschno-Izsledovatelski Sektor Pri Vlmess, Russe, Bulgaria
Filed Apr. 7, 1966, Ser. No. 562,008
Claims priority, application Bulgaria, Apr. 8, 1965, 4,878
Int. Cl. C03b *19/08*
U.S. Cl. 65—22 **6 Claims**

A method and apparatus for continuously manufacturing foam glass, comprising an upright shaft kiln into the upper portion of which there are periodically introduced charges which are spread in layers on previously deposited, still hot and already foamed charges, so that each charge as it is introduced is foamed, adheres to the immediately preceding charge and consequently forms therewith an elongated one-piece column of foam glass which solidifies and continuously increases in length. The thus formed column is simultaneously withdrawn from a lower portion of the shaft kiln at a rate which maintains the length of the solidified column within the shaft kiln substantially constant. The column is stabilized, annealed and cooled as it progresses downwardly through the shaft kiln.



3,527,588
BEADING MACHINE

Howard H. Aiken, Fort Lauderdale, Fla., and Allan I. Parvin, Clifton, Charles M. Taitel, Lake Hiawatha, Theodor Festner, Upper Saddle River, Seymour Janowsky, Clifton, and Harold Skurnik, Bloomfield, N.J., assignors to Aiken Industries, Inc., Leonardtown, Md., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 690,824
Int. Cl. C03b *23/14*
U.S. Cl. 65—154 **12 Claims**

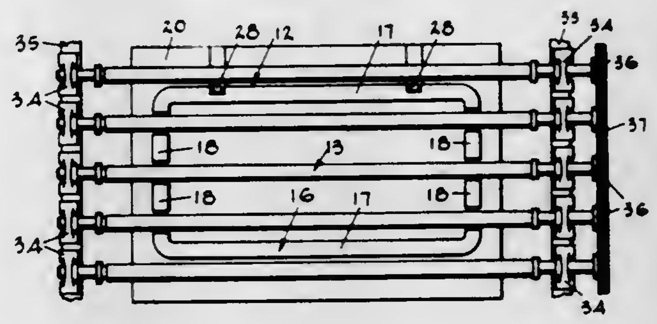


A beading machine automatically applies glass beads to electron guns. In the machine a conveyor moves a succession of electron gun assemblies which have been clamped on jigs to and through a beading station. The jigs are stopped and the guns aligned and referenced at the beading station. Glass feed magazines on each side of the beading station supply glass beads which are fed from the magazines to bead holders underneath gas burners. On movement of a jig and clamped gun electrodes to the beading station, glass is fed to the bead holders, the burners ignited, the beads softened by heat and a bead holder drive mechanism moves the beads into contact with lugs on the electrodes. The entire machine has fully automatic controls.

3,527,589
SHEET SHAPING AND CONVEYING APPARATUS

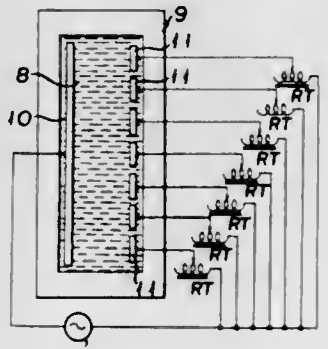
George F. Ritter, Jr., Toledo, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Feb. 13, 1967, Ser. No. 615,803
Int. Cl. C03b *23/02*
U.S. Cl. 65—289 **3 Claims**

Sheet supporting and conveying apparatus comprising a plurality of conveyor rolls, each including an inner driven shaft and an outer load supporting sleeve rotatable on said shaft and coupled thereto by a torsion spring so that when the supporting sleeve is stopped the inner shaft can continue to rotate, thereby allowing a sheet to be removed from the conveyor roll without surface damage due to relative movement between it and the roll.



3,527,590
APPARATUS FOR MELTING GLASS

Eizo Goto, Chigasaki-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Apr. 20, 1967, Ser. No. 632,381
Claims priority, application Japan, Apr. 25, 1966, 41/25,899; May 4, 1966, 41/27,954; May 31, 1966, 41/34,701; Aug. 17, 1966, 41/53,664; Aug. 31, 1966, 41/57,223; Oct. 29, 1966, 41/71,262
Int. Cl. C03b *5/02, 5/22*
U.S. Cl. 65—337 **2 Claims**



A method of melting glass contained in a vessel comprising the steps of heating from outside the raw material of glass, thus rendering electroconductive at least the surface layer portion thereof, and passing electric current through said surface layer portion to heat it from inside so as to heat said portion to a temperature exhibiting a viscosity suitable for various types of working.

3,527,591
SUSPENDING AGENT FOR LIQUID FERTILIZER

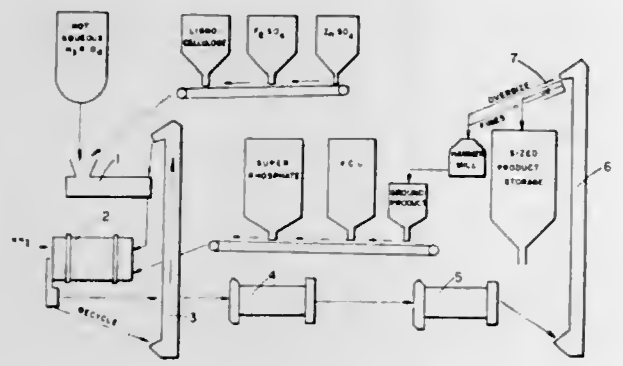
Earl L. Stauter, 5th King St.,
Fonda, Iowa 50540
No Drawing. Filed Feb. 14, 1968, Ser. No. 705,278
Int. Cl. C05f *7/00*
U.S. Cl. 71—23 **2 Claims**

In a liquid fertilizer composition containing primary plant nutrients generally in excess of their solubility in the carrier liquid, a suspending agent which precludes any significant salting out of the primary plant nutrients. The suspending agent consists of kelp meal which is usually incorporated at the rate of about 1% to 2%, by weight, of the liquid fertilizer composition.

3,527,592

PROCESS FOR MANUFACTURING GRANULAR FERTILIZER

Wilbur A. McPherson, Baxter Springs, Kans., and Robert W. Hamilton, Joplin, Mo., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 29, 1968, Ser. No. 701,448
Int. Cl. C05f *11/02*
U.S. Cl. 71—24 **1 Claim**



In the manufacture of a granular fertilizer containing organic material derived from acid digestion of lignocellulose, difficulties inherent in the handling of cohesive organic materials in fertilizer manufacturing equipment are overcome by a combination of the following:

Use of controlled narrow particle size range of lignocellulose, only partial digestion of the lignocellulose, maintenance of continuous flow and mixing during partial digestion, followed by mixing of the partially digested organic material with recycled granular fertilizer in order to maintain good flow conditions. The partially digested lignocellulose material is then incorporated with fertilizer solids in a conventional granulating drum to produce a substantially spherical granular product.

3,527,593

HERBICIDE-AMINE OXIDE COMPOSITIONS AND THEIR USE

Robert Coles Brian and Peter Douglas Bland, Bracknell, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Nov. 30, 1966, Ser. No. 597,849
Claims priority, application Great Britain, Dec. 20, 1965, 53,824/65
Int. Cl. A01n *9/20, 11/02*
U.S. Cl. 71—94 **16 Claims**

Herbicidal compositions containing herbicide and an amine oxide wetting agent. Preferred herbicides are the bipyridylium herbicides while typical amine oxides include, for example, octyl dimethylamine N-oxide and the corresponding decyl-, dodecyl-, tetradecyl-, pentadecyl- and hexadecyl-dimethylamine N-oxides.

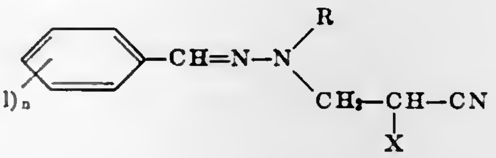
3,527,594

PROCESS FOR OBTAINING FAVOURABLE PHYSIOLOGICAL EFFECTS ON CULTIVATED PLANTS

Joseph René Brepoels, Beverloo, and Armand August Busschots, Sint-Truiden, Belgium, assignors to Poudreries Reunies de Belgique, Brussels, Belgium
No Drawing. Filed Jan. 14, 1969, Ser. No. 791,128
Claims priority, application Belgium, Jan. 17, 1968, 709,496
Int. Cl. A01n *9/06, 9/20*
U.S. Cl. 71—105 **6 Claims**

Process for obtaining favourable physiological effects on cultivated plants, these effects being particularly the obtaining of better crops as regards quality and quantity, this process consisting in that plants which have reached a certain degree of growth are treated with

N′-cyanoalkylated chlorobenzylidene hydrazines having the following representative formula:



in which

R can be a hydrogen atom or a cyanoalkyl group;
X represents a hydrogen atom, a halogen or an alkyl group;
n is an integer and can assume the value 1, 2, 3, 4 or 5.

3,527,595

HOMOGENEOUS METAL-CONTAINING SOLID MIXTURES

Arthur Adler, % C. K. Williams & Co., Inc., Easton, Pa. 18067
No Drawing. Original application Oct. 1, 1963, Ser. No. 312,881, now Patent No. 3,285,734, dated Nov. 15, 1966. Divided and this application July 8, 1966, Ser. No. 571,675
Int. Cl. B22f *1/00*
U.S. Cl. 75—.5 **5 Claims**

This invention is directed to semi-metallic composite powder products consisting essentially of about 25–75 weight percent elemental metal with a density of 6.5–21.5 grams/cc., a melting point of greater than 250° C., and an oxide negative free energy of up to about 70,000 calories/gram atom of oxygen at 25° C.; which elemental metal is in integral association with a silicate having a density between 2 and 6 grams/cc., a melting point above about 1250° C., and is derived from a metal with an oxide negative free energy of formation of at least about 90,000 calories/gram atom of oxygen at 25° C. Lead, copper, and nickel are specifically claimed elemental metals.

3,527,596

POROUS ZINC GRANULES

Walter L. Butterfield, Whippany, N.J., assignor, by mesne assignments, to The Celotex Corporation, a corporation of Delaware
No Drawing. Filed Apr. 27, 1967, Ser. No. 634,140
Int. Cl. B22f *9/00;* **B44d** *1/094*
U.S. Cl. 75—.5 **4 Claims**

A granulated zinc metal of relative high porosity and low density is provided. These porous zinc granules are characterized by their relatively ready susceptibility to corrosion when exposed to the atmosphere. The zinc corrosion products are biodeterioration inhibitors which are effective against the destructive growth of various organisms.

3,527,597

CARBIDE SUPPRESSING SILICON BASE INOCULANT FOR CAST IRON CONTAINING METALLIC STRONTIUM AND METHOD OF USING SAME

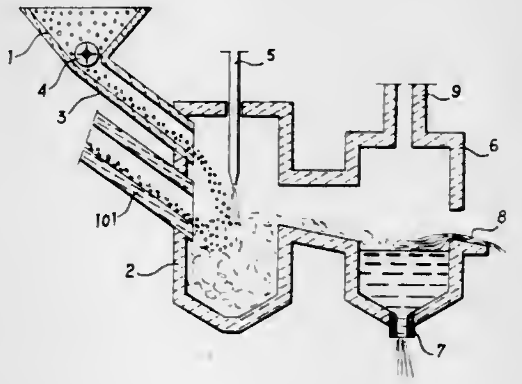
John Victor Dawson, Redditch, England, assignor to The British Cast Iron Research Association, Birmingham, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 303,582, Aug. 21, 1963. This application Dec. 13, 1965, Ser. No. 513,555
Claims priority, application Great Britain, Aug. 31, 1962, 33,468/62; Dec. 10, 1965, 52,609/65
Int. Cl. C21c *1/10, 7/04*
U.S. Cl. 75—58 **11 Claims**

An inoculant for graphitizing cast iron, consisting basically of silicon and between 0.1% and 10% strontium in metallic form, wherein any calcium present is kept below 0.35%; preferably calcium is kept substantially below that level and in the optimum case below 0.1%. The silicon may be present in the form of ferrosilicon or as an alloy of copper and silicon; also a straight strontium-silicon alloy is disclosed.

3,527,598

PROCESS OF MAKING STEEL FROM PREREDUCED PRODUCTS

Jean Rouanet, Metz, Moselle, France, assignor to Institut de Recherches de la Siderurgie Francaise, Saint-Germain-en-Laye, Yvelines, France
Filed Sept. 13, 1967, Ser. No. 667,473
Claims priority, application France, Sept. 28, 1966, 77,957
Int. Cl. C21c *5/32*
U.S. Cl. 75—60 **8 Claims**



Steel is produced in a continuous process by continuously introducing into a refining vessel, containing a mixture of molten steel-forming materials, a solid prereduced steel-forming material at an elevated temperature below the melting point of said prereduced material; continuously introducing gaseous oxygen into said refining vessel and into the molten mass therein, in an amount sufficient to convert said continuously introduced prereduced steel-forming material into steel; and continuously withdrawing liquid steel from said refining vessel at such a rate that the amount of molten steel in said refining vessel remains substantially constant, the said solid prereduced steel-forming material being charged into the refining vessel partly in the form of pellets having a relatively high carbon content and partly in the form of pellets having a relatively low carbon content.

3,527,599

PROCESS FOR THE PRODUCTION OF IV*a* AND V*a* METALS OF THE PERIODIC SYSTEM AND THEIR ALLOYS

Gerhard Jangg, Getreistemarke 9, Vienna, Austria
No Drawing. Filed Feb. 7, 1967, Ser. No. 614,415
Int. Cl. C22b *51/00, 53/00*
U.S. Cl. 75—84.5 **8 Claims**

Process for producing metals of Group IV*a* or V*a* of the Periodic System or alloys of said metals by amalgam reduction. A metal halide, such as a metal chloride, is reduced by amalgam and the reduction mixture, prior to separation of amalgam, is admixed with an acidic aqueous solution which contains a substance capable of forming a water soluble compound with the Group IV*a* or V*a* metal ion. The acid solution may consist of hydrochloric or sulphuric acid and a complex former such as oxalic acid, tartaric acid, citric acid, salicylic acid, or sulphosalicylic acid. Dilute hydrofluoric acid is also suitable.

3,527,600

CORROSION RESISTANT, HEAT RESISTING VALVE STEEL

Masaru Yano, Yutaka Sogami, Tokushige Iwata, and Nobuyoshi Hojo, Kyoto-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Dec. 6, 1967, Ser. No. 688,345
Claims priority, application Japan, Dec. 10, 1966, 41/80,890
Int. Cl. C22c *39/26*
U.S. Cl. 75—125 **4 Claims**

Corrosion resistant, heat resistant steel, particularly for making valves, which essentially consists of the following components: C=0.41–0.64%, Si=0.05–1.2%, Mn=5.5–6.9%, Ni=0.7–1.9%, Cr=20–23%, Cu=0.35–1.35%, N=0.3–0.5%, and the rest comprising iron and impurities.

3,527,601

PROCESS OF MAKING CREEP-RESISTANT ZINC-BASE ALLOYS

George S. Foerster, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 528,791, Feb. 21, 1966, which is a continuation-in-part of application Ser. No. 323,169, Nov. 12, 1963. This application June 14, 1967, Ser. No. 645,876
Int. Cl. C22c *17/00*
U.S. Cl. 75—178 **9 Claims**

This invention concerns a method for preparing a fabricated zinc-base alloy article from the atomized alloy which is uniquely characterized as creep resistant for long periods, particularly at moderate stresses, even at elevated temperatures. The method comprises providing a molten zinc-base alloy containing one or more additive metals essentially all dissolved therein, atomizing the molten alloy into finely sized droplets, solidifying said droplets into pellets and fabricating the pellets by hot working into a useful shape thereby to prepare an article having an extremely fine dispersion of second phase.

3,527,602

ORGANIC PHOTOCONDUCTORS

Charles J. Fox and Arthur L. Johnson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 31, 1967, Ser. No. 664,642
Int. Cl. G03g *5/06*
U.S. Cl. 96—1.6 **10 Claims**

3,3′ - bis - 1,5-diaryl pyrazolines are useful as organic photoconductors in electrophotographic elements.

3,527,603

PROCESS FOR THE PRODUCTION OF COLOR PHOTOGRAPHIC IMAGES BY THE SILVER-DYE-BLEACH PROCESS

Bernhard Seidel, Cologne-Mulheim, Jakob Kemmer, Cologne-Klettenberg, and Erich Bockly and Eberhard Gunther, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 24, 1967, Ser. No. 625,609
Int. Cl. G03c *7/02, 7/52*
U.S. Cl. 96—20 **1 Claim**

Sensitivity of silver-dye-bleach layers are increased if the bleaching step is carried out with a bleach bath that is flushed with inert gas like nitrogen, or the layer just before it enters the bleach bath is rinsed in a similarly flushed rinse bath.

3,527,604
COLORPROOFING MATERIALS COMPRISING p-BENZOQUINONE DIAZIDE

Fritz Endermann, Wiesbaden, and Fritz Uhlig and Jürgen Braun, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden - Biebrich, Germany, a corporation of Germany
No Drawing. Filed May 20, 1966, Ser. No. 551,516
Claims priority, application Germany, May 22, 1965, K 56,192
Int. Cl. G03c *1/52*
U.S. Cl. 96—27 **9 Claims**

Materials useful in proofing color separation negatives and the like are prepared by coating a transparent base with a composition including a p-benzoquinonediazide and an alkali-fast dye of a primary color normally used in colorproofing. Imagewise exposure of the material to light according to a color separation negative with subsequent washing with aqueous alkaline solution provides a faithful color representation of such negatives.

3,527,605
SUBBING COMPOSITION FOR HYDROPHOBIC POLYMERIC MATERIALS AND SUBBED SUBSTRATES

Richard S. Fisch, St. Paul, and Albert W. Morgan, North St. Paul, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Jan. 17, 1966, Ser. No. 520,859
Int. Cl. G03c *1/78*
U.S. Cl. 96—87 **12 Claims**

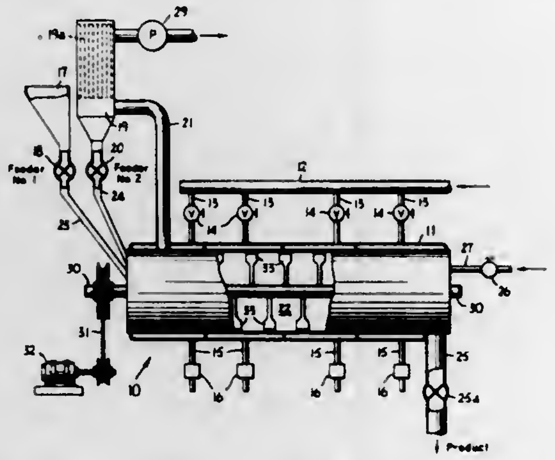
A subbing composition capable of bonding a photosensitive silver halide gelatin emulsion to a hydrophobic film base which comprises from 20 to 80 weight percent of an epoxidized butadiene polymer having an epoxy equivalent from 80 to 200, from 20 to 80 weight percent of a normally solid, film forming polyester compatible therewith, and from 0.3 to 30 weight percent of an aldehyde-containing hardener for photographic emulsions, based on the weight of total solids. Also covers hydrophobic film base, including photographic films, containing such subbing compositions.

ERRATUM

For Class 96—90 see:
Patent No. 3,527,517

3,527,606
METHOD OF MODIFYING STARCH

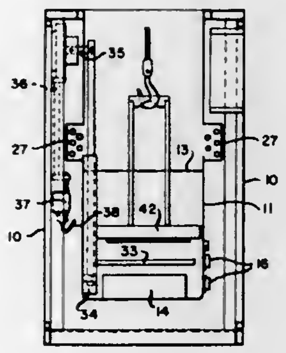
Gerwin G. Taylor, Flossmoor, Ill., and Julian A. Hay, Gary, Ind., assignors to American Maize-Products Company, a corporation of Maine
Filed Mar. 21, 1968, Ser. No. 715,090
Int. Cl. C08b *19/06;* **C13l** *1/08, 1/10*
U.S. Cl. 127—71 **6 Claims**



A method for modifying starch by either the dry roasting or dry reaction technique consisting of placing particulate starch along with any desired reactant in a cooker and mechanically agitating the starch particles at a rate sufficient to maintain the particles in a turbulized suspension, thereby yielding rate coefficients of heat transfer substantially higher than in prior processes and additionally assuring a uniformity of roast or reaction throughout the entire mass of product.

3,527,607
ULTRASONIC IMPACT CLEANERS AND METHODS OF CLEANING

John N. Antonevich, Chautauqua County, N.Y., assignor to Blackstone Corporation, a corporation of New York
Filed May 20, 1968, Ser. No. 730,261
Int. Cl. B08b *7/02*
U.S. Cl. 134—1 **8 Claims**



A method and apparatus for cleaning by subjecting articles simultaneously to impact and ultrasonically agitated solvent. The apparatus has a wash tank containing solvent, means in the tank ultrasonically agitating the solvent therein and means in the tank periodically impacting the articles to be cleaned while the solvent is ultrasonically agitated.

3,527,608
CONTINUOUS CLEANSING OF RIGID MATERIALS

Hans-Joachim Schlüssler, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany
No Drawing. Filed Dec. 1, 1965, Ser. No. 510,973
Claims priority, application Germany, Dec. 24, 1964, H 54,691
Int. Cl. C23g *1/14, 1/18;* **C03c** *23/00*
U.S. Cl. 134—2 **5 Claims**

An improvement in the continuous washing of rigid materials with a concentrated alkali washing bath which is periodically replenished comprising periodically replenishing said washing bath in order to maintain a level of from 0.02% to 0.4% of a stable liquid additive solution comprising from 1% to 40% by weight of a nonionic detergent, from 5% to 30% by weight of an organic acid selected from the group of hydroxy and amino alkyl-1,1-diphosphonic acids, ethylenediaminotetra-(methylenephosphonic acid) and aminotri-(methylenephosphonic acid), an aliphatic alcohol and a mineral acid, if desired, with the balance water.

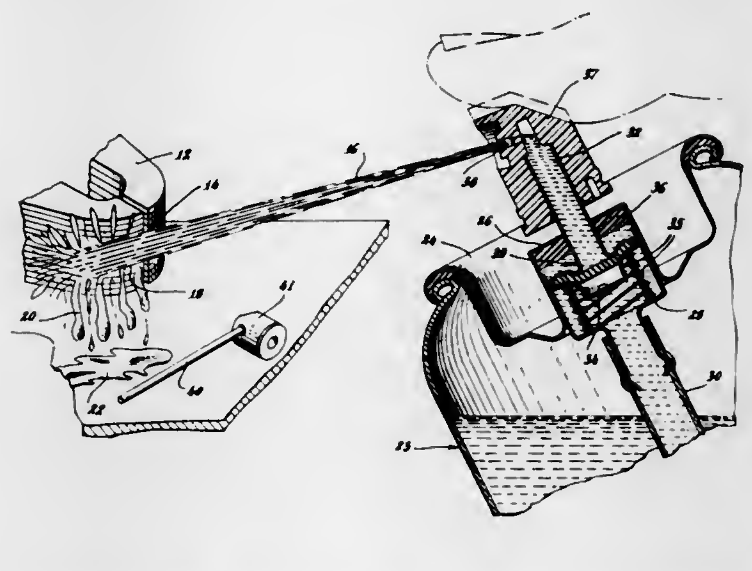
3,527,609
IN-SERVICE CLEANING OF COOLING WATER SYSTEMS

Joseph D. Vinso, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 29, 1968, Ser. No. 725,154
Int. Cl. C23g *1/02*
U.S. Cl. 134—3 **11 Claims**

Circulating cooling water systems having deposits of each of iron oxide and hardness on the interior metal surfaces thereof are cleaned without being taken out of service by a two-stage method. According to this method, (1) the hardness deposits are removed by adding an alkali metal salt, or ammonium salt, of an amino polycarboxylic acid to the cooling water and adjusting the pH, if necessary, to a value in the range of 7 to about 12, and preferably 8 to about 11, circulating the resulting chelant solution until the hardness is removed; and (2) with or without displacing the chelant solution with make-up water, adding a mixture of an ammonium salt, or alkali metal salt, of an amino polycarboxylic acid and an acidifying agent to the cooling water system so as to adjust the pH to about 3 to 6, and more preferably about 4 to 5.5, circulating the acidic solution until the iron oxide is removed, and finally displacing the acidic cleaning solution with make-up water. Preferably a corrosion inhibitor is employed in the second stage of the cleaning, but may not be necessary in the first stage. Ordinarily, normal water treatment is discontinued during cleaning. It is also advisable to blow down the system before commencing cleaning operations.

3,527,610
METHODS FOR CLEANING TAPE RECORDER TRANSDUCER HEADS AND SIMILAR DEVICES

George M. Stephenson, Georgetown, Conn. (% Miller-Stephenson Chemical Co., Inc., 16 Sugar Hollow Road, Danbury, Conn. 06810)
Original application July 14, 1966, Ser. No. 565,172. Divided and this application Oct. 20, 1969, Ser. No. 867,467
Int. Cl. B08b *3/02, 3/08*
U.S. Cl. 134—34 **8 Claims**

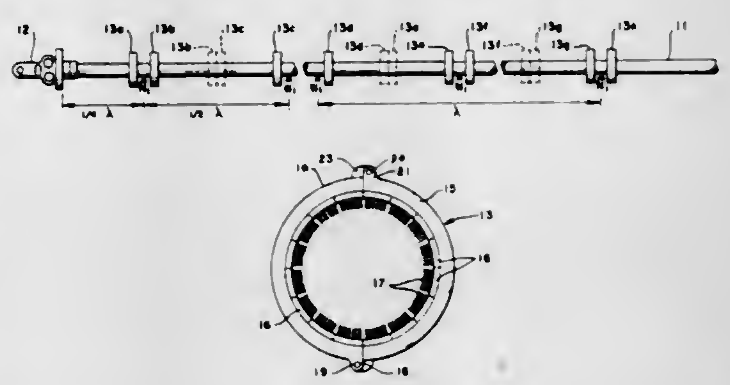


Methods for dislodging and removing accumulated deposits of powdered oxides and similar foreign matter from an accumulation zone on tape recording transducer heads and like devices, by discharging from a pressurized container a rapidly moving heavy stream of volatile organic liquid solvent directed to loosen and carry the accumulated deposit to a nearby evaporation zone.

3,527,611
STANDING WAVE PIPELINE CLEANING METHOD

Leo R. Newfarmer, La Jolla, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 16, 1968, Ser. No. 783,922
Int. Cl. B08b *1/00, 7/02*
U.S. Cl. 134—6 **4 Claims**

A method of cleaning and descaling pipe wherein abrasive collar means is positioned about the pipe and in intimate contact with the outer surface thereof. Longitudinal standing wave vibrations are generated in the pipe, causing movement of said abrasive collar means relative to said pipe.



3,527,612
ELECTROCHEMICAL CELL INCLUDING ELECTRODES PROVIDED WITH ELONGATED RECESSES THEREIN

Morris Eisenberg, Palo Alto, Calif., assignor to Electrochimica Corporation, a corporation of California
Filed May 4, 1967, Ser. No. 636,129
Int. Cl. H01m *21/00, 35/00*
U.S. Cl. 136—6 **16 Claims**

An improved electrochemical cell including electrodes having a relatively longer dimension in the direction of current flow through the cell, i.e. thick electrodes, which are provided with elongate recesses therethrough to carry electrolyte to the interior portions of such thick electrodes and hence improve current distribution therethrough and hence the electrochemical efficiency of the cell.

3,527,613
METHOD OF LOADING IRON-SULFUR ACTIVE MATERIAL INTO POROUS METALLIC PLAQUES

Carl C. Hardman, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 6, 1969, Ser. No. 789,139
Int. Cl. H01m *43/04*
U.S. Cl. 136—25 **11 Claims**

A method of loading iron-sulfur active material into porous, bonded, nickel fiber plaques comprises: first, depositing a sulfide residue in the plaque pores; second, making the plaque cathodic by charging it with between 0.1 and 0.8 amp/sq. in. of flat, planar, plaque surface area; third, causing the plaque to be immersed in

$$Fe(NH_4)(SO_4)_2 \cdot 12H_2O$$

acid salt solution and electro-precipitating iron-sulfur active material in the plaque pores; removing the plaque from the salt solution after a desired, predetermined amount of active material, having at least 3 weight percent sulfur based on the weight of iron, has precipitated and placing the plaque in KOH forming solution; finally, charging and discharging the plaque to condition it.

3,527,614
METHOD OF MANUFACTURING ELECTRODES

Renno Jacob Elema and Marinus Dirk Wijnen, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 26, 1967, Ser. No. 670,801
Claims priority, application Netherlands, Sept. 27, 1966, 6613587
Int. Cl. H01m *35/06, 35/18*
U.S. Cl. 136—75 **4 Claims**

A method of manufacturing an electrode for a battery or fuel cell. A porous electrode skeleton, e.g., nickel gauze on which nickel powder is sintered is placed between and in contact with two solutions which react and form a precipitate, e.g., nickel hydroxide. In a preferred embodiment the porous skeleton and solutions are placed in an electric field produced by two spaced electrodes so that a current flows which increases the rate of precipitation.

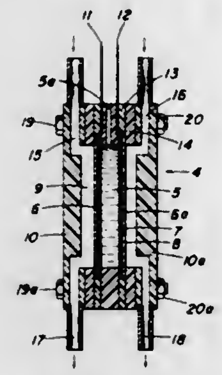
3,527,615
THERMAL BATTERY HAVING PROTECTIVELY COATED CALCIUM ANODE TO PREVENT ALLOY SHORTING

Robert P. Clark and Kenneth R. Grothaus, Albuquerque, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 14, 1969, Ser. No. 824,610
Int. Cl. H01m *23/00*
U.S. Cl. 136—83 **3 Claims**

A thermal battery including a plurality of electrochemical cells, each containing a fused electrolyte sandwiched between a calcium anode and any suitable cathode, the electrolyte consisting essentially of a lithium chloride-potassium chloride eutectic mixture which becomes conductive on melting and the anode being coated with a layer of a calcium-containing compound adapted to inhibit the formation of a lithium-calcium alloy at the anode surface in contact with the electrolyte.

3,527,616
ELECTRODES FOR FREE ELECTROLYTE FUEL CELLS

Henry Patrick Landi, Yorktown Heights, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed June 9, 1965, Ser. No. 462,615
Int. Cl. H01m *27/00, 13/00*
U.S. Cl. 136—86 **9 Claims**

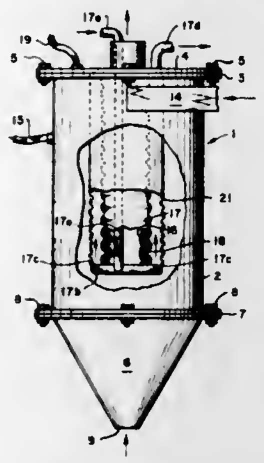


A laminated catalytic electrode suitable for use in free electrolyte fuel cells comprising in combination: (a) a gas permeable, liquid impermeable, porous, fibrillated, unsintered polytetrafluoroethylene substrate and (b) a composition molded thereon comprising (1) an electrically conductive filler being present in an amount equal to between about 0% and 80%, (2) a catalyst equal to from about 1% to about 98%, and (3) a water-repellent composition equal to from about 1% to 40%, said percentages totalling 100%, being based upon the weight of the electrode solids mixture, is provided.

3,527,617
ELECTROLYTIC CYCLONE SEPARATOR AND CELL

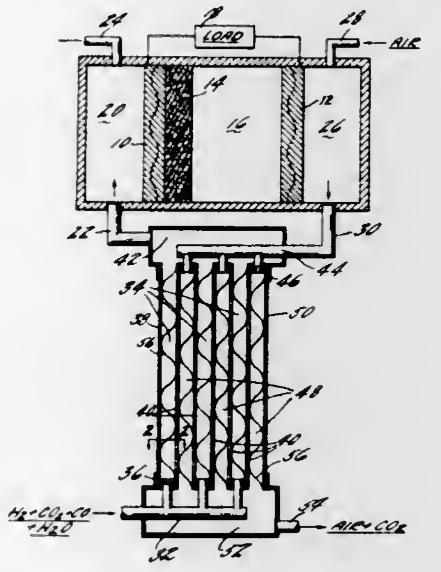
Richard Prober, Trenton, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 402,777, Oct. 9, 1964. This application Mar. 20, 1968, Ser. No. 714,655
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **9 Claims**

Apparatus and method comprising an electrolytic hydrocyclone cell for carrying out electro-chemical processes to be used in combination with a slurry of electrochemical reactant, electrolyte and electrode particles having a density greater than the electrolyte which particles function as a dispersed electrode. A vertical hollow cylindrical body is provided having a conductive parent electrode surface disposed circumferentially about its inner surface. Closure means is provided at the top of the hollow body having a cylindrical open-ended vortex finder of smaller diameter than said electrode surface centrally positioned therein so that the lower end of said vortex finder extends a substantial distance downwardly into said hollow body thereby forming an annulus between said electrode surface and the lower end of said finder. A counter electrode of larger diameter than the vortex finder is mounted in the annulus between the electrode surface and the lower end of the vortex finder, the counter electrode being electrically insulated from the parent electrode surface of the body. Slurry feed means communicates with the annulus for discharging the slurry vortically within the body and centrifugally forcing the particles within the slurry onto the parent electrode surface adjacent to its upper end. Closure means is disposed at the bottom of the body and has an opening therein for discharging underflow from the body and electrical conduits are connected to the parent electrode surface and the counter electrode for completing a circuit providing for current flow when the electrodes are immersed in electrolyte.



3,527,618
FUEL CELL WITH CARBON DIOXIDE GAS STRIPPER AND METHOD OF OPERATION

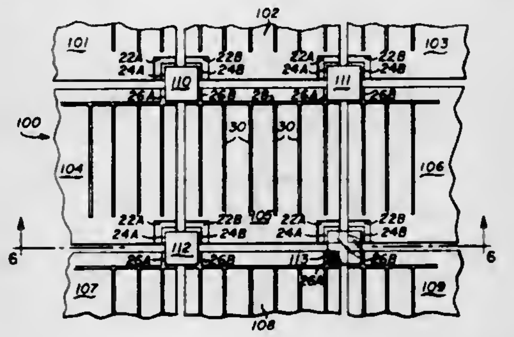
Calvin L. Bushnell, South Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 13, 1968, Ser. No. 728,737
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **8 Claims**



In a fuel cell system, carbon dioxide gas at a high partial pressure in the fuel supply stream is transferred to the process air stream to reduce the carbon dioxide content in the fuel stream. The transfer device consists of a porous separator such as sheet asbestos saturated with an activated potassium carbonate. Passage of a carbon dioxide containing gas alongside the separator permits the carbon dioxide to react with the potassium carbonate to form potassium bicarbonate. The bicarbonate diffuses to the other side of the separator where carbon dioxide and potassium carbonate are formed and carbon dioxide is evolved because of the lower carbon dioxide partial pressure in the air stream.

3,527,619
SOLAR CELL ARRAY

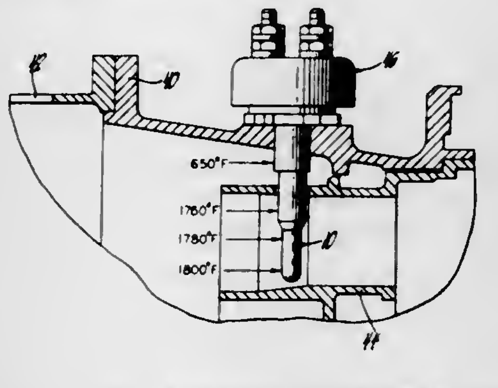
David C. Miley, Los Altos, Calif., assignor to Itek Corporation, a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,266
Int. Cl. H01l *15/02*
U.S. Cl. 136—89 **11 Claims**



A solar cell array formed of a plurality of solar cells in coplanar row and column relationship and interconnected at their corners with adjacent cells. Each solar cell has an upper solar sensitive surface which covers all cell has an upper solar sensitive surface which covers all but two adjacent corners of the solar cell and a conduc- surface of the solar cell has a terminal area, the terminal areas in the uncovered corners being spaced from the solar sensitive surface edge. The two terminal areas on the covered corners are connected to current pick-up means extending across the solar sensitive surface, and the two terminal areas on the uncovered corners are connected to the conductive lower surface.

3,527,620
METHOD OF USING NOBLE METAL THERMOCOUPLE

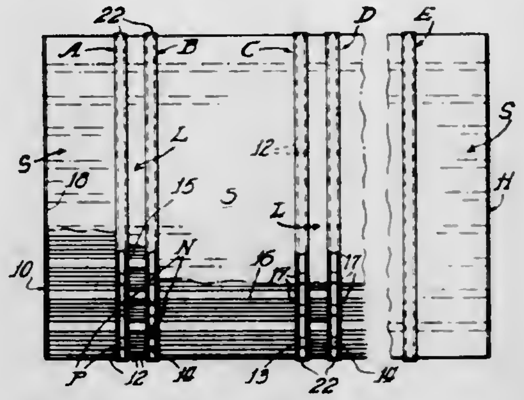
Jay D. Meador, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 397,859, Sept. 21, 1964. This application Jan. 16, 1968, Ser. No. 704,970
Int. Cl. H01v *1/06*
U.S. Cl. 136—201 **3 Claims**



A method of using a thermocouple system including specific noble metal thermocouple elements connected at junctions to other specific dissimilar non-noble lead conductors wherein the thermocouple elements and the lead conductors are matched, comprising locating the junctions at different levels in a temperature gradient region which varies predictably with the medium to be temperature sensed so that the junctions are maintained at temperatures whereby either no EMF is generated at the junctions due to the dissimilar metals therein or the EMF generated in each junction is substantially equal so that they effectively offset one another.

3,527,621
THERMOELECTRIC ASSEMBLY

Alwin B. Newton, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 13, 1964, Ser. No. 403,533
Int. Cl. H01v *1/30, 1/32*
U.S. Cl. 136—203 **2 Claims**



A modular thermoelectric heat exchange unit constructed so that conducted heat exchange elements are provided between spaced thermoelectric panels. A plurality of series connected couples are arranged in parallel strings which are thermally and electrically isolated from each other.

3,527,622
THERMOELECTRIC COMPOSITION AND LEG FORMED OF LEAD, SULFUR, AND TELLURIUM

John C. Angus, Shaker Heights, Ohio, and Russell E. Fredrick, White Bear Lake, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 241,108, Nov. 27, 1962. This application Oct. 13, 1966, Ser. No. 604,087
Int. Cl. H01r *1/18*
U.S. Cl. 136—238 **4 Claims**

1. A composition having useful thermoelectric properties consisting essentially of between about 49.5 and 52 atomic percent lead, between about 2 and 10 atomic percent sulfur, and tellurium.

4. A thermoelectric device including a thermocouple in which at least a portion of one of the thermoelectric legs is formed of a composition of claim 1.

3,527,623
QUANTITATIVE METHOD FOR THE PRODUCTION OF SINGLE THREE-DIMENSIONAL CRYSTALS FROM THE VAPOR

Michael M. Schieber, Jerusalem, Israel, assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed Feb. 19, 1968, Ser. No. 706,695
Int. Cl. B01j *17/28*
U.S. Cl. 148—1.6 **15 Claims**

Large single-crystal growth is accomplished by evaporating a specific amount of source material and condensing its vapor on a conical collector located at a specified distance from the source material where the supersaturation and temperature difference between the source material and collector are optimum for growth of large single crystals. Typical values are: three grams of source material per cubic centimeter of crystallization volume; a value between 0.1 and 10.0 for the supersaturation; and a ten-centimeter distance between the source material and the collector for a one-centimeter diameter tube.

3,527,624
CONTROLLING CARBIDE SURFACES

Vitti Julian Biretta, Elmer George Lemon, Jr., and Eugene John Vater, Cincinnati, Ohio, assignors to Jervis B. Webb Company, a corporation of Michigan
No Drawing. Filed Sept. 8, 1967, Ser. No. 666,485
Int. Cl. C21d *1/06, 1/74*
U.S. Cl. 148—14 **8 Claims**

A continuous carbide network within the carburized case of a ferrous alloy structure may be converted, by reducing it to a discontinuous carbide array or by entirely eliminating it, by coating the structure with a material which forms an effective mechanical barrier to the diffusion of carbon, such as copper, heating to a temperature within or above the transformation range of the ferrous alloy for a time sufficient to accomplish the extent of carbide network conversion desired, cooling the alloy, and then removing the coating.

3,527,625
SOLDERING PASTE

Gilman B. Mollring, Los Angeles, Calif.; Mary Betty Mollring, executrix of said Gilman B. Mollring, deceased
No Drawing. Filed Dec. 5, 1967, Ser. No. 688,015
Int. Cl. B23k *35/28, 35/36*
U.S. Cl. 148—24 **7 Claims**

An improved soldering paste composed of a pulverized solder alloy in an amount greater than 70% by weight, a suspending agent consisting essentially of a vegetable oil amine modified with an oleate amine in an amount of 12%–20% by weight, and a chloride fluxing agent in a minor proportion.

3,527,626
SILICON CARBIDE LUMINESCENT MATERIALS

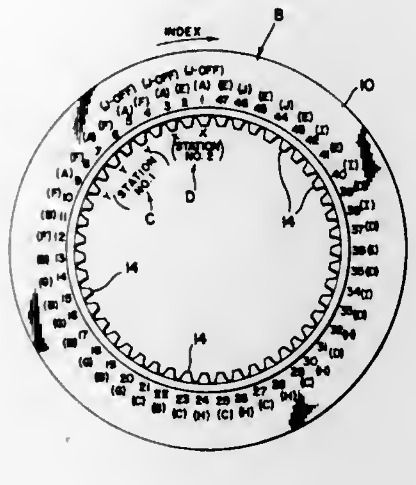
Robert William Brander, Pinner, England, assignor to The General Electric and English Electric Companies Limited, London, England, a British company
No Drawing. Filed Sept. 7, 1967, Ser. No. 665,990
Claims priority, application Great Britain, Sept. 19, 1966, 41,812/66
Int. Cl. C09k *1/50;* **H01l** *3/00*
U.S. Cl. 148—33.4 **5 Claims**

Luminescent materials consist of n-type silicon carbide containing oxygen and one or more Group III–A acceptor impurities in addition to one or more donor impurities, a preferred material containing nitrogen, oxygen and boron as the significant impurities. Single crystals of the materials can be produced by liquid phase or vapour phase epitaxial growth upon a silicon carbide crystal substrate, and luminescent powder by crushing the crystals so formed, by crushing material deposited from a vapour phase reaction mixture upon a refractory body, or by diffusion of the desired impurities into silicon carbide powder. The materials may have applications in electroluminescent light sources, electric discharge lamps and cathode ray tubes.

3,527,627
METHOD FOR HARDENING GEAR TEETH

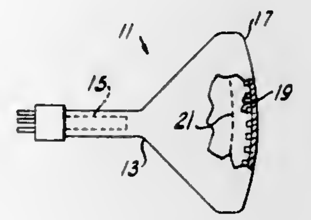
George D. Pfaffman, Farmington, Mich., and Robert G. Armstrong, Chardon, Ohio, assignors to Park-Ohio Industries, Inc., a corporation of Ohio
Original application June 16, 1966, Ser. No. 558,087, now Patent No. 3,446,495, dated May 27, 1969. Divided and this application Mar. 20, 1969, Ser. No. 851,505
Int. Cl. C21d *9/32*
U.S. Cl. 148—147 **7 Claims**

A method of hardening the spaced teeth of a gear, said method comprising the steps of inductively heating alternate teeth; quenching said heated teeth to harden the same; repeating said heating and quenching steps until every other tooth has been heated and quenched; then inductively heating the alternate unhardened teeth and quenching said unhardened teeth to harden the same.



3,527,628
METHOD FOR RECLAIMING CATHODE RAY TUBE SCREEN PANELS

Gordon L. Fullerton, Le Roy, and Albert Regenbrecht, Jr., and Thaddeus V. Rychlewski, Seneca Falls, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,499
Int. Cl. C03c *15/02*
U.S. Cl. 156—6 **3 Claims**

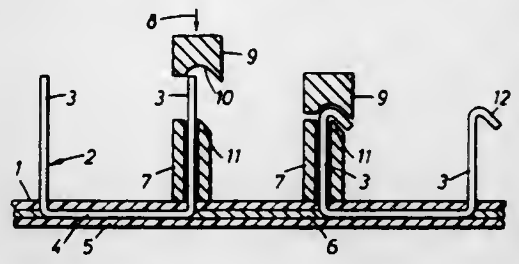


A method for reclaiming cathode ray tube screen panels which have imperfections in the surface of the screen side of the panel. The screen side of the panel is subjected to a uniform blast of pressurized abrasive material to deplete the surface material affected by the imperfection and is then chemically treated and cleaned to provide an appropriate matte finish to thereby permit rescreening of the panel for use in a cathode ray tube. The resultant tube and screen then has uniform illumination and transmission properties.

3,527,629
METHOD OF PRODUCING FASTENER MEMBER HAVING UPSTANDING FASTENER ELEMENTS SHAPED FOR RELEASABLE ENGAGEMENT WITH COOPERATING FASTENER ELEMENTS

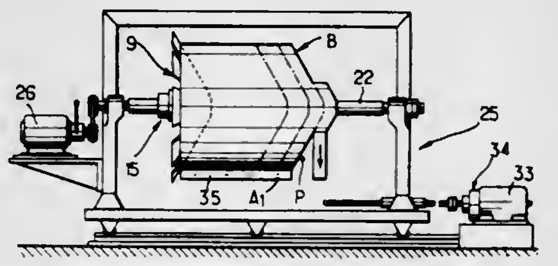
Joseph Rowland Wylde, Stoke-on-Trent, England, assignor to Velcro S.A., Nyon, Switzerland, a Swiss body corporate
Filed Nov. 15, 1966, Ser. No. 594,421
Claims priority, application Great Britain, Nov. 18, 1965, 49,047/65
Int. Cl. A44b *19/00;* **D05c** *15/00*
U.S. Cl. 156—72 **7 Claims**

Fastener members have filamentary elements, such as metal wires which have anchoring portions engaged against the underside of a foundation comprising a strip or sheet, such as of woven wire, fabric or a solid material, and fastener portions forced through said foundation and upstanding from the opposite side of the latter, a backing layer which may be formed of a fabric or a layer of plastic material formed in situ is applied to the underside of the foundation, the fastener portions after being forced through the foundation in generally straight form are subsequently deformed to fastener shape.



3,527,630
METHOD FOR MAKING PACKAGE-OPENING TEAR-OFF STRIPS OF SMALL WIDTH FROM A BAND OF LARGE WIDTH

Albert Altfeld, Beauvais, France, assignor to Novacel Societe Anonyme, Paris, France, a corporation of France
Filed May 29, 1967, Ser. No. 642,113
Int. Cl. B65h *81/00*
U.S. Cl. 156—191 **6 Claims**

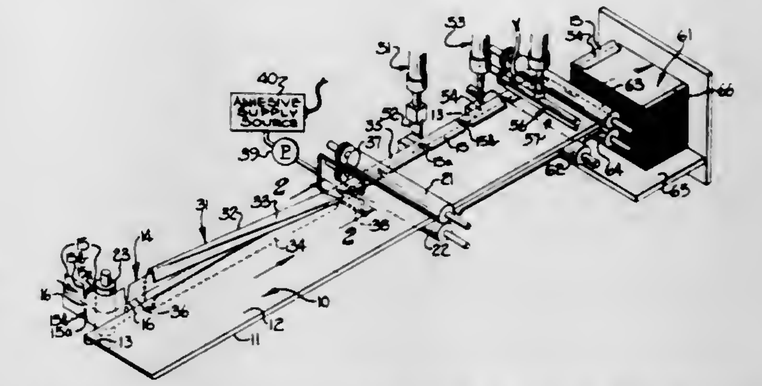


A method for the production of package-opening tear-off strips of small width from a band of large width, consisting of preparing a woven sheet having the form of a band and woven in such manner as to have a high longitudinal strength and a low transverse strength, coating one face of this sheet with a layer of plastic material, closing the pores of the sheet and also giving it dimensional stability, while the other face of the sheet is coated with an adhesive product, for example of the pressure-activated type, the sheet being then wound on a mandrel having a progressive axial movement so as to ensure the formation of a roll made-up of turns, the edges of which form truncated cones, one internal and re-entrant the other external and salient, then making a tear-starting cut at the free extremity of the band on the salient cone side, corresponding to the desired width of the tear-off strip, which is then removed from the band by the application of a tensile force on the strip in the longitudinal direction of the band.

3,527,631
PROCESS FOR MANUFACTURING MERCHANDISE CONTAINERS

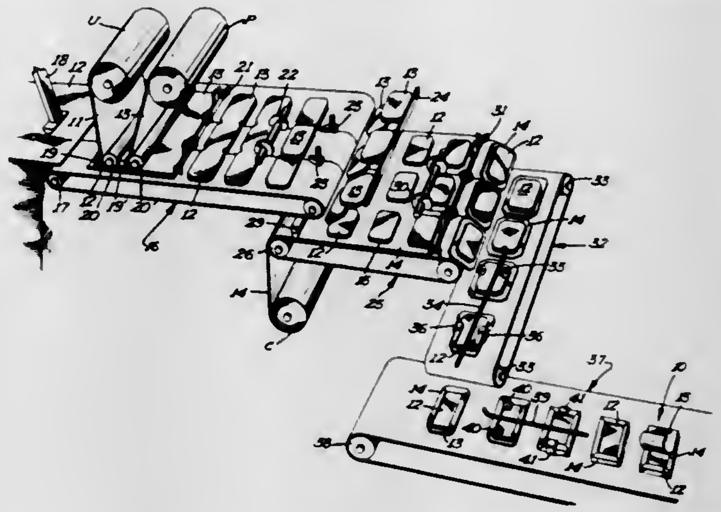
Sam S. Ryburn, Charlotte, N.C., assignor to Package Products Company, Inc., Charlotte, N.C., a corporation of North Carolina
Original application Apr. 24, 1967, Ser. No. 633,221, now Patent No. 3,385,506, dated May 28, 1968. Divided and this application Jan. 30, 1968, Ser. No. 701,626
Int. Cl. B31f *1/00*
U.S. Cl. 156—202 **6 Claims**

A process for forming merchandise containers of thermoplastic material each having an advertising label attached to a closed end of the container and an open end for filling the container, comprising longitudinally folding a sheet of thermoplastic material to form overlying portions, positioning a web of label material along the fold in the sheet with a portion of the label material projecting outwardly from the fold line in the sheet, adhering the label material to the sheet, severing the web of label material at longitudinally spaced intervals, and severing the folded thermoplastic sheet material while heat-sealing the overlying portions thereof at longitudinally spaced intervals corresponding to the severed portions in the label material.



3,527,632
PROCESS OF MAKING A LAMINATED PADDED ALBUM COVER

William W. Holes and Edward L. Libby, St. Cloud, Minn., assignors to The Holes-Webway Co., St. Cloud, Minn., a corporation of Minnesota
Filed Aug. 23, 1967, Ser. No. 662,616
Int. Cl. B32b *3/04*
U.S. Cl. 156—216 **2 Claims**

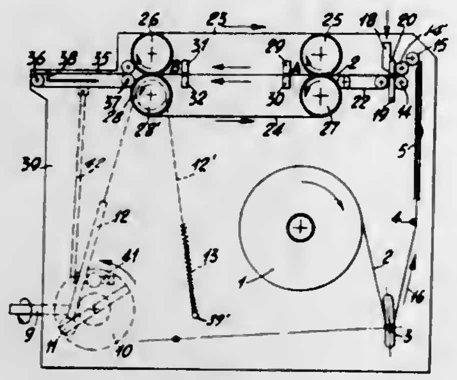


A process of making laminated padded album covers comprises moving sheets of foamed plastic material and rigid paperboard sheets through a predetermined path of travel, and bonding the paperboard sheet to a foamed plastic sheet. Applying and bonding a flexible cover sheet to the plastic sheet and thereafter applying and bonding a flexible liner sheet to the paperboard sheet to form a multiply laminated album cover. Then applying a pressure applying medium to one longitudinal edge of the cover to form a plurality of slots therein.

3,527,633
MACHINE FOR THE AUTOMATIC CONTROLLED MANUFACTURE AND OUTPUT OF PLASTIC BAGS

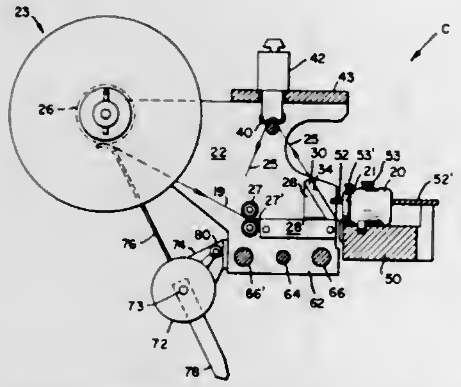
Guido D. Bertoglio, Viganello, Switzerland, assignor to Centra Anstalt, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Feb. 21, 1966, Ser. No. 528,953
Claims priority, application Switzerland, Feb. 22, 1965, 2,421/65; Nov. 20, 1965, 16,063/65
Int. Cl. B32b *31/18*
U.S. Cl. 156—353 **8 Claims**

The machine for producing bags made of a heat-sealable material has mechanisms for feeding a flattened tubular web from a roll in intermittent increments to a cross-cutting device after which operation the severed portion is guided into a system of conveyors. Straps are arranged on the conveyors for holding the cut portions. A pair of stationary thermo-welding jaws is located in the path of the conveyors and a second pair of stationary cooling jaws is arranged in the path of conveyors at the proper distance from the welding jaws. After having passed the cooling station the finished bags are delivered to a stop from where they may be picked up for another operation.



3,527,634
TAPE APPLICATOR FOR APPLYING TAPE ACROSS COVER AND BODY OF A CONTAINER

Lloyd A. Nelson, Fremont, Mich., assignor to Gerber Products Company, Fremont, Mich.
Filed Dec. 29, 1966, Ser. No. 606,508
Int. Cl. B65h *25/12*
U.S. Cl. 156—361 **7 Claims**

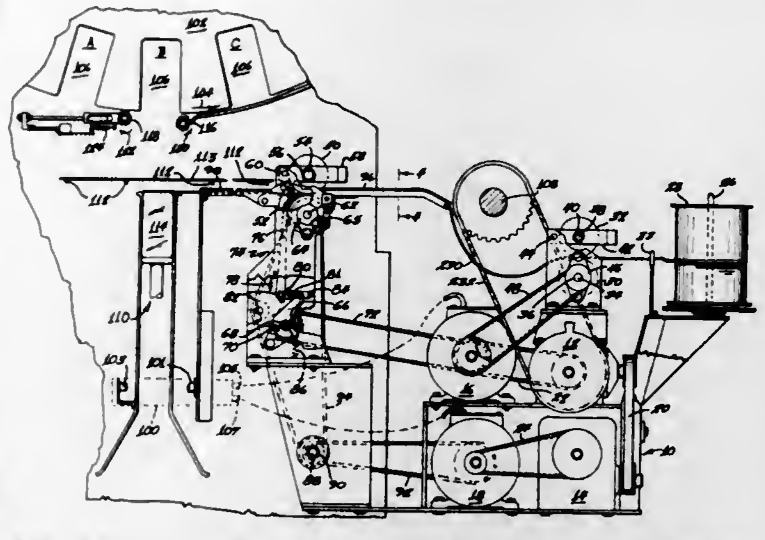


A device for applying a segment of pressure sensitive adhesive tape across the cover and body portion of a reclosable food container as the containers are advanced along a path. The tape is simultaneously advanced along a transverse path so that each container rolls across the tape. The path is provided with a raised area complementary to at least a portion of the contour of the container. In one embodiment the tape is advanced into the path by drawing upon the backing strip adhesively secured to the tape.

3,527,635
APPARATUS FOR DISPENSING MEASURED LENGTHS OF TAPE AT REGULAR TIMED INTERVALS

Neal I. Paulsen, Stanley C. Rustad, Peter Smirnow, and Henry E. Wissman, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Jan. 27, 1967, Ser. No. 612,221
Int. Cl. B32b *31/00;* **B65h** *25/00*
U.S. Cl. 156—361 **18 Claims**

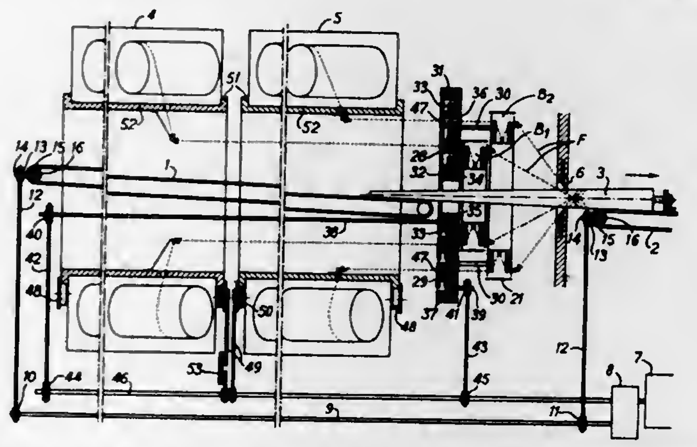
An apparatus having a tape supply reel, a drive system to pull the tape from the supply reel, and means to guide the tape. The drive system has an index drive assembly with its input driven in synchronism with a device which intermittently passes items, upon which a predetermined measured length of tape is to be placed, through a tape receiving station. The index drive assembly feeding a predetermined length of tape into position for placement on each item passed through the tape receiving station and only providing motion to the tape when an item to have tape applied thereto is not in position to receive the tape.



A knife to cut off a predetermined length of the tape as soon as the index drive assembly causes the tape to stop moving after such predetermined length of tape has been placed in position for placement on an item to be taped.

3,527,636
MACHINE FOR THE MANUFACTURE OF FIBRE-GLASS TUBING

André Maurice Chartier, Paris, France, assignor to R.D.T. Societe pour l'Etude la Realisation et la Diffusion des Techniques Modernes
Filed Oct. 17, 1966, Ser. No. 587,159
Int. Cl. B31c *3/00;* **B65h** *81/04, 81/08*
U.S. Cl. 156—425 **8 Claims**



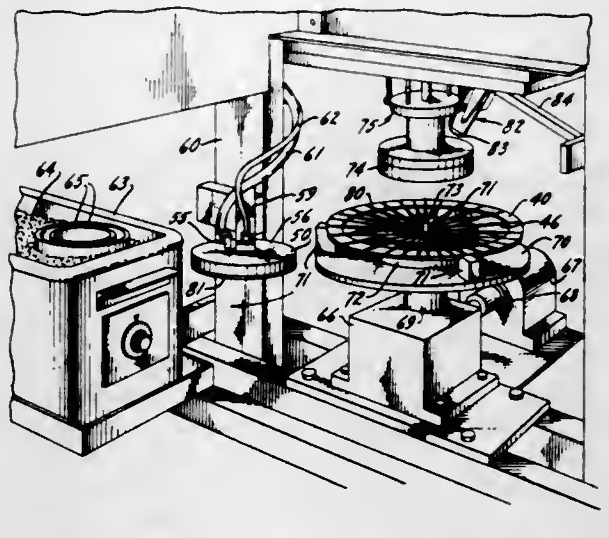
The invention relates to a machine for making synthetic resin tubing reinforced by glass threads wherein the threads are drawn through a vessel filled with the resin by a horizontally extending mandrel arranged coaxially with the vessel.

3,527,637
APPARATUS FOR FORMING WIRE CONTROL ELEMENTS

Maurice H. Brown, Palos Heights, Ill., assignor to Azonic Products Inc., Palos Heights, Ill., a corporation of Illinois
Filed Jan. 23, 1967, Ser. No. 611,112
Int. Cl. B32b *31/04;* **B31c** *13/00*
U.S. Cl. 156—510 **5 Claims**

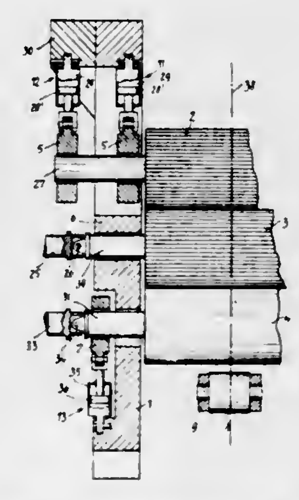
A wire impedance forming assembly wherein a turntable receives a first paper disc and the disc receives a sunburst-wound strand on a ring, a vacuum plate holds a second disc over an adhesive bath, an applicator element rises from the bath to apply adhesive to the second disc, a pressure nozzle on the plate is actuated to break any film of adhesive thus formed, the plate is pivoted over the turntable to place the second disc, adhesive side down, over the strand and first disc and a press

moves onto the second disc to press the two discs and strand together as the turntable rotates, a cutter moving into the area adjacent the turntable to cut the strand from the ring.



3,527,638
CORRUGATED PAPER BOARD MACHINE WITH MEANS FOR FORMING A CROWN ON A CORRUGATING ROLL

Rolf Karl Sonnichsen, Wedel, Holstein, Germany, assignor to Maschinenfabrik Werner H. K. Peters GmbH., Hamburg-Bahrenfeld, Germany
Filed Sept. 20, 1967, Ser. No. 669,108
Int. Cl. B31f *1/20, 1/22, 1/26*
U.S. Cl. 156—596 **6 Claims**



A corrugated paper board machine with a plurality of rolls cooperating with each other and pressed against one another, at least one of said rolls being provided with a crown, for the production of single faced corrugated paper pasted on one side. According to the invention, this crowned roll is formed by pre-bending at least one of said rolls transversely to the axis thereof.

✓

3,527,639
LIGHT-SENSITIVE COMPOSITION UTILIZING ANTHRAQUINONE DERIVATIVES AS OPTICAL SENSITIZERS

Roland Moraw, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden - Biebrich, Germany
No Drawing. Filed Sept. 28, 1966, Ser. No. 582,523
Claims priority, application Germany, Sept. 30, 1965, K 57,271
Int. Cl. G03c *1/52*
U.S. Cl. 96—90 **6 Claims**

Light-sensitive reproduction material of the type which includes a color former reactive in the presence of a free radical to provide a color forming body, and a compound which splits off a halogen free radical when exposed to light yields improved reproductions at high photographic speeds when the color former is an N-vinyl compound and the material includes a sensitizer selected from the group of compounds formed by the substitution of anthraquinone with chlorine, amino, methyl or nitro groups.

3,527,640
LIGHT-SENSITIVE REPRODUCTION MATERIAL COMPRISING LEUCO DYESTUFFS AND LIGHT-SENSITIVE 2,4-DINITROBENZENE-SULPHENYL ESTERS

Ernst-August Hackmann, Wiesbaden-Biebrich, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany
No Drawing. Filed Oct. 21, 1966, Ser. No. 588,296
Claims priority, application Germany, Oct. 23, 1965, K 57,470
Int. Cl. G03c *1/52*
U.S. Cl. 96—90 **4 Claims**

Light-sensitive reproduction material is prepared through a combination of leuco dyestuffs which are oxidizable to give a distinct color body and an activator selected from the group of light dissociable 2,4-dinitrobenzene-sulphenyl esters.

3,527,641
SUPERSENSITIZED PHOTOGRAPHIC SILVER HALIDE EMULSION

Yoshiuki Nakazawa and Masanao Hinata, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-machi, Ashigara-Kamigun, Kanagawa, Japan
No Drawing. Filed Oct. 24, 1966, Ser. No. 588,710
Claims priority, application Japan, Oct. 22, 1965, 40/64,437
Int. Cl. G03c *1/28*
U.S. Cl. 96—104 **4 Claims**

A photographic composition comprising a silver halide emulsion sensitized with a combination of two different cyanine dyes. The combination of two different sensitizing dyes results in an increase in the sensitization of the silver halide emulsion above that which can be obtained with either dye employed alone.

3,527,642
PROCESS FOR CONVERTING WASTE TO HIGHER DIGESTIVE NUTRIENTS

Charles W. Harrison, R.R. 1, Box 50, Pasco, Wash. 99301; Edward B. Jackson, 514 Symons, Richland, Wash. 99352; and Fred M. Cochrane, 406 N. Underwood, Kennewick, Wash. 99336
Filed Jan. 3, 1967, Ser. No. 606,921
Int. Cl. A23k *1/04, 1/10, 1/14*
U.S. Cl. 99—7 **6 Claims**

Vegetable and animal wastes are converted by a heating process to form a higher nutritive animal food. Waste material is mixed and masticated during passage through an elongate heated cylindrical chamber by an inefficient auger rotating in the chamber. The auger has increasing pitch in the direction of product travel to cause greater compaction and increased heat in the product during transit through the chamber to prevent excessive carbonization. The process destroys pesticides, herbicides and other contaminents in the raw material.

3,527,643
METHOD OF TREATING HERBACEOUS COMMODITIES

Oldrich Drexler, Karel Makovec, and Lubomir Vent, Zatec, and Vaclav Fric, Prague, Czechoslovakia, assignors to Vyzkumny Ustav Zemedelskych Stroju, Chador, Prague, Czechoslovakia
Filed Jan. 10, 1968, Ser. No. 696,816
Int. Cl. C12c *3/00*
U.S. Cl. 99—50 **3 Claims**

The moisture content of hops is increased by arranging the hops in form of a layer, and forcing through this layer from the lower side thereof a stream of air whose moisture content is so selected that, in conjunction with the period of time for which the air is forced through the layer, the moisture content of the hops is raised to the requisite level.

3,527,644
ENZYME ACTIVATION FOR YEAST RAISED DOUGHS

Bert W. Landfried, Independence, Mo., and John R. Moneymaker, Overland Park, Kans., assignors to Top-Scor Products, Inc., Kansas City, Kans., a corporation of New York
No Drawing. Filed Jan. 2, 1968, Ser. No. 694,838
Int. Cl. A21d *2/16, 8/04*
U.S. Cl. 99—91 **10 Claims**

The beneficial activities in yeast raised bakery products of fungal enzyme material derived from *Aspergillus oryzae* are enhanced by admixture with saturated monoglyceride prior to incorporation into the dough.

3,527,645
IRRADIATING MUSHROOMS AND THEIR GROWING SOIL

Samuel L. Casalina, 71 Paddon Road,
Watsonville, Calif. 95076
No Drawing. Filed Sept. 21, 1966, Ser. No. 580,878
Int. Cl. A23l *3/26*
U.S. Cl. 99—100 **7 Claims**

Prolonging the market life of raw mushrooms by irradiating them with between 25 and 125 Krad of an ionizing radiation at a dose rate in excess of 25 Krad per minute. Still greater improvement is achieved by maintaining the temperature between 33° and 55° F. during irradiation.

3,527,646
METHOD OF COATING FOODS WITH PREGELATINIZED STARCH

Karl A. Scheick, Griffith, Ind., Louis Jokay, Evanston, Ill., and Glen E. Nelson, Highland, Ind., assignors to American Maize-Products Company, a corporation of Maine
No Drawing. Filed Sept. 12, 1966, Ser. No. 578,497
Int. Cl. A23b *7/16*
U.S. Cl. 99—166 **12 Claims**

The present invention relates to a method of coating foods with an edible amorphous film containing a pregelatinized starch as the essential ingredient and to the products produced thereby. The process includes the following four steps: (1) a small quantity of moisture is provided on the surface of the food to be coated if dry starch powder will not adhere thereto; (2) a dry powder containing one or more pregelatinized starch materials as a major ingredient is applied to the premoistened surface of the food; (3) the layer of powder applied to the food is moistened in a limited manner to form a continuous colloidal suspension on the food surface; and (4) the suspension of powder is dried to form an amorphous flexible film on the surface of the food to provide the coating of the present invention. The pregelatinized starch which constitutes an essential ingredient in the process of this invention may be formed from a modified starch; a starch derivative or a high amylose starch derivative.

3,527,647
AGGLOMERATING PROCESS AND APPARATUS

John L. Hager, Northfield, Minn., assignor to Northfield Processed Food Systems Company, Inc., Northfield, Minn., a corporation of Minnesota
Filed Feb. 23, 1967, Ser. No. 617,997
Int. Cl. A23c *9/00;* **A23l** *1/00;* **A21d** *6/00*
U.S. Cl. 99—199 **9 Claims**

A flat spray of air-atomized liquid of controlled concentration, such as water at 35°–155° F., is directed from an orifice downwardly at an acute angle onto a moving surface such as an imperforate, metallic conveyor belt. The powdered material is fed downwardly onto the spray close to the orifice so that the agglomerates are deposited as an extended layer on the belt which may be heated to effect drying.

3,527,648
GLASS COMPOSITIONS

Nils Tryggve E. A. Baak, Ridgefield, Conn., and Charles F. Rapp, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed June 17, 1966, Ser. No. 558,278
Int. Cl. C03c *3/08, 3/10*
U.S. Cl. 106—54 **8 Claims**

A transparent glass consisting essentially of 78 to 85 mole percent SiO_2, 4–9 mole percent B_2O_3, 1–6 mole percent Al_2O_3, 1–7 mole percent BaO, 0–6 mole percent TiO_2 and 0–5 mole percent Na_2O. Three times the amount of BaO plus three times the amount of Na_2O plus TiO_2 equals at least 6 mole percent. The glass has a low coefficient of thermal expansion of from 10 to 40×10^{-7}° C. (0–300° C).

3,527,649
CADMIUM SULFIDE OR CADMIUM SULFOSELENIDE COLORED GLAZES AND PROCESS FOR PRODUCING SAME

Robert M. Sullivan, Washington, Pa., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 6, 1967, Ser. No. 688,307
Int. Cl. C03c *5/02;* **C09c** *1/10, 1/12*
U.S. Cl. 106—48 **8 Claims**

Low to high temperature maturing glazes or enamels colored with cadmium sulfide yellow and/or cadmium sulfoselenide red pigments are described. The glazes are produced by smelting a sulfur- or sulfur and selenium-containing frit base under reducing conditions, mixing the smelted frit with a cadmium compound or a cadmium-containing frit and then firing the mixture to maturity.

This invention relates to the production of glazing compositions which provide brilliant yellow to bright red glazes on ceramic bodies and more particularly to the production of glazing compositions colored with cadmium sulfide yellow or cadmium sulfoselenide red pigment, and to the glazing compositions so produced and to their utilization as glazes for ceramic bodies.

3,527,650
SUTURE COATING OF POLYETHYLENE OR POLYTETRAFLUOROETHYLENE

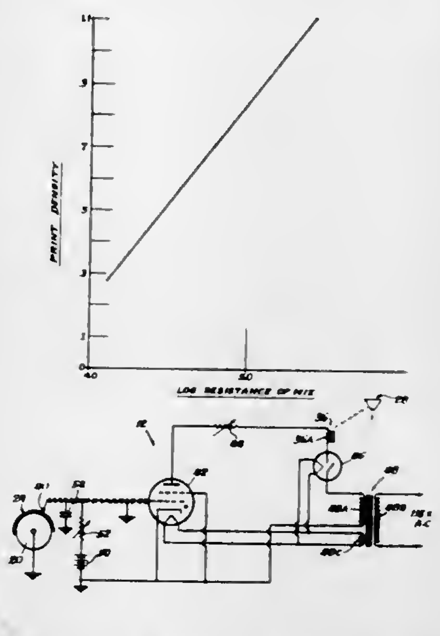
Edward A. Block, Somerville, N.J., assignor to Ethicon, Inc., a corporation of New Jersey
No Drawing. Filed Dec. 21, 1967, Ser. No. 692,283
Int. Cl. A61l *17/00*
U.S. Cl. 117—7 **8 Claims**

The hand and lubricity of a braided polyethylene terephthalate suture are improved by applying to the surface thereof polymers of polyethylene or polytetrafluoroethylene having a lower coefficient of friction than the suture and a styrene-acrylic ester copolymer resin binder therefor.

3,527,651
METHOD OF AND APPARATUS FOR DEVELOPING ELECTROSTATIC IMAGES

Loren E. Shelffo, Palatine, and Norman B. Sackrison, Des Plaines, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Oct. 20, 1966, Ser. No. 588,209
Int. Cl. G03g *13/08;* **G01r** *27/02*
U.S. Cl. 117—17.5 **11 Claims**

An arrangement for maintaining a predetermined ratio of carrier particles to toner powder in a toner mixture used in the developing assembly of an electrostatic copying machine. The arrangement comprises means for sensing the electrical resistance of the mixture and a control circuit connected to the sensing means for monitoring changes in the resistance of the mixture and, in response to such resistance changes, to provide the replenishment of toner powder.



3,527,652
METHOD OF PRODUCING A PHOSPHOR DOT SCREEN FOR A COLOR PICTURE TUBE BY AN ELECTRON BEAM PRINTING

Sadao Ozaki, Yokohama, and Ichiro Ueno, Tokyo, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan
Filed Feb. 12, 1968, Ser. No. 704,901
Claims priority, application Japan, Feb. 17, 1967, 42/10,207
Int. Cl. H01j *29/32*
U.S. Cl. 117—33.5 **12 Claims**

A method of producing a phosphor dot screen for a color picture tube which consists primarily in producing a revolving magnetic field or a revolving electric field between deflecting coils and electron guns. The electron beams produced by said electron guns can be slightly deflected by said revolving magnetic field or revolving electric field before being deflected by said reflecting coils and passing through apertures of a shadow mask to be converged on a coat of phosphor material applied to a face plate. In this way, a phosphor dot screen having phosphor dots larger in size than the spots of electron beams can be produced.

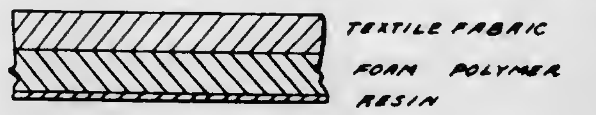
3,527,653
PRODUCTION OF A MICROPOROUS ARTIFICIAL LEATHER COATING

Erwin Sommer, Obernburg, Klaus Gerlach, Obernau, Werner Riess, Erlenbach, and Helmut Schaefer, Elsenfeld, Germany, assignors to Vereinigte Glanzstoff AG, Wuppertal, Germany
No Drawing. Filed June 16, 1967, Ser. No. 648,186
Claims priority, application Germany, June 18, 1966, V 31,290
Int. Cl. D06n *3/14;* **B44d** *1/44*
U.S. Cl. 117—62.2 **18 Claims**

Process for making a microporous artificial leather coating by depositing a polyurethane gel on a substrate, precipitating the gel at 5–80° C. with an aqueous electrolytic solution having a pH-value of 3–9 and a concentration of the electrolyte of at least 15% by weight, and then washing and drying the gel to form a leather-like microporous structure. Metal salts such as sodium chloride or potassium nitrate are useful as the electrolyte.

3,527,654
FOAM BACK DRAPERY FABRICS AND METHOD OF MAKING THE SAME

Robert L. Jones, Greensboro, and William A. Brandon, Jr., Burlington, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed July 6, 1967, Ser. No. 651,478
Int. Cl. A47h *23/10*
U.S. Cl. 117—66 **13 Claims**



A textile fabric is coated with foamed polymeric composition or formable polymeric composition which foams on the textile. The foamed material, while fluid, flows into intimate contact with the textile and gells. The laminate is impregnated with a cross-linking resin such as aminoplast which is cured to improve crush resistance and other physical properties of the foam. The laminate may be crushed, calendered or embossed prior to curing, the curing preserving the pressed state. The polymeric material may cross-link with the resin and the resin may cross-link the textile. The cured laminate may be compressively shrunk.

3,527,655
ADHESIVE SILICONE RUBBER

Gerald C. Ballard, Averill Park, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Aug. 9, 1968, Ser. No. 751,362
Int. Cl. B44d *1/14;* **C08g** *47/06*
U.S. Cl. 117—72 **7 Claims**

A fluid, curable silicone elastomer composition which bonds very tightly to the surfaces contacting it during cure comprises a vinyl substituted polysiloxane, an organohydrogen polysiloxane, a platinum compound catalyst, and a cohydrolyzate of vinyl trichlorosilane and vinyl triethoxysilane. The elastomer is useful in the repair of damaged silicone molds.

3,527,656
ANCHOR COATED REGENERATED CELLULOSE FILM

John Milton Lorenz, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 26, 1967, Ser. No. 648,989
Int. Cl. B44d *1/16;* **B32b** *23/08*
U.S. Cl. 117—76 **4 Claims**

An anchor coating composition for cellophane is provided composed of a formaldehyde-containing resin and between about 25% and about 150% by weight, based upon the weight of said resin, of urea. Film structures bearing the above-mentioned anchor coating composition and the method of making said film structures are also provided.

3,527,657
PROCESS FOR INCREASING THE BOND STRENGTH BETWEEN RUBBER AND TEXTILES USING N-SUBSTITUTED 1,3,5-DIOXAZINE

Wolfgang Huther, Cologne-Mulheim, Ivo Dane, Leverkusen, Guido Fromandi, Schildgen, and Paul Schneider, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 14, 1966, Ser. No. 565,082
Claims priority, application Germany, Aug. 11, 1965, F 46,863
Int. Cl. C08d *13/16*
U.S. Cl. 117—138.8 **14 Claims**

Increasing the bond strength between rubber and textiles by the addition of an N-substituted 1,3,5-dioxazine to a vulcanizable mixture of natural or synthetic rubber which is applied to the textile and vulcanized. Benzene derivatives substituted in the m-position by amino or hydroxy or etherified or esterified hydroxy or condensates thereof with dialkyl ketones, formaldehyde, alkyl aldehydes or aryl aldehydes or 1,5-dihydroxynaphthalene may also be included in said vulcanizable mixture.

3,527,658

LOW TEMPERATURE CATALYSTS FOR CELLULOSE ETHERIFICATIONS

Ralph J. Berni, Metairie, Elwood J. Gonzales, Gretna, and Ruth R. Benerito, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Aug. 23, 1968, Ser. No. 754,955

Int. Cl. D06m *15/56, 13/48*

U.S. Cl. 117—139.4 **12 Claims**

Cotton fabrics were reacted with certain N-methylol cyclic urea resins in the presence of a mixed catalyst system comprised of $MgCl_2$ and certain substituted acetic acids or dibasic acids at temperatures about from 105° to 125° C. for about three minutes, to yield resin-treated fabrics with permanent press properties consisting of high conditioned and wet crease recovery without yellowing during the curing operation.

3,527,659

DIMETHYLPOLYSILOXANES AND COPOLYMERS CONTAINING SiO_2 UNITS AS RELEASE AGENT

Joseph W. Keil, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed June 13, 1966, Ser. No. 556,919

Int. Cl. C08g *47/00*

U.S. Cl. 117—145 **6 Claims**

A release agent for substrates consisting of:

(1) a dimethylpolysiloxane-based formulation which is curable to an elastomer and

(2) a copolymer of $R_3SiO_{.5}$ and SiO_2 units, the copolymer having no more than 0.7 weight percent silicon-bonded hydroxyl groups, are being a monovalent hydrocarbon radical of no more than 2 carbon atoms,

illustrative of copolymer (2) is $(CH_3)_3SiO_{.5}$ units and SiO_2 units having 0.6 weight percent silicon-bonded hydroxyl groups.

3,527,660

SURFACE TREATMENT OF CELLULOSE ACETATE FILM

Terence Alfred Selby, Brantham, Manningtree, England, assignor to Bexford Limited, Brantham, Manningtree, England, a British company

No Drawing. Filed Sept. 21, 1967, Ser. No. 669,382

Claims priority, application Great Britain, Sept. 30, 1966, 43,844/66

Int. Cl. B32b *23/04;* **B44d** *5/00*

U.S. Cl. 117—145 **6 Claims**

This application describes a method of treating cellulose acetate film which comprises coating one or both sides with an adherent layer of a polymeric film-forming substance which contains particulate material and thereafter applying to the thus coated side or to at least one of the coated sides of the film at least a 0.1% by weight solution of an ionic salt of ammonium, substituted ammonium, or a group 1 or group 2 metal, and then drying the film to evaporate the solvent or alternatively the ionic salt solution may be included in the polymeric film-forming layer.

3,527,661

METHOD OF OBTAINING PUREST SEMICONDUCTOR MATERIAL BY ELIMINATION OF CARBON-IMPURITIES

Norbert Schink and Rupert Stoiber, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Aug. 31, 1967, Ser. No. 664,873

Claims priority, application Germany, Sept. 1, 1966, S 105,645; Aug. 17, 1967, S 111,390

Int. Cl. C01b *33/02*

U.S. Cl. 117—201 **12 Claims**

Described is an improvement in the C process for preparing silicon. The C process is that shown in Schweikert et al. Pat. No. 3,011,877. Chromic acids of carbon compounds, which may be present in the liquid compound of semiconductor material for precipitating semiconductor material from its gaseous phase, are first formed. Said acids are then bound by sodium or potassium hydroxide.

3,527,662

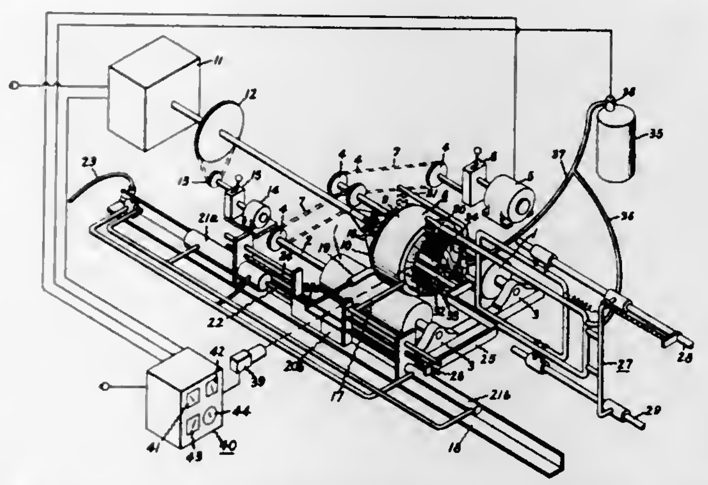
IMPREGNATION OF ELECTRICAL COILS USING RESISTANCE HEATING AND TEMPERATURE SENSING MEANS

Robert M. Elsworth, Loudonville, N.Y., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 670,463, Sept. 25, 1967, which is a continnation of application Ser. No. 481,612, Aug. 23, 1965. This application Oct. 1, 1969, Ser. No. 864,284

Int. Cl. B44d *1/36*

U.S. Cl. 117—232 **6 Claims**



The coils of electrical structures are impregnated with insulating coating and impregnating compositions by rotating the structure, resistance heating the coil by rotatable electric power means connected directly to said coils, sensing and controlling the temperature of the coils by infrared detecting and control means, applying a heat curable coating composition to the coils and curing through the medium of the electrical resistance heating.

3,527,663

PRODUCTION OF DOUBLE GLAZING UNITS

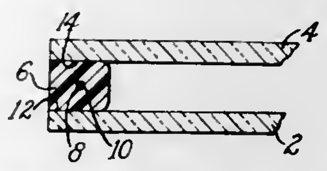
Alan D. Rose, Slough, and Ronald Woolman, Leicester, England, assignors, by mesne assignments, to Bitumen Industries Limited, Slough, England, a corporation of Great Britain

Filed Oct. 9, 1967, Ser. No. 673,904

Claims priority, application Great Britain, Oct. 14, 1966, 45,954/66

Int. Cl. B29c *19/06;* **B32b** *1/04*

U.S. Cl. 161—45 **16 Claims**



Double glazing units are produced of two sheets of glass secured together in spaced, sealed relationship using a sealant strip of curable elastomer material having an electrical conductor embedded in the same.

3,527,664

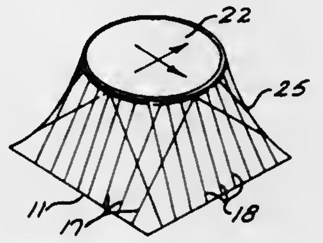
MEMBRANE STRUCTURAL MODULE HAVING DOUBLE RULED QUADRIC SURFACES

Jesse R. Hale, 14020 Budlong Ave., Gardena, Calif. 90247

Continuation-in-part of application Ser. No. 621,899, Mar. 9, 1967. This application July 1, 1968, Ser. No. 741,600

Int. Cl. B32b *3/12, 3/28;* **G09b** *23/04*

U.S. Cl. 161—68 **11 Claims**



A membrane panel structure of double ruled quadric surfaces with the rulings oriented to form biaxial multi-angled truss patterns within the surface. This structure may be used to particular advantage in forming the core of sandwich panels and establishing an isotropic truss pattern which can be oriented with the major fiber stress pattern of the panel surfaces. In an embodiment thereof, the ruled surfaces are formed from a square sheet of material which is deformed along its Z axis so that it has a node extending from the original square sheet, the edges of which form a base, the node having a terminating diameter equal to one-half the length of the diagonal of the base square. In another embodiment, the node is additionally deformed inwardly to form a folded portion extending back to the base plane.

3,527,665

COPPER-CLAD LAMINATES OF UNSATURATED THERMOSETTING RESINS WITH COPPER LAYER COATED WITH POLYPHENYLENE OXIDE RESIN

Carl L. Wright, Pasadena, and Harry H. Beacham, Severna Park, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 23, 1967, Ser. No. 610,751

Int. Cl. B32b *15/04*

U.S. Cl. 161—92 **6 Claims**

This specification discloses the production of copper-clad laminates useful in the field of printed circuitry which are made by baking a film of polyphenylene oxide resin onto the copper to be laminated and then laminating the resultant product to a base containing a thermosetting resin of the class consisting of diallyl phthalate resin and unsaturated polyesters. In order to get the desired result it is necessary to use a specific polymerization catalyst—to wit, dicumyl peroxide.

3,527,666

CONTACT COPYING MATERIAL

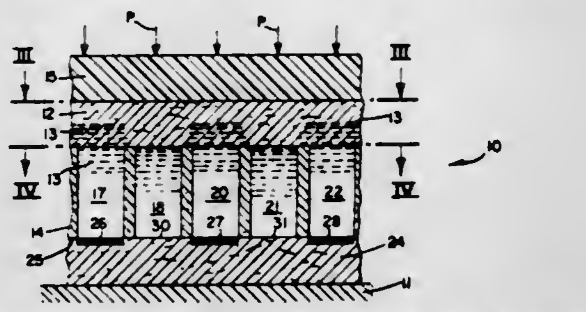
Mortimer M. Labes, Rosemont, Pa., assignor to Drexel Institute of Technology, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 11, 1967, Ser. No. 689,666

Int. Cl. B32b *5/18*

U.S. Cl. 161—161 **5 Claims**

A pressure sensitive copying material is provided, which utilizes a sheet of material having a plurality of capillary pores therein, for receiving and retaining an image-forming material from a carrier therefor, with the image-forming material being drawn into capillaries at different rates, depending upon whether the sheet to be copied is disposed with printed or other images adjacent ends of particular capillaries, or if an unprinted or unimaged surface portion of the sheet to be copied is disposed against ends of the capillaries.



3,527,667

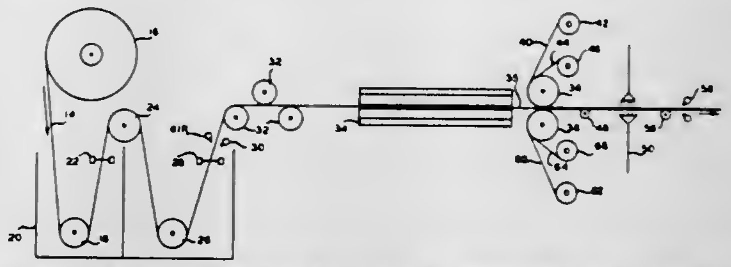
ANTI-OXIDANT FREE 1-OLEFIN COATED METAL SUBSTRATE AND METHOD FOR COATING SAME

Olaf E. Larsen and Robert H. Griffin, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Jan. 2, 1962, Ser. No. 163,525

Int. Cl. B32b *15/08, 27/08;* **C09j** *5/02*

U.S. Cl. 161—216 **18 Claims**



A metal structure is heated to a temperature within the range of about 450 to about 520° F. An unsoftened essentially anti-oxidant free normally solid polymer of a 1-olefin is then applied to the heated structure to deposit thereon a layer of polymer softened by the heat contained in said metal structure. The resulting coated structure is then cooled.

3,527,668

APPARATUS FOR THE REMOVAL OF WATER FROM CELLULOSE WEBS AND CLEANING OF THE APPARATUS

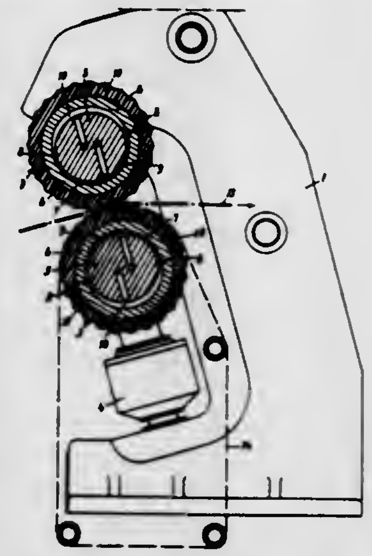
Eduard Küsters, Gladbacher Str. 457, and Kurt Quoos, Bismarckstr. 74, both of Krefeld, Germany

Filed Oct. 13, 1966, Ser. No. 586,518

Claims priority, application Germany, Oct. 29, 1965, K 57,521

Int. Cl. D21f *3/04*

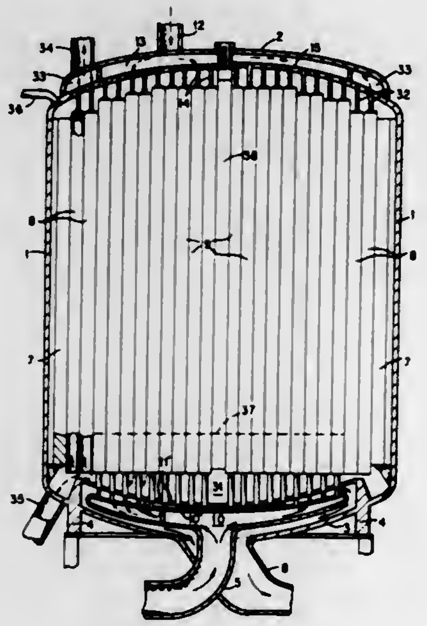
U.S. Cl. 162—272 **1 Claim**



A cellulose web dewatering roll press having axially extending radial extensions and depressions on respective rolls which mate with each other respectively to apply pressure to the web and remove water therefrom. The rolls have circumferentially extending water drainage grooves and groove cleaning finger members in the grooves for cleaning the grooves of fiber fines.

3,527,669
MOLTEN-SALT-FUELED NUCLEAR BREEDER REACTOR AND FUEL CELL FOR USE THEREIN

Edward S. Bettis, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 20, 1968, Ser. No. 730,466
Int. Cl. G21c *3/54*
U.S. Cl. 176—18 **6 Claims**

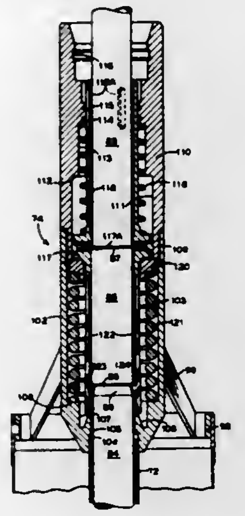


A molten-salt-fueled nuclear breeder reactor comprising a multiplicity of vertically oriented graphite fuel cells arranged in a bundle to form an active core region. Each cell comprises three concentric tubulations with axially extending passageways therebetween as well as through the innermost tubulation. The passageways provide a separate circuit for molten salt containing fissile material and for molten salt containing fertile material. A blanket region surrounds the active core region and reactivity control is achieved by displacement of molten salt containing fertile material within the interstices of the fuel cells.

3,527,670
APPARATUS FOR CONTROLLING A CONTROL ROD IN A NUCLEAR REACTOR

Gordon R. Winders, Lancaster, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 480,956, Aug. 19, 1965. This application Dec. 14, 1967, Ser. No. 697,262
Int. Cl. G21c *7/16, 7/20*
U.S. Cl. 176—36 **11 Claims**

A method and apparatus for controlling a control rod in a nuclear reactor having a control rod which is hydraulically movable in and out of the reactor core. A hydraulically operated actuator disposed within the nuclear reactor has a first fluid line extending from the actuator to a source of fluid disposed externally of the reactor. The first line has a first valve arranged to admit fluid to the actuator from the source for raising the control rod. A second line connected to the first line between the first valve and the reactor extends to a low pressure receiver. The second line has a second valve arranged to remove fluid from the actuator to the receiver for lowering the control rod. A means for latching the control rod is provided to normally hold the control rod in the core. The valves are alternately opened and closed in a predetermined sequence to first lower the control rod to release the latch before the rod can be raised out of the core.



3,527,671
PROCEDURE FOR THE SEPARATION OF ISOTOPE-CONTAINING AMINO ACID RACEMATES INTO THEIR OPTICAL D- AND L-ANTIPODES

Meinhart H. Zenk, Menzinger Str. 67, and Juergen Schmitt, Menzinger Str. 34, both of Munich, Germany
No Drawing. Filed Nov. 15, 1965, Ser. No. 507,645
Claims priority, application Germany, June 11, 1965, Z 11,589
Int. Cl. C12b *1/00*
U.S. Cl. 195—2 **8 Claims**

An enzyme acetyl-CoA:D-amino acid-α-N-acetyl-transferase is isolated from yeast by an extraction sequence. The enzyme is selective in reacting with the D-antipode of isotopically labelled amino acid racemates, and can be used in resolving such racemates into their respective D- and L-antipodes.

3,527,672
METHOD OF PRODUCING L-LYSINE

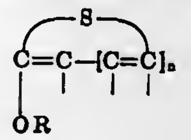
Koji Kubota, Isamu Maeyashiki, Teruo Shiro, and Katsuya Noboru, Kanagawa-ken, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 644,787, June 9, 1967. This application Oct. 28, 1969, Ser. No. 871,961
Claims priority, application Japan, June 15, 1966, 41/38,757
Int. Cl. C12d *13/10*
U.S. Cl. 195—29 **3 Claims**

When auxotrophic mutant strains of *Brevibacterium lactofermentum* No. 2256–213, which require threonine, isoleucine and valine for their growth, are cultured on an otherwise conventional medium, L-lysine accumulates in the medium.

3,527,673
SYNTHESIS OF STEROIDS

Saul L. Neidleman, Lawrence Township, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 26, 1968, Ser. No. 700,706
Int. Cl. C07c *167/00*
U.S. Cl. 195—51 **3 Claims**

This invention relates to a new process for preparing halo steroids. These steroids are prepared by interacting the corresponding steroid having the enolic ether structure



$$\overbrace{\underset{\substack{|\\OR}}{C}=\underset{|}{C}-[\underset{|}{C}=\underset{|}{C}]_n}^{S}$$

wherein S is a steroid residue and R is acyl or lower alkyl and N is 0 or 1 with a halogenating agent in the presence of a microorganism of the genus Caldariomyces or enzymes thereof The halo-keto steroids formed are useful as anabolic agents if of the androstane series, progestational agents and anti-inflammatory agents if of the pregnane series, and estrogenic agents if of the estrane series. The compounds of this invention are also useful as emulsifying agents.

ERRATA

For Class 195—103.5 see:
Patent Nos. 3,527,331 and 3,527,332

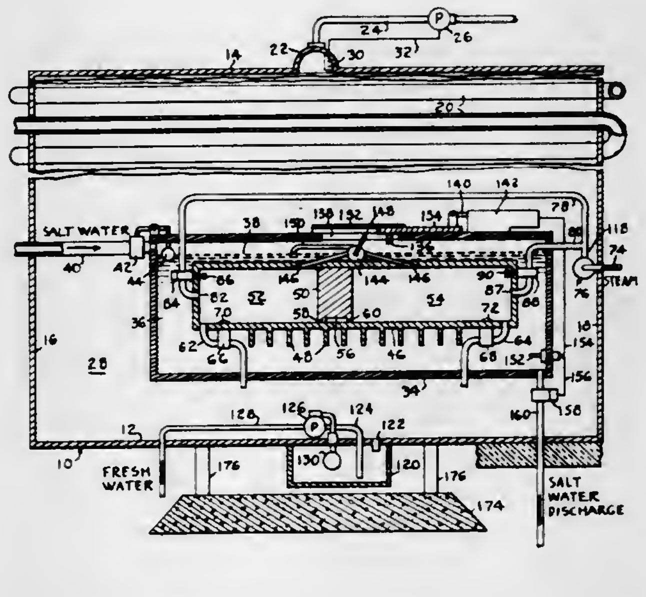
3,527,674
REAGENT MATERIAL AND METHOD FOR UREA ASSAY

Alfred Deutsch, Los Angeles, Calif., assignor to Calbiochem, Los Angeles, Calif., a corporation of California
No Drawing. Application June 30, 1966, Ser. No. 561,757, now Patent No. 3,413,198, dated Nov. 26, 1968, which is a continuation-in-part of application Ser. No. 320,004, Oct. 30, 1963. Divided and this application June 11, 1968, Ser. No. 735,990
Int. Cl. G01n *31/14*
U.S. Cl. 195—103.5 **6 Claims**

Substantially anhydrous, solid assay materials for the determination, inter alia, of reagent for assaying urea, are rendered storage stable by the presence of certain polyhydric compounds preferably mannitol, sorbitol, lactose or polyvinyl alcohol.

3,527,675
SALT WATER DISTILLATION AND CONDENSATION SYSTEM AND METHOD

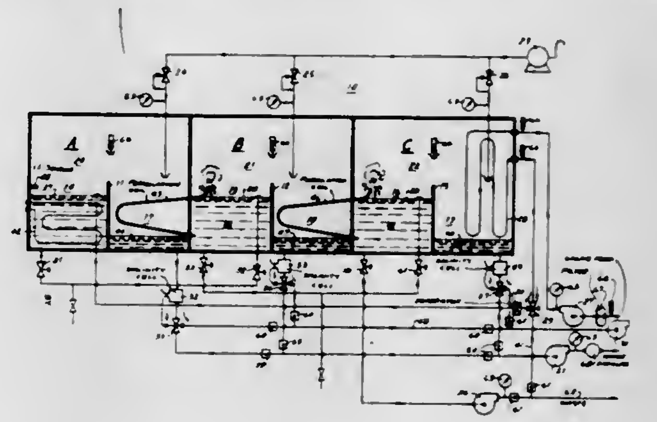
William L. Bourland, 6350 Everest Way, Sacramento, Calif. 95842
Filed May 16, 1968, Ser. No. 729,715
Int. Cl. B01d *1/14;* **C02b** *1/06*
U.S. Cl. 203—11 **12 Claims**



A condensation system and method for the extraction of fresh water from salt water and the like which includes an outer vessel which is cooled to condense and collecct vapors, a salt water containing vessei arranged in the outer vessel, a cylinder with a freely slidable piston inside the salt water containing vessel, and interconnecting systems for supplying steam to the inside cylinder alternately at opposite sides of the piston therein and reciprocably moving the piston and condensing the steam in the cylinder, thereby transferring latent heat to the salt water to produce vapor therefrom which is condensed and collected in the outer vessel.

3,527,676
MULTISTAGE DISTILLATION FOR DESALINIZING SALINE WATER

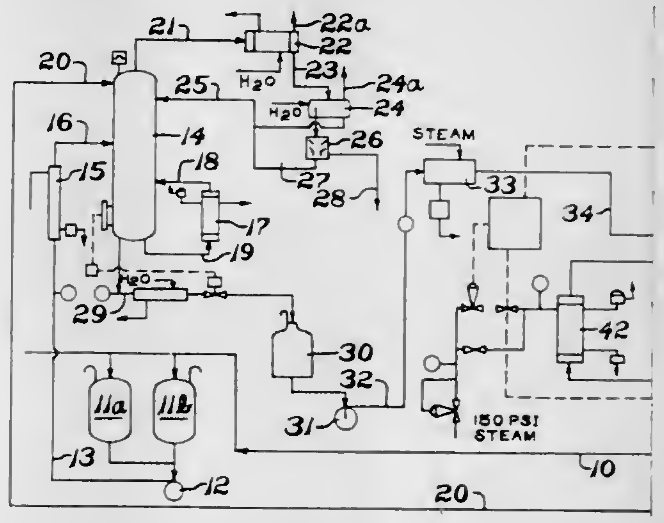
Jay P. Hingst, 204 18th Ave., Indian Rocks Beach, Fla. 33535, and George D. Heidelbaugh, 4576 22nd Ave. N., St. Petersburg, Fla. 33710
Filed July 1, 1968, Ser. No. 741,585
Int. Cl. B01d *3/06;* **C02** *1/06*
U.S. Cl. 203—11 **7 Claims**



Method and multistage apparatus especially useful for converting saline to potable water. Each stage employs successively lower temperature and lower pressure to vaporize the water. The heat released in condensing the vapor of each stage is utilized in a subsequent stage to heat the saline water of said subsequent stage to its point of vaporization.

3,527,677
PROCESS FOR DEHYDRATION OF AQUEOUS ACRYLIC ACID SOLUTIONS BY EXTRACTIVE - AZEOTROPIC DISTILLATION WITH 2-ETHYLHEXANOL OR 2-ETHYLHEXYLACRYLATE

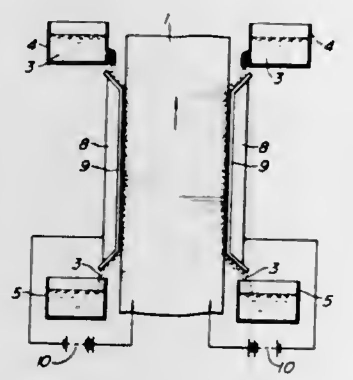
Jerome W. Harpring, New Bern, N.C., assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Mar. 6, 1969, Ser. No. 804,969
Int. Cl. B01d *3/36;* **C07c** *51/46, 57/04*
U.S. Cl. 203—15 **3 Claims**



A two-step process for dehydrating aqueous solutions of acrylic or methacrylic acids comprises a first step wherein such aqueous solution is subjected to extractive azeotropic distillation employing 2-ethylhexanol and/or 2-ethylhexyl acrylate as an azeotroping agent forming an overhead vapor stream of an azeotrope containing at least 70%/wt. of water and an essentially anhydrous bottoms stream of the acid and azeotroping agent. In the second step the dry still bottoms stream of the first stage is fractionally distilled to effect separation into an overhead stream of the dry or glacial acrylic acid and a dry second stage bottom stream of the azeotroping agent(s) which is recycled to the first step. Optionally, make-up azeotroping agent can be 2-ethylhexanol and the dry, second stage bottoms stream can be split and a slip stream distilled in an optional third step to separate out a relatively pure 2-ethylhexyl acrylate for use and sale as such.

3,527,678
METHOD OF CONTINUOUSLY TREATING THE SURFACES OF THE EDGE PORTIONS OF METAL SHEETS

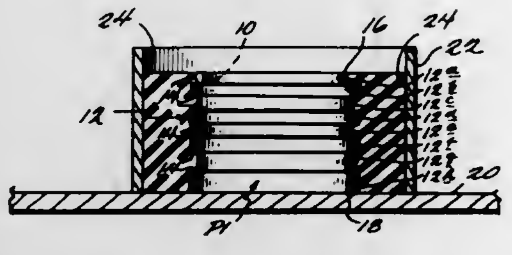
Takashi Suzuki, Toyonaka-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Sept. 20, 1967, Ser. No. 669,140
Claims priority, application Japan, Sept. 30, 1966, 41/64,698
Int. Cl. C23b *1/00, 3/00*
U.S. Cl. 204—15 **2 Claims**



A method of continuously treating the surfaces of the edge portions of a metal sheet such as aluminum foil, by moving the metal sheet longitudinally thereof, while having its edge portions immersed in a surface treating liquid flowing down on the confronting surfaces of a pair of vertically positioned wall structures.

3,527,679
MOLDED REUSABLE MASKING FOR SELECTIVE COATING, PARTICULARLY ELECTROPLATING

Joseph A. Barile, Hollywood, Fla., assignor to Aerodex, Inc., Miami, Fla., a corporation of Delaware
Filed Jan. 19, 1968, Ser. No. 699,252
Int. Cl. B44d *1/14;* **C23b** *5/48*
U.S. Cl. 204—15 **7 Claims**



A close tolerance metal part having regions requiring building up or replacement of portions of metal depleted by wear, and other regions which require no building up or replacement during the particular coating step, is supported, a liquid synthetic liquid flexible polymer or elastomer, e.g. silicone rubber, is flowed over said regions which require no buildup or replacement and confined to said regions during cure to form a masking body. The exposed regions of the part are coated, e.g. by electroplating, and the cured flexible polymer or elastomer masking body is removed from the part. The thickness of the masking body is such that when removed from the part it is generally self-supporting. In assembly line repair of similar parts, the masking body removed from the first of such parts may be removably reused on the remainder of such parts during the selective coating of the exposed regions of the remainder of such parts.

3,527,680
CATALYTIC IGNITER MEMBERS

Terence Leslie Cotton, Sawley, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Dec. 14, 1964, Ser. No. 418,204
Claims priority, application Great Britain, Jan. 1, 1964, 128/64
Int. Cl. C23b *3/02, 5/24, 5/52*
U.S. Cl. 204—32 **11 Claims**

A process for improving the activity of a platinum or platinum alloy catalytic igniter for a gas turbine engine comprises etching the igniter to remove the initial surface layer to increase its activity, plating the member with a layer of platinum which supports catalytic ignition, and heat treating the igniter to improve the hardness and tenacity of the platinum plating.

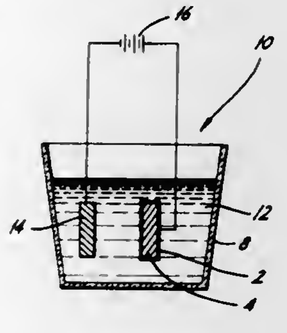
3,527,681
COPPER PLATING BATH AND A METHOD FOR DEPOSITING THICK COPPER FILMS THEREFROM

James M. Brownlow, Crompound, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
No Drawing. Filed June 17, 1968, Ser. No. 737,367
Int. Cl. C23b *5/20*
U.S. Cl. 204—52 **4 Claims**

An electrolytic plating bath for depositing thick copper films is disclosed. The bath contains water, a water soluble copper salt, to provide copper ions, a source of sulfate ions, a source of nitrate ions, formic acid and acetic acid. A critical limitation of the bath is that the ratio of sulfate ions to nitrate ions is maintained in a range of from about 0.52 to about 1.9. A method of depositing copper films from the above path in which the plating bath is flowed with a uniform velocity over the specified area to be plated with laminar agitation is also disclosed. The copper platings deposited from the bath and the method of this invention exhibit high conductivity, high ductility, uniform thickness, low internal stress, and does not blister on heating.

3,527,682
PROCESS FOR ELECTROLYTICALLY ETCHING INDIUM ANTIMONIDE

Vincent J. Valvo, Levittown, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,165
Int. Cl. C23b *3/02*
U.S. Cl. 204—143 **7 Claims**



Selected regions of an indium antimonide wafer are anodically etched by applying to those regions, via apertures in a mask placed on the wafer, a non-aqueous electrolyte which consists essentially of hydrochloric acid and

ethylene glycol in the respective relative amounts of between two and ten cubic centimeters of hydrochloric acid per 100 cubic centimeters of ethylene glycol, and by applying between the wafer and the applied electrolyte a voltage poling the wafer positive with respect to the electrolyte and having a value high enough to produce anodic etching of the selected regions.

3,527,683
PROCESS FOR PREPARING PYRIDOXAL-5-PHOSPHATE

Masao Tanaka and Kazuyuki Mineura, Machida-shi, Tokyo-to, Japan, assignors to Kyowa Hakko Kogyo Kabushiki Kaisha (Kyowa Hakko Kogyo Co., Ltd.), Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 2, 1968, Ser. No. 741,843
Claims priority, application Japan, July 5, 1967, 42/42,802
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 **10 Claims**

Pyridoxal-5-phosphate is prepared by photo-oxidizing pyridoxine-4,5-cyclic phosphate in the presence of a photosensitizer. The reaction is preferably carried out in aqueous solution which is neutral to basic at a temperature of 30°–60° C. Best results are obtained when an amino compound is present, and this compound may, itself, act as a photo-sensitizer.

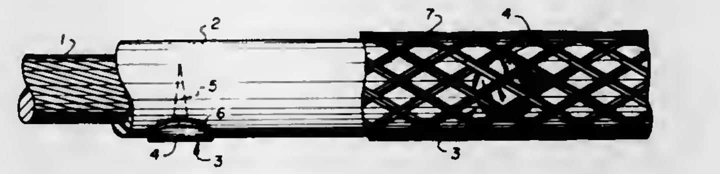
3,527,684
METHOD OF INCREASING CONTRAST IN ELECTROPHORETIC REPRODUCTION

William C. York and James G. Jarvis, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 13, 1967, Ser. No. 622,499
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 **5 Claims**

A method for increasing the contrast between the exposed and unexposed areas of a pattern of conductivity induced in a photoconductive layer, in which said layer is treated prior to exposure so that charged particles will be repelled from the unexposed areas upon development of said pattern.

3,527,685
ANODE FOR CATHODIC PROTECTION OF TUBULAR MEMBERS

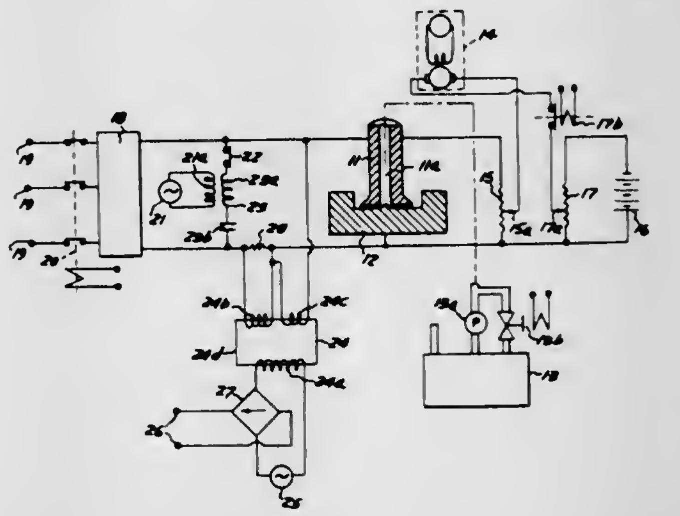
Edward P. Anderson, Livingston, N.J., assignor to Engelhard Minerals & Chemicals Corporation, Newark, N.J., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,055
Int. Cl. C23f *13/00*
U.S. Cl. 204—196 **7 Claims**



An elongated anode assembly for the cathodic protection of tubular members such as metal pipes and well casings, comprising an electrically conductive elongated core having its external surface coated with an insulation material, a plurality of metal anode pins each having head and stem portions, the pins being mounted in spaced relation to each other on and along the length of the insulated core with the heads exposed externally of the insulation material and the stems penetrating the insulation material in contact with the core, and an outer porous insulation sleeve mounted substantially co-extensively over the pin-mounted insulated core, whereby the heads of the anode pins are exposed to contact by an electrolyte through the porous sleeve.

3,527,686
ELECTROCHEMICAL MACHINING APPARATUS AND METHOD

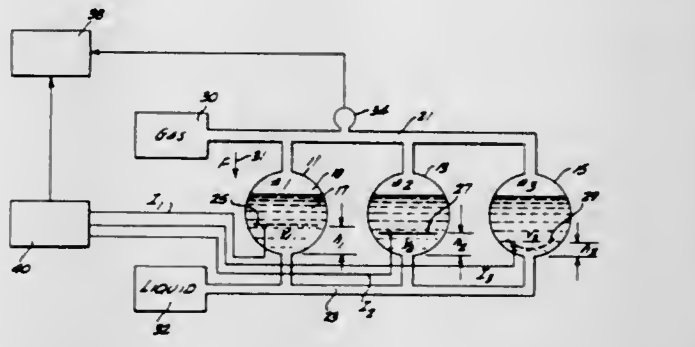
Kiyoshi Inoue, Tokyo, Japan
(100 Sakato, Kawasaki, Kanagawa, Japan)
Filed Dec. 6, 1965, Ser. No. 511,827
Int. Cl. B23p *1/02*
U.S. Cl. 204—224 **8 Claims**



A method of and an apparatus for the electrolytic machining of a conductive workpiece with a tool electrode spacedly juxtaposed therewith. Machining is carried out with a succession of machining pulses which render the workpiece anodic to solubilize workpiece material in the electrolyte filling the gap. The gap-voltage/gap-current ratio is ascertained at each pulse and, upon deviation from a predetermined value, is used to control the power supply, the electrode supply to prevent further deviation and prevent discharge across the gap during subsequent pulses.

3,527,687
SYSTEM FOR REMOTE DETERMINATION OF LIQUID LEVELS

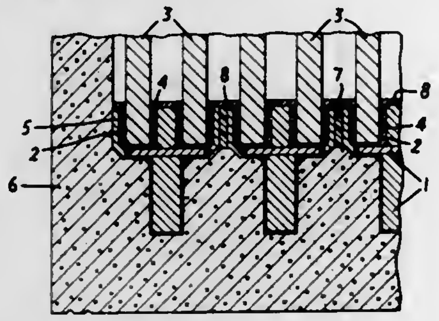
Boris T. Subbotin, Van Nuys, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,164
Int. Cl. B01k *3/00*
U.S. Cl. 204—230 **6 Claims**



A system for remotely indicating the level of liquid in a plurality of interconnected containers in which the liquid is being electrolyzed. The system is especially applicable in a spinning body where liquid level is desirably remotely determined when only a small amount of liquid remains, that is, near the end of life of the equipment. The electrodes are positioned at different common levels or positions in each tank so that either the electrolysis current or the rate of pressure rise provide a reliable indication of remaining liquid volume.

3,527,688
ELECTROLYTIC CELLS

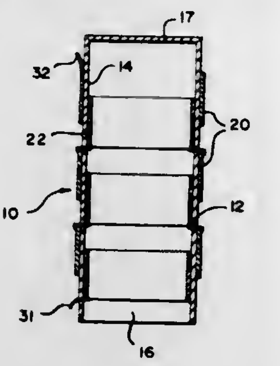
Umberto Giacopelli, Rosignano-Solvay, Italy, assignor to Solvay & Cie, Brussels, Belgium, a corporation of Belgium
Filed Dec. 28, 1966, Ser. No. 605,247
Claims priority, application Belgium, Dec. 29, 1965, 22,216, Patent 674,452
Int. Cl. B01k *2/08, 3/00, 3/04*
U.S. Cl. 204—242 **3 Claims**



The anodes of electrolytic cells, particularly diaphragm cells for the electrolysis of aqueous alkaline halide solutions, are fixed in troughs by means of alloys having low melting points, rather than being sealed in a layer of lead in accordance with the prior art. The current feed bars are arranged in longitudinal alignment and in electrical contact with the troughs. One trough or a plurality of troughs is assembled with each current feed bar and the troughs of each of these assemblies are enclosed in a mass of lead or polyester resin. Each of these assemblies is accommodated in a respective recess provided in a wall of the cell. The spaces between the assemblies may be filled with cement or a synthetic resin or asbestos cords to lend structural integrity to the entire anode assembly of the cell. This construction may finally be covered with conventional protective layers of cement and asphalt or a polyester resin resistant to attack by moist halogen and alkaline halide brine, or with a single protective layer of such a polyester resin.

3,527,689
SOLID ELECTROLYTE CELL CONSTRUCTION

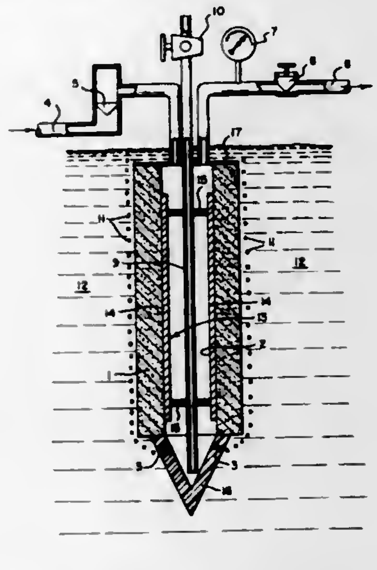
Thomas I. Taylor, Leonia, N.J., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey
Filed May 12, 1965, Ser. No. 455,144
Int. Cl. B01k *3/04;* **C23b** *5/68*
U.S. Cl. 204—278 **7 Claims**



An electrochemical cell has a hollow elongate cylindrical solid electrolyte of uniform composition and unbroken surface area, the electrolyte being capable of ionic transfer through its wall via vacancies in its lattice structure. A plurality of spaced-apart gas previous electrode bands alternating in polarity of bias is provided along each of the inner and outer surfaces of the cylindrical electrolyte, the bands on the inner surfaces offset from the bands on the outer surface, such that each band occupies a region on its respective surface opposite an insulative gap on the other surface and overlaps to a substantial extent an adjacent band of opposite polarity on the other surface. Adjacent bands of like polarity on opposite surfaces of the cylindrical electrolyte are electrically connected in separate pairs via conductive material filling thru-holes in the wall of the electrolyte, but the electrically connected bands are substantially nonoverlapping with respect to one another.

3,527,690
DEPOLARIZING CATHODES

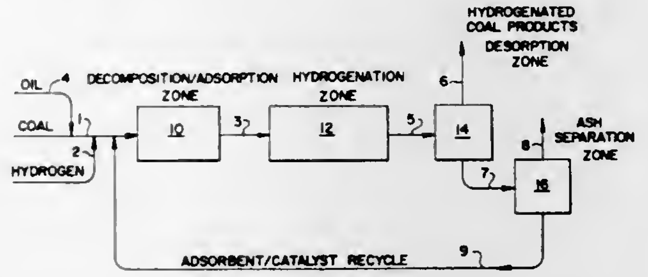
Marc Griffon du Bellay, Saint-Genis-Laval, and Roland Bachelard, Lyon, France, assignors to Ugine Kuhlmann, Paris, France, a French company
Filed Aug. 15, 1966, Ser. No. 572,374
Claims priority, application France, Aug. 16, 1965, 28,410
Int. Cl. B01k *3/04*
U.S. Cl. 204—284 **5 Claims**



A depolarizing cathode in the form of a vertical cylinder of porous conducting material, closed at the top and closed at the bottom except for apertures at the bottom through which bubbles of gas may pass to the exterior of the electrode. Inlet and outlet gas conduits and a conduit for the supply and withdrawal of liquid lead to the interior of the electrode.

3,527,691
PROCESS FOR CONVERSION OF COAL

Russell L. Hodgson, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 746,958, July 23, 1968. This application Dec. 31, 1968, Ser. No. 789,033
Int. Cl. C10g *1/06, 1/08*
U.S. Cl. 208—10 **4 Claims**



Hydrocracking coal with solid; particulate, sorbent catalyst by grinding coal to have a smaller particle size than the catalyst, slurrying the coal in oil, subjecting the slurry to hydrocracking conditions while in contact with the catalyst, separating gas and liquid products from the solids, subjecting the solids to size separation to remove non-catalyst solids from catalyst solids, and returning catalyst solids into contact with fresh slurry.

3,527,692
SIMULTANEOUS PIPELINE TRANSPORTATION AND RECOVERY OF OIL FROM OIL SHALE

Paul E. Titus, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Feb. 16, 1968, Ser. No. 706,014
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 **1 Claim**

A method for the simultaneous transportation and recovery of shale oil from oil shale flowing as a slurry within a pipeline. Oil shale is taken from a subterranean formation, crushed and transported to a remote area as an oil shale/solvent slurry in a pipeline under heating conditions sufficient to extract shale oil from the oil shale while in transit. Rates of extraction are accelerated by the addition of H_2S to the solvent.

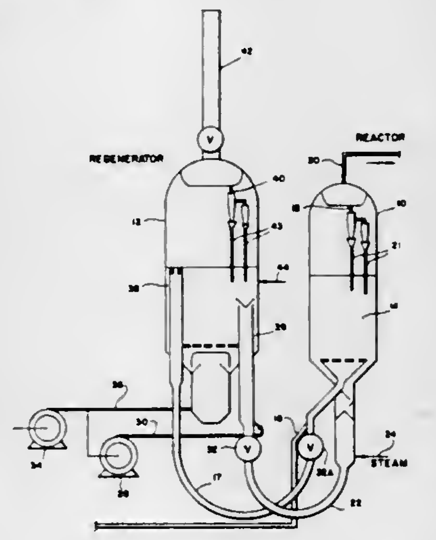
3,527,693
PROCESS FOR MAKING JET FUEL

Robert L. Barnes, Ray, Colo., and Robert L. Dinsmore, Long Beach, and Frederick W. Steffgen, Laguna Beach, Calif., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Application Aug. 3, 1967, Ser. No. 658,066, which is a continuation-in-part of application Ser. No. 588,237, Oct. 13, 1966, which in turn is a continuation-in-part of application Ser. No. 324,881, Nov. 19, 1963. Divided and this application Sept. 6, 1968, Ser. No. 758,126
Int. Cl. C07c *23/02;* **C10l** *1/04*
U.S. Cl. 208—57 **4 Claims**

A process for making jet fuel by contacting straight run stove oil (kerosene) first with a hydrodesulfurization catalyst and then with a saturative hydrogenation catalyst is disclosed. The straight run stock is first contacted with a catalyst conventionally of a Group VIII metal in combination with a Group VI–B metal such as cobalt-molybdenum, nickel-molybdenum, cobalt-tungsten, and molybdenum-tungsten supported on alumina or silica alumina at 250 to 800° F., 300 to 2,000 p.s.i.g., a WHSV of 0.2 to 6.0 and a hydrogenation rate of 1500 to 8000 s.c.f./bbl. The second stage hydrogenation is performed with a Group VIII hydrogenation catalyst such as platinum at 200 to 850° F., 100 to 2000 p.s.i.g., a weight hourly space velocity of 1.5 to 6.0 and a hydrogen flow rate of 1500 to 6000 s.c.f./bbl.

3,527,694
FLUID SOLIDS SYSTEM

Edward C. Luckenbach, Mountainside, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,377
Int. Cl. C10g *13/14*
U.S. Cl. 208—118 **12 Claims**



In a fluid solids system containing relatively coarse catalytic material and a fines content sufficient to provide good fluidity to the system, entrainment losses of fines and catalyst are reduced and fluidity is maintained by using particles having a density greater than the coarser catalytic solids in the system.

3,527,695
HYDROGENATION OF AROMATICS

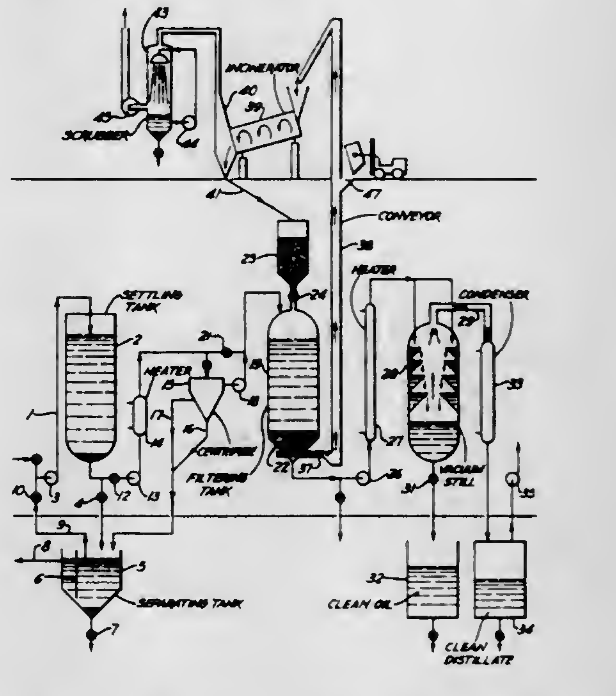
Paul Anthony Lawrance, Staswell, and Bernard Whiting Burbidge, Leatherhead, England, assignors to The British Petroleum Company Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 12, 1968, Ser. No. 712,387
Claims priority, application Great Britain, Mar. 23, 1967, 13,652/67; Aug. 24, 1967, 38,981/67
Int. Cl. C07c *5/10;* **C10g** *23/02*
U.S. Cl. 208—143 **8 Claims**

Aromatics are hydrogenated in the presence of 0.1–1000 p.p.m. of sulphur at 90–400° C. over a catalyst of palladium incorporated with a zeolite with pore openings of at least 6 A. Simultaneous desulphurisation may also occur, but there are desirably no other reactions (e.g. no isomerisation or hydrocracking). The other process conditions may be 0-3000 p.s.i.g., 0.1–20 v./v./hr. and 0.1–20:1 H_2:HC molar ratio. The preferred zeolite is decationised zeolite Y.

The process may be a pretreatment stage for a low temperature isomerisation process using a catalyst of platinum-alumina chlorinated with a chlorine derivative of methane containing at least 2 Cl atoms. The feedstock may contain C_5–C_6 paraffin hydrocarbons and up to 5% wt. aromatics which are hydrogenated in the pretreatment stage.

3,527,696
METHOD AND APPARATUS FOR RECLAIMING WASTE INDUSTRIAL OILS

James I. Wallover, Beaver, Pa., assignor to Wallover Oil Company, East Liverpool, Ohio, a corporation of Ohio
Filed Dec. 17, 1969, Ser. No. 885,794
Int. Cl. C10m *11/00*
U.S. Cl. 208—182 **14 Claims**



Waste industrial oil is filtered through a bed of activated earth to remove chemicals and extremely small foreign particles. The filtered oil is conducted away from the bed and to distilling apparatus if the oil contains distillates. Spent earth in the filter bed is removed periodically and passed through an incinerator to clean and reactivate it. Its place in the bed is taken by activated earth delivered from a substantially air-tight reservoir, to which reactivated earth from the incinerator is returned. The smoke produced by the incinerator is burned and the resulting gases are scrubbed to remove solids from them in order to provide clean air which can be delivered to the atmosphere. The solids are collected for suitable disposal.

3,527,697

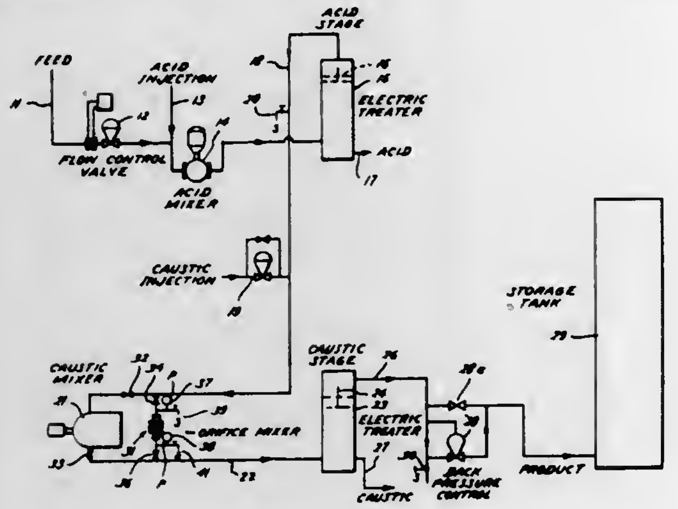
METHOD OF MIXING AND TREATING A HYDROCARBON LIQUID TO FORM A READILY COALESCING DISPERSION

Frederick D. Watson, Houston, Tex., assignor to Petrolite Corporation, St. Louis, Mo., a corporation of Delaware

Filed May 31, 1968, Ser. No. 733,662

Int. Cl. C10g *17/06*

U.S. Cl. 208—267 4 Claims



This specification discloses: An orifice mixer and a method for intimately dispersing an aqueous treating liquid within a hydrocarbon liquid by their concurrent passage through a plurality of mixing stages. Each mixing stage has a certain shear effect on the fluids being mixed, and the number of stages provides a desired level of mixing energy. In each mixing stage, the liquids flow through an open area formed by a plurality of like-size openings which have one dimension residing between 0.0312 and 0.250 inch. The total open area (and the number of openings) may be defined by formulas which are contingent upon the pressure differential, or head, which exists across each mixing stage. Preferably, the open area is provided by a plurality of like-size round openings.

3,527,698

METHOD AND APPARATUS FOR REMOVING WATER FROM SEWAGE SLUDGE

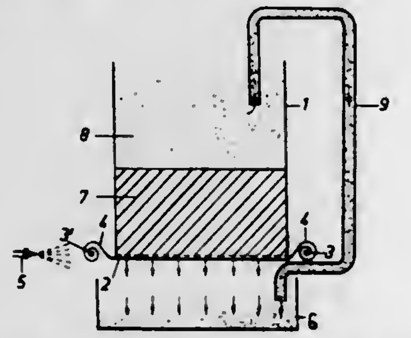
Lothar von Reppert, Wiesbaden, Wolfgang Teske, Kronberg, Taunus, and Eduard Hilscher, Frankfurt am Main, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany

Filed July 30, 1968, Ser. No. 748,744

Claims priority, application Germany, Aug. 22, 1967, C 43,146

Int. Cl. B01d *33/00;* **C02c** *3/00*

U.S. Cl. 210—10 10 Claims



A method of removing water from sewage sludge in which the sludge is introduced into at least one container having a porous bottom permitting water to pass therethrough, collecting the water that runs from the container, allowing the sludge to settle in the container until it separates into two layers, the upper layer being a supernatant layer of water, and leading off the layer of water, and an apparatus for removing water from sewage sludge.

3,527,699

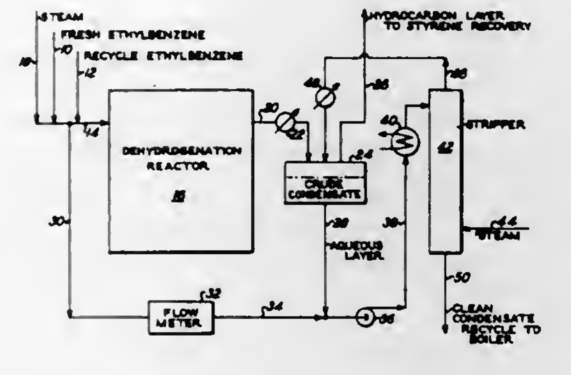
CONDENSATE RECOVERY SYSTEM

Norman Barrett King, Wayland, Mass., assignor, by mesne assignments, to The Badger Company, Inc., Cambridge, Mass., a corporation of Delaware

Filed Aug. 20, 1965, Ser. No. 481,180

Int. Cl. B01d *11/00*

U.S. Cl. 210—21 9 Claims



Styrene contaminated condensate water is purified for reuse by removing the styrene first by contacting the water with ethylbenzene as a styrene solvent and then in a preferred final step the water is steam stripped to remove the ethylbenzene solvent.

3,527,700

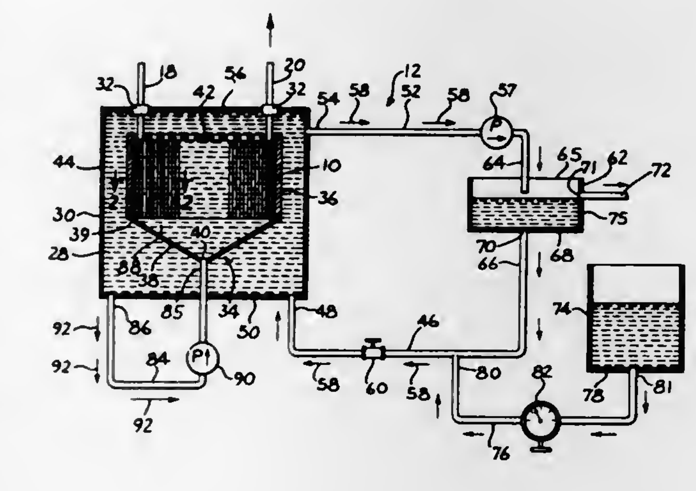
DIALYSIS FLUID RECIRCULATION PROCESS AND APPARATUS

Richard Goldhaber, Evanston, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

Filed June 6, 1968, Ser. No. 735,144

Int. Cl. B01d *13/00*

U.S. Cl. 210—22 21 Claims



A wash fluid is moved across one surface of a selectively permeable membrane under a selectively adjustable negative pressure to effect ultrafiltration and dialysis relative another fluid disposed on the other side of said membrane. A portion of the effluent is wasted and the remainder together with a volume of fresh dialyzing fluid equal to the wasted portion and selectively proportioned independently of the negative pressure provide influent.

3,527,701

METHOD AND APPARATUS FOR TREATING LIQUIDS CONTAMINATED WITH HYDROCARBONS COMPOUNDS

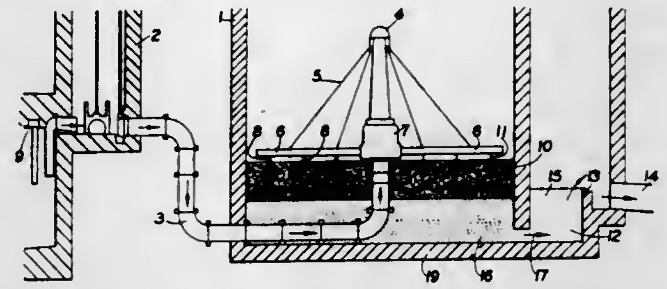
Walter Weller, Diez (Lahn), Germany, assignor to Passavant-Werke, near Michelbach, Nassau, Germany, a corporation of Germany

Fl!ed June 11, 1968, Ser. No. 736,104

Claims priority, application Germany, June 14, 1967, P 42,369

Int. Cl. B01d *17/04*

U.S. Cl. 210—40 15 Claims



Apparatus for spraying a liquid containing hydro-carbons, such as oil, under high pressure onto a filter made of particles containing an oleophilic compound, thoroughly mixing the liquid with the filter compound to remove the hydro-carbon compounds and then removing the the cleansed liquid.

3,527,702

CARBON DIOXIDE REMOVAL FROM WATER

Josef Holluta, Gunzburg, and Josef Wuhrer, Wulfrath, Germany, assignors to Rheinische Kalksteinwerke G.m.b.H., Wulfrath, Germany

No Drawing. Filed Dec. 5, 1967, Ser. No. 687,994

Claims priority, application Germany, Dec. 10, 1966, R 44,771

Int. Cl. B01d *19/04*

U.S. Cl. 210—59 2 Claims

Portland cement clinkers or set hydraulic cements are used for water filtration to remove free carbon dioxide.

3,527,703

POLYCHLOROETHYLENE STABILIZED BY METALLIC BENZOATES

Wesley L. Archer, Midland, Mich., and Miriam K. Harter, Miami, Fla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,077

Int. Cl. C09k *3/00;* **C23f** *11/00*

U.S. Cl. 252—153 3 Claims

The corrosion of iron in the presence of wet trichloroethylene or wet tetrachloroethylene is inhibited by the presence in the solvent of a small amount of any of certain metal benzoates.

3,527,704

LUBRICANTS CONTAINING CERTAIN ORGANOLEAD NITROGEN COMPOUNDS

Warren L. Perilstein, Orchard Lake, and Harold A. Beatty, Detroit, Mich., assignors to International Lead Zinc Research Organization, Inc., New York, N.Y., a membership corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 665,969, Sept. 7, 1967. This application Feb. 3, 1969, Ser. No. 796,211

Int. Cl. C10m *1/36, 1/54*

U.S. Cl. 252—49.7 32 Claims

Organolead nitrogen compounds in which the lead is tetravalent and is attached to carbon and to nitrogen, and in particular to lubricants containing such compounds effective as antiwear additives for lubricants. In many instances such utility is enhanced by incorporating certain antioxidants. A method of preparation is also described wherein trialkyllead hydroxide is reacted with the desired heterocyclic compound in an organic solvent with the formation of water and the desired organolead nitrogen compound.

3,527,705

BIS-ALKANYLAMIDES OF ALKYLENEDIAMINES

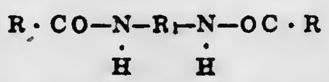
Donald Henry Foelsch, Williamsport, Pa., assignor to Glyco Chemicals, Inc., New York, N.Y., a corporation of Pennsylvania

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,768

Int. Cl. C10m *7/34*

U.S. Cl. 252—51.5 10 Claims

This invention involves a class of mixtures of diamides of the formula



$$R\cdot CO{-}\underset{H}{N}{-}R_1{-}\underset{H}{N}{-}OC\cdot R$$

wherein R_1 is the divalent alkylene group of 1,4-diaminocyclohexane, methylenediamine, ethylenediamine, or other omega,omega'-(open chain)alkylenediamine having from 3 to about 12 carbon atoms; and R·CO is the mixture of acyl groups of the mixture of primarily fatty acids predominately methyl branched-chain fatty acids (60 to about 70 percent having 18 carbons, one to 3 percent having 14 carbons, 3 to 7 percent having 16 carbons), one to 11 percent being myristic acid, 4 to 10 percent being palmitic acid, one to 6 percent of each of stearic and oleic acids, and a residual about 4 to about 10 percent composed of small amounts of each of cyclopentanioc and cyclohexanoic acids, ethyl branched-chain fatty acids of 14 to 18 carbons, and methyl branched-chain cyclopentanoic and cyclohexanoic acids; the entire mixture of all of which alkanoic acids (including the two cyclic acids) being the by-product obtained after separating the dimer acids produced in the dimerization of linoleic acid with subsequent hydrogenation.

3,527,706

METHOD OF MANUFACTURING BINDER-CONTAINING PERMANENT MAGNETS ON A FERRITE BASIS

Horst Weiland, Harksheide, and Lutz Beyer, Pinneberg, Germany, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 21, 1967, Ser. No. 662,081

Claims priority, application Germany, Aug. 31, 1966, P 40,300

Int. Cl. B22f *3/16;* **H01f** *1/04, 1/10*

U.S. Cl. 252—62.55 3 Claims

A method of manufacturing a permanent magnet in which a ferrite having the composition corresponding to the formula $MO\cdot 6Fe_2O_3$, M being barium, strontium or lead is mixed with a low melting point binder such as lead, aluminum, lead-tin alloys, lead oxide, lead or alkali metal or alkaline earth metal salts, or lead or alkali metal containing glasses. The mixture is compacted into a body of desired shape and dimensions and heated to between 700° and 1000° C. to melt the binder which forms a rigid bond for the ferrite.

3,527,707

LIQUID DETERGENT COMPOSITION

James H. McAteer, Cranford, and Joseph F. Nelson, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 5, 1963, Ser. No. 285,606

Int. Cl. C11d *3/065*

U.S. Cl. 252—138 6 Claims

A heavy duty liquid detergent having biodegradation characteristics containing an alkane sulfonate detergent, a condensed phosphate builder or ethylene diamine tetraacetic acid, small amounts of a hydrotrope and water. The liquid detergents may also contain other adjuvants such as other detergents, anti-redeposition agents, viscosity reducers, etc., conventionally found in detergent formulations.

3,527,708
AZEOTROPIC COMPOSITION

Jared W. Clark, Charleston, and Charles E. Rectenwald, South Charleston, W. Va., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 677,738, Oct. 24, 1967, which is a continuation-in-part of application Ser. No. 590,227, Oct. 28, 1966. This application Oct. 30, 1968, Ser. No. 772,046

Int. Cl. C09d *9/00;* **C11d** *7/50;* **C23g** *5/02*

U.S. Cl. 252—170 **2 Claims**

The disclosure relates to azetropic mixtures of tetrachlorodifluoroethane and isopropanol.

3,527,709
FLUORESCENT TRACER PROCESS AND COMPOSITIONS

James R. Alburger, 5007 Hillard Ave.,
La Canada, Calif. 91011

Continuation-in-part of application Ser. No. 532,611, Mar. 8, 1966, which is a division of application Ser. No. 492,674, Oct. 4, 1965, now Patent No. 3,386,920. This application Jan. 14, 1969, Ser. No. 790,939

Int. Cl. C09k *1/02*

U.S. Cl. 252—301.2 **4 Claims**

In an inspection process, the method step of employing fluorescent inspection tracers, in which at least one of the compounds fluoranthene and pyrene is dissolved in a liquid carrier to a concentration between about .001 gram per pint and about 25 grams per pint. Pyrene and fluoranthene yield novel and useful fluorescence response effects in a wide variety of organic solvents, as compared with ordinary dye sensitizers, as, for example, their ability to yield a "linear" sensitivity response with respect to dilution, such that even at concentrations as small as about .001 gram per pint, solutions of the compounds exhibit substantial degrees of dimensional sensitivity.

3,527,710
X-RAY INTENSIFIER SCREEN COMPRISING EUROPIUM ACTIVATED BARIUM ORTHOPHOSPHATE PHOSPHOR

Sam Z. Toma and Francis N. Shaffer, Towanda, Pa., assignors to Sylvania Electric Products, Inc., a corporation of Delaware

No Drawing. Filed Sept. 21, 1967, Ser. No. 669,381

Int. Cl. C09k *1/36;* **H01j** *1/63*

U.S. Cl. 252—301.4 **6 Claims**

$Ba_{2.9-3.1}(PO_4)_2:Eu^{2+}$ has been found to be a suitable phosphor for applications in X-ray intensifier screens and other intensifying devices.

3,527,711
PROCESS FOR PREPARING RARE EARTH DOPED LUMINESCENT SILICA GLASS

Stephen W. Barber and William F. Nelson, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Continuation-in-part of applications Ser. No. 355,248, Ser. No. 355,251, Ser. No. 355,253, Ser. No. 355,407, Ser. No. 355,408, Ser. No. 355,409, Ser. No. 355,421, Ser. No. 355,422, Ser. No. 355,444, Ser. No. 355,445, Ser. No. 355,469, Ser. No. 355,470, and Ser. No. 355,471, all of Mar. 27, 1964, and continuation of application Ser. No. 641,264, May 25, 1967. This application July 1, 1969, Ser. No. 841,690

Int. Cl. C03c *3/06;* **C09k** *1/54*

U.S. Cl. 252—301.4 **14 Claims**

This invention relates to the preparation of a uniformly coalesced, transparent glass containing at least one selected oxide ingredient to impart suitable characteristics to the glass by uniformly compacting a homogeneous mixture consisting essentially of substantially pure, noncrystalline silica and the selected ingredient and heating the mixture under vacuum. Typical selected ingredients include metal or metalloid oxides especially the rare earths oxides.

3,527,712
DRIED AGAROSE GEL, METHOD OF PREPARATION THEREOF, AND PRODUCTION OF AQUEOUS AGAROSE GEL

Donald W. Renn, Glen Cove, and George P. Mueller, Camden, Maine, assignors to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed Mar. 7, 1967, Ser. No. 621,119

Int. Cl. B01d *15/08;* **B01j** *13/00;* **C08b** *25/00*

U.S. Cl. 252—316 **16 Claims**

An agarose gel produced at a concentration of about 0.5% to about 5% by weight and suitable for such purposes as chromatography and other selective molecular transmission or diffusion is produced in dry form with a macro-molecular predominantly organic hydrocolloid contained in and preserving the gel structure, thereby improving the capacity of the dried gel upon rehydration to substantially reassume its original cell structure for uses of the character aforesaid after removal of the hydrocolloid by leaching from the rehydrated gel.

3,527,713
METHOD OF PREPARING PLASTIC STABILIZING CONCENTRATE AND IMPROVED PRODUCT THEREFROM

Winfield S. Haynes, Jr., Freeland, and Floyd B. Nagle, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 10, 1967, Ser. No. 659,600

Int. Cl. B01j *1/16;* **B02c** *18/00;* **C08g** *51/58*

U.S. Cl. 252—403 **9 Claims**

Improved stabilizer concentrate is prepared by extruding a mixture of 2,6 - di-tert-butyl-p-cresol and 2-(2H-benzotriazol-2-yl)-p-cresol at a temperature below the melting point of 2 - (2H-benzotriazol-2-yl)-p-cresol. An improved pellet is obtained which disperses better in an extruder and has less tendency to dust.

3,527,714
ACID LEACHING OF COBALT OR NICKEL CATALYSTS PRIOR TO POLYMER VAPORIZATION

James Keith Hambling, Frimley, near Aldershot, John Robert Jones, Walton-on-Thames, and Kuldar Heljula, Twickenham, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,044

Claims priority, application Great Britain, Nov. 29, 1966, 53,405/66

Int. Cl. B01j *11/02*

U.S. Cl. 252—413 **5 Claims**

Spent cobalt or nickel on carbon catalysts which have been used for olefin polymerisation are regenerated by leaching the spent catalyst with a mineral acid, e.g., HNO_3, until substantially all the cobalt or nickel is removed, heating the leached catalyst to 150–1000° C. to remove adsorbed polymer, cooling and impregnating with an aqueous solution of a heat decomposable cobalt or nickel salt, e.g., cobalt or nickel nitrate. The heating of the leached catalyst is preferably effected in a carrier gas. The impregnated catalyst may be activated by heating under nitrogen or by heating in a fluidised bed under increasing temperature, saturating the bed with water when the temperature has reached 180–220° C., continuing heating with fluidisation to remove water and finally heating to a temperature not above 300° C. to decompose the cobalt or nickel compound.

3,527,715
REGENERATION OF CHLORINE CONTAINING METALLIFEROUS-ALUMINA ISOMERIZATION CATALYSTS

Joseph P. Giannetti, Allison Park, Alfred M. Henke, Springdale, Howard G. McIlvried, Pittsburgh, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Aug. 2, 1966, Ser. No. 569,596

Int. Cl. B01j *11/80*

U.S. Cl. 252—415 **3 Claims**

A method for regenerating isomerization catalysts composed of alumina metalliferous hydrogenating components and chlorine after such catalyst has become deactivated by employment in an isomerization process. The method of regenerating the deactivated catalyst comprises contacting the spent catalyst with an oxygen-free gas at a temperature of from 600° to 1100° F. for a period of from one to twelve hours and thereafter subjecting the gas-contacted catalyst to a chlorination treatment.

3,527,716
CATALYST SYSTEM AND A METHOD FOR THE PREPARATION OF UNSATURATED ACIDS AND ALDEHYDES

Joseph W. Nemec, Rydal, Pa., and Francis W. Schlaefer, Pennsauken, N.J., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 555,247, June 6, 1966. This application Feb. 6, 1967, Ser. No. 615,880

Int. Cl. B01j *11/74*

U.S. Cl. 252—439 **11 Claims**

The present invention relates to a novel catalyst system and a method for the preparation of olefinic oxidation products such as unsaturated acids and aldehydes. The novel catalyst system is formed of the fluxed product of cobalt molybdate with the telluride of arsenic, bismuth or antimony, or mixtures thereof. Use of the catalyst system results in high productivity of desired products over a prolonged period of operation, high selectivity over a prolonged period of operation and sharply enhanced physical stability over known catalyst systems. The catalyst system is preferably employed in the preparation of unsaturated aliphatic acids such as acrylic and methacrylic acids and unsaturated aldehydes such as acrolein and methacrolein by the oxidation of the appropriate olefin.

3,527,717
ISOMERIZING CATALYSTS AND METHOD FOR PREPARING AND USING SAME

Joseph P. Giannetti, Allison Park, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,180

Int. Cl. B01j *11/78*

U.S. Cl. 252—442 **9 Claims**

Low temperature isomerization catalyst compositions are prepared by treating a catalyst comprising alumina and a metalliferous material having hydrogenating activity with methylchloroform. The methylchloroform-activated catalyst compositions may be pretreated and/or post treated with hydrogen chloride to increase activation thereof.

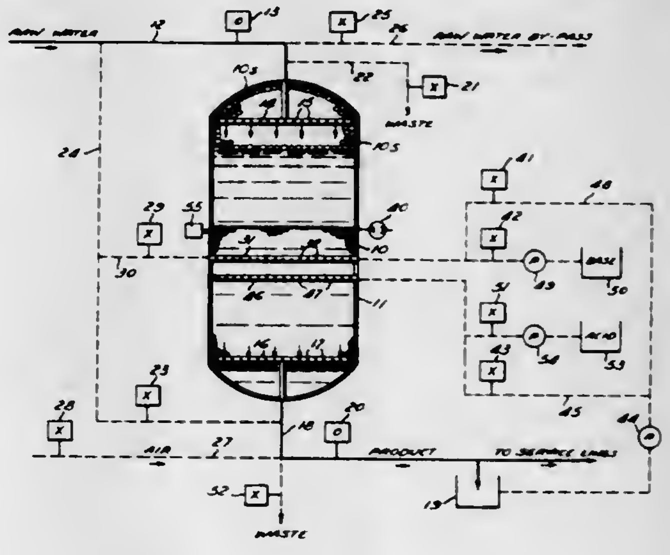
3,527,718
REGENERATING MIXED BED ANION AND CATION EXCHANGE RESINS

Arthur E. Coburn, Columbia Station, Ohio, assignor to The Scott & Fetzer Company, a corporation of Ohio

Filed Jan. 27, 1969, Ser. No. 794,135

Int. Cl. B01d *15/06*

U.S. Cl. 260—2.1 **8 Claims**



A method and apparatus for regenerating mixed anion and cation exchange resins in a container. The mixed resins are stratified into separated layers by introducing a fluid into the bottom of the container at a rate which is sufficient to stratify and separate the anion and cation resins so that the stratified layers are physically separated and a fluid layer is interposed between the stratified resin layers. Anion and cation regenerating solutions are introduced into the container by distributor tube means in the fluid layer and between the stratified anion and cation layers so that the anion and cation regenerating solutions are respectively passed through the anion and cation resin layers and then out of the container.

3,527,719
CELLULOSIC FIBROUS PRODUCTS AND METHODS OF MAKING THEM

Marvin J. Hurwitz, Elkins Park, Herbert Aschkenasy, Levittown, and Louis E. Kelley, Wyncote, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 254,585, Jan. 29, 1963, and Ser. No. 280,702, May 15, 1963. This application Jan. 18, 1965, Ser. No. 426,416

Int. Cl. C08f *45/18*

U.S. Cl. 260—17.4 **9 Claims**

This invention relates to improved cellulosic materials, like paper products. The invention is concerned with the use of a vinyl-imidazoline polymer in making improved cellulosic products and with methods for treating such materials. The invention also provides improved cellulosic products, like paper products, having increased dry strength, wet strength, tear strength, and other desirable properties. Another important embodiment of the invention provides for the deposition of an aqueous dispersion of a water-insoluble polymer in an aqueous system comprising fibrous cellulosic materials, such as paper pulp, suspended in a solution of the polymer used in this invention. The invention further provides for an aqueous composition comprising a dispersion of cellulosic fibers suspended in a solution of a water-soluble polymer. A further embodiment of the invention provides for a dispersion of cellulosic fibers and a water-insoluble polymer in a solution of a water-soluble polymeric material. The invention also provides for a process for beater deposition of a water-insoluble polymer on cellulosic products by means of the water-soluble polymer used in this invention.

3,527,720
EPOXY RESIN COMPOSITIONS INCLUDING CASTOR OIL FOR FLEXIBILITY

Gaylord L. Groff, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 663,205, Aug. 25, 1967, which is a continuation-in-part of application Ser. No. 354,094, Mar. 23, 1964. This application Apr. 7, 1969, Ser. No. 814,163

Int. Cl. C08g *30/12;* **C08k** *1/66*

U.S. Cl. 260—18 **16 Claims**

Thermosetting composition of epoxy resin, castor oil and dibasic carboxylic acid anhydride, said ingredients being so selected that the composition in the absence of filler is a free-flowing liquid at room temperature but cures upon moderate heating to provide tough, flexible electrical insulation suitable for continuous exposure to 155° C. To achieve these properties, the ingredients should be present such that there are (a) 50–110 parts by weight of castor oil per 100 parts of epoxy resin, (b) about 1.1 to 1.5 oxirane groups per anhydride group, and (c) at least 20% more anhydride groups than are necessary to provide one anhydride group per castor oil hydroxyl group. Part or all of the castor oil may be replaced by synthetic liquid condensates of ricinoleic acid and polyhydric alcohols.

3,527,721
WATER - SOLUBLE SYNTHETIC RESIN COATING COMPOSITIONS CAPABLE OF ELECTRODEPOSITION

Herbert Hönel and Wolfgang Daimer, Graz, Austria, assignors to Vianova Kunstharz, A.G., Vienna, Austria, a corporation

No Drawing. Filed Oct. 3, 1967, Ser. No. 672,429
Claims priority, application Austria, Oct. 6, 1966, A 9,366/66

Int. Cl. C09d *3/52, 3/66, 5/24*

U.S. Cl. 260—21 **22 Claims**

A process for producing water-soluble synthetic resins capable of electrodeposition in thin, uniform films is described. According to the process, a polycarboxylic acid resin and an aminoplast resin are heated at temperatures below about 120° C. to obtain a water-insoluble reaction mass. The water-insoluble reaction mass is then neutralized with a water-soluble nitrogen base to produce a water-soluble composition. The water-soluble compositions while being particularly suitable for electrodeposition can be applied using other techniques such as dipping, spraying, and flow coating.

3,527,722
FIRE RETARDANT ADDITIVE

Richard D. Carlson, Grand Island, and James J. Hodan, Williamsville, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,212

Int. Cl. C08f *7/02;* **C08g** *17/16;* **C09d** *5/14*

U.S. Cl. 260—22 **25 Claims**

A new fire retardent additive for polymers is produced by a process which comprises (A) forming a mixture of an adduct of a polyhalogenated cyclopentadiene and a high molecular weight or polymeric material containing aliphatic carbon-to-carbon unsaturation, wherein substantially all double bonds of said material are adducted, and an adduct of a polyhalogenated cyclopentadiene and a polycarboxylic compound containing aliphatic carbon-to-carbon unsaturation; and (B) reacting the resulting product with a polyhydric alcohol. The additive is admixed with polymer compositions or with bituminous materials to impart flame retardency.

Applications of the polymer compositions of this invention include wire and cable insulation and jacketing, fabric coatings, sealants, and belting and roofing materials.

3,527,723
PRESERVATIVE AND DRESSING COATING FOR AUTOMOBILE VINYL TOPS AND THE LIKE

James A. Stroh, Ferndale, and Robert J. Wesala, Dearborn Heights, Mich., assignors to Park Chemical Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Mar. 6, 1968, Ser. No. 710,747

Int. Cl. C08g *17/00, 31/06*

U.S. Cl. 260—22 **10 Claims**

A process of forming a preservative and conditioning coating on automobile vinyl tops and the like, comprising applying the coating composition to the vinyl surface by applying the composition with a sponge, soft cloth, etc., until the entire surface is wetted thoroughly; working the composition with a scrubbing action so that it is evenly distributed over the surface; and then buffing the coating lightly after it is dried to provide a high gloss finish, with said coating composition being comprised of: (a) about 0.5 to about 10% by weight emulsified organopolysiloxane oil having a viscosity from about 350 to about 250,000 centistokes at 25° C., (b) from about 1% to about 20% by weight of a water reducible polyester resin, (c) zero to about 2% by weight of a dried, and (d) a carrier fluid as the balance of the composition.

This abstract is for convenience purposes only to assist in searching of the technical literature and it should not be taken in any way as a limitation on the invention described hereinafter.

3,527,724
THERMOPLASTIC RUBBER COMPRISING ETHYLENE-VINYL ACETATE COPOLYMER, ASPHALT AND FLUXING OIL

Frank J. Hendel, South Pasadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 508,864, Nov. 19, 1965. This application Oct. 24, 1966, Ser. No. 588,721

Int. Cl. C08f *37/00, 45/28, 45/52*

U.S. Cl. 260—28.5 **1 Claim**

A thermoplastic rubber is made from a mixture of between about 10% and about 50% of asphalt, between about 5% and about 30% fluxing oil, and between about 35% and about 70% of a copolymer of polyethylene and vinyl acetate.

3,527,725
PHOSPHORUS-CONTAINING POLYMERS

Richard Strauss, Lexington, and James Bottomley, Tewksbury, Mass., assignors to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 675,299, Oct. 16, 1967. This application June 9, 1969, Ser. No. 831,744

Int. Cl. C08g *5/18, 37/18*

U.S. Cl. 260—29.3 **20 Claims**

Phosphorus-containing polymers useful as stabilizers in a variety of polymeric compositions, particularly elastomeric compositions such as styrene/butadiene rubber, are prepared by reacting trivalent phosphorus compound with a thermoplastic resinous novolak, such as for example, the reaction of phosphorus trichloride or organic phosphite with a phenol formaldehyde novolak resin.

3,527,726
WATER-SOLUBLE AMMONIUM OR AMINE SALTS OF PHOSPHATE ESTERS OF STYRENE-MALEIC ANHYDRIDE COPOLYMER - POLYALKYLENE GLYCOL ESTERS

Howard D. Gower, Munster, Ind., and Bob G. Gower, Park Forest, and David W. Young, Homewood, Ill., assignors to Atlantic Richfield Company, a corporation of Pennsylvania

No Drawing. Filed July 17, 1968, Ser. No. 745,396

Int. Cl. C10m *1/44, 5/24*

U.S. Cl. 260—29.6 **13 Claims**

Water-soluble ammonium or amine salts of phosphate esters of styrene-maleic anhydride copolymer-polyalkylene glycol esters are prepared and can be used when in aqueous solution as metal-working lubricants.

3,527,727
POLYMERS PLASTICIZED BY BIS(3-HALOALKOXY)METHANES

Clarence R. Bresson and Paul R. Stapp, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 13, 1967, Ser. No. 630,504

Int. Cl. C08f *45/34, 45/40*

U.S. Cl. 260—31.8 **7 Claims**

Vinyl polymers and copolymers are plasticized by bis-(3-haloalkoxy)methanes. The bis(3-haloalkoxy)methanes can be used as primary plasticizers or as secondary plasticizers with other known plasticizers.

3,527,728
PAPER RELEASE COATING COMPRISING POLYSILOXANES, ORGANOTIN COMPOUNDS, AND ORGANIC AMINES

Robert Muir Gibbon, West Kilbride, and Edward Keith Pierpoint, Largs, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Feb. 9, 1968, Ser. No. 704,231

Int. Cl. C08g *51/36, 31/02*

U.S. Cl. 260—31.2 **22 Claims**

A composition suitable for treatment of paper and the like to improve release properties and abrasion resistance containing a diorganopolysiloxane, a polysiloxane having not less than three silicon-bonded hydrogen atoms per molecule and at least three different silicon atoms therein having a hydrogen atom attached thereto, an organotin compound and an organic amine having a basic disassociation constant in aqueous solution of not less than 10^{-9}.

3,527,729
GLARE-FREE COATING COMPOSITIONS OF ELASTOMERIC PARTICLES IN AN ELASTOMERIC FILM-FORMER

Wallace Karl Bingham, Woodbury Township, Washington County, Leonard L. Olson, St. Paul Park, and Philip V. Palmquist, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 377,039, June 22, 1964. This application June 3, 1965, Ser. No. 461,159

Int. Cl. C08g *41/04, 51/14, 22/04*

U.S. Cl. 260—37 **18 Claims**

Non-smooth essentially glare-free optically-flat mark-resistant tough and non-abrading paint films; and compositions and methods for forming the same. The compositions contain elastomeric particles of a size between 3 and 150 microns in a mobile vehicle phase containing a non-volatile elastomer-film-forming organic binder material. Pigment may be present in both the particles and elastomeric film-forming organic binder material. The elastomeric particles account for between 25 and 75% of the volume of solids material in the compositions and films. Glass beads are optional.

3,527,730
STABILIZATION OF POLYMERS WITH ALKALI AND ALKALINE EARTH METAL SALTS

Samuel Howard Coulson, Disley, Stockport, Cheshire, and Allan King, Heald Green, Cheadle, Cheshire, England, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,662
Claims priority, application Great Britain, Dec. 30, 1965, 55,165/65; Aug. 4, 1966, 34,963/66

Int. Cl. C08f *45/56, 45/62;* **C08d** *27/70*

U.S. Cl. 260—45.7 **8 Claims**

The colour stability and rheological properties of thermoplastic resinous polymers derived from acrylonitrile, butadiene and styrene (particularly acrylonitrile/butadiene/styrene/terpolymer) are improved by incorporating into the polymer a small amount of a stable alkali metal or alkaline earth metal salt of an acid having a pK value (Bronsted) of from 3 to 14.

3,527,731
STABILIZED POLYAMIDES CONTAINING SOLUBLE COPPER AND A HALOGENATED METHANE DERIVATIVE

Antony E. Champ, Martinsville, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 502,519, Oct. 22, 1965. This application Oct. 28, 1968, Ser. No. 771,691

Int. Cl. G08g *51/58*

U.S. Cl. 260—45.75 **6 Claims**

A method and composition for stabilizing synthetic linear polyamides against the degradation effects of heat, oxygen and atmospheric conditions utilizing iodo-, diiodo-, bromo- and dibromo-methanes and a copper compound soluble in the polyamide.

3,527,732
AROMATIC POLYAMIDES PREPARED FROM AROMATIC DIAMINES CONTAINING QUINAZOLINDIONE RINGS

Gerhard Dieter Wolf and Wolfgang Giessler, Dormagen, Francis Bentz, Cologne, and Günther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 22, 1968, Ser. No. 769,704
Claims priority, application Germany, Nov. 28, 1967, F 54,138

Int. Cl. C08g *20/20*

U.S. Cl. 260—47 **8 Claims**

Aromatic polyamides for the production of films, foils, filaments and bristles showing outstanding thermal and mechanical properties are produced by reaction of aromatic dicarboxylic acid dihalides with aromatic diamines containing one or two 2,4-(1H,3H)-quinazolindione ring systems separated by aromatic radicals in polar organic solvents.

3,527,733
COPOLYMERS OF FORMALDEHYDE CONTAINING BIS - [N' - TOLUOSULPHONYL - IMIDAZOLIDINYL-N-SULPHONYL]-ALKANE

Klaus-Peter Peuchert, Cologne-Buchheim, Ernst-Ulrich Kocher and Kuno Wagner, Leverkusen, and Horst Niermann, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,438
Claims priority, application Germany, Sept. 3, 1965, F 47,082, F 47,083

Int. Cl. C08g *13/00, 9/24*

U.S. Cl. 260—67.5 **2 Claims**

Copolymers of trioxane, a cyclic or olefinic comonomer and bis-[N'-toluosulphonyl-imidazolidinyl-N-sulphonyl]-alkane and their utility in thermoplastic molding compositions.

3,527,734
PREPARATION OF CYLOBUTANEDIOL POLYCARBONATES BY DIRECT PHOSGENATION

Markus Matzner, Highland Park, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 7, 1965, Ser. No. 462,119

Int. Cl. C08g *17/13*

U.S. Cl. 260—77.5 **10 Claims**

Process for the production of a polycarbonate from the phosgenation of a cyclobutanediol which comprises reacting at a temperature of from about 10° C. to about 150° C., a cyclobutanediol reactant containing a predominant amount of a cyclobutanediol in the presence of an organic compound containing a sterically unhindered heterocyclic, tertiary nitrogen atom, the organic compound being liquid at the reaction temperature, with an amount of phosgene which is less than about 99 percent of an equal mole amount, based on the amount of the diol, and thereafter adding at least the ultimate one percent of the total phosgene at a rate not to exceed one percent of the stoichiometric quantity per four minute period, and binding the formed hydrogen chloride with the organic compound.

3,527,735
PREPARATION OF POLYAMIDES FROM p-PHENYLENE DIAMINE AND TARTARIC ACID

Elizabeth G. Horvath and Bert Horvath, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Apr. 11, 1966, Ser. No. 541,478

Int. Cl. C08g *20/24*

U.S. Cl. 260—78 **2 Claims**

Polyamides are formed from para-aromatic diamines and dicarboxylic acids such as tartaric acid using a polymerization temperature of at least 175° C. and a reduced pressure. These polyamides are useful in making adhesives, as cross-linking agents for other polymers, and the like.

3,527,736
PROCESS FOR THE PREPARATION OF SYNTHETIC DIENE POLYMERS MODIFIED BY REACTION WITH CERTAIN ANHYDRIDES OR IMIDES IN THE PRESENCE OF MONO-OLEFINS

Jan W. Aeyelts Averink and Petrus J. Kok, Amsterdam, and David E. Knibbe, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 9, 1968, Ser. No. 719,848

Claims priority, application Great Britain, Dec. 28, 1967, 58,788/67

Int. Cl. C08f *27/00, 27/08*

U.S. Cl. 260—78.4 **12 Claims**

The green strength of synthetic diene polymers (lithium-polyisoprene) is improved by their reaction with an anhydride or imide of an olefinically unsaturated 1,2-dicarboxylic acid (maleic anhydride or a maleimide) in a solvent comprising 1.0–100% w. of one or more mono-olefinic hydrocarbons (amylenes).

3,527,737
ADHESIVE COMPOSITIONS

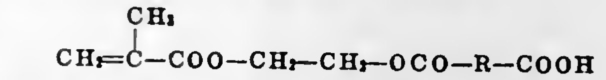
Eiichi Masuhara, Kuniharu Kojima, and Niro Tarumi, Tokyo, and Hiroko Hotta, Fujisawa, Japan, assignors to G-C Kagaku Kogyo Kabushiki-Kaisha, Tokyo, Japan

No Drawing. Filed Sept. 15, 1967, Ser. No. 668,179

Int. Cl. C08f *15/16*

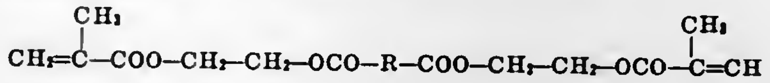
U.S. Cl. 260—78.5 **8 Claims**

This invention relates to a new adhesive composition comprising an alkyl methacrylate having an alkyl group containing 1 to 4 carbon atoms and an ester of methacrylic acid having the general Formula I:



$$CH_2=\overset{\displaystyle CH_3}{\overset{|}{C}}-COO-CH_2-CH_2-OCO-R-COOH \qquad (I)$$

wherein R represents an aryl, alkyl or hydroxyalkyl group with or without addition of an ester of dimethacrylic acid having the general Formula II:



$$CH_2=\overset{\displaystyle CH_3}{\overset{|}{C}}-COO-CH_2-CH_2-OCO-R-COO-CH_2-CH_2-OCO-\overset{\displaystyle CH_3}{\overset{|}{C}}=CH \qquad (II)$$

Also, this invention relates to such new adhesive compositions as above which still further contain an effective amount of an organometallic compound such as tri-n-butyl borane or a tertiary amine.

3,527,738
ALKENYL GLYCIDYL ETHER COPOLYMERS

William S. Pickle, New Orleans, La., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 4, 1968, Ser. No. 734,214

Int. Cl. C08f *15/36*

U.S. Cl. 260—78.5 **13 Claims**

High molecular weight interpolymers may be prepared from alkenyl glycidyl ethers by polymerizing said ethers in specific proportions with unsaturated dicarboxylic acid anhydrides, imides or diesters.

3,527,739
VULCANIZABLE COPOLYMERS OF ETHYLENE, HIGHER ALPHA-OLEFINS AND A 5-ALKADIENYL-2-NORBORNENE, AND PROCESS FOR PRODUCING SAME

Alberto Valvassori and Nazzareno Cameli, Milan, Italy, and Guido Sartori, Brussels, Belgium, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Apr. 11, 1968, Ser. No. 720,466

Claims priority, application Italy, Apr. 12, 1967, 14,837/67, Patent No. 793,304

Int. Cl. C08f *15/40*

U.S. Cl. 260—80.78 **19 Claims**

Modified Natta et al. linear, amorphous, elastomeric copolymers of ethylene and a higher alpha-olefin which are readily sulfur-vulcanizable are obtained by copolymerizing the ethylene and higher alpha-olefin with a 5-alkadienyl-2-norbornene whereby randomly distributed unsaturations are introduced into the copolymer macromolecules.

3,527,740
VULCANIZATION OF RUBBER WITH COMPLEX OF MONOBORANE AND TERTIARY AMINE OR TRIPHENYL PHOSPHINE AND CALCIUM OXIDE

Crispin Stuart Leworthy Baker, Epping, England, assignor to The Natural Rubber Producers' Research Association, London, England, a British body corporate

No Drawing. Filed May 9, 1968, Ser. No. 728,061

Claims priority, application Great Britain, May 11, 1967, 21,895/67

Int. Cl. C08f *15/40, 27/08*

U.S. Cl. 260—80.78 **5 Claims**

Borane complexes are used as vulcanizing agents for natural rubbers and synthetic rubbers produced by solution polymerisation. The evolution of hydrogen during vulcanization is avoided by the addition of a drying agent, i.e. calcium oxide, to chemically react with moisture present in the vulcanizable mixture.

3,527,741
PROCESS FOR THE RECOVERY OF RUBBERY POLYMERS

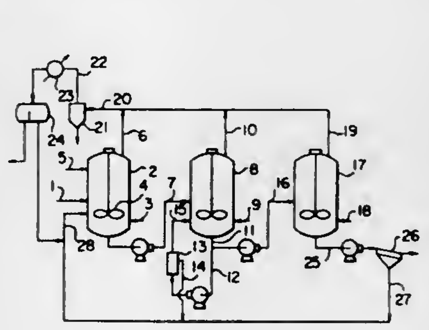
Sakuji Hattori, Yoshikazu Torigoe, and Mitsuru Ikeda, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan

Filed May 17, 1968, Ser. No. 730,112

Claims priority, application Japan, May 22, 1967, 42/32,220

Int. Cl. C08d *5/00;* **C08f** *1/92, 1/96*

U.S. Cl. 260—85.1 **6 Claims**



A process for recovering rubbery polymers by the steps of steam stripping a hydrocarbon solvent solution of the rubbery polymer using at least two strippers to remove the solvent and form an aqueous slurry of the polymer crumbs, separating water from the aqueous slurry and drying the remaining solid crumbs, the improvement residing in that the crumb concentration of the aqueous slurry in the second and subsequent strippers is increased by removing a part of water of the aqueous slurry.

3,527,742
FLUORINATED ALCOHOLS, THEIR ESTERS, AND USE THEREOF

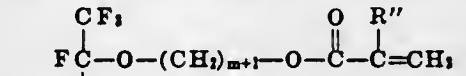
Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Aug. 4, 1965, Ser. No. 477,331, now Patent No. 3,424,785, dated Jan. 28, 1969. Divided and this application Nov. 22, 1967, Ser. No. 703,199

Int. Cl. C08f *3/62*

U.S. Cl. 260—89.5 **9 Claims**

Polymers derived from fluorine-containing acrylates or methacrylates, typically those of the structure



$$F\overset{\displaystyle CF_3}{\underset{\displaystyle CF_3}{C}}-O-(CH_2)_{m+1}-O-\overset{\displaystyle O}{\overset{\|}{C}}-\overset{\displaystyle R''}{\overset{|}{C}}=CH_2$$

wherein *m* is 1 to 20, and R'' is H or CH_3. The polymers are useful for application to fibrous materials to enhance their oil- and water-repellency.

3,527,743
PROCESS FOR MAKING POLYVINYL CHLORIDE

Ronald L. Friedman, San Rafael, Donald W. Wood, San Pablo, and Roger N. Lewis, Pinole, Calif., assignors to Argus Chemical Corporation, a corporation of Delaware

No Drawing. Filed May 18, 1967, Ser. No. 639,269

Int. Cl. C08f *3/30*

U.S. Cl. 260—92.8 **1 Claim**

Preparation of polyvinyl chloride and its copolymers from monomers using unsymmetrical diacyl peroxide initiators having a secondary or tertiary carbon atom in the alpha position relative to the carbonyl groups by which both the total yield of polymer and the rate of its formation is significantly increased.

3,527,744
VULCANIZATION OF RUBBER WITH COMPLEX OF MONOCHLOROBORANE AND TERTIARY AMINE OR TRIPHENYL PHOSPHINE

Crispin Stuart Leworthy Baker, Epping, Douglas Barnard, Welwyn Garden City, and Maurice Read Porter, Stevenage, England, assignors to The Natural Rubber Producers' Research Association, London, England, a British body corporate

Filed May 9, 1968, Ser. No. 727,903

Claims priority, application Great Britain, May 11, 1965, 21,894/65

Int. Cl. C08f *15/40, 27/08*

U.S. Cl. 260—80.78 **6 Claims**

Chloroborane complexes are used as vulcanizing agents for natural rubbers and synthetic rubbers produced by solution polymerisation, particularly cis-polyisoprene. When the vulcanizable mixture contains moisture, hydrogen evolution may be avoided by the addition of a drying agent such as calcium oxide. The products show a high degree of resistance to attack by ozone making them useful as coatings for conventional rubber articles.

3,527,745
REACTIVE AZO DYESTUFFS CONTAINING A THIOPHENE DIOXIDE

Angelo Mangini, Antonio Tundo, Bianca Flavia Bonini, Marta Rossetti, and Germana Mazzanti, Bologna, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

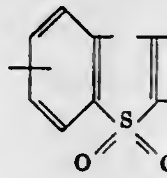
No Drawing. Filed Nov. 30, 1966, Ser. No. 597,877

Claims priority, application Italy, Dec. 3, 1965, 26,939/65

Int. Cl. C09b *62/38, 62/42, 62/40*

U.S. Cl. 260—146 **7 Claims**

A class of fiber-reactive dyestuffs, capable of forming, during the dyeing process, bonds with the hydroxyls of cellulose, with the NH_2 groups of protein fibers and with the —NH— groups of synthetic polyamide fibers, thus giving colors which are particularly stable to wet treatments. The dyestuff molecule contains the benzothiophene dioxide radical,



wherein X and Y are either a halogen or hydrogen, at least one of X and Y being a halogen. The preferred halogen is chlorine.

3,527,746
MONOAZO HETEROCYCLIC CONTAINING TRIAZINE DYESTUFFS

Luigi Canonica, Milan, Argento Crotti, Cogliate, Milan, and Fabrizio Merlo, Turin, Italy, assignors to Aziende Colori Nazionali Affini, ACNA, S.p.A., Milan, Italy

No Drawing. Filed June 30, 1965, Ser. No. 468,587

Claims priority, application Italy, July 2, 1964, 14,367/64

Int. Cl. C09b *29/36;* **D06p** *1/02*

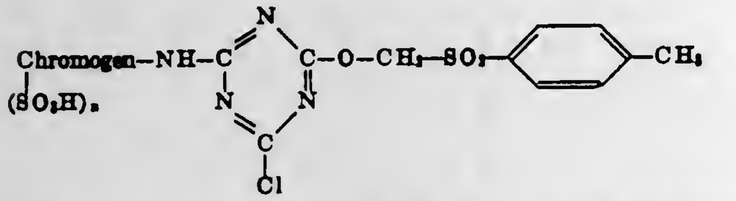
U.S. Cl. 260—153 **6 Claims**

Triazine mono- and disazo dyestuffs suitable for the dyeing of modified polypropylene.

3,527,747
REACTIVE AZO DYESTUFFS CONTAINING A TOLYLSULFONYLMETHYLENEOXYTRIAZINE GROUP

Angelo Mangini, Antonio Tundo, Bianca Flavia Bonini, and Marta Rossetti, Bologna, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy
No Drawing. Filed Mar. 21, 1966, Ser. No. 536,144
Claims priority, application Italy, Mar. 22, 1965, 6,200/65
Int. Cl. C09b *62/06, 62/08, 62/10*
U.S. Cl. 260—153 **19 Claims**

Reactive triazine dyestuffs having the formula:



wherein the chromogen is a dyestuff residue selected from the group consisting of azo, metallized azo, anthraquinone and phthalocyanine dyestuffs residues, and *n* is an integer from 1 to 4, are particularly effective for dyeing cellulose. The dyestuffs may be absorbed and fixed onto the cellulose fibers by hot or cold dyeing techniques. The dyestuffs have high reactivity and good dyeing power and the dyeings obtained therefrom have high brilliance and purity of chromatic shades and improved fastness to washing.

3,527,748
5-ARYLAZO-PYRIMIDINE DYESTUFFS

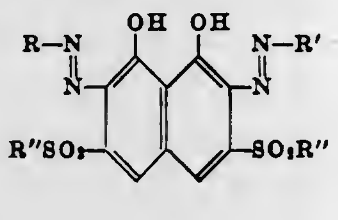
Hans Ackermann, Werner Bossard, Jacques Voltz, and Hans Wegmuller, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Continuation-in-part of application Ser. No.. 567,057, July 22, 1966. This application Nov. 8, 1967, Ser. No. 681,554
Claims priority, application Switzerland, Aug. 2, 1965, 10,857/65
Int. Cl. C09b *29/36;* **D06p** *1/02*
U.S. Cl. 260—154 **22 Claims**

Dispersible dyestuffs which are 5-arylazo-pyrimidines wherein the carbon atoms in 2-, 4- and 6-positions of the pyrimidine ring are occupied by amino groups at least one of which is substituted by an unsubstituted or nonionogenically substituted phenyl radical; such dyestuffs being distinguished by good affinity especially for polyester fibers, affording dyeings on these fibers which have excellent fastness properties; processes for dyeing polyester fibers with the aforesaid dyestuffs; and compositions containing polyester fiber material and such dyestuffs.

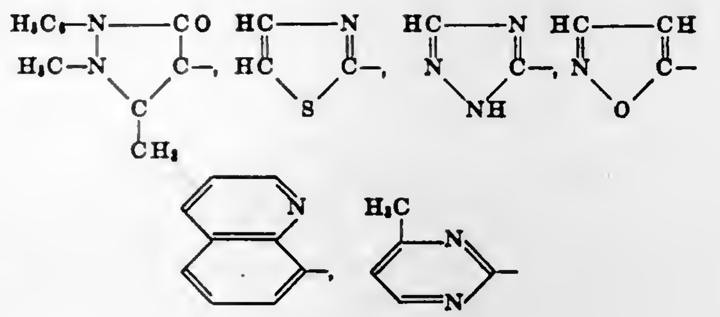
3,527,749
HETEROCYCLIC 2,7-BISAZO DERIVATIVES OF CHROMOTROPIC ACID

Břetislav Buděšínský and Dana Vrzalova, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia
No Drawing. Continuation-in-part of application Ser. No. 622,409, Mar. 13, 1967. This application Oct. 31, 1967, Ser. No. 679,505
Claims priority, application Czechoslovakia, Mar. 16, 1966, 1,712/66
Int. Cl. G09b *33/04;* **G01n** *31/00*
U.S. Cl. 260—155 **7 Claims**

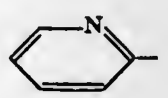
A heterocyclic 2,7-bisazo derivative of chromotropic acid of the general formula



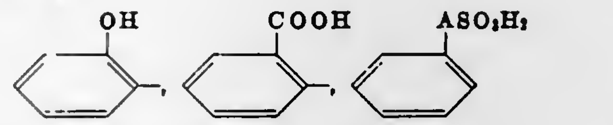
wherein R is



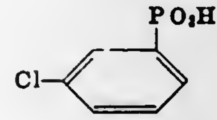
or



wherein R′ is



or



or is the same as R; and wherein R″ is —OH, —NH_2, —$NH(CH_2)_3CH_3$, —$NH(CH_2)_7CH_3$, —$NH(CH_2)_{11}CH_3$ or "—NHC_6H_5."

The compounds are made by diazotizing a heterocyclic amine and then coupling the diazonium salt with the chromotropic acid or a derivative thereof.

3,527,750
ISOLATION OF SUBSTANTIALLY PURE COUMERMYCIN A_1

Andrew E. Karr, Bloomfield, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 702,806, Feb. 5, 1968. This application Jan. 23, 1969, Ser. No. 793,536
Int. Cl. C07c *47/18*
U.S. Cl. 260—210 **12 Claims**

Coumermycin A_1 is isolated from the crude antibiotic complex by a fractional liquid extraction procedure utilizing an isopropanol-chloroform mixture and an aqueous alkaline buffer solution as the solvents.

3,527,751
PROCESS FOR THE PURIFICATION OF WATER-SOLUBLE HYDROXYALKYL CELLULOSE

John Ernest Gill, Saltcoats, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Jan. 22, 1968, Ser. No. 699,351
Claims priority, application Great Britain, Feb. 16, 1967, 7,401/67
Int. Cl. C08b *11/20, 21/24*
U.S. Cl. 260—232 **8 Claims**

Hydroxyalkyl cellulose is purified by treating the crude material with glyoxal under acid conditions to form a water-insoluble addition compound (of the hemiacetal type).

ERRATUM

For Class 260—239.3 see:
Patent No. 3,527,568

3,527,752
17β - DIALKYLAMINOALKYLAMINO - 5α - ANDROSTANO[3,2-c] - 1′ - PHENYLPYRAZOLES AND DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 3, 1969, Ser. No. 803,943
Int. Cl. C07c *173/00*
U.S. Cl. 260—239.5 **6 Claims**

The condensation of a 17-keto-5α-androstano[3,2-c]-1′-phenylpyrazole with a dialkylaminoalkylamine affords the corresponding 17-imines, which are reduced to yield the instant 17β-dialkylaminoalkylamino-5α-androstano-[3,2-c]-1′-phenylpyrazoles and derivatives thereof. The latter diamines display valuable pharmacological properties, i.e. anti-inflammatory and anti-microbial.

3,527,753
PROCESS FOR PREPARING A MIXTURE OF ISOHYDRAZONES AND AZINES

Brian John Needham and Michael Arthur Smith, Loughborough, England, assignors to Fisons Industrial Chemicals Limited, Loughborough, Leicestershire, England
Filed Mar. 24, 1967, Ser. No. 625,816
Claims priority, application Great Britain, Mar. 29, 1966, 13,736/66
Int. Cl. C07d *45/00*
U.S. Cl. 260—239 **10 Claims**

Gaseous chlorine is reacted with aqueous ammonia in the presence of a carbonyl compound to give a mixture containing isohydrazone and azine which may be converted to hydrazine.

3,527,754
PROCESS FOR THE PREPARATION OF LACTAMS

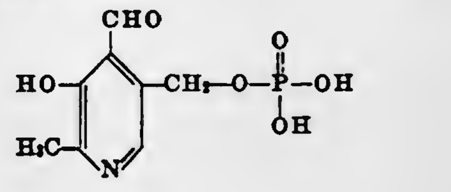
Hiroyuki Hiraoka, Shizuo Nagahama, Keizo Shimada, Masao Senoo, Takehiko Okamoto, and Moriya Uchida, Tokyo, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed Feb. 13, 1967, Ser. No. 615,308
Claims priority, application Japan, Feb. 19, 1966, 41/9,928; June 28, 1966, 41/42,287
Int. Cl. C07d *41/00, 41/06*
U.S. Cl. 260—239.3 **7 Claims**

A process for the preparation of ε-caprolactam or ω-laurolactam, characterized by contacting in vapor phase nitrocyclohexane or nitrocyclododecane with a catalyst containing metallic lead or a lead oxide at a temperature within the range of from 180° C. to 450° C.

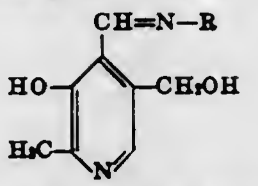
3,527,755
PROCESS FOR THE PRODUCTION OF PYRIDOXAL PHOSPHATE

Masuo Murakami, Tokyo, Masaru Iwanami, Yokohama, Kanagawa, and Toshiko Numata, Tokyo, Japan, assignors to Yamanouchi Pharmaceutical Co., Ltd., Tokyo, Japan
No Drawing. Continuation of application Ser. No. 371,744, June 1, 1964. This application June 6, 1968, Ser. No. 739,937
Claims priority, application Japan, Aug. 12, 1963, 38/42,464, 38/42,470; Feb. 3, 1964, 39/5,208
Int. Cl. C07d *31/28*
U.S. Cl. 260—240 **7 Claims**

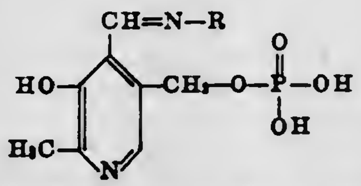
The objective of this invention is to prepare pure pyridoxal phosphate:



from the corresponding Schiff base:



wherein R is phenyl, benzyl, phenethyl, chlorophenyl, lower alkylphenyl or lower alkoxyphenyl without entailing prior art defects. The secret is the phosphorylation of the Schiff base whereby, unexpectedly, the pure phosphoric acid ester:



is obtained. Hydrolysis of the latter yields the desired pure pyridoxal phosphate.

3,527,756
1-SEC-AMINOCYCLOPROPACYCLOALKANES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed May 15, 1967, Ser. No. 638,611
Int. Cl. C07d *87/28*
U.S. Cl. 260—246 **19 Claims**

2-X-cycloalkanones, wherein X is selected from the group consisting of halo, mesyloxy and tosyloxy, are allowed to react with a secondary amine; 2-sec-aminocycloalkanone and 1,1-bis-sec - aminocyclopropacycloalkane are recovered from the reaction mixture. The 1,1-bis-sec-aminocyclopropacycloalkane can be hydrogenated, catalytic hydrogenation yielding known sec-aminocycloalkanes, and borohydride hydrogenolysis yielding novel 1-sec-aminocyclopropacycloalkanes having utility as tertiary amines, as central nervous system stimulants, and as anorexigenic agents.

3,527,757
ALKYLATION OF AMINES WITH ALKYLENEIMINES

Thomas H. Austin and Walter H. Brader, Jr., Austin, Tex., assignors to Jefferson Chemical Company, Inc., a corporation of Delaware
No Drawing. Filed Dec. 16, 1966, Ser. No. 602,158
Int. Cl. C07d *87/40*
U.S. Cl. 260—247.5 **7 Claims**

Primary and secondary amines are aminoalkylated by reaction with alkyleneimines in the presence of solid, acidic dehydration or cracking catalysts. Unlike prior art mineral and Lewis acid catalysts, these catalysts do not react with either the reactants or products and may be easily removed from the reaction mixture. The amines prepared by the process find application as epoxy curing agents and as intermediates in the preparation of corrosion inhibitors, pharmaceuticals, emulsifiers, textile chemicals and rubber chemicals.

3,527,758
PROCESS FOR THE PREPARATION OF PYRAZINOYLGUANIDINES FROM A PYRAZINOIC AZIDE AND A GUANIDINE

Edward J. Cragoe, Jr., Lansdale, and James H. Jones, Blue Bell, Pa., assignors to Merck & Co., Inc., a corporation of New Jersey
No Drawing. Filed Apr. 13, 1967, Ser. No. 630,521
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 **17 Claims**

A process is described wherein 3-amino-pyrazinoic acid azides are reacted with guanidines to form 3-amino-pyrazinoylguanidines. The pyrazinoic acid azides of this invention are reactive carbonyl derivatives that permit preparation of pyrazinoylguanidines under mild conditions with a minimum of side reactions. The products of this process have activity as diuretics, and are useful in the treatment of disorders conducive to diuretic and/or saluretic therapy.

3,527,759
PROCESS FOR THE PREPARATION OF PYRAZINAMIDOGUANIDINES

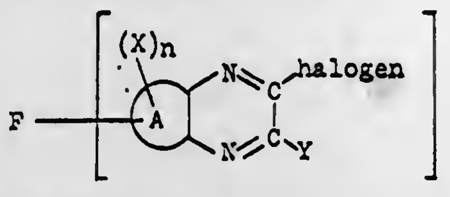
Kenneth L. Shepard, Ambler, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 29, 1967, Ser. No. 671,564
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 **5 Claims**

A process is described for the preparation of pyrazinamidoguanidines which comprises the reaction of a pyrazinoic acid hydrazide with a cyanamide in the very favorable medium of pyridine hydrochloride which practically eliminates competing side reactions through its non-aqueous catalysis.

3,527,760
ANTHRAQUINONE DYESTUFFS CONTAINING 2,3 - DIHALOQUINOXALINE CARBOXAMIDE OR SULFONAMIDE GROUPS

Edgar Siegel, Leverkusen, and Klaus Sasse, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Application Dec. 11, 1964, Ser. No. 417,831, now Patent No. 3,377,336, which is a continuation-in-part of application Ser. No. 171,269, Feb. 5, 1962. Divided and this application Oct. 24, 1967, Ser. No. 677,728
Claims priority, application Germany, Feb. 7, 1961, F 33,153; Jan. 13, 1962, F 35,774
Int. Cl. C07d *51/78*
U.S. Cl. 260—262 **8 Claims**

Fiber reactive dyestuffs for use on cellulose containing textile materials having the formula

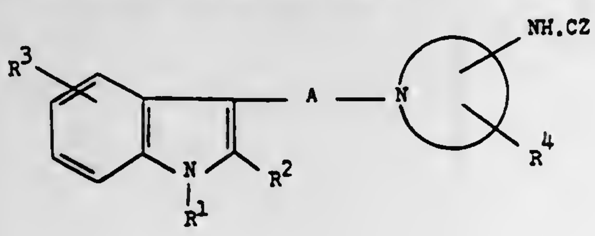


wherein F is the radical of an organic dyestuff, A is a five- or six-membered isocyclic or heterocyclic ring, X is hydrogen or an organic substituent, Y is hydrogen, halogen or an organic radical, "halogen" is a halogen atom, *m* a whole number and *n* a whole number from 1 to 3.

3,527,761
INDOLES

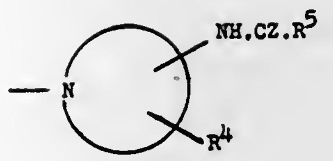
John L. Archibald, Windsor, and John Lambert Jackson, Henley-on-Thames, England, assignors, by mesne assignments, to John Wyeth & Brother Limited, Maidenhead, Berkshire, England, a British company
No Drawing. Filed May 15, 1968, Ser. No. 729,377
Claims priority, application Great Britain, May 24, 1967, 24,256/67; Mar. 1, 1968, 10,096/68
Int. Cl. C07d *29/38, 31/44*
U.S. Cl. 260—293 **22 Claims**

Indole derivatives of formula

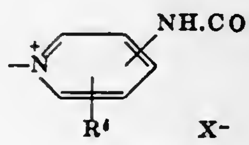


(I)

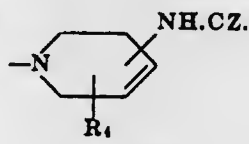
in which



represents a ring system of the general formula

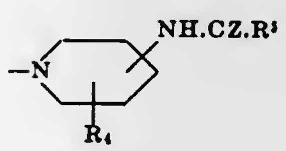


(IIa)



(IIb)

or



(IIc)

wherein R^1 represents hydrogen, lower alkyl, lower aralkyl or aroyl, R^2 represents hydrogen, lower alkyl or aryl, R^3 represents hydrogen, halogen, lower alkoxy, hydroxy, or lower alkyl, R^4 represents hydrogen, or lower alkyl, R^5 represents aryl (including heterocyclic aryl), lower alkoxy, aryloxy, lower aralkyl, lower aralkyloxy or diaryl-lower alkyl, X is an anion, A represents a lower alkylene or mono- or di-keto lower alkylene radical containing up to 4 carbon atoms, and Z is an oxo (i.e., =O) group with the proviso Z in Formula II(*c*) may also represent two hydrogen atoms when A is lower alkylene and R^5 is aryl, are valuable hypotensives and anti-hypertensives; some are also anti-inflammatories, anti-histamines, and show CNS activity as anti-convulsants, sedatives, or depressants.

3,527,762
PIPERIDINE DERIVATIVES

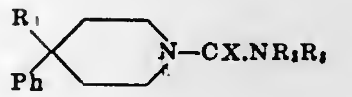
David Jack, Alexander Crawford Ritchie, and Dennis George Cheesman, Bethnal Green, London, and Norman James Harper, Gosta Green, Birmingham, England, assignors to Allen & Hanburys Limited, London, England, a British company

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,539

Claims priority, application Great Britain, Apr. 5, 1965, 14,332/65

Int. Cl. C07d *29/30, 29/36*
U.S. Cl. 260—293.4 **12 Claims**

Compounds of formula

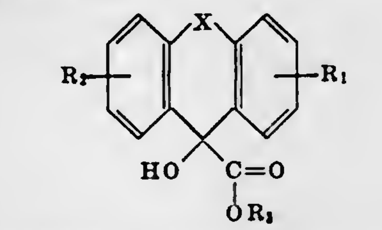


in which the phenyl group may be halogenated, R_1 is hydrogen or hydroxy, X is oxygen or sulfur and R_2 and R_3 are the same or different, may be alkyl or alkenyl or alkoxyphenyl or aralkyl or together with the adjacent nitrogen may form a piperidine ring, have good antitussive activity. Particularly active is 4-phenyl-1-piperidinecarboxamide which is more active than codeine.

3,527,763
5-HYDROXY-DIBENZOCYCLOHEPTEN-5-YL-CARBOXYLATES

Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, Amsterdam, Netherlands
No Drawing. Original application Sept. 1, 1965, Ser. No. 484,420, now Patent No. 3,349,093. Divided and this application Apr. 26, 1967, Ser. No. 646,787
Int. Cl. C07d *39/06*
U.S. Cl. 260—294.3 **3 Claims**

This invention relates to new pharmaceutical compounds having the formula

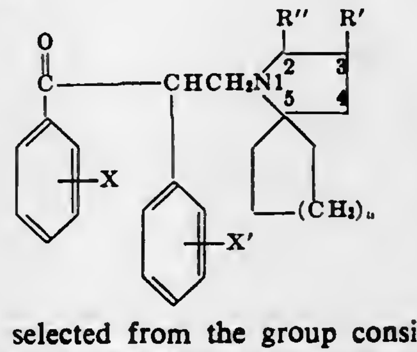


wherein X represents a $—CH_2—CH_2—$ or $—CH{=}CH—$ group, R_1 and R_2 are the same or different and each represents a hydrogen or halogen atom or a lower alkyl group, and R_3 represents a saturated polycyclic nitrogen-containing radical of up to twelve carbon atoms attached through carbon to the oxygen atom, and acid-addition salts thereof. These compounds possess anti-arythmetic and atropine-like activity.

3,527,764
2 - PHENYL - 3 - (1 - AZASPIRO[4.5]DEC - 1 - YL AND 1-AZASPIRO[4.4]NON-1-YL)-PROPIOPHENONES

Robert Bruce Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed July 25, 1968, Ser. No. 747,482
Int. Cl. C07d *27/02*
U.S. Cl. 260—326.5 **3 Claims**

This invention relates to novel 2-phenyl-3-(1-azaspiro[4.5]dec-1-yl)-propiophenones and their 1-azaspiro[4.4]non-1-yl counterparts; it is inclusive of the free base and acid addition salt forms of the compounds embraced by the formula



I

wherein *n* is selected from the group consisting of one and two, R′ and R″ are selected from the group consisting of hydrogen and lower-alkyl, and X and X′ are selected from the group consisting of hydrogen, lower-alkyl, fluorine, chlorine and bromine.

As used in this specification, the term "lower-alkyl" means alkyl of from one through four carbon atoms, e.g., methyl, ethyl, propyl, butyl, and isomeric forms thereof.

3,527,765
PRODUCTION OF EPITHIOALKANES

Jack E. Reece and James T. Edmonds, Jr., Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 12, 1967, Ser. No. 645,485
Int. Cl. C07d *89/02*
U.S. Cl. 260—327 **6 Claims**

Epithioalkanes are formed by the pyrolysis of tris(2-mercaptoalkyl)borates. In one embodiment, a tris(2-mercaptoalkyl)borate is formed by esterification of a 2-mercaptoalkanol with an acidic boron compound.

3,527,766
DERIVATIVE OF 6,11-DIHYDRODIBENZ-(b,e)THIEPIN

Miroslav Protiva, Miroslav Rajšner, Zdeněk Votava, and Jiřina Metyšová, Prague, Czechoslovakia, assignors to Spofa, Sdružení podniků pro zdravotnickou výrobu, Prague, Czechoslovakia
No Drawing. Filed June 4, 1962, Ser. No. 199,635
Claims priority, application Czechoslovakia, June 8, 1961, 3,564/61; Mar. 24, 1962, 1,826/62, 1,827/62
Int. Cl. C07d *67/00*
U.S. Cl. 260—327 **1 Claim**

1. 11-(3-dimethylaminopropylidene) - 6,11 - dihydrodibenz-(b,e)thiepin.

3,527,767
PROCESS FOR THE PREPARATION OF THIOLANES SUBSTITUTED IN THE 2-POSITION

Pierre Legendre, Pau, France, assignor to Société Nationale des Petroles d'Aquitaine, Courbevoie, France
No Drawing. Filed Apr. 30, 1968, Ser. No. 725,483
Claims priority, application France, May 3, 1967, 105,058
Int. Cl. C07d *63/04*
U.S. Cl. 260—332.1 **10 Claims**

This invention has to do with a process for the preparation of thiolanes in which the carbon in the 2-position carries a halogenated carbon atom, characterized in that a halogen is caused to react with a substituent such as an electro-negative substituent similar to a 1-thio-5,5-dihalo-4-pentene derivative.

3,527,768
SULFONAMIDO COUMARIN COMPOUNDS

Gerald L. Bachman, Kirkwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 24, 1967, Ser. No. 685,318
Int. Cl. C07d *7/28*
U.S. Cl. 260—343.2 **9 Claims**

This disclosure covers certain halogenated sulfonamido coumarins as new chemical compounds. These compounds have been found to be useful in the control of bacteria.

3,527,769
PROCESS FOR PRODUCING AN OPTICALLY ACTIVE DIHYDROCHRYSANTHEMOLACTONE

Masanao Matsui, Tokyo, and Hirosuke Yoshioka, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed May 17, 1966, Ser. No. 550,597
Claims priority, application Japan, May 20, 1965, 40/29,910; May 31, 1965, 40/32,346, 40/32,352; June 4, 1965, 40/33,276
Int. Cl. C07d *7/06*
U.S. Cl. 260—343.5 **2 Claims**

This invention relates to a process for producing optically active dihydrochrysanthemolactone using an optically active starting material.

3,527,770
REDUCTIVE DEHALOGENATION OF 4-HALOTETRAHYDROPYRANS

Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 20, 1967, Ser. No. 654,682
Int. Cl. C07d *7/08, 7/04*
U.S. Cl. 260—345.1 **12 Claims**

4-halotetrahydropyrans are reductively dehalogenated to tetrahydropyrans by contact with a Group VIII metal compound and hydrogen or by action of a Group I–A metal and an alcohol.

3,527,771
DEHYDROHALOGENATION OF 4-HALOTETRAHYDROPYRANS

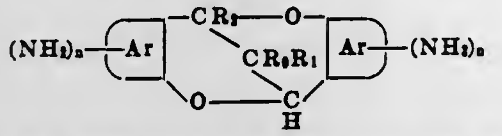
Paul R. Stapp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Oct. 27, 1967, Ser. No. 678,519
Int. Cl. C07d *7/10*
U.S. Cl. 260—345.1 7 Claims

Dihydro-2[H]-pyrans are formed by thermal dehydrohalogenation of certain 4-halotetrahydropyrans at temperatures within the range of 400 to 600° *C*.

3,527,772
AMINOMETHANODIOXOCINS AND A PROCESS FOR MAKING THEM

Henry E. Hennis, Coleman, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 25, 1968, Ser. No. 715,490
Int. Cl. C07d *7/24*
U.S. Cl. 260—345.2 12 Claims

Aminomethanodioxocins having the formula



where Ar is a homocyclic or heterocyclic substituted or unsubstituted aromatic ring, *n* is an integer of from 0 to 2 inclusive; R_0 is H; R_1 is H, aryl or alkyl; R_0 and R_1 may together with the C to which they are attached form the cyclohexane ring; and R_2 is H, aryl or alkyl are produced from their corresponding nitromethanodioxocins by a process comprising reducing catalytically by hydrogenating said nitromethanodioxocin in the presence of a noble metal catalyst and an inert solvent at a temperature between 0° and 60° C. These new amino compounds are useful in resin production and as dye intermediates.

3,527,773
BENZYLOXY COMPOUNDS AND EPOXY DERIVATIVES THEREOF

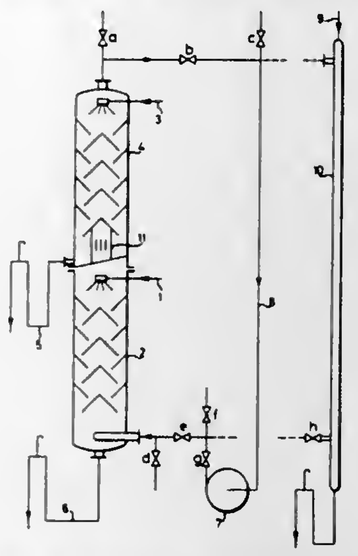
Raymond L. Cobb, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 531,351, Mar. 6, 1966. This application Oct. 17, 1968, Ser. No. 768,520
Int. Cl. C07d *1/00*
U.S. Cl. 260—348 3 Claims

Organic compounds are formed by treating a mixture of allylic halides with an alkali metal salt of benzyl alcohol. The reaction products are oxidized to form novel epoxide compounds. The novel benzyloxy compounds are useful as monomers for polymerization reactions and the epoxy derivatives thereof are useful in preparing curing agents, adhesives, and plasticizers.

3,527,774
PROCESS FOR UTILIZING THE HEAT OF THE EFFLUENT OF THE SAPONIFICATION DEVICE IN UNITS FOR THE MANUFACTURE OF ALKENE OXIDES ACCORDING TO THE CHLOROHYDRIN PROCESS

Adolf Rothe, Altotting, Hans Herold, Burgkirchen (Alz), and Karl Löschner, Altotting, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 4, 1966, Ser. No. 584,258
Claims priority, application Germany, Oct. 28, 1965, F 47,534
Int. Cl. C07d *1/04, 1/12*
U.S. Cl. 260—348.6 3 Claims

The hot effluent from the saponifier in units for the manufacture of alkene oxides according to the chlorohydrin process is contacted in a first exchange chamber with a gas current which is thereby loaded with steam and heated. The steam-loaded and heated gas current then contacts the fresh milk of lime (used for saponifying the chlorohydrin) to heat it up. The carrier gas flows countercurrent to the hot and colder liquids. The gas current contacting the hot liquid is kept under a slight subatmospheric pressure and that contacting the colder liquid is kept under slight superatmospheric pressure. The gas current is washed after it has left the second exchange stage and the wash liquid is also used as operating liquid for maintaining the cycle of the gas current. A suitable device consists of series-connected exchange chambers with inlet and outlets for the hot and colder liquids and cone-shaped inserts forming dropping edges for the liquids. A blower removes gas from the first exchange chamber by suction and discharges it into the second exchange chamber. The washing liquid operates a hydraulic compressor or a liquid jet pump. One exchange chamber is arranged above the other separated by a sleeve with an inclined annular collecting bottom. The tangential outlet slits in the upper section of the sleeve confer a twisting component upon the gas current when it enters the second exchange chamber. The hot as well as the cold liquid are introduced through nozzles at the upper ends of both exchange chambers, which confer upon them a twisting movement in the same direction as the twist of the gas current.



3,527,775
TRICYCLOHEXYLTIN NITRATE AND AZIDE

Donald E. Bublitz, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 20, 1968, Ser. No. 761,311
Int. Cl. C07c *117/00;* **C07f** *7/22*
U.S. Cl. 260—349 3 Claims

The novel compounds tricyclohexyltin nitrate and tricyclohexyltin azide, said compounds being useful as pesticides.

3,527,776
OPTICAL RESOLUTION OF DL-LYSINE

Teruo Uzuki, Kanagawa-ken, and Naotake Sato and Takekazu Akashi, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Aug. 23, 1967, Ser. No. 662,579
Claims priority, application Japan, Aug. 31, 1966, 41/57,006; Oct. 27, 1966, 41/70,882; Jan. 28, 1967, 42/5,487
Int. Cl. C07c *143/56*
U.S. Cl. 260—372 6 Claims

Racemic lysine is resolved into the optically active enantiomorphs by conversion to the lysine salt of 3,5-dinitrobenzoic acid, anthraquinone-β-sulfonic acid, 1-chloronaphthalene-4-sulfonic acid, or β-naphthalenesulfonic acid, seeding of a supersaturated solution of the racemic salt with crystals of the optically active form of the salt, decomposition of the grown seed crystals and recovery of the liberated optically active lysine. The afore-mentioned aromatic acids are unique in forming lysine salts capable of being resolved by seeding.

3,527,777
METHOD FOR OBTAINING ECDYSTERONES

Josef Jizba, Ujezd nad Lesy, and Frantisek Sorm and Vlastimil Herout, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia
No Drawing. Filed Mar. 5, 1968, Ser. No. 710,687
Int. Cl. C07c *167/40*
U.S. Cl. 260—397.25 7 Claims

Ecdysterone and hydroxyecdysterone are obtained in substantially pure form by extracting plant material derived from Pteridophyta with water or an organic, water-miscible solvent so as to form an extract containing the above-mentioned insect hormones, and separating these hormones from the thus-formed extract.

3,527,778
3,17 - BISOXYGENATED 11βMETHYL - 19 - NORPREGN - 4 - EN - 20 - ONES AND DERIVATIVES THEREOF

John S. Baran, Morton Grove, and Ivar Laos, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 688,988, Dec. 8, 1967. This application Feb. 27, 1969, Ser. No. 803,077
Int. Cl. C07c *169/34*
U.S. Cl. 260—397.45 7 Claims

3,17-bisoxygenated 11β - methyl - 19 - norpregn-4-en-20-ones and derivatives thereof useful as pharmacological agents, e.g., progestational, estrogen-inhibitory and antifertility, are prepared by processes which utilize 3-oxygenated 11β-methylestra - 1,3,5(10) - trien - 17 - ones as starting materials.

3,527,779
CARBOXYLIC ACID PREPARATION

Bernard Paulis, The Hague, and Henk G. Merkus and Jan P. Campen, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 16, 1969, Ser. No. 816,790
Claims priority, application Great Britain, Nov. 15, 1968, 54,332/68
Int. Cl. C11c *1/00*
U.S. Cl. 260—413 3 Claims

A process for the preparation of carboxylic acid from olefin, CO, and water at temperatures of from about 60° to about 150° using a relatively noncorrosive catalyst of critical amounts of BF_3, H_2O, and H_3PO_4.

3,527,780
REDISTRIBUTION OF ALKYL GROUPS IN TETRAALKYL LEADS

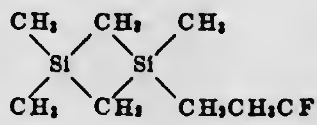
George H. Williamson, Jr., Fairfax, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 4, 1967, Ser. No. 687,460
Int. Cl. C07f *7/26*
U.S. Cl. 260—437 6 Claims

Process for redistributing the alkyl groups of two or more different tetraalkyl lead compounds which comprises treating them with a particulate synthetic silica-magnesia catalyst.

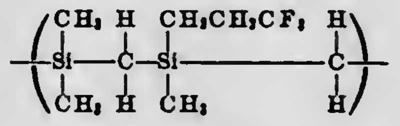
3,527,781
DISILACYCLOBUTANES

Gideon Levin, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
No Drawing. Filed Sept. 1, 1967, Ser. No. 664,933
Int. Cl. C07d *103/02;* **C07f** *7/08*
U.S. Cl. 260—448.2 3 Claims

This invention relates to novel disilacyclobutanes and polymers made therefrom. The disilacyclobutanes are useful as lubricants and release agents, and the polymers contain perfluoroalkylethyl radicals along the chain which enhances the swell resistance of the polymers. The polymers also withstand extreme temperatures in an inert atmosphere. Illustrative of the compounds of this invention are disilacyclobutanes of the formula



and polymers having repeating units of the formula



$$-\!\left(\underset{CH_3}{\overset{CH_3}{Si}}-\underset{H}{\overset{H}{C}}-\underset{CH_3}{\overset{CH_2CH_2CF_3}{Si}}-\underset{H}{\overset{H}{C}}\right)\!-$$

3,527,782
STABILIZATION OF ORGANIC ISOCYANATES

David H. Chadwick and Eugene L. Powers, New Martinsville, W. Va., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Mar. 22, 1966, Ser. No. 536,314
Int. Cl. C07c *119/04;* **C08g** *22/44;* **C08a** *51/62*
U.S. Cl. 260—453 7 Claims

Organic isocyanates are stabilized against viscosity changes with a compound having the formula $R'(OR)_n$ wherein R′ is carbon, silicon, aluminum, phosphorous, antimony, arsenic, bismuth, boron, gallium, indium, lead, titanium, vanadium, zirconium, hafnium or niobium, R is an organic radical and *n* is an integer corresponding to the valence of R′.

3,527,783
META-BORATES AND BOROXINES

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 367,854, May 15, 1964. This application Feb. 5, 1968, Ser. No. 702,836
Int. Cl. C07f *5/04*
U.S. Cl. 260—462 6 Claims

Meta-borates and boroxines of N,N-di-sec-alkyl-alkanolamine or of N,N-di-cycloalkyl-alkanolamine. The metaborates and boroxines are useful as weathering stabilizers in plastics, as additives in petroleum products and as bactericides.

3,527,784
ALKALI METAL IMPREGNATED MOLECULAR SIEVE MIXED WITH ALKALI METAL IMPREGNATED CHARCOAL BOTH IN PARTICULATE FORM FOR FLUIDIZED BED SYNTHESIS OF ACRYLONITRILE

Clifford E. Smith, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 23, 1967, Ser. No. 648,230
Int. Cl. C07c *121/04*
U.S. Cl. 260—465.3 2 Claims

Charcoal impregnated with an alkali metal cyanide, an excellent catalyst for synthesis of acrylonitrile from HCN and C_2H_2, but which is not operable in a fluidized bed in this reaction, is rendered fluidizable therein by admixing same with zeolite particles impregnated with an alkali metal cyanide, the impregnated zeolite particles being in the range of 20 to 80 vol. percent of the resulting mixture. The resulting mixture is used in a fluidized bed in the synthesis of acrylonitrile.

3,527,785
4-ACETOXY-BENZYLIDENEMALONITRILES

Toshiaki Ozaki, Toyonaka-shi, Keimei Fujimoto, Kyoto, Sigeo Yamamoto, Toyonaka-shi, Yositosi Okuno, Nishinomiya-shi, Toshiyuki Wakatsuki, Kyoto, Taizo Ogawa, Minoo-shi, Fukashi Horiuchi and Akira Fujinami, Takarazuka-shi, and Yoshihiko Nishizawa, Nara-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Dec. 5, 1967, Ser. No. 688,004
Claims priority, application Japan, Dec. 6, 1966, 41/80,237, 41/80,238
Int. Cl. A01n *9/02, 9/20;* **C07c** *121/70*
U.S. Cl. 260—465 **5 Claims**

4 - acetoxy - benzylidenemalonitriles in which the benzene nuclei have further been substituted by lower alkyl groups are prepared by acetylating 4-hydroxy-benzylidenemalonitriles. They have fungicidal, insecticidal, acaricidal and nematocidal activities and are used as agricultural pesticides.

3,527,786
FLUIDIZABLE ACRYLONITRILE CATALYTIC COMPOSITION AND PROCESS

Darrell W. Walker and Clifford E. Smith, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed July 6, 1967, Ser. No. 651,369
Int. Cl. C07c *121/04*
U.S. Cl. 260—465.3 **4 Claims**

Charcoal impregnated with an alkali metal cyanide, an excellent catalyst for the synthesis of acrylonitrile from HCN and acetylene, but which is not operable in a fluidized bed in this reaction, is rendered fluidizable therein by mixing same with silica particles of a size in the range of 1 to 5,000 millimicrons to provide from 20 to 80 vol. percent of silica in the resulting mixture. The resulting catalyst mixture is used in a fluidized bed in the acrylonitrile synthesis.

3,527,787
PROCESS FOR THE MANUFACTURE OF ACRYLONITRILE

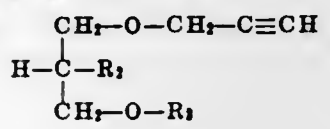
Herbert Baader, Hermulheim, near Cologne, Kurt Sennewald, Knapsack, near Cologne, and Helmut Reis, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed Dec. 27, 1967, Ser. No. 693,709
Claims priority, application Germany, Jan. 31, 1967, K 61,312
Int. Cl. C07c *121/32*
U.S. Cl. 260—465.9 **7 Claims**

Production of acrylonitrile by catalytic dehydrochlorination of β-chloropropionitrile, comprising heating the β-chloropropionitrile in contact with an alkyl-phosphine and/or aryl-phosphine and/or their hydrochlorides, dihydrochlorides, dichlorides or quaternary phosphonium chlorides as a catalyst and distilling off the resulting dehydrochlorination products comprised of hydrogen chloride and acrylonitrile.

3,527,788
1-PROPARGYLOXY-2-CARBAMOYLOXY-3-PROPYLOXY PROPANE

Michel Louis Delalande, Paris, France, assignor to Delalande S.A., Courbevoie, Hauts-de-Seine, France, a corporation of France
No Drawing. Filed July 26, 1966, Ser. No. 567,861
Claims priority, application Great Britain, July 27, 1965, 31,936/65
Int. Cl. C07c *101/00*
U.S. Cl. 260—482 **1 Claim**

A compound of the formula



$$\begin{array}{l} \mathrm{CH_2{-}O{-}CH_2{-}C{\equiv}CH} \\ \quad | \\ \mathrm{H{-}C{-}R_2} \\ \quad | \\ \mathrm{CH_2{-}O{-}R_3} \end{array}$$

in which

R_2 is hydroxyl or —O—CO—NH_2
R_3 is selected from the group consisting of
- (1) a lower aliphatic hydrocarbyl;
- (2) a cycloalkyl radical;
- (3) an ω-chloroalkyl radical in which the alkyl contains from 2 to 4 carbon aotms;
- (4) a morpholinoalkyl radical in which the alkyl contains from 2 to 4 carbon atoms;
- (5) a benzene nucleus and a benzene nucleus substituted with one or more members selected from the group consisting of
  - (a) an alkyl containing from 1 to 3 carbon atoms,
  - (b) an acyl containing 2 or 3 carbon atoms,
  - (c) chloro,
  - (d) trifluoromethyl;
- (6) an arylaliphatic radical;
- (7) an aryloxyalkyl radical;
- (8) an α or β naphthyl radical.

3,527,789
PRODUCTION OF POLY(LOWER)ALKYL ALKENEPOLYCARBOXYLATES

George B. Payne, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 6, 1967, Ser. No. 673,271
Int. Cl. C07c *69/52*
U.S. Cl. 260—485 **6 Claims**

Production of acyclic alkene derivatives having a plurality of alkoxycarbonyl groups as chain substituents by reacting certain stabilized sulfur ylids with certain α,β-unsaturated aliphatic esters in the liquid phase in a reaction medium of a lower aliphatic alcohol of 1 to 4 carbon atoms. The poly(lower)alkyl alkenepolycarboxylates thereby produced are hydrolyzed to obtain the corresponding alkenepolycarboxylic acids which are useful epoxy curing agents.

3,527,790
CONTINUOUS PROCESS FOR THE PRODUCTION OF ESTERS OF ISOPROPANOL

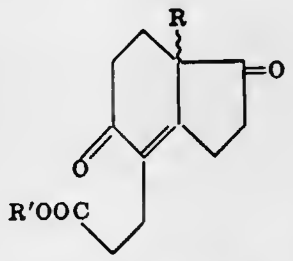
Jean Moundlic, Paris, and Georges Gobron, Melle, Deux-Sevres, France, assignors, by mesne assignments, to Melle-Bezons, Melle, Deux-Sevres, France, a corporation of France
No Drawing. Filed May 29, 1967, Ser. No. 642,222
Claims priority, application France, June 30, 1966, 67,699; Mar. 17, 1967, 99,264
Int. Cl. C07c *67/00, 29/06*
U.S. Cl. 260—488 **13 Claims**

This disclosure describes a continuous process for the preparation of esters of isopropanol and an aliphatic, monocarboxylic acid containing from two to four carbon atoms by directing the reaction product of propylene and aqueous sulfuric acid into a distillation column containing said aliphatic acid and water vapor at a preferred temperature of from 75° C. to 140° C. and a pressure of from atmospheric to 5 kg./cm.^{2}, effective.

3,527,791
NOVEL PROCESS FOR THE PREPARATION OF INDANE DERIVATIVES

Robert Bucourt, Clichy-sous-Bois, and Jean Tessier, Vincennes, France, assignors to Roussel-UCLAF, S.A., Paris, France, a corporation of France
No Drawing. Filed June 1, 1966, Ser. No. 554,356
Claims priority, application France, June 9, 1965, 20,062
Int. Cl. C07c *69/74*
U.S. Cl. 260—468 **12 Claims**

The invention relates to the preparation of indane derivatives of the general Formula I:



wherein R is a lower alkyl radical, and R' is hydrogen or a lower alkyl radical from the condensation of lower alkyl esters of 5-oxo-6-heptenoic acid and 2-alkyl-4-carboxy-cyclopentane-1,3-dione.

3,527,792
PROCESS FOR PREPARING DICYCLOMINE HYDROCHLORIDE

Frank Frederick Ebetino, Norwich, N.Y., assignor to The Norwich Pharmacal Company, a corporation of Delaware
No Drawing. Filed May 9, 1967, Ser. No. 637,078
Int. Cl. C07c *69/74*
U.S. Cl. 260—468 **1 Claim**

A new, alternative, higher yielding, simplified process for the preparation of dicyclomine hydrochloride.

3,527,793
PHENYLGLYCINE DERIVATIVES

Charles Truman Holdrege, Camillus, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Aug. 18, 1967, Ser. No. 661,520, now Patent No. 3,464,985, dated Sept. 2, 1969. Divided and this application Jan. 30, 1968, Ser. No. 701,546
Int. Cl. C07c *101/44*
U.S. Cl. 260—471 **9 Claims**

2,3 or 4-acetamido-substituted-phenylglycines are useful intermediates in the preparation of 7-substituted-amino-cephalosporanic acids, which compounds are valuable as antibacterial agents. D-α-amino-4-acetamidophenylacetic acid for example, is used to produce 1-[D-α-amino-4'-aectamidophenylacetamido] - cephalosporanic acid, a compound valuable in the treatment of bacterial infection in mammals, including man.

3,527,794
CARBOALKOXYLATION OF OLEFINS

Richard F. Heck, McDaniel Crest, Wilmington, Del., assignor to Hercules Powder Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 13, 1965, Ser. No. 479,665
Int. Cl. C07c *69/54, 69/56, 69/76*
U.S. Cl. 260—476 **9 Claims**

The process involves the introduction of an organic group into an ethylenically unsaturated hydrocarbon. As an example, a mixture of carbomethoxymercuric chloride, lithium palladium chloride and ethylene is formed in methanol as solvent. This results in the formation of an unstable adduct between the ethylene and carbomethoxypalladium chloride. Decomposition of the adduct by maintaining it above its decomposition temperature provides methyl acrylate as the product.

3,527,795
PROCESS FOR PREPARING WATER-SOLUBLE SALTS OF ORGANIC PHOSPHORUS ACIDS

Roger A. Rose, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,525
Int. Cl. C07f *9/38;* **C11d** *1/00*
U.S. Cl. 260—502.4 **7 Claims**

This invention relates to a process for preparing a stable, free-flowing particulate water-soluble composition such as the sodium salts of 1-hydroxy ethylidene diphosphonic acid and ethylene-1,1-diphosphonic acid. This process more specifically comprises the steps of intimately admixing, for example, by periodic agitation and at a rate sufficient to maintain resulting reaction mass in a substantially solid and particulate form, a liquid diphosphonic acid, having a concentration at 20° C. of about 50% to about 80% by weight, and an alkali metal-containing material such as sodium carbonate which is in the form, for example, of soda ash, to form a free-flowing granulated material. The ratio of alkali metal to acid is in the range of 1:1 to 4:1. The resulting granular material is preferably aged for from about 2 seconds to about 5 minutes and then heated for from about 5 minutes to about 2 hours at a temperature of from about 100° C. to about 200° C. to form a substantially anhydrous salt. The particle size of the resultant salt is characterized by having at least 90% by weight of all the particles remain on a No. 100 mesh U.S. Standard screen.

3,527,796
N-ACYL PHENYLHYDRAZINE SULFAMIC ACIDS AND SALTS THEREOF

Meyer Sletzinger, North Plainfield, John M. Chemerda, Plainfield, and George Gal, Summit, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 586,364, Oct. 13, 1966. This application Aug. 14, 1967, Ser. No. 660,234
Int. Cl. C07c *143/86*
U.S. Cl. 260—513.6 **3 Claims**

Process for preparing 1-aroyl-3-indolyl acetic acids by direct acylation of substituted phenylhydrazine sulfonates and subsequent condensation and cyclization with levulinic acid. Said products are useful as anti-inflammatory agents.

3,527,797
PRODUCTION OF ACRYLIC ACID

Richard Krabetz, Ludwigshafen (Rhine), Heinz Engelbach, Limburgerhof, Pfalz, and Helmut Zinke-Allmang, Bad Durkheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 17, 1967, Ser. No. 675,760
Claims priority, application Germany, Oct. 25, 1966, 1,568,200
Int. Cl. C07c *51/32*
U.S. Cl. 260—533 **9 Claims**

Production of acrylic acid by reaction of 1 part by volume of propylene with 1.5 to 10 parts by volume of molecular oxygen in the form of a gas containing 10 to 30% by volume of oxygen in the presence of 1 to 10 parts by volume of steat at temperatures of 300° to 400° C. using a catalyst which contains molybdenum, tungsten, tellurium and iron and/or nickel and/or copper and/or manganese in an atomic ratio of 1 to 20:0.01 to 20:0.001 to 1:1 and also oxygen. Acrylic acid is suitable for the production of polymers.

3,527,798

ACTIVE CALCIUM SUCCINATES IN CIS-FORM AND A PROCESS FOR THE PREPARATION THEREOF

Tadataka Hara, 988 4-chome, Shimotakaido,
Suginami-ku, Tokyo, Japan
Filed Dec. 12, 1966, Ser. No. 600,949
Claims priority, application Japan, Dec. 16, 1965,
40/77,042
Int. Cl. C07c *55/10*
U.S. Cl. 260—537 **3 Claims**

Active calcium succinates in cis-form and a process for the preparation thereof comprising combining commercial succinic acid with calcium in a molar ratio of at least 2:1. The active calcium succinates possess anticarcinogenic activity and are also useful as deodorants for the removal of fish odor or as refreshing agents for fishes.

3,527,799

UREA SYNTHESIS PROCESS

Ivo Mavrovic, New York, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 20, 1966, Ser. No. 521,921
Int. Cl. C07c *127/00*
U.S. Cl. 260—555 **3 Claims**

A urea synthesis process improvement is provided, in which the pressure of the synthesis autoclave effluent stream is adiabatically reduced to produce an off-gas rich in free ammonia, which is separated from the residual liquid stream containing product urea. The residual liquid stream is subjected to two stages of ammonium carbamate decomposition by heating, to produce off-gas streams containing ammonia and carbon dioxide. The first stage off-gas is absorbed in an aqueous absorbent solution while in heat exchange with the residual liquid stream during the second decomposition stage at reduced pressure. Greater heat generation and recovery is obtained by separating the initial ammonia-rich off-gas generated by pressure reduction from the liquid effluent stream, and only passing the first decomposition stage off-gas to the heat recovery sequence.

3,527,800

SULFONYLCARBODIIMIDES

Adnan A. R. Sayigh, North Haven, and Henri Ulrich, North Branford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,836
Int. Cl. C07c *143/74, 143/78, 119/04*
U.S. Cl. 260—556 **6 Claims**

Sulfonylcarbodiimides are produced by reacting a carbodiimide with a sulfonyl isocyanate. At an intermediate step in the reaction 2-imino-4-hydrocarbylsulfonylimino-1,3-oxazetidines and/or 4-imino-3-hydrocarbylsulfonyl-1,3,5-triazine-2,6-diones are produced. The latter two types of compounds are useful for the preparation of sulfonylcarbodiimides. Sulfonylcarbodiimides, in turn, are useful as stabilizers for polyesters.

3,527,801

6-AMINO-N-(2-[(2-DIALKOXYALKYL)AMINO]ETHYL)-BENZENESULFONAMIDES

Peter H. L. Wei, Upper Darby, and Stanley C. Bell, Penn Valley, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 533,856, Mar. 14, 1966. This application Mar. 15, 1968, Ser. No. 713,300
Int. Cl. C07c *143/80*
U.S. Cl. 260—556 **11 Claims**

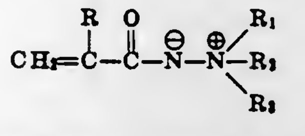
6 - amino - N-(2-[(2-dialkoxyalkyl)amino]ethyl)benzenesulfonamides (I) are prepared by condensing the corresponding 6 - amino - N-(2-bromoethyl)benzenesulfonamide and a dialkyl aminoacetaldehyde acetal in the presence of a base. Compounds (I) are pharmacologically active, especially as central nervous system depressant agents.

3,527,802

ACRYLIC AMINIMIDES

Robert C. Slagel, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky
No Drawing. Continuation-in-part of application Ser. No. 514,705, Dec. 15, 1965. This application May 5, 1967, Ser. No. 636,273
Int. Cl. C07c *103/44*
U.S. Cl. 260—561 **6 Claims**

Acrylic aminimides are prepared from acrylic acids or derivatives thereof. The acrylic aminimides can be homopolymerized and copolymerized to result in functional group-containing polymeric products capable of thermosetting. The acrylic aminimides have the general formula:



$$CH_2{=}\overset{R}{\overset{|}{C}}{-}\overset{O}{\overset{\|}{C}}{-}\overset{\ominus}{N}{-}\overset{\oplus}{N}(R_1)(R_2)(R_3)$$

wherein R is a hydrogen, lower alkyl (C_1–C_8), aryl, chlorine, fluorine, bromine, or cyano group and R_1, R_2, and R_3 are hydrocarbon radicals and R_1 and R_2 can be combined to form a heterocyclic ring with the nitrogen.

3,527,803

PROCESS FOR THE SEPARATION OF ACRYLAMIDE FROM ACRYLAMIDE SULFATE

Fabio B. Bruschtein, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Feb. 14, 1968, Ser. No. 705,314
Int. Cl. C07c *103/08*
U.S. Cl. 260—561 **6 Claims**

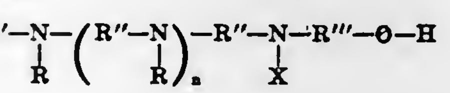
Acrylamide is separated from acrylamide sulfate by neutralizing the acrylamide sulfate with a basic sodium compound and precipitating sodium sulfate decahydrate from the reaction mixture at a temperature below about 32° C., preferably below about 20° C. The precipitated solids are then separated to recover a purified and more concentrated aqueous solution of acrylamide. Also by operating at the lower neutralization temperatures detrimental by-products are avoided in the monomer. In a preferred embodiment, acrylamide sulfate containing dissolved iron as an inhibitor is neutralized with a basic sodium compound, the amount of the latter reagent being controlled so as to not exceed pH 3 in the reaction mixture. After precipitating and separating the sodium sulfate decahydrate, the aqueous acrylamide solution is contacted with an agent for separating iron from acidic aqueous solution.

3,527,804

HYDROXYALKYL POLYSUBSTITUTED ALKYLENE POLYAMINES

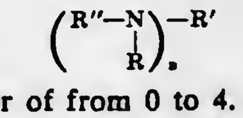
Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 577,151, Sept. 6, 1966, which is a continuation-in-part of application Ser. No. 290,917, June 27, 1963, now Patent No. 3,288,748, dated Nov. 29, 1966. This application Apr. 20, 1967, Ser. No. 632,222
Int. Cl. C07c *91/12, 91/14;* **C08f** *45/60*
U.S. Cl. 260—563 **10 Claims**

Hydroxyalkyl polysubstituted alkylene polyamines having the formula:



$$R'{-}\underset{R}{\underset{|}{N}}{-}\left(R''{-}\underset{R}{\underset{|}{N}}\right)_n{-}R''{-}\underset{X}{\underset{|}{N}}{-}R'''{-}O{-}H$$

where R is sec-alkyl of from 6 to about 50 carbon atoms, cycloalkyl or phenyl, R′ is hydrogen, sec-alkyl of from 6 to about 50 carbon atoms, cycloalkyl or phenyl, R″ and R‴ are alkylene of from 2 to about 10 carbon atoms each, X is R or



$$\left(R''{-}\underset{R}{\underset{|}{N}}\right)_n{-}R'$$

and *n* is an integer of from 0 to 4. The compounds are useful as additives to organic substrates including plastics, rubber, lubricants, both synthetic and of petroleum origin, and other hydrocarbon distillates.

3,527,805

PROCESS FOR PREPARING HYDRAZOCOMPOUNDS

Gianfranco Pregaglia, Giancarlo Bressan, and Renato Broggi, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Mar. 30, 1966, Ser. No. 538,576
Claims priority, application Italy, Apr. 5, 1965,
7,505/65
Int. Cl. C07c *109/04*
U.S. Cl. 260—569 **9 Claims**

Described is an improvement in the process for obtaining hydrazocompounds and carboxylic acids by reduction of aromatic nitrocompounds, in the presence of naphthoquinones, with alcohols and alkali metal hydroxides. The improvement comprises using as a reducing alcohol a glycol selected from the group consisting of aliphatic, cycloaliphatic glycols from 2 to 12 carbon atoms.

3,527,806

10-ALKYL-ALKENYL- OR BENZYL-5-(3-AMINOPROPYLIDENE)-DIBENZO[a,d]CYCLOHEPTENES

Gerald Rey Bellet and Hans Spiegelberg, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 3, 1967, Ser. No. 620,241
Claims priority, application Switzerland, Mar. 17, 1966,
3,904/66
Int. Cl. C07c *87/28*
U.S. Cl. 260—570.8 **8 Claims**

5-(aminopropylidene-dibenzo[a,d]cycloheptenes having anti-depressant activity.

3,527,807

UNSATURATED SULFONE AMINES

Giuliana C. Tesoro, Dobbs Ferry, N.Y., and Frank V. Mattei, Plainfield, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application May 5, 1961, Ser. No. 107,893. Divided and this application Sept. 24, 1968, Ser. No. 798,488
Int. Cl. C07c *127/20, 147/04, 157/10*
U.S. Cl. 260—584 **2 Claims**

Unsaturated sulfone compounds corresponding to the structure

$$(CH_2{=}CHSO_2CH_2CH_2OC_aH_{2a})_3{\equiv}N$$

wherein *a* has a value of 1 to 8. The compounds can be used for the chemical modification, particularly cross-linking, of polymers containing active hydrogen atoms.

3,527,808

PROCESS FOR PURIFICATION OF TRIS(HYDROXYMETHYL)AMINOMETHANE

Frederick W. Schmitz and Robert E. Laine, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland
No Drawing. Filed Mar. 28, 1968, Ser. No. 716,999
Int. Cl. C07c *89/04*
U.S. Cl. 260—584 **1 Claim**

A two-stage crystallization process for the production of tris(hydroxymethyl)aminomethane substantially free from color-producing impurities, water insoluble material and fine particles of less than 100 mesh and resistant to caking during storage.

3,527,809

HYDROFORMYLATION PROCESS

Roy L. Pruett and James A. Smith, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 3, 1967, Ser. No. 658,055
Int. Cl. C07c *45/10*
U.S. Cl. 260—604 **9 Claims**

An oxo process for preparing oxygenated products comprising aldehydes which have unusually high normal to branched-chain isomer ratios. The process involves using a particularly characterized rhodium-containing complex catalyst under a specific combination of carefully controlled reaction conditions.

3,527,810

PROCESS FOR PREPARING A DIMETHYL SULFOXIDE-SULFUR TRIOXIDE COMPLEX

David J. Pettitt, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware
No Drawing. Filed June 6, 1968, Ser. No. 734,853
Int. Cl. C07c *147/00;* **C08b** *5/14*
U.S. Cl. 260—607 **4 Claims**

Process for preparing a dimethyl sulfoxide-sulfur trioxide complex by reacting dimethyl sulfoxide with sulfur trioxide in the presence of tetrachloroethylene said complex being useful in preparing sulfate esters of cellulose or starch.

3,527,811

1,1,2 - TRIFLUORO - 2 - BROMOETHYL DIFLUOROMETHYL ETHER AND ITS METHODS OF PREPARATION

Ross C. Terrell, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Original application Oct. 3, 1966, Ser. No. 583,929, now Patent No. 3,449,504. Divided and this application June 12, 1968, Ser. No. 758,169
Int. Cl. C07c *43/00, 43/12*
U.S. Cl. 260—614 **1 Claim**

This invention relates to the novel compound 1,1,2-trifluoro-2-bromoethyl difluoromethyl ether having the formula CHF_2OCF_2CHFBr. The compound is prepared for fluorination of corresponding dichloromethyl ether using fluorinating agents in the presence of antimony salts and tetravalent halides as fluorination catalysts. The compound is useful as an anesthetic and as a solvent and dispersant for fluorinated materials.

3,527,812

1,1 - DIFLUORO - 2,2 - DICHLOROETHYL DIFLUOROMETHYL ETHER AND ITS METHOD OF PREPARATION

Ross C. Terrell, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Original application Oct. 3, 1966, Ser. No. 583,948, now Patent No. 3,461,213, dated Aug. 12, 1969. Divided and this application Oct. 9, 1968, Ser. No. 778,904
Int. Cl. C07c *43/00, 43/12*
U.S. Cl. 260—614 **1 Claim**

This application discloses the novel compound 1,1-difluoro-2,2-dichloroethyl difluoromethyl ether having the formula $CHF_2OCF_2CHCl_2$. The compound is prepared by fluorination of the corresponding dichloromethyl ether using fluorinating agents in the presence of pentavalent antimony salts or tetravalent halides as fluorination catalysts. The precursor dichloromethyl ether is prepared by chlorination of the methyl ether. The novel ether has useful anesthetic properties and is a useful solvent.

3,527,813

1,1,2 - TRIFLUORO - 2 - CHLOROETHYL DIFLUOROMETHYL ETHER AND ITS METHOD OF PREPARATION

Ross C. Terrell, Summit, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Original application Oct. 3, 1966, Ser. No. 583,938, now Patent No. 3,469,011, dated Sept. 23, 1969. Divided and this application Sept. 4, 1968, Ser. No. 778,889

Int. Cl. C07c *43/00, 43/12*

U.S. Cl. 260—614 **1 Claim**

This application discloses the novel compound 1,1,2-trifluoro-2-chloroethyl difluoromethyl ether having the formula CHF_2OCF_2CHFCl. The compound is prepared by fluorination of the corresponding dichloromethyl ether using fluorinating agents in the presence of pentavalent antimony salts and tetravalent halides as fluorination catalysts. Advantageous preparation of the precursor dichloromethyl ether involves chlorination of the methyl ether by the addition of not more than 1.5 molar equivalents of chlorine. The novel difluoromethyl ether is useful as an anesthetic agent.

3,527,814

HALOMETHYL FLUOROISOPROPYL ETHERS

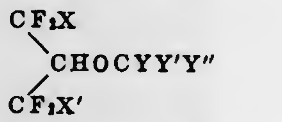
Louise S. Croix, Summit, and Alex J. Szur, North Plainfield, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Original application Dec. 8, 1966, Ser. No. 600,014. Divided and this application Mar. 8, 1968, Ser. No. 735,939

Int. Cl. C07c *43/00, 43/12*

U.S. Cl. 260—614 **5 Claims**

This invention relates to certain novel halogenated derivatives of fluorinated isopropyl methyl ethers represented by the following formula:



$$(CF_2X)(CF_2X')CHOCYY'Y''$$

where X and X' can be Cl or F, Y is selected from the group consisting of F and Cl, and Y' and Y'' are selected from the group consisting of H, Cl and F. The compounds can be prepared by clorinating and fluorinating the corresponding haloisopropyl methyl ethers. The compounds are useful as solvents and dispersants for fluorinated materials and the compounds $CF_3(CF_2Cl)CHOCH_2Cl$ and $(CF_3)_2CHOCH_2Cl$ exhibit anesthetic properties in mammals.

3,527,815

OLEFINIC ALCOHOLS

Hans D. Holtz, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 8, 1965, Ser. No. 506,866

Int. Cl. C07c *35/00, 69/54*

U.S. Cl. 260—617 **6 Claims**

Unsaturated alcohols such as 1,2-bis(2-hydroxy-3-cyclohexene-1-yl)ethylene are produced by the oxidation of a triolefin in the presence of a boron-containing compound, followed by hydrolysis of the resulting olefinic boarate esters.

3,527,816

OLEFINIC ALCOHOLS

John R. Norell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Original application Oct. 22, 1965, Ser. No. 502,332, now Patent No. 3,433,928, dated Mar. 18, 1969. Divided and this application July 29, 1968, Ser. No. 748,162

Int. Cl. C07c *35/00;* **C08g** *17/00*

U.S. Cl. 260—617 **6 Claims**

Novel esters such as 1-(3-cyclohexen-1-yl)-2-(acetoxycyclohexyl)ethylene and alcohols such as 1,2-bis(4-hydroxycyclohexyl)ethylene are formed from 1,2-bis(3-cyclohexen-1-yl)ethylene and derivatives thereof. The esters are useful as plasticizers and the alcohols are useful as intermediates in the formation of polyesters and polyurethanes.

3,527,817

HYDROGENATION OF HALOGENATED AROMATIC CARBONYL COMPOUNDS

Andrew J. Dietzler, Midland, Junior J. Lamson, Bay City, and Richard H. Hall, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 583,947, Oct. 3, 1966. This application Mar. 14, 1968, Ser. No. 712,967

Int. Cl. C07c *29/00, 31/16*

U.S. Cl. 260—618 **10 Claims**

The hydrogenation of halogenated aromatic ketones and aldehyde to the corresponding carbinols in the presence of copper chromite catalyst is facilitated by the additional presence of an oxide or hydroxide of an alkaline earth metal.

3,527,818

OXO ALCOHOLS USING CATALYSTS COMPRISING DITERTIARY PHOSPHINES

Ronald F. Mason, Mill Valley, and John L. Van Winkle, San Lorenzo, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Original application Nov. 26, 1965, Ser. No. 510,068, now Patent No. 3,401,204, dated Sept. 10, 1968. Divided and this application June 5, 1968, Ser. No. 782,776

Int. Cl. C07c *29/16;* **C07f** *15/06*

U.S. Cl. 260—632 **5 Claims**

The novel bicyclic heterocyclic ditertiary phosphines, hydrocarbylenebis - (monophosphabicyclononanes), are used in the selective direct, single-stage production of reaction products consisting predominantly of primary alcohols by reacting an olefinic compound with carbon monoxide and hydrogen at a temperature between about 100° and 300° C. and superatmospheric pressure in the presence of a catalyst of cobalt in complex combination with carbon monoxide and hydrocarbylene-bis(monophosphabicyclononane).

3,527,819

OXYCHLORINATION PROCESS FOR PREPARING TRICHLOROETHYLENE AND TETRACHLOROETHYLENE

Sidney Berkowitz, Highland Park, and Morton Meadow, Trenton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,855

Int. Cl. C07c *21/10, 21/12;* **B01j** *11/78*

U.S. Cl. 260—654 **4 Claims**

A catalyst, especially useful in oxychlorination reactions, which consists essentially of (a) copper chloride, (b) potassium chloride and (c) neodymium chloride in specific proportions carried on (d) a porous silica gel carrier.

The catalyst is used in an oxychlorination reaction by heating a feed stream containing a C_1–C_4 hydrocarbon gas, oxygen, chlorine and/or hydrogen chloride to a temperature of from about 325 to about 600° C. in the presence of said catalyst to obtain chlorinated hydrocarbons.

3,527,820

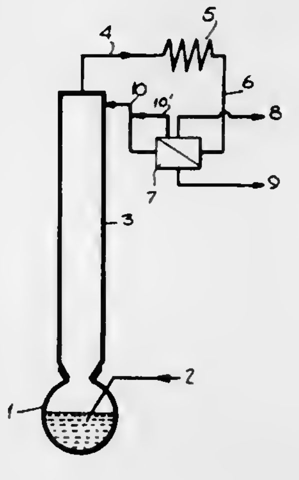
PRODUCTION OF ALKYL CHLORIDES CONTAINING FROM 3 TO 6 CARBON ATOMS

Jules Mercier, Melle, Deux-Sevres, France, assignor to Melle-Bezons, Melle, Deux-Sevres, France a corporation of France

Continuation-in-part of application Ser. No. 331,003, Dec. 16, 1963. This application Oct. 19, 1967, Ser. No. 676,587

Int. Cl. C07c *17/16*

U.S. Cl. 260—657 **11 Claims**



This application discloses a continuous process for the production of alkyl chlorides by reaction at an elevated temperature between an alkanol containing from 3 to 6 carbon atoms and hydrochloric acid.

3,527,821

OLEFINIC HYDROCARBON STABILIZED BY SODIUM BOROHYDRIDE PARTICLES

Charles W. Montgomery, Oakmont, and Charles M. Selwitz, Pitcairn, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 16, 1968, Ser. No. 698,111

Int. Cl. C07c *7/18;* **C09k** *1/64;* **C10g** *9/16*

U.S. Cl. 260—666.5 **10 Claims**

Discrete particles of sodium borohydride are suspended in olefinic hydrocarbons for destruction of olefinic hydroperoxide impurities.

3,527,822

DIVINYLBENZENE POLYMERIZATION INHIBITORS

Herbert L. Benson, Jr., Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 16, 1969, Ser. No. 816,791

Int. Cl. C07c *7/08, 7/18;* **B01d** *3/34*

U.S. Cl. 260—666.5 **6 Claims**

Certain nitroso derivatives of phenol and naphthol effectively inhibit divinylbenzene polymerization at elevated temperatures in the absence of oxygen (air) and permit the separation and purification of divinylbenzene by vacuum distillation.

3,527,823

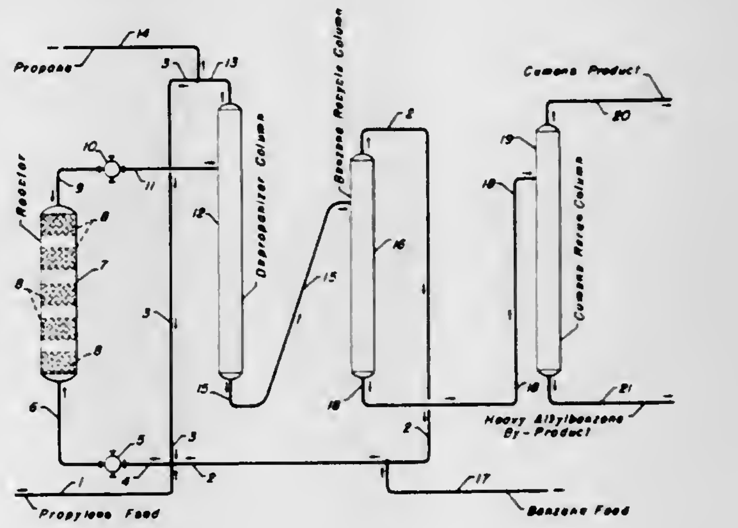
PROCESS FOR ALKYLATION OF AROMATIC COMPOUNDS

Edwin K. Jones, Kenilworth, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Continuation-in-part of application Ser. No. 635,988, May 4, 1967. This application July 16, 1969, Ser. No. 842,224

Int. Cl. C07c *3/54*

U.S. Cl. 260—671 **13 Claims**



A process for the synthesis of monoalkylated aromatic compound which comprises passing an alkylatable aromatic compound and an olefin-acting alkylating agent upflow through a reaction zone under alkylating conditions in the presence of an unreactive vapor dispersant. The molar ratio of olefin-acting alkylating agent to unreactive vapor dispersant is preferably not greater than 2:1. The process is particularly applicable to the synthesis of cumene from benzene and propylene in the presence of a solid phosphoric acid catalyst.

3,527,824

TRANSALKYLATION PROCESS

Ernest L. Pollitzer, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 694,061, Dec. 28, 1967. This application July 1, 1968, Ser. No. 741,307

Int. Cl. C07c *3/50, 3/58*

U.S. Cl. 260—672 **5 Claims**

Toluene is transalkylated utilizing a catalyst comprising a crystalline aluminosilicate, a Group VIII metal and an additional component selected from the group consisting of arsenic, antimony, bismuth, selenium, tellurium, and compounds thereof.

3,527,825

TRANSALKYLATION PROCESS

Ernest L. Pollitzer, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 694,061, Dec. 28, 1967. This application July 3, 1968, Ser. No. 742,193

Int. Cl. C07c *3/50, 3/58*

U.S. Cl. 260—672 **6 Claims**

A mixture of C_9 aromatic hydrocarbon and toluene is transalkylated utilizing a catalyst comprising a crystalline aluminosilicate, a Group VIII metal and an additional component selected from the group consisting of arsenic, antimony, bismuth, selenium, tellurim and compounds thereof.

3,527,826
CATALYST FOR THE DISPROPORTIONATION OF TOLUENE

Takeshi Sonoda and Masaki Sato, Kamakura-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed May 19, 1969, Ser. No. 825,921
Claims priority, application Japan, May 27, 1968, 43/35,612
Int. Cl. B01j *11/40, 11/52;* **C07c** *3/58*
U.S. Cl. 260—672 8 Claims

A shaped catalyst for the fixed bed disproportionation of toluene consisting essentially of the binary mixture of not more than 55% by weight based on the total catalyst of hydrogenated synthetic mordenite and at least 45% by weight based on the total catalyst of hydrogenated natural mordenite, wherein the degree of dealkalization of each of said two mordenites is at least 50 mol percent and the mordenite structure content determined by the intensity of X-ray diffraction peak of specific Bragg's reflection angle is at least 60% by weight.

3,527,827
SYNTHESIS OF MONOCYCLIC TERPENES

George E. Illingworth, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Oct. 25, 1968, Ser. No. 770,855
Int. Cl. C07c *13/00;* **C09f** *3/00*
U.S. Cl. 260—675.5 6 Claims

Monocyclic terpenes may be prepared by reacting a conjugated diolefinic hydrocarbon with a substituted allene at reaction conditions which include an elevated temperature and elevated pressure. This process is illustrated by the production of terpinolene by condensing isoprene and dimethyl allene at 75° C. and 50 atm. for 4 hours.

3,527,828
OLEFIN PRODUCTION

Frank D. Mango, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 15, 1967, Ser. No. 690,770
The portion of the term of the patent subsequent to Jan. 28, 1986, has been disclaimed
Int. Cl. C07c *11/02, 11/12*
U.S. Cl. 260—677 11 Claims

Hydrocarbon telomers, having a plurality of ethylenic linkages and more than $m+n$ carbon atoms, produced by contacting in a reaction zone olefinic reactants of m carbon atoms and acyclic monoolefins of n carbon atoms in the presence of a molybdenum- or rhenium-containing catalyst to at least a minimum olefin conversion, and separating from the resulting product mixture the products of $m+n$ or less carbon atoms for recycle to the reaction zone.

3,527,829
PROCESS FOR PRODUCING HIGH-PURITY ISOBUTYLENE

Tatuo Horie, Tokyo, and Yasuo Fujiwara, Yokohama, Kanagawa, Japan, assignors to Nippon Oil Company, Limited, Tokyo, Japan
No Drawing. Filed May 1, 1967, Ser. No. 634,836
Claims priority, application Japan, May 12, 1966, 41/29,700
Int. Cl. C07c *11/102*
U.S. Cl. 260—677 6 Claims

This invention relates to a process for producing high-purity isobutylene which comprises bringing a mixture of hydrocarbons containing isobutylene into contact with a catalyst solution comprising 6.0 to 14.0 mol percent of zinc chloride, 4.0 to 11.0 mol percent of hydrogen chloride, 80.0 to 86.0 mol percent of water and, if desired, at least one of trivalent iron ions and tetravalent titanium ions, thereby selectively converting isobutylene into corresponding tertiary butyl alcohol, degassing the resulting catalyst solution at an elevated temperature to such an extent that no vigorous dehydration of tertiary butyl alcohol to regenerate isobutylene occurs, and thereafter, conducting the dehydration reaction of tertiary butyl alcohol thereby recovering high-purity isobutylene therefrom.

3,527,830
PREPARATION OF OLEFINIC HYDROCARBONS

Robert A. Dombro, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Sept. 19, 1968, Ser. No. 760,984
Int. Cl. C07c *11/02, 149/00*
U.S. Cl. 260—677 10 Claims

Olefinic hydrocarbons may be prepared by treating an organic sulfide in the presence of a primary, secondary or tertiary amine and a transition metal catalyst at elevated temperatures.

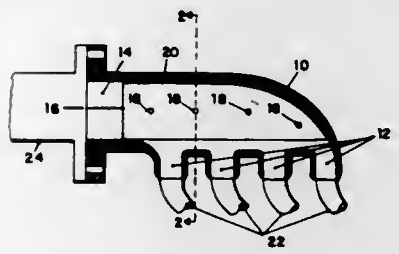
3,527,831
1,3-PENTADIENE RECOVERY

George C. Blytas, Kensington, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 12, 1968, Ser. No. 721,070
Int. Cl. C07c *7/00, 11/00*
U.S. Cl. 260—681.5 4 Claims

Separation of 1,3-pentadiene from isoprene by selectively complexing the 1,3-pentadiene with cuprous chloride in the presence of selected proportions of an inert diluent.

3,527,832
COKE PREVENTION IN STEAM CRACKING

Nicholas C. Pamphilis, Mendham, and John A. Kivlen, Sparta, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,727
Int. Cl. C07c *3/30;* **C10g** *9/16*
U.S. Cl. 260—683 5 Claims



Sect. 2-2

A technique and apparatus is described for lessening the tendency of steam cracker effluents to coke in the process equipment downstream from the steam cracker furnace. A special baffled collection manifold is used on the furnace outlet tubes.

3,527,833
PROCESS FOR THE ISOMERIZATION OF BUTENE-2

William L. Kehl, Indiana Township, Allegheny County, Raymond J. Rennard, Jr., O'Hara Township, Allegheny County, and Harold E. Swift, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 28, 1969, Ser. No. 828,712
Int. Cl. C07c *5/22*
U.S. Cl. 260—683.2 7 Claims

Butene-2 is isomerized to butene-1 at elevated temperatures in the presence of a magnesium chromium ferrite catalyst.

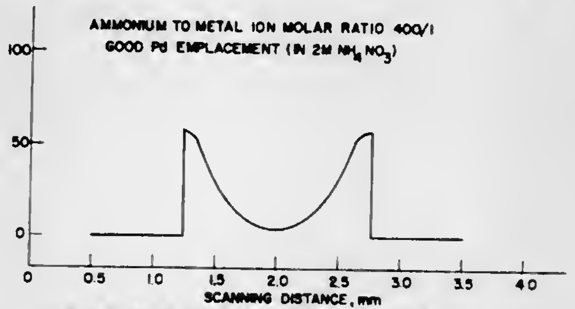
3,527,834
CONVERSION OF BUTENE-2 TO BUTENE-1

William L. Kehl, Indiana Township, Allegheny County, Raymond J. Rennard, Jr., O'Hara Township Allegheny County, and Harold E. Swift, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 28, 1969, Ser. No. 828,713
Int. Cl. C07c *5/22*
U.S. Cl. 260—683.2 7 Claims

Butene-2 is converted to butene-1 at elevated temperatures in the presence of a zinc chromium ferrite catalyst.

3,527,835
HYDROISOMERIZATION WITH MORDENITE CATALYST PREPARED BY COMPETITIVE CATIONIC EXCHANGE

Hans A. Benesi, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Jan. 24, 1968, Ser. No. 700,204
Int. Cl. C07c *5/30*
U.S. Cl. 260—683.65 8 Claims



ELECTRON PROBE MEASUREMENTS OF PALLADIUM PROFILE IN MORDENITE EXTRUDATES

A method for preparing a paraffin hydroisomerization catalyst containing highly dispersed platinum or palladium homogeneously distributed into a synthetic crystalline alumino-silicate mordenite support. Dispersion of metal throughout the support is achieved by competitive cationic exchange in an ammoniacal solution having an ammonium ion to metal complex ion ratio of about 100 to 1 or more. Dispersion of metal is maintained by controlling the metal reduction temperature. The catalyst thus prepared is used to isomerize normal paraffins in the C_4 to C_7 range in the presence of hydrogen at elevated temperature and pressure.

3,527,836
DEHYDROGENATION PROCESS OVER Pt-EXCHANGED 5A SIEVE

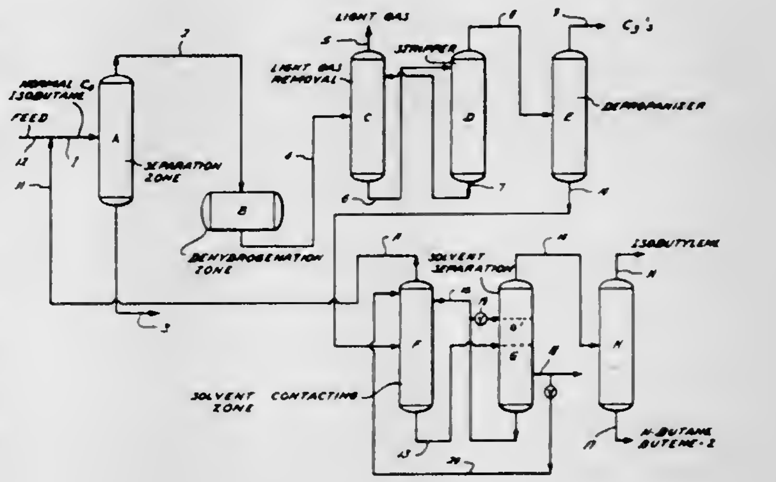
Leonard Turner, Woking, and Philip John Hunter, Twickenham, England, assignors to The British Petroleum Company Limited, London, England, a corporation of England
No Drawing. Filed May 2, 1968, Ser. No. 726,224
Claims priority, application Great Britain, May 2, 1967, 20,168/67, 20,169/67
Int. Cl. C07c *5/18;* **C01b** *33/28*
U.S. Cl. 260—683.3 3 Claims

Alkanes are dehydrogenated to alkenes over small pore molecular sieves which have a platinum group metal exchanged on to their external surfaces. Alkali metal partial poisoning increases selectivity.

3,527,837
PRODUCTION OF ISOBUTYLENE

Rudolph C. Woerner, Houston, and Lloyd D. Tschopp, Humble, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 640,096, May 19, 1967, now Patent No. 3,479,416. This application Aug. 13, 1969, Ser. No. 849,838
Int. Cl. B01d *3/34;* **C07c** *7/00, 5/18*
U.S. Cl. 260—683.3 11 Claims

In an integrated facility for the preparation of isobutylene, it has been found that a significant improvement in the purity of the isobutylene from the extractive distillation solvent stripper can be obtained by returning a portion of the lean solvent to the upper section of the stripper, thus creating an absorbing sub zone in the upper section of the stripper. This has the effect of increasing the isobutylene purity and further enriching the butadiene-1,3 in side draw stream in the lower section of the stripper. Unlike conventional extractive distillation, which this modification resembles, very low solvent concentrations can be used thus effecting a saving in solvent circulation.



3,527,838
ETHYLENE OLIGOMERIZATION

Kenneth W. Barnett, San Leandro, and Peter W. Glockner, Alameda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 13, 1969, Ser. No. 790,840
Int. Cl. C07c *3/10*
U.S. Cl. 260—683.15 6 Claims

An improved ethylene oligomerization process employs a catalyst composition produced by contacting (π-cyclopentenyl)cyclopentadienylnickel and a sulfided inorganic oxide catalyst support.

3,527,839
ETHYLENE OLIGOMERIZATION

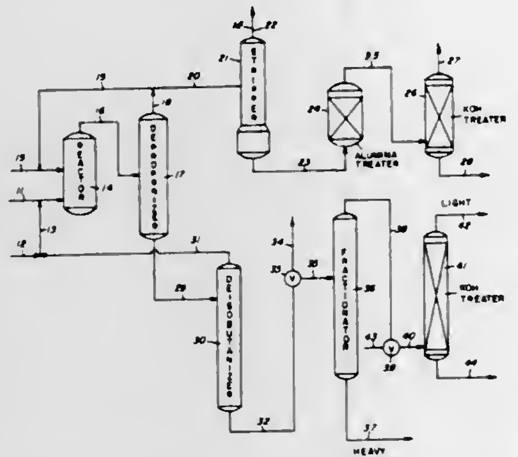
Peter W. Glockner, Alameda, and Kenneth W. Barnett, San Leandro, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 13, 1969, Ser. No. 790,841
Int. Cl. C07c *3/20*
U.S. Cl. 260—683.15 7 Claims

Ethylene is oligomerized to a product mixture consisting predominanately of linear alpha-olefins in the presence of a sulfided, supported nickel oxide catalyst.

3,527,840
CONTINUOUS REMOVAL OF HYDROFLUORIC ACID FROM AN ALKYLATE HYDROCARBON STREAM

Robert E. Price, Port Arthur, Tex., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 713,381
Int. Cl. C07c *3/54;* **C10g** *19/00*
U.S. Cl. 260—683.48 12 Claims

Hydrofluoric acid is continuously removed from an alkylate hydrocarbon stream by admixing either water, steam or an aqueous alkali solution with the alkylate hydrocarbon stream and contacting the admixture with solid potassium hydroxide in a treating zone. This admixture maintains active potassium hydroxide surfaces by removing potassium fluoride coating as a sludge, thus avoiding interruptions during the treating process.



3,527,841

ALPHA-CYANOACRYLATE ADHESIVE COMPOSITIONS

Thomas H. Wicker, Jr., and John M. McIntire, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 10, 1968, Ser. No. 720,326

Int. Cl. A61b *17/04;* **C08f** *3/62;* **C08g** *17/02*

U.S. Cl. 260—823 **11 Claims**

Alpha-cyanoacrylate adhesive compositions for general and particularly for surgical uses containing poly(lactic acid) as a viscosity modifier and an acidic component such as SO_2 and/or a free radical scavenger such as hydroquinone as a polymerization inhibitor.

3,527,842

PRESSURE SENSITIVE ADHESIVE MADE FROM SILOXANE RESINS

Harold A. Clark, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Apr. 14, 1969, Ser. No. 816,093

Int. Cl. C08g *47/04*

U.S. Cl. 260—825 **4 Claims**

Mixture of a polysiloxane resin (1) which contains SiOH groups and has a phenyl to silicon ratio of from 0.5 to 0.8, (2) a phenylvinylsiloxane resin having a vinyl to silicon ratio of 0.15 to 0.60 and (3) a SiH containing siloxane compatible with (1) and (2) can be partially cured by action of a catalyst causing addition of the SiH to the silicon-vinyl to give a pressure-sensitive adhesive. This adhesive is useful for bonding films such as polyimide films to metal substrates, such as electrical conductors. After bonding the film to the substrate the assembly is heated to cure (1) and permanently bond the film to the substrate.

3,527,843

POLYLACTAM WITH POLYESTER WITH 0.005 TO 0.1 MOL OF 2,2-BIS(HYDROXYMETHYL) PROPIONIC ACID PER MOL OF LACTAM

Herbert K. Reimschuessel, Morristown, and Gerald J. Dege, Parsippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Apr. 11, 1968, Ser. No. 721,561

Int. Cl. C08g *41/04*

U.S. Cl. 260—857 **14 Claims**

This specification discloses improved blends of polylactams and polyesters wherein the polylactam is modified by incorporating therein a minor amount of 2,2-bis(hydroxymethyl)propionic acid. These blends form films which show improved tear resistance and fibers which show improved resistance to splitting when compared to polylactam-polyester blends.

3,527,844

PIGMENT CONCENTRATE COMPRISING AN AMORPHOUS ETHYLENE/PROPYLENE BLOCK COPOLYMER AND A CRYSTALLINE ALPHA-OLEFIN POLYMER

David C. Hull, Hugh J. Hagemeyer, Jr., and Raymond L. Etter, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New York

No Drawing. Continuation of application Ser. No. 308,666, Sept. 13, 1963. This application Apr. 4, 1968, Ser. No. 718,953

Int. Cl. C08f *29/12*

U.S. Cl. 260—876 **10 Claims**

Pigment concentrate consisting essentially of a finely divided pigment dispersed in a mixture of 10–90% by weight propylene-ethylene block copolymer having a viscosity at 150° C. of 5000 to 300,000 cps. and 10–90% by weight low molecular weight crystalline polypropylene or crystalline block copolymer containing at least 80% polymerized propylene and the remainder other alpha-monoolefin.

3,527,845

METHOD OF REDUCING FINES IN ALPHA-OLEFIN POLYMER POWDER

James L. Jezl, Swarthmore, and Habet M. Khelghatian, Springfield, Pa., and Donald F. Knaack, Wilmington, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 28, 1967, Ser. No. 649,606

Int. Cl. C08f *29/12*

U.S. Cl. 260—897 **6 Claims**

A method for reducing the amount of powder fines in finely divided crystalline polymer powder recovered from stereoregular polymerization of C_3–C_8 alpha monoolefins which comprises blending a finely divided crystalline C_3–C_8 alpha monoolefin polymer powder with 2 to 30 weight percent of crystalline ethylene polymer or a crystalline propylene-ethylene copolymer, agitating and heating the polymer powder blend at a temperature in the range of 100°–160° C. for the time necessary to reduce powder fines content in the polymer powder blend.

3,527,846

FIBER-FORMING COMPOSITIONS HAVING IMPROVED DYE RECEPTIVITY

Vittorio Cappuccio, Cornelio Caldo, and Giuseppe Cantatore, Terni, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Continuation-in-part of application Ser. No. 124,346, July 17, 1961. This application May 24, 1967, Ser. No. 640,808

Claims priority, application Italy, July 20, 1960, 12,800/60; Mar. 3, 1961, 3,985/61; May 24, 1961, 13,357/61

Int. Cl. C08f *29/12, 29/56*

U.S. Cl. 260—897 **12 Claims**

Fiber-forming compositions having improved dye receptivity comprising a polymer selected from the group consisting of polyalphamonoolefins and polyacrylonitrile and from about 1 to 25% by weight, based on the weight of the polymer of a basic nitrogen-containing compound, said compound having been obtained by either (A) reacting epichlorohydrin with:

(A_1) two bisecondary C_4–C_{60} aliphatic, aromatic or heterocyclic amines selected from the group consisting of diamines containing secondary amine groups and diamines containing primary amine groups which act as secondary amine groups due to steric hindrance, or

(A_2) one bisecondary amine according to (A_1) and one C_3–C_{30} primary aliphatic amine, or

(B) a bisecondary aliphatic, aromatic or heterocyclic C_4–C_{60} amine or a diamine containing primary amine groups which act as secondary amine groups due to steric hindrance.

Process for preparing dye receptive fibers comprising melting the foregoing composition and subjecting it to molten mass extrusion and stretching.

Basic nitrogen-containing compounds obtained by either of the foregoing reactions (A) and (B).

3,527,847

THIONOPHOSPHORAMIDES AND PROCESS THEREFOR

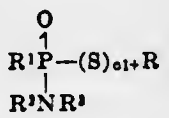
Philip S. Magee, San Rafael, and Larry E. Stevick, San Francisco, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 340,501, Jan. 27, 1964. This application Aug. 2, 1967, Ser. No. 657,780

Int. Cl. C07f *9/24;* **A01n** *9/36*

U.S. Cl. 260—934 **10 Claims**

Compounds of the formula



$$R^1\underset{\underset{\displaystyle R^2NR^3}{|}}{\overset{\overset{\displaystyle O}{\uparrow}}{P}}-(S)_{n-1}R$$

in which R^1 is an organic radical such as a hydrocarbyl radical bonded to the phosphorus by an O, S or C atom, R has 1 to 18 carbon atoms and is an aliphatic radical substituted with 0 to 6 halogen atoms, and 0 to 1 alkoxycarbonyl groups or monocyclic aryl substituted with halogens or nitro groups, R^2 and R^3 are individually hydrogen or organic radicals of 1 to 18 carbon atoms and *n* is 1 or 2. These compounds are prepared by reacting a thionophosphoramidate with a thiosulfenyl halide or sulfenyl halide. Compounds of this group exhibit fungicidal and other biological activity.

3,527,848

β-AMIDO VINYL PHOSPHATES AND THEIR METHOD OF PREPARATION

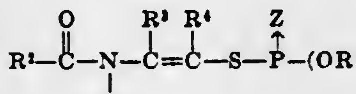
Melancthon S. Brown, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed June 7, 1967, Ser. No. 644,063

Int. Cl. C07f *9/24, 9/58;* **A01n** *9/36*

U.S. Cl. 260—944 **7 Claims**

β-Amidovinyl thiophosphates of the formula



$$R^2-\overset{\overset{\displaystyle O}{\|}}{C}-\underset{\underset{\displaystyle R^1}{|}}{N}-\overset{\overset{\displaystyle R^3}{|}}{C}=\overset{\overset{\displaystyle R^4}{|}}{C}-S-\overset{\overset{\displaystyle Z}{\uparrow}}{P}-(OR)_2$$

in which R is a hydrocarbyl radical, R^1 is a saturated aliphatic, cycloaliphatic or aryl radical, R^2, R^3 and R^4 are hydrogen, saturated aliphatic, cycloaliphatic or aryl radical, with the proviso that R^1 and R^2 may be joined to form an alkylene radical and Z is oxygen or sulfur. Compounds of this class are insecticidal and may be made by reacting an appropriate N-vinyl amide with a phosphorane sulfenyl halide.

3,527,849

DITHIOPHOSPHATES AND DITHIOPHOSPHONATES HAVING AN S-(TERT.-BUTOXY CARBONYL METHYL) GROUP

Noboru Shindo, Yasukazu Ura, and Hiroki Takahashi, all % Nissan Kagaku Kogyo K.K., Kenkyusho, 1 of No. 4 5-chome, Toshima, Kita-ku, Tokyo, Japan, and Mitsuru Hayakawa, Mamoru Hayashi, and Hiroharu Nakadai, all % Nissan Kagaku Kogyo K.K., Kenkyusho Noji Shikenjo, 1470 Ohaza-Shiraoka, Shiraoka-machi, Minamisaitama-gun, Saitama-ken, Japan

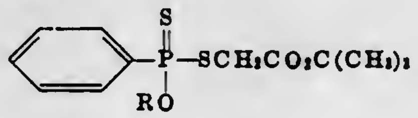
No Drawing. Filed July 12, 1965, Ser. No. 471,448

Claims priority, application Japan, July 15, 1964, 39/39,775; July 20, 1964, 39/40,457

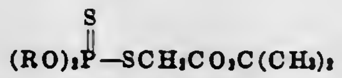
Int. Cl. C07f *9/16;* **A01n** *9/36*

U.S. Cl. 260—941 **6 Claims**

Compounds having insecticidal activity and having the following formulae



or



$$(RO)_2\overset{\overset{\displaystyle S}{\|}}{P}-SCH_2CO_2C(CH_3)_3$$

wherein R represents lower alkyl.

3,527,850

PHENYL DIALKYL PHOSPHINATES

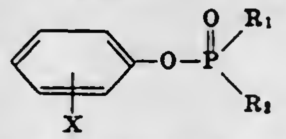
Kenneth L. McHugh, Kirkwood, and Kurt A. Nowotny, Rock Hill, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Mar. 31, 1965, Ser. No. 444,406, now Patent No. 3,383,318. Divided and this application Nov. 20, 1967, Ser. No. 708,739

Int. Cl. C07f *9/12;* **C09k** *3/00*

U.S. Cl. 260—961 **7 Claims**

Compounds particularly useful as functional fluids and lubricants which are represented by the formula



wherein R_1 and R_2 are each alkyl radicals having from 3 to 6 carbon atoms, X is selected from the group consisting of hydrogen, alkyl and alkoxy radicals having from 1 to 8 carbon atoms, and the halogens.

3,527,851

METHOD FOR CONTROLLING THE EXTRUSION OF VISCO-ELASTIC MATERIAL

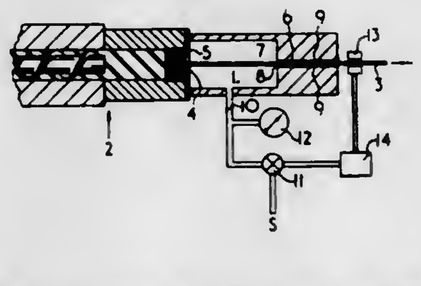
Douglas Bulgin, Erdington, Birmingham, England, assignor to The Dunlop Company Limited, London, England, a British company

Filed Oct. 10, 1967, Ser. No. 674,177

Claims priority, application Great Britain, Oct. 15, 1966, 46,197/66

Int. Cl. B29h *3/00, 21/00*

U.S. Cl. 264—40 **6 Claims**

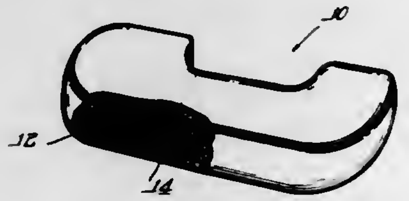


Method for extrusion whereby fluid pressure is applied to the extrudate immediately after it emerges from the extruder die and hence provide finer control for the dimensions of the product. A sensing device may be employed to measure the dimensions and a servo system incorporated so that the fluid pressure varies according to the valves of the sensed dimensions in order to maintain substantially constant extrudate dimensions.

3,527,852

RESINOUS FOAM WITH INTEGRAL SKIN AND PROCESS OF MAKING THE SAME

Henry E. Thill, Wheeling, Ill., assignor to Biwax Corporation, Des Plaines, Ill., a corporation of Illinois
Filed Apr. 10, 1968, Ser. No. 720,282
Int. Cl. B29d *27/00*
U.S. Cl. 264—45 **7 Claims**



Articles comprising a cellular core and an integral skin are fabricated from thermosetting or cross-linking resins by charging a quantity of an irreversibly reactable resin system into a mold cavity, providing in the cavity a capsule containing a predetermined quantity of foaming agent, the capsule being arranged for selective release of the foaming agent, and then simultaneously revolving and heating the mold to cause a skin of cured resin to form on the surfaces of the mold cavity, selective release of the foaming agent thereafter causing the residual, moving uncured resin to be mixed with the agent and foamed to fill the skin with a cured cellular core coadunated with the skin.

3,527,853

PROCESS FOR MANUFACTURING SEMIPERMEABLE CELLULOSE ACETATE MEMBRANES SUITABLE FOR DESALINATION

Martin E. Rowley, Hilton, and Nelson G. Baumer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,195
Int. Cl. B29d *7/02;* **C08b** *3/06*
U.S. Cl. 264—49 **7 Claims**

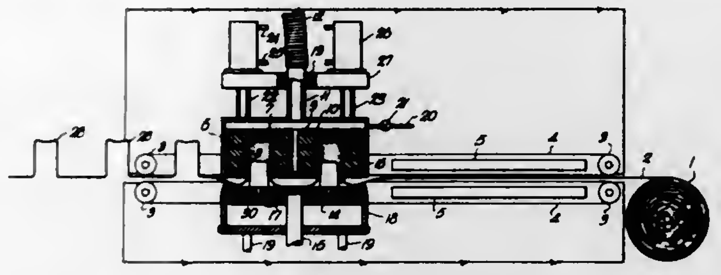
A process has been found in which conventional cellulose acetate "hydrolysis baths" can be utilized directly (without a separate step in which the partially hydrolyzed cellulose acetate is precipitated) in overall processes for manufacturing cellulose acetate membranes that are particularly useful for purifying salty water, for example, as "reverse osmosis" membranes. The "hydrolysis baths" contain cellulose acetate, acetic acid, water, and a sulfuric acid catalyst. The present processes involve, initially, reacting the sulfuric acid with an organic amine, casting the resulting dope in the form of a film and then subjecting the surface of the film to a stream of "drying" gas.

3,527,854

METHOD FOR THE CONTINUOUS PRODUCTION OF OPEN TOP CONTAINERS

Raymond H. Martin, Beaverton, Mich., John Mulligan, Philadelphia, Pa., and James E. Yochim, Parsippany, N.J.; said Mulligan and said Yochim assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 4, 1968, Ser. No. 742,969
Int. Cl. B29b *3/00;* **B29c** *17/03, 17/04*
U.S. Cl. 264—89 **3 Claims**

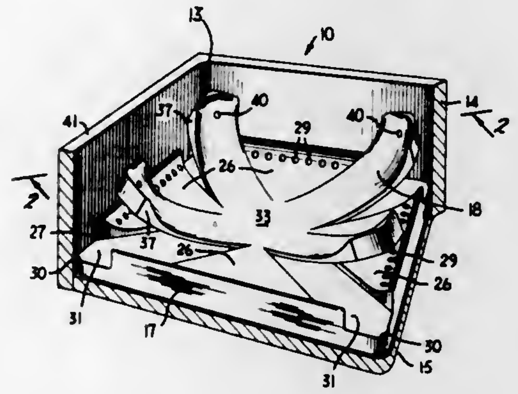
Method for producing petroleum oil cans by thermoforming with a cooled plate surrounding vacuum-assist plugs. Female shaping tools contact the upper side of a sheet to be formed and a clamp frame clamps the sheet against the female tools. A pressure box having a double seal at the top seals the sheet about the vacuum-assist plugs which are advanced into the female tools. The sealing of the pressure box against the sheet forces the sheet against the cooled plate so as to cool those areas of the sheet which are not disposed in the female tools. A differential pressure is applied to the sheet portions disposed in the female tools to form such portions against the female tools. Finger-shaped vacuum-assist plugs are found most efficient.



3,527,855

FILM-FORMING METHOD AND APPARATUS

Allan I. Parvin, Millburn, N.J., Ihor Wyslotskyi, Evanston, Ill., and Douglas P. Roome, Cedar Grove, N.J., assignors to Standard Packaging Corporation, New York, N.Y., a corporation of Virginia
Filed Apr. 28, 1967, Ser. No. 634,764
Int. Cl. B29c *17/04;* **B29h** *7/02*
U.S. Cl. 264—92 **7 Claims**



The specification describes several embodiments of a film-forming apparatus of a packaging machine. In each embodiment of the film-forming apparatus, there is provided a cavity in communication with a source of suction for stretching a formable film into the cavity, and means defining a retractable stretch controlling surface accommodated within the cavity and interposed in the path of a portion of the film stretched therein to retard the stretching thereof. In addition, in some of the embodiments there is a recess within the cavity for receiving the stretch controlling surface in retracted position, the base of the cavity and the retracted stretch controlling surface cooperating to define the base of the cavity in which the film is formed.

3,527,856

EXPANSION OF COMPRESSED VERMICULAR GRAPHITE SCRAP

Franciszek Olstowski, Freeport, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 539,731, Apr. 4, 1966. This application Nov. 6, 1968, Ser. No. 773,965
Int. Cl. B29j *1/00*
U.S. Cl. 264—109 **8 Claims**

A process for recovering compressed vermicular graphite scrap by reducing the size of the scrap to particles having a size between 100 mesh and particles having about 1 inch as their longest dimension, treating such particles with an expanding agent and rapidly heating the treated particles to a temperature of above 200° C. to produce a low density, vermicular form of graphite. As expanding agents, liquid organic materials, water, and aqueous solutions of water-soluble inorganic acids, inorganic bases, inorganic salts and water-soluble organic materials containing at least 50% water are employed.

3,527,857

PROCESS FOR PREPARING POLYTETRAFLUOROETHYLENE-CONTAINING POWDER

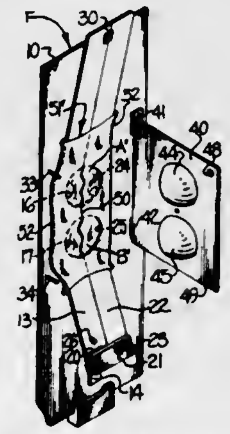
Herbert Fitz, Burgkirchen (Alz), Germany, assignor to Farbewerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,766
Claims priority, application Germany, Oct. 26, 1965, F 47,509
Int. Cl. C08f *3/24, 47/02*
U.S. Cl. 264—117 **9 Claims**

A process for preparing a polytetrafluoroethylene polymer powder to improve its flow properties and increase its powder density comprising applying mechanical forces on unsintered polytetrafluoroethylene powder in a dispersion consisting of water and an organic liquid capable of wetting polytetrafluoroethylene and soluble in water to at most 15% at temperatures ranging from 0 to 100° C., preferably 10 to 80° C.

3,527,858

METHOD FOR FINISHING FULL-FASHIONED BRASSIERE BLANKS

Ralph C. Braxton and Leonard E. Phillippie, Burlington, N.C., assignors to Alamance Industries, Inc., Burlington, N.C., a corporation of North Carolina
Filed Feb. 12, 1968, Ser. No. 704,615
Int. Cl. B29c *27/24, 17/10, 17/03*
U.S. Cl. 264—161 **5 Claims**



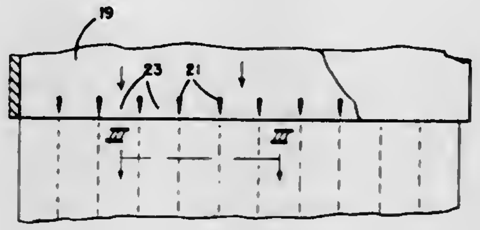
Pairs of full-fashioned brassiere blanks knit of thermoplastic yarn are sewn together along opposed sides to form elongate tubes which are positioned on shaped boarding form members and maintained in a smooth and uniformly tensioned condition while they are heat-set. The boarding form members are supported for movement between side-by-side and overlapping positions to facilitate the donning and doffing of the sewn together brassiere blanks.

3,527,859

MANUFACTURE OF SCORED FILMS

Theodore H. Fairbanks, West Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,478
Int. Cl. B29d *7/04, 7/24;* **B29f** *3/04*
U.S. Cl. 264—177 **2 Claims**

Manufacture of films having longitudinally extending grooved or scored areas. A streamlined flow of film forming material is subdivided into separate substreams by obstructing members placed inside the die and before the die discharge orifice. With such a nozzle construction, the substreams contact and partially blend into a continuous, unbroken film possessing areas extending longitudinally thereof which are of reduced thickness, and the said film is thereafter released from the die and set to provide a solid film.



3,527,860

PROCESS FOR PRODUCING FIBERS

Marshall T. Watson and Lionel E. Wooten, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Sept. 26, 1967, Ser. No. 670,802
Int. Cl. D01d *5/12;* **B29c** *25/00*
U.S. Cl. 264—210 **5 Claims**

Novel polyamide fibers of trans-1,4-cyclohexanedicarboxylic acid, terephthalic acid and 3,3′-ethylenedioxybis-(propylamine) in a molar ratio of trans-1,4-cyclohexanedicarboxylic acid:terephthalic acid:3,3′-ethylenedioxybis (propylamine) of about 70–100:30–0:100. The novel synthetic fibers are heat set by a particular technique and possess a unique set of properties. Preparation of the novel synthetic fibers may be by melt spinning the polyamide at a temperature of at least 290° C., drawing the resulting fiber to at least three times its original length at a temperature of at least about 125° C. and stabilizing the drawn fiber at a temperature of at least about 220° C. while allowing the fiber to relax by at least 3 percent of its drawn length.

3,527,861

CAST DENTAL PROSTHESIS AND METHOD OF MAKING SAME

Abraham B. Weinstein, 23 Ralsey Road S., Stamford, Conn. 06902, and Jacob Biscow, 70 E. 8th St., Brooklyn, N.Y. 11215
Filed Feb. 6, 1967, Ser. No. 614,334
Int. Cl. A61c *13/04, 13/08*
U.S. Cl. 264—221 **13 Claims**

The method ot casting flowable materials in a vacuum by first connecting an air tight mold to a container filled above the connection with the casting material, exhausting air therefrom, and thereafter slowly lowering the vacuum and thereby forcing the flowable material into the air tight exhausted mold until filled with the casting material.

3,527,862

PROCESS FOR THE MANUFACTURE OF POLYESTER SYNTHETIC FIBERS

Itsuya Shimosako, Yoshiaki Hori, and Hitoshi Tonami, Iwakuni-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,471
Claims priority, application Japan, Feb. 5, 1964, 39/5,867
Int. Cl. B29c *17/02*
U.S. Cl. 264—290 **8 Claims**

A process for producing terephthalate polyester filaments of improved dye affinities and excellent creep resistance comprising drawing undrawn terephthalate polyester filaments having a birefringence of 0.0050–0.0250 at a relatively low draw ratio at a temperature of from 55° to 95° C. with heating of the drawn filaments at a temperature of from 100° to 220° C. while allowing shrinkage. The heat-treated yarn is thereafter redrawn at a temperature of not less than about 160° C. to not less than about 1.16 times the length of the heat-treated yarn to thereby produce a polyester synthetic fiber having improved dyeability and yarn characteristics. The draw ratio ranges from the minimum draw ratio of the undrawn yarn to a draw ratio about 0.5 higher than such minimum.

3,527,863
TISSUE INFILTRANT

Theodore E. Weichselbaum, St. Louis, Mo., assignor, by mesne assignments, to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,993

Int. Cl. A01n *1/30;* **G01n** *1/30*

U.S. Cl. 424—3 **7 Claims**

A composition for impregnating tissues with wax for sectioning on a microtome, which contains a normally solid wax plus 0.2% to 1% dimethyl sulfoxide. The composition is applied to the tissue as a melt and the dimethyl sulfoxide is sufficient to improve penetration of the tissue by the wax to provide a tissue specimen suitable for sectioning.

3,527,864
COMPOSITIONS FOR TOPICAL APPLICATION TO ANIMAL TISSUE AND METHOD OF ENHANCING PENETRATION THEREOF

Francis S. Kilmer MacMillan and Warren I. Lyness, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Continuation-in-part of application Ser. No. 344,195, Feb. 12, 1964. This application Nov. 18, 1966, Ser. No. 595,437

Int. Cl. C07c *147/00*

U.S. Cl. 424—177 **5 Claims**

Disclosed is a composition for topical application to animal tissue comprising a safe and effective amount of an antimicrobial agent and from 0.1% to 10.0% by weight of a higher (C_8–C_{12}) aliphatic sulfoxide. Anti-bacterial compositions containing from about 0.1% to 10.0% of higher aliphatic sulfoxide have been found to enhance the penetration of antimicrobial agents through keratinized epithelial tissue.

3,527,865
METHOD OF CONTROLLING SEA LAMPREY

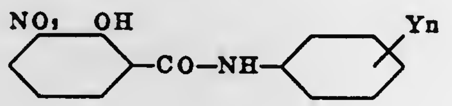
Robert G. Taborsky, Bedford Heights, Ohio, assignor to Ben Venue Laboratories, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Original application July 2, 1965, Ser. No. 469,300. Divided and this application Apr. 4, 1966, Ser. No. 539,723

Int. Cl. A01n *9/20*

U.S. Cl. 424—230 **22 Claims**

1. The method of controlling sea lamprey which comprises adding to a sea lamprey larvae habitat containing sea lamprey larvae a larvicidal amount of a 3-nitrohalosalicylanilide having the formula



where Y is a halogen and *n* is an integer no greater than 5.

3,527,866
17β-PHENOXYACETYLOXYESTR-4-EN-3-ONES

Takuichi Miki, Amagasaki, Kentaro Hiraga, Ikeda, Tsunehiko Asako, Suita, Toru Yui, Osaka-fu, and Michio Masuoka, Suita, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

No Drawing. Filed July 28, 1967, Ser. No. 656,659

Claims priority, application Japan, July 28, 1966, 41/49,808; June 6, 1967, 42/36,120

Int. Cl. C07c *169/08*

U.S. Cl. 424—243 **5 Claims**

17β-phenoxy-acetyloxyestr-4-en-3-one and the corresponding 6-methyl and 6,6-dimethyl derivatives exhibit an unexpectedly high anabolic action and an improved anabolic/androgenic ratio vis-a-vis, e.g., 19-nortestosterone phenylpropionate and related known anabolic agents.

3,527,867
AGENTS INHIBITING FUNGUS GROWTH AND METHOD OF CONTROLLING FUNGI THEREWITH

Jörg Bader, Arlesheim, and Karl Gätzi, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 621,800, Mar. 9, 1967, which is a continuation-in-part of application Ser. No. 555,994, June 8, 1966. This application Feb. 19, 1968, Ser. No. 706,614

Claims priority, application Switzerland, June 11, 1965, 8,200/65; Feb. 23, 1967, 2,700/67

Int. Cl. A01n *9/12, 9/22;* **C07d** *71/00*

U.S. Cl. 424—277 **16 Claims**

Agents for inhibiting the growth of fungi, which contain as active component 5-amino-1,2-dithiol-3-ones substituted at the amino group and also in 4-position, and method of controlling phytopathogenic and other noxious fungi with such agents, which are of surprisingly low phytotoxicity.

3,527,868
LIPOTROPIC MEDICINE HAVING AS A BASE BETAINE ACETYL ASPARTATE AND METHOD FOR TREATMENT THEREWITH

Yvonne Thuillier, Paris, France, assignor to Albert Rolland S.A., Paris, France, a French societe anonyme

Application Oct. 17, 1967, Ser. No. 678,480, now Patent No. 3,470,242, dated Sept. 30, 1969, which is a continuation-in-part of application Ser. No. 432,717, Feb. 15, 1965. Divided and this application June 9, 1969, Ser. No. 831,507

Claims priority, application France, Feb. 25, 1964, 965,070

Int. Cl. A61k *27/00*

U.S. Cl. 424—316 **2 Claims**

A medicinal composition comprising as the active ingredient a major amount of betaine acetyl aspartate and a pharmaceutically acceptable carrier is administered to mammals for the treatment of hepatic steatosis in a daily dosage range about 100 to 2,000 milligrams of aspartate per kilogram of body weight.

3,527,869
ADAMANTANE-1-CARBOXYLIC DERIVATIVES AS ANTIVIRAL AGENTS

André R. Gagneux and Franz Hafliger, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 19, 1966, Ser. No. 521,556. Divided and this application Jan. 10, 1969, Ser. No. 810,060

Claims priority, application Switzerland, Jan. 20, 1965, 816/65

Int. Cl. A61k *27/00*

U.S. Cl. 424—319 **3 Claims**

This invention relates to compositions and method for the treatment of influenza A virus (PR8) and Columbia SK viral infections with adamantane-1-carboxylic derivatives.

3,527,870
ANTHELMINTIC COMPOSITIONS CONTAINING BENZOYLETHYL QUATERNARY AMMONIUM COMPOUNDS AND A METHOD THEREFOR

Alfred Margot, Basel, and Jean-Jacques Gallay, Birsfelden, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Original application Jan. 20, 1966, Ser. No. 521,831, now Patent No. 3,453,313, dated July 1, 1969. Divided and this application Nov. 1, 1968, Ser. No. 798,520

Claims priority, application Switzerland, Jan. 29, 1965, 1,280/65

Int. Cl. A61k *27/00*

U.S. Cl. 424—329 **5 Claims**

Quaternary benzoylethyl ammonium compounds, including new compounds which have amino groups in the para-position of the phenyl ring, are useful as anthelmintic agents.

3,527,871
METHOD OF TREATING ARRHYTHMIA

Edward L. Engelhardt, Gwynedd Valley, and Mary Lou Torchiana, Ambler, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 30, 1968, Ser. No. 701,544

Int. Cl. A61k *27/00*

U.S. Cl. 424—330 **11 Claims**

This invention relates to a method of treating or preventing cardiac arrhythmias by administering to the affected patient a safe but effective amount of a dibenzocycloheptene compound having an aminomethyl, an alkylaminomethyl, or a dialkylaminomethyl substituent at the 5-position.

ELECTRICAL

3,527,872
APPARATUS FOR THE REPLACEMENT OF CONTACT PINS OF ELECTROLYSIS FURNACES

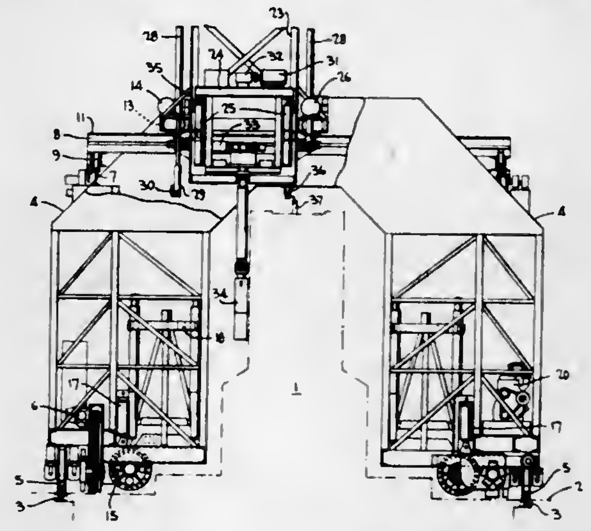
Gudmund Heggstad and Johan Nikolai Ström, Hoyanger, Norway, assignors to A/S Årdal og Sunndal Verk, Oslo, Norway

Filed Jan. 24, 1968, Ser. No. 700,304

Claims priority, application Norway, Jan. 24, 1967, 166,542

Int. Cl. H05b *7/06, 7/10, 7/14*

U.S. Cl. 13—1 **8 Claims**



Apparatus for replacing contact pins in electrolysis furnaces comprises a gantry structure mounted for movement along a row of furnaces and extending transversely over the furnaces. A carriage adapted for movement in directions at right angles to each other is mounted on the gantry and supports pin-drawing equipment. Pin cages for storing and transporting both new and old pins are located in each of the legs of the gantry on opposite sides of the row of furnaces whereby the pin-drawing equipment may easily transfer an old pin from one side of the furnace to a pin cage on the same side and replace the old pin with a new pin from the pin cage.

3,527,873
COMPOSITE SUPERCONDUCTING CABLE HAVING A POROUS MATRIX

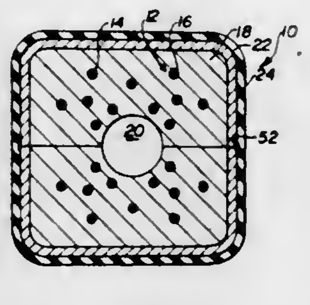
Habibo Brechna, Palo Alto, and Edward L. Garwin, Los Altos Hills, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Dec. 27, 1968, Ser. No. 787,419

Int. Cl. H01b *7/34*

U.S. Cl. 174—15 **10 Claims**

A composite superconducting cable comprised of a circular array of solid strands of superconducting wire embedded in a porous matrix that supports the strands within a solid conduit. The matrix is provided with a central passage through which supercritical or superfluid helium is circulated as a coolant; the matrix is further provided with small longitudinal channels formed in its periphery adjacent the conduit for venting gaseous helium to a low-pressure reservoir.



3,527,874
CROSSLINKED POLYETHYLENE OIL FILLED HIGH VOLTAGE POWERED CABLE

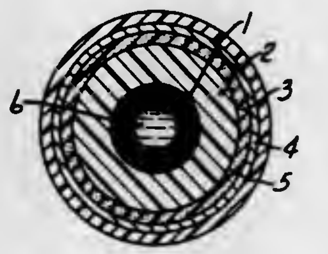
Toshiyuki Hayami, Osaka, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan

Filed Sept. 14, 1967, Ser. No. 667,778

Claims priority, application Japan, Sept. 27, 1966, 41/90,009, 41/90,010

Int. Cl. H01b *7/34, 9/36*

U.S. Cl. 174—24 **3 Claims**

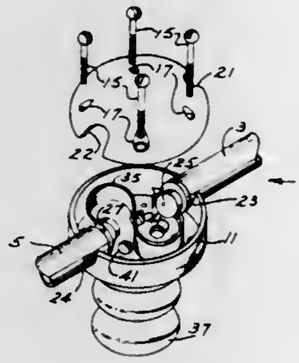


Crosslinked polyethylene cable core for high voltage use made by extruding a crosslinked polyethylene insulating layer over a conductor, in which silicon oil or a mixed oil consisting of silicon oil and a hydrocarbon is always present on the interface between the conductor and the insulating layer to prevent the generation of corona from this electrically weak point.

3,527,875
HIGH VOLTAGE BUS CONNECTORS SHIELDED AGAINST CORONA DISCHARGE

James B. Saxon, Birmingham, Ala., assignor to Anderson Electric Corporation, Leeds, Ala., a corporation of Alabama

Filed Nov. 8, 1967, Ser. No. 681,486
Int. Cl. H02g *5/00*
U.S. Cl. 174—73 **11 Claims**

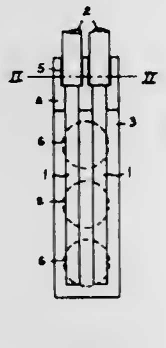


Connectors are described for electrically and mechanically connecting either a pair of high voltage bus bars or a single bus bar to an equipment terminal. The connectors include a rounded shield for supporting the buses and shielding the connection against corona discharge. A flexible S-shaped expansion coupling within the shield interconnects either the buses or the bus and the terminal.

3,527,876
ELECTRICAL CONNECTION BETWEEN SUPERCONDUCTORS

Erki Karvonen, Helsinki, Finland, and Jean-Marie Rayroux, Baden, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Sept. 23, 1968, Ser. No. 761,651
Claims priority, application Switzerland, Oct. 23, 1969, 14,374
Int. Cl. H02g *15/08*
U.S. Cl. 174—94 **7 Claims**

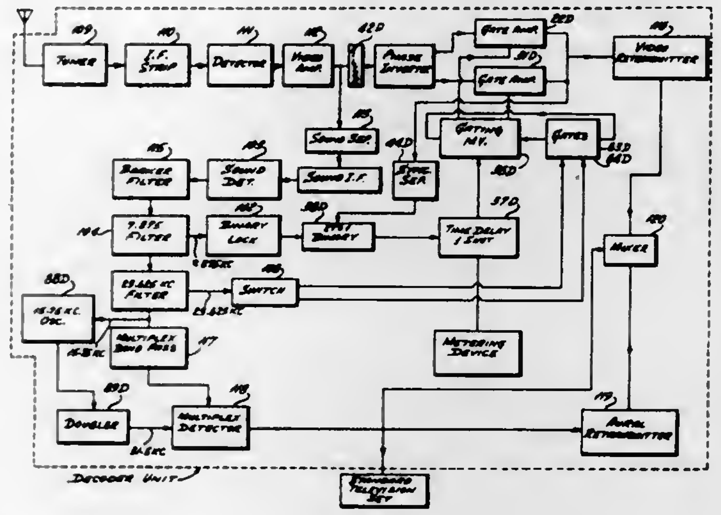


An electrical connection between the end portions of two conductors made of hard-super-conductive material is formed by spot welding the conductor end portions to a plate also made from a hard-superconductive material in which the critical current-density has been increased by annealing. The hard-superconductive conductors are coated with copper which is removed at the places where the spot welds are made, and these copper coatings are electrically connected to a sheet of copper which forms an underlay for the hard-superconductive plate.

3,527,877
CODED VIDEO SYSTEMS WITH SIGNAL PHASE INVERSION

Harold R. Walker, Metuchen, N.J., assignor to Charger Electronic Systems Inc., New York, N.Y., a corporation of New York

Filed Oct. 21, 1965, Ser. No. 499,401
Int. Cl. H04n *7/18*
U.S. Cl. 178—5.1 **15 Claims**

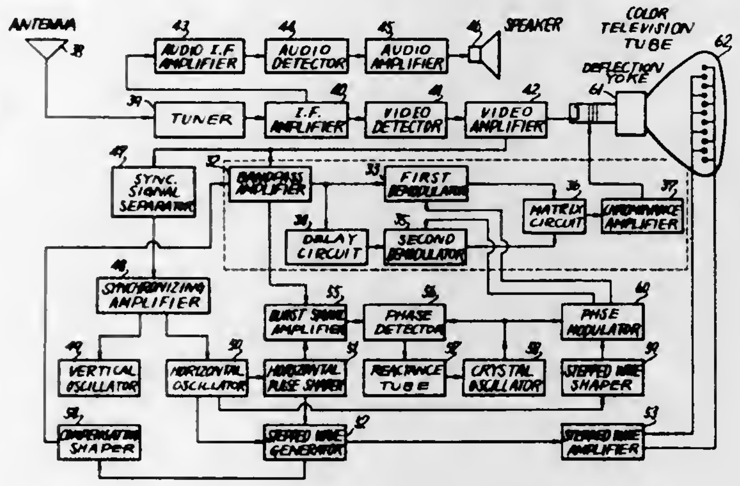


A secrecy video signal transmission system employs periodic reversal of the video signal polarity. Alternate horizontal line periods may be inverted, with accompanying attenuation of low frequency signal components. Synchronizing signals may be inverted or not, as desired.

3,527,878
LINE SEQUENTIAL COLOR TELEVISION RECEIVER

Yasumasa Sugihara, Kawasaki-shi, Japan, assignor to The General Corporation, Kanagawa-ken, Japan, a corporation of Japan

Filed Aug. 23, 1966, Ser. No. 574,337
Claims priority, application Japan, Aug. 26, 1965, 40/51,683
Int. Cl. H04n *9/36*
U.S. Cl. 178—5.4 **1 Claim**

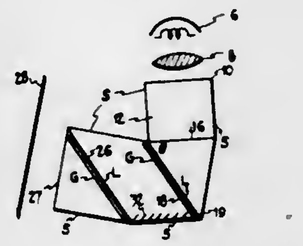


1. In a line-sequential color television receiver for converting a simultaneous color television signal to the line-sequential color television signal, the combination comprising a video amplifier connected to the output of a video detector for amplifying a television video signal detected by said detector, a buffer amplifier connected to the output of said video amplifier for passing color signal components of the simultaneous television signals, a first demodulator connected to the output of a bandpass amplifier for demodulating the output signals thereof at a detection axis representing a particular primary color appearing in each horizontal scanning period, a second demodulator connected to the output of said bandpass amplifier for demodulating the output signals thereof at the detection axis of about 120° ahead of that of said first demodulator in each horizontal scanning period, a matrix circuit connected to the outputs of said video amplifier and second demodulator to combine the output signals thereof, a delay circuit connected to the output of said matrix circuit to delay the output signal by one horizontal scanning period and a mixer to mix the signal from said buffer amplifier, the output signal of said first demodulator and the output signal of said matrix circuit.

3,527,879
COLOR IMAGE PROJECTION SYSTEM

Dalton H. Pritchard, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Oct. 9, 1967, Ser. No. 673,616
Int. Cl. H04n *5/74, 9/16*
U.S. Cl. 178—5.4 **6 Claims**

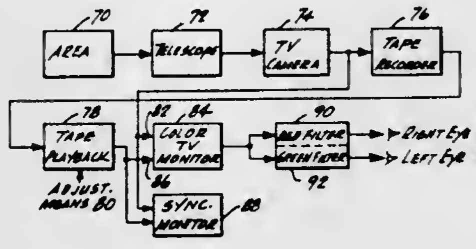


In a color image projection system utilizing a single light source and a single electro-optical element, charge patterns corresponding to the intensity of each component color are deposited in mutually exclusive coextensively distributed areas on a surface of a layer of electro-optical material so as to change the polarization of light passing through the layer and thus change the amount of light passing through an analyzer and color selective filters. The color selective filters cause the light passing therethrough to correspond to the color represented by the charge patterns.

3,527,880
PSEUDO STEREO-OPTICAL OBSERVATION MEANS

Theodore J. Gordon, Newport Beach, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Jan. 25, 1967, Ser. No. 611,750
Int. Cl. H04n *5/78, 9/54*
U.S. Cl. 178—6 **7 Claims**

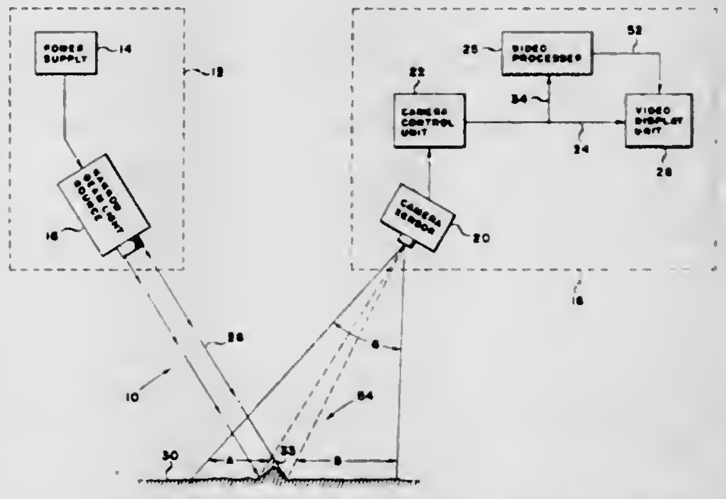


Pseudo stereo-optical observations of a tracked object or area are made with a single telescope mounted on a vehicle by splitting the optical image beam wherein one part is viewed by one eye and the other part is converted by a television camera for recording on magnetic tape with playback at a variable delay time to a television monitor which produces a delayed image viewed by the other eye. In another version, the optical image is converted and recorded on one or two channels of tape, and a recorded signal in each of these instances is variably delayed with respect to the signal being recorded or to the other channel signal, respectively, and each pair of relatively delayed signals are used to produce separate images on television monitoring means for viewing by respective eyes of a viewer.

3,527,881
OPTICAL IMAGING APPARATUS UTILIZING LOGIC CIRCUITRY FOR BLANKING PORTIONS OF VIDEO DISPLAYS

Robert W. Blanchard, Los Gatos, Calif. assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Aug. 3, 1967, Ser. No. 658,132
Int. Cl. H04n *1/38, 3/24, 7/14*
U.S. Cl. 178—6 **6 Claims**

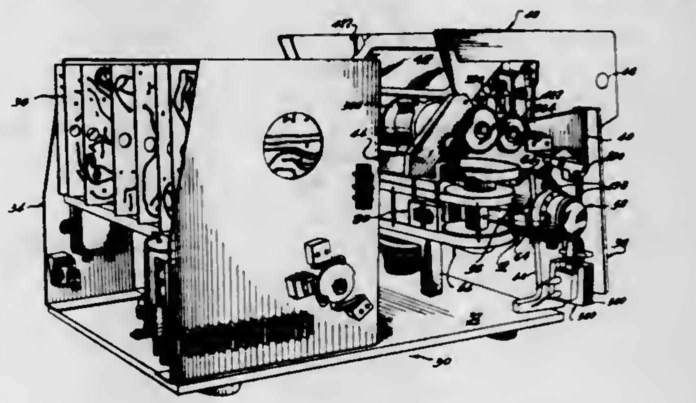


The optical imaging apparatus of the present invention utilizes logic circuitry for blanking selected portions of the video display screen of an associated system. Those areas of the screen which are illuminated present an object viewed by the apparatus during underwater exploration. The various logic circuits which the apparatus utilizes provides the correct timing sequences for both the horizontal and/or vertical sweeps for illumination of the screen only in preselected areas.

3,527,882
COMBINATION OF FACSIMILE TRANSMITTER AND RECEIVER OPERABLE IN A FEED THROUGH MANNER IN BOTH MODES

Frans Brouwer, Glencoe, and Frank L. Sobchak, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Feb. 2, 1967, Ser. No. 613,545
Int. Cl. H04n *1/14, 1/22*
U.S. Cl. 178—6.6 **42 Claims**

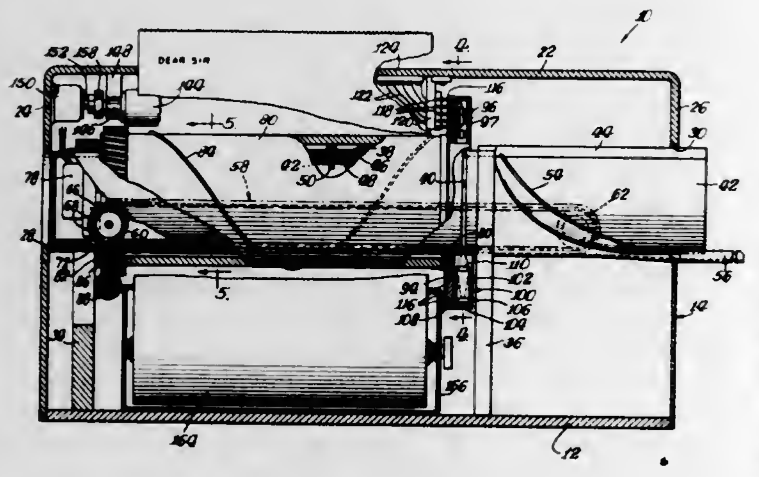


A facsimile device which serves as both a transmitter and a recorder operable in an automatic feed through manner in both modes. The device comprises combined optical scanner and printer contact assemblies mounted on a timing belt assembly which is adapted to drive the optical scanner in a linear direction across a copy document fed therepast by a copy feed roller and to drive the printer contact in a linear direction across recording paper fed therepast by separate paper drive means. By simple selection means for operating the device in the desired mode, the optical scanner scans the desired copy as it passes therethrough to transmit facsimile signals to a remote location or, in the alternative, the printer contact means marks the recording paper as it passes therethrough in accordance with facsimile signals received from a remote location. The copy document and recording paper drive means are particularly arranged with respect to the optical and printer scanning means so that the copy document may be fed into the front of the device and a recorded document will emanate from the device in a manner such that it may be viewed as it comes out of the device.

3,527,883
FACSIMILE TRANSCEIVER

Frank L. Sobchak, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed July 17, 1967, Ser. No. 653,992
Int. Cl. H04n *3/02*
U.S. Cl. 178—6.6 8 Claims

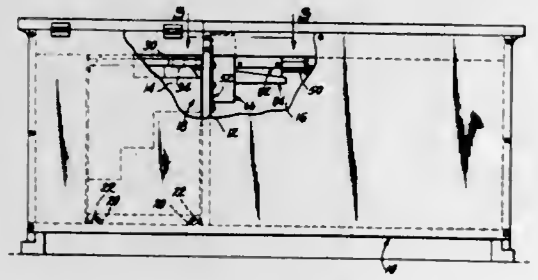


A facsimile transceiver having means for feeding a sheet of copy material in the transmission mode through stationary cylindrical guide means while the copy material is scanned by a single optical scanner assembly revolved about the guide means on a drum. A linear printer bar extends lengthwise of the drum and is mounted for cooperation with a helical electrode on the drum while recording paper is moved therebetween in the receiving mode.

3,527,884
DEMOUNTABLE SYSTEM FOR FLYING SPOT SCANNER

Donald J. Cross, Tonawanda, and George C. Waybright, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 4, 1968, Ser. No. 765,237
Int. Cl. H01j *29/02*
U.S. Cl. 178—7.81 10 Claims

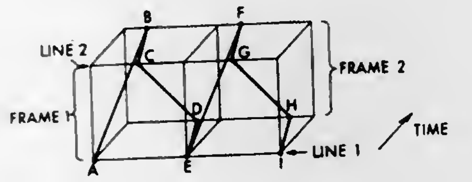


In a television set incorporating means to display photographic film on the face of the television picture tube, a flying spot scanner tube is mounted on a partition wall of a cabinet in such a manner that its position is predetermined with relationship to a chassis which contains equipment to convert light signals passing through the film from the scanner tube into electrical signals to be transmitted to a television chassis. Parts are so arranged that the scanner tube and its support may be placed in proper orientation directly on the chassis in lieu of on the partition wall, when the chassis is removed from the cabinet, as for servicing.

3,527,885
DATA COMPACTION SYSTEM WITH STAGGERED SCANNING AND ADAPTIVE REDUNDANCY REMOVAL

Julian J. Bussgang, Lexington, Mass., assignor to Signatron, Inc., Lexington, Mass., a corporation of Massachusetts

Filed May 1, 1967, Ser. No. 635,088
Int. Cl. H04b *1/66;* **H04j** *3/18;* **H04n** *7/12*
U.S. Cl. 178—6.8 14 Claims

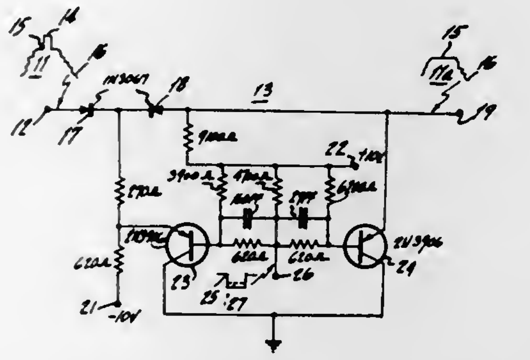


A data compaction system in which data concerning an image is selected in accordance with a prescribed two-dimensional curvilinear scanning path and such data is thereupon supplied to a suitable bandwidth compression means, such as an adaptive redundancy removal system, for producing a data compacted output information signal which can then be transmitted by a transmitting signal having a considerably reduced bandwidth.

3,527,886
COMPOSITE TELEVISION VIDEO SWITCHING CIRCUIT

Leonard J. Baun, Cinnaminson, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Mar. 30, 1967, Ser. No. 627,193
Int. Cl. H04n *5/22*
U.S. Cl. 178—7.1 9 Claims

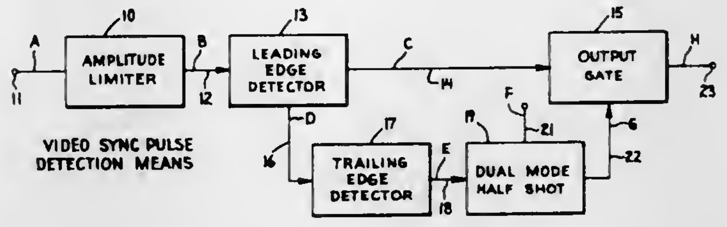


A circuit for transferring the video component to the exclusion of the synchronizing pulses of a composite television signal includes diode means having normal biasing to provide the circuit with a relatively low impedance during video signal intervals, the biasing being periodically changed to provide the circuit with a relatively high impedance during blanking intervals.

3,527,887
VIDEO SYNCHRONIZING PULSE DETECTION MEANS

Gary D. Clapp and Lance E. Riggin, Indianapolis, and Donald R. Willis, Fort Wayne, Ind., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 11, 1968, Ser. No. 720,732
Int. Cl. H04n *5/44*
U.S. Cl. 178—7.3 2 Claims



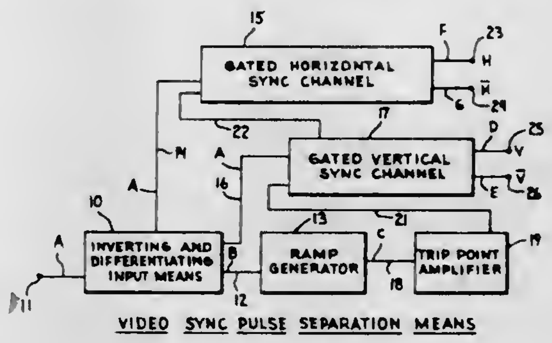
A video synchronizing pulse detection circuit for detecting horizontal and vertical synchronizing pulses present in a composite television video signal received from a high signal noise level environment such as that inherent in transmissions from high performance aircraft, missiles, and satellites, and producing an output signal comprised of reconstructed, noise free, horizontal and vertical synchronizing pulses for use by subsequent video synchronizing pulse separation circuitry. The detection circuit includes an amplitude limiting input stage for accepting the received and amplified, noisy composite television video signal from a video display preamplifier, and clipping that signal at a predetermined negative-going level. The clipped output signal of the amplitude limiter is coupled to a leading edge detector which senses the leading edges, and clamps the tips of the horizontal and vertical synchronizing pulses to ground. This ground referenced signal is then coupled to an output gate circuit which initiates the beginning of a reconstructed horizontal or vertical sync detector output pulse in response thereto. The ground referenced signal from the leading edge detector is also coupled to a trailing edge detector which senses the trailing edge of the horizontal or vertical output pulse from the leading edge detector, and produces a trigger signal to a dual mode "half shot" circuit in response to each trailing edge detected. The half shot circuit delays each horizontal or vertical pulse trailing edge signal by a respective predetermined amount of time for purposes of protection from noise, and then supplies an "end of sync pulse" signal to the output gate circuit to terminate the reconstructed, noise free, horizontal or vertical sync output pulse.

3,527,888
MEANS FOR SEPARATING HORIZONTAL AND VERTICAL VIDEO SYNCHRONIZING PULSES

Gary D. Clapp and Lance E. Riggin, Indianapolis, and Donald R. Willis, Fort Wayne, Ind., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 10, 1968, Ser. No. 720,179
Int. Cl. H03k *5/20;* **H04n** *5/10*
U.S. Cl. 178—7.5 5 Claims

A video synchronizing pulse separation circuit for separating a composite video wavetrain comprised of nonserrated vertical and horizontal synchronizing pulses without picture content into two separate channels, one for vertical pulses and the other for horizontal pulses. The composite wavetrain is applied as an input signal to an inverting and differentiating means which couples it to a horizontal gating circuit, a vertical gating circuit, and a ramp generator. The horizontal gating circuit is normally "open" to permit the passage of the more frequently occurring horizontal pulses in the input signal to the horizontal channel output means, while the vertical gating circuit is normally "closed" to prevent passage of these horizontal pulses to the vertical channel output means. The ramp generator produces a ramp function output signal whose maximum amplitude is dependent on the time interval between the synchronizing pulses, the longer the time interval, the higher the amplitude. The time interval immediately preceding each vertical pulse in the composite signal is considerably longer than the interval preceding a horizontal pulse, which causes the ramp function output signal to exceed a predetermined minimum level and activate a trip point amplifier means during the interval immediately preceding a vertical pulse.

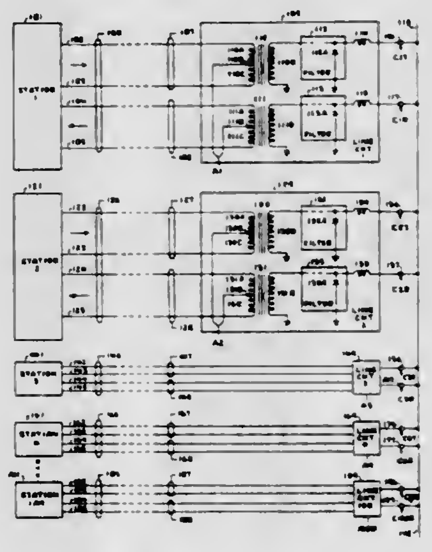

15
F
23
GATED HORIZONTAL SYNC CHANNEL
H
6
24
17
22
D
25
GATED VERTICAL SYNC CHANNEL
V
14
A
16
E
26
10
13
21
A
INVERTING AND DIFFERENTIATING INPUT MEANS
B
RAMP GENERATOR
C
TRIP POINT AMPLIFIER
19
11
12
18
VIDEO SYNC PULSE SEPARATION MEANS

The trip point amplifier means causes an inhibit signal to be provided to the horizontal gating circuit to prevent the vertical pulse from passing therethrough to the horizontal channel output means, and provides an enable signal to the vertical gating circuit to cause it to open and allow the vertical pulse to pass through to the vertical channel output means. These signals are maintained by the trip point amplifier means until the trailing edge of the vertical synchronizing pulse resets the ramp generator which prepares the circuit for the following horizontal pulses by allowing the horizontal gate to return to its normally open condition and the vertical gate to return to its normally closed condition.

3,527,889
CONFERENCE COMMUNICATION SYSTEM

Carl B. Nennerfelt, Galion, Ohio, assignor, by mesne assignments, to New North Electric Company, Galion, Ohio, a corporation of Ohio

Filed Mar. 1, 1967, Ser. No. 619,773
Int. Cl. H04m *3/56*
U.S. Cl. 179—1 14 Claims

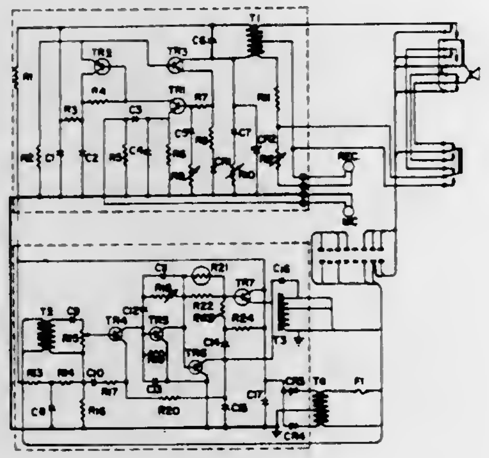


Arrangement in a communication system for providing conference connection between three or more station instruments. The initiating conferee keys or dials the number of a second party to place the two parties in normal calling-called communication. Either party then flashes his hook-switch or dials "1" and, after recept of dial tone, keys or dials the number of a third conferee. The calling-called connection is released and the three parties are placed in communication via an idle group of three conference terminal circuits which are dedicated to a given one of a plurality of conference node amplifier circuits. Succeeding conferees may be added by any conferee flashing the hook-switch or dialing "1" followed by dialing the number of the desired party, further discrete conference terminal circuits of a second plurality which are common to all of the conference node amplifier circuits being provided for use with the same conference node amplifier circuit in adding further conferees to such call.

3,527,890

INTRAPLANT VOICE COMMUNICATION SYSTEM

Joseph J. Radomski, Shillington, Pa., assignor to Gai-Tronics Corporation, Reading, Pa.
Filed Apr. 5, 1967, Ser. No. 628,610
Int. Cl. H03f *13/00*
U.S. Cl. 179—1 **5 Claims**



This invention is an improvement of the intraplant communication system in Pat. No. 3,080,454. It comprises two basic units, a handset amplifier with its associated power supply and enclosure and a speaker amplifier with its associated power supply and enclosure. These two assemblies form a communication station. A station combines both handset amplifier and speaker amplifier into one assembly, small enough to be housed in an enclosure of the size previously used to house only the handset or speaker amplifier. One D.C. power supply is used to power both amplifiers, thus eliminating one D.C. supply.

Since one communication station is housed in one enclosure, field wiring and installation costs are substantially reduced.

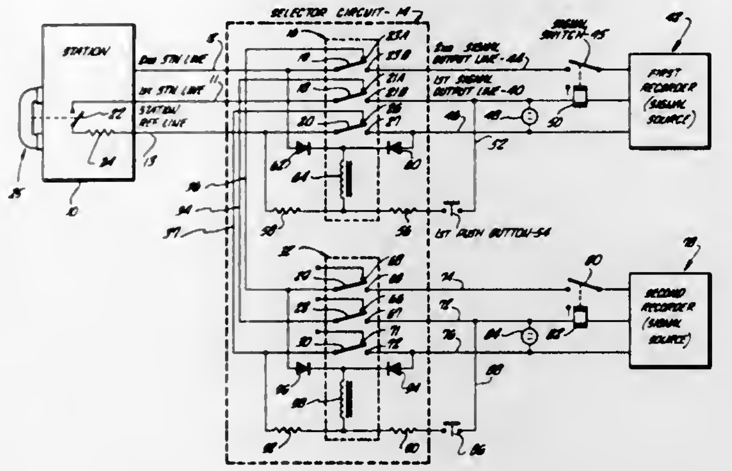
A further improvement is the absence of driver transformers from both amplifiers, resulting in reduced hum pickup caused by A.C. magnetic fields.

3,527,891

SELECTOR CIRCUIT

William E. Johnston, 4608 Coyle Place, Woodland Hills, Calif. 91364
Continuation of application Ser. No. 621,934, Mar. 9, 1967. This application Nov. 24, 1969, Ser. No. 872,471
Int. Cl. H04j *11/10*
U.S. Cl. 179—2 **2 Claims**

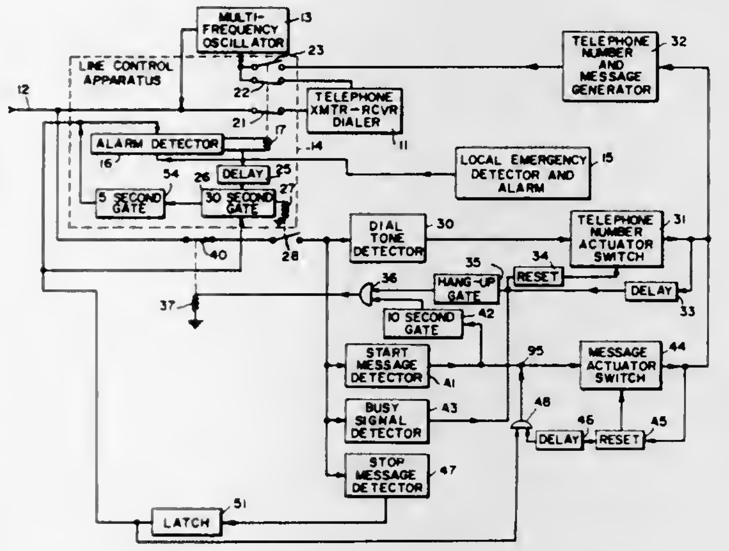
A transmitting station, such as a telephone hand set, is automatically connected to any one of several receivers such as dictation recording systems. Each receiver can supply two different signals. One signal indicates the receiver is in use. The other signal indicates the receiver is available and operates the selector circuit to connect the available recorder to the station. When the recorder is so selected, it automatically transmits the signal to indicate it is in use, and discontinues the signal indicating the recorder is available.


SELECTOR CIRCUIT
STATION
FIRST RECORDER (SIGNAL SOURCE)
SECOND RECORDER (SIGNAL SOURCE)
1ST PUSH BUTTON

3,527,892

AUTOMATIC ALARM TRANSMITTING SYSTEM

Jurgen Kok, Bedford, Mass., assignor to DASA Corporation, Andover, Mass., a corporation of Massachusetts
Filed Mar. 23, 1967, Ser. No. 625,430
Int. Cl. H04m *11/04*
U.S. Cl. 179—5 **17 Claims**



An alarm system for automatically transmitting information of the existence of an emergency to remote locations by telephone. The automatic alarm system, upon the occurrence of an emergency event, disconnects the local telephone, seizes the telephone line, responds to dial tone signals to make connection with a preselected station, responds to a control signal from the called station to send an emergency message, and then restores the local telephone to normal operability in response to a second control signal from the called station.

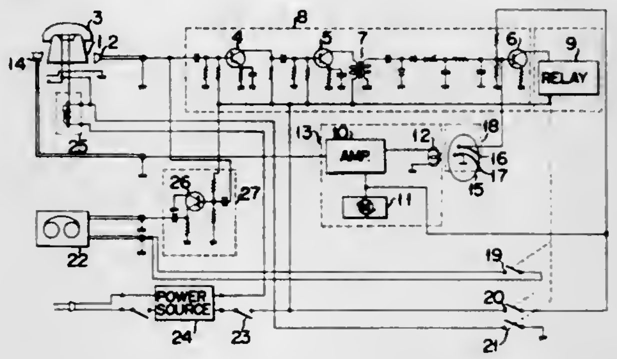
ERRATUM

For Class 179—6 see:
Patent No. 3,527,312

3,527,893

AUTOMATIC ANSWERING APPARATUS FOR A TELEPHONE WITH A SINGLE RELAY

Takanori Honobe and Yoichi Hayakawa, Tokyo, Japan, assignors to Crown Radio Corporation, Tokyo, Japan, a corporation of Japan
Filed Nov. 30, 1967, Ser. No. 686,874
Claims priority, application Japan, Feb. 21, 1967, 42/13,870; Feb. 23, 1967, 42/14,519; Mar. 31, 1967, 42/26,629
Int. Cl. H04m *11/10*
U.S. Cl. 179—6 **3 Claims**

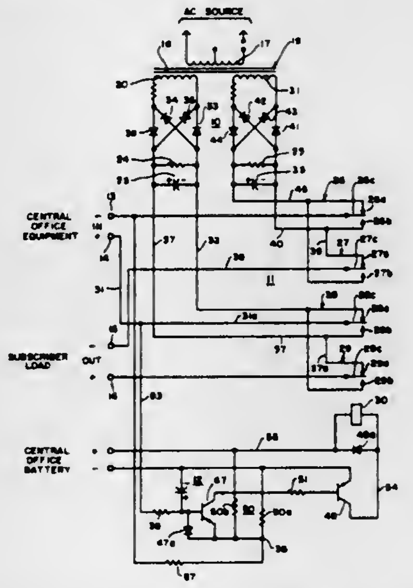


A control tape recorder is provided with an endless tape which has stored the absentee's automatic answers recorded in advance, and to a part of which is attached a metal electrode foil. The endless tape which has been set in motion is so designed as to stop by means of the metal electrode foil each time it completes one rotation, thereby limiting the duration of the caller's message.

3,527,894

VOLTAGE BOOSTING AND POLARITY CONTROL CIRCUIT

Lee O. Mesenhimer, Lakewood, and Neil A. Kammiller, North Olmsted, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio
Filed June 29, 1967, Ser. No. 649,994
Int. Cl. H04b *3/00*
U.S. Cl. 179—16 **7 Claims**

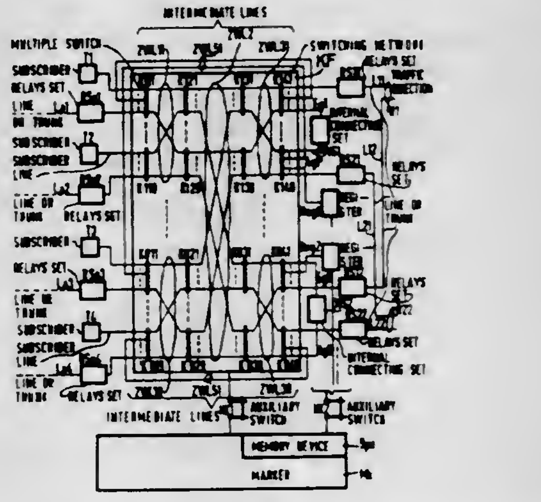


The invention is directed to the provision of an improved control network which includes a main source of DC voltage, an operated subscriber circuit energized by said main source, an auxiliary, boosting source of DC voltage connected between the operated circuit and the main DC source in series-aiding relationship to the main source and polarity sensing and control means connected between the main source and the auxiliary DC source to affect control of polarity relationship of the auxiliary source in accordance with changes of polarity in the exchange circuit to maintain the auxiliary source in said series-aiding relationship, said control means operating about a substantial midpoint of the main source voltage to detect polarity changes over a wide range in the central office terminal voltage.

3,527,895

LOAD AVERAGING ARRANGEMENT FOR TELEPHONE SWITCHING SYSTEMS

Norbert Bininda, Munich-Solln, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Apr. 8, 1966, Ser. No. 541,166
Claims priority, application Germany, Apr. 23, 1965, S 96,706
Int. Cl. H04q *3/68*
U.S. Cl. 179—18 **5 Claims**

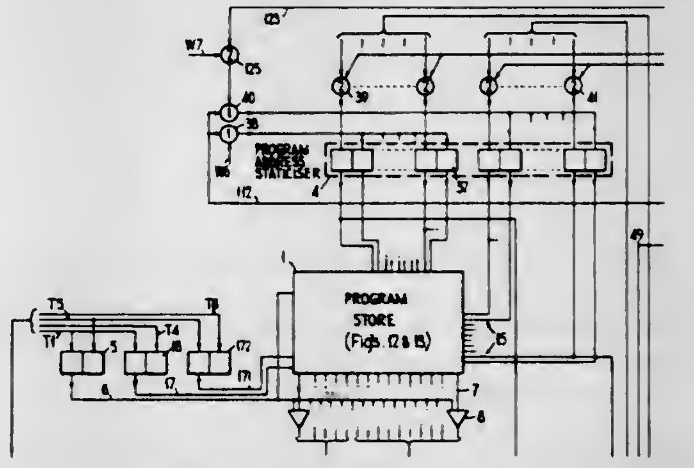


An exchange connection network for telephone systems for conformation of the actual traffic load to the traffic load capacity without a mixture of different types of traffic between coupling stages. Rather, the various types of input and output means, such as subscriber lines, relay sets, registers, etc., are connected in mixed fashion to the switching network, so that the effective traffic load is averaged out and is brought to a value conforming to the traffic load capacity of the switching network. If necessary for this purpose, some of the inlets and outlets of the switching network are left unconnected.

3,527,896

TRANSLATORS FOR USE IN TELECOMMUNICATION SWITCHING SYSTEMS

Michael Turner Hills, West Ealing, London, and Martin Ward, Coventry, England, assignors to The General Electric Company, Limited, London, England, a British company
Filed Mar. 27, 1967, Ser. No. 626,236
Claims priority, application Great Britain, Mar. 28, 1966, 13,496/66
Int. Cl. H04q *3/47*
U.S. Cl. 179—18 **6 Claims**



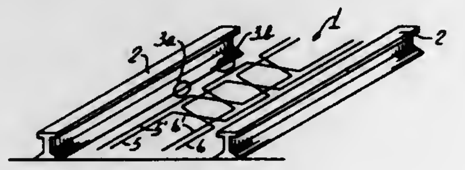
A register-translator which operates under the control of a stored programme to gain access to a succession of different storage locations of a digital data store in response to input routing digits supplied to the register-translator.

The last storage location to which access is gained in connection with a particular call stores the regained translation, namely output routing digits, while every other location to which access is gained stores the address within the store of two different storage locations. One of these addresses is utilised if the next storage location to which access is gained is associated with the same input routing digit as the location in question while the other address is utilised if the next storage location is associated with the next digit.

3,527,897

INDUCTION RADIO SYSTEM FOR VEHICLES

Masao Sugi, Kamakura, and Kenichi Yoshida, Sakai, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan
Filed Mar. 15, 1968, Ser. No. 713,380
Claims priority, application Japan, Mar. 20, 1967, 42/17,274, 42/17,277
Int. Cl. H04b *5/00*
U.S. Cl. 179—82 7 Claims

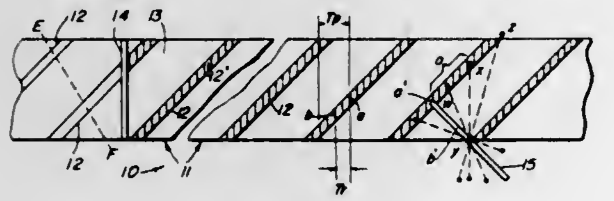


A four-conductor transmission line which consists of two two-wire transmission lines each respectively having their lines or conductors transposed at regular intervals. One of these two wire transmission lines is permitted to overlie the other with a position shift to separate respective transposition or crossover intersections. Each of the two-wire lines is excited with an identical signal but with a phase difference that permits the signal receiving level emitted from the transmission line to always be greater than zero.

3,527,898

SIGNAL COMPRESSION OR EXPANSION SYSTEM USING VARIABLE AZIMUTH MAGNETIC RECORDING

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois
Filed Aug. 16, 1965, Ser. No. 480,001
Int. Cl. G11b *5/02, 5/56;* **H04b** *1/66*
U.S. Cl. 179—100.2 9 Claims

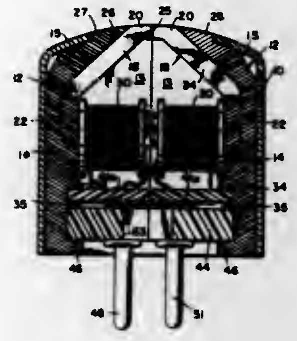


Method and apparatus for audio signal compression or expansion using a stationary longitudinal scan type playback head whose azimuth is adjustable relative to oblique lines of magnetization on the record and which playback head is automatically shifted laterally as a function of azimuth adjustment to limit scanning to one line of magnetization at a time, the playback speed being adjusted automatically in proportion to head azimuth adjustment to maintain pitch.

3,527,899

MAGNETIC TAPE TRANSDUCER HEAD WITH SHIELDED HOUSING AND PRINTED CIRCUIT CONNECTION BOARDS

Francis A. Oliver and Donald P. Humphreys, Columbus, Ind., assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed May 1, 1967, Ser. No. 635,100
Int. Cl. G11b *5/28, 5/42, 5/10*
U.S. Cl. 179—100.2 6 Claims

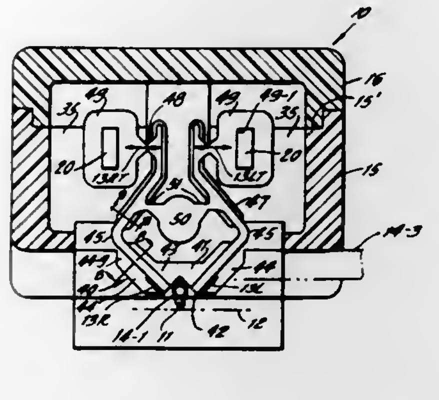


A transducer head for use with magnetic tape comprising a pair of opposed shells each having its own half C-core provided with a wire coil. The ends of the coil are connected to a printed circuit board in each shell. The shells are mounted in opposed relation in a housing with their core halves joined to form a completed loop and their printed circuit boards electrically interconnected to each other and to a common terminal board carried in said shells.

3,527,900

STEREOPHONIC PHONOGRAPH PICKUPS HAVING A PAIR OF VERTICALLY ORIENTED BENDER-TYPE BEAM TRANSDUCERS AND FORCE CHANGING COUPLER

Richard P. Muttick, Yorktown Heights, and William F. Knauert, Yonkers, N.Y., assignors to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed Dec. 11, 1968, Ser. No. 782,847
Int. Cl. H04r *1/16, 17/08;* **G11b** *3/10*
U.S. Cl. 179—100.41 9 Claims

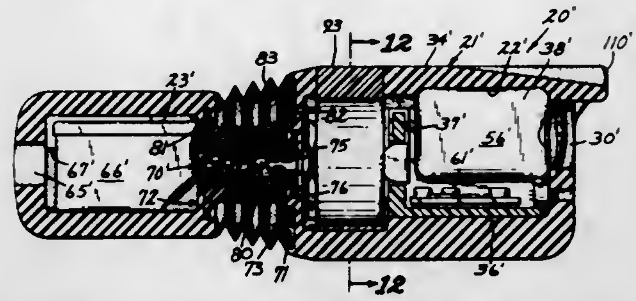


A stereophonic phonograph pickup for utilization in conjunction with 45–45 records, in which the transducers for the individual channels of information are vertically orientated in parallel planes. The transducers are of the bender type, beam shaped variety requiring a horizontal motion input, substantially perpendicular to the extended beam surface, to efficiently drive the transducer. A motion resolving and force changing coupler is provided between the stylus rod and the vertically orientated bender-type transducers for separating the record induced undulations, and thereafter efficiently converting the 45–45 components to drive forces directed perpendicular to the transducer plane.

3,527,901

HEARING AID HAVING RESILIENT HOUSING

Robert L. Gelb, Wayzata, Minn., assignor to Dahlberg Electronics, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 28, 1967, Ser. No. 626,557
Int. Cl. H04r *25/00*
U.S. Cl. 179—107 20 Claims

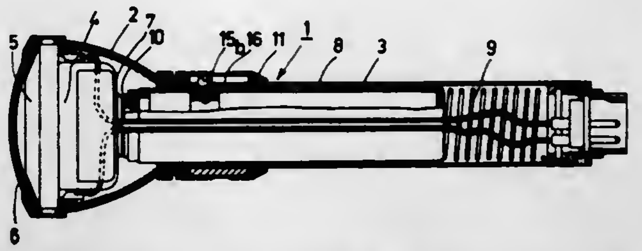


A hearing aid adapted to be worn entirely within the ear of the user, where substantially all, or at least a major portion, of the housing is made of a relatively soft resilient material. In use, the portion of the hearing aid housing containing the receiver is positioned in the ear canal of the user so that the acoustic output of the receiver is as close as possible to the user's eardrum. The distance between the portion of the hearing aid housing containing the receiver, and that portion of the hearing aid housing containing the microphone amplifier and energy source, is adjustable so that differences in lengths and sizes of ear canals between different users can be taken into account to insure proper fitting.

3,527,902

ELECTRODYNAMIC MICROPHONE HAVING AN ADJUSTABLE TUBE FOR CHANGING THE DIRECTIONAL CHARACTERISTIC OF THE MICROPHONE

Adrianus Hendrijus vanLiempd, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 21, 1967, Ser. No. 624,942
Claims priority, application Netherlands, Mar. 26, 1966, 6604014
Int. Cl. H04r *1/38*
U.S. Cl. 179—121 11 Claims



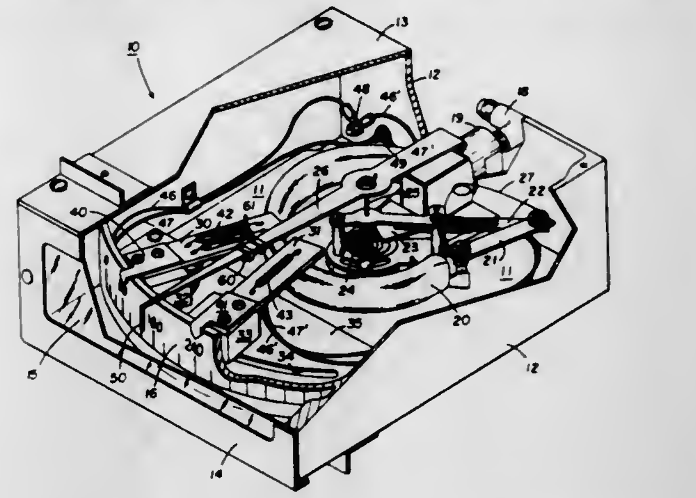
An electrodynamic microphone in which the back side of the diaphragm communicates with a closed air chamber formed by an adjustable sleeve within the microphone housing. The back side of the diaphragm communicates either with the open air or with the closed air chamber, depending upon the position of the displaceable sleeve. Adjustment of the sleeve provides a change in the directional characteristic of the microphone with little or no change in frequency response.

3,527,903

COMBINATION GAUGE SWITCH

Jack C. Holland, 9810 Lakemere, and Kenneth E. McNeill, 11336 Buchanan, both of Dallas, Tex. 75228
Filed July 15, 1968, Ser. No. 744,760
Int. Cl. G01d *13/26*
U.S. Cl. 200—56 3 Claims

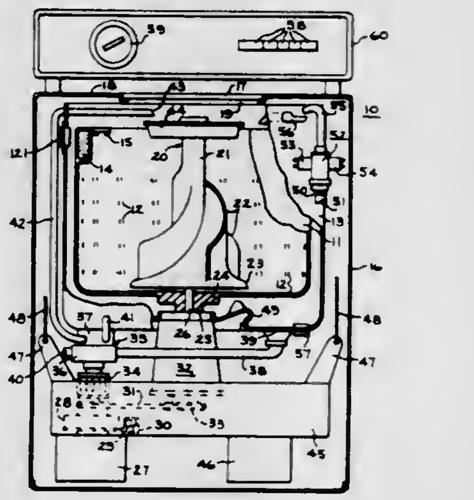
A gauge/switch combination utilizes a transducer for converting sensed conditions as pressure to rotary mechanical motion which causes a pivotably mounted pointer to rotate over a pair of magnetically operated switches mounted on a pair of pre-positioned spaced apart cantilever beams, the activation and deactivation of the switches controlling apparatus associated therewith.



3,527,904

UNBALANCE CONTROL MEANS FOR CLOTHES TREATING APPARATUS

Joseph C. Worst, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 21, 1969, Ser. No. 826,355
Int. Cl. H01h *35/14*
U.S. Cl. 200—61.45 5 Claims



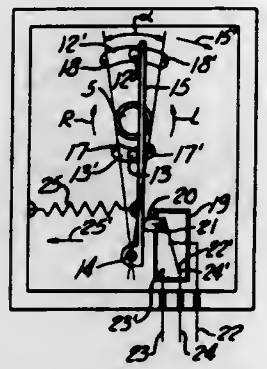
A proximity detector such as a magnet is mounted within the stationary cabinet structure of an automatic clothes washer to operate a switch in response to the approach of the rotating clothes container within a predetermined distance of the detector. By this arrangement, when unbalance forces cause the rotating clothes container to approach excessive vibrational amplitudes, the proximity detector and switch means controlled thereby will, without having been physically engaged by the rotating container, initiate appropriate correctional measures such as reducing the speed of the rotating container.

3,527,905

INDUCTION SWITCH WITH ADJUSTMENT MEANS FOR INDEPENDENTLY SELECTING THE CLOCKWISE AND COUNTERCLOCKWISE ANGULAR VELOCITIES OF ACTUATION

Kaname Doi, Ibaragi, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan
Filed Feb. 13, 1968, Ser. No. 705,053
Int. Cl. H01h *35/10*
U.S. Cl. 200—61.46 6 Claims

An induction switch which is operable to switch an electrical circuit with independently predetermined values of clockwise and counterclockwise angular velocities of a shaft. A movable contact which is biased to a neutral position is displaced in one given direction from its neutral position by either clockwise or counterclockwise rotations of a rotor to permit the actuation of an electrical switch.



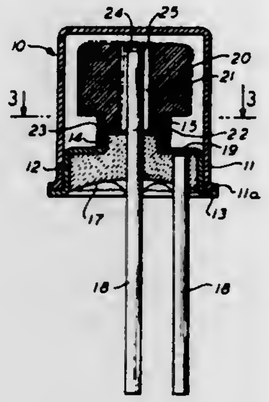
The rotor is inductively coupled with a magnetized rotor secured on the aforementioned shaft to permit magnetically induced rotation of the first named rotor with the magnetized rotor.

3,527,906

CENTRIFUGAL SWITCH

Pierre P. Schwab, River Edge, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed June 6, 1969, Ser. No. 831,144
Int. Cl. H01h *35/10*
U.S. Cl. 200—80 6 Claims



A miniature centrifugal switch of a rugged shockproof construction is provided for triggering ballistic fuses of projectiles. The switch comprises a metal cylindrical case mounted for revolving movement about an axis parallel to its longitudinal axis. A movable conductive mass serving also as a switch contact is mounted on an end wall of the case through a helical spring to permit the mass to be deflected sidewise by centrifugal force. However, the spring is pretensioned—i.e., wound tightly on itself—so that the mass is not deflected by increasing centrifugal force until a predetermined rotational speed is reached about an axis parallel with the central longitudinal axis through the helical spring and mass.

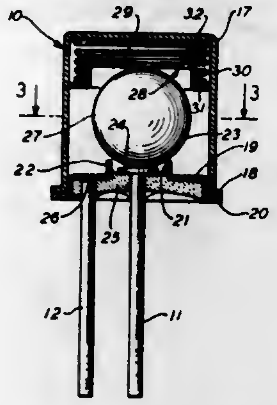
3,527,907

CENTRIFUGAL SWITCH WITH NORMALLY CLOSED CONTACTS

Pierre P. Schwab, River Edge, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed June 12, 1969, Ser. No. 832,639
Int. Cl. H01h *35/10*
U.S. Cl. 200—80 7 Claims

A miniature centrifugal switch with normally closed contacts is mounted to revolve about a given axis parallel to its longitudinal axis. The switch comprises a metal case having a circular-edge contact on one end wall, a second contact within the circular contact, a spherical condutive body in the case biased into engagement with the circular-edge contact but wherein the central contact is inset slightly to prevent seating engagement of the spherical body with the circular contact whereby to assure electrical connection with both cotnacts until a predetermined centrifugal force is exerted on the spherical body sufficient to tilt the body sidewise to break connection with the central contact.

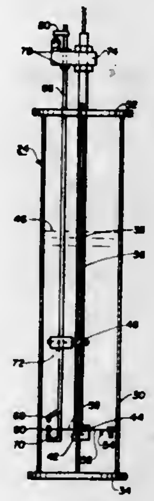


3,527,908

RATE OF CHANGE LIMIT DEVICE

Joseph W. Fleming, 1800 Kent Road, Pittsburgh, Pa. 15241

Original application Oct. 22, 1965, Ser. No. 501,263, now Patent No. 3,436,956, dated Apr. 8, 1969. Divided and this application Oct. 8, 1968, Ser. No. 765,812
Int. Cl. H01h *35/40*
U.S. Cl. 200—81.9 9 Claims



Described is apparatus for determining when the rate of change of a moving body falls below or rises above a predetermined value by means including a pivotal vane disposed within a fluid medium and incorporating switch means responsive to pivotal movement of the vane in the medium beyond a predetermined limit for indicating a rate of change above or below that limit. The invention also encompasses means for shutting down a process line, machine or other instrumentality when the rate of change rises above or falls below the aforesaid limit.

3,527,909

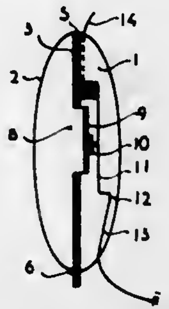
DIFFERENTIAL PRESSURE SENSITIVE SWITCH

Jean Torre, 13 Boulevard Burel, Marseille, France

Filed May 2, 1968, Ser. No. 726,134
Claims priority, application France, May 19, 1967, 21,863
Int. Cl. H01h *35/34;* **G01m** *3/26*
U.S. Cl. 200—83 2 Claims

A compressed air supply is connected to one chamber of a differential pressure sensitive switch and a container, that is being tested for fluid-tightness, is connected to

another chamber of the switch. Both chambers and the container are pressurized by the air supply and then the air supply is shut off. Should the container burst a partition separating the two chambers will be displaced, thus closing two contacts that complete an electrical circuit to a signalling device. The partition has a window that is bridged in a fluid-tight manner by a resiliently flexible diaphragm of lesser resistance to flexing than the partition, so that if there is any micrometric lowering of pressure, the more sensitive-diaphragm will react and operate the signal.

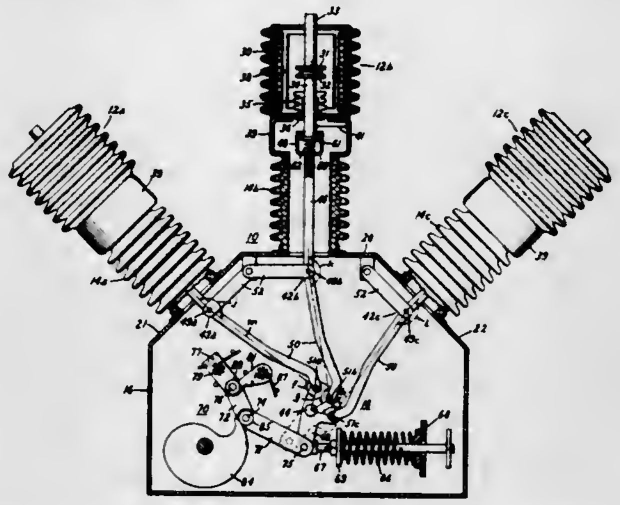


3,527,910

POLYPHASE VACUUM TYPE CIRCUIT BREAKER

William C. Mitchell, Jr., Media, Pa., and Alexander D. Kline, Huntington, W. Va., assignors to General Electric Company, a corporation of New York

Filed Apr. 25, 1968, Ser. No. 724,127
Int. Cl. H01h *3/42, 33/66*
U.S. Cl. 200—144 9 Claims



A polyphase electric circuit breaker comprising three vacuum interrupters, one for each phase of the circuit breaker. The operating mechanism for the interrupters is contained within a housing having a roof with a central horizontal wall portion and two sloping wall portions at opposite sides of the horizontal wall portions. Tubular insulators are respectively mounted on said wall portions with their axes in a common plane. The vacuum interrupters are respectively mounted atop said tubular insulators and are operated through linkages respectively extending through the tubular insulators into the housing, where they are coupled to a common rotatably-mounted operating member.

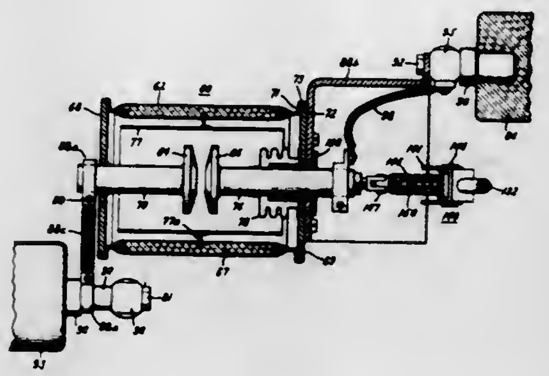
3,527,911

MOUNTING ARRANGEMENT FOR A VACUUM CIRCUIT INTERRUPTER

William T. Sharp, Philadelphia, Pa., assignor to General Electric Company, a corporation of New York

Filed July 22, 1968, Ser. No. 746,404
Int. Cl. H01h *33/66*
U.S. Cl. 200—144 6 Claims

A vacuum-type circuit breaker comprises a vacuum interrupter connected between two spaced-apart conductive studs extending transversely of the longitudinal axis of the interrupter's tubular envelope. Operating force is supplied to one end of the interrupter via a path that extends transversely of said longitudinal axis. Said one end of the interrupter is substantially rigidly fixed to a supporting framework, but the other end of the interrupter is left unsupported except through the supporting structure at said one end of the interrupter. The stud at said other end of the interrupter is connected to the conductive structure of the interrupter through flexible connecting means that imparts no support to the interrupter.

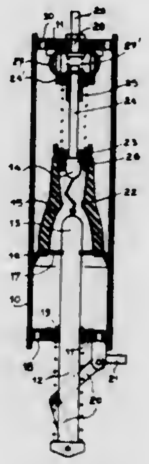


3,527,912

GAS BLAST CIRCUIT BREAKER

Jean Jaillet, Saint-Egreve, France, assignor to Merlin Gerin, Societe Anonyme, Grenoble, France

Filed Dec. 26, 1967, Ser. No. 693,660
Claims priority, application France, Jan. 9, 1967, 90,467
Int. Cl. H01h *33/88*
U.S. Cl. 200—148 13 Claims



A puffer type electrical circuit breaker having gas blast arc extinguishing means operable to delay the release of the gas blast until a time after the contacts have moved a certain distance apart from each other.

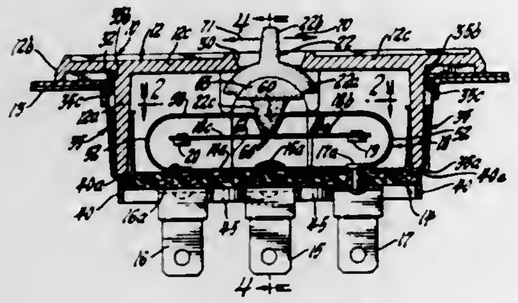
3,527,913

SINGLE POLE DOUBLE THROW SWITCH WITH A ONE PIECE CONTACT SPRING WITH TWO U-SHAPED SEGMENTS CENTER BIASING THE ACTUATOR

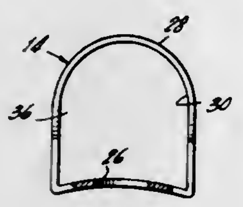
Edmond R. Gionet, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 1, 1968, Ser. No. 702,451
Int. Cl. H01h *1/00, 23/30*
U.S. Cl. 200—153 7 Claims

This disclosure relates to an electric switch for use in selectively controlling energization of either a first or second electric circuit. The switch includes a base member carrying a plurality of spaced terminals and a mobile contact carrier comprising a one piece member in conductive engagement with one of the terminals and which is normally self biased to a normal position in which the mobile contacts carried thereby are spaced from the other terminals. The switch further includes a switch actuator biased to a normal position by the mobile contact carrier, but which is manually movable in opposite directions from its normal position to selectively move respective ones of the mobile contacts carried thereby into engagement with the associated other terminals to effect energization of either the first or second electric circuit.



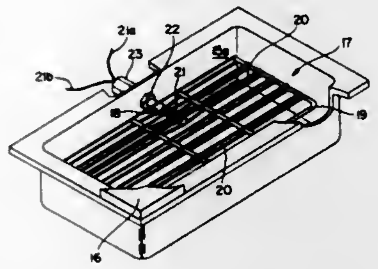
3,527,914
TOGGLE SWITCH GUARD
Edward A. Spacek, 215—12 24th Ave.,
Bayside, N.Y. 11360
Filed Mar. 3, 1969, Ser. No. 803,894
Int. Cl. H01h *9/02*
U.S. Cl. 200—168 **4 Claims**



A guard for a toggle switch which occupies a protective position about the switch member so as to minimize inadvertent actuation of the switch member without, at the same time, rendering the switch member unduly inaccessible for switching operation.

3,527,915
NO LOAD SENSING DEVICE FOR MICROWAVE OVENS
Duane B. Haagensen, Edina, and Samuel G. Sweet, Hopkins, Minn., assignors to Litton Precision Products, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,047
Int. Cl. H05b *9/06*
U.S. Cl. 219—10.55 **8 Claims**

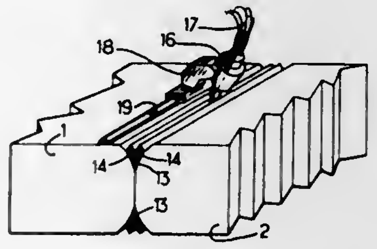
A no load sensing device is provided for a microwave oven to cut off the magnetrons when a predetermined temperature is reached within the cavity of the oven when no foodstuff has been placed in the oven. The no load sensing device comprises a plurality of rods which are connected to a U-shaped rod. The no load sensing device is mounted in the cavity of the oven and several of the rods are connected to a housing having a thermostat therein. The rods are arranged and located so as to not interfere with the radiation pattern, however, the rods are of such a configuration that they will transfer the heat penetrating the rods to the thermostat so as to give a true indication of the temperature resulting from the quality factor established within the cavity.



3,527,916
PROTECTIVE GAS WELDING PROCESS
Karl-August Ebert, Neu-Isenburg, and Heinrich Schrader, Hochdahl, Germany, assignors to Messer Griesheim GmbH, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Feb. 14, 1969, Ser. No. 799,535
Claims priority, application Germany, Feb. 14, 1968, 1,652,826
Int. Cl. B23k *9/16, 35/38*
U.S. Cl. 219—74 **2 Claims**

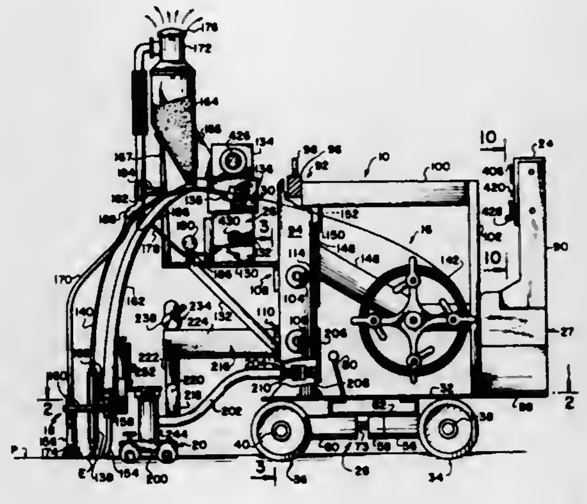
A protective gas welding process utilizing a current conducting and consumable wire electrode includes argon and oxygen as the protective gas mixture with the electrode containing additives of deoxidizing constituents. The gas mixture contains 5 and 25% oxygen with respect to unalloyed and low alloyed steel as well as between 3 and 25% oxygen with respect to high alloyed steel, and with increasing oxygen, wire electrodes are used with an increasing content of deoxidizing constituents.

3,527,917
METHOD OF ELECTRON BEAM WELDING ON THICK METAL SHEETS
Jean-Pierre Peyrot, Villejuif, France, assignor to Clover, Villejuif, Val-de-Marne, France, a joint-stock company of France
Filed Apr. 19, 1968, Ser. No. 722,796
Claims priority, application France, Apr. 28, 1967, 104,761
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **10 Claims**



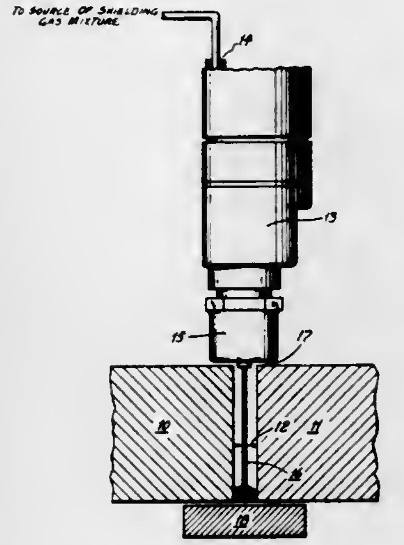
Method of manufacture by electronic welding on thick metal sheets, the thickness of which is greater than twice the maximum penetration depth of the electron gun which comprises the following steps: preparing an intermediate surface which is to be welded by welding edge to edge at the centre of the two surfaces to be assembled, the thickness of the said weld being less than twice the said penetration depth; preparing a chamfer at each extremity of the said weld; carrying out a welding pass across each free space formed by each of the said chamfers so as to assemble together the two said surfaces by electronic welding.

3,527,918
TUBE PANEL WELDING APPARATUS
John Bunnell Fielder and Norman Dale Freeman, Dansville, N.Y., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed June 30, 1967, Ser. No. 650,473
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **7 Claims**



Welding apparatus for fabricating elongated welds between tubes which are joined together to form a tube panel. A guidance system is provided for forming the elongated welds a uniform lateral distance away from the central axis of the tubes.

3,527,919
EXTENDED ELECTRODE WELDING TECHNIQUE
Irving L. Stern, Huntington, and Vincent D. Schaper, Jamaica, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 5, 1969, Ser. No. 796,666
Int. Cl. B23k *9/02*
U.S. Cl. 219—137 **4 Claims**

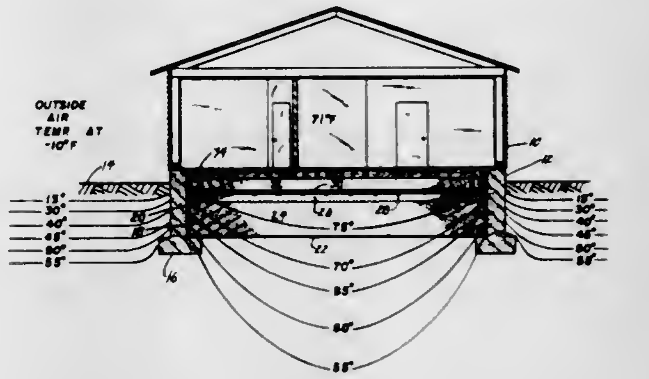


Square butt joint welding of relatively thick steel plates employing an extended electrode into the root opening is accomplished by making the first weld pass in a gas atmosphere of approximately 46% (argon+2% oxygen)+46% helium+8% carbon dioxide. A backing strap spaced from the plates by about 1/32 to 1/8 inch and a gas flow of 100 to 110 cubic feet per hour set the parameters for the initial preferred conditions. Where the welding depth is reduced to less than 1½ inches the carbon dioxide is deleted from the gas mixture and the gas flow adjusted within the range of 100 to 200 cu. ft./hr.

3,527,920
WELDING OF ALLOY STEELS
Karl E. Dorschu, Basking Ridge, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 366,702, May 12, 1964, which is a continuation-in-part of application Ser. No. 284,453, May 31, 1963. This application Mar. 21, 1968, Ser. No. 714,778
Int. Cl. B23k *35/00*
U.S. Cl. 219—137 **9 Claims**

A consumable wire electrode for arc welding high impact resistant, low alloy steels, having yield strength of approximately 90,000 to 100,000 pounds per sq. in. in a principally inert gas atmosphere, has a composition for achieving exceptional weld impact resistance, together with yield strength matching or slightly exceeding that of the low alloy steel plate, comprising in percentage of total weight, 0.06 to 0.09 carbon; 1.25 to 1.45 manganese; 0.35 to 0.55 silicon; 1.80 to 2.20 nickel; 0.40 to 0.55 molybdenum, and 0.010 to 0.025 titanium, the balance being essentially iron and residual traces of several other elements.

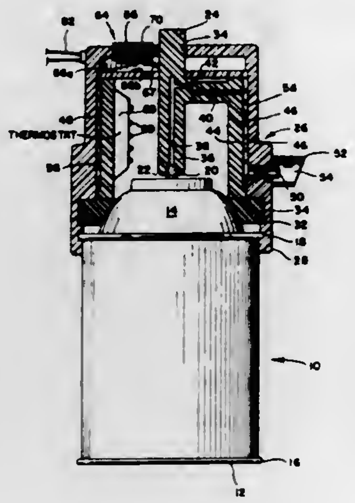
3,527,921
ELECTRIC HEATING SYSTEM
Harry M. Voglesonger, Riverton, Conn., assignor to The Smith-Gates Corporation, Farmington, Conn., a corporation of Connecticut
Continuation of application Ser. No. 600,612, Dec. 9, 1966. This application Aug. 29, 1968, Ser. No. 778,884
Int. Cl. F24d *13/02;* **H05b** *1/00*
U.S. Cl. 219—213 **10 Claims**



A building is provided with a peripheral foundation which is insulated to approximately the depth of minimal seasonal temperature variations. A concrete slab provides the floor of the building, and sand is provided below the slab with electrically energizable heating mats located in the sand approximately one foot below the slab to permit storing heat energy in this sand and in the material therebeneath so that electrical power can be used to heat the building for substantial periods of time either to take advantage of off-peak power or to minimize the effects of electrical power failures.

3,527,922
HEATER FOR AEROSOL FOAM DISPENSING CONTAINERS
Irving Reich, Cranbury Road, Princeton, N.J. 08540; John B. Day, 1065 Kendale Road N., Columbus, Ohio 43221; and Charles W. Rodman, 163 Thomas Ave., Grove City, Ohio 43123
Filed Mar. 26, 1968, Ser. No. 716,199
Int. Cl. B67d *5/62;* **H05b** *1/02, 3/82*
U.S. Cl. 219—308 **9 Claims**

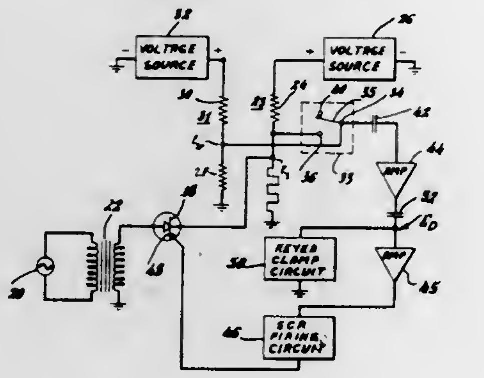
An electrical heating device is provided for heating foam products as they are discharged from aerosol containers. The device rapidly heats foam products, such as foam shaving lather, by flowing the foam in direct contact with a hot electrical resistance element. A pressure-actuatable electrical switch and a thermostat heater are provided to control the flow of current to the heating element. The pressure-actuatable switch may be heated itself during operation of the heater to indicate to the user that the heating element has reached the required operating temperature.



3,527,923
SINGLE ELEMENT HEATER ARRANGEMENT FOR AN ANALYTICAL INSTRUMENT

Michael John O'Neill, Newtown, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Oct. 5, 1967, Ser. No. 673,040
Int. Cl. H05b *1/02*
U.S. Cl. 219—497 2 Claims

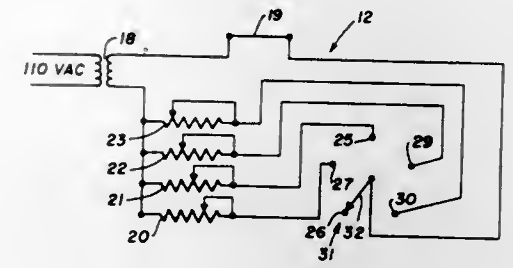


An analytical instrument includes a resistive heater element positioned with respect to a sample and adapted for heating the sample when a current flows in the heating element. Circuit means are provided for establishing a voltage E_{sp} representative of a setpoint temperature T_{sp} to which the sample is to be heated and circuit means, including the element, generate a voltage E_s representative of the temperature T_s of the sample. Means are provided for generating an alternating signal having a characteristic thereof proportional to a difference in the amplitude of the voltages E_{sp} and E_s and for causing a heating current having an average heating value proportional to the signal characteristic to flow in the element. With this arrangement, the resistive heating element additionally functions as a sensing element and advantageously reduces heater-sensor lag.

3,527,924
APPARATUS FOR IDENTIFYING FIBERS

Frank B. Lutz, Athens, and Paul E. Motzkus, Cullman, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed May 3, 1968, Ser. No. 726,503
Int. Cl. G05n *25/04*
U.S. Cl. 219—504 3 Claims

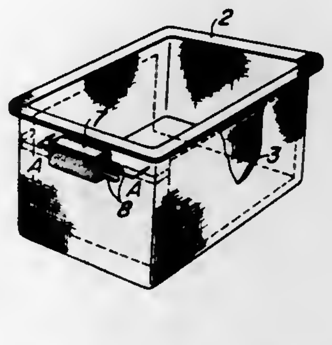


An apparatus for identifying fibers as to their generic type wherein a plurality of power resistors control the current flow through a resistance element which is selectively connectable to the power resistors. Each of the power resistors is adjusted to maintain the resistance element at a temperature which will melt a particular fiber or group of fiber types, the fiber being held in contact with the resistance element.

3,527,925
HEATER FOR USE WITH STORAGE BATTERY

Tadao Toyooka and Takeo Nishida, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Mar. 29, 1968, Ser. No. 717,311
Claims priority, application Japan, Oct. 14, 1967, 42/88,287, 42/88,288, 42/88,289
Int. Cl. H05b *3/06*
U.S. Cl. 219—521 4 Claims



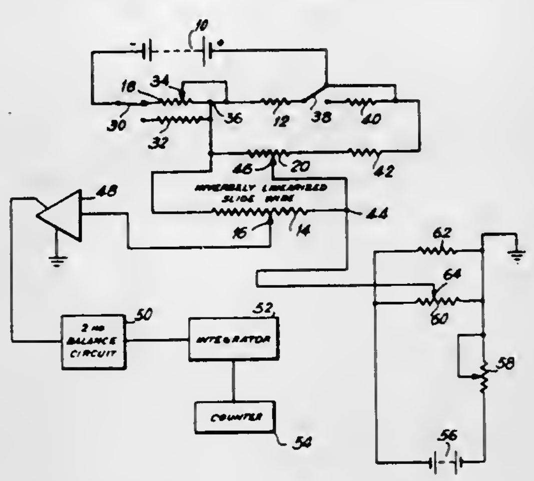
A heater for use with a storage battery, which is adapted for effectively heating the electrolyte contained in the storage battery and preventing the electromotive force from dropping due to a decrease in temperature of the electrolyte, thereby making it always possible to produce a constant electromotive force.

3,527,926
COMPUTING SYSTEM FOR PROCESSING CHARTED CHROMATOGRAPHY CURVES

Harold W. Holy, Hundon, Sudbury, England, assignor to Technicon Corporation, a corporation of New York

Filed Sept. 20, 1965, Ser. No. 488,682
Claims priority, application Great Britain, Jan. 5, 1965, 483/65
Int. Cl. G01n *31/08;* **G06k** *11/02*
U.S. Cl. 235—61.6 6 Claims

A computing apparatus is provided with a chart on which has been recorded the curve peaks which are the concentrations of respective constituents of a sample which has been chromatographically analyzed. The apparatus is used to follow the respective curve peaks, to integrate the area enveloped by each curve peak and multiply such curve by appropriate factors and to directly indicate the quantity of each unknown constituent.



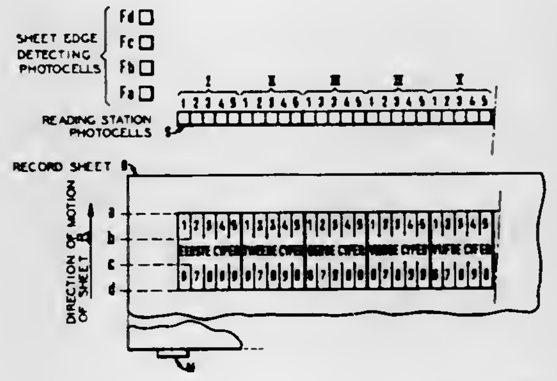
ERRATUM

For Class 235—61.11 see:
Patent No. 3,527,406

3,527,927
PROCESS AND APPARATUS FOR PRODUCING AND READING ARABIC NUMBERS ON A RECORD SHEET

Willem Jan Bijleveld and Adrianus Johannes van der Toorn, The Hague, Netherlands, assignors to De Staat der Nederlanden Ten Deze Vertegenwoordigd Door de Directeur-General der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Sept. 3, 1965, Ser. No. 484,935
Claims priority, application Netherlands, Sept. 9, 1964, 6410466
Int. Cl. G06k *7/00, 19/00;* **H04q**
U.S. Cl. 235—61.11 1 Claim


SHEET EDGE DETECTING PHOTOCELLS
Fd
Fc
Fb
Fa
READING STATION PHOTOCELLS
RECORD SHEET
DIRECTION OF MOTION OF SHEET

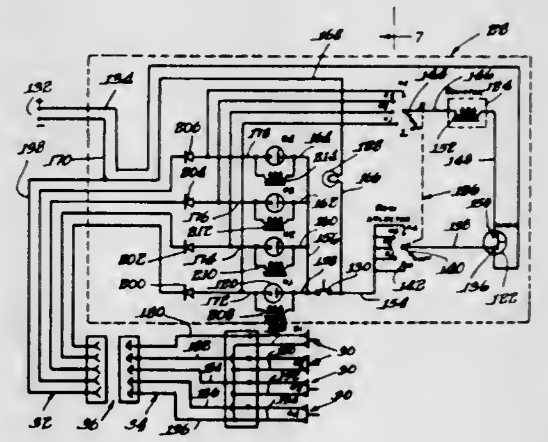
A process for producing a visually readable, rectangular record sheet or card with horizontal code field strips of prearranged visual rectangular areas each of which areas indicate in three horizontal rows in only visually readable printing: (a) all ten Arabic digits in different predetermined positions therein and (b) the digital location for that digit. These strips of rectangular areas are arranged so that they can be easily marked with both visually and machine readable digits over the printed indications by any person in his or her natural left to right sequence of writing Arabic numbers, with the position of that person's marks in each rectangular area making the sheet then machine readable.

An apparatus including an electronic circuit for reading these marks comprises a first plurality of horizontal scanning devices with one device for each digit indication in two of the horizontal rows; and a second plurality of vertical scanning devices, with one device for each row of indications, which vertical devices successively scan the edge of the card parallel to these rows as the card moves past them. The circuit also includes AND-gates controlled by more than one of the first plurality of horizontal scanning devices to be responsive to the digit location or position marking in the third row of each code field strip on the card.

3,527,928
ELECTRONIC SEED MONITOR

James Paul Ryder, Arlington Heights, and Victor Sussin, Elmhurst, Ill., assignors to Dickey-john Corporation, Chatham, Ill., a corporation of Illinois

Filed Apr. 7, 1966, Ser. No. 540,873
Int. Cl. G06m *21/24, 7/04*
U.S. Cl. 235—92 13 Claims

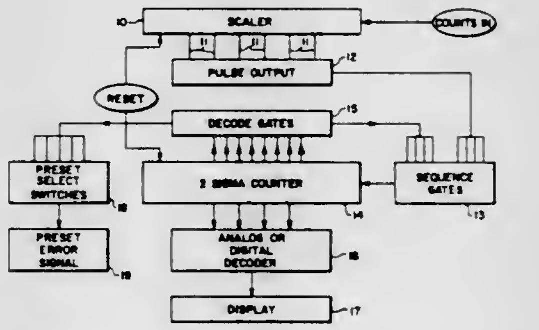


A seed monitoring apparatus comrising a switch having a pair of spring blade members supporting first and second contacts biased twoard each other, and a pivotally mounted element engageable by seeds to be monitored and having a portion engaging one of the blade members for opening the switch.

3,527,929
STATISTICAL ERROR COMPUTING APPARATUS

Roy E. Nather, Solana Beach, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Dec. 9, 1966, Ser. No. 600,596
Int. Cl. G06m *11/00, 3/06*
U.S. Cl. 235—92 7 Claims

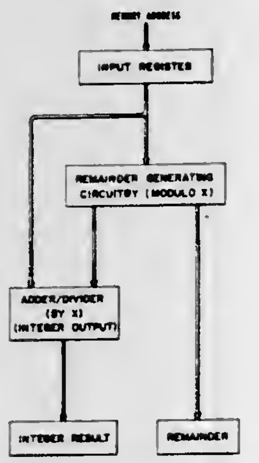


An improved statistical error computing apparatus for use in data reduction systems for radiation counting equipment for example. The apparatus uses a counter to store information on the range of statistical error for live display and print-out. As counts are accumulated, the information in this counter is updated rather than continuously recomputed and may be displayed live on a meter if desired. Counting decoding is used for transferring the information in the counter into a printer register for printing out the percent error after accumulation is completed.

3,527,930
HIGH SPEED DIVISION SYSTEM

John Cocke, Menlo Park, Charles V. Freiman, Los Altos, and Merle E. Homan, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 19, 1967, Ser. No. 654,579
Int. Cl. G06f *7/38, 7/44*
U.S. Cl. 235—160 **11 Claims**

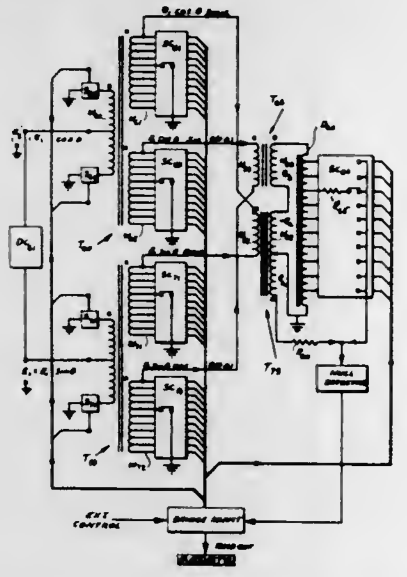

INPUT REGISTER
REMAINDER GENERATING CIRCUITRY (MODULO X)
ADDER/DIVIDER (BY X) (INTEGER OUTPUT)
INTEGER RESULT
REMAINDER

A system for performing high speed division of an essentially fixed divisor type. The system includes means for developing remainders in a highly parallel fashion wherein once the interdigit remainders have been developed, the complete integer quotient may be generated for all digit positions substantially concurrently with the generation of the final remainder.

3,527,931
TRIGONOMETRIC BRIDGE

John B. Heaviside, Huntington, N.Y., assignor to North Atlantic Industries, Inc., Plainview, N.Y., a corporation of New York

Original application Feb. 25, 1965, Ser. No. 435,149, now Patent No. 3,366,804, dated Jan. 30, 1968. Divided and this application Jan. 11, 1968, Ser. No. 697,042
Int. Cl. G06g *7/22, 7/32*
U.S. Cl. 235—179 **16 Claims**

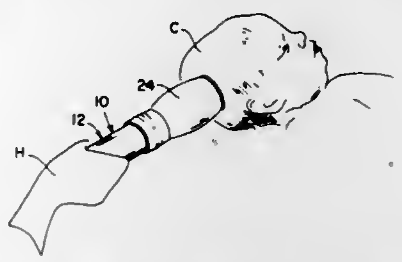


A computing circuit for processing input complementary trigonometric functions defined by amplitude and angular data to derive an indication of the angular data. Complementary trigonometric functions of a trail angle are generated and products formed between these functions and the input trigonometric functions, the products being combined to derive a representation of the amplitude data and the representation combined with the products to derive an indication of the angular data.

3,527,932
TRANSILLUMINATING FLASHLIGHT

James J. Thomas, Morganton, N.C., assignor of fifty percent to Billie E. Newton, Morganton, N.C.

Filed Nov. 16, 1967, Ser. No. 683,600
Int. Cl. F21v *33/00*
U.S. Cl. 240—6.4 **4 Claims**

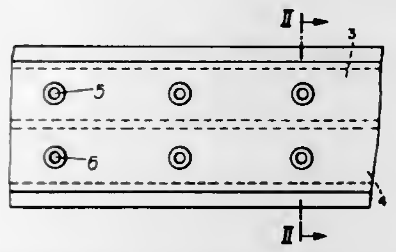


A transilluminating flashlight comprising a portable battery operated flashlight having a light-impervious open ended tubular hood extending beyond the light emitting end of the flashlight, said hood being formed of self supporting but readily deformable material to enable a light fast seal to be made against a fragile substance such as the head of a newborn baby.

3,527,933
FLAT ELECTRICAL CONNECTING ELEMENT

Helmut Thümmel, Ehingen (Danube), Germany, assignor to Firma Heinrich Benzing, Ehingen (Danube), Germany, a firm of Germany

Filed Dec. 28, 1967, Ser. No. 694,342
Claims priority, application Germany, Dec. 28, 1966, B 90,499
Int. Cl. F21i *15/06*
U.S. Cl. 240—11.2 **16 Claims**



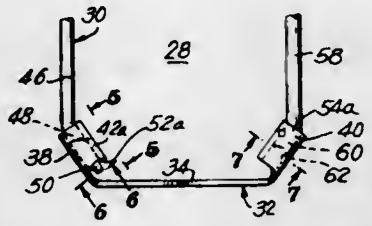
A flat sheet of plastic, preferably pliable and shape-retaining, has a pair of flat, conductive foils embedded in the sheet, each one of the foils forming one conductor. Metallic connection sockets can be inserted piercing the plastic sheet, and making connections with the metallic foil as they pierce the composite sheet-foil. The connecting elements are preferably formed with separate connecting prongs. The foil may be adhered, or strapped to flat surfaces such as road signs, advertising material, or formed as a strip with side rails to accept U-shaped transparent covers, covering lamp plug-in assemblies to fit into the connectors.

3,527,934
TAKE-APART LAMP HARPS

Herman Bergman, Searingtown, N.Y., assignor to Berger Industries, Inc., Maspeth, N.Y., a corporation of New York

Filed June 17, 1968, Ser. No. 737,675
Int. Cl. F21v *17/06*
U.S. Cl. 240—148 **10 Claims**

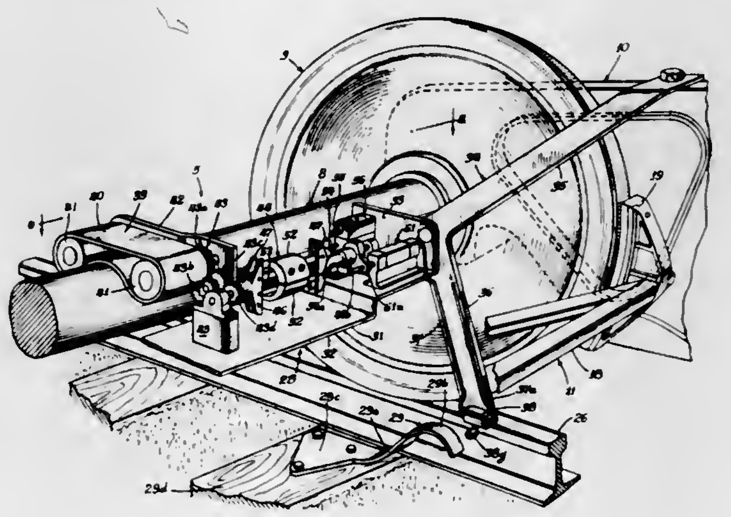
A take-apart lamp harp to be mounted on a lamp for supporting a shade thereon. The lamp harp has components which can be readily connected together and disassembled from each other. The lamp harp consists of a resilient wire bail and a bracket which has a base and a pair of channels extending upwardly from the base and respectively receiving elongated free end portions of the bail legs. These elongated free end portions of the bail legs respectively have different constructions. One of the channels has a construction permitting one of the bail legs to be introduced at its free end portion laterally into this one channel. Said one channel has a means preventing longitudinal movement of said one bail leg out of this one channel after it has been laterally introduced into the same. The other of the bracket channels has a means which limits the other bail leg movement at its free end portion into this other channel only longitudinally and through a top open end thereof, and in addition this other channel may have a means preventing longitudinal displacement of the other bail leg out of the other channel as long as the one bail leg has its free end portion situated in the one channel.



3,527,935
VEHICLE SPEED CONTROL DEVICE

William H. Peterson, Homewood, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed Dec. 29, 1967, Ser. No. 694,435
Int. Cl. B61l *3/04*
U.S. Cl. 246—182 **29 Claims**

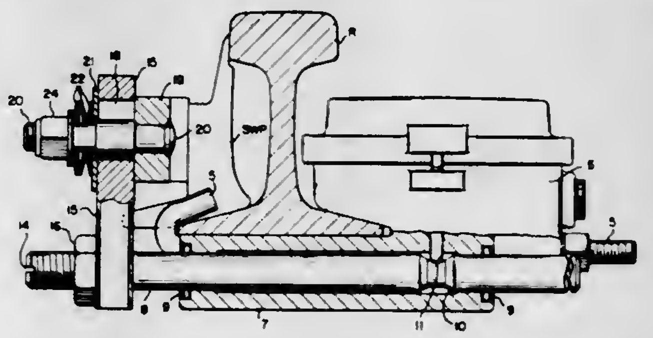


A railroad car comprising a body and an underframe, truck means supporting the underframe, and car speed control means mounted on said truck means, a railroad car brake system comprising pneumatic means operable to apply brakes to said truck means, the speed control means having a speed responsive device in the form of a speed sensing belt drivingly engaging with the truck axle and operating centrifugal weights which fly out a proportional distance to operate a pre-conditioned valve for supplying pneumatic pressure from the pneumatic means to the brakes, and pre-conditioning pneumatic valve means including an on-ground valve tripping device tripped by passage of the car over it and opening the pre-conditioning valve means to allow pneumatic pressure to said first mentioned valve and thereby conditioning the latter. The railroad car is further provided with manually operated mechanical linkage for isolating the pneumatic means from the car brakes and communicating the pneumatic means with the first mentioned valve of the speed control device.

3,527,936
SWITCH POINT DETECTOR

Karl W. Abendroth, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 27, 1968, Ser. No. 708,629
Int. Cl. B61l *5/10*
U.S. Cl. 246—253 **3 Claims**

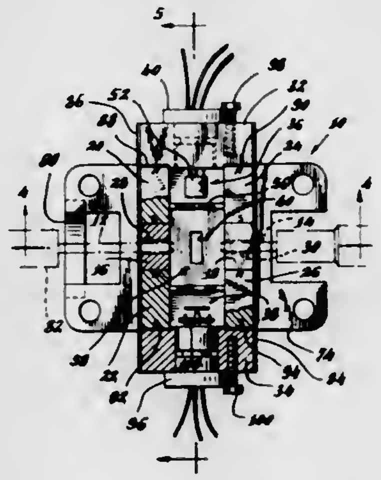


This switch point detector clamps to the outside of the main rail of a railway track switch and has a plunger passing under such main rail for attachment to the movable switch point. This attachment permits vertical and longitudinal movement of the switch point due to temperature changes or other forces and also compensates for the hinge action of the switch point without interfering with its accurate detection of transverse movement. Each switch point detector can detect a single position of a particular point. If both positions of a track switch are required to be detected, two point detectors are used, one for each movable point.

3,527,937
ELECTRON BOMBARDMENT TYPE ION SOURCE FOR A MASS SPECTROMETER

Edward B. Delany and Willard E. Estey, Ridgefield, and Donald Whitehead, Norwalk, Conn., and Ralph E. Mayo, Atlanta, Ga., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

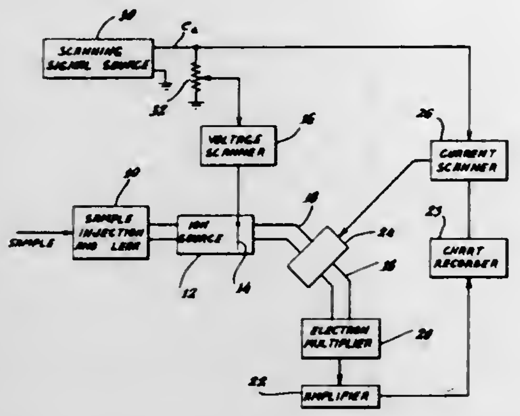
Filed Apr. 11, 1967, Ser. No. 630,133
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **12 Claims**



An ion source for a mass spectrometer comprising a pair of bar magnet assemblies aligned with a filament and target for confining electron beam passing therebetween. Each bar magnet assembly comprises a pair of bar magnets separated by soft iron bars with which they are in intimate contact. Small aligned cylindrical channels in the soft iron bars provide means for introducing samples into the ionization source from two directions. Stainless steel shims are provided in the magnet assemblies to reduce variations in magnetic field strength due to temperature cycling as the ion source is heat cycled prior to magnetization.

3,527,938
LINEARIZATION OF MASS SCANNING IN A MASS SPECTROMETER

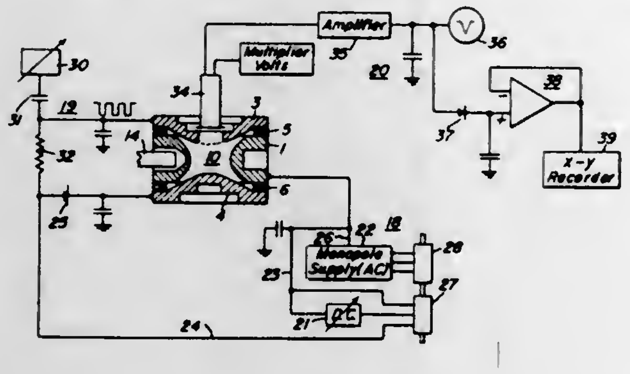
Edward B. Delany, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 16, 1967, Ser. No. 678,151
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **8 Claims**



A mass spectrometer includes means for establishing a magnetic scanning field and a simultaneously varying electric, ion accelerating field. The flux density B of the magnetic field and the amplitude of the accelerating field potential V are varied linearly and simultaneously in a manner for providing that a ratio *B/V* is maintained substantially constant during a scanning interval. Linear presentation in time of mass-charge data thereby occurs while a variation in V results in a varying resolution characteristic providing a substantially constant base width for peaks of differing mass-charge numbers.

3,527,939
THREE-DIMENSIONAL QUADRUPOLE MASS SPECTROMETER AND GAUGE

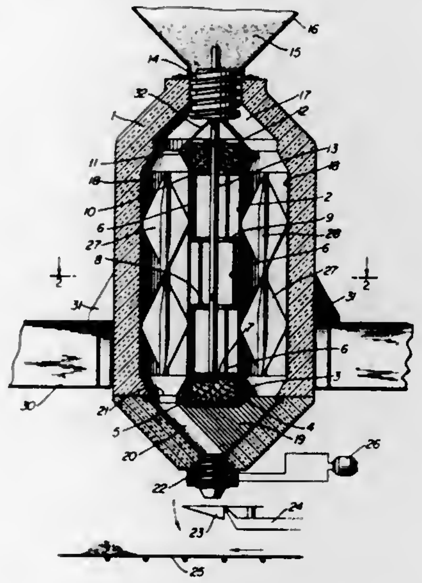
Peter H. Dawson, Schenectady, and Nathan R. Whetten, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 626,207, Mar. 27, 1967. This application Aug. 29, 1968, Ser. No. 767,599
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **14 Claims**



A mass spectrometer and ion gauge employs opposed electrodes to form a containment region in which superimposed variable high frequency and direct current potentials on the electrodes establish a rotationally symmetric hyperbolic electric field so that ions of a given or selected *e/m*, depending on the values and frequency of the potentials, are trapped and stored for a controllable time period. Periodic voltage pulses applied to the electrodes sweep trapped ions through an aperture in one electrode to an electron multiplier and measuring circuits. By varying the intensities and frequencies of the potentials ions of differing mass can be separated and measured.

3,527,940
METHOD AND APPARATUS FOR IRRADIATING FLUENT MATERIALS THROUGH A HELICAL PATH

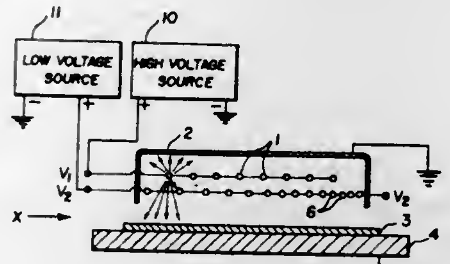
Pierre Balanca, Neuilly-sur-Seine, Claudette Bernard, Colombes, and Jean Taponier, Asnieres, France, assignors to Saint-Gobain Techniques Nouvelles, Courbevoie, France
Filed Feb. 23, 1966, Ser. No. 529,307
Claims priority, application France, Feb. 26, 1965, 7,161
Int. Cl. G21h *5/00*
U.S. Cl. 250—44 **13 Claims**



The irradiation of particulate material and liquids has been irregular. Substantial uniformity of exposure is achieved by flowing the material at uniform speed in a spiral path past a source of irradiation. Several forms of novel apparatus are described for carrying out the process.

3,527,941
CHARGING SYSTEM FOR PLACING A UNIFORM CHARGE ON A PHOTOCONDUCTIVE SURFACE

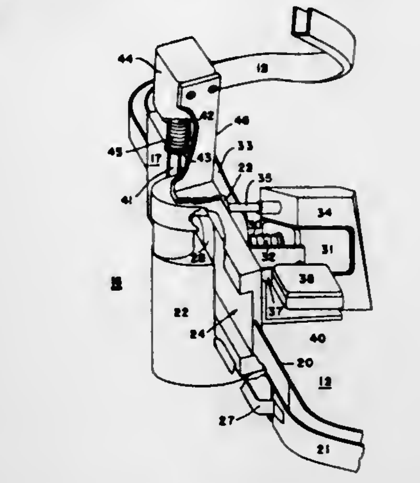
Morris B. Culhane, David D. McNair, and Robert K. Rickard, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 22, 1968, Ser. No. 746,596
Int. Cl. G03g *13/00*
U.S. Cl. 250—49.5 **7 Claims**



A single charging station places a uniform charge of a predetermined magnitude upon an insulator by graduating the amount of control that a grid exerts upon an ion source, preferably a corona discharge. The size of the grid mesh may be varied or the potential of the grid may be varied, or a combination of the two may be used to provide the desired control.

3,527,942
AUTOMATIC SAMPLE CHANGER FOR POSITIONING A PLURALITY OF PELLETS IN AN X-RAY ANALYZER

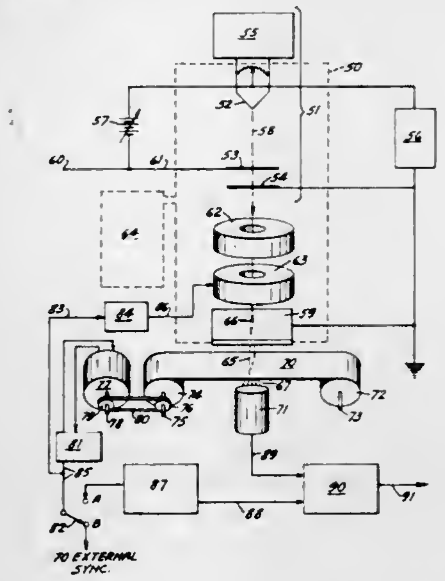
Glenn D. Roe and Carl A. Youngman, Dallas, Tex., assignors to The Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Nov. 9, 1967, Ser. No. 681,712
Int. Cl. G01n *23/20*
U.S. Cl. 250—51.5 **8 Claims**



An automatic sample changer for positioning each of a plurality of pellets in predetermined relation to an X-ray or like analyzer. The pellets are loaded on an inclined ramp which leads to a sample holder supported relative to the analyzer by rotatable base means. A piston cooperates with the sample holder to center each pellet on the axis of rotation of the base means. A spring-loaded solenoid periodically operates the piston to introduce new pellets while analyzed pellets are discharged into an exit ramp.

3,527,943
APPARATUS FOR RECORDING AND RETRIEVING INFORMATION BY THE USE OF X-RAYS

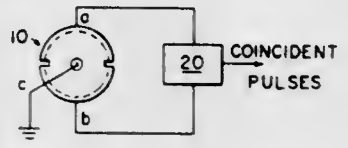
Richard L. Paidosh, St. Anthony, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,921
Int. Cl. G03b *41/16*
U.S. Cl. 250—65 **7 Claims**



Apparatus for and method of retrieving information from a medium which differentially emits photon energy representative of information prerecorded thereon when it is uniformly struck by X-rays. The apparatus comprises means for producing a beam of X-rays, means for positioning a said medium in the beam of X-rays and means for sensing the photon energy emitted by said medium and converting it into an electrical signal. The method comprises the steps of producing a beam of X-rays, positioning a said medium in the beam of X-rays and sensing the photon energy emitted by said medium.

3,527,944
MULTIPLE SEMI-CONDUCTOR RADIATION DETECTORS WITH COMMON INTRINSIC REGION

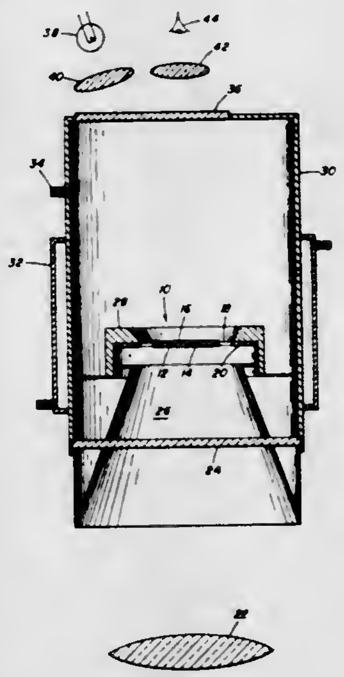
Hobart W. Kraner, Bellport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 10, 1968, Ser. No. 766,433
Int. Cl. G01f *1/24;* **H01l** *15/00*
U.S. Cl. 250—83 **4 Claims**



A lithium drifted germanium gamma ray detector to eliminate unwanted Compton interactions having an outer doped region with spaced contacts and grooves separating said contacts from electrical connection. In one form a common doped contact is separated from the spaced contacts by the intrinsic region. Incomplete Compton interactions appear randomly and singly on the spaced contacts and can be eliminated. Multiple Compton interactions in which the full gamma energy is absorbed appear as coincident pulses which are passed for spectral analysis.

3,527,945
MOUNTING STRUCTURE FOR A LIQUID CRYSTAL THERMAL IMAGING DEVICE

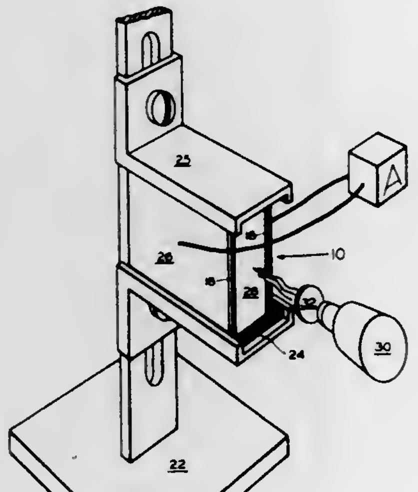
Gerald Jankowitz, Hillsdale, N.J., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Sept. 24, 1968, Ser. No. 762,007
Int. Cl. G01j *5/06*
U.S. Cl. 250—83 **2 Claims**



A thermal image system is provided utilizing temperature sensitive chemicals referred to as "liquid crystal detectors" which detect thermal patterns in a field of view imaged thereon, and convert these thermal patterns to a visible image. The liquid crystal detector is mounted on a thin blackened membrane and supported through ribs or spokes of the membrane material in an evacuated housing. By mounting the membrane via ribs or spokes to its support, temperature non-uniformities across the membrance are alleviated. Additionally, thermal radiation is applied to the liquid crystal detector via a reflective cone to neutralize geometrical steradiancy variations across the membrane.

3,527,946
SEMICONDUCTOR DOSIMETER HAVING LOW TEMPERATURE DIFFUSED JUNCTION

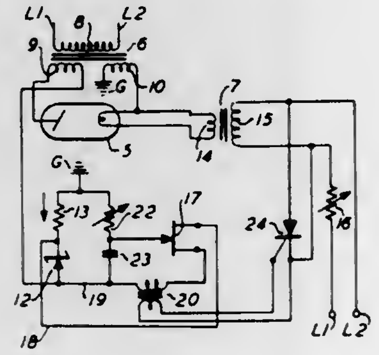
Gordon Kramer, 645 Neil Ave.,
Columbus, Ohio 43215
Filed June 13, 1966, Ser. No. 557,258
Int. Cl. G01t *3/00*
U.S. Cl. 250—83.1 **2 Claims**



A fast-neutron radiation dosimeter comprising a semiconductor having a low temperature diffused p-n junction comprising silicon with a dopant of lithium diffused therein. Total dosage is indicated by measuring the short circuit current obtained in the presence of light (photovoltaic effect).

3,527,947
DENTAL X-RAY TUBE STABILIZER HAVING A CONTROL SWITCH IN THE FILAMENT CIRCUIT

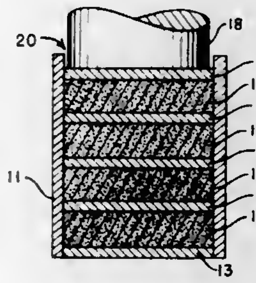
Louis L. Weisglass, New York, and William C. Pinnell, Elmont, N.Y., assignors to S. S. White Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1968, Ser. No. 700,442
Int. Cl. H05g *1/32;* **G03b** *41/16*
U.S. Cl. 250—103 **8 Claims**



A stabilizer system for automatically maintaining the discharge current of small dental X-ray tube constant which eliminates the necessity for voltage stabilization and compensating circuits. Stabilization is effected by regulation of the filament supply voltage rather than the discharge voltage across the X-ray tube. Rapidly responsive solid devices are utilized which automatically maintains the discharge current of the X-ray tube constant and results in a small and inexpensive stabilizer readily adaptable to dental X-ray units.

3,527,948
COBALT-RHENIUM ENERGY SOURCE

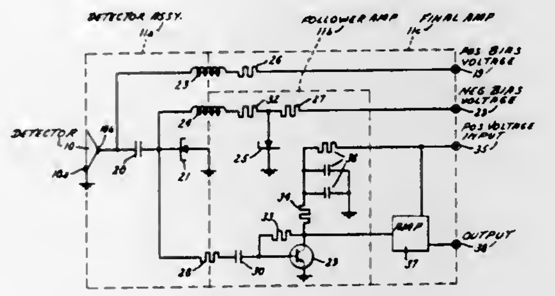
Frederick N. Rhines, Gainesville, Fla., and James A. Donovan and William R. McDonell, Aiken, S.C., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 10, 1968, Ser. No. 782,577
Int. Cl. G21h *3/00*
U.S. Cl. 250—106 **8 Claims**



A high temperature cobalt-rhenium radioactive energy source prepared by placing alternate layers of porous rhenium and radioactive cobalt metal into a capsule and heating the capsule and layers above the melting point of cobalt to infuse the molten cobalt into the rhenium layers without substantial diffusion of the cobalt into the capsule walls.

3,527,949
LOW ENERGY, INTERFERENCE-FREE, PULSED SIGNAL TRANSMITTING AND RECEIVING DEVICE

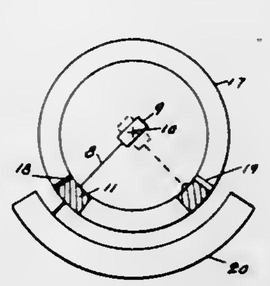
Gerald C. Huth, Rosemont, and Robert J. Locker, King of Prussia, Pa., assignors to General Electric Company, a corporation of New York
Filed Feb. 15, 1967, Ser. No. 616,314
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **10 Claims**



A rapid rise time, low energy, visible and near infrared pulse signal transmitter, such as a pulsed gallium arsenide injection lasing diode, is combined with a highly sensitive, digitally responsive receiver, such as a contoured, avalanche amplifying, silicon, semiconductor detector and a tunnel diode system for selectively amplifying rapid rise time pulses only, to provide an interference-free, ranging, signalling, or point-to-point communication device.

3,527,950
LIGHT MODULATION SYSTEM USING AN OSCILLATING REED SCANNER

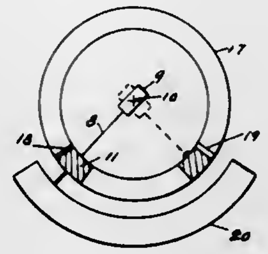
Jacob S. Zuckerbraun, Bronx, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Original application Aug. 5, 1960, Ser. No. 47,837, now Patent No. 3,244,886, dated Apr. 5, 1966. Divided and this application Aug. 28, 1968, Ser. No. 755,995
Int. Cl. G01d *5/36;* **G01j** *1/20*
U.S. Cl. 250—203 **1 Claim**



A scanning device for light source tracking devices is disclosed utilizing a photosensitive element mounted on a reed that oscillates the photosensitive element about a central position with simple harmonic motion at a predetermined frequency so as to permit intermittent impingement of light on the element in a relationship to generate a signal having a frequency equal to twice the frequency of oscillation when the center of the image is at such central position and to generate an error signal having a frequency equal to the frequency of oscillation when the image is displaced from such central position, the phase of the error signal being dependent upon the direction of such displacement.

3,527,951
LIGHT MODULATION SYSTEM

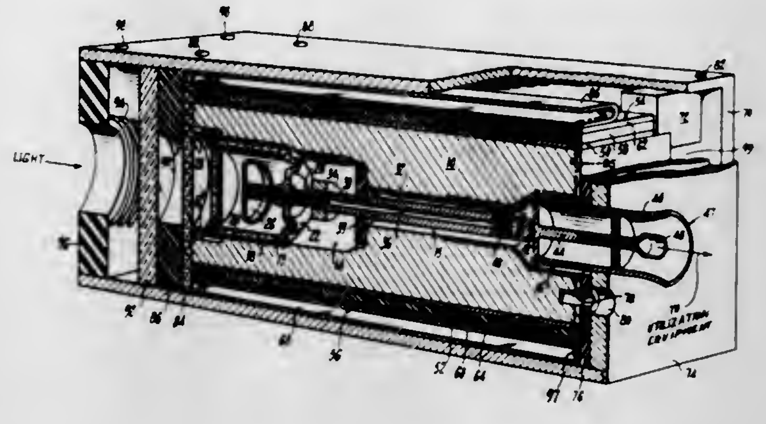
Jacob S. Zuckerbraun, Bronx, N.Y., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York
Original application Aug. 5, 1960, Ser. No. 47,837, now Patent No. 3,244,886, dated Apr. 5, 1966. Divided and this application Aug. 28, 1968, Ser. No. 755,957
Int. Cl. G01j *1/20, 3/14*
U.S. Cl. 250—203 **2 Claims**



A scanning device for light source tracking devices is disclosed utilizing a photosensitive element mounted on a reed that oscillates the photosensitive element about a central position with simple harmonic motion at a predetermined frequency so as to permit intermittent impingement of light on the element in a relationship to generate a signal having a frequency equal to twice the frequency of oscillation when the center of the image is at such central position and to generate an error signal having a frequency equal to the frequency of oscillation when the image is displaced from such central position, the phase of the error signal being dependent upon the direction of such displacement.

3,527,952
TRANSMISSION LINE ASSEMBLY FOR PHOTOTRANSDUCER

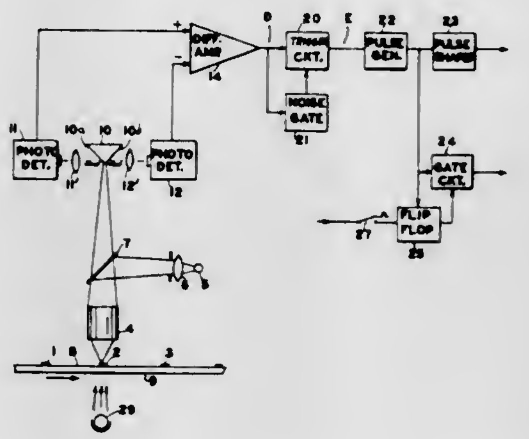
Albert W. Penney, Jr., Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,344
Int. Cl. H01j *39/12*
U.S. Cl. 250—206 **6 Claims**



A central conducting block has one end of a central bore in contact with the anode of a photodiode, the cathode of which is connected through the central conductor of a coaxial transmission line (the outer conductor comprising said conducting block) via a coaxial L pad to a coaxial plug assembly. The outer conductor of the coaxial plug assembly is connected through an outer cover structure to one side of one or more low impedance transmission lines, the other side of which are in electrical contact with the main conducting block and are in turn coupled to a high-voltage source to provide high-working voltage to the diode. Resiliently disposed optical filter means are readily interchangeable.

3,527,953
PHOTOELECTRIC LINE DETECTOR

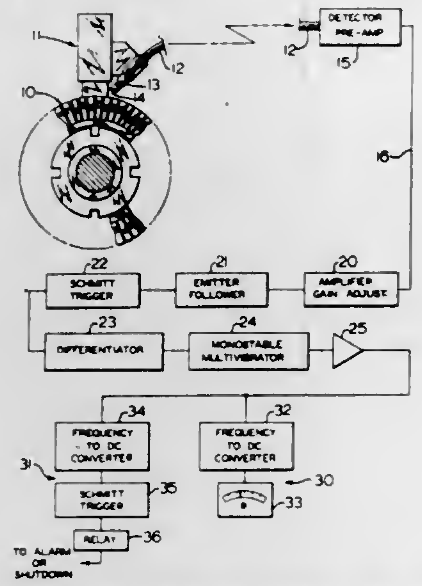
Anwar K. Chitayat, Plainview, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.
Filed Dec. 28, 1966, Ser. No. 605,362
Int. Cl. G01n *21/18*
U.S. Cl. 250—219 **4 Claims**



Photoelectric line detector means for accurately detecting the presence of a scanned line on a predetermined plane surface. A radiant energy beam is directed onto said surface. Means are provided to receive reflections of said beam of said line on said surface and then divide said beam reflections into first and second time spaced components. Means are provided to compare said components and generate a control signal.

3,527,954
SPARK MONITOR FOR DIRECT CURRENT MOTORS AND GENERATORS

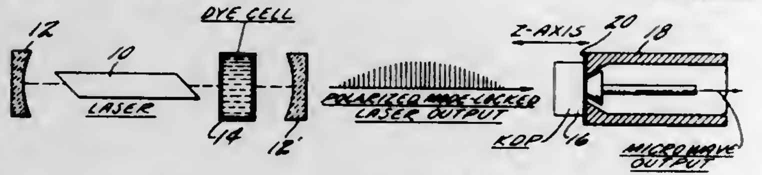
John L. Hoffman, Tazewell County, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois
Filed Apr. 22, 1968, Ser. No. 722,954
Int. Cl. G02b *5/14, 5/16*
U.S. Cl. 250—227 **3 Claims**



A system for detecting and measuring the rate of sparking at the brushes of direct current motors and generators which uses optical fibers for detecting the visible light resulting from the sparking and transmitting this light to a remote location outside the influence of the field of the machine, where it is detected and converted to an electrical signal that is transmitted to a monitoring circuit. The monitoring circuit includes means for visually displaying the amplitude of the electrical signal which is proportional to sparking at the brushes and can include a safety circuit that can actuate an alarm or shut down the machine.

3,527,955
MICROWAVE GENERATOR USING LASER PULSES

Michael J. Brienza, Vernon, and Anthony J. Demaria, West Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,303
Int. Cl. H03f *7/00*
U.S. Cl. 307—88.3 **4 Claims**

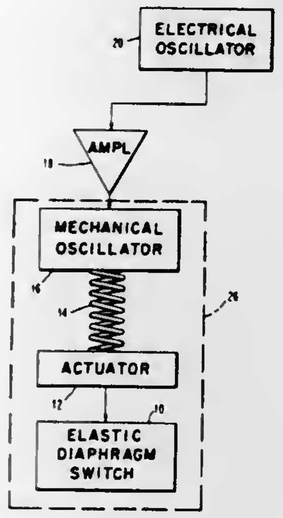


Electromagnetic waves of discrete microwave frequencies are generated by the irradiation of an optically nonlinear material with uniformly spaced, ultrashort optical pulses produced by a mode-locked laser. The microwave signals are generated by the optical rectification of the laser pulse train, and are harmonically related to the laser pulse train in frequency, the fundamental frequency being specified by the repetition rate of the laser pulses.

3,527,956
SWITCH ARRANGEMENT

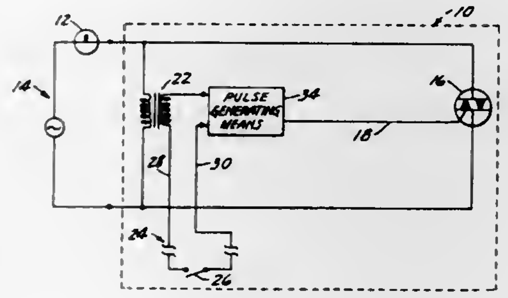
Morris Krakinowski, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 697,872, Jan. 15, 1968. This application Aug. 20, 1969, Ser. No. 857,289
Int. Cl. H01h *3/60*
U.S. Cl. 307—134 **26 Claims**

This is a switch arrangement for permitting high frequency electrical switching operations without electrical contact "chatter" or "bounce." This switch arrangement permits either a high frequency electrical or mechanical input to be utilized for actuating an Elastic Diaphragm Switch by means of a mechanical oscillator, switch actuator, and a coupling spring which is cooperatively connected between the mechanical oscillator and the switch actuator.



3,527,957
SOLID STATE REMOTELY CONTROLLED CIRCUIT USING CONTROL PULSES

Bertil Eck, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,697
Int. Cl. H03k *17/56*
U.S. Cl. 307—140 **11 Claims**



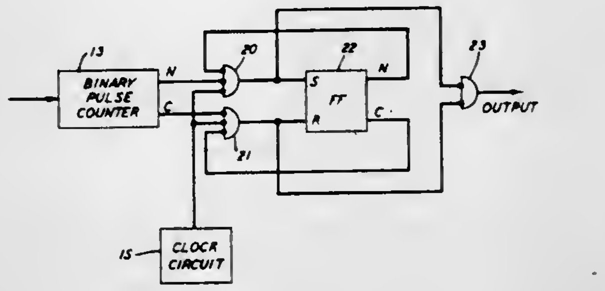
A solid state control device for remotely controlling energization of a load from a power source is shown wherein conduction of a bi-directional semiconductor device can be remotely controlled by an isolated low voltage remote control console which when remotely actuated by an operator actuates a pulse generating means which triggers the bi-directional semiconductor device to connect the load to the power source. In one embodiment, the circuit can be used for remotely controlling operation of a slide projector lamp and slide control mechanism.

3,527,958
ULTRASONIC DELAY LINE MEMORY

Ernst H. Young, Jr., Center Valley, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Feb. 16, 1968, Ser. No. 705,973
Int. Cl. H03k *19/08*
U.S. Cl. 307—208 **5 Claims**

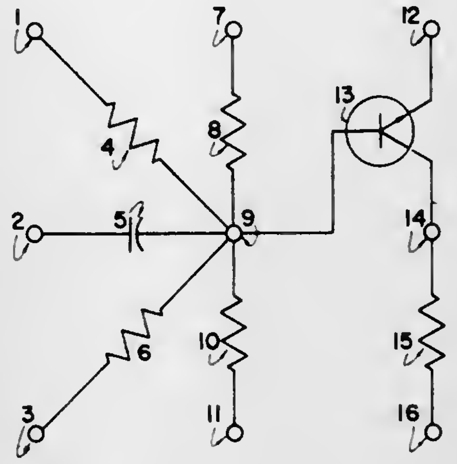
This application discloses an ultrasonic delay line memory for storing digital information using a retiming circuit having a circuit speed as low as that of the memory.

More specifically, the retiming of a pulse sequence from the memory is accomplished by applying the sequence to a binary pulse counter which changes state for each input pulse and combining the normal and complementary outputs of the counter with a sequence of clocking pulses to produce an output comprising only the first clocking pulse following each change of state of the counter. Because this retiming circuit can use clocking pulses as wide as the memory pulses, a higher bit rate can be used in the memory, and greater economy can be realized.



3,527,959
TRANSISTOR NOR GATE

Barry J. Stern, P.O. 2112, Indiana Instruments Inc., Hammond, Ind. 46323
Filed Sept. 11, 1967, Ser. No. 670,823
Int. Cl. H03k *19/34*
U.S. Cl. 307—215 **5 Claims**

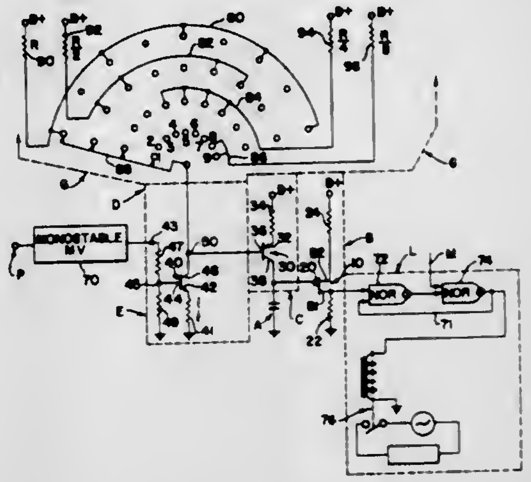


A nine terminal basic logic module comprising a transistor NOR gate with one capacitor input. The nine terminals of the basic logic module are arranged with respect to one another as the elements of a 3 x 3 matrix. All components are arranged between these nine terminals so that the sum of the component lead length is minimum. Several basic logic modules are arranged with respect to one another as the elements of a matrix.

3,527,960
ELECTRONIC COUNTING CIRCUIT

James H. Hufford, Moline, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Oct. 4, 1967, Ser. No. 672,907
Int. Cl. H03k *21/00, 21/04*
U.S. Cl. 307—226 **5 Claims**

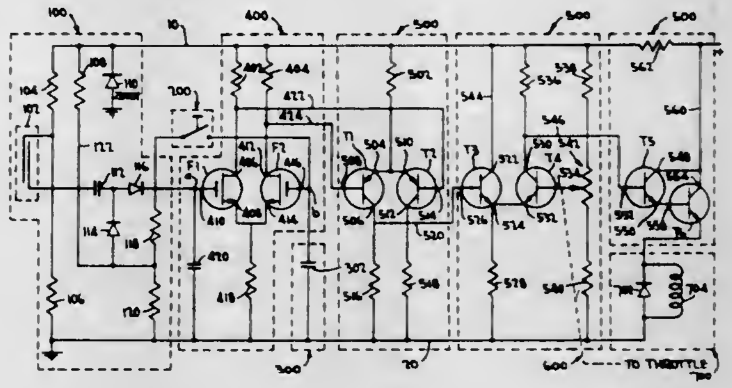
There is disclosed herein a counting circuit having a storage capacitor and a threshold detector, such as a unijunction transistor, coupled to the capacitor for producing an output signal when the capacitor has been charged to a predetermined voltage level. For each received count pulse, a step charge is applied to the storage capacitor.



The magnitude of each step charge is inversely proportional to the decimal number of a preselected count of the count pulses.

3,527,961
DIFFERENTIAL RESPONSE ANALYZING CIRCUIT FOR CONTROLLING SUCH QUANTITIES AS VEHICLE SPEED

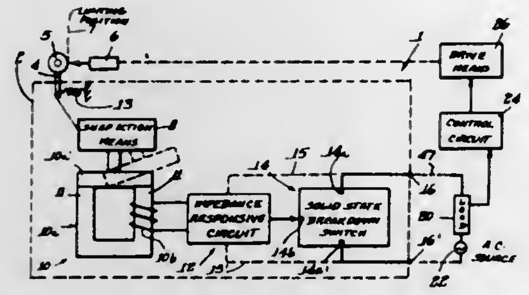
Oscar Palini, Camp Spring, Md., assignor to U.S. Research Corp., Washington, D.C., a corporation of the District of Columbia
Filed June 29, 1967, Ser. No. 649,902
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **9 Claims**



A vehicle speed control system wherein an input signal representative of actual vehicle speed is compared with a reference signal representative of desired vehicle speed, the difference between the two signals producing an error voltage from a comparison amplifier. The error voltage is fed through amplification stages and then to a throttle position control device attached to the vehicle engine throttle. A feedback arrangement is coupled between the engine throttle and the amplification stages. The feedback arrangement monitors the throttle position and produces a throttle position biasing signal, this biasing signal being varied by the error voltage, whereby the engine throttle is adjusted about its biased position. The adjusted position of the throttle is also sensed and becomes a new biased position. The vehicle speed accordingly will likewise be adjusted until the actual vehicle speed substantially equals the desired vehicle speed, i.e., until the error voltage approaches zero. The reference signal representative of desired vehicle speed is derived from the input signal representative of actual vehicle speed through a set switch arrangement and is then stored on a reference storage capacitor. Thus, the set switch is depressed only when the vehicle has initially assumed a desired speed level, the speed control system then automatically maintaining said speed level.

3,527,962
MACHINE TOOL LIMIT SWITCH

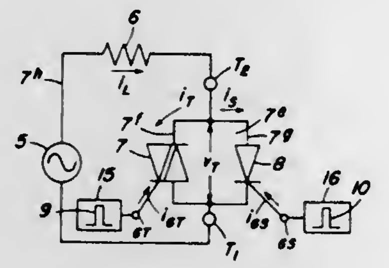
Stanford R. Ovshinsky, Bloomfield Hills, Lionel Robbins, Orchard Lake, and Paul R. Lundgren, Rochester, Mich., assignors to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,894
Int. Cl. H03k *17/56*
U.S. Cl. 307—252 **12 Claims**



A contact-free limit switch unit including most advantageously variable inductor means which has a core having separable core sections and a winding on the core. An actuator member is provided which is engaged and moved by a movable element of a machine tool or the like. Snap-action means is operated by the actuator member, the snap-action means when engaged by the movable element moving one of the core sections between core path closing and core path opening positions. A high current capacity solid state threshold-type switch is coupled across a pair of output terminals. Control means are coupled to the winding for feeding a control voltage to the solid state switch which voltage exceeds the threshold level of the solid state switch when said one core section is in the position resulting from the movement of said snap-action means by the actuator member.

3,527,963
AC CURRENT SWITCHING CIRCUIT INCLUDING BIDIRECTIONAL AND UNIDIRECTIONAL THYRISTORS

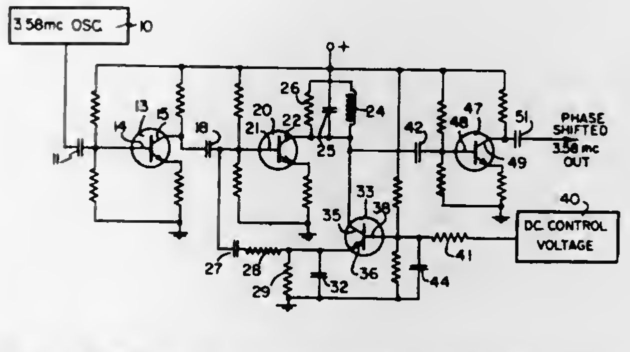
Akira Suzuki and Shigeru Ikeda, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan
Filed Jan. 30, 1968, Ser. No. 701,607
Claims priority, application Japan, Jan. 31, 1967, 42/6,401
Int. Cl. H03k *17/00*
U.S. Cl. 307—252 **11 Claims**



An AC static switching circuit including a source of alternating voltage, a load and a bidirectional and unidirectional thyristor parallel network connected in circuit in which the bidirectional and unidirectional thyristors are both normally turned OFF to establish effectively an open condition in the latter circuit, a first unidirectional gating pulse current turning ON at a first time period the bidirectional thyristor which thereupon self-generates at least a predetermined amount of alternating current to hold the turned ON state therein for a time interval equal to at least two one-half cycles of the alternating voltage to provide a closed condition in the circuit to permit current to flow in the load and a second unidirectional gating pulse current of positive polarity turning ON at a second time period the unidirectional thyristor which thereupon diverts therethrough such amount of alternating current from the turned ON bidirectional thyristor as to reduce the amount of alternating current flowing in the latter thyristor to an amount less than the predetermined amount thereby returning the bidirectional thyristor to the turned OFF state at a third time period, the turned ON unidirectional thyristor subsequently returning to the turned OFF state at the third time period, the last-mentioned turned OFF states of the bidirectional and unidirectional thyristors serving to re-establish the open condition in the series circuit to terminate the flow of current in the load and circuit.

3,527,964
PHASE SHIFTING CIRCUIT CONTROLLED BY A DIRECT CURRENT SIGNAL

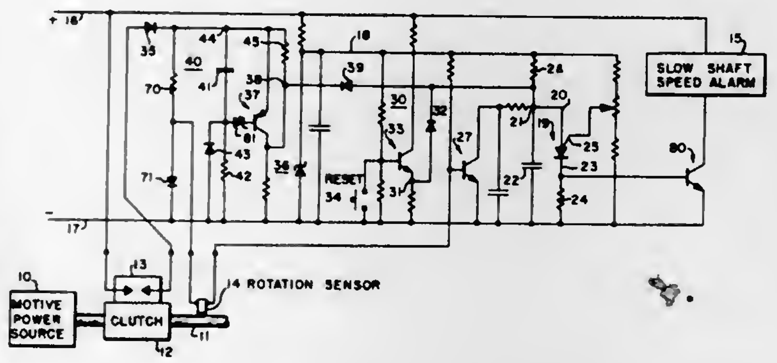
Robert B. Hansen, Arlington Heights, and Gordon E. Reichard, Franklin Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed June 7, 1967, Ser. No. 644,208
Int. Cl. H04n *9/50;* **H03k** *5/01*
U.S. Cl. 307—262 **4 Claims**



A phase shifting circuit controlled by a direct current signal in which the input signal is divided into first and second signals. The second signal is shifted in phase in a direct current controlled phase shifter and the resultant phase shifted second signal is combined with the first signal to develop a phase shifted output signal. The direct current controlled phase shifting circuit also acts to change the amplitude of the phase shifted second signal as a function of the phase shift so that the output signal is maintained at a substantially constant amplitude.

3,527,965
VELOCITY OF MOVEMENT MONITOR

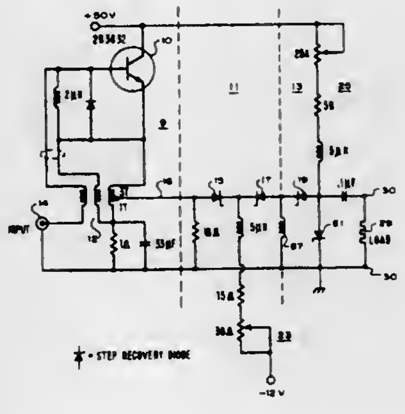
Royal R. Hawkins, Bloomington, and Richard K. Heiser, Edina, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed June 6, 1968, Ser. No. 734,981
Int. Cl. G01p *3/44*
U.S. Cl. 307—308 **10 Claims**



A motive source is coupled to a shaft through a clutch. A capacitor is charged to a voltage whose magnitude is inversely related to shaft speed, the capacitor being connected to a programmable unijunction transistor in a manner to render the unijunction transistor conductive when the shaft speed is too low. A transistor controlled voltage source is diode coupled to the capacitor, and the transistor is controlled from the clutch in a manner to forward bias the diode and clamp the capacitor to a voltage below that necessary to fire the unijunction transistor when the clutch is disengaged and for a time period after initial clutch engagement while the shaft is coming up to speed. After this time period, the diode is back-biased and the capacitor charge is related to shaft speed. A holding voltage source maintains the unijunction transistor conductive once a slow shaft speed is sensed, and a manual switch resets the unijunction transistor to the nonconductive state.

3,527,966
PULSE CIRCUIT USING STEP-RECOVERY DIODES

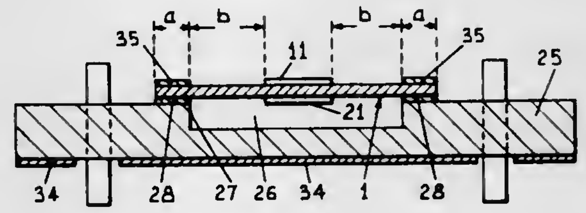
Charles O. Forge, Cupertino, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed June 23, 1967, Ser. No. 648,454
Int. Cl. H03k *3/33*
U.S. Cl. 307—319 **4 Claims**



An improved pulse-forming circuit uses cascaded stages of paired step-recovery diodes to sharpen an applied pulse in successive stages.

3,527,967
MONOLITHIC CRYSTAL FILTERS WITH ULTRASONICALLY LOSSY MOUNTING MEANS

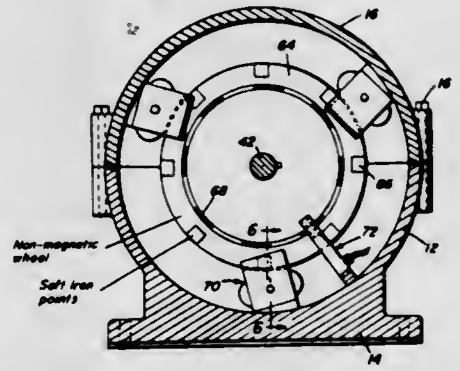
Arthur Joseph Dyer, Watford, and John Francis Werner, Pinner, England, assignors to The General Electric and English Electric Companies Limited, London, England, a British company
Filed June 3, 1969, Ser. No. 830,055
Claims priority, application Great Britain, June 4, 1968, 26,453/68
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.2 **16 Claims**



In a monolithic crystal filter assembly the crystal slab is secured to acoustically absorbent support means around its periphery. This helps to suppress unwanted resonances in the pass band of the filter. The support means may include a support member secured to the slab by means of a layer of acoustically absorbent adhesive.

3,527,968
PRESSURE SEALED MAGNETOMOTIVE MOTOR

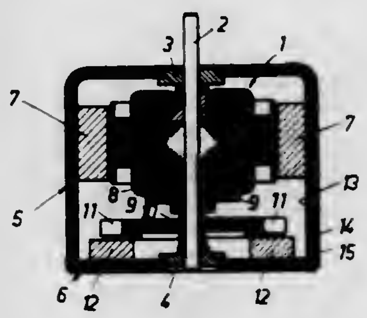
Owen R. Waltrip, Roseville, Calif., assignor, by direct and mesne assignments, of ten percent to Paul J. Lunardi and twenty-two and one-half percent to John Konsoulas, both of Roseville, and twenty-two and one-half percent to Coleman D. Stephen, Jr., Sacramento, Calif., and twenty-two and one-half percent to Noel Adams, Oklahoma City, Okla.
Continuation-in-part of application Ser. No. 698,058, Jan. 15, 1968. This application July 16, 1968, Ser. No. 745,235
Int. Cl. H02k *37/00*
U.S. Cl. 310—49 **9 Claims**



A magnetomotive arrangement in which an electromagnetic coil is intermittently energized to produce a magnetic field while a magnetic insert carried by a nonmagnetic rotor passes between the pole faces of flux conducting members associated with the coil to vary the flux gap between the pole faces and the reluctance of the magnetic flux path. The change in the magnetic field so produced involves a conversion of D.C. electrical energy to A.C. electrical energy and motive energy through motor and generator action.

3,527,969
SOUNDPROOFED HOUSING FOR ELECTRIC MOTORS

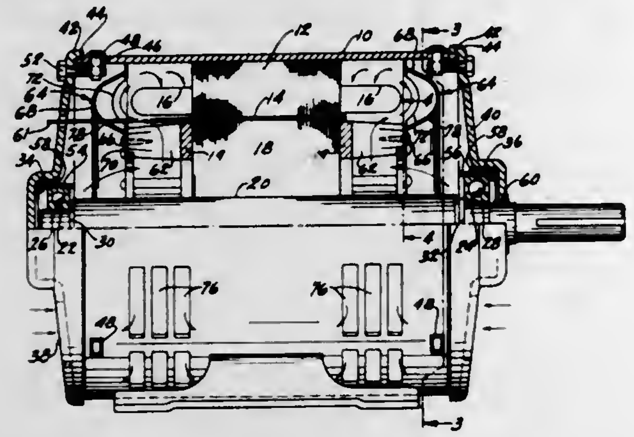
Hermann Papst, Saint Georgen, Germany, assignor to Papst-Motoren KG, Saint Georgen, Black Forest, Germany
Filed Oct. 28, 1968, Ser. No. 773,976
Claims priority, application Germany, Oct. 27, 1967, 1,613,343
Int. Cl. H02k *5/02, 5/24, 5/14*
U.S. Cl. 310—51 **18 Claims**



A housing for compact electric motors which comprises one or more layers of metallic material and one or more liners of preferably synthetic soundproofing material. At least one layer consists of ferromagnetic material and the liner is applied to the inner and/or outer side of such layer. The ferromagnetic material serves, inter alia, as a conveyor for the magnetic force lines of the motor. The housing may include, a cup-, disk-, bell- or similarly shaped body portion, and a cover of the same materials as the main body portion. The soundproofing liner need not be coextensive with the main body portion to provide valuable soundproofing characteristics.

3,527,970
ELECTRIC MOTOR CONSTRUCTION AND VENTILATING SYSTEM

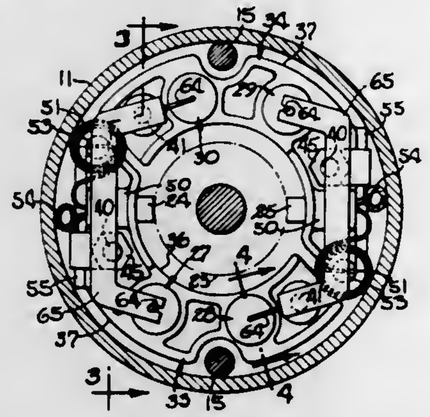
Lawrance W. Wightman, Creve Coeur, and Howard C. Gebhart, Chesterfield, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Oct. 9, 1968, Ser. No. 766,204
Int. Cl. H02k *9/06*
U.S. Cl. 310—63 **3 Claims**



A take-apart electric motor having a stator casing with a smooth, cylindrical, interior wall into which the stator core is fitted, in which large diameter fans on both sides of the stator core circulate cooling air at high velocity around the faces of the stator core, around and over the winding end turns, and around the interior surface of the stator casing on both sides of the stator, and in which rotor supporting end shields are detachably connected to the ends of the casing by removable means which permits the free, uninterrupted, circular flow of cooling air around the interior surface of the stator casing and permits the free axial assembly or removal of the stator core.

3,527,971
APPARATUS FOR MOUNTING BRUSHES AND DIODES IN A DYNAMOELECTRIC MACHINE

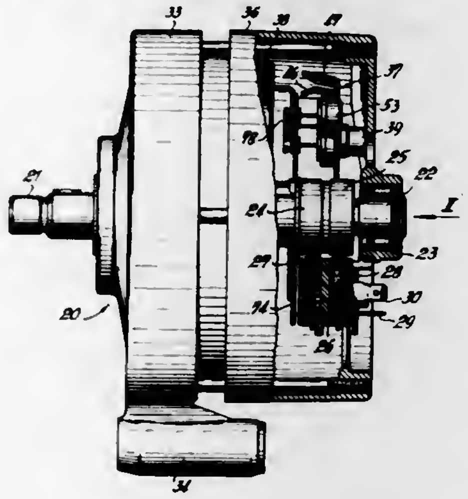
William A. Means, Rockford, Ill., assignor to Applied Motors, Inc., Rockford, Ill., a corporation of Illinois
Filed May 8, 1968, Ser. No. 727,427
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **5 Claims**



A pair of arcuate mounting plates made of electrically and thermally conductive material are attached to the end bell of a direct current motor and physically support not only the contact brushes of the motor but also a series of diodes for providing full wave rectification of alternating current supplied to energize the armature winding. Each plate serves to connect the diodes and brushes electrically to simplify the wiring within the motor and, in addition, acts as a heat sink to promote the dissipation of heat generated by the diodes. The mounting plates are shaped to present large surface areas for effectively dissipating the heat and yet are arranged to fit compactly within space which otherwise would be wasted in the motor housing, thereby avoiding the need of increasing the physical size of the motor to accommodate the plates.

3,527,972
FULL WAVE RECTIFIER ASSEMBLY, PARTICULARLY FOR COMBINATION WITH AUTOMOTIVE TYPE ALTERNATORS

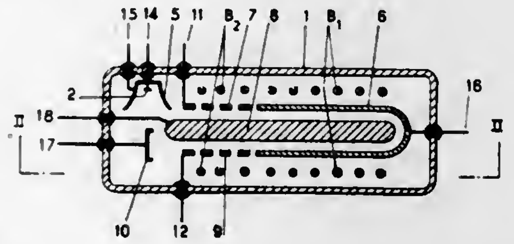
Herbert Franz, Stuttgart, Gerhard Haug, Waiblingen, Friedhelm Meyer, Gerlingen, Frithjof Werner, Stuttgart-Zuffenhausen, Kurt Straif, Stuttgart-Fasanenhof, Richard Steimer, Denkendorf, Johannes Sayer, Stuttgart-Bad, and Hans Reichelt, Stuttgart, Germany, assignors to Robert Bosch GmbH., Stuttgart, Germany, a limited-liability company of Germany
Filed Oct. 9, 1968, Ser. No. 766,173
Claims priority, application Germany, Nov. 18, 1967, 1,613,040
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **25 Claims**



A pair of sheet metal strips of circular sector shape are mounted, one of them insulated, on the end bell of an automotive type alternator. The rectifier diodes being pressed into holes in the strips, and a parallel ring plate is secured to the strips, and formed with eyelets through which terminal wires of the rectifier diodes extend the eyelets and other mounting points holding interconnection wires to form a complete alternator-rectifier assembly and terminal board for the alternator. The assembly fitting about the shaft of the alternator preferably in the region of the slip rings thereof, exposed to alternator cooling air, requiring little additional space and economical to manufacture and assembly.

3,527,973
ELECTRON DELAY STRUCTURE COMPRISING A U-SHAPED ELECTRODE AND ELECTRON TUBE UTILIZING THE SAME

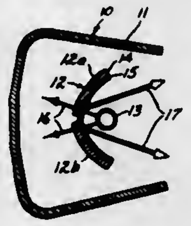
Gerard Kantorowicz, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Jan. 12, 1968, Ser. No. 697,333
Claims priority, application France, Jan. 13, 1967, 91,046
Int. Cl. H01j *25/42*
U.S. Cl. 315—3.5 **5 Claims**



An electronic delay structure comprises within an evacuated envelope, an elongated electrode, at one end of which two dispersive periodic delay line sections are positioned in front of each other. One of them is energized with a microwave signal and the other is coupled to an output. A U-shaped electrode surrounds the elongated electrode and a cathode is provided for emitting an electron beam into the drift space bounded by the two above mentioned electrodes. Crossed magnetic and electric fields are provided in the drift space. The magnetic field is different in the space between the two delay line sections and in the remainder of the drift space.

3,527,974
REFLECTOR FOR PRODUCING A COLOR CORRECTED LIGHT COLUMN

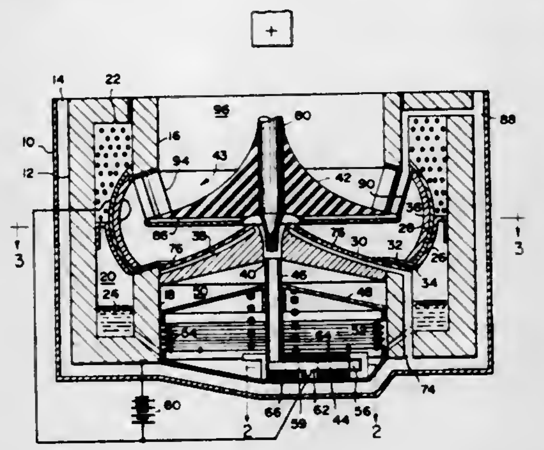
George D. Cooper, 1136 Vista Place, Edmonds, Wash. 98020
Continuation-in-part of abandoned application Ser. No. 490,963, Sept. 28, 1965. This application Oct. 17, 1966, Ser. No. 587,233
Int. Cl. H01j *5/16, 61/40;* **F21v** *7/00;* **G02b** *5/26*
U.S. Cl. 313—113 **17 Claims**



Reflector to be used with a source of radiant energy for coaction therewith to be placed adjacent to the source and define a light column which will reflect certain visible radiant energy that will mix with visible and invisible radiant energy emitted directly from the source to produce a light column having a color temperature quality different from that of the source.

3,527,975
MERCURY VAPOR ELECTRON GENERATOR

George N. J. Mead, 5 Robin Lane, Exeter, N.H. 03833
Filed Oct. 11, 1967, Ser. No. 674,554
Int. Cl. H01j *1/12, 13/40, 37/06*
U.S. Cl. 313—171 **20 Claims**



A mercury cathode device that is compatible with evacuated systems is provided for various electrical and electronic applications and is characterized in operation by high power density at a low voltage drop. Mercury flows over a conical electrode where it forms a thin film which is the emission surface and which is continuously regenerated by the recirculating mercury. The thin film provides stability for the cathode spot with anchored emission and also prevents the boiling and turbulence normally associated with mercury pool cathodes. A baffle is located above the electrode and the assembly is surrounded by an annular positively charged electrode which attracts the electrons radially outward. As the emitted electrons approach the periphery of the baffle they are caught in a cylindrical annular magnetic field at the periphery of the emission surface. The magnetic field directs the electrons into a circular path preventing them from reaching the peripheral electrode. The rotary movement of the electrons in this area at high speeds ionizes any mercury atoms that may have escaped from the emission surface or elsewhere. Positive ions produced by the ionization are then attracted back to the emission surface rather than advancing further into the system. The ionization zone acts as a barrier to the passage of all particles except electrons thus maintaining a plasma in close proximity to the cathode and making the unit compatible with evacuated systems.

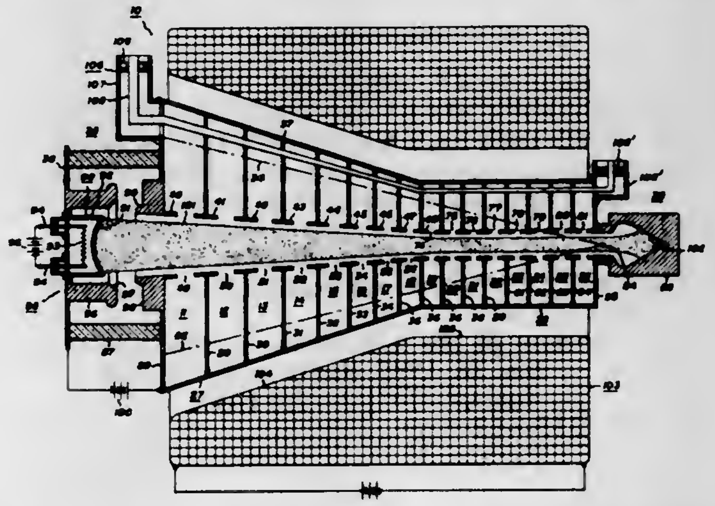
Located above the baffle and radially inward from the peripheral electrode is an annular passage in which is located an electron extracting device in the form of an open grid work electrode having a greater positive charge than that on the peripheral electrode. Thus the orbiting electrons are extracted and directed inward to form a converging electron beam.

ERRATUM

For Class 315—3.5 see:
Patent No. 3,527,973

3,527,976
LOG PERIODIC ELECTRON DISCHARGE DEVICE

Herbert L. Thal, Jr., Rotterdam, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 29, 1966, Ser. No. 582,895
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.6 **26 Claims**

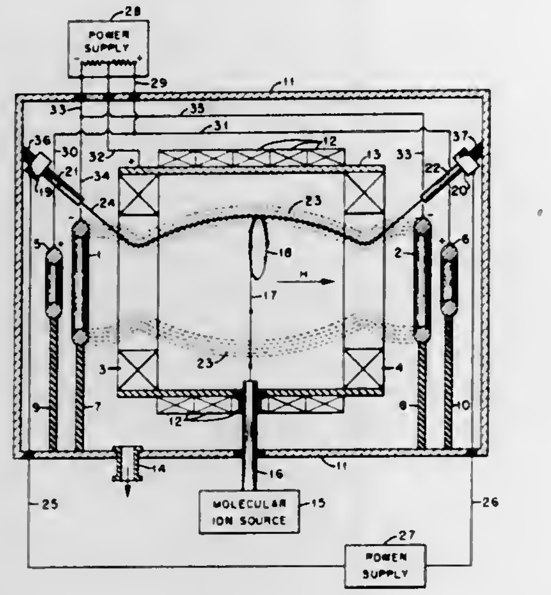


An electron beam log periodic device is disclosed which in one form is an R-F amplifier including a slow wave circuit defining an electron beam path therethrough. The slow wave circuit tapers in a log periodic manner and the electron beam which passes therethrough is also correspondingly tapered in a log periodic manner. An input signal is coupled into the circuit to selectively energize a region therein based on the input signal, and the beam is modulated. This modulated beam passes into another part of the circuit to selectively energize a region therein and amplified power is taken off the circuit.

3,527,977
MOVING ELECTRONS AS AN AID TO INITIATING REACTIONS IN THERMONUCLEAR DEVICES

Arthur E. Ruark, Kensington, Md., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed June 3, 1968, Ser. No. 733,846
Int. Cl. H01j *7/24*
U.S. Cl. 315—111 **7 Claims**

Molecular ions of a high energy are injected into an evacuated container within a magnetic field into the path of an energetic oscillating electron stream and the plasma it creates which dissociates and/or ionizes the molecular ions into atomic ions. The resulting atomic ions are trapped by the magnetic field to form a circulating beam of atomic ions within the container. One or more pairs of opposing molecular ion beams may be utilized to strike each other in the electron stream for dissociation or ionization thereof, and, if desired, an energetic arc discharge may also be utilized in conjunction with the energetic oscillating electron stream as an aid in the process of forming the atomic ions.



3,527,978
FILM PRODUCED BY AUTOMATIC GENERATION AND DISPLAY OF ANIMATED FIGURES

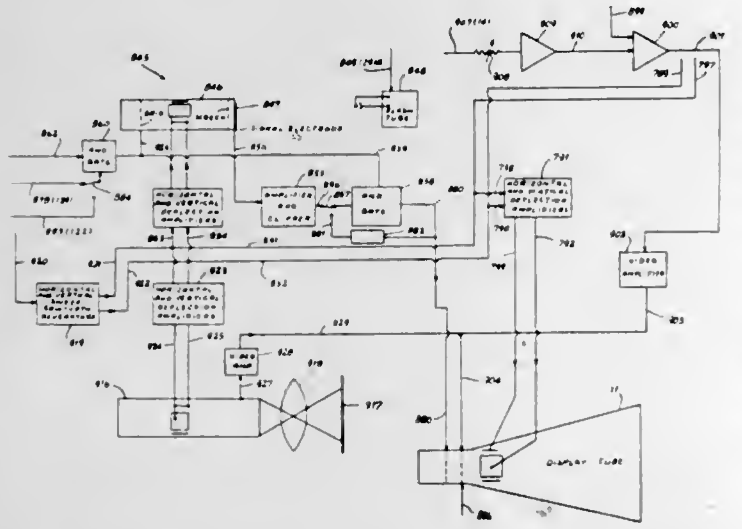
Lee Harrison III, Englewood, Colo., assignor to Control Image Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 607,078, Jan. 3, 1967. This application Nov. 16, 1967, Ser. No. 683,702

The portion of the term of the patent subsequent to Jan. 16, 1985, has been disclaimed

Int. Cl. H01j *29/20;* **H04n** *5/44*

U.S. Cl. 315—18 **21 Claims**



An animated display is produced by photographing a sequential display on the face of a cathode ray tube. The display is produced by generating a plurality of vectors representing reference lines of a figure to be displayed. The vectors are located on the tube face by positioning voltages which uniquely determine the placement of each of the vector figure segments.

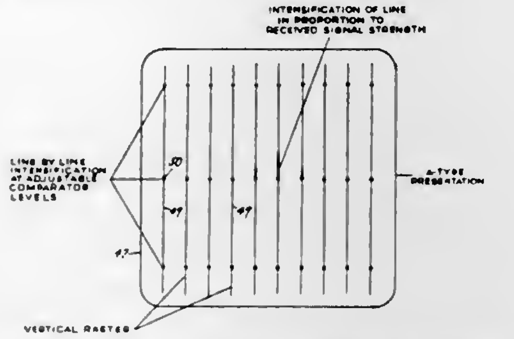
3,527,979
MULTIPLE "A" TYPE DISPLAY DEVICE HAVING MAGNETICALLY DEFLECTED CATHODE RAY TUBE

Jerome Hollander, Great Neck, Bernard Engelson, Franklin Square, Jerome Leiner, Brooklyn, and Luther Nashman, Bronx, N.Y., assignors to Loral Corporation, Scarsdale, N.Y., a corporation of New York

Filed July 16, 1968, Ser. No. 745,152

Int. Cl. H01j *29/76*

U.S. Cl. 315—22 **3 Claims**


INTENSIFICATION OF LINE IN PROPORTION TO RECEIVED SIGNAL STRENGTH
LINE BY LINE INTENSIFICATION ACCORDING TO COMPARATOR LEVELS
A-TYPE PRESENTATION
VERTICAL RASTER

A multiple "A" type display device employing a raster technique.

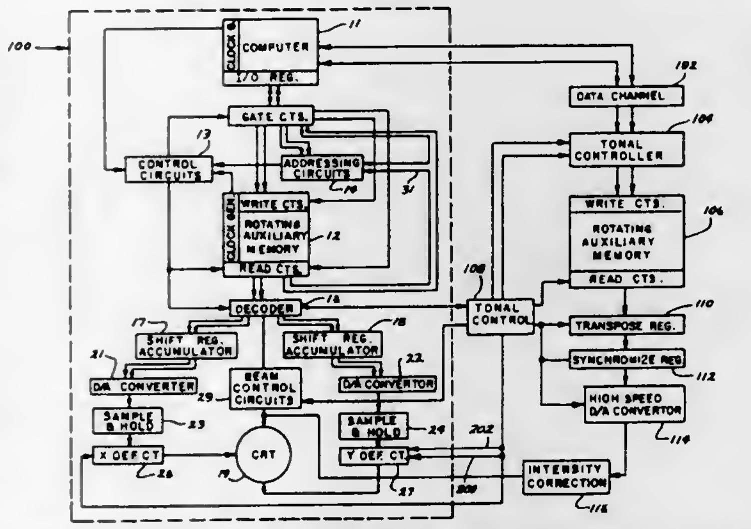
3,527,980
DIGITAL VARIABLE INTENSITY DISPLAY

Richard H. Robichaud, Burlington, and Harold Philip Peterson, Woburn, Mass., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 28, 1968, Ser. No. 716,883

Int. Cl. H01j *29/52, 29/70*

U.S. Cl. 315—22 **11 Claims**



An improvement to two dimensional displays created solely from digital information for providing a third dimension from further digital information is disclosed where the third dimension is created by modulating the local brightness of two dimensional information displayed in accordance with the further digital information. A memory associated with the two dimensional display is expanded and the intensity information associated with the two dimensional deflection information is stored. The deflection information and the intensity information are then read from memory, synchronized, converted to analog signals, and used to control the cathode ray tube.

3,527,981
CERAMIC TUBE WITH INTEGRATED RESONATOR STRUCTURE

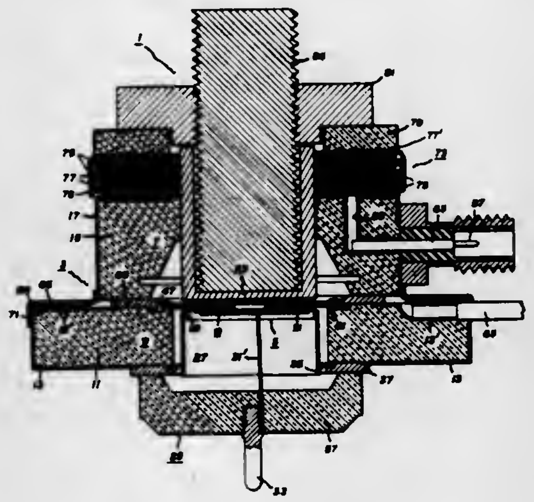
Claude Hopper, Jr., and Shelby A. Jolly, Owensboro, Ky., assignors to General Electric Company, a corporation of New York

Filed Mar. 8, 1968, Ser. No. 711,657

Int. Cl. H01j *7/46*

U.S. Cl. 315—39 **9 Claims**

A microwave frequency ceramic tube cavity oscillator is provided comprising a ceramic vacuum tube portion including a surrounding wall structure and a ceramic cavity resonator portion which forms an integral part of the tube wall structure. The resonator comprises annular ceramic members, coated on their outside surfaces with conductive material, which members form anode and cathode resonator cavities. The ceramic material of the annular members fill a substantial portion of the cavities to an extent that the ceramic material itself acts as the dielectric. With this arrangement, the tube parts are disposed internally of the cavity resonators and are supported by the wall structure thereof including the ceramic members. Means are provided to feed back energy from the anode cavity to the cathode cavity for oscillator operation.



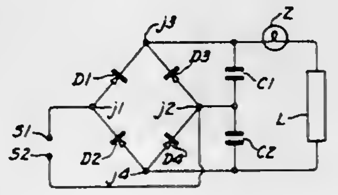
3,527,982
DISCHARGE LAMP BALLASTING

William H. Lake, Novelty, Ohio, assignor to General Electric Company, a corporation of New York

Continuation-in-part of application Ser. No. 524,110, Feb. 1, 1966. This application July 31, 1968, Ser. No. 757,180

Int. Cl. H05b *37/00*

U.S. Cl. 315—200 **11 Claims**



A hybrid rectifier-capacitor bridge formed of two branches each comprising a rectifier and a capacitor connected in series across alternating current input terminals and a bypass rectifier connected across the capacitor. The series rectifiers conduct in opposite directions in the two branches; each bypass rectifier is poled to conduct in opposite directions to the series rectifier in the same branch. The utilization circuit including a discharge lamp and which may also include a series ballasting impedance is connected across the junction points of the series rectifier and capacitor in the two branches. A dual envelope high intensity lamp specially adapted for operation in this circuit includes a filament in the interenvelope space connected in series with the arc tube, the filament having a resistance at operating temperature not exceeding ⅓ the equivalent arc tube resistance.

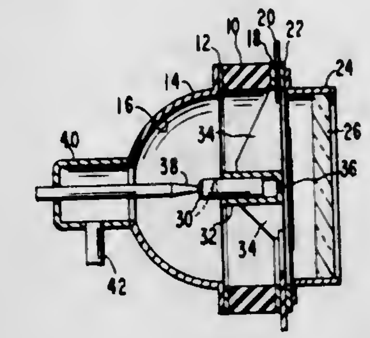
3,527,983
ARC LAMP HAVING ACCELERATION ACTUATED IGNITION MEANS

Alfred H. Schwartz, San Mateo, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 10, 1968, Ser. No. 735,833

Int. Cl. H01j *7/38;* **H01l** *61/54*

U.S. Cl. 315—357 **13 Claims**



An arc lamp having acceleration actuated ignition means. The lamp comprises two electrodes mounted in ionizable gas confined within a lamp housing. Means are disclosed for moving one electrode relative to the other upon acceleration of the housing and for arresting this relative motion. This structure permits the lamp to be ignited by positioning the electrodes in abutment, applying electric power to the electrodes, and accelerating the lamp housing thereby causing the electrodes to separate and acquire a potential difference which ionizes gas therebetween.

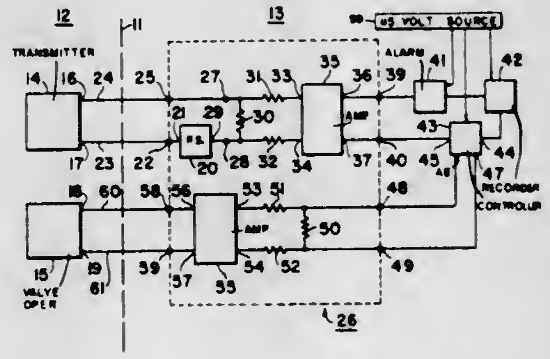
3,527,984
ENERGY BARRIER LIMITING TRANSFER OF ENERGY FROM ONE AREA TO ANOTHER

Allan L. Flanagan, Attleboro, and Willis, F. Hickes, Sharon, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed Dec. 1, 1967, Ser. No. 687,348

Int. Cl. H02j

U.S. Cl. 317—9 **9 Claims**

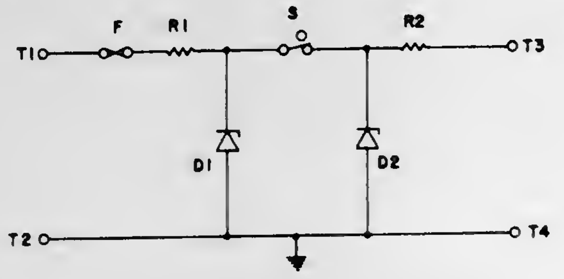


A resistance network in combination with an impedance matching amplifier is employed to isolate an input circuit from an output circuit; with the termination of the input circuit or output circuit located in a hazardous area, the maximum energy that can be transferred to the hazardous area under adverse conditions is thereby limited to a safe level; an additional feature is the use of a self-limiting power supply associated with the input circuit and energizing a device in the hazardous area; the combination permits safely monitoring a field sensing device in a hazardous area and safely furnishing control command to a related valve operator in the hazardous area.

Combustible gases, vapours or dusts are used in connection with certain processes and in such cases there is a requirement that certain process locations, where instrumentation is necessary, employ devices incapable of igniting such materials, for example intrinsically safe devices. Intrinsically safe instrumentation employing electrical signals must have circuit configuration and device design so that under any possible condition of operation or of malfunction there will be a limited level of energy transfer to the hazardous area. For example, if the hazardous area contains hydrogen, the maximum energy transfer to the area under any conditions must be severely limited. It has been found that under certain conditions 30 micro-joules of energy in the form of a spark ignites hydrogen. For the more common, less readily ignited materials, 1/10 of a milli-joule energy is a more representative limiting figure. These energy values are representative only and vary widely with circuit parameters. Safety of a specific circuit is usually determined by trial of the actual device under carefully controlled conditions.

3,527,985
ELECTRICAL BARRIER DEVICE

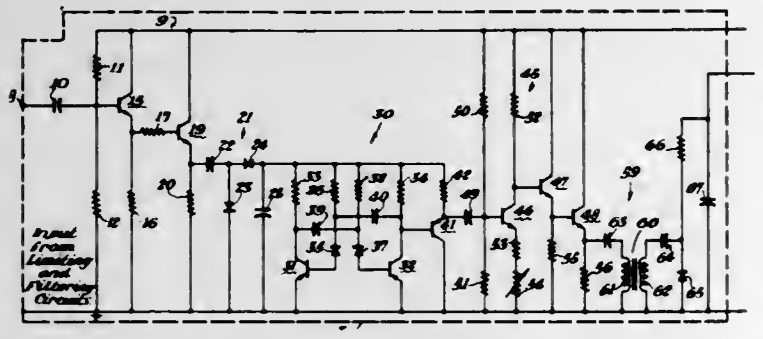
Kenneth John Brown, Oxted, England, assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Oct. 27, 1967, Ser. No. 678,707
Claims priority, application Great Britain, Dec. 2, 1966, 54,195/66
Int. Cl. H02h *7/00*
U.S. Cl. 317—16 **8 Claims**



An electrical barrier device in an electrical conductor isolates a safe area from a hazardous area; the barrier device includes Zener diodes both connected to an electrical reference and arranged to be effectively placed in parallel by a normally closed switch serially disposed in said electrical conductor, so that a condition causing a dangerous voltage will result in the by-pass of current through said Zener diodes, opening said switch permits Zener diode testing by the application of a test current to either Zener diode.

3,527,986
FAIL-SAFE ELECTRONIC CIRCUIT ARRANGEMENT

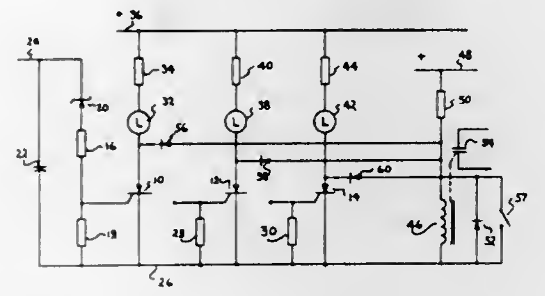
John O. G. Darrow, Murrysville, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Aug. 11, 1967, Ser. No. 660,118
Int. Cl. H02h *3/22*
U.S. Cl. 317—31 **21 Claims**



A fail-safe voltage level detecting circuit, including a fixed frequency generator for producing voltage signals proportional to the amplitude of an A.C. input and including an amplitude level detector for measuring the amplitude of the voltage signals and for providing a D.C. output having a particular polarity when the amplitude of the A.C. input and in turn the amplitude of the voltage signals exceed a predetermined level.

3,527,987
MONITOR CIRCUIT FOR DETECTING THE OCCURRENCE OF ONE OR MORE OF A PLURALITY OF EVENTS IN A SYSTEM

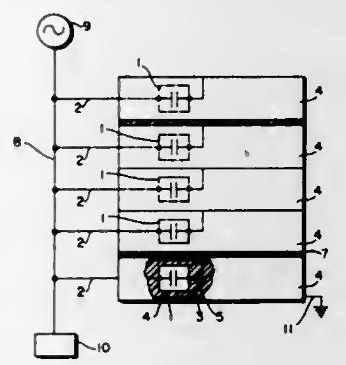
Henry J. Havlicek, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,304
Int. Cl. H02h *7/00;* **G08b** *19/00*
U.S. Cl. 317—33 **5 Claims**



A fault monitoring circuit in which a plurality of thyristors, such as SCR's, is used to detect a similar plurality of faults and to provide a preselected output at the occurrence of any fault. Each of the thyristors has a light in its load circuit to indicate which fault has occurred. A normally energized relay is deenergized when any one of the thyristors is conducting, thereby providing the preselected output as the energizing current acts as holding current for the thyristor.

3,527,988
CAPACITOR ASSEMBLY

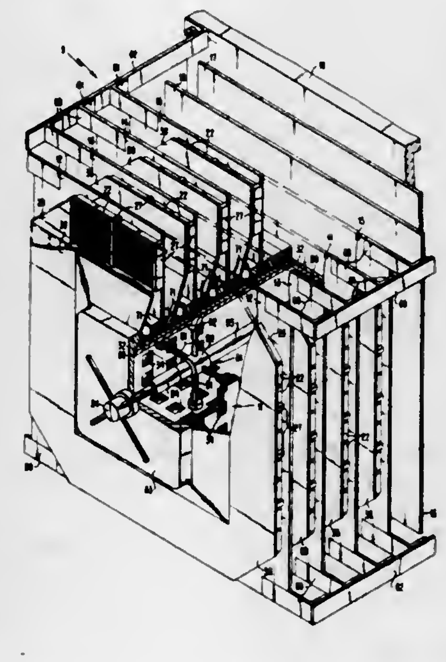
Wilbur O. Hansen, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed Jan. 22, 1968, Ser. No. 699,399
Int. Cl. H01g *1/08, 3/28*
U.S. Cl. 317—100 **7 Claims**



A capacitor assembly having a large heat transfer surface and housing a plurality of capacitors. A plurality of thermally conductive tubes are mounted substantially parallel, adjacent tubes contacting each other to define passages for a cooling medium. At least one capacitor is supported within each tube. The capacitors are thermally connected to the walls of the tubes in which they are contained in order to provide for heat transfer thereto. Leads extending from capacitor terminals may protrude from opposite ends of each tube. The tubes may also be electrically conductive so that capacitors may be conveniently connected in parallel by electrically connecting one terminal of each capacitor to the wall of the tube in which it is contained and the other terminal of each capacitor to a common wire. Wires to which the other terminal of each capacitor is to be connected may pass through each tube in spaced relationship thereto so that a short lead is required to make the connection.

3,527,989
CIRCUIT ASSEMBLY

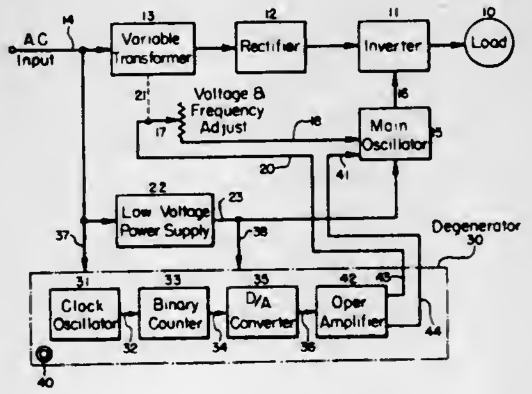
David E. Cuzner, Ampfield, Romsey, and Patrick J. Mulholland, Chandler's Ford, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 7, 1969, Ser. No. 797,477
Claims priority, application England, Feb. 13, 1968, 7,012/68
Int. Cl. H05k *7/20, 1/04*
U.S. Cl. 317—100 **7 Claims**



A circuit assemby comprises a supporting structure and a plurality of printed circuit cards mounted in spaced apart relationship on the supporting structure. The circuit cards each have an aperture and support and provide interconnections between a plurality of circuit elements. A tube extends through the apertures to supply cooling air to the circuit elements. The tube is removable from the assembly to permit removal of any one of the cards from the structure without disturbing the remaining cards.

3,527,990
MOTOR SPEED CONTROL SYSTEM WITH INCREMENTAL SPEED VARIATION

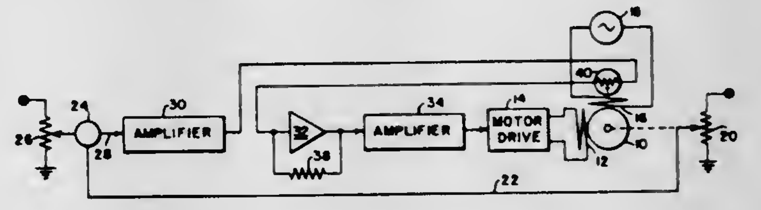
Kurt Gasser, Orange, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,823
Int. Cl. H02p *7/62*
U.S. Cl. 318—6 **15 Claims**



An inverter 11 is supplied from a rectifier 12 coupled to an A-C supply line, and the frequency of the inverter output voltage is regulated by a main oscillator 15 to control the speed of the motor energized by the inverter. A degenerator circuit 30 is coupled to the main oscillator to provide a predetermined incremental variation in the frequency of the main oscillator output signal and correspondingly effect a programmed change in the motor speed. The degenerator includes a clock oscillator 31, a binary counter 33 coupled to the clock oscillator, and a digital-to-analogue converter 35.

3,527,991
SERVOMOTOR CONTROL SYSTEM IN WHICH GAIN IS VARIED IN RESPONSE TO MOTOR TEMPERATURE

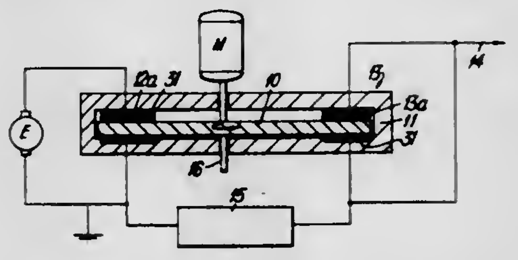
Milton Sackin, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 27, 1968, Ser. No. 740,757
Int. Cl. G05b *13/02*
U.S. Cl. 318—634 **7 Claims**



Described is a system for improving the capability of a servomotor in a feedback loop arrangement by sensing the temperature of the motor windings and by reducing the bandwidth or gain of the feedback loop as the temperature rises. In this manner, the maximum capabilities of the system are utilized under all conditions, but not exceeded.

3,527,992
ELECTROSTATIC GENERATOR

Alfred William Bright and Brian Makin, Southampton, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Dec. 3, 1968, Ser. No. 780,774
Claims priority, application Great Britain, Dec. 4, 1967, 55,101/67
Int. Cl. H02n *1/00*
U.S. Cl. 318—116 **14 Claims**

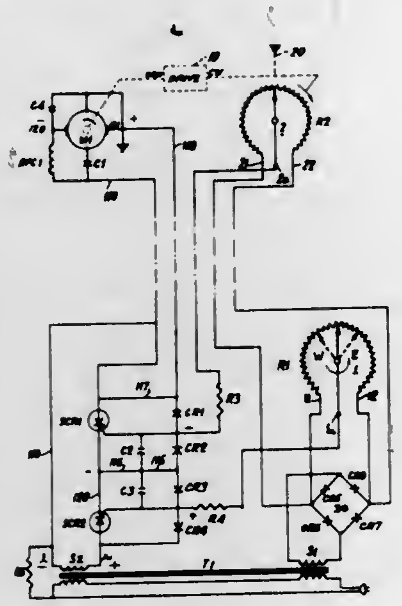


An electrostatic generator which operates with a liquid (e.g. nitrobenzene) insulant. The conductivity of the liquid is kept at a very low figure by a de-ionising the liquid, e.g. by electrodialysis. The generator employs a single rotary disc as the charge carrier, with a charge collector angularly spaced from a charge supplied.

3,527,993
SOLID STATE MOTOR DRIVEN ANTENNA ROTATOR CONTROL CIRCUIT

Sergel L. Ticknor, Earlville, N.Y., assignor, by mesne assignments, to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Feb. 12, 1968, Ser. No. 704,633
Int. Cl. G05b *11/12*
U.S. Cl. 318—674 **2 Claims**

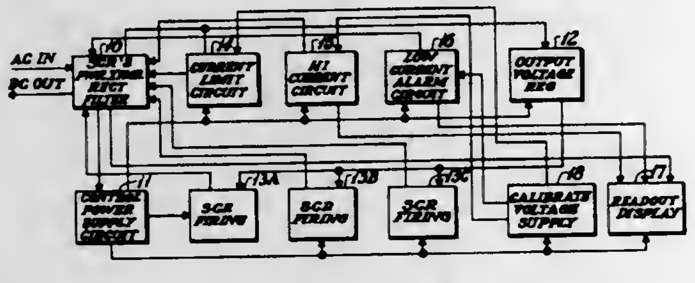
An antenna rotational control system is provided having a console control comprising a variable potentiometer which is an arm of a bridge, the other arm being coupled to the antenna. A solid state control circuit including a DC motor and a stabilized dual SCR circuit drives said antenna in response to position control positions on said console.



3,527,994
SCR BATTERY CHARGER WITH TUNNEL DIODE CURRENT CONTROLS

Leo B. Bourgeault, Spring Lake Heights, Alfred W. Wohlberg, Neptune, and Albert W. Compoly, Marlboro, N.J., assignors to The Bendix Corporation, a corporation of Delaware

Filed July 12, 1966, Ser. No. 564,612
Int. Cl. H02j *7/10*
U.S. Cl. 320—39 **5 Claims**



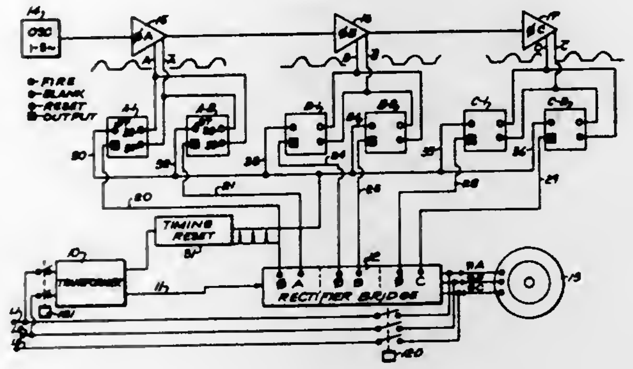
A battery charger utilizing SCR's to chop the A.C. sine wave voltages into pulses to produce a regulated D.C. voltage of a constant potential and the current is controlled to reduce the charging current to a safe value as the batteries reach a full charge by circuits controlling the conduction of the SCR's.

3,527,995
SINGLE-PHASE TO POLYPHASE CONVERSION SYSTEM

William H. Lee, Lakewood, and Roger H. Stotzer, Parma, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Apr. 12, 1967, Ser. No. 630,242
Int. Cl. H02m *5/14, 5/30*
U.S. Cl. 321—7 **8 Claims**

A motor is driven selectively from a three-phase power line to provide normal speed operation, or from a single-phase of the three-phase power line to provide low speed operation. The single-phase power is converted to a lower frequency determined by the frequency of a reference signal whose envelope determines the times that a conductive device becomes operative to conduct the single-phase power wave to the motor during a half-cycle of the power wave. The conduction of the conductive device during a half-cycle is effected by a firing signal which is provided by energy circuit means which is set to integrate the energy applied thereto and provide a firing signal in response to a predetermined amount of energy.

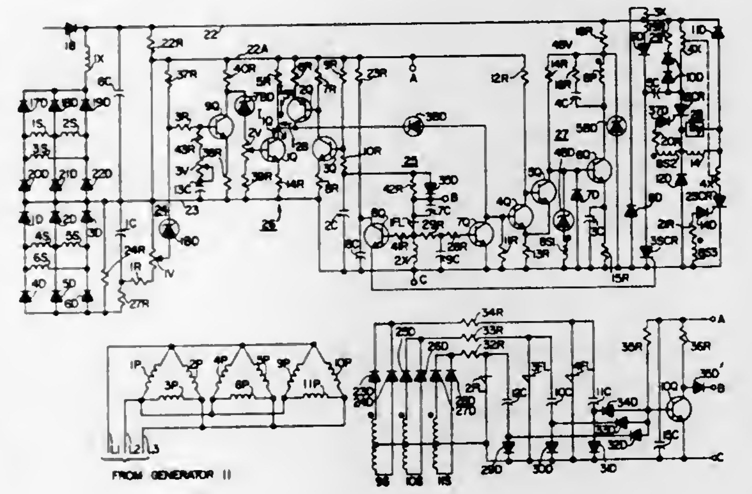


The reference signal is applied to the energy circuit means to provide the energy and the energy circuit means is reset at the beginning of each half-cycle of a signal power wave.

3,527,996
SWITCHING VOLTAGE REGULATOR USING TIME RATIO CONTROL WITH FORCED COMMUTATION

Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Apr. 10, 1967, Ser. No. 629,752
Int. Cl. H02p *9/30*
U.S. Cl. 322—28 **25 Claims**

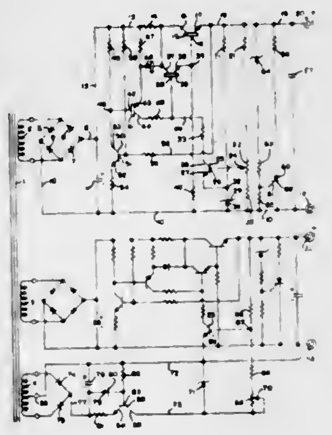


This invention comprises a direct current, static, regulation system primarily intended for use with an electric generator of the rotating type having an exciting field winding. The regulation system includes a DC power supply having a rectifier and filter for deriving direct current excitation voltage from the output of the generator to be regulated, and a blocking diode for operatively coupling a standby battery across the rectifier and filter in case of failure. The regulation system further includes means for deriving an error signal representative of the difference between the actual output of the generator and a reference value, and for combining this error signal with a repetitive, time varying, timing signal to thereby control the output gating pulses produced by a gating pulse generator. The gating pulse generator in turn controls the operation of a direct current chopper, output, power amplifier circuit that controls the excitation of the generator field winding. The direct current chopper, output, power amplifier circuit employs an external impulse commutation circuit, and is arranged in a manner so as to eliminate any possibility of a short circuit due to a commutation failure, and is capable of riding through occasional commutation failures without disastrous results. The DC chopper, output, power amplifier circuit can be operated free-running at a constant frequency or provision may be made for frequency locking on a multiple of the generator output frequency.

3,527,997
REGULATED POWER SUPPLY WITH FOLD-BACK OVERLOAD CURRENT CHARACTERISTIC AND OVERVOLTAGE PROTECTION

Sarkis Nercessian, Long Island City, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York

Filed June 21, 1968, Ser. No. 738,895
Int. Cl. G05f *1/58*
U.S. Cl. 323—9 **8 Claims**

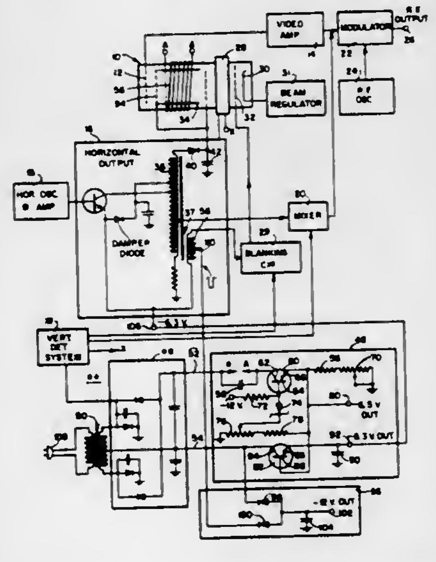


A voltage regulated power supply particularly adapted to provide two fixed output voltages incorporates overvoltage protection and current limiting which is proportional to output voltage so that it has a fold-back overload current characteristic.

3,527,998
VOLTAGE REGULATOR STARTING SYSTEM

De Loss J. Tanner, deceased, late of Bensenville, Ill., by Arthur L. Hellyer, administrator, Wheaton, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Apr. 26, 1967, Ser. No. 635,644
Int. Cl. G05f *1/56, 1/64*
U.S. Cl. 323—22 **6 Claims**

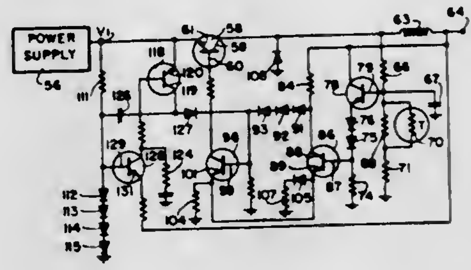


A starting and sustaining system for a regulated supply including a diode which couples an unregulated voltage to a Zener diode for starting the regulator which then produces a regulated output voltage. This regulated output voltage is fed back to remove the unregulated voltage by reverse biasing the diode and provide bias for the Zener thereby improving the regulation of the output voltage.

3,527,999
SWITCHING TYPE VOLTAGE REGULATOR CONTROLLED BY INTEGRATING CIRCUIT

Aaron David Weinberger, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Mar. 1, 1968, Ser. No. 709,653
Int. Cl. G05f *1/56*
U.S. Cl. 323—22 **7 Claims**

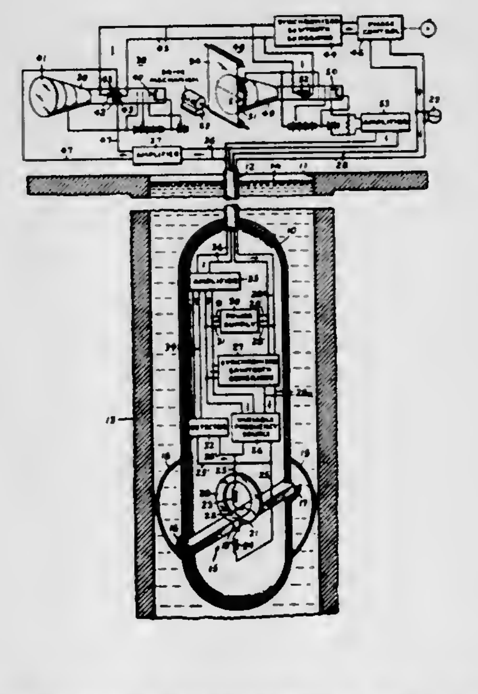


A voltage regulator circuit including a switch which periodically interrupts the current from a power supply in response to control signals applied thereto. A filter circuit alternately stores and delivers energy to provide an output DC potential having a magnitude which is dependent upon the ratio of the on to the off time of the switch. An intergrating circuit samples the switched voltage and operates a Schmitt trigger circuit to control the on and off time of the switch. No extrinsic reference device is used in this circuit. When it is desired to use the regulated output potential also to operate the Schmitt trigger circuit of the voltage regulator, a starting circuit is provided to initiate operation of the switch for a period of time sufficient to develop a voltage at the output of the regulator which, in turn, will disable the starting circuit during the normal period of voltage regulation.

3,528,000
NUCLEAR RESONANCE WELL LOGGING METHOD AND APPARATUS

Harold F. Schwede, Redding, Conn., assignor, by mesne assignments, to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas

Filed Mar. 5, 1954, Ser. No. 414,379
Int. Cl. G01n *22/78*
U.S. Cl. 324—.5 **24 Claims**



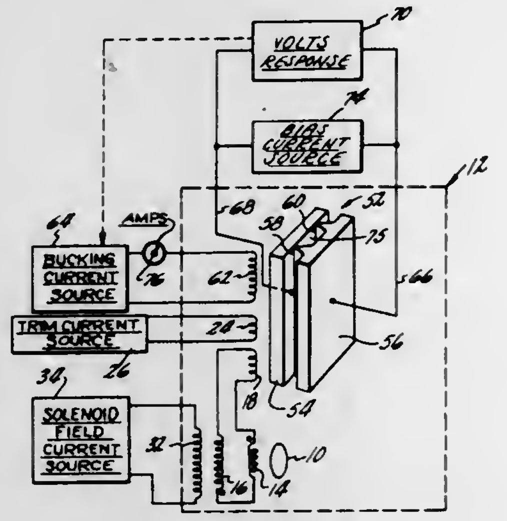
1. In a method for investigating a well drilled into the earth, the steps of subjecting nuclei having magnetic

properties and comprising material at a selected level in a well to a first unidirectional magnetic field, simultaneously subjecting said nuclei to an alternating magnetic field directed at an angle to said first field, sweeping the amplitude of said first field at a first relatively low frequency through a range including at least one value for which Larmor precession of selected nuclei will be sustained, superimposing on said first sweep a second amplitude sweep of relatively small amplitude and relatively high frequency, providing a signal representative of Larmor precession of nuclei, and obtaining indications of said signal.

3,528,001
TEST CELL FOR MEASURING THE MAGNETIC PROPERTIES OF CRYOGENIC MATERIALS

George B. Yntema, Bolton, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Nov. 9, 1967, Ser. No. 681,640
Int. Cl. G01r *33/12*
U.S. Cl. 324—34 4 Claims



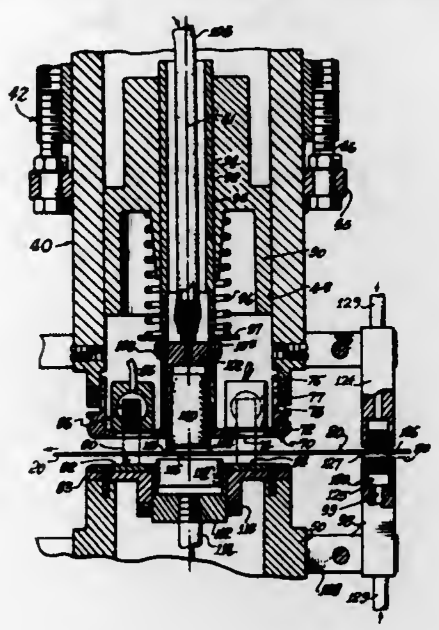
A cryostat for measuring the magnetic moment of a sample includes concentric, serially-opposed super-conducting sensing windings in a field of a solenoid, into which the sample may be placed. The magnetic effect of the sample is measured by either a super-conducting transformer rendered magnetically responsive by the heating of its core, or by a pair of Josephson tunnel junctions in a superconducting coil. Either embodiment of measuring device is connected to the series opposed pair of coils and is therefore responsive to currents induced therein by the magnetic moment of the sample.

3,528,002
CALIPER WITH AIR BEARINGS FOR CONTINUOUSLY MOVING SHEET MATERIAL

Edward O. Dunlavey, Topanga, Calif., assignor to Conrac Corporation, New York, N.Y., a corporation of New York

Filed Jan. 4, 1968, Ser. No. 695,646
Int. Cl. G01b *7/00*
U.S. Cl. 324—34 12 Claims

The thickness of a moving web of sheet material is measured by two elements of an electromagnetic transducer. Air is continuously expelled through a porous plug in the center of each transducer head to produce an air film that maintains uniform spacing between the head and the sheet. The upper transducer element is biased downwardly by a spring relative to a floating mass, and its movement is damped viscously with respect to the same mass. The sheet web is guided to the caliper means

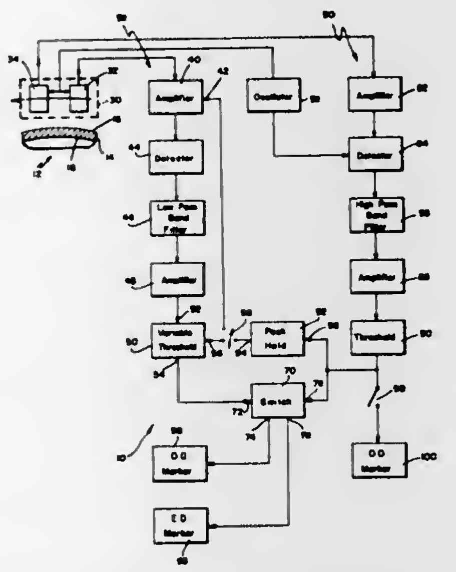


by upper and lower auxiliary air bearings spaced from the caliper axis.

3,528,003
SENSOR FOR INSPECTING A TEST PIECE FOR INSIDE AND OUTSIDE FLAWS UTILIZING MEANS RESPONSIVE TO THE TYPE OF FLAW FOR ADJUSTING THE THRESHOLD OF THE SENSOR

Friedrich M. O. Förster, 144 Der Schoene Weg, 741 Reutlingen, Germany

Filed Nov. 28, 1967, Ser. No. 686,192
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 11 Claims

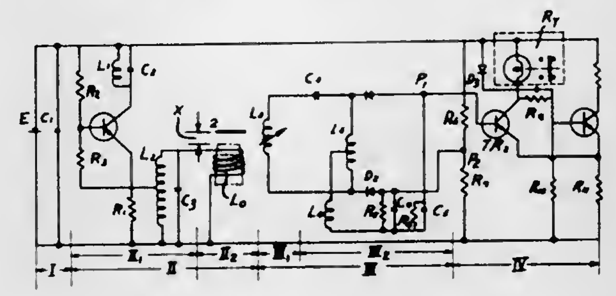


The present invention relates to nondestructive testing and more particularly to means for locating defects in a workpiece, determining whether the defect is unacceptable and if it is indicating the characteristics and location of the defect. In the embodiments of the invention disclosed herein this is accomplished by providing a pick-up probe for scanning the workpiece to locate any stray magnetic fields produced by any inside or outside defects, such as cracks, together with means to indicate the size and location of the defect. Means, such as an eddy current probe, are provided for simultaneously scanning the workpiece to locate surface defects and modifying the response of the system to the stray fields according to whether the defect is on the inside surface or outside surface. Means are also provided for determining whether the defect is acceptable or unacceptable and to mark the workpiece accordingly.

3,528,004
APPARATUS FOR DETECTING THE PROXIMITY OF A METAL BODY

Hayao Katabami, 9 Ohmiya-cho, Kawasaki-shi, Japan

Original application Feb. 7, 1964, Ser. No. 343,410. Divided and this application Sept. 25, 1967, Ser. No. 680,602
Int. Cl. G01r *33/12*
U.S. Cl. 324—41 2 Claims

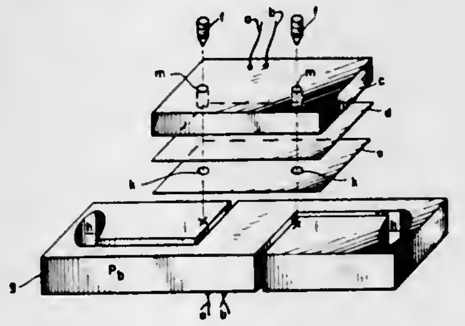


In detecting proximity of the metallic body, when a non-magnetic metallic body is brought close to one end surface of a cylindrical inductance coil energized by an alternating current, the inductance of the coil will be decreased by the eddy current induced in the metallic body which results in the reduction in the magnetic flux passing through the inductance coil. On the other hand when a magnetic body is brought near the end surface of the inductance coil, the inductance thereof will be increased owing to the increase in the magnetic flux passing through the coil. Such an increase or decrease in inductance can be detected by for example, a high frequency oscillation circuit comprising said inductance coil as one of its elements and a detector for detecting the change in frequency of said high frequency oscillation circuit.

3,528,005
ULTRA-SENSITIVE MAGNETIC GRADIOMETER USING WEAKLY COUPLED SUPERCONDUCTORS CONNECTED IN THE MANNER OF A FIGURE EIGHT

Arthur L. Morse and Darrell L. Judge, Los Angeles, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Nov. 16, 1967, Ser. No. 683,586
Int. Cl. G01r *33/02*
U.S. Cl. 324—43 6 Claims

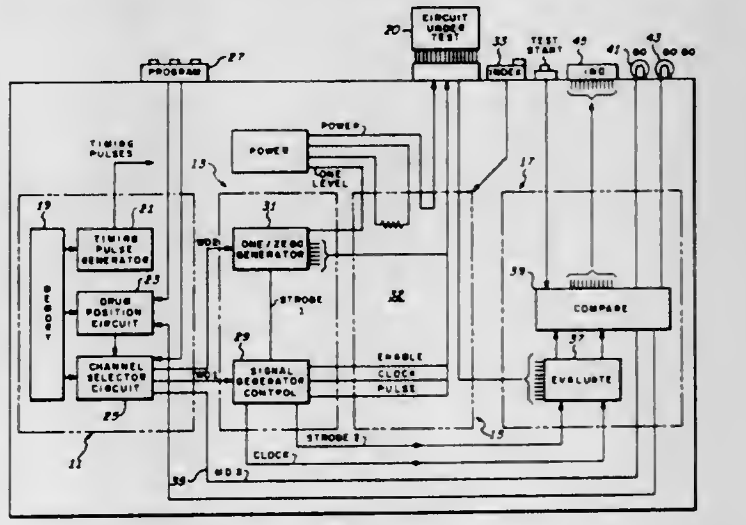


There is disclosed herein an improved superconducting magnetometer of extreme sensitivity which uses the macroscopic quantum aspects of a superconductor to directly measure the magnetic field, the magnetic gradient, and/or higher order spatial derivatives in magnetic fields. It is known generally that the current flowing between two weakly coupled superconductors at what is commonly called a "Josephson Junction" depends on the discontinuity of the superwave function at the point of the weak link in contrast to non-superconducting material where the current depends on the difference in the voltage across a weak link. The phase of a superwave function is extremely sensitive to an external magnetic field. Circuitry is disclosed herein which is such that the effect of the magnetic field on the phase of the superwave function and the resulting change in current flow across a Josephson Junction can be used as a basis for the operation of a magnetometer in order to measure extremely small changes in magnetic fields.

3,528,006
APPARATUS FOR AUTOMATICALLY TESTING THE PULSE PROPAGATION CHARACTERISTICS OF DIGITAL ELECTRONIC CIRCUITS

David C. Davis, Jr., and John M. Ritter II, Clearwater, Fla., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,686
Int. Cl. G01r *31/28*
U.S. Cl. 324—73 7 Claims

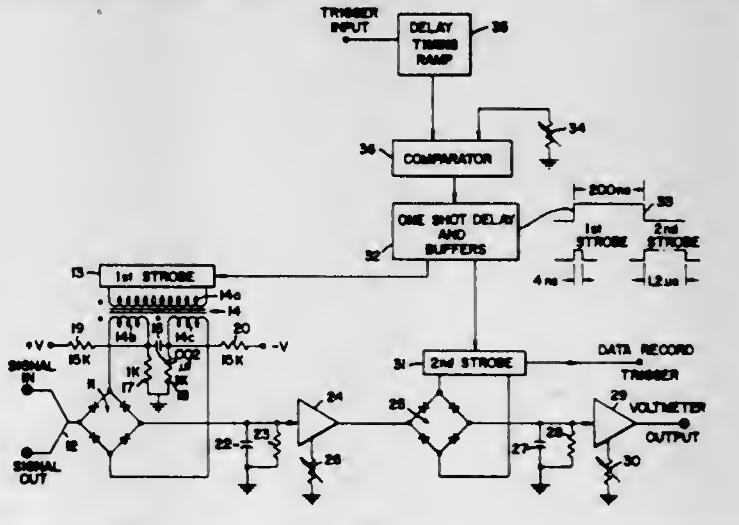


A testing apparatus for electronic circuits contains registers for storing information to be strobed into the circuit under test and a correct result register for storing the results to be expected from an acceptable circuit. A first strobe pulse is used to strobe test signals into the circuit. This strobe pulse is also delayed for a time equal to the normal propagation time of the test signals through the circuit under test. Information read out of the circuit under test at the time of the delayed strobe pulse is compared with information in the correct result register.

3,528,007
SINGLE-SHOT STROBING VOLTMETER

Willis D. Stinson, Jr., Oakland, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California

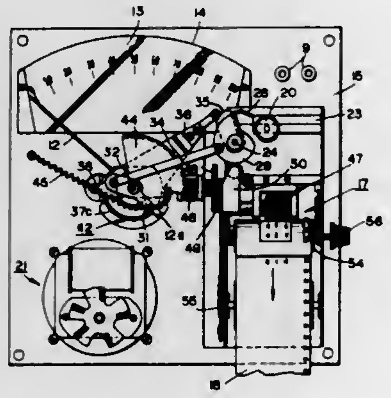
Filed Feb. 27, 1968, Ser. No. 708,578
Int. Cl. G01r *1/00*
U.S. Cl. 324—111 6 Claims



A strobing voltmeter which has a single-shot measurement capability. A sampled signal is coupled into a first memory having a shunt capacitor of low value; a relatively broad strobe pulse allows the capacitor to charge to the full value of the signal voltage during a single sample interval. Thereafter, a second diode bridge couples the first memory to a second capacitor memory to transfer the amplitude information. The second memory has a long discharge time to enable output utilization means to sense the sampled amplitude.

3,528,008
CONVERSION OF ANALOG MEASUREMENTS TO DIGITAL FORM

Warren E. Benson, Jr., Needham, Mass., assignor, by mesne assignments, to Kingsbury Technology Inc., Norwood, Mass., a corporation of Delaware
Filed June 24, 1965, Ser. No. 466,760
Int. Cl. G01r *13/04*
U.S. Cl. 324—113 **5 Claims**



Method and apparatus in which analog measurements provided by a movable member, such as the pointer of a galvanometer, are converted into direct digital outputs by a mechanism which, when activated, (1) follows or seeks the measurement position of the movable member, which has been temporarily clamped in such position, and (2) operates a digital indicator, such as numerically engraved print wheels of a counter unit, in a manner determined by such position, to thereby digitally measure such position.

To provide a digital output for a particular analog measurement, the pointer is clamped and the follower is placed in motion, thus commencing to set the numerically engraved wheels of the counter unit. When the follower reaches the position of the pointer, it is stopped and the reading of the counter unit is the desired digital indication. The follower is subsequently returned to its rest position and the pointer is unclamped.

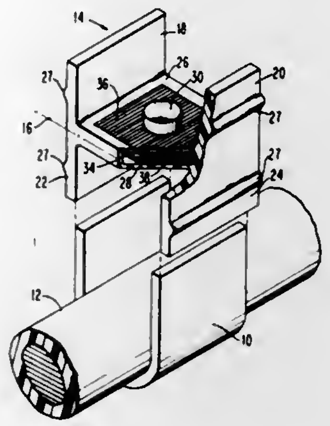
In one embodiment of the invention, the pointer is mounted for angular movement and has a clampable extension. The follower is mounted for angular movement about the pointer axis and is geared to the digital indicator. Initially the follower is held by a stop member which is also mounted on the pointer axis.

When a digital indication is desired, a motor causes the stop member to be oscillated and the pointer to be clamped. During the first half cycle of its oscillation, the stop member allows the follower to move to the position of the pointer where it is stopped by the clamped extension. During the second half cycle, the follower is returned to its rest position and the pointer is unclamped.

3,528,009
LINE FAULT INDICATOR USING MOIRE PATTERNS

Edgar Astrove, Scarsdale, N.Y., assignor to Ferdinand Frankel, doing business as Frankel Connector Company, New York, N.Y.
Filed July 5, 1968, Ser. No. 742,718
Int. Cl. G01r *19/16, 31/02;* **G08b** *5/20*
U.S. Cl. 324—133 **9 Claims**

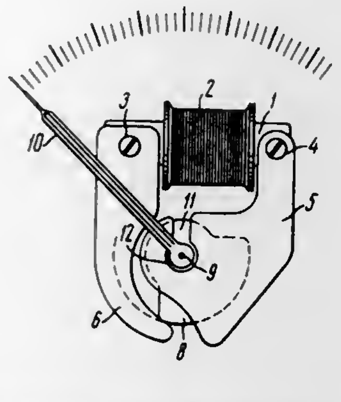
A line fault indicator is constructed with an indicating system which includes a magnetic armature with geometric line patterns on its two major surfaces. The armature is constrained between two transparent windows, each of which has a line pattern and a permanent magnet integral therewith. A U-shaped soft iron core is provided to couple the electric field from the conducting being sensed to the indicating system. In one configuration, the indicating system is initially set so that the magnetic armature is attracted and held against one of the transparent windows by the permanent magnet associated with the respective window, thereby creating a moire pattern which is visible through the transparent window. When an overcurrent line fault occurs, an increased field strength appears in the iron core and is coupled through the magnetic armature. The resulting magnetic attraction is sufficiently strong to overcome the holding magnet's attraction upon the armature, and draws it into engagement with the other transparent window where it is captured and held by the magnet associated with that window. This destroys the visible moire pattern through the first window and is indicative of the occurrence of an electrical fault.



3,528,010
MEASURING INSTRUMENT HAVING A MOVABLE IRON MEMBER

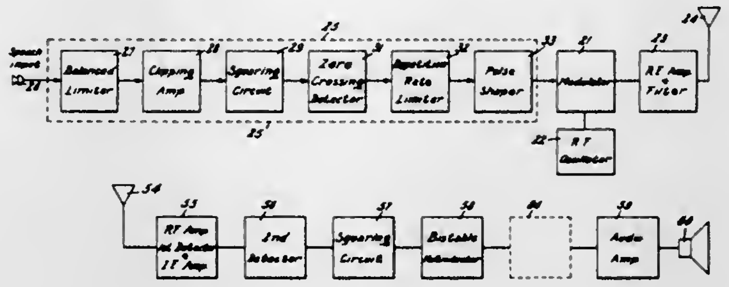
Viktor Ivanovich Efimenko, Ulitsa Vystavochnaya 3, kv. 17, Krasnodar, U.S.S.R.; Konstantin Konstantinovich Iljunin, Novye Cheremushki, Kvertal 34a, korpus 5, kv. 58, Moscow, U.S.S.R.; and Alexandr Fedorovich Gorodovsky, Ulitsa Mekhanicheskaya 3, kv. 1, Krasnodar, U.S.S.R.
Filed Nov. 7, 1966, Ser. No. 592,371
Int. Cl. G01r *1/00, 1/20*
U.S. Cl. 324—146 **11 Claims**

A measuring instrument comprises a fixed member of non-permanent magnetic material having split pole-pieces which define a slot, a coil being arranged on said fixed member and a movable iron member being in said slot and mounted on a spindle, the movable member being constituted as a plate asymmetrical to said spindle whereas the pole-pieces are also different in shape and asymmetrical with respect to each other and to said spindle.



3,528,011
LIMITED ENERGY SPEECH TRANSMISSION AND RECEIVING SYSTEM

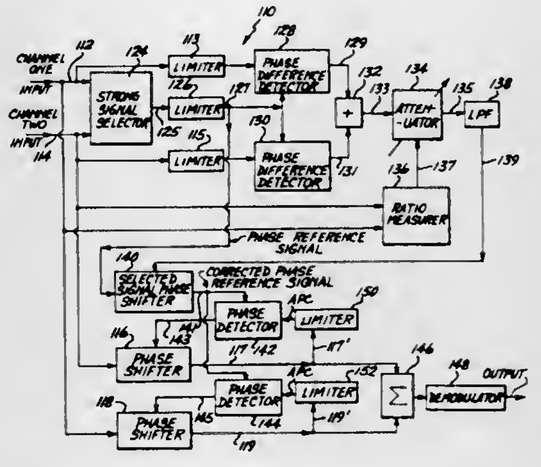
Roy E. Anderson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 563,219, July 6, 1966. This application Dec. 22, 1967, Ser. No. 700,310
Int. Cl. H04b *1/04*
U.S. Cl. 325—38 **21 Claims**



A new limited energy speech transmission and receiving system wherein a speech signal is first digitized and then transmitted by pulse techniques to achieve a substantial reduction in the transmitting energy. Digitizing of the input speech signal is achieved by developing time sequential pulses representative of the zero-crossing positions of the input speech signal. The zero crossing positions are determined by the points where the input speech signal passes through the long time average value thereof, which is defined as the zero value, and hence the points where the speech signal passes through this value are defined as zero-crossing points. These zero-crossing signal pulses are then modulated on a suitable radio frequency carrier for transmission to the receiving apparatus. By this arrangement, transmission occurs only when there is a bit of information to be conveyed. This technique then allows intelligible speech to be transmitted with considerable less energy (about one-tenth) the energy required by conventional energy saving techniques such as single side band suppressed carrier (SSB).

3,528,012
PHASE CONTROL CIRCUITRY FOR PLACING DIVERSELY RECEIVED SIGNALS IN PHASE COINCIDENCE

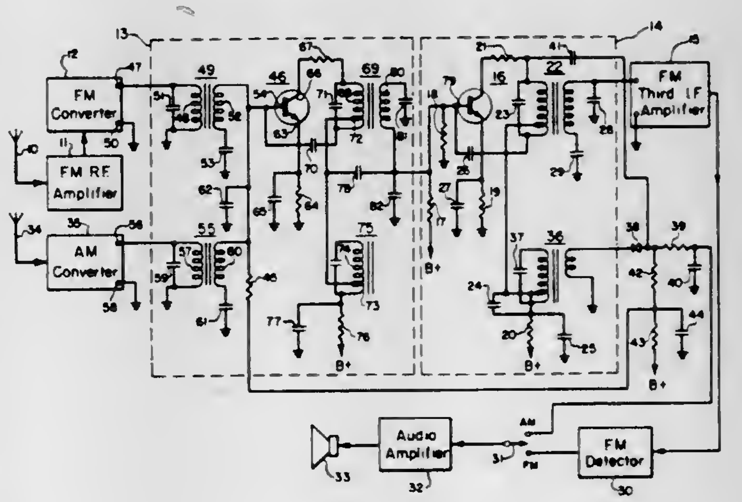
Leonard R. Kahn, Freeport, N.Y., assignor to Kahn Research Laboratories, Inc., Freeport, N.Y., a corporation of New York
Filed Feb. 13, 1967, Ser. No. 615,473
Int. Cl. H04b *7/08*
U.S. Cl. 325—304 **16 Claims**



System for placing diversely received electromagnetic signals in phase coincidence by dynamically selecting or establishing a phase reference signal, and providing phase coincidence among the incoming signals in response to the phase of the reference signal. In one embodiment the phase of the reference signal is determined by the phase of the strongest incoming signal. In an alternative embodiment circuitry is provided for establishing the phase of the reference signal in accordance with the phase difference between incoming signals, either by averaging or as a function of the square of the ratio of the signal strengths.

3,528,013
DUAL FREQUENCY INTERMEDIATE-FREQUENCY COUPLING CIRCUIT

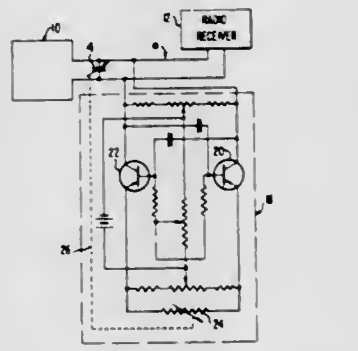
Oleh Karpowycz, Addison, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 25, 1967, Ser. No. 670,184
Int. Cl. H04b *1/16*
U.S. Cl. 325—317 **3 Claims**



A multi-band AM/FM wave-signal receiver includes an economical intermediate-frequency coupling circuit which requires fewer components than previous designs. In particular, two tuned interstage transformers, each operable at a different frequency, serve in conjunction with three capacitors to couple signals in two widely divergent frequency bands from one intermediate-frequency amplifier stage to another. By arranging for one of the capacitors to concurrently serve as a tuning, by-pass and coupling capacitor a savings of at least one passive component is realized.

3,528,014
SUBMARINE COMMUNICATIONS ANTENNA SYSTEM

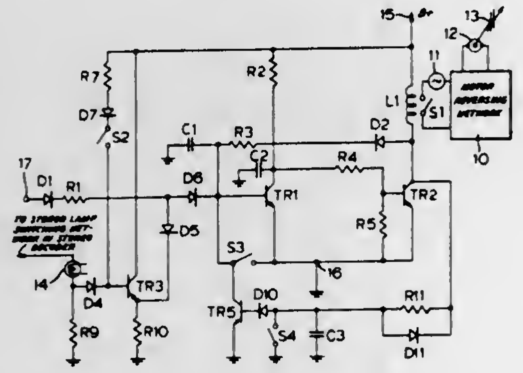
Thomas K. Albee, Lisle, Ill., assignor to The Bunker-Ramo Corporation, a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,790
Int. Cl. H04b *1/16*
U.S. Cl. 325—427 **18 Claims**



Method and apparatus for the cancellation of longitudinal non-Gaussian noise in a submarine antenna system and for increasing the Q of an antenna by compensating for the radiation resistance term of the inherent circuit losses by the coupling of a negative impedance means to the antenna circuit. The antenna system may provide a substantially constant bandwidth over a wide range of selected operating frequencies within the low frequency bands by the simultaneous tuning of the loop antenna system and the adjusting of the negative impedance means.

3,528,015
AUTOMATIC MOTOR TURN-ON NETWORKS FOR SIGNAL SEEKING RECEIVERS

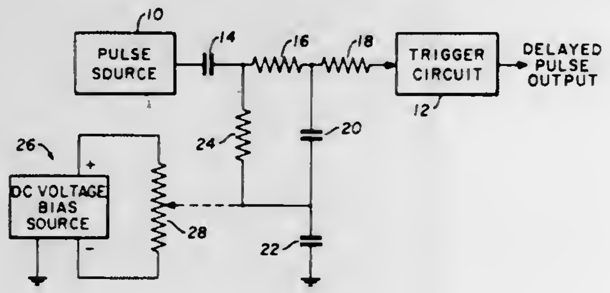
Jacob Buhr, Kitchener, Ontario, Canada, assignor to Electrohome Limited, Kitchener, Ontario, Canada
Filed May 8, 1967, Ser. No. 636,716
Int. Cl. H04b *1/32*
U.S. Cl. 325—471 **10 Claims**



A signal seeking receiver having an automatic shut-off network for automatically turning off the motor of the receiver responsive to the tuning in of a signal is provided with a network that automatically turns on the motor after the receiver has been tuned to a station for a predetermined period of time.

3,528,016
CAPACITOR BIASING FOR VARIABLE REMOTE CONTROL OF PULSE DELAYS

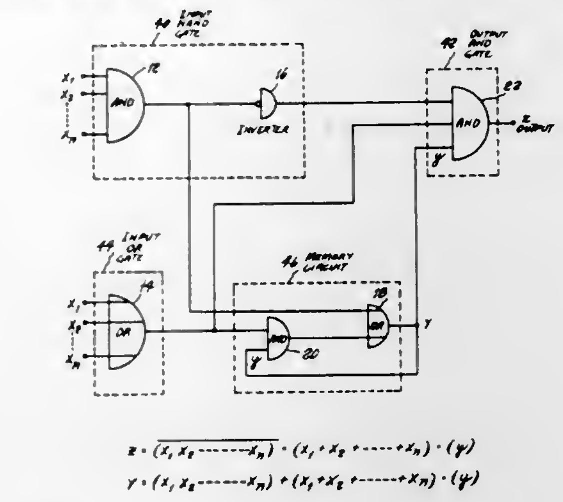
Roland F. Koontz, Menlo Park, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 13, 1967, Ser. No. 690,245
Int. Cl. H03k *17/28*
U.S. Cl. 328—56 **5 Claims**



Variable remote control pulse delay circuit in which a capacitor is connected across a pulse source for integrating each pulse and delaying the rise of each pulse to a predetermined voltage level. The capacitor initially discharged is biased with a variable DC voltage prior to application of each pulse voltage so that the time required for the additive voltages to attain a predetermined voltage level is variably controlled.

3,528,017
PLURAL-INPUT, DROPOUT-INSENSITIVE SKEW-MEASURING CIRCUIT FOR MAGNETIC RECORDING TAPE

Ronald Zussman, Brooklyn, N.Y., assignor to the United States of America as represented by the Secretary of the Navy
Filed Apr. 9, 1968, Ser. No. 719,874
Int. Cl. H03k *19/00, 19/36*
U.S. Cl. 328—92 **8 Claims**

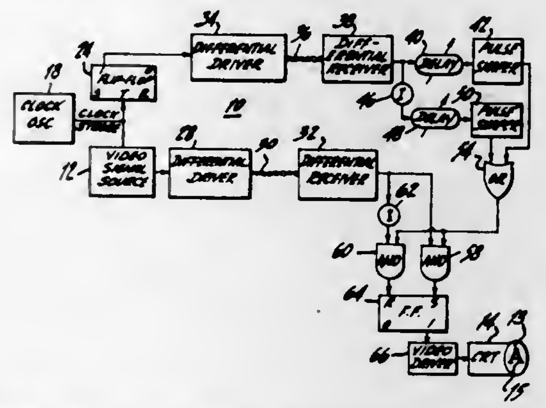


A minimal logic circuit for testing skew of magnetic tape and implementing the following input-output logical design equations:

$$Z=\overline{(X_1X_2\ .\ .\ .\ X_n)}\cdot(X_1+X_2+\ .\ .\ .\ +X_n)\cdot(y)$$
$$Y=(X_1X_2\ .\ .\ .\ X_n)+(X_1+X_2+\ .\ .\ .\ +X_n)\cdot(y)$$

3,528,018
BILEVEL VIDEO SIGNAL RECONSTRUCTION CIRCUIT

Carl R. Corson, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,617
Claims priority, application Great Britain, July 3, 1967, 30,547/67
Int. Cl. H03k *5/01*
U.S. Cl. 328—164 **5 Claims**



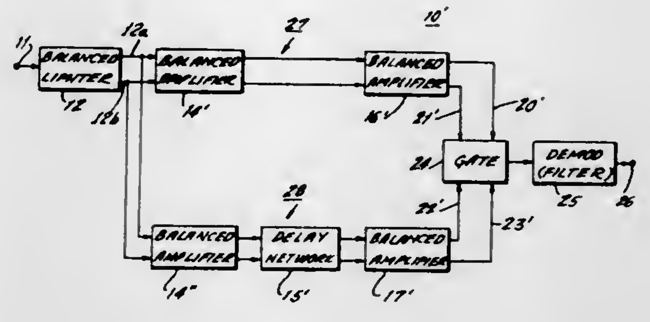
A bilevel reconstruction circuit eliminates pulse width distortion in bilevel video signals so as to provide an accurate replica of the original video signal prior to the introduction of such distortion.

3,528,019
F-M DEMODULATION SYSTEM EMPLOYING A BALANCED LIMITER AND A BALANCED AMPLIFYING CIRCUIT

Akira Inoue, Minato-ku, Tokyo-to, Japan, assignor to Nippon Electric Limited, Tokyo, Japan
Filed Oct. 31, 1967, Ser. No. 679,312
Claims priority, application Japan, Nov. 4, 1966, 41/72,980
Int. Cl. H03k *9/08;* **H03d** *3/06;* **H04b** *1/16*
U.S. Cl. 329—106 **5 Claims**

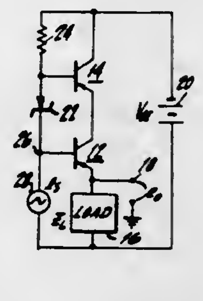
The present disclosure broadly teaches an F-M demodulating scheme and apparatus in which the F-M signal is converted to a pulse-width-modulated signal and is

demodulated to reproduce a replica of the transmitted signal. The pulse width modulation produces an output signal which has extremely good frequency response over a wide frequency band and excellent signal-to-noise (S/N) characteristics resulting from the employment of a balanced system in which balanced signals (i.e. equal but opposite in phase) are amplified phase delayed relative to one another and applied to a gate circuit to generate pulse width modulated signals which may be demodulated through low-pass filter means to produce a final output signal having the above mentioned advantageous characteristics.



3,528,020
VOLTAGE REGULATED SIGNAL TRANSLATING CIRCUIT

Frederic D. Rando, Cherry Hill, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,673
Int. Cl. H03f *3/42;* **H03g** *3/30*
U.S. Cl. 330—25 **8 Claims**

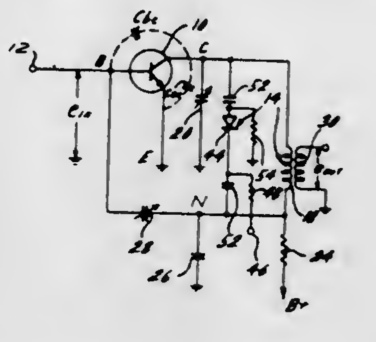


A circuit comprising two active devices connected in series and operated in the unity voltage gain configuration. One of the two devices is in the signal conduction path and drives the load. The other device is used to absorb the change in voltage due to either the signal input or to the power supply variation. The voltage across the signal translating device is regulated over the full range of operation, thereby minimizing variations in its parameters and ensuring a high fidelity of signal transmission.

3,528,021
TUNED AMPLIFIER NEUTRALIZING CIRCUIT

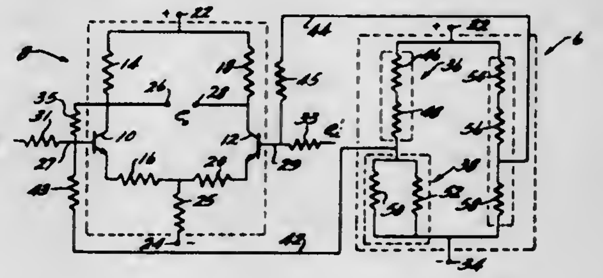
Mitsunari Okasaki, Tokyo, Japan, assignor to Alps Electric Company, Limited, Tokyo, Japan, a Japanese corporation
Filed July 3, 1968, Ser. No. 742,370
Claims priority, application Japan, Feb. 20, 1968, 43/10,275
Int. Cl. H03f *1/14*
U.S. Cl. 330—27 **4 Claims**

A tuned amplifier of the type comprising a semiconductor amplifying element, a tuned resonant circuit having a variable capacitance and inductance, and a neutralizing element, a bridge circuit being defined between the input and output of the amplifier, in which the variable capacitance is so connected in the circuit that it is outside that bridge circuit.



3,528,022
TEMPERATURE COMPENSATING NETWORKS

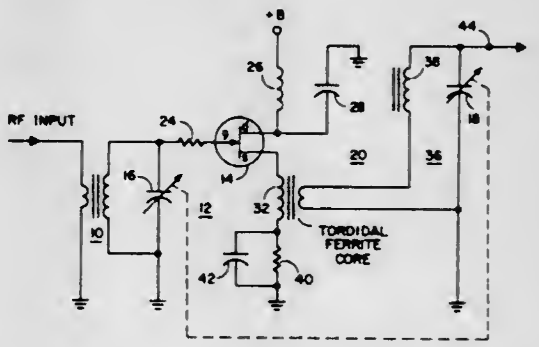
Max M. Adams, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1965, Ser. No. 495,957
Int. Cl. H03f *1/32, 3/68*
U.S. Cl. 330—30 **5 Claims**



A bridge network is formed by a combination of resistors which respectively vary in a nonlinear function over a given temperature range and have a constant resistance value over the temperature range. The output of this resistance network gives a variable voltage output which is applied to the bases of a pair of transistors in a differential amplifier and provides temperature compensation to prevent "null drift" over a given temperature range.

3,528,023
AMPLIFIER

Robert K. Jeffers, Penfield, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Aug. 29, 1968, Ser. No. 756,261
Int. Cl. H03f *3/16*
U.S. Cl. 330—35 **7 Claims**

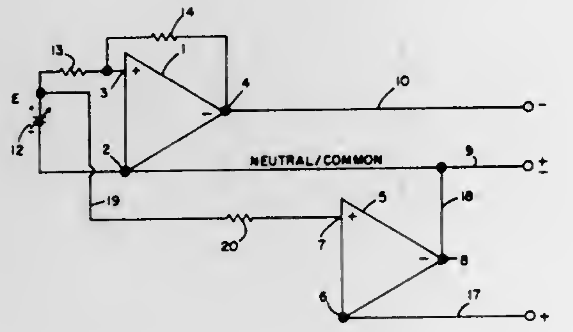


An RF amplifier is described using a field effect transistor. The output circuit is connected to the source electrode of the field effect transistor while input signals are applied to the gate thereof, so as to constitute a field effect source follower. A toroidal ferrite step-down transformer is connected to the source electrode so as to reflect a low impedance presented by a series tuned circuit connected to its step-down side into the source circuit whereby to provide a large amount of degeneration, except at the frequency to which the amplifier is tuned, thereby reducing cross modulation distortion.

3,528,024
COMPLEMENTARY TRACKING OUTPUTS FROM SINGLE-ENDED AMPLIFIERS HAVING A COMMON LEAD WITH A SINGLE-ENDED INPUT

Alfred W. Barber, Bayside, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York

Filed June 10, 1968, Ser. No. 750,384
Int. Cl. H03f *3/68*
U.S. Cl. 330—117 **6 Claims**

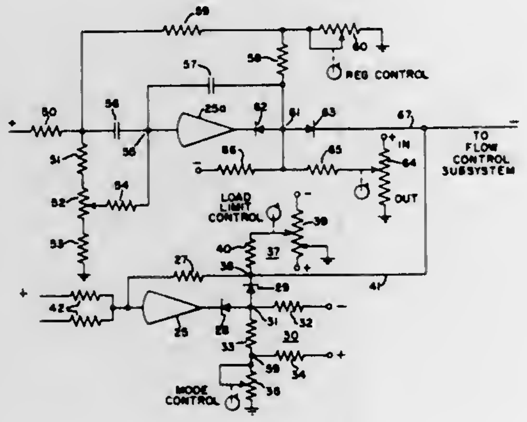


Two single-ended operational amplifiers or operational power supplies can be connected to provide complementary tracking outputs about a neutral or common lead. The unique circuits provided in accordance with the present invention permit programming the two amplifiers or power supplies from a single-ended source of voltage or current having one end connected to the neutral or common lead of the output. Several forms of the present invention are provided.

3,528,025
CONTROL AMPLIFIER WITH PROVISION FOR ALTERNATE CONTROLS

James B. Wagner, Lynnfield, Mass., assignor to General Electric Company, a corporation of New York

Filed May 14, 1968, Ser. No. 728,960
Int. Cl. H03f *3/00;* **G06g** *7/12*
U.S. Cl. 330—192 **5 Claims**

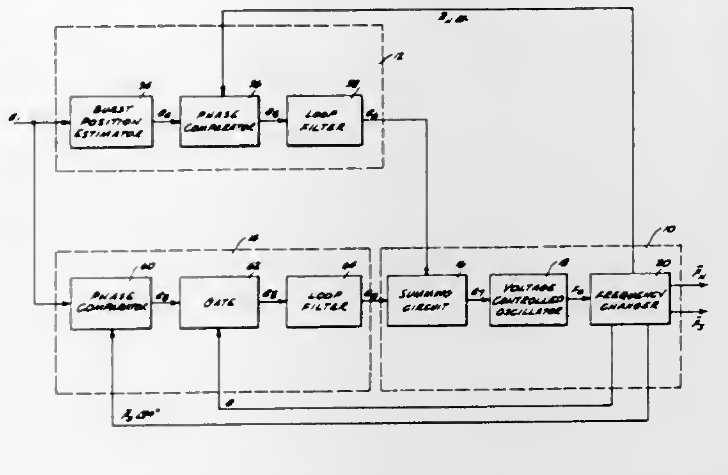


An electrohydraulic control system for a turbine employs operational amplifiers to perform various functions including positioning the steam valves, with provisions for manual valve control during removal for maintenance of one or more amplifiers and providing additional overspeed protection during maintenance.

3,528,026
COARSE-FINE PHASE LOCKED LOOP

Alan R. Groendycke, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 1, 1968, Ser. No. 726,646
Int. Cl. H03b *3/04*
U.S. Cl. 331—11 **12 Claims**

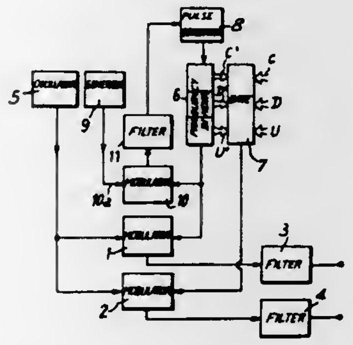


A coarse-fine phase locked loop circuit for providing output signals such as television sync signals which are phase locked with a frequency burst input signal, comprising a coarse phase locked loop and a fine phase locked loop that are coupled to receive a frequency burst signal having a repetition rate which is harmonically related to the signal frequency. The coarse phase locked loop compares the phase difference of the repetition rate of the frequency burst signal with one feedback signal derived from the output of a voltage controlled oscillator and the fine phase locked loop compares the phase difference of the frequency signal of the frequency burst signal with another feedback signal derived from the output of the voltage controlled oscillator for generating error signals in response to the phase difference to control the phase of the voltage controlled oscillator.

3,528,027
ELECTRIC SIGNAL GENERATOR WITH ACCURATELY CONTROLLABLE PHASE-SETTINGS

Roger Charles Charbonnier, Meudon-Bellevue, France, assignor to Adret Electronique S.A., Trappes, France

Filed Feb. 19, 1968, Ser. No. 707,390
Int. Cl. H03b *27/00*
U.S. Cl. 331—30 **8 Claims**

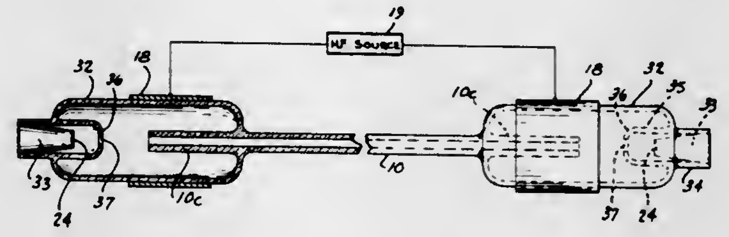


For the generation of sine wave voltages with accurately controllable and programmable phase-settings, a generator is provided which comprises a decade pulse counter operating as a frequency divider and a coincidence logic device being adapted for generating a pulse each time the count of said pulse counter coincides with a predetermined assigned digital value set on said coincidence logic device.

3,528,028
GASEOUS LASER OF IMPROVED CONSTRUCTION

Kenneth M. Baird, Ottawa, Ontario, Canada, assignor to National Research Council, Ottawa, Ontario, Canada, a body corporate of Canada

Filed Aug. 10, 1964, Ser. No. 388,634
Claims priority, application Canada, Dec. 4, 1963, 890,474
Int. Cl. H01s *3/02, 3/05;* **H01j** *11/02*
U.S. Cl. 331—94.5 **1 Claim**



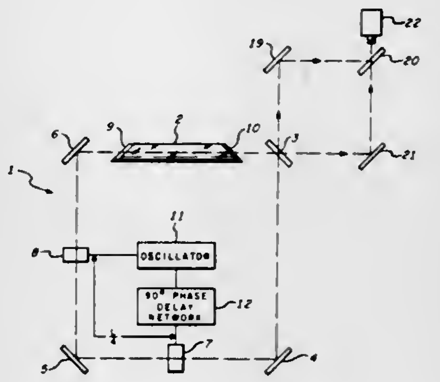
A main laser tube is provided, in the regions where electrodes are to be arranged, with vacuum tight bulbs of larger diameter than the main tube, and the electrodes are placed around the exterior of such bulbs. Connections between the interior of the main tube and the interior of each of the bulbs are established by holes or interruptions in the wall of the main tube.

Each of the two end portions of the laser tube are closed by a plug which consists of a single piece and has a reflecting coating on its inner surface. To ensure alignment of the reflecting surfaces of the plugs and the longitudinal axis of the laser tube, each end portion of the laser and its associated plug interengage with complementary conical surfaces. Minor adjustments are made by slightly flexing the entire device when mounting on an external support.

3,528,029
RING LASER HAVING SYNCHRONIZED PHASE MODULATORS FOR INHIBITING MODE PULLING

Leonhard W. Holmboe, Locust Valley, and Irving Itzkan, Great Neck, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,775
Int. Cl. H01s *3/10*
U.S. Cl. 331—94.5 **3 Claims**

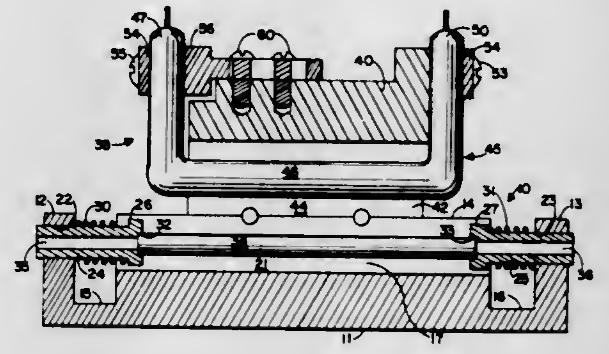


A ring laser including a pair of light modulators spaced along the path of the contradirectional waves propagating therein a prescribed distance from one another and driven by an electrical signal having a frequency equal to the spectral free range of the laser cavity, the signal applied to one modulator being in phase quadrature with that applied to the other modulator whereby the phase shifts introduced to the contradirectional waves by the respective modulators are cumulative in one beam but cancel one another in the oppositely directed beam.

3,528,030
LASER CAVITY COMPRISING SEVERABLE ELEMENTS RESPECTIVELY CARRYING THE LASER ROD AND PUMPING SOURCE

Gary W. Bickel, Boston, John J. Ferrara, Acton, and Marvin L. Lipshutz, Brookline, Mass., assignors to Honeywell Inc., a corporation of Delaware

Filed Aug. 16, 1967, Ser. No. 661,058
Int. Cl. H01s *3/05*
U.S. Cl. 331—94.5 **1 Claim**

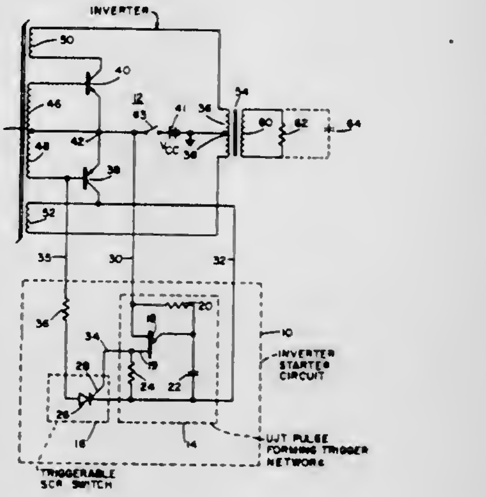


An improved laser assembly in which both the lasing member and the pumping lamp are readily replaceable, and in which the lamp can be replaced without disturbing the alignment of the lasing member with respect to its external mirrors, including provision for wide manufacturing tolerances in pumping lamps.

3,528,031
STARTING CIRCUIT FOR TRANSISTOR INVERTERS, BLOCKING OSCILLATORS, AND THE LIKE

Lawrence Merrill Palmer, Arcadia, Calif., and Robert A. Phillips, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Feb. 1, 1968, Ser. No. 702,230
Int. Cl. H02m *7/52*
U.S. Cl. 331—113 **2 Claims**



Disclosed is a starting circuit for a transistor inverter, blocking oscillator or the like and includes a starting oscillator or pulse-type trigger circuit having a period of oscillation substantially greater than the period of oscillation of the inverter. A triggerable switch is connected between the starting oscillator and the inverter and is triggered into conduction by the starting oscillator when the latter conducts, thereby producing a starting current in the inverter. Circuit means are connected between the starting circuit and the inverter and prevent the starting oscillator from charging up to a firing voltage within a half period of oscillation of the inverter.

3,528,032

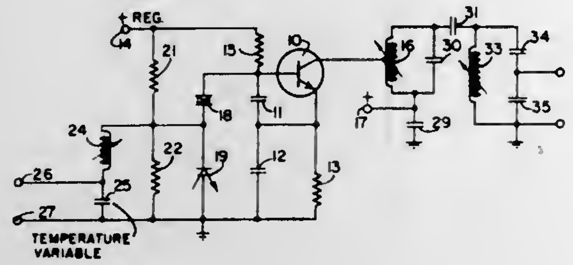
FREQUENCY MODULATED CRYSTAL OSCILLATOR INCLUDING VOLTAGE VARIABLE CAPACITOR

Theodore N. Tahmisian, Jr., Oak Lawn, Daniel J. Mahoney, Elgin, and Charles N. Lynk, Elmwood Park, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Oct. 30, 1967, Ser. No. 679,040

Int. Cl. H03c *3/22*

U.S. Cl. 331—116 **8 Claims**



Frequency modulated crystal oscillator formed by Colpitts type circuit with transistor as active element and crystal operated in anti-resonant mode in series with voltage variable capacitor. The crystal and capacitor are connected across the capacitors of the Colpitts circuit. An inductor and a capacitor are connected in series with each other across the voltage variable capacitor to form therewith a network having a capacitive reactance which cooperates with the inductance of the crystal. The inductor acts to provide linear modulation characteristics, increases the modulation sensitivity, and is adjustable to warp the crystal frequency, and the capacitor in series therewith receives the modulating voltage which controls the voltage variable capacitor.

3,528,033

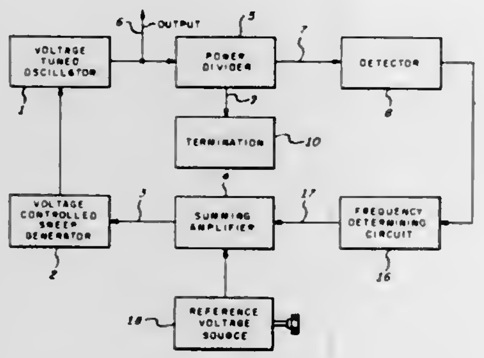
SWEEP RATE CONTROLLED FREQUENCY SWEPT OSCILLATOR

Harold W. Hunt, Charles E. Littlejohn, and Harry F. Strenglein, Clearwater, Fla., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Aug. 7, 1968, Ser. No. 750,926

Int. Cl. H03b *23/00*

U.S. Cl. 331—178 **4 Claims**



A feedback system for maintaining the sweep rate of a voltage controlled frequency swept oscillator at a selected value. The output of the swept oscillator is transmitted through two paths having different but fixed time delay characteristics and then heterodyned in a mixer to produce a beat frequency signal. The beat frequency varies directly with any changes in the slope of the oscillator frequency sweep. The beat frequency signal is applied to a frequency discriminator to produce a control voltage for controlling the sweep rate of the frequency swept oscillator.

3,528,034

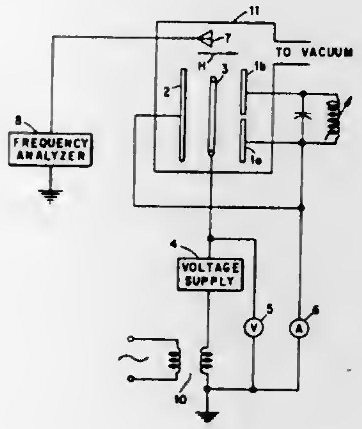
ESTABLISHMENT OF HARMONIC FREQUENCIES IN A PENNING-TYPE DISCHARGE

Elwood D. Shipley, Knoxville, and Oliver C. Yonts, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed July 26, 1968, Ser. No. 747,953

Int. Cl. H03c *1/28;* **H01j** *25/02*

U.S. Cl. 332—5 **4 Claims**



One cathode of a Penning-type discharge device is divided in half with a resonant circuit joining the two parts. The plasma discharge therein, which otherwise contains a continuum of frequencies, is thereby modified so as to contain only harmonic frequencies, thereby substantially stabilizing the plasma. Such a device may also be used, if desired, as a simple frequency-modulated broadcasting unit by the application of an audio-range frequency to the voltage on the anode of the device.

3,528,035

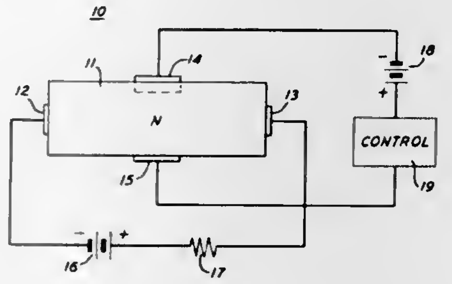
TWO-VALLEY SEMICONDUCTIVE DEVICES

Michiyuki Uenohara, Scotch Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed July 11, 1966, Ser. No. 564,356

Int. Cl. H03c *3/22;* **H03b** *5/24*

U.S. Cl. 332—16 **3 Claims**



Modifications are disclosed, in two-valley semiconductor oscillators made of materials such as n-type gallium arsenide, that alter the characteristic oscillatory frequency of each device by changing the electric field within the device. This is accomplished, for example, by altering the effective width of the current channel in the device. Alternatively, certain modifications are also used to initiate oscillations in the presence of a steady state bias that otherwise would be insufficient for such initiation.

3,528,036

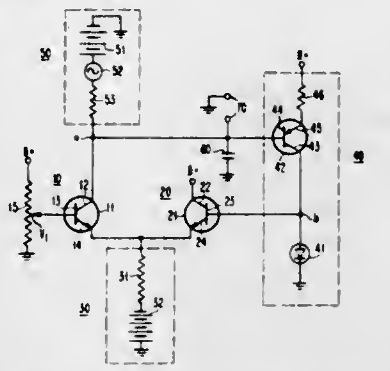
FM MODULATOR FOR VIDEO RECORDING

James G. Belleson, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 12, 1968, Ser. No. 744,402

Int. Cl. H03c *3/18;* **H03b** *7/08*

U.S. Cl. 332—16 **5 Claims**



A modulator with a nonsaturating current switch having two branches, each branch having a transistor, and these transistors having common emitters connected to a constant current source. In such a conventional current switch, the transistors must be alternately conductive. The base of the first transistor is connected to a fixed potential, and the base of a second transistor is connected to a tunnel diode. When the base of the second transistor is above a fixed potential, only the second transistor will conduct; but when the base of the second transistor is below the fixed potential, the first transistor will conduct. A signal source is connected across a charging capacitor as well as across the first transistor and the constant current source. The voltage on the capacitor is sensed through a third transistor connected to a tunnel diode. Thus, during nonconduction of the first transistor, the charging capacitor will be charged by the signal source. When the voltage on the charging capacitor reaches a predetermined amplitude, the tunnel diode switches. At this point, the second transistor becomes nonconductive and the first transistor conducts to thereby provide a discharge path for the capacitor through the first transistor and the common current source. When the charging across the capacitor is lowered sufficiently, the current through the tunnel diode increases the potential on the base of the second transistor above the fixed potential and the cycle then repeats.

As the modulating signal is varied, the charging time of the capacitor is varied and thereby the frequency of the output signal across the capacitor is varied.

3,528,037

CIRCUIT AND METHOD FOR CORRECTION OF TRANSMISSION DISTORTION IN AN AMPLITUDE MODULATION SYSTEM

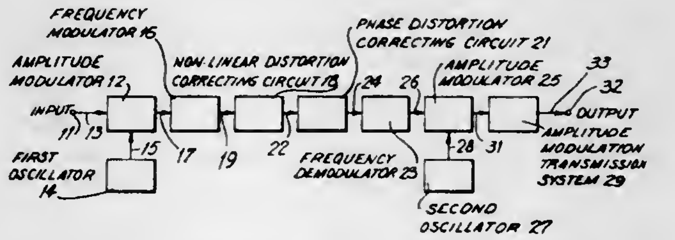
Koichi Yamazaki, Yokohama-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed Nov. 2, 1967, Ser. No. 688,643

Claims priority, application Japan, Nov. 4, 1966, 41/72,711

Int. Cl. H03c *1/06, 5/00*

U.S. Cl. 332—37 **8 Claims**



A frequency modulator converts an amplitude modulated signal to a frequency modulated signal which is compensated for non-linear distortion in correspondence with non-linear distortion in the amplitude modulated signal. The compensated frequency modulated signal is compensated for phase distortion in correspondence with phase distortion in the amplitude modulated signal and is then converted to an amplitude modulated signal. The amplitude modulated signal is provided as the compensated amplitude modulated signal.

3,528,038

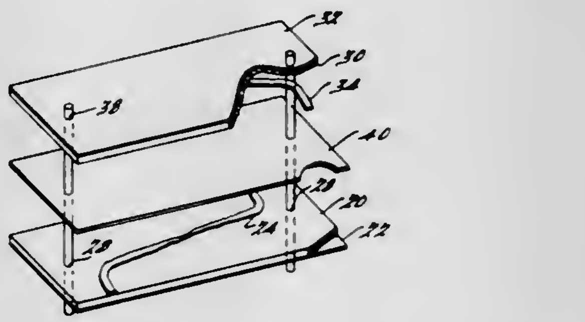
TAPERED LINE DIRECTIONAL COUPLER

Carl P. Tresselt, Detroit, Mich., assignor to The Bendix Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 574,973, Aug. 25, 1966. This application July 11, 1969, Ser. No. 843,286

Int. Cl. H01p *5/14, 3/00*

U.S. Cl. 333—10 **14 Claims**



A backward wave coupler for microwave frequencies having a pair of tapered line conductors with corresponding sequential oblique and parallel sections.

3,528,039

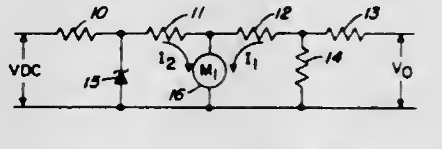
CIRCUIT FOR ADDING CONSTANT DC BIAS, SUPPLIED BY A REFERENCE ZENER DIODE, TO A VARIABLE INPUT SIGNAL

Robert H. Parker, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Mar. 22, 1965, Ser. No. 441,550

Int. Cl. H03g *11/00;* **G01r** *17/02*

U.S. Cl. 333—14 **8 Claims**



Disclosed is a circuit for expanding or compressing the variations of a voltage. The circuit contains two current loops. One of said loops passes a current which is created by the fluctuating voltage and therefore this current varies proportionally to said voltage. A regulated current is supplied to the second loop. The two currents are then added in a monitoring means so that the regulated current changes the variation of the fluctuating current. The percentage of variation is increased or decreased depending upon the respective polarities of the currents in the two loops.

3,528,040

ELECTRONICALLY VARIABLE FILTER

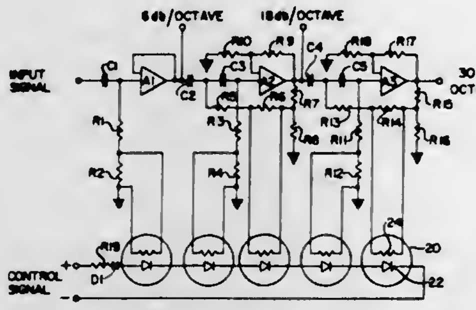
Aaron A. Galvin, Lexington, Mass., assignor to Aerospace Research, Inc., Boston, Mass., a corporation of Massachusetts

Filed Dec. 12, 1968, Ser. No. 783,290

Int. Cl. H03h *7/10;* **H04b** *3/04*

U.S. Cl. 333—18 **4 Claims**

An electronically variable filter in which the filter response is easily and precisely varied by a control signal which can be derived from the filter output. A bank of equal value resistors are employed in an active filter and are coupled to an array of photosensitive resistors which

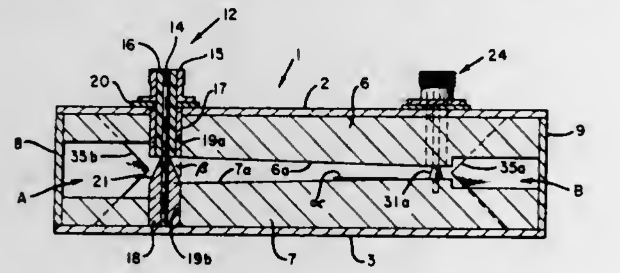


are uniformly and controllably varied in resistance by sources of variable intensity light.

3,528,041

BROADBAND DOUBLE RIDGED WAVEGUIDE BALUN

Royden M. Honda, San Jose, and George A. Hahn, Saratoga, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 30, 1968, Ser. No. 787,982
Int. Cl. H03h *7/42, 7/38;* H01b *5/10*
U.S. Cl. 333—26 10 Claims

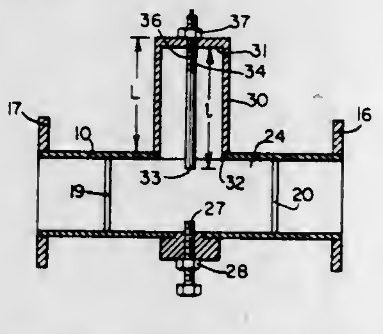


This balun includes a length of doubly ridged rectangular waveguide that is dimensioned to support TE_{10} mode propagation of electromagnetic waves and is short circuited at both ends. Adjacent one end of the waveguide, a first coaxial probe is centered in and short circuited across the waveguide at the top of one ridge. Adjacent the other end of the waveguide, second and third coaxial probes are spaced equidistant from the center line of the waveguide and in the same plane transverse to the direction of propagation of electromagnetic waves in the waveguide. The latter probes are short circuited across the waveguide at the tops of opposite ridges so as to couple to and from the waveguide equal amplitude signals that are 180° out-of-phase.

3,528,042

TEMPERATURE COMPENSATED WAVEGUIDE CAVITY

Aaron David Weinberger, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 22, 1967, Ser. No. 669,920
Int. Cl. H01p *7/06, 1/30*
U.S. Cl. 333—83 8 Claims

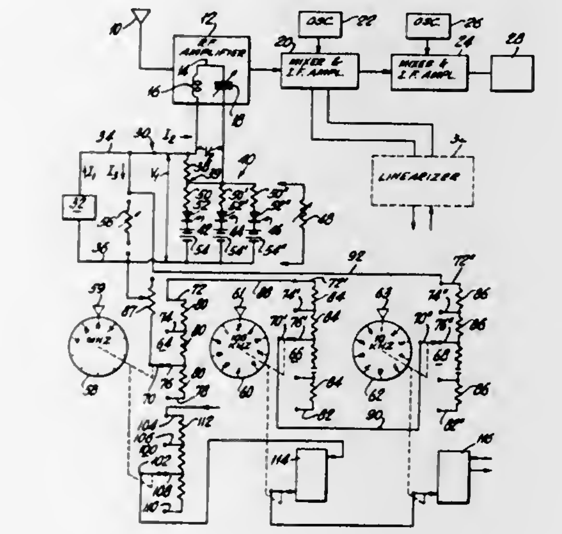


A waveguide cavity includes a screw extending within the cavity and adustable for tuning the cavity. The cavity also includes a separate temperature compensating element including a rod extending within the cavity with the temperature compensating element responsive to temperature changes to vary the position of the rod within the cavity. The use of a separate temperature compensating element provides temperature compensation which is independent of the resonant frequency of the cavity.

3,528,043

VOLTAGE CONTROLLABLE TUNING CIRCUIT WHICH RESPONDS LINEARLY IN FREQUENCY WITH LINEAR DIAL CHANGES

Frederick Richter, Huntington, Frank T. D'Anna, Plainview, and Patrick J. Buckley, Commack, N.Y., assignors to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Dec. 17, 1968, Ser. No. 784,414
Int. Cl. H03j *3/18, 3/20*
U.S. Cl. 334—14 4 Claims



A device for tuning a circuit employing a voltage controllable frequency determining element is described. The tuning circuit responds linearly in frequency to a voltage controlled from a dial which provides selection of tuning frequencies with discrete incremental variations. The dial frequency selections are transformed by a switching network to a first voltage directly proportional to dial frequencies and the first voltage is applied to a non-linear network to generate a control voltage which is applied to the frequency determining element to establish a tuning circuit frequency corresponding to the selected dial frequency.

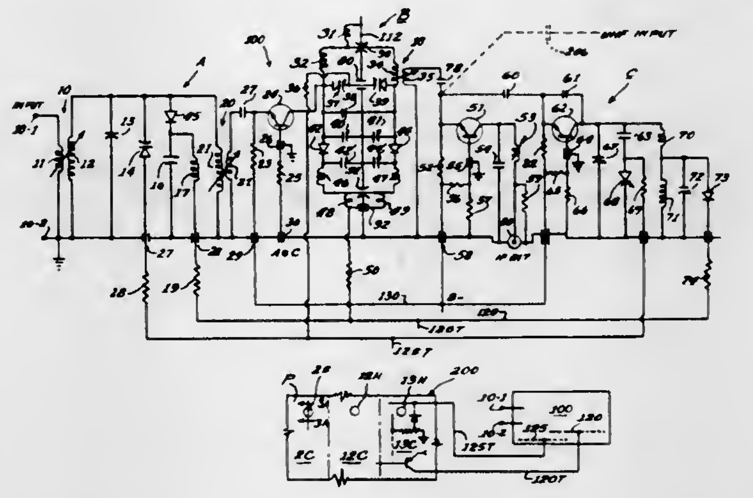
3,528,044

TOUCH CONTROLLED TV CHANNEL SELECTOR COMPRISING A PLURALITY OF BISTABLE SWITCHING CIRCUITS

Gert L. Manicki, Port Credit, Ontario, Canada, assignor to Standard Kollsman Industries, Inc., Melrose Park, Ill.
Filed June 19, 1968, Ser. No. 738,350
Int. Cl. H03j *5/04;* H03h *5/12*
U.S. Cl. 334—15 6 Claims

Touch controlled voltage selectors are disclosed to electrically control frequency tuning of a solid state, voltage responsive type of VHF television tuner. The selectors have an output voltage bus that is selectively fed from a ganged chain of control stages (one for each channel) to apply various levels of tuning voltage to the tuner and a switching voltage bus that is connected to the control stages common to the high band of channels to provide switching current for band switching from the low band to the high band.

One of the selector embodiments has control stages comprised of bistable transistor multivibrator circuitry and the other has control stages comprised of bistable neon lamp circuitry. Each type of bistable circuit is gang-connected to its companion circuits to cause any selected

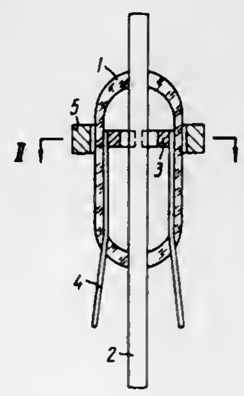


circuit, when switching from its inactive to its active state, to simultaneously cause any other stage, if active, to switch from its active state to an inactive state.

3,528,045

HERMETICALLY SEALED OVERCURRENT RELAY

Vadim Nikolaevich Shoffa, Ul. 6a, kv. 11, Moscow, U.S.S.R.
Filed Oct. 4, 1968, Ser. No. 765,169
Claims priority, application U.S.S.R., Oct. 5, 1967, 1,187,843
Int. Cl. H01h *53/10*
U.S. Cl. 335—204 2 Claims



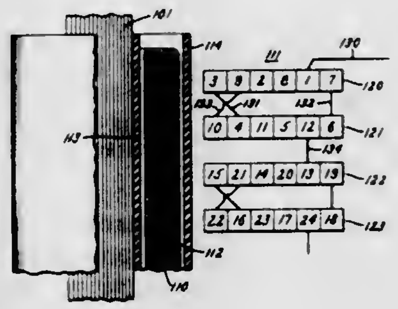
A hermetically sealed overcurrent relay comprises a hermetically sealed envelope through which extends a central conductor embraced by magnetically operated ferromagnetic contacts which are mounted on contact springs. A magnetic adjusting device in the form of two permanent magnets located outside the envelope and in the shape of half-rings, embraces the central conductor and the ferromagnetic contacts to produce magnetic fluxes which are superposed on the magnetic flux established in the ferromagnetic contacts by the current flowing in the central conductor.

3,528,046

INTERLACED DISK WINDING WITH IMPROVED IMPULSE VOLTAGE GRADIENT

George E. Sauer, West Stockbridge, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 22, 1966, Ser. No. 596,217
Int. Cl. H01f *15/14*
U.S. Cl. 336—70 6 Claims

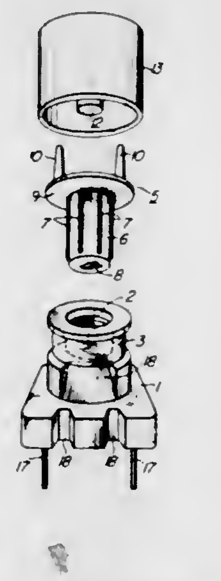
This application discloses an indicative winding of the disk type wherein each disk coil comprises at least one group of at least two radially interwound spiral conductors and the conductors of at least two adjacent coils are connected in re-entrant series interlaced relation. In each set of re-entrantly connected coils, the series circuit traverses first one conductor in each coil of the set and thereafter repeats its traverse of the set in like coil sequence through all remaining conductors of one conductor group. By utilizing one innermost end turn of each conductor group as the high voltage terminal end of each coil, the maximum voltage gradient between inner peripheral turns of axially adjacent coils and sets of coils is minimized.



3,528,047

MINIATURIZED HIGH-FREQUENCY TRANSFORMER

Kazutomo Iwata, Neyagawa-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 9, 1969, Ser. No. 823,271
Claims priority, application Japan, May 21, 1968, 43/43,032
Int. Cl. H01f *15/04, 21/06*
U.S. Cl. 336—83 3 Claims



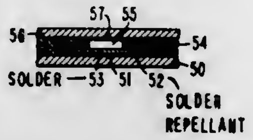
A miniaturized high-frequency transformer comprising: a cap core having an adjusting magnetic core at its center and an adjustment groove at its closed end; a core supporter having a hole at its center and another adjustment groove at its closed end; a terminal board member having coils wound thereon and a through tapping hole, the core supporter being in threaded engagement with the tapping hole so that the core supporter is firmly and adjustably coupled with the terminal board member and the resulting assembly is covered with the cap core with the adjusting magnetic core inserted into the hole in the core supporter; and a shield case for substantially enclosing the assembled transformer structure, whereby the inductance of the transformer is adjustable on either one of the opposite sides of the structure.

3,528,048

METHOD OF CONSTRUCTING PRINTED CIRCUITS FOR SUBSEQUENT COMPLETION OR DELETION

Joseph P. Kirk, London, England, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 6, 1967, Ser. No. 651,500
Int. Cl. H01h *37/76*
U.S. Cl. 337—401 7 Claims



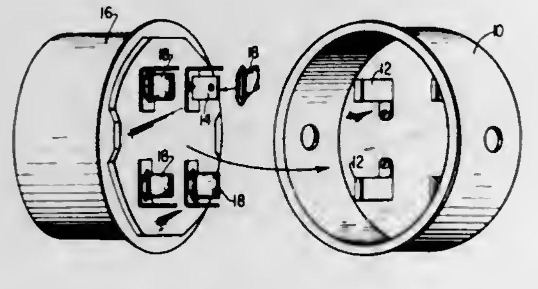
A process for printed circuit manufacture wherein conductive blocks of a low-melting point metal are incorporated with the circuit lines as sections thereof for subsequent heating to selectively open or close the circuit line.

3,528,049

DISCONNECT FOR ELECTRIC METERS

Harley J. Orr, Bedford, N.H., assignor to Sola Basic Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 15, 1968, Ser. No. 729,310
Int. Cl. H01r *13/44*
U.S. Cl. 339—36 3 Claims



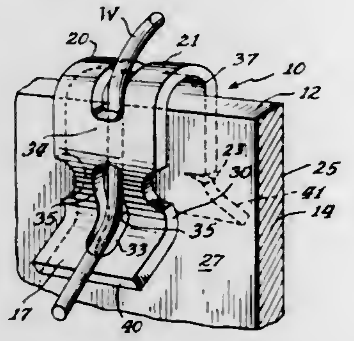
An insulating sheath for the temporary disconnection of electric meters which comprises a sleeve of elastic molded plastic material so formed as to stretch and cling to the blade of a meter upon removal of the meter from its socket.

3,528,050

PUSH-ON TYPE GROUNDING CLIP

Eugene D. Hindenburg, Sycamore, Ill., assignor to Holub Industries, Inc., a corporation of Illinois

Continuation-in-part of application Ser. No. 666,093, Sept. 7, 1967. This application May 2, 1969, Ser. No. 825,112
Int. Cl. H01r *11/20*
U.S. Cl. 339—95 20 Claims



The present invention relates to apparatus for securing a wire, conduit or the like to a wall, and more particularly to an electrical outlet box or the like. Specifically, there is disclosed an improved press-on type clip having utility in bringing about pressure contact between a ground wire and an associated metallic box or electrical housing.

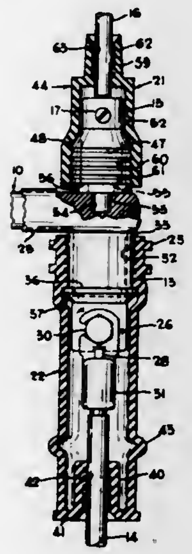
The clip of the present invention comprises a unitary piece of spring material which is formed into a generally horseshoe-shaped device capable of being pressed over an edge of an appropriate housing and being configured to receive a grounding wire, conduit or the like and press the same into conductive contact with the housing wall.

3,528,051

FLEXIBLE INSULATING SHEATH

John A. Toedtman, Warson Woods, and James J. Cooper, Affton, Mo., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 30, 1967, Ser. No. 679,120
Int. Cl. H01r *13/56*
U.S. Cl. 339—101 4 Claims



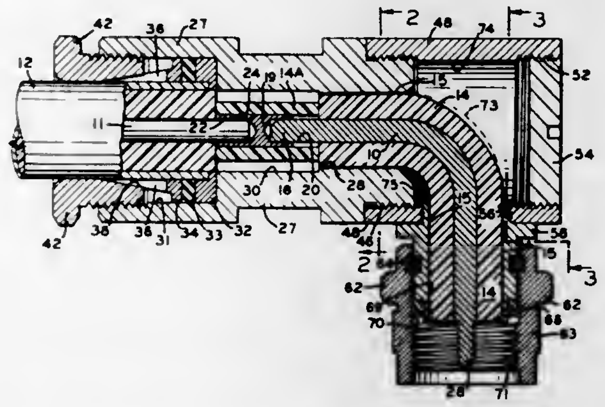
A tubular insulating sheath which is substantially cylindrical to provide a waterproof sleeve for the connection between an electrical conductor and a bus bar. An internal rib and shoulder configuration cooperates with a bus bar terminal to seal one end. At the other end, a reentrant ribbed portion cooperates with the conductor to provide a seal for that end and, in addition, a flexible portion of the sheath is provided which allows the conductor and sheath to be bent without breaking the seal.

3,528,052

RIGHT ANGLE CONNECTORS

Alexander R. Brishka, 14 Sophia St., Mamaroneck, N.Y. 10543

Continuation-in-part of application Ser. No. 659,729, Aug. 10, 1967. This application May 13, 1968, Ser. No. 728,648
Int. Cl. H01r *17/18*
U.S. Cl. 339—177 4 Claims



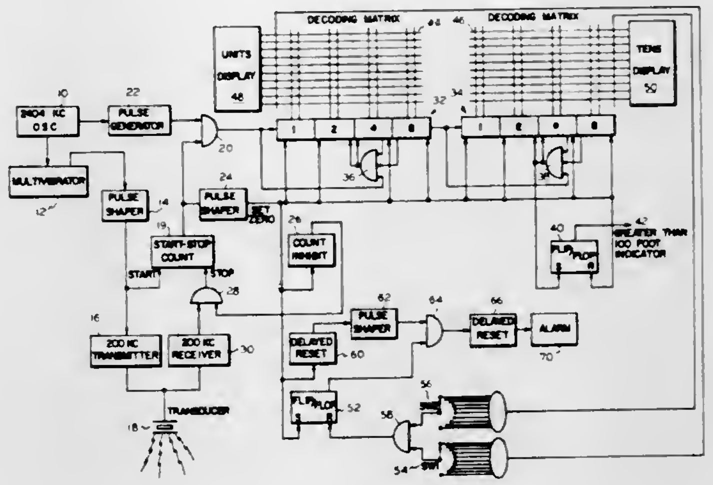
A right angle coupling for high frequency concentric lines includes a conductive housing having coupling means at either end. An air cavity adjoining a bend in the insulation on the central conductor corrects for a bad impedance match and reduces wave reflection.

3,528,053

APPARATUS FOR A DEPTH INDICATOR

Abraham Rubin, 508 E. Gravers Lane, Wyndmoor, Pa. 19118

Filed Mar. 26, 1969, Ser. No. 810,545
Int. Cl. G01s *9/68*
U.S. Cl. 340—3 3 Claims



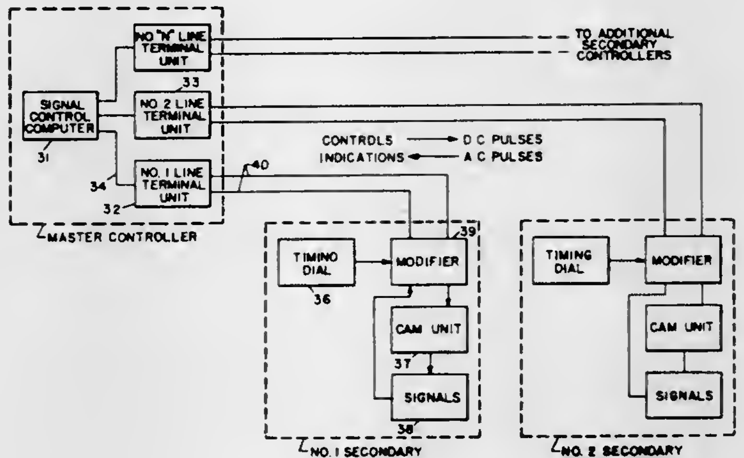
A water depth indicator wherein the actual depth in feet is periodically counted and displayed by digital counting and display circuitry and an alarm signal is generated by the detection of a depth below a minimum level. The minimum depth level is preset into a switch connected to periodically received signals indicative of the actual water depth and gate the depth signals to an alarm signal generating circuit.

3,528,054

DIGITAL CONTROL SYSTEM FOR TRAFFIC SIGNALS

John H. Auer, Jr., Fairport, and Lyle A. Ross, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Feb. 28, 1966, Ser. No. 530,687
Int. Cl. G08g *1/07*
U.S. Cl. 340—35 12 Claims



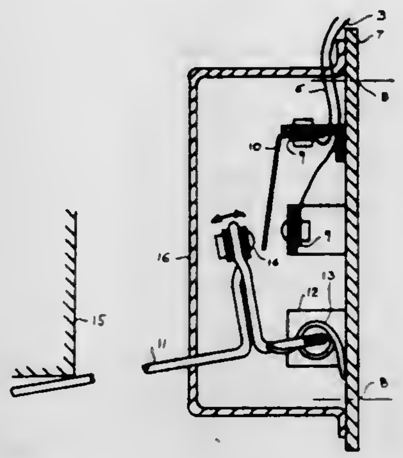
A system wherein a master traffic actuated controller establishes control over one or more local signal controllers and transmits information to each local signal controller via a pair of wires. A transmitted signal of one polarity renders the local controller responsive to the master and interruptions of the signal having less than a predetermined duration convey the desired control information. A transmitted signal of opposite polarity controls the local controller to display a desired signal pattern irrespective of the information conveyed by interruption of the first polarity signal.

3,528,055

SAFETY ALERTING SYSTEM FOR DUMP-BODY VEHICLES

Richard Francis De Falco, 52 Lakewood St., Worcester, Mass. 01603

Filed Nov. 18, 1968, Ser. No. 776,610
Int. Cl. B60p *1/04*
U.S. Cl. 340—52 1 Claim



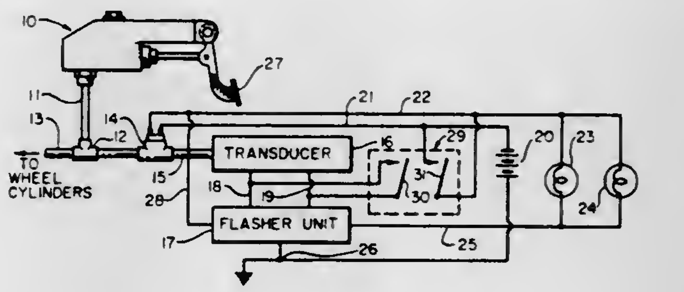
The present invention relates generally to a safety alerting system for trucks and/or other vehicles having a dump-body and more particularly, to an alerting system for providing a warning signal to the operator of the vehicle when the body of the vehicle is raised from its seated position.

3,528,056

INTERVEHICULAR COMMUNICATIONS SYSTEM INCLUDING DECELERATION WARNING SYSTEM

John Voevodsky, Palo Alto, Calif. (P.O. Box 5769, Stanford, Calif. 94305)

Continuation-in-part of application Ser. No. 464,699, June 17, 1965. This application June 10, 1966, Ser. No. 556,770
Int. Cl. B60q *1/26*
U.S. Cl. 340—72 22 Claims



An intervehicular deceleration warning communications system in which a warning light is mounted on a leading vehicle to communicate a component of deceleration initiated by the driver of the leading vehicle to the driver of a following vehicle. A device for measuring the deceleration of the leading vehicle is rigidly attached to this vehicle and in one form may use an accelerometer formed by mercury switches tilted at different angles with respect to a horizontal. They are progressively closed as the deceleration increases. In another form, deceleration is measured by brake pressure and in still another form a tachometer device is coupled to a rotating part of the automobile. The warning light, mounted on the leading car, is flashed at a rate which varies exponentially with a component of deceleration. With the mercury switch type accelerometer this component of acceleration will take into account the intensity of brake action, the deceleration caused by all other frictional forces including aerodynamic, which vary from vehicle to vehicle, and lastly the deceleration caused by the component of gravitational forces parallel to the slope of the road. The exponential variation compensates for the neural response of the following driver to the flashing light. The "on" time per cycle of the flash is also shortened with an increasing flash rate to provide a redundant warning. The nonlinearity between deceleration and the flash rate is produced by a non-linear impedance element in an oscillation circuit or with proper circuit connections of the mercury switches which form an accelerometer. In practice, a flashing rate of from 1 flash per second for zero deceleration becoming 1.5 flashes per second at 0.1 *g* deceleration and continuing in a like manner to 7.65 flashes per second at 0.5 *g* is a preferred exponential function.

3,528,057

SYSTEM FOR TRANSMITTING DIGITAL TRAFFIC SIGNALS

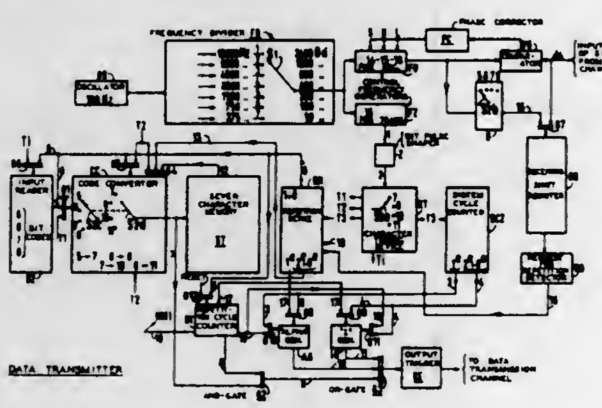
Hendrik Cornelis Anthony van Duuren, Wassenaar, and Herman da Silva, Voorburg, Netherlands, assignors to De Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Filed Nov. 28, 1966, Ser. No. 597,375

Claims priority, application Netherlands, Dec. 3, 1965, 6515723

Int. Cl. H04l *1/10;* **H03k** *13/32*

U.S. Cl. 340—146.1 **4 Claims**



A system for transmitting digital traffic signals, particularly data transmission system by converting any one of a plurality of multiunit codes on a uniform basis into corresponding constant ratio codes, and providing means for detecting and correcting errors by automatically repeating the signals received incorrect. Such a system includes a transmitting station and a receiving station with means at each station for converting the codes, storing devices and shift registers for code signals, means for correcting the phase of the elements of the codes, means for dividing signals into groups or cycles and counting these cycles to prevent loss or duplication of signals, blocking devices, and special code signal generators and detectors for requesting repetitions and denoting starts of system and repetition cycles.

3,528,058

CHARACTER RECOGNITION SYSTEM

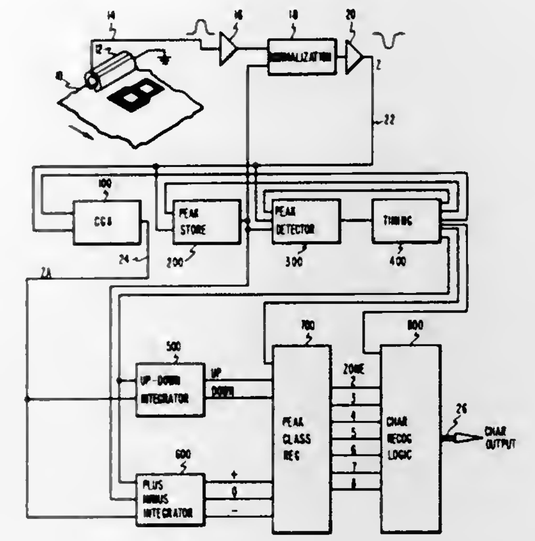
Milton F. Bond, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed May 27, 1966, Ser. No. 553,488

Int. Cl. G06k *9/10*

U.S. Cl. 340—146.3 **9 Claims**

A single-gap magnetic character recognition system adds two further signal-level magnitude statements to the conventional plus, minus and zero statements. These five statements are incorporated into the reference signatures with which the scanner signal is compared for recognition. Signal threshold levels for the plus, minus and zero categories are modified during the scanning of each segment of a scanned character. A controlled-gain amplifier for emphasizing signal peaks has a minimum gain at the beginning and end of each scan segment, and a maximum gain near the center of each segment. Retiming means corrects the separation of character segments to compensate for variations in the speed of the document transport. False retiming from trailing-edge noise within a single segment is preventing by disabling the timing generator after a given peak until a further peak exceeds a threshold value.



3,528,059

READING DEVICE HAVING TOLERANCE LIMITS

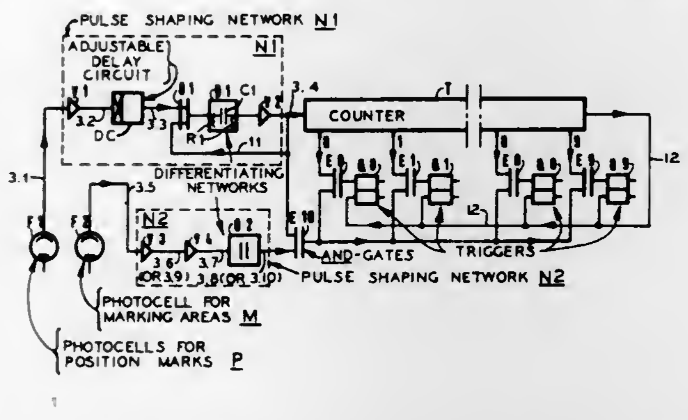
Arie Adriaan Spanjersberg, Leiderdorp, Netherlands, assignor to De Staat der Nederlanden, Ten Deze Vertegenwoordigd Door de Directeur-Generaal der Posterijen, Telegrafie en Telefonie, The Hague, Netherlands

Continuation of application Ser. No. 346,292, Feb. 20, 1964. This application Sept. 26, 1968, Ser. No. 784,272

Claims priority, application Netherlands, Feb. 21, 1963, 289,310

Int. Cl. G06k *7/10, 9/06*

U.S. Cl. 340—146.3 **12 Claims**



A photoelectric reading device for a registration bearer with at least one column of marking-areas or squares to be filled-in by unskilled persons and adjacent thereto a column of position marks corresponding to said areas, said device containing a photocell for each column for generating pulses in response to each mark, and pulse shaping circuits or networks controlled by said pulses generated from said photocells, so that a correct response may be had from marks for the areas even within predetermined limits before and through said areas.

3,528,060

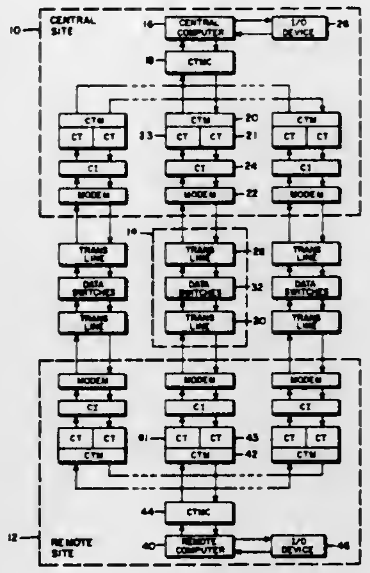
TIME VARIABLE STOP BIT SCHEME FOR DATA PROCESSING SYSTEM

Daryl G. Streif, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 20, 1968, Ser. No. 738,483

Int. Cl. H04j *3/06*

U.S. Cl. 340—172.5 **7 Claims**



A scheme for providing selectively variable Stop bit time durations in information transfer between computer sites in a multi-computer data processing system. The scheme involves the addition of a logical circuit to an already existing Communication Terminal Module whereby the time duration of the synchronizing Stop bit, which is transmitted as the last bit in each multi-bit character of a multi-character message between computer sites, is selectively established at one of a plurality of bit times. The Stop bit duration is selected to accommodate the reaction time of the receiving computer site.

3,528,061

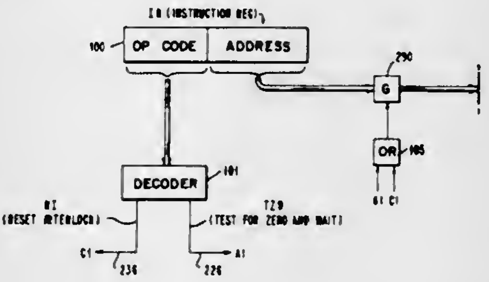
INTERLOCK ARRANGEMENT

Frank W. Zurcher, Jr., Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

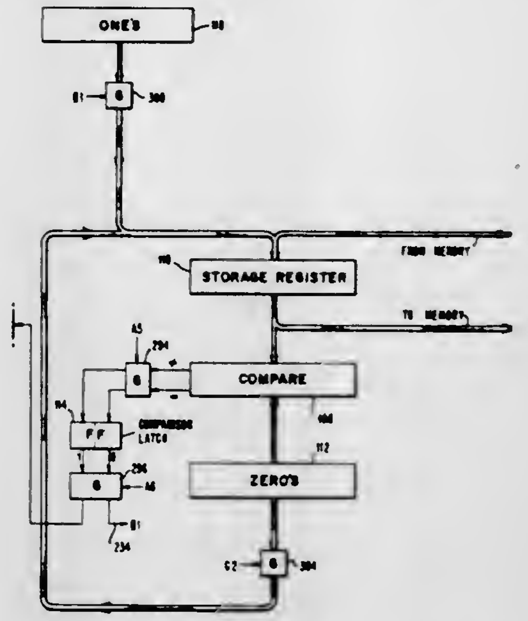
Filed July 5, 1968, Ser. No. 742,669

Int. Cl. G06f *9/18*

U.S. Cl. 340—172.5 **5 Claims**



A pair of complementary machine instructions, viz. a "test for zero and wait" (TZW) instruction and a "reset interlock" (RI) instruction, are utilized to prevent more than a first active entity in a data processing system from concurrently using a second entity. Upon the encountering of the first instruction, a location in shared memory, specified to contain the interlock information, is tested for current use or current availability for use of the aforesaid latter entity. If such entity is currently in use, other processors or entities in the system attempting to use the second entity are respectively placed in "wait" states until the processor or entity using this second entity encounters the second instruction. At this junction, the location is made to indicate that the second entity is available for use and a chosen one of the processors or entities at that time in the "wait" state is selected as eligible to next use the second entity and to take it out of the "wait" state.



3,528,062

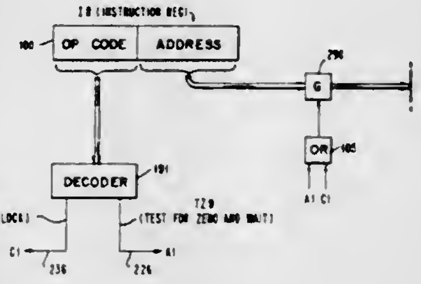
PROGRAM INTERLOCK ARRANGEMENT, INCLUDING TASK SUSPENSION AND NEW TASK ASSIGNMENT

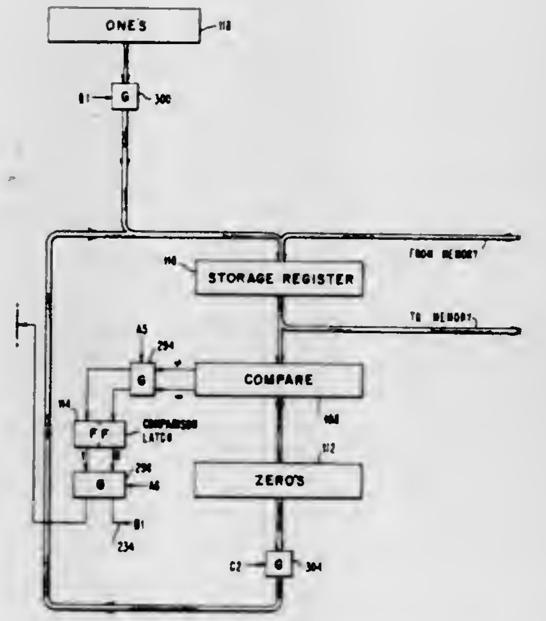
Meir M. Lehman, Bronx, Jack L. Rosenfeld, Tarrytown, and Hans P. Schlaeppi, Chappaqua, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 5, 1968, Ser. No. 742,676

Int. Cl. G06f *9/18*

U.S. Cl. 340—172.5 **21 Claims**





A pair of complementary machine instructions, viz a "test for zero and wait" (TZW) instruction and a "reset interlock" (RI) instruction are utilized to prevent more than one processor or other active entity in a data processing system from concurrently entering into the same section of a program or sections of programs that manipulate the same data. Upon the encountering of the first instruction of a critical program section, a designated location in shared memory, specified to contain the interlock information, is tested for being in a first or second state, the first state indicating that a particular section is in use, the second state indicating that the section is free to be entered into. If the first state is encountered, a processor attempting to enter the section in use is placed into a "wait" state until the processor using the section encounters the second instruction. At this juncture, the first state of the location in memory is replaced by the second state, a signal is broadcast to the other processors to resume processing, whereby any processors in the "wait" state are taken out of such state.

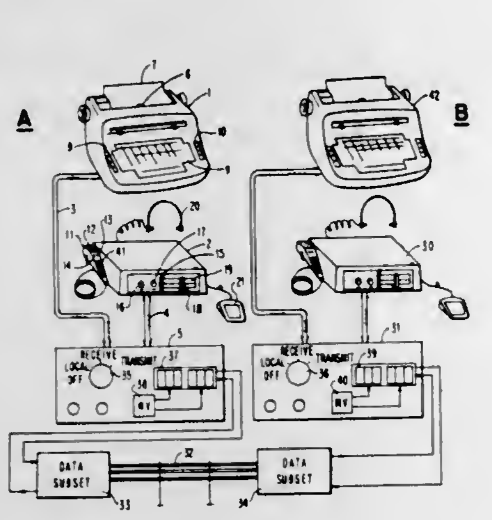
3,528,063
RECORDING AND REPRODUCING APPARATUS WITH FACILITIES FOR LOCATING INFORMATION IN RECORD MEDIA

Robert A. Kolpek, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application June 30, 1965, Ser. No. 468,386, now Patent No. 3,417,202, dated Dec. 17, 1968. Divided and this application Dec. 6, 1968, Ser. No. 781,804

Int. Cl. G05b *11/01;* G11b *5/62*

U.S. Cl. 340—172.5 17 Claims



The apparatus includes a printer and a magnetic recorder unit that are arranged in connection with auxiliary control apparatus for independent operation as a printer and an audio dictation unit, respectively, in one mode of operation, and for the recording and reproducing of digital data representing printed characters on the typewriter, in an other mode of operation. Facilities are provided for locating data in a record media as follows.

When in a Record mode, if a "Line" button is depressed, the recorder reads characters of information on the media in a reverse direction. No printing takes place, but when a Carrier Return code is encountered, the printer performs a Carrier Return operation to the next line on a document in the printer. As each character is read, the printer is backspaced. However, a Backspace character causes the printer to space to maintain synchronism between the printer and recorder unit. When a Playback button is depressed, depression of the Line button results in movement of the media in a forward direction during which time characters of information are read for printing by the printer. A similar operation occurs for data "words," and "characters."

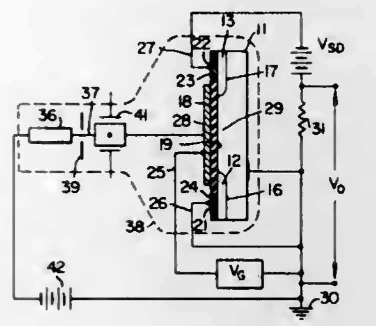
3,528,064
SEMICONDUCTOR MEMORY ELEMENT AND METHOD

Thomas E. Everhart, Berkeley, and Noel C. MacDonald, Albany, Calif., assignors to The Regents of the University of California

Filed Sept. 1, 1966, Ser. No. 576.669

Int. Cl. G11c *11/42*

U.S. Cl. 340—173 15 Claims



A semiconductor storage element and method which utilizes a metal oxide semiconductor field effect type transistor and selectively stores charge in the insulating layer of the transistor by irradiating selected areas with a high energy electron beam while applying a voltage between the metal electrode and the semiconductor body which transfers charges between the metal electrode and the bombarded area of the insulating area.

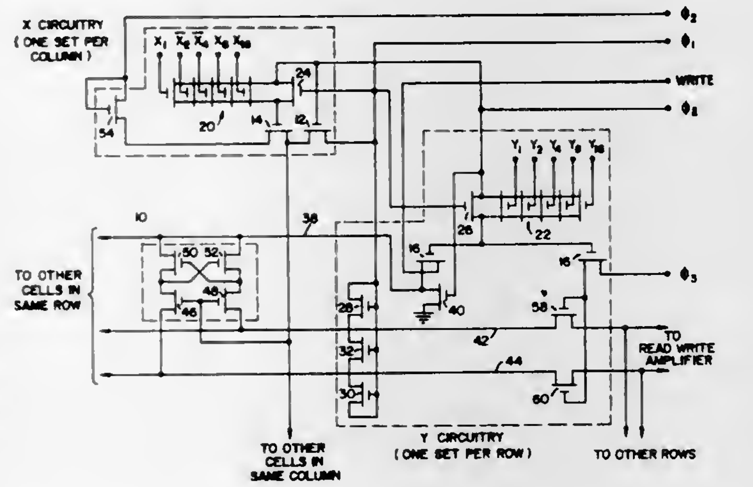
3,528,065
DOUBLE-RAIL RANDOM ACCESS MEMORY CIRCUIT FOR INTEGRATED CIRCUIT DEVICES

Alton O. Christensen, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 5, 1969, Ser. No. 821,755

Int. Cl. G11c *11/40*

U.S. Cl. 340—173 12 Claims


X CIRCUITRY (ONE SET PER COLUMN)
WRITE
TO OTHER CELLS IN SAME ROW
TO OTHER CELLS IN SAME COLUMN
Y CIRCUITRY (ONE SET PER ROW)
TO OTHER ROWS
TO READ WRITE AMPLIFIER

A double-rail, fast-acting random access memory circuit is provided on an integrated circuit chip. The memory cell contains a complementary pair of cross-coupled memory elements and a pair of X address circuits operated by FARMOST decoders. The two complementary entry rails are addressed by a pair of Y address circuits also operated by FARMOST decoders. Operation of the circuit consists of transferring incremental charges into and out of the internal gate capacitances of the memory cell. Rapid operation is provided by precharging the entry rails, and by preconditioning the cell prior to a writing operation.

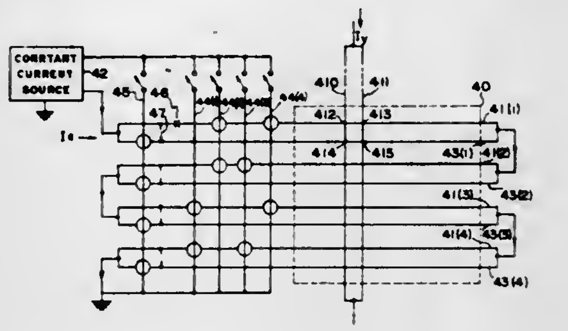
3,528,066
FAULT TOLERANT SUPERCONDUCTIVE MEMORY

John W. Bremer, Sunnyvale, Calif., assignor to General Electric Company, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,907

Int. Cl. H03k *3/38;* G11c *11/44*

U.S. Cl. 340—173.1 20 Claims



A location addressed superconductive memory wherein the drive lines are connected in series for increased selection speed, each drive line being provided with a controllable shunt path for the drive current. A feature of the J-cells type selection circuit is the provision of spare address cells having a selectably address decoding to replace defective address cells or address cells associated with defective memory locations.

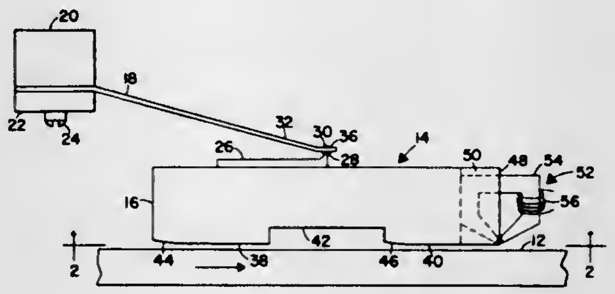
3,528,067
TRANSDUCER ASSEMBLY WITH TANDEM BEARING PADS

Clarence R. Linsley, La Crescenta, and Henry J. Pinczower, Los Angeles, Calif., assignors to Singer-General Precision, Inc., a corporation of Delaware

Filed May 12, 1967, Ser. No. 638,081

Int. Cl. G11b *5/58, 5/60*

U.S. Cl. 340—174.1 3 Claims



A flying head construction for magnetic recording. The pitch stability of an elongated shoe or vehicle is improved by dividing the flat working face into tandem bearing pads, with the electromagnetic read/write head disposed between the pads or at the region of the trailing edge of the after pad.

3,528,068
DEVICE FOR CONVERTING BINARY CODED DIGITAL INFORMATION TO SYMBOL FORM FOR VIDEO DISPLAY

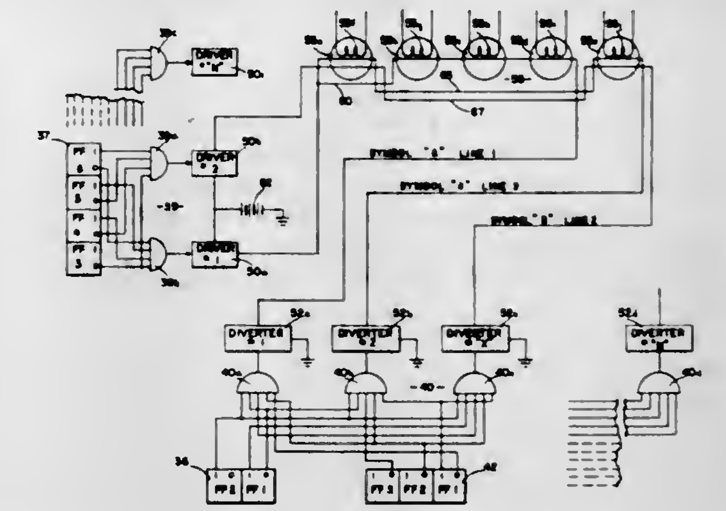
James D. Johnson, Inglewood, Calif., assignor to Computer Communication, Inc., a corporation of California

Filed Feb. 24, 1967, Ser. No. 618,496

Int. Cl. G09f *9/00;* H01j *31/10*

U.S. Cl. 340—324 8 Claims

Symbol information is stored in binary coded form in a high speed random access memory. This information is transferred to a symbol generator device which converts the information into dot patterns forming the symbols for display on a high speed linear scan video display device such as that used in a television receiver.



3,528,069
RADAR APPARATUS INCORPORATING A MEMORY DEVICE IN THE FORM OF A FERRITE MATRIX

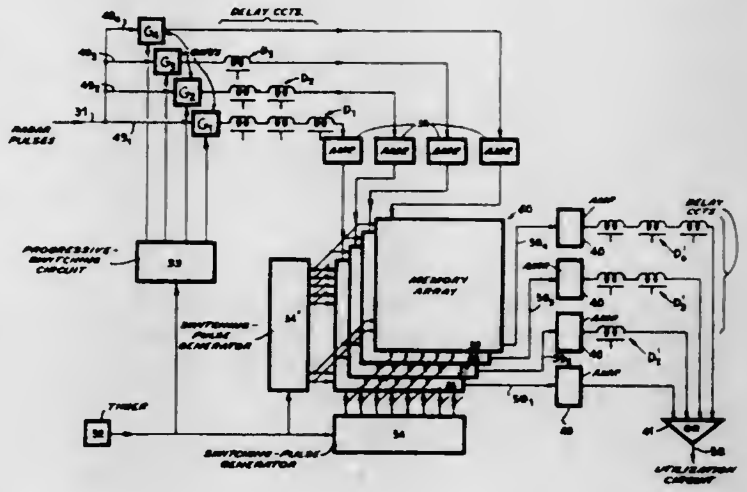
Pierre R. J. Mondon, Paris, France, assignor to Société Nouvelle d'Electronique et de la Radio-Industrie, Paris, France, a corporation of France

Continuation of abandoned application Ser. No. 800,598, Mar. 19, 1959. This application Mar. 16, 1964, Ser. No. 353,020

Claims priority, application France, Apr. 4, 1958, 762,336; July 24, 1958, 771,019

Int. Cl. G01s *7/24, 9/02*

U.S. Cl. 343—5 9 Claims

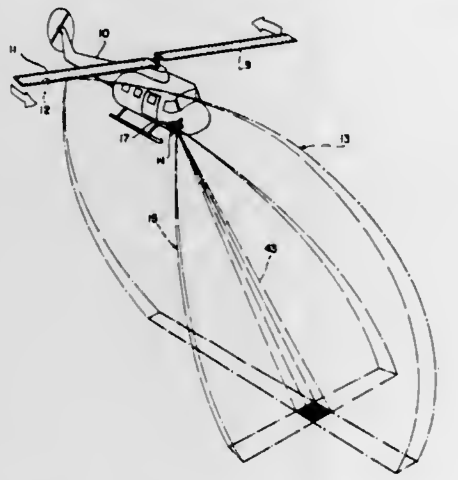


1. In a radar system, in combination, input means for supplying radar signals including information on the range and another coordinate of a target; a display indicator; a memory device comprising a matrix of several like arrays of pulse-storage units, each of said arrays having assigned to it a different value of said other coordinate of a target, the position of a unit in its array representing the range of a target; distributor means connected to said input means for producing writing pulses in response to said signals and applying each writing pulse to the array assigned to the value of said coordinate represented by the corresponding radar signal; timer means for testing homologous units of all said arrays in unison in a succession of scanning cycles for inscribing said writing pulses thereon at the instants of their occurrence, said instants being representative of said range, and producing an output signal in response to each inscribed pulse; and circuit means for sequentially applying the output signals

from respective arrays to said indicator and translating the time of occurrence of each output signal together with the position of the respective array within said matrix into a two-dimensional display of the position of a target.

3,528,070
MULTIFUNCTION CROSSED BEAM RADAR SYSTEM

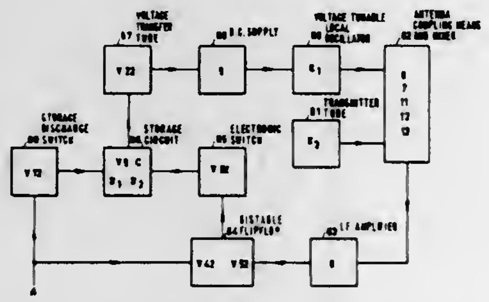
David W. Young, Jr., Warren, N.J., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Continuation-in-part of application Ser. No. 536,171, Feb. 14, 1966. This application Dec. 30, 1968, Ser. No. 787,763
Int. Cl. G01s *9/06*
U.S. Cl. 343—11 **10 Claims**



A multifunction airborne radar system generating a vertical fan beam of radiant energy continuously movable in azimuth for terrain mapping with a plan position indicator type display screen and including additional antenna means having a fan beam energy response pattern generally normal to the vertical fan beam and movable in elevation to intersect the vertical fan beam at selected elevation angles for detecting reflected energy and generating a range marker on the display screen defining an elevation aiming angle for performing various target tracking functions including establishing glide slopes, clearance planes and directional control information.

3,528,071
RADAR SENDING INSTALLATION

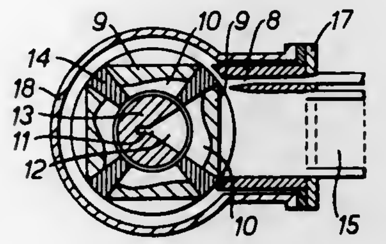
Mattheus Gerardus Disselen, Rijswijk, South Holland, Netherlands, assignor to Nederlandse Organisatie voor Toegepast - Natuurweten - Schappelijk Onderzoek ten behoeve van de Rijksverdediging, The Hague, Netherlands, a corporation of Netherlands
Continuation-in-part of application Ser. No. 189,657, Apr. 9, 1962. This application June 15, 1965, Ser. No. 464,243
Claims priority, application Netherlands, Apr. 26, 1961, 264,088
Int. Cl. G01s *7/28*
U.S. Cl. 343—17.1 **9 Claims**



A frequency agile radar system comprising a random pulse frequency transmitter, a voltage tuned local oscillator, varying voltage tuning mechanism adapted to stop change of voltage at a predetermined point, and reset, and a means to change the transmitter pulse frequency during the interpulse interval.

3,528,072
AERIAL SYSTEMS HAVING PLURAL LENSES, SELECTABLE FOR DELAY CORRECTION

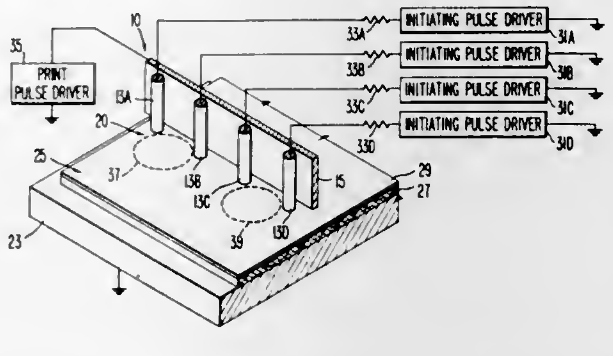
Samuel William Pickering, Ashford, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a British company
Filed Feb. 15, 1968, Ser. No. 705,805
Claims priority, application Great Britain, Feb. 16, 1967, 7,373/67
Int. Cl. H01q *13/00, 13/10, 19/06*
U.S. Cl. 343—754 **4 Claims**



A stack of linear waveguide slot arrays are end fed in parallel by a horn shaped feeder and the vertical radiation pattern of the stack is altered by interposing within the horn feed, one of a plurality of dielectric delay correction plates having appropriate thickness variations in the stacking direction. When used in a terrain mapping radar the vertical beam pattern may be matched to different flight altitudes thereby.

3,528,073
TRAPEZOIDAL-WAVEFORM DRIVE METHOD AND APPARATUS FOR ELECTROGRAPHIC RECORDING

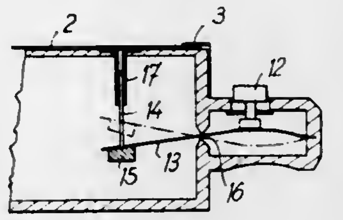
David A. Starr, Jr., San Mateo, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Original application Dec. 29, 1965, Ser. No. 517,341, now Patent No. 3,453,452, dated July 1, 1969. Divided and this application Oct. 31, 1968, Ser. No. 772,258
Int. Cl. G01d *15/06;* **H03k** *4/60*
U.S. Cl. 346—74 **12 Claims**



Electrographic recording method and apparatus employing plural-electrode print heads and apparatus providing improved sloped drive waveforms for reducing the magnitude of noise potential coupled onto unselected print electrodes. The drive waveforms employed may be provided by apparatus presenting a controllable leading-edge ramp or may utilize a trapezoidal waveform generator, such as one including an amplifier having capacitive feedback coupled around first and second current switches.

3,528,074
APPARATUS FOR INDICATING THE REACTION OF A SUBJECT

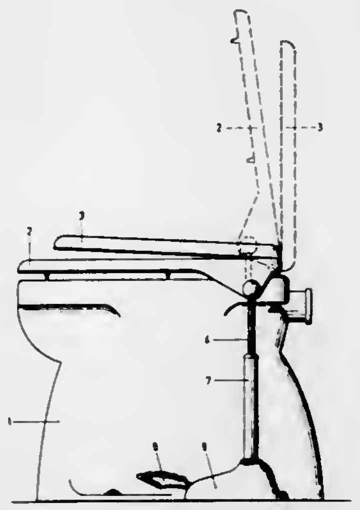
Gilbert Cohen-Seat, 15 Avenue d'Orsay, Paris, France
Filed Mar. 11, 1968, Ser. No. 712,194
Int. Cl. G07c *1/08;* **G01d** *15/04*
U.S. Cl. 346—104 **7 Claims**



Apparatus for indicating the attention or reaction of a subject listening to audiovisual programs, having a housing over which a sheet of indicating material is driven. A manually operable pointed member is mounted in the housing so that it can perforate the sheet at any given moment.

3,528,075
DEVICE FOR RAISING THE SEAT OF A CLOSET

Willi Leon, Heemstede, Netherlands, assignor of one-half to Lambert Johan Nicolaas Schutterop, Amsterdam, Netherlands
Filed Jan. 25, 1968, Ser. No. 700,455
Claims priority, application Netherlands, Jan. 30, 1967, 6701415
Int. Cl. A47k *13/10*
U.S. Cl. 4—251 **9 Claims**

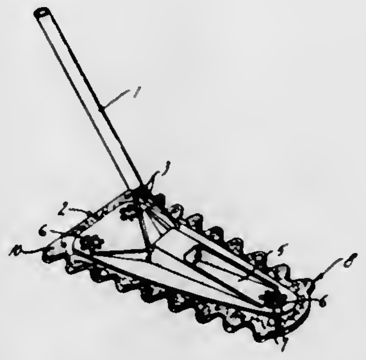


A device for raising the seat of a closet, wherein two pressure members which are coupled with each other by means of a spring member are slidably mounted in an upstanding guide member, the lower pressure member being adapted to be lifted by means of a pedal and locked in an upper position, the upper pressure member being connected to a control member which engages the seat.

3,528,076
MOP WITH PAD SECURING MEANS

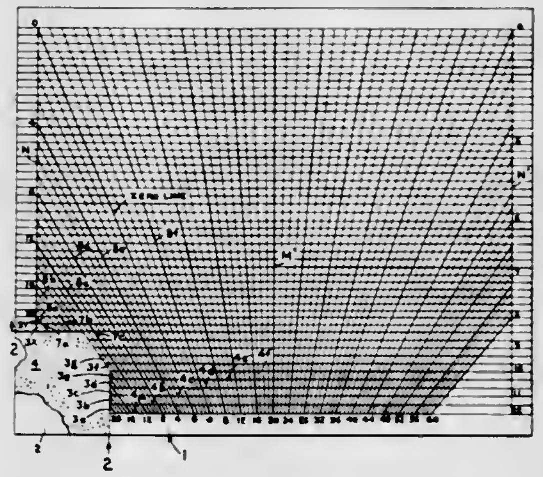
Howard A. Anderson, Pittsburgh, Pa., assignor to Bissell Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 9, 1968, Ser. No. 704,461
Int. Cl. A47l *13/24*
U.S. Cl. 15—228 **2 Claims**

A mop with a head and handle, is provided with three triangularly spaced circular openings on the flat bottom surface of the head. The openings each have a plurality of teeth spaced about the circumference and extending radially inward. The teeth releasably engage a myriad of tiny loops on the surface of a mop pad, which is comprised of a lofted, fibrous and very lightweight material that naturally provides the myriad of loops on its surfaces.



3,528,077
EQUAL SPACE LINE DIVIDER AND METHOD OF MAKING THE SAME

Richard M. Selden, 47 Glendale Ave., Livingston, N.J. 07039
Filed Mar. 29, 1968, Ser. No. 717,080
Int. Cl. B43l *5/00*
U.S. Cl. 33—1 **10 Claims**

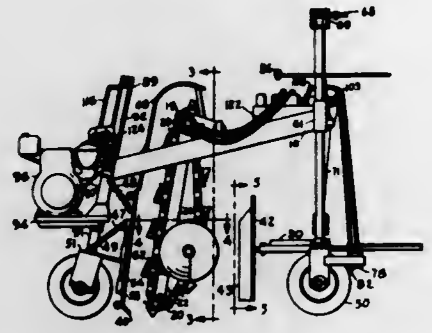


A device for dividing a line or space into an equal number of parts which employs at least two interrelated layers or members consisting of a base member of flexible or pliable material and a plurality of relatively stiff elements, strips or segments, having parallel edges and arranged parallel to each other and so affixed to the base member as to permit the formation of a joint between any two given strips or segments, when the base member is bent or folded; the strip or segmented elements being marked or imprinted with lines or calibration marks in a predetermined geometrical and spatial relation so that at any joint so formed a pre-determined number of equal parts may be measured by reference to the corresponding number of imprinted lines or calibration marks on the adjacent visible strip or segment element for the given joint.

3,528,078
TRENCHING MACHINE

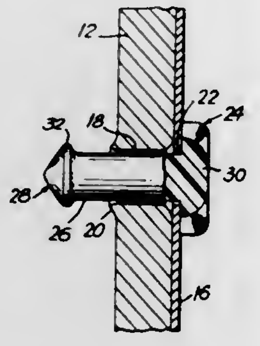
Clifton I. Taylor, Rte. 1, Box 139F, Sanford, Fla. 32771
Filed Mar. 11, 1968, Ser. No. 711,973
Int. Cl. E02f *5/06*
U.S. Cl. 37—86 **1 Claim**

Trenching machine having frame supported at its corners by front and rear wheel assemblies with means to vary elevation of frame relative to wheels. Downwardly extending digger unit on frame intermediate wheel assemblies discharges material against spreader plate and conveyor means then moves material further from trench.



3,528,079
PAPER DOLL HAVING COMBINED ORNAMENT AND FASTENING DEVICE

Lawrence Birch, Rego Park, N.Y., assignor to Standard Toykraft, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 2, 1968, Ser. No. 694,903
Int. Cl. A63h *9/00*
U.S. Cl. 46—157 7 Claims



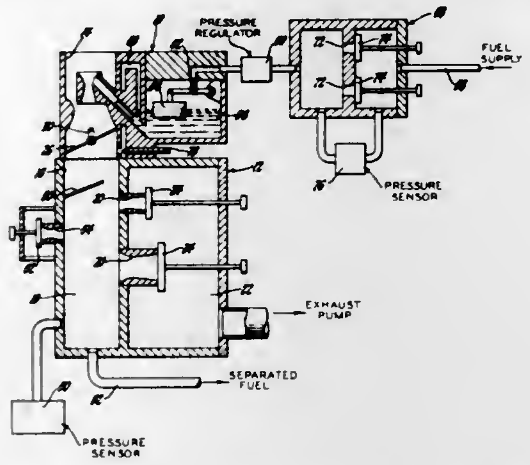
A paperboard figurine having on its front surface a sheet type outer garment. The garment and figurine have registered apertures above the center of the figurine. A stud is pushed through the apertures rear end foremost from the front of the garment to the back of the figurine. The rear end of the stud is slightly larger than the apertures so that it will not permanently enlarge the apertures. The front end of the stud is enlarged and of an ornamental configuration. It has a flat back surface which rests against the portion of the garment covered thereby.

3,528,080
CARBURETOR FLOW TEST METHOD

James L. Greene, Holley, and Gerard T. Ruflin, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,878
Int. Cl. G01m *19/00*
U.S. Cl. 73—118 3 Claims

A carburetor flow stand is located in an enclosure containing air at substantially constant temperature, pressure, and humidity. Air is drawn from the enclosure through the carburetor, the flow stand chamber, and a plurality of sonic outlet nozzles, the rate of air flow being accurately indicated by the pressure in the flow stand chamber. A calibrated nozzle opening from the enclosure to the flow stand chamber is used to check the accuracy of the measurement of flow stand chamber pressure.

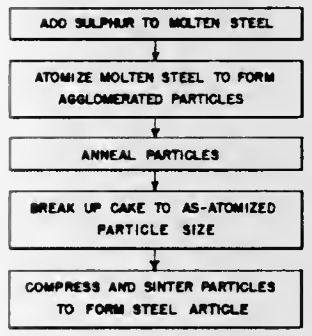
A blending process supplies a continuous stream of test fuel to the carburetor at substantially constant density and viscosity so that the rate of fuel flow may be accurately measured by the pressure drop across an orifice.



The blending process includes a step in which the fuel is brought to a substantially constant temperature for accuracy in the viscosity measurement.

3,528,081
METHOD OF MAKING STEEL POWDER

Robert A. Huseby, Milwaukee, and Paul B. Garner, Menomonee Falls, Wis., assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 18, 1968, Ser. No. 698,738
Int. Cl. B22f *1/00*
U.S. Cl. 75—.5 4 Claims

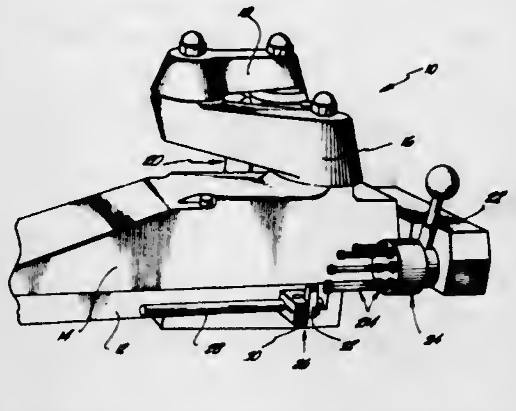

ADD SULPHUR TO MOLTEN STEEL
ATOMIZE MOLTEN STEEL TO FORM AGGLOMERATED PARTICLES
ANNEAL PARTICLES
BREAK UP CAKE TO AS-ATOMIZED PARTICLE SIZE
COMPRESS AND SINTER PARTICLES TO FORM STEEL ARTICLE

The invention relates to a method of making steel powder having, when compacted and sintered, increased machineability. Sulphur is added to carbon steel in the furnace and/or ladle in an amount of about .08 to .25% by weight of the steel. Subsequently, the molten steel is fed by gravity from a tundish in the form of a downwardly moving stream and sheets of water are impinged against the stream to atomize the molten steel and provide a plurality of chain-like agglomerates of particles containing fine, dispersed inclusions of sulphur. The particles are subsequently annealed at a temperature of 1500° F. to 2100° F. in a reducing atmosphere to soften the steel particles, reduce the oxide film and decrease the carbon content. When subsequently compacted and sintered, the resulting metal part has improved machineability due to the sulphur dispersions which are locked within the steel particles.

3,528,082
MACHINE TOOL FEED CONTROL

Thomas D. Newton, Downey, Calif., assignor to Allied Pacific Manufacturing Company, Compton, Calif., a corporation of California
Filed Feb. 29, 1968, Ser. No. 709,472
Int. Cl. B23c *9/00*
U.S. Cl. 90—21.5 2 Claims

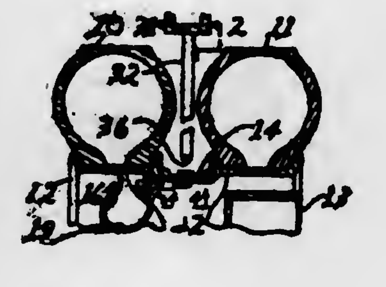
A valve assembly for controlling hydraulic fluid flow to hydraulic cylinders in pattern-following machine tools. A control valve and a turret stop assembly are mounted on a compound slide assembly. The control valve is manually opened to initiate movement of the pattern-following tool by hydraulic fluid flow through the valve. Adjustment of the amount of valve opening controls movement rate.



Turret stop assembly movement, in response to contact with a stop on the fixed base of the slide assembly, shuts off the control valve.

3,528,083
PRESSURE WARNING APPARATUS FOR PNEUMATIC TIRE

Hugh M. Parker, 718 Cherokee St., Talladega, Ala. 35160
Filed Mar. 7, 1968, Ser. No. 711,355
Int. Cl. B60c *23/02*
U.S. Cl. 116—34 9 Claims

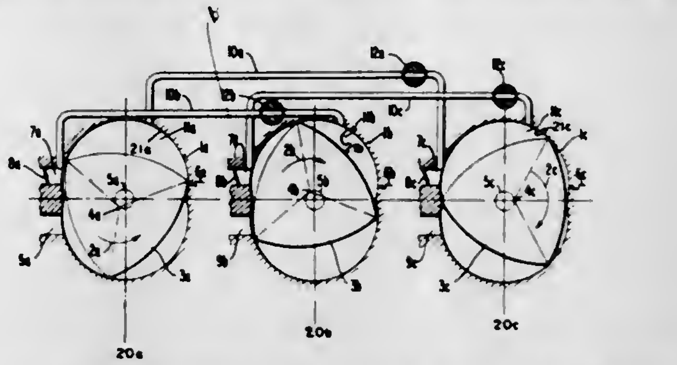


Pressure warning apparatus having a pressure actuated movable element carried by a wheel unit and connected to a pneumatic tire and movable to selected positions in response to pressure differentials in the tire. An actuating member carried by the wheel unit is held in inoperative position by the movable element until there is a predetermined change in pressure in the tire whereupon the actuating member is then released and moves outwardly to actuate a warning device.

3,528,084
ROTARY PISTON INTERNAL COMBUSTION ENGINE

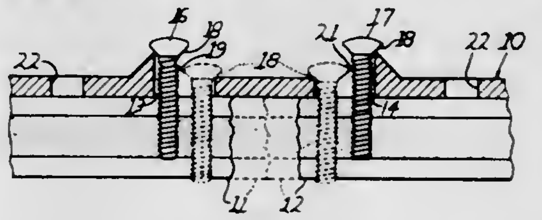
Hubert zu Hohenlohe, Eschenau, Waldhof, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 25, 1968, Ser. No. 778,708
Claims priority, application Germany, Dec. 2, 1967, 1,576,902
Int. Cl. F02b *53/06*
U.S. Cl. 123—8.07 9 Claims

A rotary piston internal combustion engine of three-disk construction in which three disks are rotatably supported on the eccentrics of an eccentric shaft mutually displaced by 120°; each of the pistons valves the discharge apertures of inlet and outlet channels while each of the three inlet channels downstream of the throttle valve or each of the three suction spaces between inlet and outlet channels of each disk is connected by way of a line adapted to be closed with the compression chamber of that disk whose eccentric leads the eccentric of the first-mentioned disk by 120°; the orifices of the lines in the compression chambers are located within the area of the major axis.



3,528,085
BONE COMPRESSION PLATE

Walker Reynolds, Jr., 327 E. 10th St., Anniston, Ala. 36201
Filed Mar. 22, 1968, Ser. No. 715,443
Int. Cl. A61f *5/04*
U.S. Cl. 128—92 4 Claims

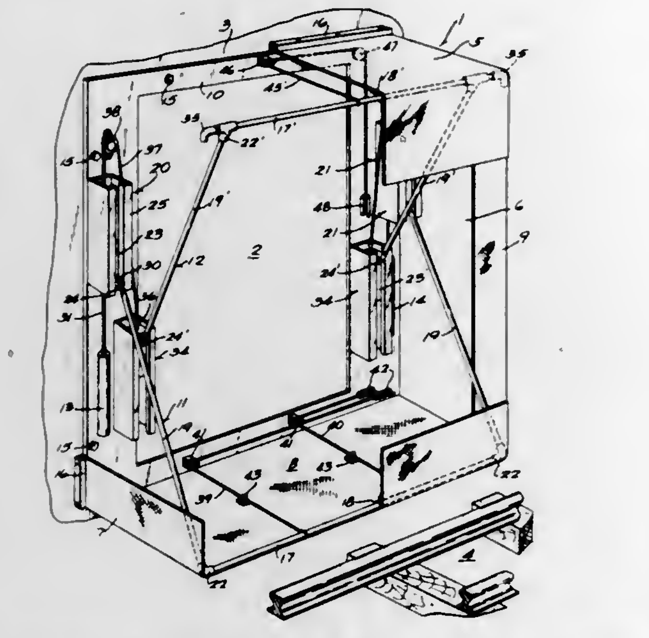


A bone compression plate of a length to span adjacent bone sections and having openings therethrough disposed to overlie each bone section. At least one of the openings is elongated and receives a screw having a head adjacent one end with an under surface that tapers inwardly toward the other end of the screw. An inclined cam surface on the plate adjacent the elongated opening engages the inwardly tapered under surface of the screw to move the screw and the bone section connected thereto relative to the elongated opening.

3,528,086
LOADING DOCK SHELTER

Gary L. Conger, 3043 W. Mason St., Green Bay, Wis. 54301
Filed Mar. 7, 1968, Ser. No. 711,324
Int. Cl. E06b *1/56, 1/32;* **E04b** *12/18*
U.S. Cl. 135—5 5 Claims

A collapsible fabric shelter includes a canvas cover having a top wall, two side walls and, in some cases, a bottom wall on a collapsible linkage interconnected on the opposite sides of a mounting frame for attachment about an opening to a building. The linkage includes a pair of U-shaped support members which are formed of interconnected pipe elements with the outer edges of the top and bottom walls of the canvas cover secured to the bases of the members. The side arms of the upper member extend angularly downwardly and inwardly toward the building and the side arms of the lower member extend angularly upwardly and inwardly toward the building. The inner ends of the upper and lower support members are pivotally secured to a separate trolley which includes wheels disposed with a vertical track. A weight member is provided on each side of the shelter opening and connected by a cable to the trolley to which the arms of the lower support member are secured. A further cable is looped over a pulley and connected to the top of the trolleys for the lower and upper support members. The force of the weight continuously pulls down on the lower member tending to force the lower end of the shelter outwardly and simultaneously exerts an upward force on the upper member tending to force the upper end of the shelter outwardly. As a result, the flexible enclosure is biased outwardly into the expanded position but may be readily retracted in whole or in part. A manually adjustable cable arrangement is provided for locking of the shelter between the minimum and maximum expanded position to thereby vary the opening if so desired or to lock the system in a collapsed position.



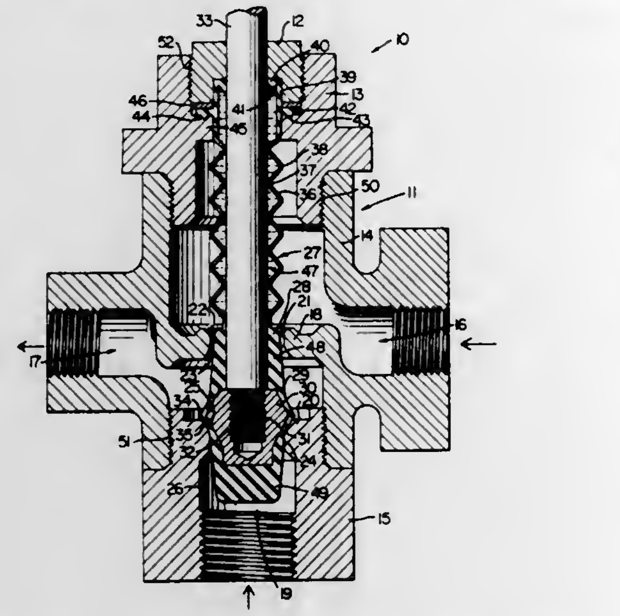
3,528,087
PACKLESS VALVE CONSTRUCTION

Charles H. Perkins, Richmond, Va., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Mar. 25, 1968, Ser. No. 715,656

Int. Cl. F16k *41/10, 11/04*

U.S. Cl. 137—625.4 **21 Claims**



This disclosure relates to an improved valve construction of the packless type and has a valve member for opening and closing a valve seat of the housing means that interconnects an inlet means with an outlet means thereof, the valve means including a flexible bellows type boot having a free end secured to the housing means and telescopically receiving a valve stem therethrough to be attached to the valve seating part thereof with the space between the valve stem and the boot being filled with a non-compressible fluid means so as to prevent collapse of the boot around the stem beyond a predetermined controlled degree in all operating positions of said valve means relative to the valve housing.

3,528,088
ANCHORING DEVICE OF SPRING STEEL AND METHOD FOR IMPARTING THE DEVICE WITH A BAINITIC STRUCTURE

Hans-Dieter Seghezzi and Konrad Köstlin, Vaduz, Liechtenstein, assignors to Hilti Aktiengesellschaft, Schaan, Liechtenstein

Filed Jan. 17, 1968, Ser. No. 698,578

Claims priority, application Germany, Jan. 23, 1967, H 61,632

Int. Cl. C21d *1/20*

U.S. Cl. 148—143 **5 Claims**

Anchoring device composed of spring steel essentially consisting of

	Percent by weight, between about
Carbon	0.50–0.80
Silicon	0.70–2.00
Manganese	0.50–1.20
Chromium	0.50–1.20

phosphorus in an amount not exceeding 0.035 percent by weight and sulphur in an amount not exceeding 0.035 percent by weight, the spring steel of the anchoring device being further characterized by a predominantly bainitic structure and a hardness in the range of 55–58 HRc. The steel may also contain not more than about 0.5% by weight of molybdenum and/or vanadium. The application also discloses a method for imparting the steel composition of the anchoring device with the bainitic structure, the method comprising heating the anchoring device for about 10–30 minutes to a temperature in the range of 850–950° C. The thus heated device is then rapidly cooled to a temperature of about 200–280° C. and is maintained at this temperature for about 30–120 minutes, whereafter the device is cooled to room temperature.

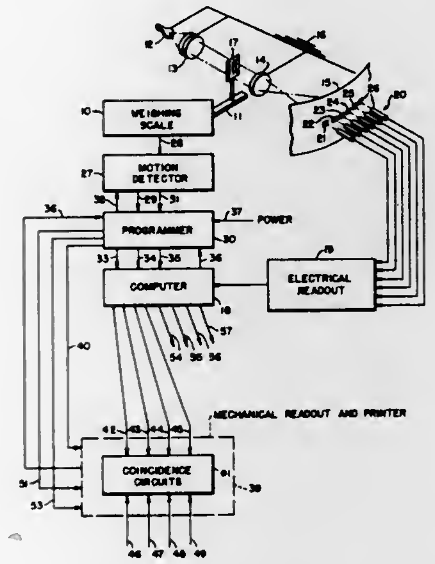
3,528,089
CONDITION RESPONSIVE WEIGHING APPARATUS

Orval J. Martin, Toledo, Ohio, assignor to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio

Filed Mar. 18, 1968, Ser. No. 713,833

Int. Cl. G01g *23/38*

U.S. Cl. 177—3 **9 Claims**



A computing weighing scale comprising photosensitive means for setting up selected price factors in the scale's computer and interlock means for preventing initiation or completion of the system's operating cycle, which includes weighing, computing, and printing, if part of the photosensitive means burns out.

3,528,090
METHOD OF PROVIDING AN ELECTRIC CONNECTION ON A SURFACE OF AN ELECTRONIC DEVICE AND DEVICE OBTAINED BY USING SAID METHOD

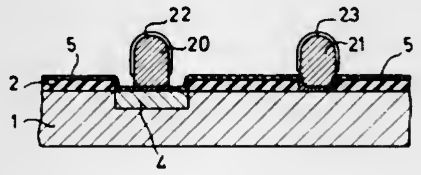
Karel Jakobus Blok van Laer, Nijmegen, Netherlands, assignor, by mesne assignments, to U.S. Philips Co., Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 19, 1968, Ser. No. 699,228

Claims priority, application Netherlands, Jan. 25, 1967, 6701136

Int. Cl. C23f *17/00;* **H01l** *7/00*

U.S. Cl. 204—15 **4 Claims**



A method of providing tinned bump contacts on a semiconductor device or integrated circuit, wherein on the device surface is provided a metal layer for plating and on the latter a non-solderable metal layer which is removed at the areas where the bump contacts are to be formed. The bump contacts are next formed by plating while the metallic layers are masked, after which the mask is removed and the device immersed in a solder bath, with the result that the solder coats only the bump contacts and does not adhere to the surrounding surface portions of the non-solderable layer.

3,528,091
BOTTLE CAP

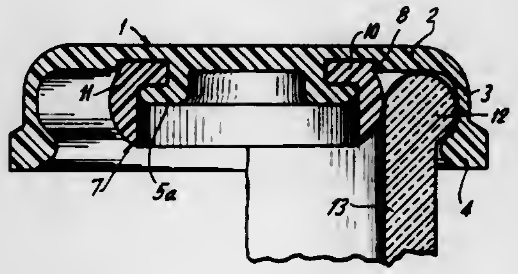
Werner Sachau, Hamburg, Germany, assignor to Tivoli Werke Aktiengesellschaft, Hamburg-Eidelstedt, Germany

Filed Mar. 13, 1968, Ser. No. 712,801

Claims priority, application Germany, Mar. 15, 1967, T 33,443

Int. Cl. B65d *41/22*

U.S. Cl. 215—41 **4 Claims**



This invention is a combination cap- and plug-type closure for bottles, jars, and similar containers. Basically, the closure of this invention is formed of an outer cap section of hard plastic material and an inner centrally disposed plug section of soft plastic material.

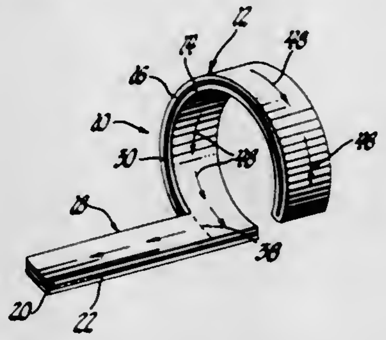
3,528,092
ELECTROMAGNETIC FORMING METHOD AND APPARATUS

Sarkis Barkhoudarian, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Jan. 26, 1968, Ser. No. 700,813

Int. Cl. B23k *21/00*

U.S. Cl. 228—3 **1 Claim**



Electromagnetic forming method and apparatus for joining a strip workpiece to the inner surface of a hollow member utilizing a disposable forming coil which comprises the strip workpiece.

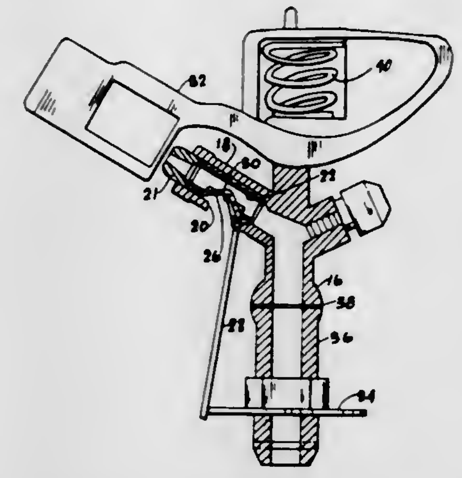
3,528,093
SQUARE PATTERN IRRIGATION SPRINKLING DEVICE

Cornelis Eerkens, 147—07 Charter Road, Jamaica, N.Y. 11435

Filed Jan. 3, 1968, Ser. No. 695,437

Int. Cl. B05b *3/00*

U.S. Cl. 239—97 **2 Claims**



A rotary sprinkler, which would otherwise distribute water in a circular pattern, is provided with a cam mechanism which alters the pattern from a circular area to a square area. Other configurations besides the square can be obtained if desired.

3,528,094
FLAW DETECTOR FOR DISCONTINUOUS SHEET LENGTHS

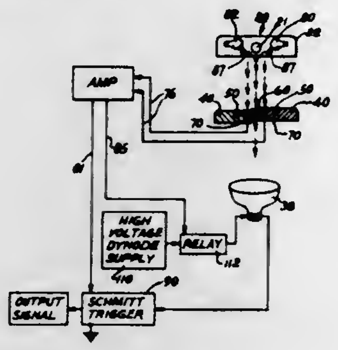
Melvin J. Binks, Barrington, Ill. (℅ Binks Industries Inc., 391 E. Potter Ave., Wood Dale, Ill. 60191)

Filed Mar. 22, 1968, Ser. No. 715,400

Int. Cl. G01n *21/32*

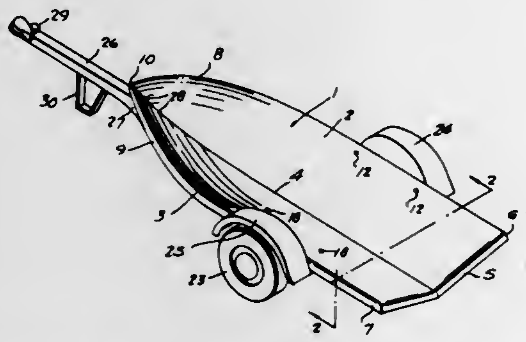
U.S. Cl. 250—219 **18 Claims**

A flaw detector for discontinuous sheet lengths traveling across an opaque surface with a narrow, elongated detection slot for passage of a planar light beam to a photo tube sensing flaws thereby. Rows of magnets in the surface proximate the slot, on either side, hold down the leading and trailing ends of passing sheets. The surface descends in steps across the slot, which is filled with transparent material. Photo transistors in the surface, proximate both sides of the slot, have separate restricted light beams directed thereon for detection of sheet absence to signal a control means for suppression of light exposure to and signal transmission from the photo tube. In one embodiment an ultra-fast reed relay, triggered by the photo transistors upon sheet absence, disconnects the photo tube dynode voltage supply. Simultaneously, a Schmitt trigger at the photo tube output is grounded by the photo transistors to suppress signal transmission during sheet absence.



3,528,095
BOAT TRAILER

Clark Gudmundson, 267 E. 550 N.,
Bountiful, Utah 84010
Filed Apr. 2, 1968, Ser. No. 718,141
Int. Cl. B62d *53/00*
U.S. Cl. 280—414 1 Claim

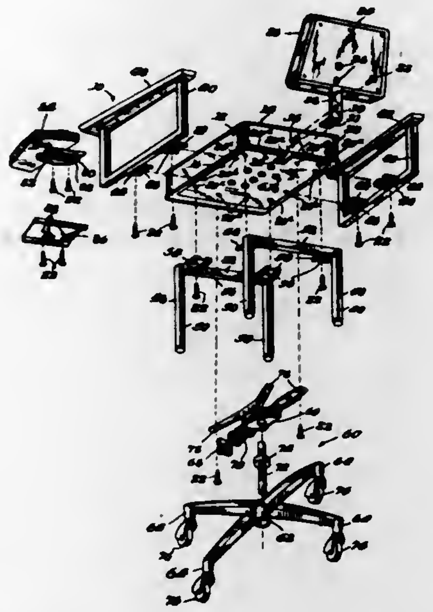


A towable boat trailer having a boat supporting elongated sheet whose two halves slant laterally downwardly towards one another meeting at a common crease extending on the longitudinal axis of the sheet. The side marginal portions of the sheet extend downwardly to provide side walls, adjacent which, the bottom face of the sheet is resiliently supported on a wheel axle. The side walls curve inwardly and upwardly meeting at a point on said axis, giving the sheet a cupped configuration capable of receiving a boat bottom thereon. A tow bar extends forwardly from the pointed end.

3,528,096
MODULAR FURNITURE

Jerome E. Moberg, Perry, N.Y., assignor to AVM Corporation, Jamestown, N.Y., a corporation of Delaware
Filed Feb. 28, 1968, Ser. No. 709,032
Int. Cl. A47c *13/00*
U.S. Cl. 297—130 3 Claims

A method for producing and apparatus assembleable into any one of a multiplicity of furniture pieces from a small number of basic components comprises the construction of a chair seat having component receiving means in its base adapted to receive a multiplicity of components which may be selectively mounted to assemble various pieces of furniture. The components may be added in groups of one or more, and include a chair back component, leg components, a tilter base component, an interconnection component for connecting a pair of seats or other components in side-by-side relationship with a seat, and a table top component for connecting between a pair of seats. These various components are selectively assembled into furniture pieces, examples including tiltable or rigid chairs, a stool, a settee, and a settee-table top combination.



3,528,097
LIQUID DEVELOPERS FOR DEVELOPING ELECTROSTATIC IMAGES

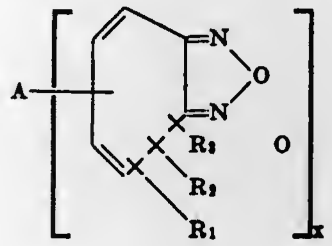
Tetsuro Otsuka, Takatsuki-shi, Isao Ota, Osaka-shi, and Shinichi Ogo, Moriguchi-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
No Drawing. Filed Feb. 9, 1968, Ser. No. 704,262
Claims priority, application Japan, Mar. 14, 1967, 42/16,817
Int. Cl. G03g *9/06*
U.S. Cl. 252—62.1 4 Claims

An improved liquid developer consists essentially of a carrier liquid having an electrical resistivity higher than 10^{12} ohm–cm., a finely divided pigment powder dispersed or suspended in the carrier liquid, a control agent and, as an addition for improving visual images in halftone, from 0.01 to 0.3%, optimally 0.03 to 0.1%, by weight of geraniol, linalool, or citronellol.

3,528,098
BRIDGED POLY(BENZOFURAZAN OXIDES)

John T. Shaw, Grove City, Pa., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Application Aug. 30, 1965, Ser. No. 483,756, now Patent No. 3,260,621, which is a continuation-in-part of application Ser. No. 237,811, Nov. 15, 1962, now abandoned. Divided and this application Feb. 15, 1966, Ser. No. 527,493
Int. Cl. C07d *85/48*
U.S. Cl. 260—307 4 Claims

A bridge poly(benzofurazan oxide) of the general formula:

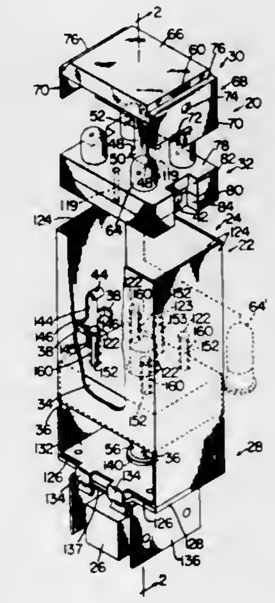


where R_1, R_2 and R_3 are hydrogen, lower alkyl, lower alkoxy, chloro or nitro, or two are a second furazan ring; and A is a bridging link, having *x* valence bonds, each attached to separate benzo rings, and *x* is 2, 3 or 4, is prepared by the azide decomposition of an ortho-nitro-azido compound, or the oxidative ring closure of an ortho-nitro-amino compound. The A may be sulfone, carbonyl, azo, ether, —CH_2— or other linkage.

The compounds are depolarizers for battery cells, or fungistatic agents.

3,528,099
LOCKING AND RELEASE MEANS IN A SWITCH ASSEMBLY

Anthony A. Di Pilla, Philadelphia, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Jan. 25, 1968, Ser. No. 700,492
Int. Cl. H01h *9/02, 9/18*
U.S. Cl. 200—168 26 Claims

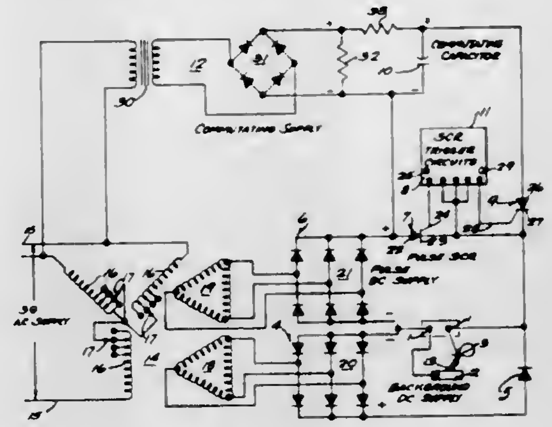


A switch assembly has a casing into which a push button construction means is insertible. The push button construction means has an operator push actuator and a lamp holder means that are relatively movable with respect to each other, and are assembled as a unitary push button construction. The push button construction is insertible as a unit into the casing and is automatically locked during the insertion procedure. After the push button construction has been locked, the push actuator may be repeatedly pushed inward and released, and this causes a switch actuating plunger correspondingly to actuate and unactuate a switch means that is supported by the casing. The push button construction may be removed from the casing by first pulling out the push actuator, then pushing in the push actuator slightly, and then withdrawing the entire push button construction from the casing.

3,528,100
ARC ESTABLISHING CIRCUIT

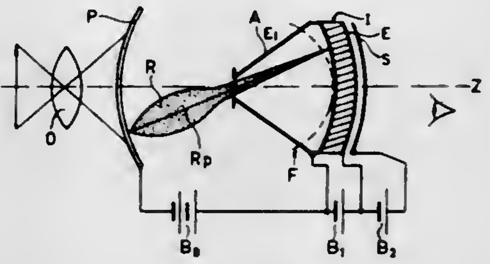
Joseph J. Budy, Menomonee Falls, Wis., assignor, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 19, 1968, Ser. No. 706,305
Int. Cl. B23k *9/10*
U.S. Cl. 219—131 2 Claims

An arc welding circuit includes a three phase power transformer having a pair of in-phase secondaries, each connected in a delta configuration. A pair of full wave rectifiers is connected one to each of the secondaries and connected in parallel to welding terminals connected respectively to a work member and a consumable electrode. The first secondary is wound to provide a selected background voltage sufficient to maintain a previously established arc and is connected to the terminals in series with a blocking diode or other unidirectional current conductive means. The other secondary is wound to establish a preselected higher output voltage sufficient to establish and maintain the arc with substantial metal transfer from a consumable electrode and is connected in circuit in series with a silicon controlled rectifier. A separate turn-off silicon controlled rectifier is connected across the main rectifier in series with a capacitor to terminate conduction. The capacitor is interconnected to the incoming power supply through a charging circuit including a single phase transformer-rectifier unit. By controlled firing of the two controlled rectifiers, the high voltage supply is connected across the electrode and the work member to establish the arc and transfer metal.



3,528,101
ELECTRONIC IMAGE INTENSIFIER WITH SECONDARY EMISSIVE MULTIPLICATION AND AN ELECTRON-OPTICAL FOCUSSING SYSTEM BETWEEN A PHOTOCATHODE AND THE SECONDARY EMISSIVE ELECTRODE

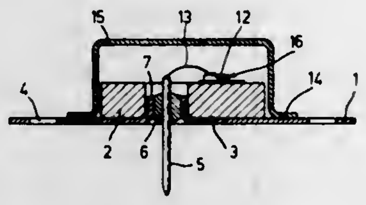
Brian William Manley, Burgess Hill, and John Adams, East Grinstead, England, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 20, 1968, Ser. No. 706,893
Claims priority, application Great Britain, Mar. 29, 1967, 14,226/67
Int. Cl. H01j *39/00, 39/14*
U.S. Cl. 313—95 6 Claims



An image intensifier device employing a photocathode, a channel intensifier device, i.e., a secondary emissive electron multiplier device comprising a plate having a large number of channels in the thickness direction and having conductive layers on major opposite faces serving, respectively, as input and output electrodes, and an electron-optical system located between the photocathode and the input electrode. The device is so constructed that the electron-optical system has rotational symmetry, and an electron-optical axis coincident with its axis of rotational symmetry, the electron-optical axis being normal to the surface of the photocathode and the faces of the channel intensifier. The principal rays of the photocathode diverge between a cross-over point and the channel intensifier while the channels are all parallel to each other and the channel intensifier and the image plane of the electron-optical system are both curevd and are both concave as viewed from the photocathode.

3,528,102
SEMICONDUCTOR HEADER ASSEMBLY AND METHOD OF FABRICATION THEREOF

Jacques Rodet, Lebisey-Caen, and Daniel Reouf, d'Harcourt-Caen, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 708,386
Claims priority, application France, Feb. 23, 1967, 96,270
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 **13 Claims**

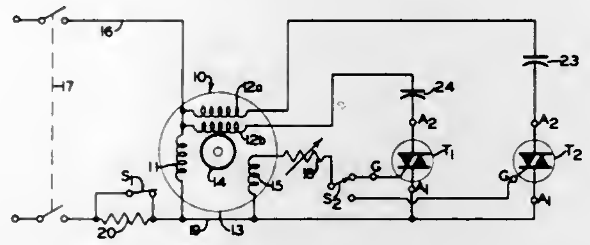


A semiconductor body is supported on a metal plate of high thermal conductivity having openings which register with tubular projections on a metal slab to which the plate is soldered. Electrodes on the upper surface of the semiconductor body are electrically connected to terminal pins which respectively pass through and are insulated in the tubular projections by the fusion of insulating beads. The soldering of the plate to the slab, the welding of the hood to the slab, and the fusion of the insulating beads are all accomplished in a simultaneous heat treatment. In one embodiment, the beads have a coefficient of expansion which is lower than that of the metal slab, thereby sustaining compression, whereas in an alternative embodiment the insulating beads have a coefficient of expansion about equal to that of the metal slab, relying on oxide-diffusion for bonding.

3,528,103
INDUCTION MOTOR AND STARTING AND REVERSING CIRCUIT THEREFOR

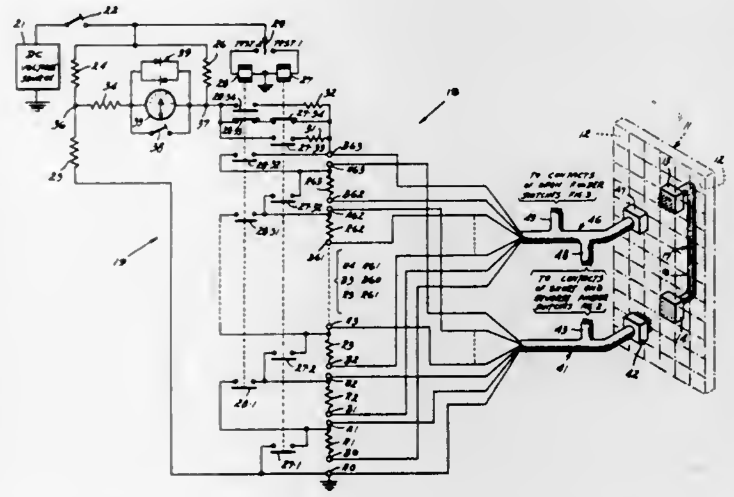
George T. Wolf, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 11, 1968, Ser. No. 697,224
Int. Cl. H02p *1/40, 1/44*
U.S. Cl. 318—207 **12 Claims**

A bilateral semiconductor switching device is utilized to provide the starting winding of a single phase induction motor with line voltage during the starting condition of the motor and to achieve rapid reversal of rotation without need to open or close high current contacts. The gate signal for the semiconductor switching device is provided by a pickup coil sensing the current in the main winding, the signal being greater than the threshold of the level of the semiconductor device until the operating speed of the motor is reached. To accomplish rapid reversal of rotation, the start winding polarity is set during the time that the semiconductor switching device is in a high impedance state, and the reversal is initiated by momentarily applying to the gate of this bilateral semiconductor switching device energy from the opposite power terminal.



3,528,104
BRIDGE CIRCUIT METHODS OF AND APPARATUS FOR TESTING AND LOCATING FAULTS IN ELECTRICAL CIRCUITS

Arthur J. Ehlschlager, Columbus, Ohio, assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 8, 1968, Ser. No. 711,736
Int. Cl. G01r *31/02*
U.S. Cl. 324—51 **8 Claims**



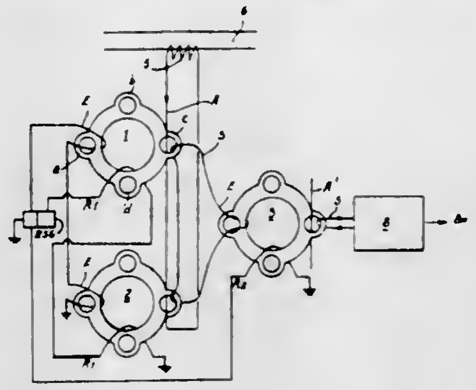
Methods of and apparatus for testing electrical circuits to locate faults such as discontinuities, shorts and reverse and bridged connections in the circuits. A Wheatstone type bridge circuit includes three arms having fixed, equal values of resistance therein. A plurality of resistors having a sum total resistance value equal to the resistance value of each of the other three arms of the bridge circuit are arranged to be connected in a fourth arm of the bridge circuit. Conductors of the electrical circuits to be tested are connected in the fourth arm of the bridge circuit so that the plurality of resistors of the fourth arm and the conductors form ideally a series connection with each conductor connected between a pair of associated resistors. The fourth arm of the bridge circuit now has an equivalent single test resistance value which can be compared with the resistance value of at least one of the other three arms of the bridge circuit to determine if the conductors are continuous and that no shorts or reverses are present.

If discontinuities, shorts and reverse connections are indicated, switching features are provided for locating the faults.

3,528,105
EXCESS CURRENT DETECTORS EMPLOYING MULTI-APERTURE FERRITE ELEMENTS

Jean Gagnière, Meudon, France, assignor to Electricite de France (Service National), Paris, France, a body corporate of France
Filed Feb. 16, 1968, Ser. No. 706,181
Claims priority, application France, Feb. 20, 1967, 95,568
Int. Cl. G01r *19/16*
U.S. Cl. 324—103 **8 Claims**

An excess current detector comprising at least one multi-aperture ferrite element, of the type sold under the trademark Transfluxor, to one operating winding of which is supplied a signal corresponding to the current to be monitored. The arrangement is such that the element supplies an output when the signal exceeds a threshold value predetermined by the magnetic characteristics of the element.



DESIGNS

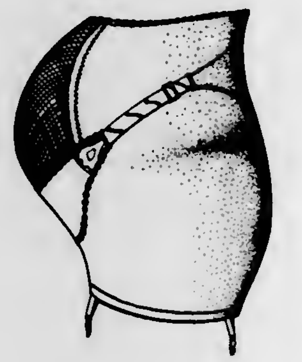
SEPTEMBER 8, 1970

218,586

MATERNITY GIRDLE

Marguerite R. Williams, Trumbull, Conn., assignor to Surgical Appliance Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 20, 1969, Ser. No. 19,626
Term of patent 14 years
Int. Cl. D2—*02*
U.S. Cl. D2—2

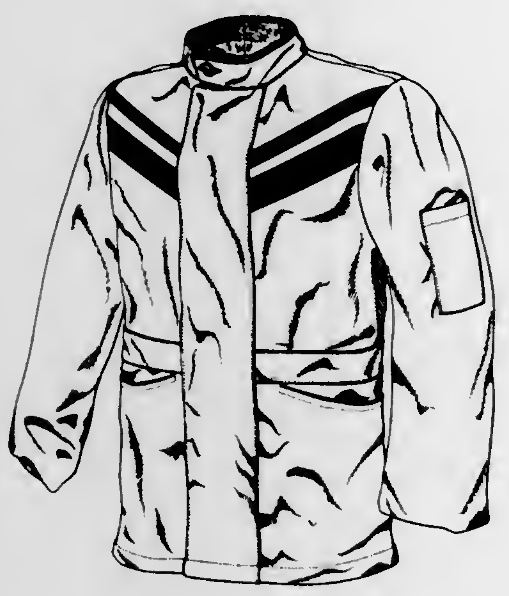


218,587

JACKET

Sid Lawson, New City, N.Y., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Sept. 17, 1968, Ser. No. 13,566
Term of patent 14 years
Int. Cl. D2—*07*
U.S. Cl. D2—183

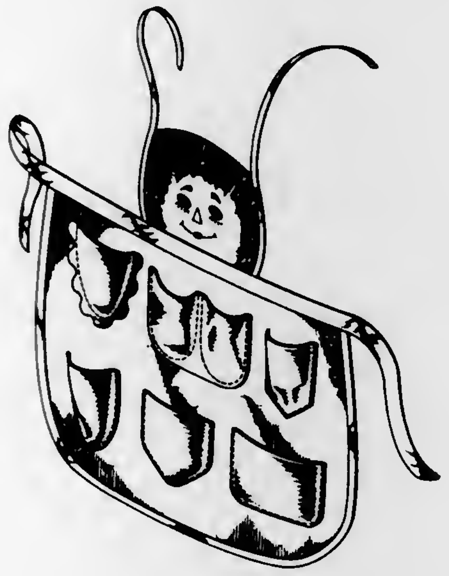


218,588

GIRL'S APRON

Kathy D. Lambert, Chicago, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership

Filed July 17, 1969, Ser. No. 18,250
Term of patent 14 years
Int. Cl. D2—*01*
U.S. Cl. D2—228

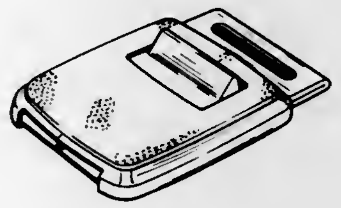


218,589

SEATBELT BUCKLE

Thomas E. Lohr, Warren, Mich., assignor to Jim Robbins Seat Belt Co., Mount Clemens, Mich., a corporation of Delaware

Filed May 8, 1969, Ser. No. 17,078
Term of patent 14 years
Int. Cl. D2—*08*
U.S. Cl. D2—408

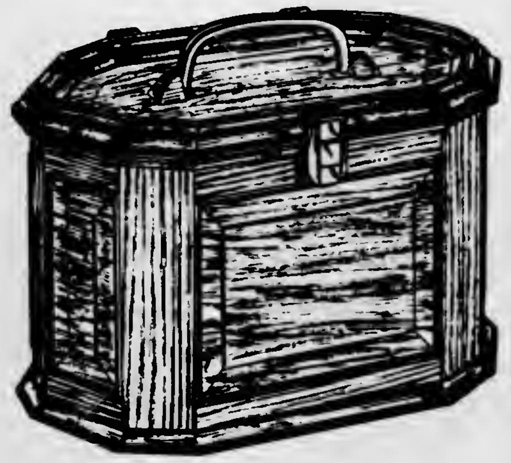


218,590

SEWING CHEST

Albert C. Petitto, Hudson, Mass., assignor to Lerner Manufacturing, Inc., Melville, N.Y., a corporation of New York

Filed June 20, 1969, Ser. No. 17,799
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D3—19

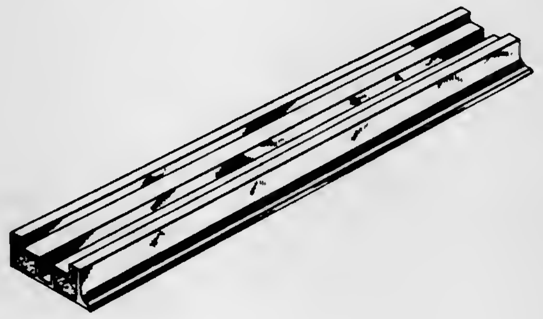


218,591

SCREED

Terry J. Kohler, Sheboygan, Wis., assignor to The Vollrath Company, Sheboygan, Wis., a corporation of Wisconsin

Filed Sept. 24, 1969, Ser. No. 19,284
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—45

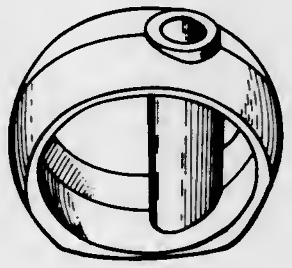


218,592

FURNITURE SLIDE

Bent Harlang, Hellerup, and Jorgen P. C. Rasmussen, Holte, Denmark, assignors to Kevi A/S, Rugvaenget, Tastrup, Denmark

Filed Mar. 28, 1969, Ser. No. 16,506
Claims priority, application Denmark Jan. 31, 1969
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—227

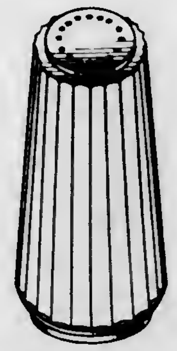


218,593

DISPENSING CONTAINER

Richard S. Hart, Wheaton, Ill., assignor to Morton International, Inc., Chicago, Ill., a corporation of Delaware

Filed July 15, 1969, Ser. No. 18,204
Term of patent 14 years
Int. Cl. D9—*07*
U.S. Cl. D9—207

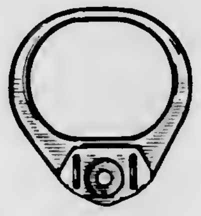


218,594

PULL TAB FOR A TEAR STRIP OPENER

Audie L. Lambert, Rosemont, and Richard D. Zenger, Downers Grove, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 7, 1968, Ser. No. 13,870
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—256

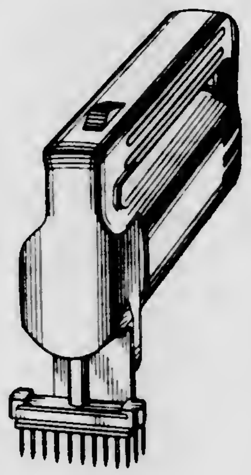


218,595

MEAT TENDERIZER

Virginia L. Clifton, 1701 E. Louisiana Ave., Denver, Colo. 80210

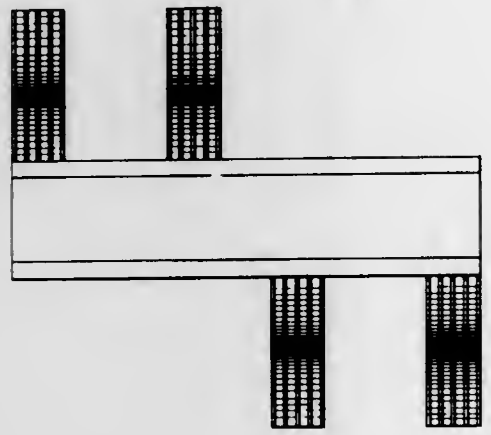
Filed Feb. 7, 1969, Ser. No. 15,689
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D11—1

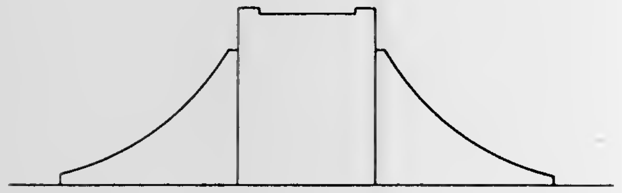


218,596
HIGHWAY OVERPASS

Todd Christopher Brown, 516 Prospect St.,
Westfield, N.J. 07090
Filed Sept. 18, 1968, Ser. No. 13,581
Term of patent 14 years
Int. Cl. D25—*05*

U.S. Cl. D13—1

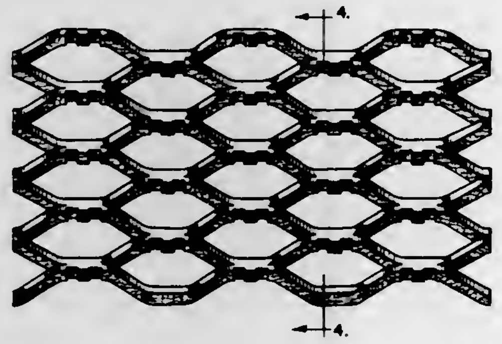




218,597
SERRATED METAL GRATING

Mark M. Stone, Highland Park, Ill., assignor to Metalex Corporation, Libertyville, Ill., a corporation of Illinois
Filed Apr. 21, 1969, Ser. No. 16,835
Term of patent 14 years
Int. Cl. D25—*01*

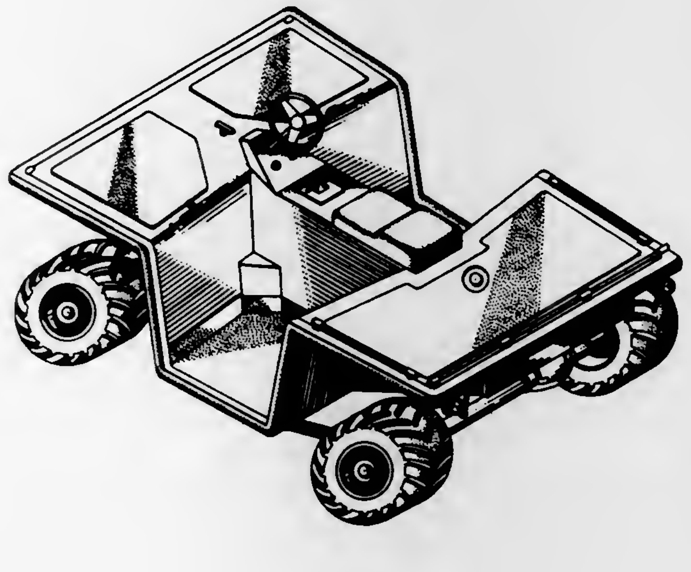
U.S. Cl. D13—1



218,598
OFF ROAD VEHICLE

Robert L. Horn, 76 Richie Ave., Cincinnati, Ohio 45215, and John A. Middleton, Cincinnati, Ohio; said Middleton assignor to said Horn
Filed Apr. 14, 1969, Ser. No. 16,711
Term of patent 14 years
Int. Cl. D12—*08*

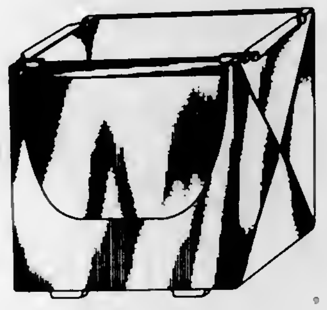
U.S. Cl. D14—3



218,599
CART

Robert L. Propst, Ann Arbor, and Travis M. Randolph, Saugatuck, Mich., assignors to Herman Miller, Inc., Zeeland, Mich., a corporation of Michigan
Filed June 11, 1969, Ser. No. 17,646
Term of patent 14 years
Int. Cl. D12—*02*

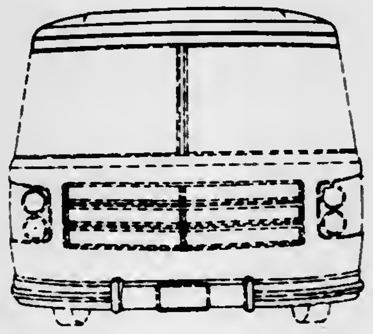
U.S. Cl. D14—3

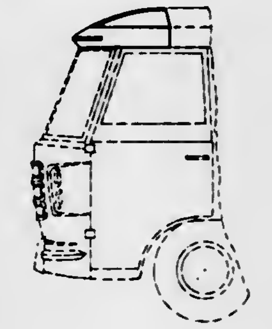


218,600
ROOF TRIM PIECE FOR A VEHICLE

Jesse R. Birchard, Walled Lake, Mich., Albert D. Mortrude, Pompano Beach, Fla., and Ray C. Conner, Battle Creek, Mich., assignors, by mesne assignments, to The Cortez Corporation, Kent, Ohio, a corporation of Ohio
Original design application Sept. 20, 1968, Ser. No. 13,621. Divided and this application Feb. 26, 1969, Ser. No. 17,041
Term of patent 14 years
Int. Cl. D12—*14*

U.S. Cl. D14—6

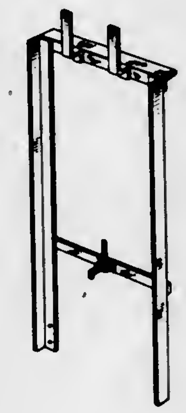




218,601
CART CARRIER

Richard E. Prestage, R.R. 2, Box 3008, and Phillip D. Prestage, R.R. 2, Box 1188, both of Battle Creek, Mich. 49017
Filed May 15, 1969, Ser. No. 17,161
Term of patent 14 years
Int. Cl. D12—*14*

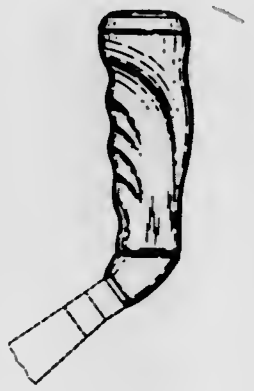
U.S. Cl. D14—6



218,602
SELECTOR LEVER HANDLE FOR A TRANSMISSION

Paul M. Malasky, Bloomfield Hills, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed May 22, 1969, Ser. No. 17,272
Term of patent 7 years
Int. Cl. D12—*14;* D8—*03*

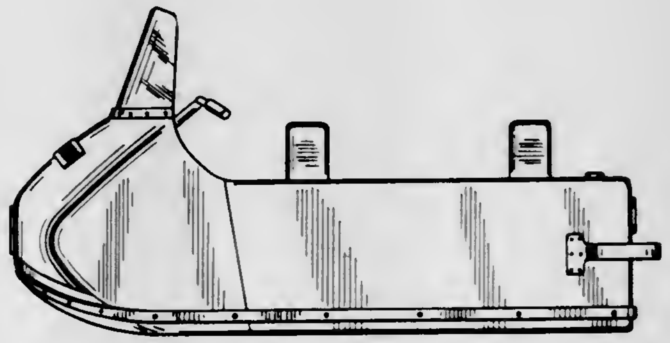
U.S. Cl. D14—6



218,603
SNOWMOBILE BODY

William C. Sizer, P.O. Box 832,
Minneapolis, Minn. 55440
Filed June 6, 1969, Ser. No. 17,543
Term of patent 14 years
Int. Cl. D12—*13*

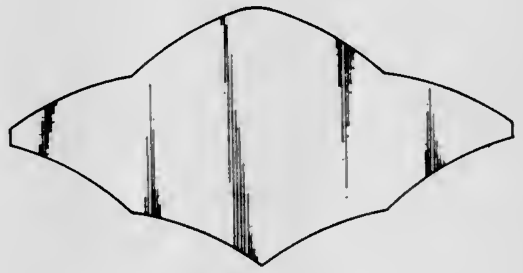
U.S. Cl. D14—24



218,604
SURFACE COVERING UNIT

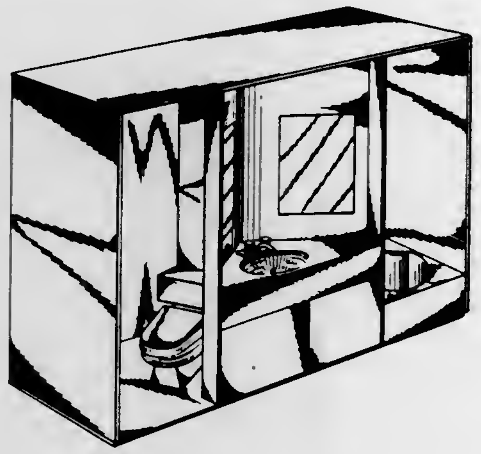
Barnadette Letienne nee Benoit, 1550 McGregor Ave., Apt. 801, Montreal, Quebec, Canada
Filed May 26, 1969, Ser. No. 17,358
Term of patent 14 years
Int. Cl. D25—*01*

U.S. Cl. D18—2



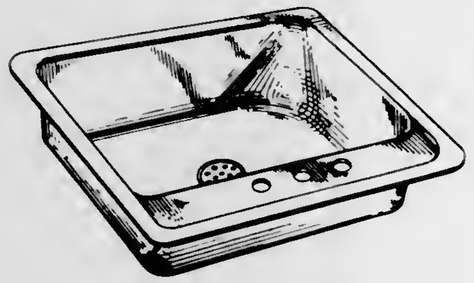
218,605
BATHROOM UNIT

Warren L. Hamilton, Woodbridge, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 11, 1969, Ser. No. 18,629
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—49



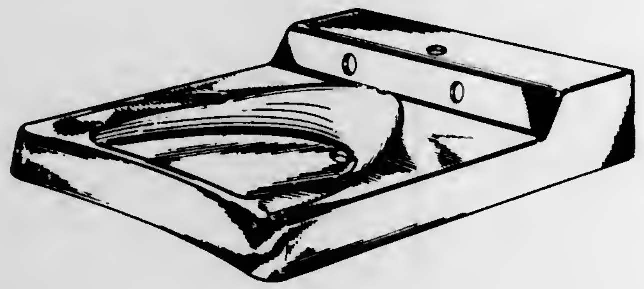
218,606
SINK

Millard H. Lien, Omaha, Nebr., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
Filed May 6, 1969, Ser. No. 17,031
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



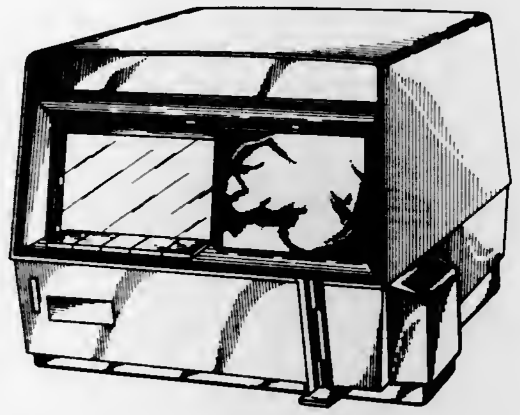
218,607
LAVATORY

Donald C. Schrock, La Grange, and Richard J. Contant, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed May 21, 1969, Ser. No. 17,254
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—58



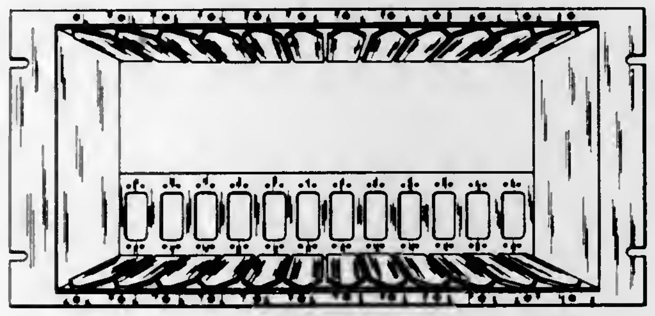
218,608
AUDIO-VISUAL EDUCATIONAL DEVICE OR THE LIKE

William J. Raymond, Des Plaines, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 16, 1968, Ser. No. 14,024
Term of patent 14 years
Int. Cl. D16—*03, 04;* D19—*08*
U.S. Cl. D25—1



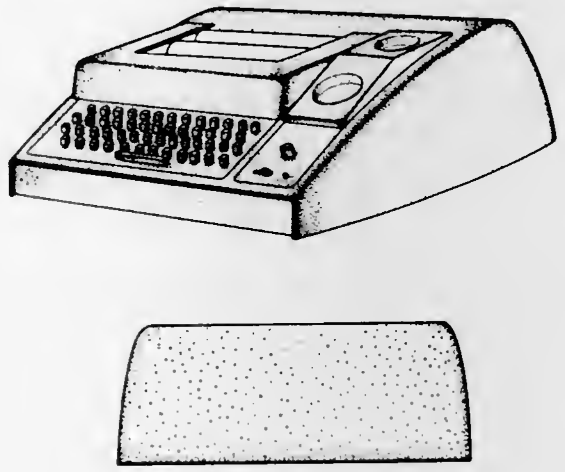
218,609
INSTRUMENT RECEIVING BIN

Randolph E. Charles, 76 Plain Road, Wayland, Mass. 01778
Filed Apr. 3, 1969, Ser. No. 16,575
Term of patent 14 years
Int. Cl. D14—*99*
U.S. Cl. D26—5



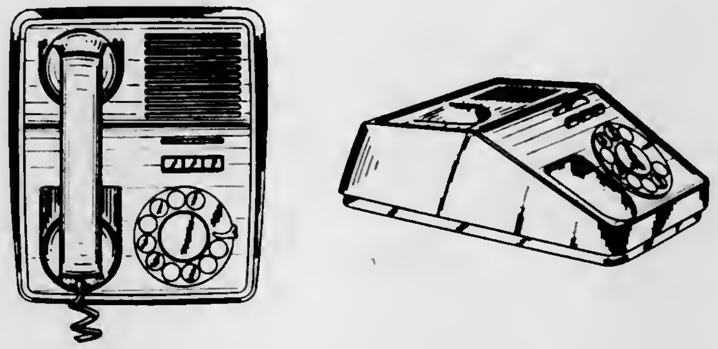
218,610
ACOUSTICALLY COUPLED COMMUNICATION TERMINAL

William O. Swan, Sunnyvale, and Roger N. Fleck and Gene Tepper, San Francisco, Calif., assignors to Anderson Jacobson, Inc., Mountain View, Calif., a corporation of California
Filed Jan. 27, 1969, Ser. No. 15,524
Term of patent 14 years
Int. Cl. D14—*02*
U.S. Cl. D26—14



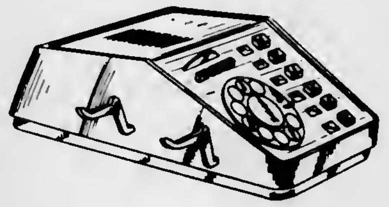
218,611
DESK TELEPHONE SET

George L. Payne, Bedford Hills, N.Y., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1969, Ser. No. 18,825
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



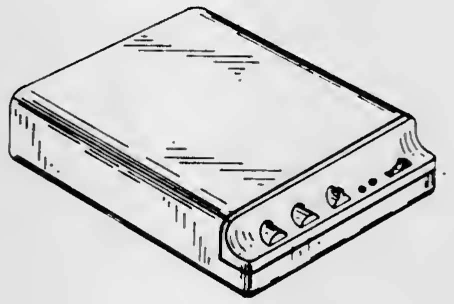
218,612
DESK TELEPHONE BASE

George L. Payne, Bedford Hills, N.Y., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 22, 1969, Ser. No. 18,826
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



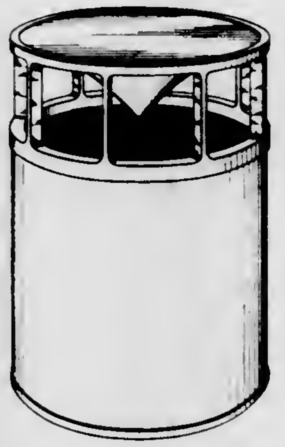
218,613
CABINET FOR TELECOMMUNICATION AND SOUND REPRODUCTION EQUIPMENT

Kenneth Henry Grange, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Continuation of design applications Ser. No. 14,320 and Ser. No. 14,325, both filed Nov. 5, 1968. This application July 7, 1969, Ser. No. 19,254
Claims priority, application Great Britain May 7, 1968
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



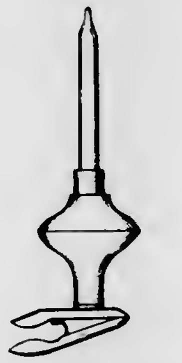
218,614
LOUD SPEAKER ENCLOSURE

Carl R. Yurdin, Port Washington, N.Y., assignor to Harman-Kardon, Incorporated, Plainview, Long Island, N.Y., a corporation of Delaware
Filed Oct. 15, 1969, Ser. No. 19,577
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14



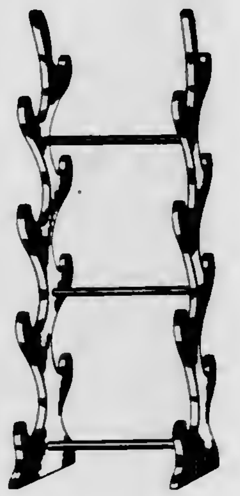
218,615
CHRISTMAS TREE ORNAMENT

Kurt S. Adler, Riverdale, N.Y.
(1107 Broadway, New York, N.Y. 10010)
Filed Feb. 5, 1969, Ser. No. 15,643
Term of patent 3½ years
Int. Cl. D11—*05*
U.S. Cl. D29—1



218,616
WINE RACK

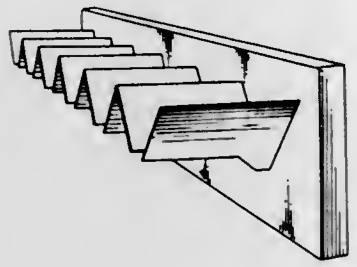
Lawrence J. Owen, Jr., 408 Congress Ave., East Williston, N.Y. 11596
Filed May 20, 1969, Ser. No. 17,241
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—3



218,617
TIE RACK

Shirley Brotherton, 54 S. McGregor Ave.,
Mobile, Ala. 36608
Filed July 16, 1969, Ser. No. 18,228
Term of patent 14 years
Int. Cl. D6—*01*

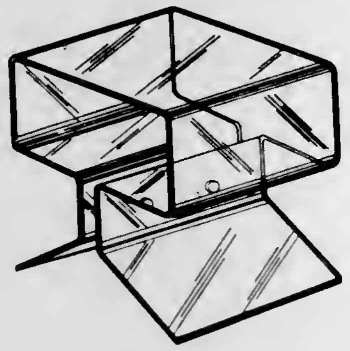
U.S. Cl. D33—8



218,618
TABLE

John A. Weick, 329 E. 17th St.,
New York, N.Y. 10003
Filed Nov. 10, 1969, Ser. No. 20,031
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—14

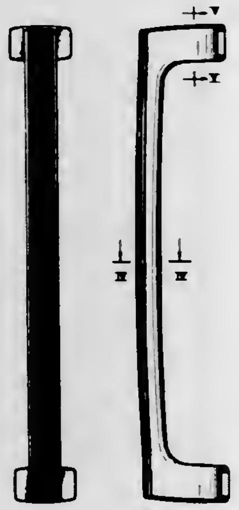


218,619
GRAB BAR

Raymond W. Young, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 6, 1969, Ser. No. 18,555
Term of patent 14 years
Int. Cl. D8—*03;* D6—*01*

U.S. Cl. D33—21

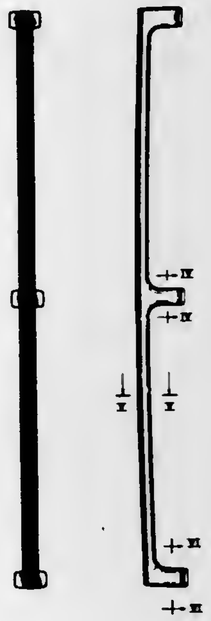


218,620
GRAB BAR

Raymond W. Young, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 6, 1969, Ser. No. 18,557
Term of patent 14 years
Int. Cl. D8—*03;* D6—*01*

U.S. Cl. D33—21

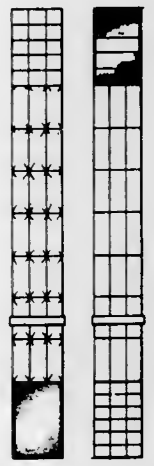


218,621
WEIGHT BELT

George T. Scott, Jr., Lubbock, Tex., assignor to Elmer's Weights, Inc., Lubbock, Tex., a corporation of Texas

Filed June 5, 1969, Ser. No. 17,534
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—5

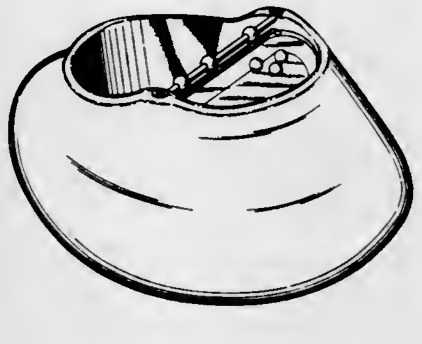


218,622
CHILD'S ROCKING SEAT

Leslie C. Peltier, Delphos, Ohio, assignor to The Delphos Bending Company, Delphos, Ohio, a corporation of Ohio

Filed July 30, 1969, Ser. No. 18,464
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—5

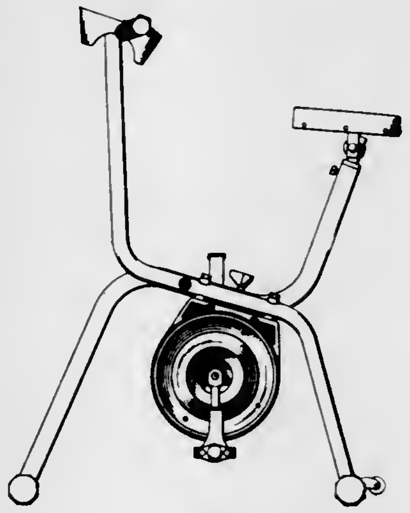


218,623
FOLDING BICYCLE EXERCISER

Charles R. Margolies, Oreland, Pa., assignor to Snyder Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1969, Ser. No. 19,156
Term of patent 7 years
Int. Cl. D21—*03*

U.S. Cl. D34—5

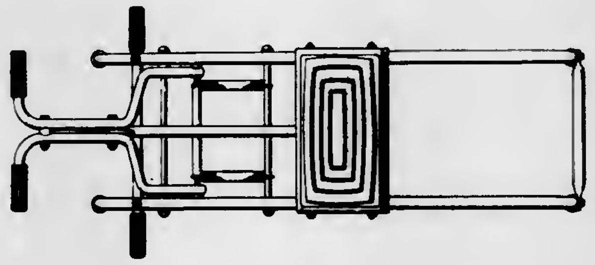


218,624
ROWING EXERCISER

Charles R. Margolies, Oreland, Pa., assignor to Snyder Manufacturing Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1969, Ser. No. 19,158
Term of patent 7 years
Int. Cl. D21—*03*

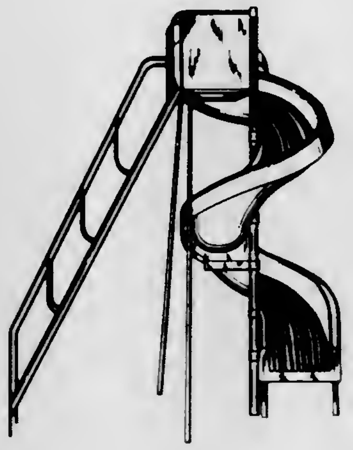
U.S. Cl. D34—5



218,625
PLAYGROUND SLIDE

Claude Welsey Ahrens, W. Highway 6,
Grinnell, Iowa 50112
Filed Nov. 7, 1969, Ser. No. 19,977
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—5

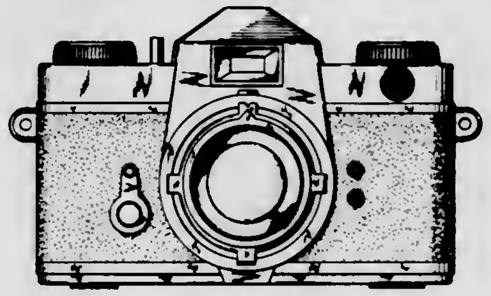


218,626
TOY BANK

Robert F. Bateman, Providence, R.I., and Thomas E. Brown, Birmingham, Mich., assignors to Dart Industries Inc., a corporation of Delaware

Continuation of design application Ser. No. 2,541, June 3, 1966. This application Nov. 16, 1967, Ser. No. 9,448
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—11

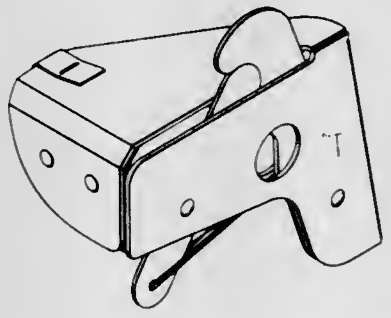


281,627
TOY PISTOL

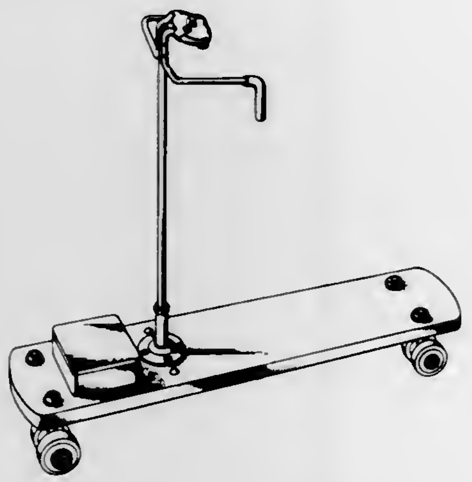
Walter C. Kuhne, San Rafael, and Donald B. McKee, Kentfield, Calif., assignors to Landphere Associates, San Francisco, Calif., a corporation of California

Filed June 13, 1969, Ser. No. 17,692
Term of patent 3½ years
Int. Cl. D21—*02*

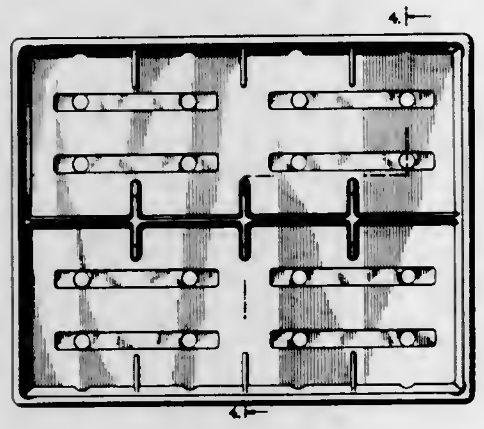
U.S. Cl. D34—15



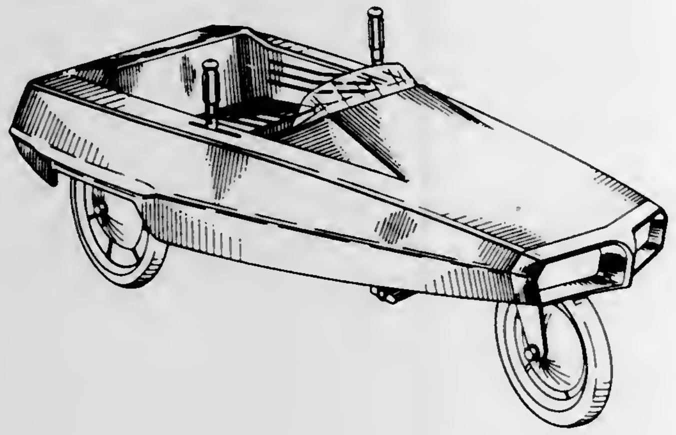
218,628
SKATE BOARD SCOOTER
Phillipp Gonzalez, 2730 W. 15th St., Los Angeles, Calif. 90006
Filed Aug. 22, 1969, Ser. No. 18,813
Term of patent 14 years
Int. Cl. D12—*11*
U.S. Cl. D34—15



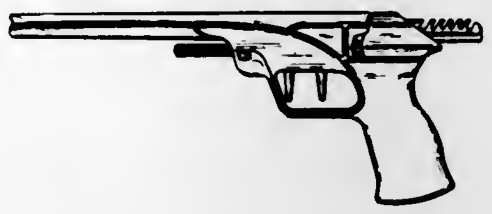
218,629
TRAY FOR HOLDING CONTAINERS FOR PLANTS
Arthur Hasselbach, Box 336, Cranbury, N.J. 08512
Filed Oct. 29, 1969, Ser. No. 19,828
Term of patent 14 years
Int. Cl. D11—*02;* D9—*04*
U.S. Cl. D35—3



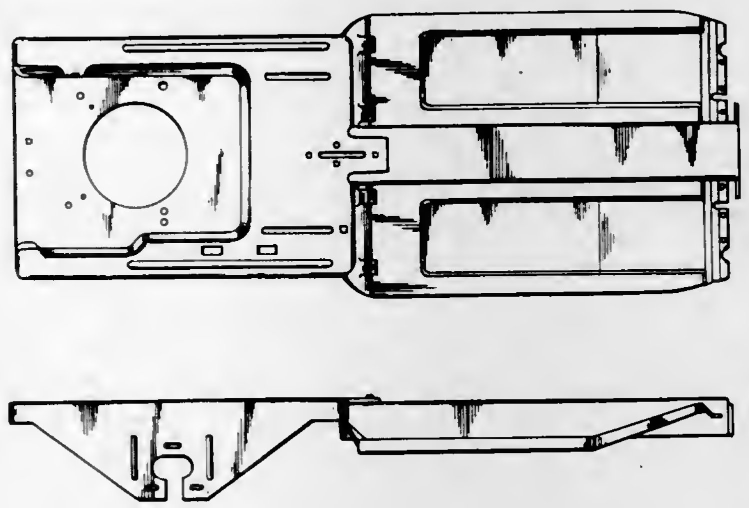
218,630
JUVENILE AUTO
Charles E. Steele, Olney, Ill., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 5, 1969, Ser. No. 17,529
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



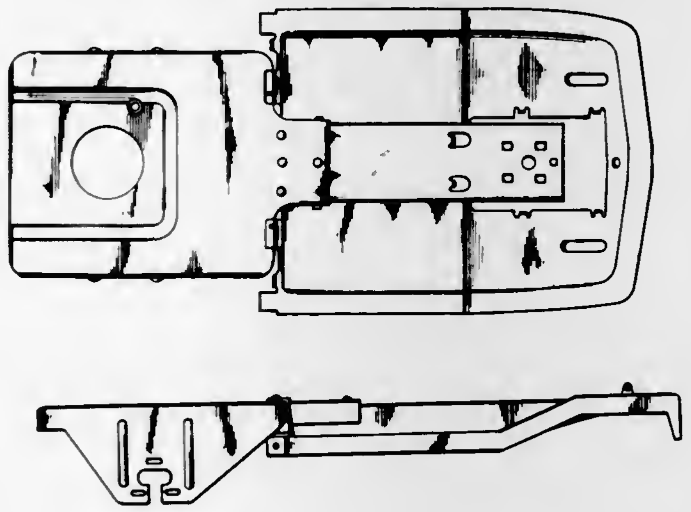
218,631
TOY GUN
Alfred C. Hyter, 4201 Kingsbury Ave., Toledo, Ohio 43612
Filed Sept. 11, 1969, Ser. No. 19,103
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



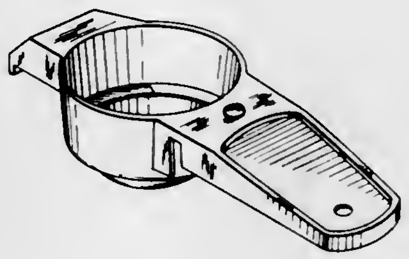
218,632
RIDING-TYPE LAWNMOWER FRAME
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Sept. 5, 1969, Ser. No. 19,032
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



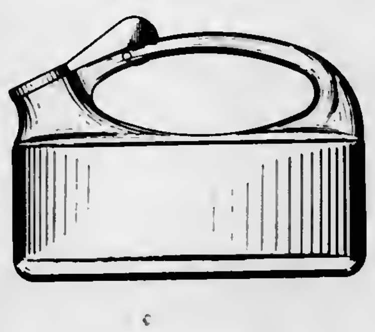
218,633
RIDING-TYPE LAWNMOWER FRAME
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Sept. 5, 1969, Ser. No. 19,033
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



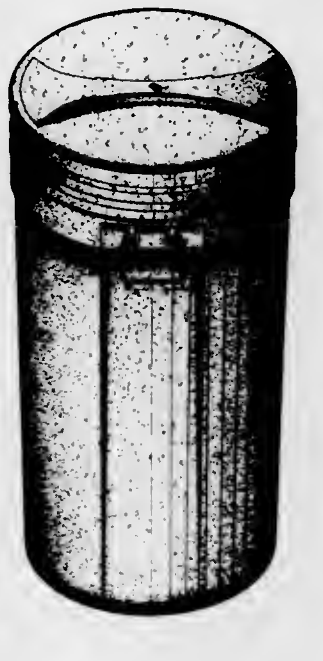
218,634
EGG SEPARATOR
James Baldwin Swett, Barrington, R.I., assignor to Dart Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 6, 1969, Ser. No. 18,559
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—29



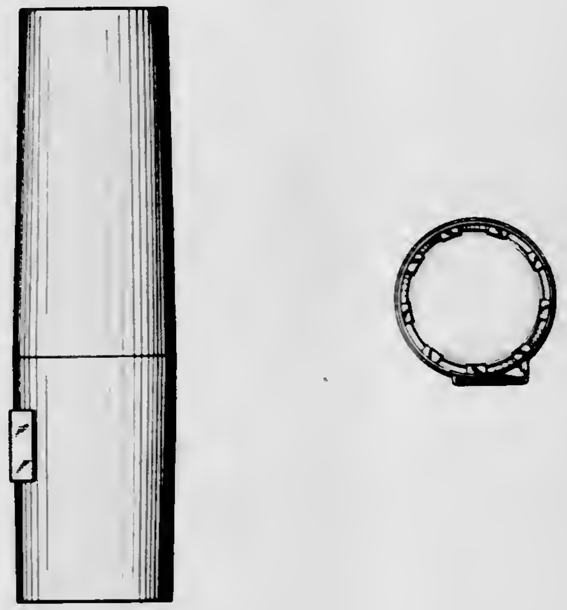
218,635
TEA KETTLE OR SIMILAR ARTICLE
Michael Lax, 68 E. 91st St., New York, N.Y. 10028
Filed Dec. 23, 1969, Ser. No. 20,616
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—25



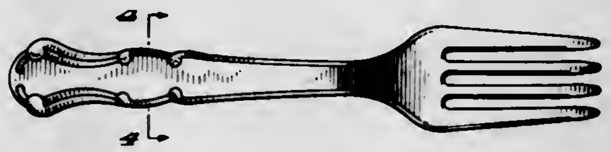
218,636
TRASH RECEPTACLE OR THE LIKE
Raymond J. Mangold, Montville, and Clayton S. Myers, Fanwood, N.J., assignors, by mesne assignments, to Contico International, Inc., St. Louis, Mo., a corporation of Missouri
Filed July 25, 1968, Ser. No. 12,893
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—35



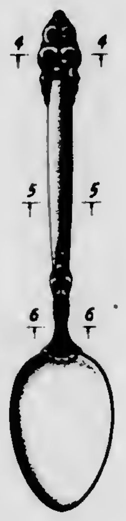
218,637
DISPENSER FOR CUPS
Clark D. Sims, Huntington Station, N.Y., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 31, 1969, Ser. No. 15,578
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D52—2



218,638
PLASTIC FORK OR SIMILAR ARTICLE
David Rauch, Worcester, Mass., assignor to Van Brode Milling Co., Inc., Clinton, Mass., a corporation of Massachusetts
Filed Sept. 12, 1969, Ser. No. 19,121
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12

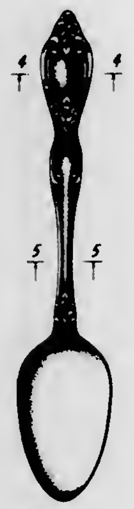


218,639
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida, Ltd., Oneida, N.Y., a corporation of New York
Filed Nov. 4, 1969, Ser. No. 19,934
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



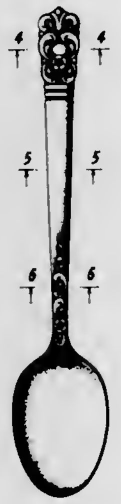
218,640
SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida, Ltd., Oneida, N.Y., a corporation of New York
Filed Nov. 4, 1969, Ser. No. 19,935
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



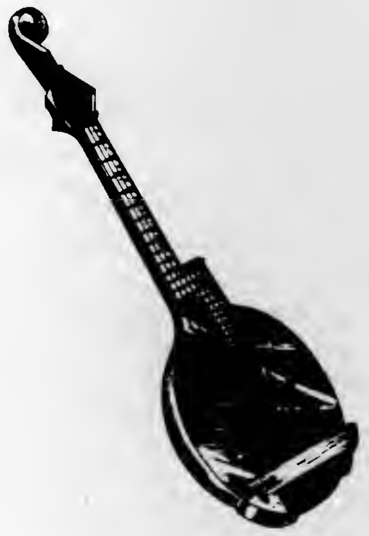
218,641
SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida, Ltd., Oneida, N.Y., a corporation of New York
Filed Nov. 12, 1969, Ser. No. 20,038
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



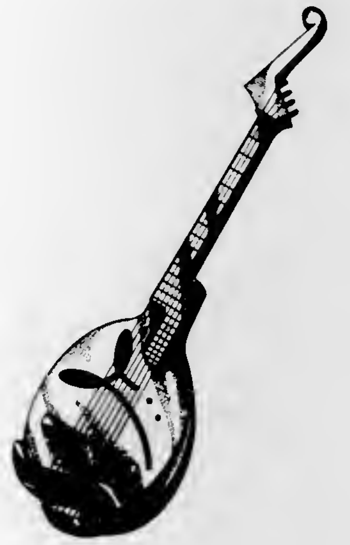
218,642
STRINGED MUSICAL INSTRUMENT

Walter J. Pelensky, 19C Manheim Gardens, Philadelphia, Pa. 19144
Filed Dec. 1, 1969, Ser. No. 20,322
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



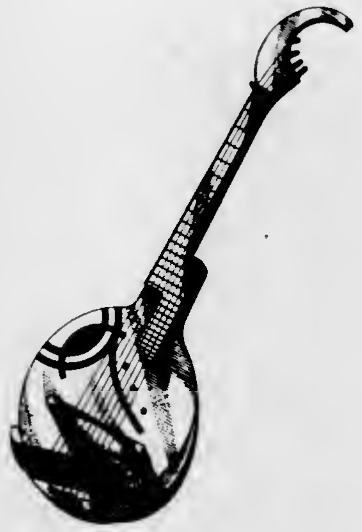
218,643
STRINGED MUSICAL INSTRUMENT

Walter J. Pelensky, 19C Manheim Gardens, Philadelphia, Pa. 19144
Filed Dec. 8, 1969, Ser. No. 20,399
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



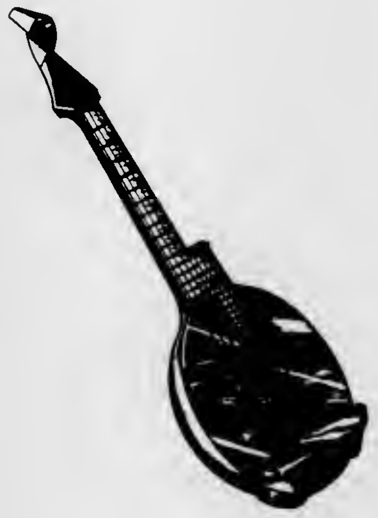
218,644
STRINGED MUSICAL INSTRUMENT

Walter J. Pelensky, 19C Manheim Gardens, Philadelphia, Pa. 19144
Filed Dec. 15, 1969, Ser. No. 20,504
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



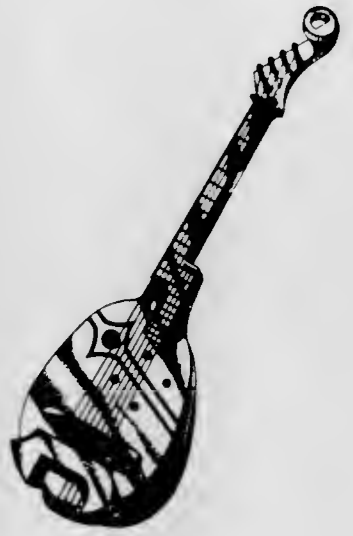
218,645
STRINGED MUSICAL INSTRUMENT

Walter J. Pelensky, 19C Manheim Gardens, Philadelphia, Pa. 19144
Filed Dec. 15, 1969, Ser. No. 20,503
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



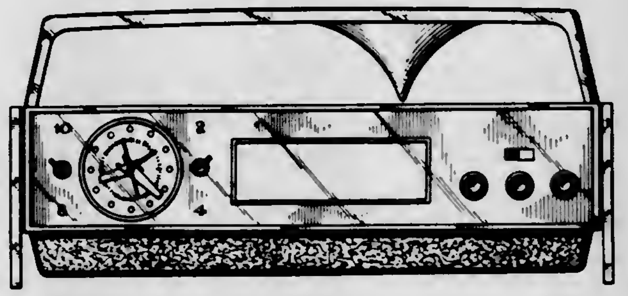
218,646
STRINGED MUSICAL INSTRUMENT OR SIMILAR ARTICLE

Walter J. Pelensky, 19C Manheim Gardens, Philadelphia, Pa. 19144
Filed Dec. 1, 1969, Ser. No. 20,321
Term of patent 14 years
Int. Cl. D17—*03*
U.S. Cl. D56—1



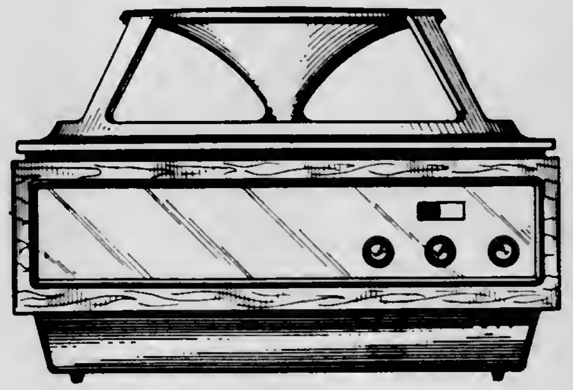
218,647
RADIO CABINET

Robert W. Becker, Naperville, and Melvin H. Boldt, Glenview, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed May 27, 1969, Ser. No. 17,367
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D56—4



218,648
RADIO CABINET

Melvin H. Boldt, 933 N. Glenayre Drive, Genview, Ill. 60025, and George A. Wilson, 738½ Hinman Ave., Evanston, Ill. 60402
Filed May 27, 1969, Ser. No. 17,374
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D56—4

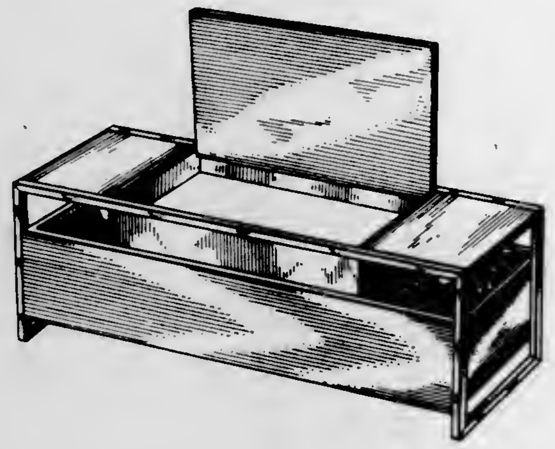


218,649
RADIO RECEIVER CABINET

Melvin H. Boldt, 933 N. Glenayre Drive, Glenview, Ill. 60025, and Tom Kakeuchi, 1242 W. Grace St., Chicago, Ill. 60622

Filed May 27, 1969, Ser. No. 17,375
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D56—4

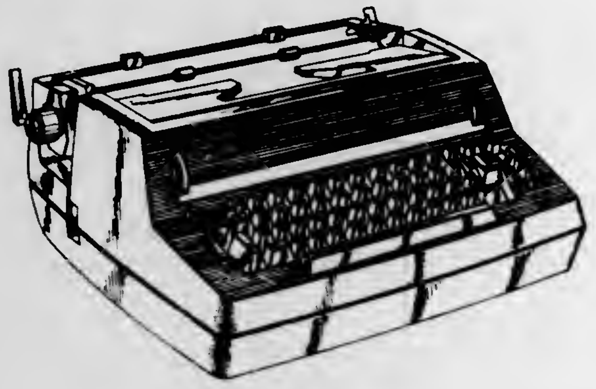


218,650
TYPEWRITER

Henry Dreyfuss, South Pasadena, Calif., and Richard H. Penney, New York, N.Y., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 15, 1969, Ser. No. 16,753
Term of patent 14 years
Int. Cl. D18—*01*

U.S. Cl. D64—11



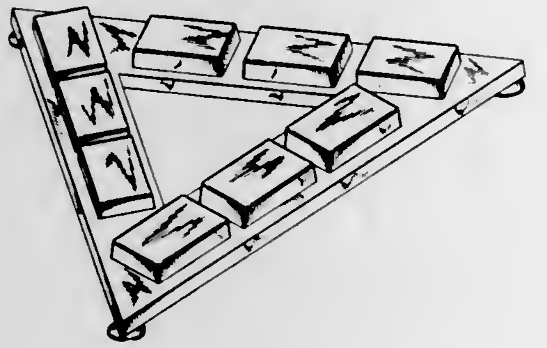
218,651
FLASHING SIGNAL UNIT

Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York

Continuation-in-part of design application Ser. No. 9,385, Nov. 13, 1967. This application May 23, 1968, Ser. No. 12,594

Term of patent 14 years
Int. Cl. D29—*99*

U.S. Cl. D72—1

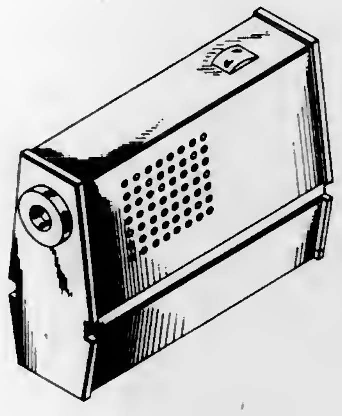


218,652
INTRUSION ALARM

Robert Podall, Chicago, Ill., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed July 28, 1969, Ser. No. 18,437
Term of patent 14 years
Int. Cl. D29—*99*

U.S. Cl. D72—1

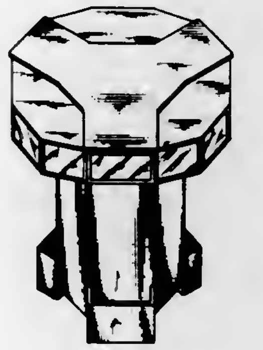


218,653
DISPLAY UNIT

Harry Kodinsky, Pittsburgh, Pa., assignor to Kiads, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 10, 1969, Ser. No. 17,613
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D80—11

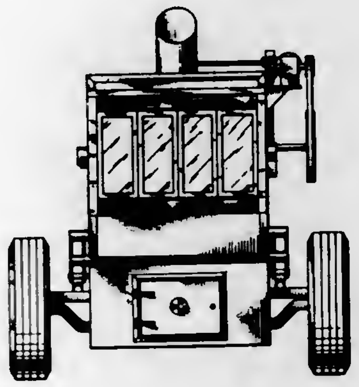


218,654
PORTABLE BARBECUE

J D. Moncrief, Sacramento, Calif., assignor to Western Ribs Inc., a corporation of California

Filed June 25, 1969, Ser. No. 17,868
Term of patent 14 years
Int. Cl. D7—*04*

U.S. Cl. D81—10

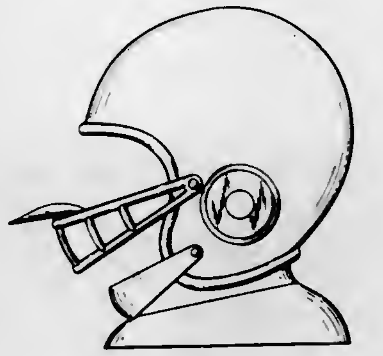


218,655
ASH TRAY

Louis Sommerfeld, 165 W. End Ave., New York, N.Y. 11235

Filed Aug. 15, 1969, Ser. No. 18,715
Term of patent 7 years
Int. Cl. D27—*03*

U.S. Cl. D85—2

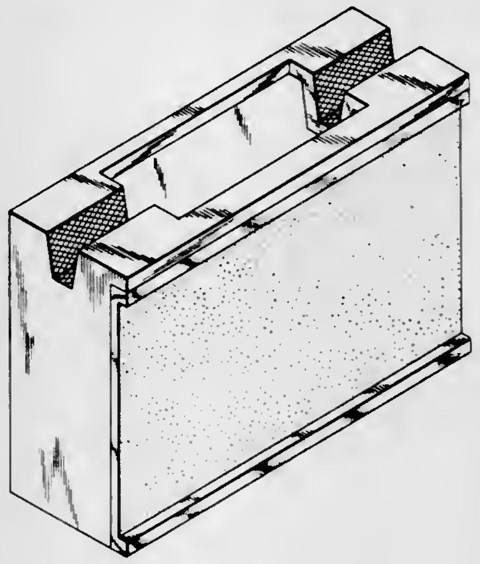


218,656
ASH TRAY

Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York

Filed Oct. 2, 1969, Ser. No. 19,387
Claims priority, application Japan May 22, 1969
Term of patent 14 years
Int. Cl. D27—*03*

U.S. Cl. D85—2

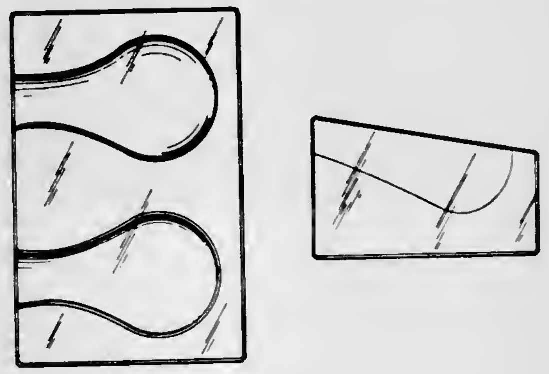


218,657
REST FOR A SMOKING PIPE

Nicholas P. Angelakos, Brooklyn, N.Y., assignor to Lancaster Colony Corporation, a corporation of Delaware

Filed Aug. 8, 1969, Ser. No. 18,590
Term of patent 14 years
Int. Cl. D27—*02*

U.S. Cl. D85—8

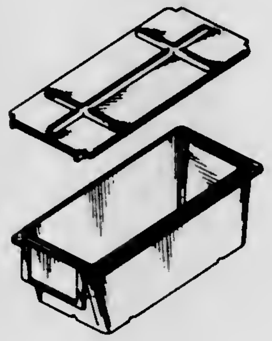


218,658
COMBINED STACKABLE CONTAINER AND COVER THEREFOR

George D. Perkins, Laguna Beach, and David E. Workman, Pasadena, Calif., and Joseph W. Kneier, Chesterland, Ohio, assignors to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Dec. 16, 1968, Ser. No. 14,977
Term of patent 14 years
Int. Cl. D3—*99*

U.S. Cl. D87—1

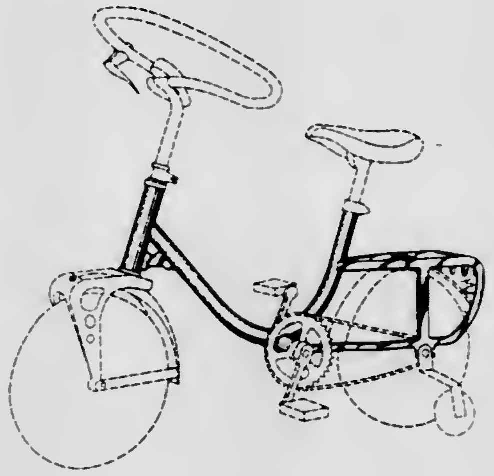


218,659
FRAME FOR BICYCLE

Shinji Takashima, Kanagawa, Japan, assignor to Miyata Industry Co., Ltd., Chigasaki City, Kanagawa, Japan, a corporation of Japan

Filed May 1, 1969, Ser. No. 16,978
Claims priority, application Japan Nov. 11, 1968
Term of patent 14 years
Int. Cl. D12—*11*

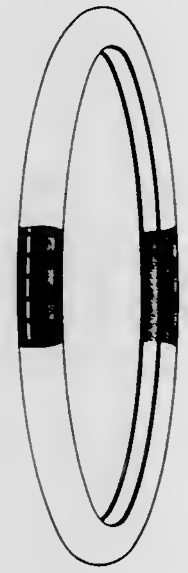
U.S. Cl. D90—8



218,660
TIRE

Claude A. Hart, Walsall, England, assignor to The Dunlop Company Limited, Erdington, Birmingham, England, a British company
Filed May 16, 1969, Ser. No. 17,182
Claims priority, application Great Britain Nov. 29, 1968
Term of patent 14 years
Int. Cl. D12—*14*

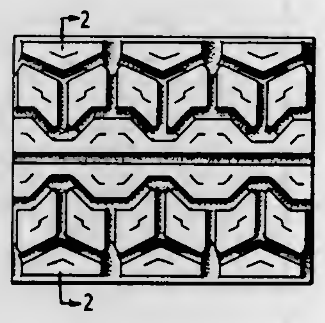
U.S. Cl. D90—20



218,661
TIRE

Yoshi Oita, Kobe, Japan, assignor to The Dunlop Company Limited, Birmingham, England, a British corporation
Filed June 16, 1969, Ser. No. 17,720
Claims priority, application Japan Dec. 18, 1968
Term of patent 14 years
Int. Cl. D12—*14*

U.S. Cl. D90—20



218,662
TEXTILE FABRIC

Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,113
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1

218,663
TEXTILE FABRIC

Leonard C. Clementi, Huntington N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,114
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1

218,664
TOWEL OR SIMILAR ARTICLE

Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,115
Term of patent 14 years
Int. Cl. D6—*09*

U.S. Cl. D92—26

218,665
TEXTILE FABRIC

Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,118
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1

218,666
TEXTILE FABRIC

Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,119
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1

218,667
TOWEL OR SIMILAR ARTICLE

Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Jan. 28, 1970, Ser. No. 21,120
Term of patent 14 years
Int. Cl. D6—*09*

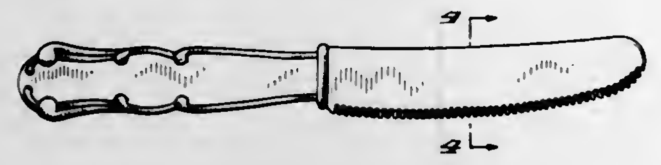
U.S. Cl. D92—26

218,668
PLASTIC KNIFE

David Rauch, Worcester, Mass., assignor to Van Brode Milling Co., Inc., Clinton, Mass., a corporation of Massachusetts

Filed Sept. 12, 1969, Ser. No. 19,128
Term of patent 14 years
Int. Cl. D7—*03*

U.S. Cl. D95—3

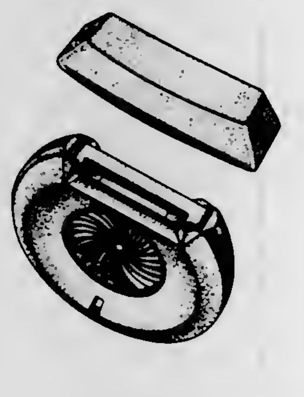


218,669
COMBINED RAZOR AND SLIP CAP

Donald M. Genaro, Haworth, N.J., and Clemens A. Iten, Staunton, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed Oct. 9, 1969, Ser. No. 19,473
Term of patent 14 years
Int. Cl. D28—*03*

U.S. Cl. D95—3

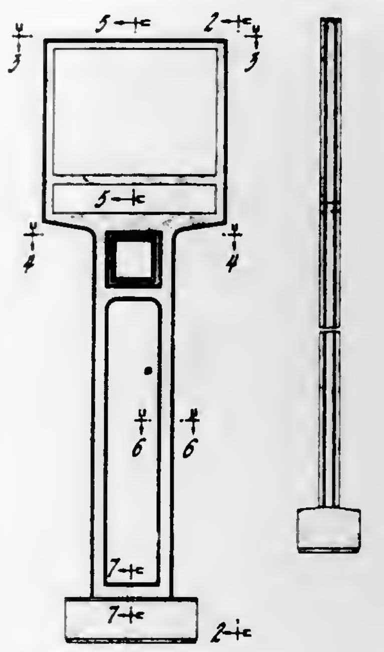


218,670
SIGN SUPPORT

Robert C. Brentrup, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Apr. 7, 1969, Ser. No. 16,589
Term of patent 14 years
Int. Cl. D20—*03*

U.S. Cl. D96—12



LIST OF PATENTEES
TO WHOM
PATENTS WERE ISSUED ON THE 8TH DAY OF SEPTEMBER, 1970

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  Emmett, Robert C., Jr., Thompson, Robert B., Wegene', Willi A., and Abell, Leo M. 3,527,573.
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Abromavage, John C., to Arcoa, Incorporated. Combination crimper and tester. 3,527,075, Cl. 72-31.
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  Kellems, Kenneth K., 3,526,922.
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  Manley, Brian William, and Adams, John 3,528,101.
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Addressograph-Multigraph Corporation: *See*—
  Shelffo, Loren E., and Sackrison, Norman B., 3,527,651.
Adler, Arthur. Homogeneous metal-containing solid mixtures. 3,527,595, Cl. 75-0.5
Adler, Felix M. Apparatus for the construction of elevated ways. 3,527,553, Cl. 94-22.
Adret Electronique S.A.: *See*—
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  Galvin, Aaron A., 3,528,040.
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  Talmo, Robert E., Lawford, Victor N., and Aguilar, Hector 3,527,100.
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  Croix, Louise S., 3,527,814.
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  Terrell, Ross C., 3,527,812.
  Terrell, Ross C., 3,527,813.
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  Zimmerman, Robert G., 3,527,111.
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  Meyer, Hans, and Carpanzano, Carmine, 3,526,911.
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  Uzuki, Teruo, Sato, Naotake, and Akashi, Takekazu 3,527,776.
Akimoto, Yumi, to Mitsubishi Kinzoku Kogyo Kibushiki Kaisha. Production of uranium-nitrogen compounds. 3,527,578, Cl. 29-195.
Aktiengesellschaft Brown, Boveri & Cie: *See*—
  Karvonen, Erki, and Rayroux, Jean-Marie, 3,527,876.
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  Braxton, Ralph C., and Phillippie, Leonard E., 3,527,858.
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Alexeff, Alexander V., to Alexeff-Snyder Enterprises, Inc. Web guiding apparatus. 3,527,394, Cl. 226-17.
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  Kotler, Aaron L., 3,526,909.
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  Jack, David, Ritchie, Alexander Crawford, Cheesman, Dennis Geo'ge, and Harper, Norman James, 3,527,762.
Allen, Kennth W. Crine attachment for bakkhoe. 3,527,362, Cl. 212-59.
Allen, Ralph E. Loading attachment for trucks. 3,527,370, Cl. 214-354.
Allen, Robert D., and Brault, James, to Princeton Applied Research Corporation. Absorption, scattering and fluorescence measuring method and apparatus. 3,527,538, Cl. 356-117.
Allen, Robert L., to General Motors Corporation. Cooled blade shroud. 3,527,544, Cl. 416-90.
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  Reimschuessel, Herbert K., and Dege, Gerald J., 3,527,843.
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  Landa, Torstein, and Johnsson, Stig, 3,527,076.
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Alps Electric Company Limited: *See*—
  Okasaki, Mitsunari, 3,528,021.
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American Cyanamid Company: *See*—
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American Hospital Supply Corporation: *See*—
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American Machine & Foundry Company: *See*—
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Anderson Electric Corporation: *See—*
Saxon, James B., 3,527,875.

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Anderson, Roy E., to General Electric Company. Limited energy speech transmission and receiving system. 3,528,011, Cl. 325-38.

Androck Incorporated, : *See—*
Woods, J. Walter, 3,527,277.

Androsov, Arkady Vasilievich: *See—*
Kuzko, Jury Petrovich, Livaov, Vladimir Alexandrovich, Konstantinov, Lev Nikolaevich, Chekinov, Anatoly Petrovich, Fainbron, Semen Davydovich, Mazur, Alexandr Iosifovich, Surkov, Mikhail Ivanovich, Nazarov, Afanasy Ivanovich, Monakhov, Alexandr Petrovich, Maiorov, Nikolai Nikolaevich, Stopachinsky, Boris Antonovich, Ryndenkov, STanislav Vladimirovich, Shebeko, GEnnady Alexeevich, Androsov, Arkady Vasilievich, and Titov, Veniamin Georgievich 3,527,080.

Angus, John C., and Fredrick, Russell E., to Minnesota Mining & Manufacturing Company. Thermoelectric composition and leg formed of lead, sulfur, and tellurium. 3,527,622, Cl. 136-238.

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Anthony, David, and Crane, Robert, to Clairol Incorporated. Custom conditioner. 3,527,236, Cl. 132-7.

Antonevich, John N., to Blackstone Corporation. Ultrasonic impict cleaners and methods of cleaning. 3,527,607, Cl. 134-1.

Applied Motors, Inc.: *See—*
Means, William A., 3,527,971.

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Archer, William E., and Coe, Everett L., Jr. Electrical control method and apparatus. 3,527,022, Cl. 55-2.

Archibald John L., and Jackson, John Lambert, to Wyeth, John, & Brother Limited, mesne. Indoles. 3,527,761, Cl. 260-293.

Arcoa Inc.: *See—*
Butler, David W., and Hobart, Edwin L., 3,527,324.
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Argyle, Bernell E.: *See—*
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Arvin Industries, Inc.: *See—*
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Atlantic Richfield Company: *See—*
Barnes, Robert L., Dinsmore, Robert L., and Steffgen. Frederick W., 3,527,693.
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aylor, Gerwin G., and Hay, Julian A., to American Maize-Products Company. Method of modifying starch. 3,527,606, Cl. 127-71.

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Bachelard, Roland: *See—*
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Bachman, Gerald L., to Monsanto Company. Sulfonamido coumarin compounds. 3,527,768, Cl. 260-343.2

Backer, William R., and Dahlin, Richard A., to Norton Company. Grinding wheel guard for abrading machines. 3,526,998, Cl. 51-269.

Bader, Jorg, Gatzi, Karl, , and Bussgang, Julian J., to Geigy Chemical Corporation Signatron, Inc. Agents inhibiting fungus growth and method of controlling fungi therewith Data compaction system with staggered scanning and adaptive redundancy removal. 3,527,867, Cl. 178-6.8

Badger Company, Inc., The, : *See—*
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Baker, Crispin Stuart Leworthy, to Natural Rubber Producers' Research Association, The. Vulcanization of rubber with complex of monoborane and tertiary amine or triphenyl phosphine and calcium oxide. 3,527,740, Cl. 260-80.78

Baker, Crispin Stuart Leworthy, Barnard, Douglas, and Porter, Maurice Read, to Natural Rubber Producers Research Association, The. Vulcanization of rubber with complex of mono- chloroborane and tertiary amine or triphenyl phosphine. 3,527,744, Cl. 260-80.78

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Balanca, Pierre, Bernard, Claudette, and Taponier, Jean, to Saint-Gobain techniques Nouvelles. Method and apparatus for irradiating fluent materials through i helica path. 3,527,940, Cl. 250-44.

Ballard, Gerald C., to General Electric Company. Idhesive silikone rubber. 3,527,655, Cl. 117-72.

Balon, Albert J. Pilot light. 3,527,410, Cl. 239-288.5

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Banchink, Ira N., Sze, Morgan C., and Maddock, Maldwin J., to Lummus Company, The. Steam reforming of carbon monoxide rich hydrocarbon feeds. 3,527,565, Cl. 23-212.

Baran, John S., Laos, Ivar, and Searle, G.D., & Co.3,17-Bisoxygenited 11 β methyl-19-nor-pregn-4-en- 20-ones and derivatives thereof. 3,527,778, Cl. 260-397.45

Barber, Alfred W., to Forbro Design Corporation. Complementary tracking outputs from single-ended amplifiers having a common lead with a single-ended input. 3,528,024, Cl. 330-117.

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Barbieri, John D., Xenakis, James A., and Chang, Nai-Chong, to Sperry Rand Corporation. Velocity and distance measuring device. 3,527,104, Cl. 73-490.

Barile, Joseph A., to Aerodex, Inc. Molded reusable masking for selective coating, particularly electroplating. 3,527,679, Cl. 204-15.

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Barnett, Kenneth W., and Glockner, Peter W., to Shell Oil Company. Ethylene oligomerization. 3,527,838, Cl. 260-683.15

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Baumgartner, Willy, Pice, Thomis, and Travis, David Neil, to Gesellschaft zur Forderung der Foschung an der Eidg. Techn. Hochschule American Cyanamid Company. Imaged intensifier for optically produced images Beam splitting cube utilizing interference filters for color separation. 3,527,522, Cl. 350-171.

Baun, Leonard J., to RCA Corporation. Composite television video switching circuit. 3,527,886, Cl. 178-7.1

Baxter Laboratories, Inc.: *See—*
Goldhaber, Richard, 3,527,700.

Beacham, Harry H.: *See—*
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Bean, Lloyd F., to Xerox Corporation. Silk screen master. 3,527,163, Cl. 101-128.4

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Bell Aerospace Corporation: *See—*
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Bell Telephone Laboratories, Incorporated: *See—*
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Benson, He'bert L., Jr., to Shell Oil Company. Divinylbenzene polymerization inhibitors. 3,527,822, Cl. 200-666.5

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Bergman, Herman, to Berger Industries, Inc. Take-apart lamp harps. 3,527,934, Cl. 240-148.

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BERNI, Ralph J., Gonzales, Elwood J., and Benerito, Ruth R., to United STates of America, Agriculture. Low temperature catalysts for cellulose etherifications. 3,527,658, Cl. 117-139.4

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Bettis, Edward S., to United States of America, Atomic Energy Commission. Molten-salt-fueled nuclear breeder reactor and fuel cell for use therein. 3,527,669, Cl. 176-18.223

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Beyer, Lutz: *See—*
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Bickel, Gary W., Ferrara, John J., and Lipshutz, Marvin L., to Honeywell Inc. Laser cavity comprising severable elements respectively carrying the laser rod and pumping source. 3,528,030, Cl. 331-94.5

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Bigler, Bernhard, and Louvet-Dronet, Jules L., to Babcock & Wilcox Company, The. Tube guide apparatus. 3,527,261, Cl. 122-510.

Bijleveld, Willem Jan, and van der Toorn, Adrianus Johannes, to De Staat der Nederlanden, Ten Deze Vertegen- woordigd Door de Directeur-General der Posterijen, Telegrafie en Telefonie. Process and apparatus for producing and reading arabic numbers on a record sheet. 3,527,927, Cl. 235-61.11

Bilinski, Donald J., and Macor, Goerge S., to Singer-General Precision, Inc. Universal joint flexure hinge. 3,527,062, Cl. 64-15.

Bingham, Wallace Karl, Olson, Leonard L., and Pilmquist, Philip V., to Minnesota Mining and Manufacturing Company. Glare-free coating compositions of elastomeric particles in an elastomeric film-former. 3,527,729, Cl. 260-37.

Bininda, Norbert, to Siemens Aktiengesellschaft. Load averaging arrangement for telephone switching systems. 3,527,895, Cl. 179-18.

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Biretta, Vitti Julian, Lemon, Elmer George, Jr., and Vater, Eugene John, to Webb, Jervis B., Compiny. Controlling carbide surfaces. 3,527,624, Cl. 148-14.

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Bissell Inc.: *See—*
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Bitumen Industries Limited, : *See—*
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Bivans Corporation: *See—*
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Bivans, ELBERT L., to Bivans Corporation. Hopper escapement. 3,527,367, Cl. 214--008

Biwax Corporation: *See—*
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Black, Sivalls & Bryson, Inc.: *See—*
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- Boehm, James F.: *See*—
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- Boersma, Richard Fred, to Deere & Company. Pivotally mounted tractor roll bar. 3,527,474, Cl. 280-150.
- Bolle, Benjamin, to Bernhard Forster. Day- and date-indicating wristwatch. 3,527,047, Cl. 58-58.
- Boltz, Howard A., to Lockheed Aircraft Corporation. Apparatus for removing electrical insulation. 3,527,138, Cl. 90-11.
- Bolz, Robert E. Pelt drying system. 3,526,967, Cl. 34-46.
- Bond, Milton F., to International Business Machines Corporation. Character recognition system. 3,528,058, Cl. 340-146.3
- Bond, Robert D., to Ames, B. C., Company. Air gauging three-dimensional objects. 3,527,092, Cl. 73-37.5
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  - Mangini, Angelo, Tundo, Antonio, Bonini, Bianca Flavia, and Rossetti, Marta 3,527,747.
- Bonlie, Russell W. Chircoal briquette and manufacture thereof. 3,527,580, Cl. 44-11.
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  - Newton, Alwin B., 3,527,621.
- Bornfleth, Ulrich, and Selonke, Fritz, to Hauni-Werke Korber & Co. K.G. Apparatus for feeding rod-shaped articles to consuming machines. 3,527,369, Cl. 214-301.
- Borsum, Adolph W., Borsum, William K., and Kyogoku, Tikeji. Apparatus for dispensing pills or the like. 3,527,383, Cl. 221-112.
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  - Borsum, Adolph W., Borsum, William K., and Kyogoku, Tikeji 3,527,383.
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- Boughner,Abraham Lewis, to FMC Corporation. Method and apparatus for testing film clarity. 3,527,541, Cl. 356-202.
- Bouladon, Gabriel, and Zuppiger, Paul, to Battelle Development Corportation, The. Continuous and endless passenger transport system. 3,527,169, Cl. 104-25.
- Bourgeault, Leo B., Wohlberg, Alfred W., and Compoly, Albert W., to Bendix Corporation, The. SCR battery charger with tunnel diode current controls. 3,527,994, Cl. 320-39.
- Bourland, William L. Salt water distillation and condensation system and method. 3,527,675, Cl. 203-11.
- Bowker, John Kent, Hughes, Jerry Glenn, and Stasey, Charles Marshall, to Itek Corporation. Color concentration discriminators. 3,527,540, Cl. 356-175.
- Bowles Engineering Corporation: *See*—
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  - O'Neill, William C., 3,527,403.
- Boyanich, Milan, Sr. Rearview mirror wiper. 3,526,920, Cl. 15-250.29
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- Boyer, Laurance E., and Boyer, Laurance E. RETRACTABLE SP-PORT POS FOR CONTAINERS Retractable support post for containers. 3,527,355, Cl. 211-71.
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- Brandestini, Antonio, and Siegwart, Hans Rudolf, said Siegwart assor. to said Brandestini. Method of fastening anchoring means to a tensioning wire. 3,526,941, Cl. 29-155.
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- Braxton, Ralph C., and Phillippie, Leonard E., to Alamance Industries, Inc. Method for finishing full-fashioned brassiere blanks. 3,527,858, Cl. 264-151.
- Brechna, Habibo, and Garwin, Edward L., to United States of America, Atomic Energy Commission. Composite superconducting cable having a porous matrix. 3,527,873, Cl. 124-15.
- Breed, Arthur R., to Lamson & Sessions Co., The. Lock bolt and method of making the same. 3,526,914, Cl. 10-10.
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- Bremer, John W., to General Electric Company. Fault tolerant superconductive memory. 3,528,066, Cl. 340-173.1
- Brepoels, Joseph Rene, and Busschots, Armand August, to Poudreries Reunies de Belgique. Process for obtaining favourable physiological effects on cultivated plants. 3,527,594, Cl. 71-105.
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- Bresson, Clarence R., and Stapp, Paul R., to Phillips Petroleum Company. Polymers plasticized by bis(3-haloalkoxy)methanes. 3,527,727, Cl. 260-31.8
- Brian, Robert Coles, and Bland, Peter Douglas, to Imperial Chemical Industries Limited. Herbicide-amine oxide compositions and their use. 3,527,593, Cl. 71-94.
- Brienza, Michael J., and Demaria, Anthony J., to United Aircraft Corporation. Microwave generator using laser pulses. 3,527,955, Cl. 307-88.3
- Briggs & Stratton Corporation: *See*—
  - Santi, John D., 3,527,266.
- Bright, Alfred William, and Maki, Briin, to National Research Development Corporation. Electrostatic generator. 3,527,992, Cl. 318-116.
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- Bristow, Hubert R., and Parkes, John F. A., to Elliott Brothers (London) Limited. Fluid pressure control systems. 3,527,241, Cl. 137-98.
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- British Petroleum Company Limited, The: *See*—
  - Hambling, James Keith, Jones, John Robert, and Heljula, Kuldar, 3,527,714.
  - Lawrance, Paul Anthony, and Burbidge, Bernard Whiting, 3,527,695.
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- Broussard, Leo P., to Shell Oil Company. Apparatus and method for working a well with plural levels of perforations. 3,527,302, Cl. 166-297.
- Brouwer, Frans, and Sobchak, Frank L., to Stewart-Warner Corporation. Combination of facsimile transmitter and receiver operable in a feed through manner in both modes. 3,527,882, Cl. 178-6.6
- Brown, Gaylord W. Stockable container and apparatus for its manufacture. 3,527,380, Cl. 220-97.
- Brown, Gordon H., and Chandler, Robert M., to Whirlpool Corporation. Refuse compactor apparatus. 3,527,161, Cl. 100-256.
- Brown, Kenneth John, to Foxboro Company, The. Electrical barrier device. 3,527,985, Cl. 317-16.
- Brown, Maurice H., to Azonic Products Inc. Appiratus for forming wire control elements. 3,527,637, Cl. 156-510.
- Brown, Melancthon S., to Chevron Research Company. β-Amido vinyl phosphites and their method of preparation. 3,527,848, Cl. 260-944.
- Brown, Thomas J. Ladder leveling device. 3,527,321, Cl. 182-205.
- Brownlow, James M., to International Business Machines Corporation. Copper plating bath and a method for depositing thick copper films therefrom. 3,527,681, Cl. 204-52.
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- Bruschtein, Fabio B., to Dow Chemical Company, The. Process for the separation of acrylamide from acrylamide sulfate. 3,527,803, Cl. 260-561.
- Bryce, William Dean, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Goverment of the. Combustion system with aerodynamically variable geometry. 3,527,052, Cl. 60-39.65
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- BTR Industries Limited: *See*—
  - Goward, Stanley Harold, and Goddard, Michiel Robert, 3,527,485.
- Bublitz, Donald E., to Dow Chemical Company, The. Tricyclohexyltin nitrate and azide. 3,527,775, Cl. 260--349
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- Bucourt, Robert, and Tessier, Jean, to Roussel-Uclaf, S.A. Novel process for the preparation of indane derivatives. 3,527,791, Cl. 260-468.
- Budesinsky, Bretislav, and Vrzalova, Dana, to Ceskoslovenska Akademie Ved. Heterocyclic 2,7-bisazo derivatives of chromotropic acid. 3,527,749, Cl. 260-155.
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- Buhr, Jacob. Automatic motor turn-on networks for signal seeking receivers. 3,528,015, Cl. 325-471.
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- Bush, Vannevar. Compound stirling cycle engine. 3,527,049, Cl. 60-24.
- Bushmeyer, Richird W., to Case, J. I., Company. Tripping and cushioning mechanism for earthworking tools. 3,527,307, Cl. 172-265.
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- Cappuccio, Vittorio, Caldo, Cornelio, and Cantatore, Giuseppe, to Montecatini Edison S.p.A. Fiber-forming compositions having improved dye receptivity. 3,527,846, Cl. 260-897.
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  - Fairbanks, Theodore H., 3,527,859.
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- Foerster, George S., to Dow Chemical Company, The. Process of making creep-resistant zinc-base alloys. 3,527,601, Cl. 75-178.
- Foessl, John K., to Galt Equipment Limited. Temperature control unit. 3,527,289, Cl. 165-29.
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Hackmann, Ernst-August, to Kalle Aktiengesellschaft. Light-sensitive reproduction material comprising leuco dyestuffs and light-sensitive 2,4- dinitrobenzene-sulphenyl esters. 3,527,640, Cl. 96-90.

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Hands, Albert Henry, and McGowan, Joseph. Air curtain means for a passenger vehicle. 3,527,152, Cl. 98-2.

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Hansen, Robert B., and Reichard, Gordon E., to Motorola, Inc. Phase shifting circuit controlled by a direct current signal. 3,527,964, Cl. 307-262.

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Hanson, Russell G. Partition module construction. 3,527,006, Cl. 52-241.

Hara, Tadataka. Active calcium succinates in cis-form and a process for the preparation thereof. 3,527,798, Cl. 260-537.

Harding, Jack, to Big 'D' Chemical Company. Package for vapor dispensing device. 3,527,405, Cl. 239-51.5

Hardman, Carl C., to Westinghouse Electric Corporation. Method of loading iron-sulfur active material into porous metallic plaques. 3,527,613, Cl. 136-25.

Harland, Philip W., to Ametek, Inc. Plastic case construction with tight seal and blowout. 3,527,102, Cl. 73-431.

Harless, Charles A., to Harris-Intertype Corporation. Cylinder throw mechanism for printing presses. 3,527,165, Cl. 101-143.

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    Harless, Charles A., 3,527,165.
    Lee, William H., and Stotzer, Roger H., 3,527,995.

Harrison, Charles W., Jackson, Edward B., and Cochrane, Fred M. Process for converting wiste to higher digestive nutrients. 3,527,642, Cl. 99-7.

Harrison, Lee, III, to Control Image Corporation. Film produced by automatic generation and display of animited figures. 3,527,978, Cl. 315-18.

Harrison, William B., and Tirrell, Clifford F., to Grace, W. R., & Co. Drying oven and volatile condenser. 3,526,970, Cl. 34-73.

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Haug, Gerhard: *See—*
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Havlicek, Henry J., to General Electric Company. Monitor circuit for detecting the occurence of one or more of a plurality of events in a system. 3,527,987, Cl. 317-33.

Hawes, Ralph E., Jr., Durand, Charles C., Jr., Hiroshige, Kazuyuki, and Buchanan, Leonird, to General Dynamics Corporation. Body motion decoupler. 3,527,429, Cl. 244-3.14

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- Honda, Royden M., and Hahn, George A., to Sylvania Electric Products, Inc. Broadband double ridged waveguide balun. 3,528,041, Cl. 333-26.
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  - Hawkins, Royal R., and Heiser, Richard K., 3,527,965.
  - Schaller, Frank H., 3,527,457.
- Honobe, Takanori, and Hayakawa, Yoichi, to Crown Radio Corporation. Automatic answering apparatus for a telephone with a single relay. 3,527,893, Cl. 179-6.
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- Jack, David, Ritchie, Alexander Crawford, Cheesman, Dennis Geo'ge, and Harper, Norman James, to Allen & Hanburys Limited. Piperidine derivatives. 3,527,762, Cl. 260-293.4
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  - Jaffa, Matthew L., and Jaffa, David 3,527,166.
- Jaffa, Matthew L., and Jaffa, David. Vacuum table system for printing machine. 3,527,166, Cl. 101-407.
- Jagers, Leopold. Cutting blades. 3,526,999, Cl. 51-206.
- Jahnke, Donald E., to Vac-Air, Inc. Vacuum packaging of poultry. 3,527,018, Cl. 53-112.
- Jaillet, Jean, to Merlin Gerin, Societe Anonyme. Gas blast circuit breaker. 3,527,912, Cl. 200-148.
- Janetka, John, to New York Wire Works Limited. Locking joint structures for garment racks. 3,527,361, Cl. 211-182.
- Jangg, Gerhard. Process for the production of IVa and Va metals of the periodic system and their alloys. 3,527,599, Cl. 75-84.5
- Jankowitz, Gerald, to Barnes Engineering Company. Mounting structure for a liquid crystal thermal imaging device. 3,527,945, Cl. 250-83.
- Janowsky, Seymour: *See—*
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- Jeffee, Saul, and Kowalak, John, to Movielab, Inc. Method and apparatus for photographic printing. 3,527,531, Cl. 355-89.
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- Jenney, Deane K.: *See—*
  - Seward, Charles I., and Jenney, Deane K. 3,527,549.
- Jennings, Luther K. Speed control device for a model airplane engine. 3,527,265, Cl. 123-98.
- Jenson, Donald P., and Murrill, James H., to United States of America, Navy, mesne. Selective automatic and manual throttle actuator. 3,527,118, Cl. 74-626.
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  - Ticknor, Sergei L., 3,527,993.
- Jezequel, Marcel, and Ovtcharenko, Jean. Mold-holder more particularly for producing injected articles, such as footwear articles or other applications, well as injecting machines provided with this mold-holder or the like. 3,526,932, Cl. 18-42.
- Jezl, James L., Khelghatian, Habet M., and Knaack, Donald F., to Avisun Corporation. Method of reducing fines in alphi-olefin polymer powder. 3,527,845, Cl. 260-897.
- J/G Researched Products, Inc.: *See—*
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- Jikay, Louis: *See—*
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- Jizba, Josef, Sorm, Frantisek, and Herout, Vlastimil, to Ceskoslovenska Akademie Ved. Method for obtaining ecdysterones. 3,527,777, Cl. 260-397.25
- Jobst Institute, Inc., The: *See—*
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- Joch, John, Jr.: *See—*
  - Mullvain, Wallace C., Sr., Joch, John, Jr., and Matheus, Norman R. 3,527,173.
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- Johnson, James D., to Computer Communication, Inc. Device for converting binary coded digital information to symbol form for viceo display. 3,528,068, Cl. 340-324.
- Johnson, Mitchell A., Jr. Apparatus for mulching vegetation. 3,527,278, Cl. 146-124.
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- Jones, William C. Respiration testing apparatus. 3,527,205, Cl. 128-2.08
- Jones, William C. Respiration testing apparatus. 3,527,206, Cl. 128-2.08
- Jordan, David H., to Allis-Chalmers Manufacturing Company. Elevator motor reversing valve control system. 3,526,978, Cl. 37-8.
- Jordan, Donald E., to Pneumatic Applications Company, mesne. Diaphragm operated brake or clutch unit. 3,527,329, Cl. 192-88.
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- Kaplan, Lloyd A., and Upton, Joshua D., Jr., to United States of America, Navy. Extraction-crystallization method. 3,527,576, Cl. 23-299.
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- Kashio, Toshio, to Casio Computer Co., Ltd. Printer driving circuit for rockably mounted settable print wheels. 3,527,162, Cl. 101-93.
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- Katz, Seymour, and Baehr, Richard M., to General Motors Corporation. Method of soldering utilizing a backing composition. 3,526,954, Cl. 29-471.5
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- Kehl William L., Rennard, Raymond J., Jr., and Swift, Harold E., to Gulf Research & Development Company. Conversion of butene-2 to butene-1. 3,527,834, Cl. 260-683.2
- Kehl, Williim L., Rennard, Raymond J., Jr., and Swift, Harold E., to Gulf Research & Development Company. Process for the isomerization of butene-2. 3,527,833, Cl. 260-683.2

- Keil, Joseph W., to Dow Corning Corporation. Dimethylpolysiloxanes and copolymers containing SiO_2 units is releise agent. 3,527,659, Cl. 117-145.
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  - Verheyden, Luc, Klein, Klaus, Cappelletti, Carlo, Verheyden, Luc, Klein, Klaus, Cappelletti Carlo, Verheyden, Luc, Klein, Klaus, and Cappelletti, Carlo 3,527,249.
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  - Zuckerbraun, Jacob S., 3,527,951.
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- Kruggel, Roy W., to Whirlpool Corporation. Heat pump for selectively heating or cooling a space. 3,527,060, Cl. 62-140.
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- Kruschwitz, Werner, to Draftex G.m.b.H. Sealing strip for the edges of openings of luggage compartments, doors or windows of automobiles. 3,527,013, Cl. 52-716.
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- Lehman, Meir M., Rosenfeld, Jack L., and Sehlaeppi, Hans P., to International Business Machines Corporation. Program interlock arrangement, including task suspension and new task assignment. 3,528,062, Cl. 340-172.5
- Leiner, Jerome: *See—*
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- Leisure Group, Inc., The: *See—*
  - Karbo, Richard S., 3,527,196.
- Leland, Ragnvald G. Flexible window washer and wiper. 3,526,918, Cl. 15-121.
- Lem, Donald J., and Steinbeck, Herbert D., to International Business Machines Corporation. Pressure cuff system. 3,527,204, Cl. 128-2.05
- Lemon, Elmer George, Jr.: *See—*
  - Biretta, Vitti Julian, Lemon, Elmer George, Jr., and Vater, Eugene John 3,527,624.
- Leon, Willi, 1/2 to Schutterop, Lambert Johan Nicolaas. Device for raising the seat of a closet. 3,528,075, Cl. 4-251.
- Leonard, John E., to Landis Machine Company. Workpiece feeding mechanism. 3,527,365, Cl. 214-1.3
- Lerman, Samuel, to Milbern, Compiny Learman, Samuel. Upholstering stuffing member. 3,526,912, Cl. 5-355.
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  - Schwartz, William H., 3,526,931.
- Levin, Gideon, to Dow Corning Corporation. Disilacyclobutanes. 3,527,781, Cl. 260-448.2
- Levinstein, Moses A., to General Electric Company. Method for making lightweight metallic structure. 3,526,953, Cl. 29-471.3
- Lewis, Douglas R., to Ethylene Corporation. Flexile coupling having expansion and contraction limiting means. 3,527,481, Cl. 285-114.
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- Lewis, William R., to Dow Chemical Company, The, mesne. Float shoe apparatus. 3,527,299, Cl. 166-184.
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  - Aronson, Theodore F., and Hostetler, Van B., 3,527,015.
  - Shipley, Robert E., 3,526,979.
- Lincks, Hans, and Muller, Hans, to Entwicklungsring Sud GmbH. Adjustable rotary pump with pressure relief. 3,527,552, Cl. 418-24.
- Linsley, Clarence R., and Pinczower, Henry J., to Singer-General Precision, Inc. Transducer assembly with tandem bearing pads. 3,528,067, Cl. 340-174.1
- Lippman, Jordan H., to Hirwood Electronics Co., Inc. Bracket for mounting a light on a camera. 3,527,437, Cl. 248-205.
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  - Bickel, Gary W., Ferrara, John J., and Lipshutz, Marvin L. 3,528,030.
- Little, James D., to Koppers Company, Inc. Refractory liners and method for attaching such liners to coke oven doors. 3,527,179, Cl. 110-173.
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Mangini, Angelo, Tundo, Antonio, Bonini, Bianca Flavia, Rossetti, Marta, and Mazzanti, Germana, to Aziende Colori Nazionali Affini ACNA S.p.A. Reactive azo dyestuffs containing a thiophene dioxide. 3,527,745, Cl. 260-146.

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- Migee, Philip S., and Stevick, Larry E., to Chevron Research Company. Thionophosphoramides and process therefor. 3,527,847, Cl. 260-934.
- Miki, Takuichi, Hiraga, Kentaro, Asako, Tsunehiko, Yui, Toru, and Masuoka, Michio. 17β-phenoxyacetyloxyestr-4-EN-3-ones. 3,527,866, Cl. 424-243.
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- Park Chemical Company: *See—*
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- Parsons, David: *See—*
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- Pasek, Frank S., to Rixson Inc. Template, combinations therewith, and methods for use thereof. 3,526,947, Cl. 29-407.
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- Pawl, Walter S. Globe map clock. 3,527,046, Cl. 58-44.
- Payne, George B., to Shell Oil Company. Production of poly(lower)ilkyl alkenepolycarboxylates. 3,527,789, Cl. 260-485.
- Payne, Harvey Thomas, to Greenign Donald Ltd. Mechanical splice. 3,527,487, Cl. 287-78.
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- Pedley KNowles & Co.: *See—*
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- Penhasi, Harry A., to Beckman Instruments, Inc. Stopped flow reaction kinetic system. 3,527,570, Cl. 23-253.
- Penhasi, Harry A., and Rader, Con D., to Beckman Instruments, Inc. Cardiac output aaratus. 3,527,542, Cl. 356-244.
- Penney, Albert W., Jr., nited Aircraft Corporation. Transmission line assembly for phototransducer. 3,527,952, Cl. 250-206.
- Peoples, Jerry A. Valving system for reciprocating engine. 3,527,141, Cl. 91-184.
- Perilstein, Warren L., and Beatty, Harold A., to International Lead Zinc Research Organization, Inc. Lubricants containing certain organolead nitrogen compounds. 3,527,704, Cl. 252-49.7
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  - O'Neill, Michiel John, 3,527,923.
- Perkins, Charles H., to Robertshaw Controls Company. Packless valve construction. 3,528,087, Cl. 137-625.4
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- Peuchert, Klaus-Peter, Kocher, Ernst-Ulrich, Wagner, Kuno, and Niermann, Horst, to Farbenfabriken Bayer Aktiengesellschaft. Copolyme's of formildehyde kontaining bis-[N'- tiluosulphonyl-imidazolidinyl-N-sulphonyl]- alkane. 3,527,733, Cl. 260-67.5
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- Pfaffman, George D., and Armstrong, Robert G., to Park-Ohio Industries, Inc. Method for hardening gear teeth. 3,527,627, Cl. 148-147.
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- Stapp, Paul R., to Phillips Petroleum Company. Dehydrohalogenation of 4-halotetrahydropyrans. 3,527,771, Cl. 260-345.1
- Stark, Marvin, to Pullman Incorporated. Railway car construction. 3,527,171, Cl. 105-404.
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- Tanaka, Masao, and Mineura, Kazuyuki, to Kyowa Hakko Kogyo Kabushiki Kaisha (Kyowa Hakko Kogyo Co., Ltd.). Process for preparing pyridoxal-5-phosphate. 3,527,683, Cl. 204-158.
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- Terrell, Ross C., to Air Reduction Company, Incorporated. 1,1-Difluoro-2,2-dichloroethyl difluoromethyl ether and its method of preparation. 3,527,812, Cl. 260-614.
- Terrell, Ross C., to Air Reduction Company, Incorporated. 1,1,2-Trifluoro-2-chloroethyl difluoromethyl ether and its method of preparation. 3,527,813, Cl. 260-614.
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- Beavers, Dorothy J. Use of organic acids and acid derivatives as antifoggants in silver halide emulsions. T878,010, 9-8-70, Cl. 96—109.
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- Elins, Herbert S., and N. L. Weeks. Process for producing minute capsules. T878,002, 9-8-70, Cl. 96—67.
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- Padday, John F. Storage of water in coated layers. T878,008, 9-8-70, Cl. 96—29.
- Parsons, Timothy F. Photographic diffusion transfer product and process. T878,005, 9-8-70, Cl. 96—29.
- Seaton, William H., T. E. Stanin, and R. E. Gee, Jr. Poly(tetramethylene glycol) having a narrow molecular weight distribution and its manufacture. T878,004, 9-8-70, Cl. 260—615.
- South, Joe E. Novel prescreened photosensitive lithographic printing plates. T878,009, 9-8-70, Cl. 96—33.
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- Weyerts, Walter J. Photographic diffusion transfer product and process. T878,006, 9-8-70, Cl. 96—29.

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- Ahrens, Claude W. Playground slide. 218,625, 9-8-70, Cl. D34—5.
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- Raymond, William J., to Borg-Warner Corp. Audio-visual educational device or the like. 218,608, 9-8-70, Cl. D25—1.
- Robbins, Jim, Seat Belt Co.: *See*—
  - Lohr, Thomas E. 218,589.
- Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Riding-type lawn mower frame. 218,632, 9-8-70, Cl. D40—1.
- Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Riding-type lawn mower frame. 218,633, 9-8-70, Cl. D40—1.
- Schrock, Donald C., and R. J. Contant, to Crane Co. Lavatory. 218,607, 9-8-70, Cl. D23—58.
- Scott, George T., Jr., to Elmer's Weights, Inc. Weight belt. 218,621, 9-8-70, Cl. D34—5.
- Sims, Clark D., to Owens-Illinois, Inc. Dispenser for cups. 218,637, 9-8-70, Cl. D52—2.
- Sizer, William C. Snowmobile body. 218,603, 9-8-70, Cl. D14—24.
- Snyder Mfg. Co.: *See*—
  - Margolies, Charles R. 218,623.
  - Margolies, Charles R. 218,624.
- Sommerfeld, Louis. Ash tray. 218,655, 9-8-70, Cl. D85—2.
- Sperry Rand Corp.: *See*—
  - Dreyfuss, Henry, and Penney. 218,650.
- Steele, Charles E., to American Machine & Foundry Co. Juvenile auto. 218,630, 9-8-70, Cl. D34—15.
- Stone, Mark M., to Metalex Corp. Serrated metal grating. 218,597, 9-8-70, Cl. D13—1.
- Sun Oil Co.: *See*—
  - Lawson, Sid. 218,587.
- Surgical Appliance Industries, Inc.: *See*—
  - Williams, Marguerite R. 218,586.
- Swan, William O., R. N. Fleck, and G. Tepper, to Anderson Jacobson, Inc. Acoustically coupled teletype terminal. 218,610, 9-8-70, Cl. D26—14.
- Swett, James B., to Dart Industries, Inc. Egg separator. 218,634, 9-8-70, Cl. D44—29.
- Takashima, Shinji, to Miyata Industry Co., Ltd. Frame for bicycle. 218,659, 9-8-70, Cl. D90—8.
- Takeuchi, Tom: *See*—
  - Boldt, Melvin H., and Takeuchi. 218,649.
- Tepper, Gene: *See*—
  - Swan, William O., Fleck, and Tepper. 218,610.
- Van Brode Milling Co., Inc.: *See*—
  - Rauch, David. 218,668.
  - Rauch, David. 218,638.
- Vollrath Co., The: *See*—
  - Kohler, Terry J. 218,591.
- Weick, John A. Table. 218,618, 9-8-70, Cl. D33—14.
- Western Ribs Inc.: *See*—
  - Moncrief, J. D. 218,654.
- Williams,Marguerite R., to Surgical Appliance Industries, Inc. Maternity girdle. 218,586, 9-8-70, Cl. D2—2.
- Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 218,664, 9-8-70, Cl. D92—26.27.
- Willoughby, Connie C., to Cannon Mills Co. Textile fabric. 218,665, 9-8-70, Cl. D92—1.
- Willoughby, Connie C., to Cannon Mills Co. Textile fabric. 218,666, 9-8-70, Cl. D92—1.
- Wilson, George A.: *See*—
  - Boldt, Melvin H., and Wilson. 218,648.
- Workman, David E.: *See*—
  - Perkins, George D., Workman, and Kneier. 218,658.
- Young, Raymond W., to American Standard Inc. Grab bar. 218,619, 9-8-70, Cl. D33—21.
- Young, Raymond W., to American Standard Inc. Grab bar. 218,620, 9-8-70, Cl. D33—21.
- Yurdin, Carl R., to Harman-Kardon, Inc. Loud speaker enclosure. 218,614, 9-8-70, Cl. D26—14.
- Zenger, Richard D.: *See*—
  - Lambert, Audie L., and Zenger. 218,594.
- Zenith Radio Corp.: *See*—
  - Becker, Robert W., and Boldt. 218,647.

CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

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DEFENSIVE PUBLICATIONS APPLICATIONS

(Notice of Dec. 16, 1969, 869 O.G. 687)

36 : T878,002
T878,003
36 : T878,005
T878,006
36 : T878,007
T878,009
36 : T878,010
47 : T878,001
47 : T878,004
64 : T878,011
80 : T878,008

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 8, 1970 Volume 878 Number 2

TRADEMARKS

NOTICES

United States Adopted Names

List No. 26

March 1, 1970 to June 30, 1970

The following nonproprietary names for the drugs described have been adopted by the USAN Council (the nomenclature committee sponsored by the American Medical Association, the American Pharmaceutical Association, and the United States Pharmacopeial Convention) in cooperation with the interested manufacturers. The designation "United States Adopted Names" (USAN) has been coined to distinguish these formally adopted nonproprietary names from other nonproprietary names. Adoption of such names does not imply endorsement of the products involved by the A.M.A. Council on Drugs, the United States Pharmacopeia or the National Formulary.

Any comments or suggestions should be addressed to Doctor Joseph B. Jerome, Secretary, United States Adopted Names Council, American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610.

amcinafide: topical anti-inflammatory
artegraft: arterial graft of bovine origin
carmustine: antineoplastic
carperone: tranquilizer
clotrimazole: antifungal
desonide: anti-inflammatory
dextrates: pharmaceutic aid (binding aid and diluent for tablets)
letimide hydrochloride: analgesic
lorbamate: muscle relaxant
methadyl acetate: narcotic analgesic
minoxidil: antihypertensive
mitocarcin: antineoplastic
mycophenolate sodium: oncolytic
mycophenolic acid: oncolytic
naproxen: anti-inflammatory; analgesic; antipyretic
naproxol: anti-inflammatory; analgesic; antipyretic
pivampicillin hydrochloride: antibiotic
polyglycolic acid: surgical suture material
probucol: anticholesteremic
rafoxanide: anthelmintic
terbutaline sulfate: bronchodilator
tilorone hydrochloride: antiviral
tiprenolol hydrochloride: beta sympatholytic
zinc sulfanilate: antibacterial

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	24, 142
Date of oldest new application	June 13, 1969
Date of oldest amended application (filing date)	September 27, 1965

C. M. WENDT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9-24-69	11-30-67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-3-69	9-27-65
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36	12-24-69	6-19-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-13-69	5-18-67
Renewals (All Classes)	5-11-70	----------
Sec. 12(c) Publications (All Classes)	5-15-70	----------

Applications filed during the month of June 1970—3,042

Registrations Issued	480—No. 898,021 to No. 898,500
Renewals Issued	140

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

MARKS PUBLISHED FOR OPPOSITION

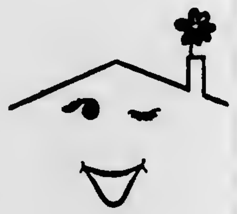
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 282,464. Home Interiors & Gifts, Inc., Dallas, Tex. Filed Oct. 13, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Coffee and Tea Pots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls, and Jars and Vases (Int. Cl. 21).

Class 30—Crockery, Earthenware, and Porcelain

For Ceramic Coffee and Tea Pots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls, and Jars and Vases (Int. Cl. 21).

Class 33—Glassware

For Glass Coffee and Tea Pots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls, and Jars and Vases (Int. Cl. 21).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Holders and Candelabras (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

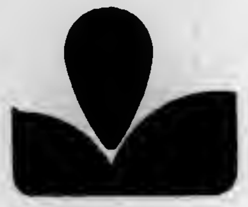
For Wall Decorations in the Form of Wall Hung Planters, Plaques, Trivets of Metal, Ceramics, Wood, and Glass (Int. Cl. 21).

Class 101—Advertising and Business

For Providing Demonstrations of Interior Decorating Items at Home Meetings (Int. Cl. 35).

First use on or about Dec. 20, 1958.

SN 284,245. The Southland Corporation, Dallas, Tex. Filed Nov. 6, 1967.



Class 45—Soft Drinks and Carbonated Waters

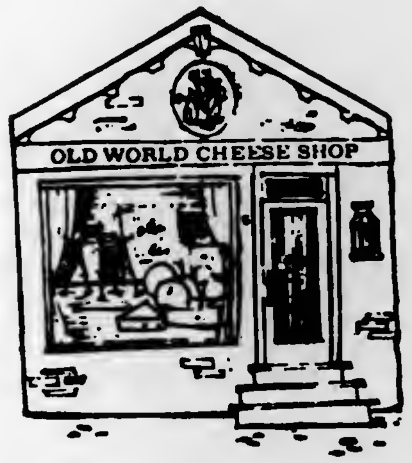
For Orange Flavored Drink, Lemon Flavored Drink, Grape Flavored Drink, Pineapple-Orange Flavored Drink, and Party Punch (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

For Fluid Milk, Fluid Buttermilk, Fluid Cream, Fresh Orange Juice Sold in Cartons, Cheese Flavored Chip Dip, Cottage Cheese, Butter, Oleomargarine, Whipped Cream Topping, Fresh Eggs, and Ice Cream (Int. Cls. 29, 30, and 32).

First use at least as early as June 12, 1967.

SN 292,973. Old World Cheese Shop, Toronto, Ontario, Canada. Filed Mar. 11, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed Sept. 14, 1967; Reg. No. 165,940, dated Oct. 31, 1969. For the purposes of registration no claim is made to the exclusive right to use "Cheese Shop," apart from the mark shown, but the applicant waives none of its common law rights therein.

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).

Class 101—Advertising and Business

For Counselling Services in the Area of Cheese Selection (Int. Cl. 35).

SN 306,984. Aircraft Radio Corporation, Boonton, N.J. Filed Sept. 10, 1968.

WE'VE GOT THE PLANE BRAINS

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Transmitters, Radio Receivers, Radio Transceivers, Converters, Inverters, Amplifiers, Power Supplies, Electric Motors, Dynamotors, Antennae, and Parts for All of the Foregoing—Namely, Indicators, Connectors, Cable Assemblies, Switches, Electronic Filters, RF Masks, RF Signal Limiters, Beat Frequency Oscillator (BFO) Kits; Capacitors, Coils, Relays, Diodes, Transistors, Resistors, Transformers, Electron Tubes, Crystals, Insulators, Locking Terminals, Bushings, Printed Circuit Assemblies, Insulating Plates, Metal Dust Covers for Electric Housing, Spring Clips for Electrical Connections, Heat Sinks, Fuseholders, Fuses, Condensers, and Brush Assemblies (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Navigation Systems and Navigation/Communication Systems Comprising Receivers, Transmitters, Transceivers, Converters, Inverters, Control Units, Indicators, Antennae and Connectors; Glide Slope Receivers; Course Indicator Systems Comprising Compass Transmitters, Computer-Amplifiers, Control Units, Gyros, Slaving Meters, Indicators and Connectors; Automatic Direction Finder Systems (ADF) Comprising Receivers, Inverters, Indicators, Antennae and Connectors; Radio Magnetic Indicators (RMI) and Radio Magnetic Indicator (RMI) Converters, and Connectors Therefor; Distance Measuring Equipment (DME); Marker Beacon Receivers Comprising Indicators, Antennae, and Connectors; Transponder Systems Comprising Receiver-Transmitters, Coders, Control Units, Self Test Kits, Antennae and Connectors; Electric Gyro Systems; Autopilot Systems; Signal Generators Comprising Filter Units, Power Units, Cable Assemblies and Connectors; Course Checkers for Checking the Phase-Accuracy of Signal Generators; Turning Meters; Thermistors; and Microammeters (Int. Cl. 9).

Class 38—Prints and Publications

For Technical Manuals (Int. Cl. 16).

First use at least as early as Sept. 15, 1967.

SN 320,870. Terra-Sancta Creations, Inc., Philadelphia, Pa. Filed Mar. 5, 1969.

TERRA SANCTA GUILD

The mark "Terra Sancta Guild" is derived from Latin and is translated as "holy land guild."

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Serving Trays of Non Precious Metal and Glass (Int. Cl. 21).

Class 28—Jewelry and Precious-Metal Ware

For Pendants, Lapel Pins, Tie Tacks and Medallions in the Nature of Jewelry (Int. Cl. 14).

Class 32—Furniture and Upholstery

For Bookends and Book Stands (Int. Cls. 16 and 20).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Holders and Altar Set Candle Lamps (Int. Cl. 11 and 21).

Class 37—Paper and Stationery

For Desk Accessories—Namely, Pencil Organizers, Note Trays and Letterholders (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Plaques, Floor Stand Crosses, Holy Water Fonts, Diptychs, and Decorative Door Signs (Int. Cls. 16 and 20).

First use Aug. 16, 1966.

SN 325,039. Industrial Brush Company, Pomona, Calif. Filed Apr. 21, 1969.

IBC

Class 14—Metals and Metal Castings and Forgings

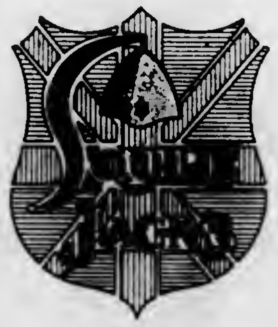
For Cores Including Flanges, End Castings and Extrusions for Brush Strip Material for Use in Brushes (Int. Cl. 6).

Class 29—Brooms, Brushes, and Dusters

For Industrial and Commercial Cleaning and Brush Products—Namely, Brushes for Use in Washing and Cleaning, Sweeping, Treating Fruit and Produce, Vehicle Washing, Hand and Pool; Brooms, Cotton Swabs, Rubber Batts, Straight and Coiled Brushes and Brooms of Filaments Retained in a Base of Strip-Like Form (Int. Cl. 21).

First use Aug. 1, 1968.

SN 326,026. Wehling Enterprises, Inc., Cincinnati, Ohio. Filed May 1, 1969.



The drawing is lined for the colors blue and red.

Class 46—Foods and Ingredients of Foods

For Take Out Restaurant Foods—Namely, Fish, Shrimp, French Fried Potatoes, Vinegar, and Batter Mix (Int. Cl. 29).

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).

First use Apr. 3, 1969.

SN 327,620. The Hair House, Inc., Omaha, Nebr. Filed May 19, 1969.

HAIR HOUSE

Applicant disclaims the word "Hair" apart from the mark as shown.

Class 40—Fancy Goods, Furnishings, and Notions

For Ladies' Hair Pieces (Int. Cl. 26).

Class 51—Cosmetics and Toilet Preparations

For Wig Sprays (Int. Cl. 3).

First use Nov. 15, 1968.

SN 332,403. Rohm and Haas Company, Philadelphia, Pa. Filed July 14, 1969.

KORDEK

Class 1—Raw or Partly Prepared Materials

For Plastic Film in the Form of Sheets (Int. Cl. 17).

Class 5—Adhesives

For Plastic Film in the Form of Sheets With Adhesive Surfaces (Int. Cl. 17).

First use on or about June 4, 1969.

SN 339,321. Harsco Corporation, Camp Hill, Pa. Filed Sept. 30, 1969.

THE BIG BLUE

Class 19—Vehicles

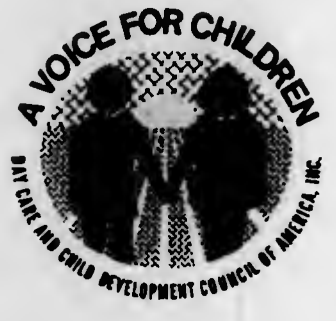
For Wagons, Farm Wagon Running Gears, and Forage Wagons (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Manure Spreaders (Int. Cl. 7).

First use Sept. 26, 1967.

SN 346,345. Day Care and Child Development Council of America, Inc., Washington, D.C. Filed Dec. 16, 1969.


A VOICE FOR CHILDREN
DAY CARE AND CHILD DEVELOPMENT COUNCIL OF AMERICA, INC.

The drawing is lined for the color orange.

Class 38—Prints and Publications

For Bulletins, Newsletters and Pamphlets (Int. Cl. 16).

Class 100—Miscellaneous

For Providing Information and Technical Assistance to Chapters and Organizations Throughout the Country To Assist Them To Set Up, Fund, Operate or Assist in the Development of Day Care Centers and Other Facilities for the Benefit of Children (Int. Cl. 42).

First use Sept. 1, 1968.

SN 357,501. La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. Filed Apr. 21, 1970.

THE HOUSE OF STYLE

Owner of Reg. Nos. 753,442, 883,902, and others.

Class 51—Cosmetics and Toilet Preparations

For Women's and Men's Toiletries and Grooming Aids—Namely, Preparations for Hair Care, Namely, the Setting, Controlling, Rinsing, Managing, Conditioning, Holding and Lusterizing of Hair; Preparations for Skin and Hand Care, Namely, Hand and Skin Lotion, Bath Oil; and Preparations for Drying Nail Polish and Cutical Conditioner; Personal Deodorants and Anti-Perspirant; Facial Cosmetics and Eye Make-Up, Namely, Facial Make-Up, Lipstick, Eye Shadow and Eye Liner in Cake Form; Wig Care Products, Namely, Conditioner, Lusterizer and Holding Preparations (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Personal Detergents and Wig Cleaner (Int. Cl. 3).

First use on or about June 1, 1963.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1 — Raw or Partly Prepared Materials

SN 334,744. Rohm and Haas Company, Philadelphia, Pa. Filed Aug. 7, 1969.

ANIM/8

For Elastomeric Fibers, Continuous Filaments and Staple Lengths for Further Manufacture and Other Uses in the Industrial Arts (Int. Cl. 22).
First use on or about May 22, 1969.

SN 335,732. American Cyanamid Company, Wayne, N.J. Filed Aug. 20, 1969.

IREX

For Synthetic Resin, Specifically an Infrared Absorbing Molding Compound (Int. Cl. 1).
First use Aug. 4, 1969.

SN 339,474. Tivian Laboratories Incorporated, Providence, R.I. Filed Oct. 1, 1969.

GEMITATION

Owner of Reg. No. 856,358.
For Two (2) Component Epoxy Composition To Produce Imitation Gems (Int. Cl. 1).
First use July 9, 1968.

SN 348,125. Dodge-Wasmund Mfg., Inc., Pico Rivera, Calif. Filed Jan. 9, 1970.

WEARLON

For Raw Stock—Namely, Bars, Tubes and Sheets, Made From Fluorine Polymer Compositions (Int. Cl. 17).
First use Oct. 7, 1969.

SN 348,126. Dodge-Wasmund Mfg., Inc., Pico Rivera, Calif. Filed Jan. 9, 1970.

THERMALON

For Raw Stock—Namely, Bars, Tubes and Sheets, Made From Fluorine Polymer Compositions (Int. Cl. 17).
First use January 1965.

SN 348,127. Dodge-Wasmund Mfg., Inc., Pico Rivera, Calif. Filed Jan. 9, 1970.

THERMALOY

For Raw Stock—Namely, Bars, Tubes and Sheets, Made From Fluorine Polymer Compositions (Int. Cl. 17).
First use January 1965.

SN 360,636. Fort Wayne Reduction, Inc., Fort Wayne, Ind. Filed May 25, 1970.

MIXCOR

For Salvage Product Comprised of Mixed Paper and Corrugated Paper (Int. Cl. 16).
First use Apr. 17, 1970.

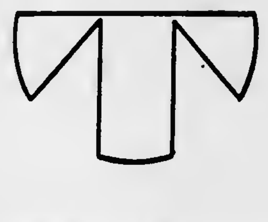
SN 360,936. Purex Corporation, Ltd., d.b.a. Lanson Chemical Corporation, Lakewood, Calif. Filed May 27, 1970.

LANCRYL

For Thermosetting Acrylic Polymer (Int. Cl. 1).
First use Nov. 12, 1968.

Class 6 — Chemicals and Chemical Compositions

SN 323,584. Master Chemical Corporation, Perrysburg, Ohio. Filed Apr. 3, 1969.



For Additive Anti-Foaming Agent for Use in Cutting Fluid Coolants (Int. Cl. 1).
First use January 1967.

SN 330,110. C. Cool Company Inc., New Shrewsbury, N.J. Filed June 16, 1969.

OVERCOME WITH SOUL POWER

For Household Liquid Ammonia (Int. Cl. 3).
First use November 1968.
Subj. to Intf. with SN 317,690.

SN 346,896. Gulf Oil Corporation, Pittsburgh, Pa. Filed Dec. 22, 1969.

GULF

Owner of Reg. Nos. 710,757, 710,758, and others.
For Linear Fatty Acids (Int. Cl. 1).
First use on or about Nov. 12, 1969.

SN 346,914. Lea-Ronal, Inc., Freeport, N.Y. Filed Dec. 22, 1969.

AURO DURE

For Gold Plating Baths (Int. Cl. 1).
First use May 1, 1969.

SN 347,017. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Dec. 23, 1969.

DYNASIL

Owner of German Reg. No. 743,609, dated Jan. 22, 1959.
For Silicic Acid Esters (Int. Cl. 1).

SN 347,092. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Dec. 24, 1969.

PETRAMIN

Owner of German Reg. No. 859,352, dated Sept. 8, 1956.
For Dyestuffs (Int. Cl. 2).

SN 347,224. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Dec. 29, 1969.

POPCORN

For Sulfur (Int. Cl. 1).
First use May 1, 1969.

SN 348,652. Copy Systems, Inc., d.b.a. Copy Paper Co., Los Angeles, Calif. Filed Jan. 15, 1970.

DURATONE

For Toner for Electrostatic Copiers (Int. Cl. 1).
First use Nov. 24, 1969.

SN 359,565. Morton International, Inc., Chicago, Ill. Filed May 13, 1970.

HYSOL

For Dyes (Int. Cl. 2).
First use on or about Oct. 27, 1949.

SN 359,953. Diamond Shamrock Corporation, Cleveland, Ohio. Filed May 18, 1970.

MULTIFEX IDX

Owner of Reg. Nos. 613,348 and 613,349.
For Precipitated Calcium Carbonate (Int. Cl. 1).
First use Sept. 11, 1968.

Class 10 — Fertilizers

SN 336,055. Excel-Mineral Company, Inc., d.b.a. Excel Mineral Co., Los Angeles, Calif. Filed 8–25–69.

MULCH-ALL

For Granular Water-Absorptive Soil and Turf Additive Used To Increase the Porosity of the Soil and To Increase Its Water-Retentive Qualities (Int. Cl. 1).
First use July 24, 1969.

Class 11 — Inks and Inking Materials

SN 328,655. Chemolene Industries, Inc., Bordentown, N.J. Filed May 29, 1969.

CHEMOLENE GOLD RIBBON INK

Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the notation "Ink" apart from the mark as shown.
For Writing Ink (Int. Cl. 16).
First use Apr. 29, 1969.

Class 12 — Construction Materials

SN 321,517. Majestic Tile Company, Melrose Park, Ill. Filed Mar. 12, 1969.

EARLY COLONIAL

Owner of Reg. No. 864,816.
For Imitation Brick Facing (Int. Cl. 19).
First use Nov. 15, 1967.

SN 326,966. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed May 12, 1969.

MADEIRA LINDA

The exclusive right to use the word "Madeira" is disclaimed apart from the composite mark.

For Wood, Lumber and Fiber Products, i.e., Decorative and Utility Plywoods for Use in the Construction, Furniture and Building Fields (Int. Cl. 19).
First use on or about Apr. 15, 1969.

SN 328,372. Uni-Wall Interlock, Inc., Denver, Colo. Filed May 26, 1969.

MARCO-CRETE

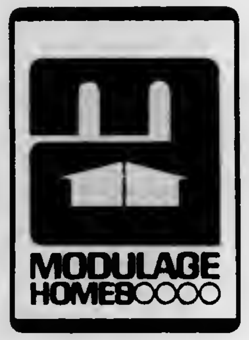
For Lightweight Cellular Concrete Building Construction Components—Namely, Columnar Panels for Walls, Roofs or Floors of Buildings (Int. Cl. 19).
First use Apr. 15, 1969.

SN 328,753. United States Ceramic Tile Company, Canton, Ohio. Filed May 29, 1969.

SPARTINA

Owner of Reg. Nos. 231,433, 781,933, and others.
For Ceramic Tile—Namely, Floor Tile (Int. Cl. 19).
First use in or about April 1966.

SN 335,641. Albee Homes, Inc., Niles, Ohio. Filed Aug. 19, 1969.



The phrase "Tomorrow's Technology in Quality Housing" and the word "Homes" are disclaimed apart from the mark.

For Modular Homes and Prefabricated Buildings (Int. Cl. 19).
First use May 15, 1969.

SN 353,710. American Enclosures Company, Novi, Mich. Filed Mar. 11, 1970.

TRI-DOR

For Shower Doors and Panels (Int. Cl. 19).
First use July 1968.

SN 353,884. Johns-Manville Corporation, New York, N.Y. Filed Mar. 12, 1970.

SANDHURST

For Ceiling Panels (Int. Cl. 19).
First use at least on or about May 29, 1969.

SN 354,721. Glass Shower Door Co., Inc., d.b.a. Tylo Sauna Midwest, Chicago, Ill. Filed Mar. 20, 1970.

For Prefabricated Sauna Rooms (Int. Cl. 19).
First use July 17, 1969.

SN 355,239. Johns-Manville Corporation, New York, N.Y. Filed Mar. 27, 1970.

MICROBAN

For Ceiling Tile and Panels (Int. Cl. 19).
First use at least on or about July 11, 1969.

SN 355,335. Asbestospray Corporation, Newark, N.J. Filed Mar. 30, 1970.

CERAMOSPRAY

For Acoustic and Thermal Insulating Fibers (Int. Cl. 17).
First use Dec. 9, 1965.

SN 355,387. Georgia Tile Distributors, Inc., Douglasville, Ga. Filed Mar. 30, 1970.

PALAZZO

The word "Palazzo" means "palace" in Italian.
For Cultured, Man-Made Marble in Sections (Int. Cl. 19).
First use Sept. 5, 1968.

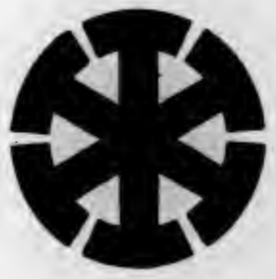
SN 355,537. Panelboard Manufacturing Company, Inc., Somerville, N.J. Filed Mar. 31, 1970.

PANELCREST

For Wall Board Having a Laminated Decorative Synthetic Resin Facing (Int. Cl. 19).
First use Feb. 26, 1970.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 302,654. Temple Industries, Inc., Diboll, Tex. Filed July 12, 1968.



For Toilet Seats (Int. Cl. 6).
First use January 1964.

SN 313,797. The Aro Corporation, Bryan, Ohio. Filed Dec. 6, 1968.

FULL-BORE

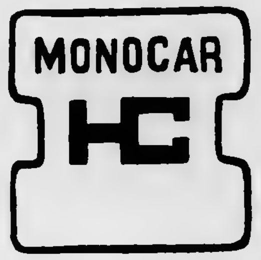
For Couplers and Connectors for Pneumatic Lines—Namely, Female Thread Couplers, Female Thread Connectors, Male Thread Couplers, Male Thread Connectors, Hose Insert Couplers, Hose Insert Connectors, Reusable Hose Insert Couplers, and Reusable Hose Insert Connectors (Int. Cl. 6).
First use Sept. 19, 1968.

SN 317,766. Shapiro Bros. Industries, Van Nuys, Calif. Filed Jan. 28, 1969.

MG COUPLING

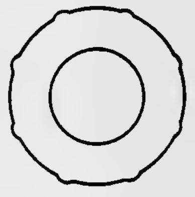
The word "Coupling" is disclaimed apart from the mark as shown.
For Pipe Couplings (Int. Cl. 6).
First use on or about Feb. 29, 1968.

SN 334,079. Jose L. Gonzalez, Marco A. Fonseca, and Enrique T. Gibbon (partnership), Mexico City, Mexico. Filed July 31, 1969.



For Valves (Int. Cl. 6).
First use September 1968; in commerce Mar. 14, 1969.

SN 339,984. Wrought Washer Mfg. Co., Milwaukee, Wis. Filed Oct. 6, 1969.



The protruding spaced peripheral nubs, comprising the mark are applied to the goods by being formed integrally thereon.
For Washers (Int. Cl. 6).
First use Sept. 25, 1969.

SN 353,720. Beneke Corporation, Columbus, Miss. Filed Mar. 11, 1970.

HI-RISE

For Toilet Seats (Int. Cl. 11).
First use Jan. 19, 1970.

Class 14 — Metals and Metal Castings and Forgings

SN 351,067. Ugine Kuhlmann, Paris, France. Filed Feb. 10, 1970.

GIMEL

Owner of French Reg. No. 500,408, dated Nov. 24, 1961 (Seine); Natl. Inst. No. 174,441.
For Metals and Metal Alloys (Int. Cl. 6).

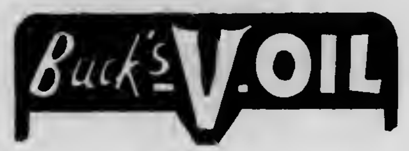
SN 359,179. Glenn R. Lee Company, Inc., Kokomo, Ind. Filed May 8, 1970.

DIACOR

For Aluminum, Steel and Brass Slugging Wire, Heel Pins, and Shoe Repair Wire (Int. Cl. 6).
First use May 1967.

Class 15 — Oils and Greases

SN 319,942. Peter Pendarvis, d.b.a. Oil Engineers & Co., Santa Ana, Calif. Filed Feb. 24, 1969.



For Additive for Lubricating Oils (Int. Cl. 4).
First use Feb. 9, 1956.

SN 329,834. Calfonex, Inc., Englewood, N.J. Filed June 12, 1969.

PIPE-BREAK

For Penetrating Oil Used To Break Down Rust on Pipe Joints (Int. Cl. 4).
First use June 4, 1969.

SN 330,795. Turtle Wax, Inc. Chicago, Ill. Filed June 23, 1969.

SNAKE OIL

No exclusive rights are claimed in the word "Oil" apart from the mark, but applicant waives none of its common law rights in the mark shown.
For Crankcase Oil Additive for Motor Vehicles (Int. Cl. 4).
First use June 12, 1969.

Class 16 — Protective and Decorative Coatings

SN 319,946. Polyastics Corporation, Croydon, Pa. Filed Feb. 24, 1969.

POLY-FLOOR

For Modified Urethane Protective Coatings for Use as Seamless Flooring (Int. Cl. 2).
First use Aug. 1, 1966.

SN 349,883. National Patent Development Corporation, New York, N.Y. Filed Jan. 28, 1970.

HYDRON

Owner of Reg. No. 839,778.
For Underwater Paints and Coatings for Water Vehicles (Int. Cl. 2).
First use July 1, 1969.

SN 355,449. The Sherwin-Williams Company, Cleveland, Ohio. Filed Mar. 30, 1970.

RUSTIQUE

For Clear and Pigmented Coatings in the Nature of a Paint (Int. Cl. 2).
First use Mar. 4, 1970.
Subj. to Intf. with SN 362,441.

SN 361,228. Arthur C. Mangels Industries, Inc., Philadelphia, Pa. Filed June 1, 1970.

NU-FRIGERATOR

Owner of Reg. No. 531,908.
For Paint Enamel (Int. Cl. 2).
First use Jan. 5, 1948.

SN 362,441. Conchemco, Incorporated, Kansas City, Mo. Filed June 12, 1970.

RUSTIQUE

For Exterior Wood Stain (Int. Cl. 2).
First use Jan. 13, 1966.
Subj. to Intf. with SN 355,449.

Class 17—Tobacco Products

SN 334,746. St. Regis Tobacco Corporation Limited, Zurich, Switzerland. Filed Aug. 7, 1969.

BEAUFORT

For Cigarettes, Tobacco, and Cigars (Int. Cl. 34).
First use Mar. 27, 1969; in commerce Mar. 27, 1969.

SN 356,731. Philip Morris Incorporated, New York, N.Y. Filed Apr. 13, 1970.

SUNLAND

For Cigarettes (Int. Cl. 34).
First use Oct. 13, 1969.

SN 357,818. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. Filed Apr. 24, 1970.

CERTINA

For Smoking and Chewing Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use May 7, 1969; in commerce May 7, 1969.

SN 357,876. Utica Tobacco Company, Inc., Utica, N.Y. Filed Apr. 24, 1970.

BUCKO

For Smoking and Chewing Tobacco (Int. Cl. 34).
First use Nov. 6, 1928.

SN 358,670. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed May 4, 1970.

WINCHESTER

For Cigarettes (Int. Cl. 34).
First use Apr. 22, 1970.

SN 358,944. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. Filed May 6, 1970.

FLAMBEAU

For Smoking and Chewing Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use Nov. 4, 1969; in commerce Jan. 15, 1970.

SN 358,946. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. Filed May 6, 1970.

SWEET CHARITY

For Smoking and Chewing Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use Nov. 4, 1969; in commerce Jan. 15, 1970.

SN 358,947. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. Filed May 6, 1970.

CIRCLE

For Smoking and Chewing Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use Nov. 4, 1969; in commerce Jan. 15, 1970.

SN 358,948. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. Filed May 6, 1970.

SQUARE CIRCLE

For Smoking and Chewing Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use Nov. 4, 1969; in commerce Jan. 15, 1970.

SN 359,470. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

VALENCIAS

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

SN 359,473. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

MILE HIGH

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

SN 359,475. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

CORDOVA

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

SN 359,477. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

HONCHOS

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

Class 18—Medicines and Pharmaceutical Preparations

SN 316,260. USV Pharmaceutical Corporation, New York, N.Y. Filed Jan. 9, 1969.

TOBAN

For Preparation for Use as a Smoking Deterrent (Int. Cl. 5).
First use Nov. 27, 1968.

SN 336,243. Calbiochem, Los Angeles, Calif. Filed Aug. 18, 1969.

LYSODREN

For Oral Chemotherapeutic Agent (Int. Cl. 5).
First use Apr. 14, 1969.

Class 19—Vehicles

SN 328,081. Tom Sawyer Boats, Inc., Hannibal, Mo. Filed May 22, 1969.

TomSawyer

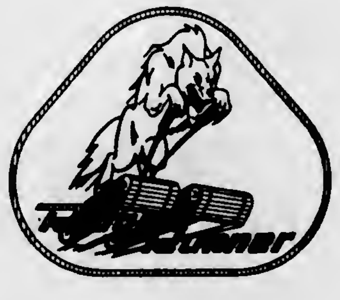
The name "Tom Sawyer" is fanciful and not the name of any known individual.
For Fiberglass V-Bottom Pleasure Boats and Fiberglass Pontoon or Catamaran Type Pleasure Boats (Int. Cl. 12).
First use Jan. 23, 1967.

SN 347,528. Outboard Marine Corporation, Waukegan, Ill. Filed Dec. 31, 1969.

TRACKSTER

Owner of Reg. Nos. 571,449, 787,055, and others.
For All Terrain Vehicle (Int. Cl. 12).
First use on or before May 26, 1969.

SN 359,356. Donald H. Hagen, Minneapolis, Minn. Filed May 11, 1970.



The drawing is lined for the color red.
For Snow Mobiles (Int. Cl. 12).
First use Jan. 29, 1969.

SN 361,620. Spectra McIntosh Corporation, Chicago, Ill. Filed June 3, 1970.

SINGLEAF

For Automotive Vehicle Springs (Int. Cl. 12).
First use Apr. 28, 1970.

SN 361,766. Somovex Inc., St-Jean-Port-Joli, Quebec, Canada. Filed June 4, 1970.

chimo

For Snowmobiles and Trailers Therefor (Int. Cl. 12).
First use Feb. 11, 1970.

SN 362,034. Landola, Incorporated, Converse, Ind. Filed June 8, 1970.

Landohome

For Mobile Homes (Int. Cl. 12).
First use at least as early as Dec. 31, 1958.

SN 362,035. Landola, Incorporated, Converse, Ind. Filed June 8, 1970.

Landola

For Mobile Homes (Int. Cl. 12).
First use at least as early as Dec. 31, 1946.

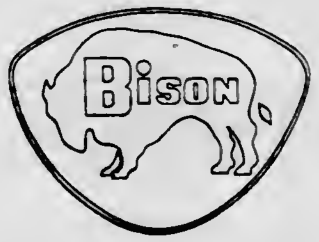
Class 21—Electrical Apparatus, Machines, and Supplies

SN 274,089. Tandy Corporation, d.b.a. Radio Shack, Fort Worth, Tex., by merger from Radio Shack Corporation, Boston, Mass. Filed June 16, 1967.

SCIENCE FAIR

The word "Science" is disclaimed apart from the mark as shown.
For Educational Kits for Making Electronic and Electromechanical Devices, Said Kits Including Instructions, Wiring Diagrams, Potentiometers, Transistors, Capacitors, Resistors, Wires, Switches, Diodes, Earphones, Loudspeakers, Transformers, and Hardware (Int. Cl. 9).
First use at least as early as June 1, 1967.

SN 297,026. Vactronics, Inc., Orlando, Fla., by change of name from Bison Manufacturing Company, Orlando, Fla. Filed May 1, 1968.



For Household Vacuum Cleaners (Int. Cl. 9).
First use Jan. 16, 1968.

SN 307,779. AG fur Industrielle Elektronik A.G.I.E., Losone (Tessin), Switzerland. Filed Sept. 17, 1968.

AGIETRONIC

Owner of Swiss Reg. No. 212,358, dated Aug. 27, 1965; and U.S. Reg. Nos. 737,137, 750,064, and 750,065.

For No-Break Solid State Power Supply for Large Computer Systems (Int. Cl. 9).

First use Aug. 11, 1967; in commerce Aug. 11, 1967.

SN 307,783. Winston E. Kock, Ann Arbor, Mich. Filed Sept. 16, 1968.

DOOR-TONE

For Electric Door Annunciator Incorporating Either a Transistorized Note Reproducer or a Tape Recording Reproducer (Int. Cl. 9).

First use May 29, 1968.

SN 307,784. Winston E. Kock, Ann Arbor, Mich. Filed Sept. 16, 1968.

CATHEDRAL DOOR-TONE

For Electric Door Annunciator Incorporating a Transistorized Note Reproducer (Int. Cl. 9).

First use May 29, 1968, on annunciators.

SN 314,204. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1968.

CHAMP

For Amplifier-Loudspeaker Systems for Electrical Musical Instruments (Int. Cl. 9).

First use in or about 1948.

SN 321,150. Associated Engineering Corporation, Brookline, Mass. Filed Mar. 10, 1969.

ADDAPLUG

For Electrical Connector (Int. Cl. 9).

First use on or about Oct. 26, 1950.

SN 323,036. Victory Engineering Corporation, Springfield, N.J. Filed Mar. 27, 1969.

PLUSISTOR VECO

Owner of Reg. Nos. 616,524 and 616,807.

For Plus Semiconductors—Namely, Thermistors, Varistors, and Resistors (Int. Cl. 9).

First use November 1968.

SN 323,162. Wavecom, Inc., Chatsworth, Calif. Filed Mar. 28, 1969.

WAVECOM

For Electrical Network Systems, Elements, and Components—Namely, Filters, Attenuators, Isolators, Hybrid and High Directivity and Other Couplers, Multiplexers, and Gain Equalizers (Int. Cl. 9).

First use June 24, 1968.

SN 323,385. The Telex Corporation, Tulsa, Okla. Filed Apr. 1, 1969.

TELEX

Owner of Reg. Nos. 439,711 and 517,386.

For Amplifiers, Microphones, Radios, Speakers, Combination Radio-Phonographs, Video Tape Recorders and Reproducers, and Components and Parts of All of Said Equipment (Int. Cl. 9).

First use at least as early as 1948.

SN 324,736. The Mosler Safe Company, Hamilton, Ohio. Filed Apr. 16, 1969.

TRAFFIC COMMANDER

For Electric Controls and Electric Traffic Signs for Directing Drive In Customers to Desired Location (Int. Cl. 9).

First use on or about Mar. 11, 1969.

SN 325,367. Major Corporation, Crystal Lake, Ill. Filed Apr. 23, 1969.

MICRO-PATCH

Owner of Reg. No. 820,238.

For Electrical Cross Connection Lighting and Power Load Circuit Panels (Int. Cl. 9).

First use on or about Mar. 24, 1967.

SN 326,270. Westinghouse Electric Corporation, East Pittsburgh, Pa. Filed May 2, 1969.

AMPTECTOR

For Solid State Trip Device for Detecting Overloads and Short Circuits in Circuit Breakers (Int. Cl. 9).

First use on or about Sept. 30, 1968.

SN 334,339. Jahco, Inc., Portland, Oreg. Filed Aug. 4, 1969.

ALBIE

For Electronic Equipment—Namely, Radio Beacons (Int. Cl. 9).

First use Mar. 26, 1969.

SN 340,673. Medical Plastics, Inc., Minneapolis, Minn. Filed Oct. 14, 1969.

MPI

For Medical Appliance Accessories—Namely, Disposable Electrode Ground Plates, Indifferent Plate Electrodes, Electrode Cable Clamps, Universal Electric Plugs, and Electric Cables (Int. Cl. 9).

First use Mar. 1, 1968.

SN 346,439. Wells Television, Inc., New York, N.Y. Filed Dec. 17, 1969.

NURSE-VIEW

For Electrical Communication Equipment in the Form of a Television and Audio System for Use in Hospitals (Int. Cl. 9).

First use Nov. 10, 1969.

SN 346,974. Space and Tactical Systems Corp., Burlington, Mass. Filed Dec. 22, 1969.

MICROPOWER

For Dual Gate Circuit and Flip-Flop Circuit Thick Film Ceramic Hybrid Modules (Int. Cl. 9).

First use in or before June 1969.

SN 353,789. Southwire Company, Carrollton, Ga. Filed Mar. 11, 1970.

triple 8

For Electrically Conductive Cable, Wire and Wire Products—Namely, Insulated and Uninsulated Solid Wire, Insulated and Uninsulated Multi-Filament Cable, Aircraft Wire, Armor Cable, Auto Ignition and Primary Cable, Battery Cable and Battery Cable Ground Wire, Braided Cable, Control Wire, DD Service Entrance Cable, Enunciator Wire, Fire Alarm and Burglar Alarm Wire, Fixture Wire, Flexible Electric Cord, Harness Wire, Heater Cord, Lamp Cord, Locomotive Cable, Machine Tool Wire, Magnet Wire, Neon Sign Cable, Radio Hook-Up Wire, Telephone Wire, Welding and Mining Cable, and Aluminum Alloy Rod Which Is Drawn and Processed To Produce One or More of the Above Products (Int. Cl. 9).

First use July 5, 1968.

Class 22 — Games, Toys, and Sporting Goods

SN 300,167. American Machine & Foundry Company, New York, N.Y. Filed June 11, 1968.

WEE

For Toys for Pre-School Age Children—Namely, Wagons, Scooters, Sidewalk Velocipedes, Wheeled Hand Trucks, and Rockers (Int. Cl. 28).

First use Feb. 28, 1966.

SN 315,791. Shakespeare Company, Kalamazoo, Mich. Filed Jan. 3, 1969.

Without waiving any rights which applicant may have acquired, the word "Shaft," the phrase "With the Spiral Markings" and the representation of an arrow head are disclaimed apart from the mark.

For Arrow Shafts (Int. Cl. 28).

First use July 29, 1966.

SN 315,931. Lakeside Industries, Inc., South Minneapolis, Minn. Filed Jan. 6, 1969.

STICKEY WICKET

For Apparatus Sold as a Unit for Playing a Target Type Skill Game (Int. Cl. 28).

First use Oct. 8, 1968.

SN 322,314. Miner Industries, Inc., New York, N.Y. Filed Mar. 20, 1969.

TOTE-A-CRAFT

For Toy Hobby Kit Comprising a Carrying Case and Craft Materials Contained Therein (Int. Cl. 28).

First use Mar. 17, 1969.

SN 322,519. Central Quality Industries, Inc., Polo, Ill. Filed Mar. 24, 1969.

SLIM-Master

For Exercise Equipment Comprising a Sensing Pad-Like Member for Use in In-Place Jogging and Electronic Means Electrically Connected to Said Pad-Like Means and Functioning To Indicate to the Jogger the Jogging Pace and Time of Jogging (Int. Cl. 28).

First use Jan. 25, 1969.

SN 332,521. William H. Peters, d.b.a. Manta-Ray Co. Montpelier, Ohio. Filed July 14, 1969.

HOOTENANNA

For Artificial Fish Lures (Int. Cl. 28).

First use July 1931.

SN 333,591. L & R Industries, Inc., Los Angeles, Calif. Filed July 25, 1969.

MARKSMAN

For Targets for Toy Guns (Int. Cl. 28).

First use approximately September 1960.

SN 359,966. Mattel, Inc., Hawthorne, Calif. Filed May 18, 1970.

STICK-AROUNDS

For Kit Containing Labels for Toy Automobiles and Comprising Stripes, Numbers, and Insignias (Int. Cl. 28).

First use Feb. 17, 1970.

SN 361,218. William H. Doub, d.b.a. D & W Enterprises, Immokalee, Fla. Filed June 1, 1970.

PUSHAHOOP

For Toy Hoops (Int. Cl. 28).

First use May 6, 1970.

SN 361,231. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

GRAND WESTERN

For Toy Automobile Racing Set (Int. Cl. 28).

First use Apr. 21, 1970.

SN 361,232. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

RING DANCE

For Toy Top (Int. Cl. 28).

First use Apr. 21, 1970.

SN 361,235. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

ZOOMIES

For Toy Automobile (Int. Cl. 28).
First use Apr. 21, 1907.

SN 361,446. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

SCENE-MAKERS

For Toy Drawing Set (Int. Cl. 28).
First use Mar. 25, 1970.

SN 361,447. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

FINISHERS

For Toy Drawing Set (Int. Cl. 28).
First use Mar. 25, 1970.

SN 361,448. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

KLOOGE

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,449. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

GRASS CRUSHER

For Toy Automobile (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,450. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

ROAD HOG

For Toy Automobile (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,452. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

PROFESSIONAL

For Toy Top (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,453. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

OOZE

For an Amorphous, Fluid Material for Forming Many Fanciful Toy Shapes (Int. Cl. 28).
First use Apr. 3, 1970.

SN 362,615. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

HOT WINGS

For Toy Airplanes (Int. Cl. 28).
First use June 11, 1970.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 251,664. A. Stephen u. Söhne, Hameln (Weser), Germany. Filed Aug. 3, 1966.

MICRO-CUT

Owner of U.S. Reg. No. 884,080.
For Food Comminuting Machines and Parts Therefor (Int. Cl. 7).
First use Aug. 5, 1959; in commerce Aug. 5, 1959.

SN 270,042. The W. E. Bassett Company, Derby, Conn. Filed Apr. 26, 1967.

Owner of Reg. Nos. 433,832, 695,409, and others.
For Pocket Screwdrivers (Int. Cl. 8).
First use 1957.

SN 289,994. Laser Technology, Inc., North Hollywood, Calif. Filed Jan. 31, 1968.

For Equipment for Cutting, Polishing and Finishing of Solid Materials—Namely, Diamond Impregnated Wire, Wire Saws, Diamond Saws, Sieve Shakers, Crystal Polishers, Centerless and Parallel Surface Grinders (Int. Cls. 7 and 8).
First use Oct. 3, 1967.

SN 295,320. The Dumore Company, Racine, Wis. Filed Apr. 10, 1968.

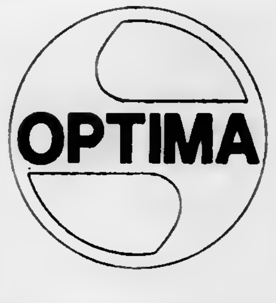
DUMORE

Owner of Reg. Nos. 119,596, 414,279, and 528,610.
For Chain Saw Sharpeners; Self-Contained Machine Tool Units Adapted To Be Mounted Directly on the Work for Performing Milling and Other Machining Operations, and for Use as Attachments on Large Machine Tool Installations; Automatic Drill Heads; Tool Post Grinders; Tool and Cutter Grinders; Drilling and Grinding Machines; Portable Electric Grinders and Flexible Shaft Tools; Electric Drill Heads Having Automatic Feed and Retraction; and Hydraulic and Electric Control Mechanisms Which Are Parts of Metal Working Machines (Int. Cl. 7).
First use 1916.

SN 305,826. Guenther Systems, Inc., Buchanan, N.Y. Filed Aug. 23, 1968.

For Conveyor System With Load Supporting Platforms (Int. Cl. 7).
First use July 9, 1968.

SN 308,311. Practica A.G., Hergiswil, Nidwald, Switzerland. Filed Sept. 26, 1968.



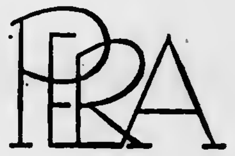
Owner of Swiss Reg. No. 217,976, dated June 2, 1966.
For Drill Grinding Machines (Int. Cl. 7).

SN 313,739. Sverre Munck Aksjeselskap, Bergen, Norway. Filed Dec. 5, 1968.

MUNCK MONOLOADER

Owner of Norwegian Reg. No. 74,473, dated May 30, 1968; and U.S. Reg. Nos. 842,365 and 842,763.
For Stationary and Mobile Cranes for Use on Land and on Board Vessels (Int. Cl. 7).

SN 317,610. Production Engineering Research Association of Great Britain, Melton Mowbray, England. Filed Jan. 27, 1969.



Owner of British Reg. No. B899,647, dated Sept. 22, 1966.
For Metal Cutting and Metal Forming Machines, Reamers, Drills, Milling Cutters and Parts Thereof, and Machines for Mechanical Handling—Namely, Machines Which Are Capable of Producing or Assembling Parts in a Series of Stages (Int. Cl. 7).

SN 319,215. West Chemical Products, Inc., Long Island City, N.Y. Filed Feb. 14, 1969.

WEST-AIRE

Owner of Reg. No. 723,244.
For Cabinet Dispensers for Dispensing of Air Sanitizers and Deodorants Packaged in Pressurized Spray Cans (Int. Cl. 7).
First use Dec. 13, 1968.

SN 320,638. Milwaukee Electric Tool Corporation, Brookfield, Wis. Filed Mar. 3, 1969.

For Portable Electric Drills and Attachments Therefor; Saws and Attachments Therefor; Sanders and Attachments Therefor; Hammers and Hammer-Drills and Attachments Therefor; Screw Drivers and Nut Runners and Attachments Therefor; Polishers and Attachments Therefor; Impact Wrenches and Attachments Therefor; Sander-Grinders and Grinders and Attachments Therefor; Metal Cutting Shears; and Drain Cleaners (Int. Cl. 7).
First use June 1938.

SN 321,622. Automated Building Components, Inc., Miami, Fla. Filed Mar. 13, 1969.

COMPRESS

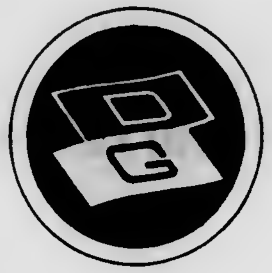
For Concrete Presses (Int. Cl. 7).
First use Feb. 18, 1969.

SN 325,087. Sportsmans Aids, Inc., Houston, Tex. Filed Apr. 21, 1969.

BEST-YET

For Fish Hook Removers (Int. Cl. 8).
First use July 15, 1961.

SN 330,726. Didde-Glaser, Inc., Emporia, Kans. Filed June 23, 1969.



For Printing Presses and Printed Sheet Handling Machines (Int. Cl. 7).
First use Oct. 9, 1968.

SN 337,658. Graphex, Inc., Lawrence, Mass. Filed Sept. 11, 1969.

LITHODYNE

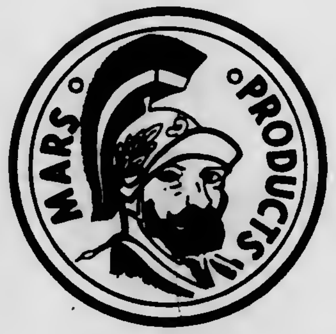
For Offset Printing Presses (Int. Cl. 7).
First use May 25, 1969.

SN 338,378. Deschner Corporation, Inglewood, Calif. Filed Sept. 19, 1969.

PECK-CHECK

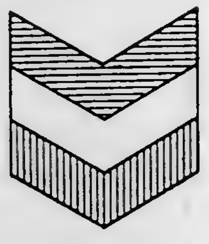
For Hydraulic Check Controls for Automatic Drill Presses (Int. Cl. 7).
First use Sept. 9, 1969.

SN 342,436. Thomas L. Gentilini, Virginia, Minn. Filed Nov. 3, 1969.



The word "Products" is disclaimed apart from the mark as shown.
For Metal Working Tools—Namely, Boring, Cutting, Threading, Drilling, Grinding, and Turning Tools, and for Diaphragm and Impeller Pumps for Liquids, Hoists, Cranes, Vacuum Cleaners, Air Compressors and Spraying Machines for Liquids and Parts Thereof (Int. Cl. 7).
First use July 1, 1969.

SN 350,967. Standard Oil Company of California, San Francisco, Calif. Filed Feb. 9, 1970.



The drawing is lined for the colors red and blue and applicant claims the colors red, white and blue. Owner of Reg. Nos. 640,311, 884,574, and others.

For Stands for Use in Supporting Automobiles While Being Repaired (Int. Cl. 8).

First use Mar. 8, 1968.

SN 351,895. Alphonse O. Bohrer, d.b.a. Laborsaber, St. Louis, Mo. Filed Feb. 20, 1970.

Laborsaber

For Power Saws (Int. Cl. 7).

First use May 27, 1969.

SN 352,847. North American Rockwell Corporation, Pittsburgh, Pa. Filed Mar. 2, 1970.

LECTI-COTE

For Spinning Rings (Int. Cl. 7).

First use at least as early as 1962.

SN 352,849. North American Rockwell Corporation, Pittsburgh, Pa. Filed Mar. 2, 1970.

MIRROR-GOLD

Owner of Reg. No. 529,433.

For Spinning Rings (Int. Cl. 7).

First use at least as early as 1958.

SN 353,304. R. Hoe & Co., Inc., New York, N.Y. Filed Mar. 6, 1970.

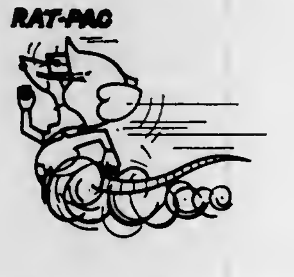
HOE

Owner of Reg. Nos. 528,057 and 870,441.

For Printing Machinery Designed To Print on and Decorate Metal Surfaces and Commonly Referred To as Sheet-Fed Metal Decorating Rotary Presses (Int. Cl. 7).

First use Aug. 4, 1936.

SN 361,541. Valley Tow-Rite, Inc., Lodi, Calif. Filed June 3, 1970.



For Automotive Engine Oil Coolers (Int. Cl. 12).

First use February 1969.

SN 362,591. Bridgeport Implement Works, Inc., Stratford, Conn. Filed June 15, 1970.

PIXTONE

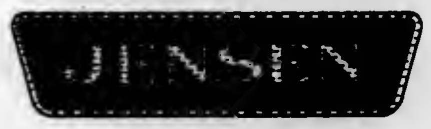
Owner of Reg. No. 589,827.

For Machines for Picking Up, Carrying and Dumping Stones From Fields (Int. Cl. 7).

First use on or about Jan. 1, 1950.

Class 24 — Laundry Appliances and Machines

SN 319,903. Jensen Machinery, Inc., Fort Lauderdale, Fla. Filed Feb. 24, 1969.



The drawing is lined for the color silver, but no claim to color is made.

For Laundry Equipment—Namely, Flat Work Folding Machines, Flat Work Cross-Folding Machines and Folder and Cross-Folder Systems for Folding Laundry and Textiles (Int. Cl. 7).

First use Aug. 1, 1966.

Class 26 — Measuring and Scientific Appliances

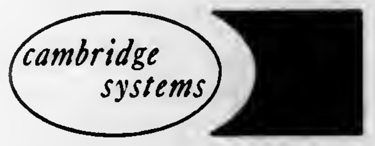
SN 303,921. The Mosler Safe Company, Hamilton, Ohio. Filed July 30, 1968.

MOSLER 410

For Information Storage, Retrieval, Presentation and/or Duplicating Systems Utilizing Coded Card and/or Film File Module, With Local and/or Remote Inquiry Stations, and Combinations of CCTV, Scan Zoom CCTV, Local Hardcopy, Remote Hardcopy, Card to Card Copy With or Without Hollerite Encoding, Fiche to Fiche Copy, and Card or Fiche to Roll Film Copy. The Above Systems Provided With or Without a Computer Interface (Int. Cl. 9).

First use on or about Feb. 14, 1968.

SN 305,631. EG & G, Inc., Bedford, Mass., assignee of Cambridge Systems, Inc., Newton, Mass. Filed Aug. 21, 1968.

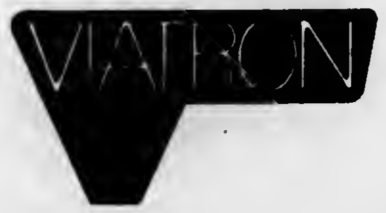


The word "Systems" is disclaimed except in the association shown, without waiver of applicant's common law rights in the composite trademark.

For Thermoelectric Dew Point Hygrometers, Dew Point and Temperature Indicators, Dew Point/Temperature Sensors, Electronic Indicators Associated Therewith, On-Off Devices Controlled by the Dew Point Temperature of Gases, Sonic Anemometers, Portable Weather Stations, Thermometers, Precision Humidity Generators and Automatic Meteorological Temperature and Dew Point Measuring Systems (Int. Cl. 9).

First use on or about Sept. 1, 1961.

SN 314,280. Viatron Computer Systems Corporation, Burlington, Mass. Filed Dec. 11, 1968.



For Data Processing Apparatus—Namely, Microprocessor Fixed Memory, Data Channel, Parallel Data Channel, Short Record Adapter, Card Punch/Reader Adapter Unbuffered, Card Punch/Reader Buffered, Control Keyboard, Manual Communications Adapter, Automatic Communications Adapter, Acoustic Coupler, Video Display 9-Inch Screen Black/White, Video Display 12-Inch Screen Color, Keyboard Alphanumeric Character Plus Controls, Tape Recorder, Printing Robot (on Line, Unbuffered), Printing Robot (on Line, Buffered), Data Stream Control Adapter, Tape Duplicator, 4 Tape Extender, Tape Cartridge, Tape to Card Converter and Tape to Computer-Compatible Tape Converter 4 Tape Drives (Int. Cl. 9).

First use May 31, 1968.

SN 316,350. Pro-Skil Golf Corp., Rosemont, Pa., assignee of Michael Storti, d.b.a. Pro-Skill Golf Co., Rosemont, Pa. Filed Jan. 10, 1969.

CIRCLE/SIZER

For Golf Ball Measuring Gauge (Int. Cl. 9).

First use on or about Dec. 16, 1968.

SN 317,307. Barber-Colman Company, Rockford, Ill. Filed Jan. 23, 1969.

ACCRALINE

For Indicating Temperature Controllers of the Pyrometer Type (Int. Cl. 9).

First use Oct. 8, 1968.

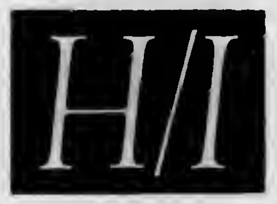
SN 322,504. Vanguard Data Systems, Inc., Newport Beach, Calif. Filed Mar. 21, 1969.

DATASCRIBE

For Keyboard to Magnetic Tape Data Recorders (Int. Cl. 9).

First use in or before Nov. 1968.

SN 326,276. Hacker Instruments, Inc., West Caldwell, N.J., by change of name from William J. Hacker & Co., Inc., West Caldwell, N.J. Filed May 2, 1969.



For Microscopes, Microtomes and Microtome Knives (Int. Cl. 9).

First use Jan. 2, 1968.

SN 326,992. Chase Instruments Corp., Lindenhurst, N.Y. Filed May 12, 1969.

RED-D-TUBE

For Rack Packs of Disposable Culture Tubes With Easel Dispenser (Int. Cl. 9).

First use Aug. 16, 1968.

SN 327,147. Hydrospace Research Corporation, Rockville, Md. Filed May 13, 1969.

Hydrolog

For Towed Water-Speed Measurement System and Components Thereof (Int. Cl. 9).

First use Nov. 5, 1968.

SN 332,193. Owens-Illinois, Inc., Toledo, Ohio. Filed July 10, 1969.

KIM-RAK

For System Comprising a Receptacle, Test Tubes and a Plastic Bag, Sold as a Unit for Laboratory Experimental Purposes (Int. Cl. 9).

First use Apr. 7, 1969.

SN 333,389. Fabri-Tek Incorporated, Minneapolis, Minn. Filed July 24, 1969.

LOGI-TRAN

For Computers for Use in Teaching Computer Techniques (Int. Cl. 9).

First use on or about Jan. 21, 1969.

SN 336,309. Bel-Art Products, Pequannock, N.J. Filed Aug. 26, 1969.

MARI-JET

For Laboratory Equipment—Namely, an Aspirator Pump (Int. Cl. 9).

First use May 1968.

SN 343,920. Signatron, Inc., Lexington, Mass. Filed Nov. 19, 1969.

SIGNATRON

Owner of Reg. No. 846,025.

For Slide Rule Investment Computer for Calculating Dividend Yield and Price-Earnings Ratio of Stocks (Int. Cl. 9).

First use at least as early as Mar. 14, 1969.

SN 353,447. Davanac Industries Ltd., Montreal, Quebec, Canada. Filed Mar. 9, 1970.

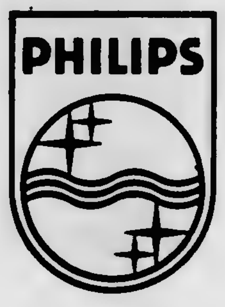
LIQUI-LEVEL

The right to the exclusive use of the word "Level" is disclaimed apart from the mark. Owner of Canadian Reg. No. 162,370, dated Apr. 25, 1969.

For Hydrostatic Tank Gauges To Gauge Liquid Levels in Vented Tanks (Int. Cl. 9).

First use February 1967; in commerce in or about June 1968.

SN 355,153. N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. Filed Mar. 26, 1970.



Owner of U.S. Reg. Nos. 681,200, 882,453, and others.

For Calculators and Computers (Int. Cl. 9).

First use at least as early as Jan. 13, 1969; in commerce at least as early as Jan. 13, 1969.

SN 355,558. Ovitron Corporation, Newburgh, N.Y. Filed Apr. 1, 1970.

LASERTRAC

For Laser Scanning Inspection Systems and Laser Sensitive Paper (Int. Cl. 9).
First use Sept. 27, 1969.

SN 355,598. American Allsafe Company, Inc., Buffalo, N.Y. Filed Apr. 1, 1970.

MULTIGARD

For Lenses for Goggles (Int. Cl. 9).
First use Mar. 15, 1970.

SN 355,611. Beatrice Foods Co., Chicago, Ill. Filed Apr. 1, 1970.

OPTOSCOPE

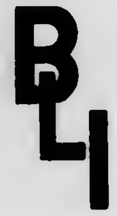
For Binoculars (Int. Cl. 9).
First use on or about Sept. 1, 1969.

SN 362,593. Electro-Nucleonics, Inc., Fairfield, N.J. Filed June 15, 1970.

GEMSAEC

For Biochemical Clinical Analyzers (Int. Cl. 9).
First use Sept. 15, 1969.

SN 362,953. Biotronex Laboratory, Incorporated, Silver Spring, Md. Filed June 18, 1970.



For Electromagnetic Blood Flowmeters and Flow Transducers (Int. Cl. 9).
First use May 1, 1970.

SN 363,387. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed June 23, 1970.

CRONEL

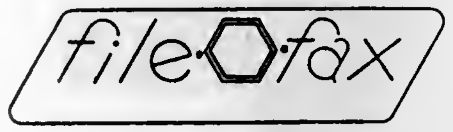
Owner of Reg. Nos. 608,302 and 744,400.
For Graphic Arts Color Previewers (Int. Cl. 9).
First use Apr. 28, 1970.

Class 32 — Furniture and Upholstery

SN 300,489. Sportsmen's Industries, Inc., Hialeah Gardens, Fla. Filed June 14, 1968.

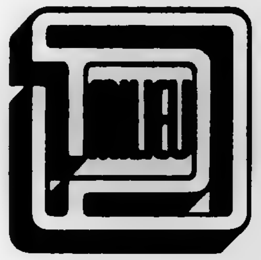
For Marine Furniture—Namely, Marine Chairs (Int. Cl. 20).
First use Nov. 1, 1965.

SN 334,834. File-O-Fax Corporation, Buffalo, N.Y. Filed Aug. 8, 1969.



For Furniture—Namely, Card Trays, Card Tray Tables, and Desk Top Rotating Card Tray Holders (Int. Cls. 16 and 20).
First use Jan. 22, 1969.

SN 359,492. Thayer Coggin, Inc., High Point, N.C. Filed May 12, 1970.



The drawing is not lined for any particular color; the shading is an artistic feature of the design.
For Furniture—Namely, Chairs (Int. Cl. 20).
First use October 1969.

SN 360,181. White Stores, Inc., Wichita County, Tex. Filed May 18, 1970.

MAGIC SLEEP

For Mattresses (Int. Cl. 20).
First use Mar. 23, 1970.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 314,374. The Vendo Company, Kansas City, Mo. Filed Dec. 12, 1968.

For Microwave Ovens (Int. Cl. 11).
First use Oct. 1, 1968.

SN 325,855. Emerson Electric Co., St. Louis, Mo. Filed Apr. 29, 1969.

TK

For Electrical Heating Units of the Resistance Wire Coil Type, Both Sheathed and Unsheathed, Including Surface and Oven Heating Units for Ranges, Heating Elements for Water Heaters, Flatirons and the Like; and Switches and Motor Operated Controls for Electrical Heating Units (Int. Cl. 11).
First use on or about Aug. 1, 1940.

SN 328,601. A. O. Smith Corporation, Milwaukee, Wis. Filed May 28, 1969.

EXECUTIVE

For Domestic Water Heaters (Int. Cl. 11).
First use Apr. 14, 1969.

SN 333,544. Electrovert, Inc., Mount Vernon, N.Y. Filed July 25, 1969.

SELECT-A-WAVE

For Apparatus for Applying Solder to Selected Portions of the Wiring on Printed Circuit Boards (Int. Cl. 9).
First use June 30, 1969.

SN 335,857. Federal Pacific Electric Company, Newark, N.J. Filed Aug. 21, 1969.

CLIMATEWISE

For Electrical Heating Units and Cooling Units, and Combination Heating and Air Conditioning Units, and Condensers and Evaporators for Air Conditioners, for Commercial and Domestic Use (Int. Cl. 11).
First use at least as early as July 10, 1969.

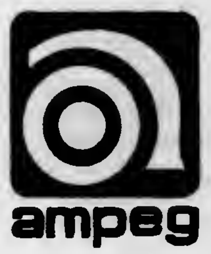
Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 312,483. Midland International Corporation, North Kansas City, Mo. Filed Nov. 18, 1968.

For Bicycle Tires and Tubes (Int. Cl. 12).
First use on or about Aug. 1, 1968.

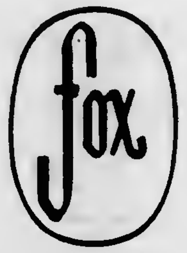
Class 36 — Musical Instruments and Supplies

SN 329,422. The Ampeg Co., Inc., Linden, N.J. Filed June 9, 1969.



For Musical Instruments Known as Bass and Guitar; Electronic Musical Instrument Amplifiers; and the Following Musical Instrument Accessories and Supplies: Extension Speakers, Bass Stands, Rib Extender for Electronic Basses, Anti-Swivel Endpin for Electronic Basses, Gut Strings, Steel Strings, Accordion Pickups, Bass Pickups, Piano Pickups, Tremolo or Reverb Footswitches, Double Footswitches for Vibrato and Reverb, and Instruments for Distorting Musical Sound (Int. Cls. 9 and 15).
First use Aug. 7, 1968.

SN 345,332. Fox Products Corporation, South Whitley, Ind. Filed Dec. 4, 1969.



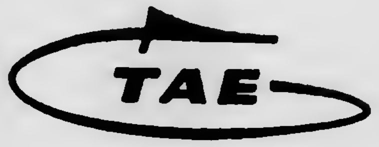
For Bassoons (Int. Cl. 15).
First use first half of 1950.

SN 350,138. James Selwyn Stanley, Princeton, N.J. Filed Jan. 30, 1970.

DIGITONE

For Printed Plastic Finder Strip, To Be Rested Upon the Keys of Any Keyboard Musical Instrument in Order To Identify Each of the Twelve Degree-Tones of the Chromatic Scale, in Any Given Key (Int. Cl. 15).
First use Jan. 26, 1970.

SN 361,665. Trans Atlantic Electronics Ltd., Dorval, Quebec, Canada. Filed June 4, 1970.

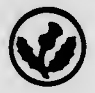


Owner of Canadian Reg. No. 143,166, dated Dec. 24, 1965.
For Phonographs and Parts Thereof (Int. Cl. 9).

Class 37 — Paper and Stationery

SN 309,570. Hammermill Paper Company, Erie, Pa. Filed Oct. 14, 1968.

STRATHMORE PAPERS



The Generic Term "Papers" is disclaimed.
For All Kinds of Writing and Printing Paper (Int. Cl. 16).
First use Apr. 4, 1921.

SN 315,585. Paper Mate Manufacturing Company, Santa Monica, Calif. Filed Jan. 2, 1969.

INKLING

For Pens (Int. Cl. 16).
First use Jan. 16, 1968.
Subj. to Intf. with SN 296,041.

SN 317,695. Securadyne, Ltd., Lynbrook, N.Y. Filed Jan. 28, 1969.

SECUR-A-CARD

For Credit Cards (Int. Cl. 16).
First use on or about Jan. 4, 1969.

SN 318,438. Letraset U.S.A., Inc., Mountain View, Calif. Filed Feb. 5, 1969.

LETRACOLOR

For Color-Coated Sheets for Use in the Graphic Arts (Int. Cl. 16).
First use on or before Feb. 23, 1968.

SN 320,143. P. H. Glatfelter Company, Spring Grove, Pa. Filed Feb. 26, 1969.

ULTRA BULK

The word "Bulk" is disclaimed apart from the mark as shown.
For Writing Papers, Commercial Printing Papers, Periodical Publishing Papers, Book publishing Papers, and Converting Papers (Int. Cl. 16).
First use Feb. 10, 1969.

SN 320,612. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 3, 1969.

NEENAH

The mark is used as a watermark on the goods. Owner of Reg. Nos. 510,933, 526,871, and others.
For Writing Paper (Int. Cl. 16).
First use June 1912.

SN 325,737. Jerome J. Ellis, d.b.a. Jay Printing Specialties, Saginaw, Mich. Filed Apr. 28, 1969.

RITUAL OF FRIENDSHIP

For Partially Printed Forms and Pencils (Int. Cl. 16).
First use Nov. 19, 1959.

SN 325,767. The Mead Corporation, Dayton, Ohio. Filed Apr. 28, 1969.

DUPLIFORM

Owner of Reg. No. 887,337.
For Bond, and Duplicator Papers (Int. Cl. 16).
First use Feb. 3, 1969.

SN 325,768. The Mead Corporation, Dayton, Ohio. Filed Apr. 28, 1969.

DUPLIRUN

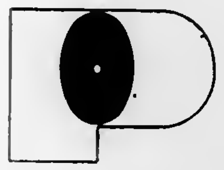
Owner of Reg. No. 887,337.
For Bond, and Duplicator Papers (Int. Cl. 16).
First use Dec. 17, 1968.

SN 332,075. Acme Backing Corporation, New York, N.Y. Filed July 9, 1969.

POROBOND

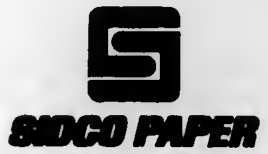
For Composite Sheeting of Impervious Paper and Pervious Paper for Packaging, Sold in the Sheet and in the Roll (Int. Cl. 16).
First use May 26, 1969.

SN 336,009. Paper Manufacturers Company, Philadelphia, Pa. Filed Aug. 22, 1969.



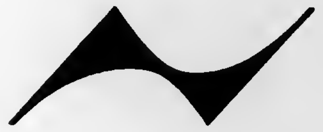
For Paper Products—Namely, Heat Seal Label Papers, Gummed Label Papers, and Rolled and Folded Tapes (Int. Cl. 16).
First use in September 1968.

SN 336,242. Sidco Paper Company, Philadelphia, Pa. Filed Aug. 18, 1969.



Applicant disclaims the word "Paper" apart from the mark as shown.
For Industrial Wrapping Papers and Printing Papers, Coated and Uncoated (Int. Cl. 16).
First use on or about July 1966.

SN 359,062. Milprint, Inc., d.b.a. Nicolet Paper Company, Milwaukee, Wis. Filed May 7, 1970.



The mark consists of a fanciful representation of the letter "N."
For Flexible Film-Type Packaging Materials—Namely, Glassine, Greaseproof Papers, and Coated or Metallized Papers and Plastic Films (Int. Cl. 16).
First use Apr. 1, 1970.

Class 38 — Prints and Publications

SN 314,111. Programming Methods Incorporated, New York, N.Y. Filed Dec. 10, 1968.

SCORE

For Computer Programming System Sold as a Package Consisting of Printed Encoding Sheets, Printed User's Manual Containing General Description of the System, and Typewritten Specific Instructions, With or Without Specific Computer Program in Magnetic Tape, Magnetic Disc, or Punched Card Form (Int. Cl. 16).
First use Dec. 1, 1967.

SN 327,032. 16 Magazine, Inc., New York, N.Y. Filed May 12, 1969.

SPEC

For Monthly Magazine (Int. Cl. 16).
First use Dec. 21, 1965.

SN 338,720. Mattel, Inc., Hawthorne, Calif. Filed Sept. 24, 1969.

THE LITTLE CLOWN'S CIRCUS

For Talking Storybook (Int. Cl. 16).
First use Aug. 14, 1969.

SN 343,809. American Association for the Advancement of Science, Washington, D.C. Filed Nov. 18, 1969.

SCIENCE

For Periodically Issued Magazine Concerning the Field of Science Primarily (Int. Cl. 16).
First use July 31, 1880.

SN 343,811. American Association for the Advancement of Science, Washington, D.C. Filed Nov. 18, 1969.

AAAS

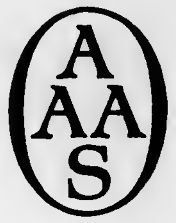
For Newsletters, Bulletins, Journals, Indices, Directories, Books, and Programs (Int. Cl. 16).
First use Dec. 31, 1868.

SN 343,813. American Association for the Advancement of Science, Washington, D.C. Filed Nov. 18, 1969.

AAAS BULLETIN

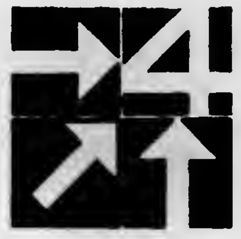
For Periodically Issued Scientific Bulletin (Int. Cl. 16).
First use Mar. 31, 1962.

SN 343,816. American Association for the Advancement of Science, Washington, D.C. Filed Nov. 18, 1969.



For Newsletters, Bulletins, Journals, Indices, Directories, Books, and Programs (Int. Cl. 16).
First use Dec. 31, 1964.

SN 359,571. Psychological Associates, Inc., St. Louis, Mo. Filed May 13, 1970.



For Text Books (Int. Cl. 16).
First use May 4, 1970.

SN 359,830. Dixie Youth Baseball, Inc., Lookout Mountain, Tenn. Filed May 15, 1970.

DUGOUT DOPE

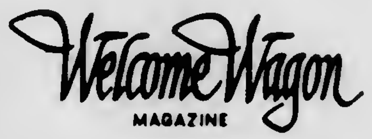
For Newsletter Issued Periodically (Int. Cl. 16).
First use on or about Sept. 1, 1968.

SN 360,103. Meredith Corporation, Des Moines, Iowa. Filed May 18, 1970.

APPLETON-CENTURY-CROFTS

Owner of Reg. No. 878,244.
For Printed Materials—Namely, Books, Papers, Worksheets, Pamphlets, and Reference Books (Int. Cl. 16).
First use Jan. 23, 1948.

SN 360,184. Welcome Wagon International, Inc., Memphis, Tenn. Filed May 18, 1970.



For Magazines (Int. Cl. 16).
First use on or about August 1969.

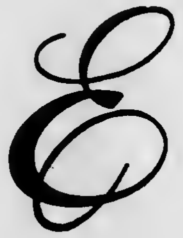
SN 360,581. Newspaper Enterprise Association, Inc., Cleveland, Ohio. Filed May 22, 1970.

LANCELOT

For Comic Strip for Newspapers and the Like (Int. Cl. 16).
First use at least as early as Mar. 16, 1970.

Class 39 — Clothing

SN 302,906. Adidas S.A.R.L., Dettwiller, Bas-Rhin, France. Filed July 17, 1968.



Priority claimed under Sec. 44(d) on French Reg. No. 733,273, dated Jan. 18, 1968.
For Sweatsuits and Overalls (Int. Cl. 25).

SN 314,758. The Lovable Company, Atlanta, Ga. Filed Dec. 18, 1968.

"C'EST CHEERS" (SAY CHEERS)

For Women's Foundation Garments (Int. Cl. 25).
First use Dec. 12, 1968.

SN 322,532. Shannon Mfg. Co., North Hollywood, Calif. Filed Mar. 24, 1969.

"LITTLE HELPER"

For Girdles (Int. Cl. 25).
First use Sept. 23, 1966.

SN 328,955. Collegiate Cap & Gown Company, Champaign, Ill. Filed June 3, 1969.

Collegiate

For Caps, Gowns, Judicial Robes, Clerical Robes, Choir Robes, Nurses Capes, Surplices, Cottas, Rabats, and Stoles (Int. Cl. 25).
First use at least as early as Sept. 30, 1939.

SN 332,249. Maynard H. Moore, Jr. Inc., Stoneham, Mass. Filed July 10, 1969.

LEATHERLYKE

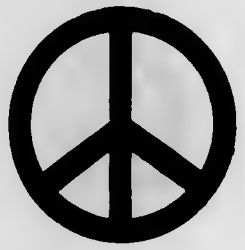
Owner of Reg. No. 443,091.
For Edge Bindings, Made From Sheet Base Material Resembling Artificial Leather for the Parts of Shoe Uppers, Said Bindings Being Made From a Strong, Flexible Sheet Base Material, Usually Carrying a Waterproof Synthetic Resinous Coating (Int. Cl. 25).
First use on or about June 24, 1935.

SN 332,877. Woolrich Woolen Mills, Woolrich, Pa. Filed July 17, 1969.

MALONE PANTS

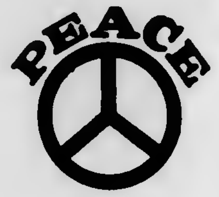
The word "Pants" is disclaimed apart from the mark as shown.
For Woolen Pants (Int. Cl. 25).
First use 1891.

SN 333,274. Intercontinent Shoe Corporation, New York, N.Y. Filed July 23, 1969.



For Footwear (Int. Cl. 25).
First use June 14, 1969.
Subj. to Intf. with SN 339,726.

SN 339,726. Harold Koenig, Miami, Fla. Filed Oct. 3, 1969.



For Dresses, Slacks, Blouses, Skirts, Sweaters, Bermuda Shorts and Shorts, Jump Suits and Suits, Bathing Suits, and Evening Gowns for Women; Suits, Coats, Trousers, Dungarees, Socks, Neckwear, and Knit, Sport and Dress Shirts for Men and Boys (Int. Cl. 25).
First use Jan. 2, 1969.
Subj. to Intf. with SN 333,274.

SN 341,379. Fownes Brothers & Co., Incorporated, New York, N.Y. Filed Oct. 22, 1969.

PEPITO BY FOWNES

"Pepito" is translated into English as "little Joe." Owner of Reg. Nos. 23,017, 786,846, and others.
For Slippers and Sandals (Int. Cl. 25).
First use June 1969.

SN 341,525. Jose Kataife and Ruben Menasce, d.b.a. Cormal S.A., Buenos Aires, Argentina. Filed Oct. 23, 1969.

dorya

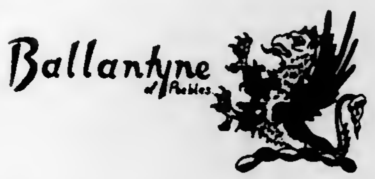
The drawing is lined for the color red. Owner of Argentine Reg. No. 521,095, dated Dec. 30, 1968.
For Handkerchiefs (Int. Cl. 24).

SN 342,116. Hidden Charm, Inc., Chicago, Ill. Filed Oct. 30, 1969.

HIDDEN CHARM

For Brassieres and Brassiere Pads (Int. Cl. 25).
First use May 13, 1968.

SN 342,220. Ballantyne of Peebles Incorporated, New York, N.Y. Filed Oct. 31, 1969.



Owner of Reg. No. 567,995.
For Sweaters and Hosiery for Men, Women, and Boys (Int. Cl. 25).
First use Aug. 14, 1946.

SN 342,221. Ballantyne of Peebles Incorporated, New York, N.Y. Filed Oct. 31, 1969.

Ballantyne of Peebles.

Owner of Reg. No. 516,661.
For Sweaters and Hosiery (Int. Cl. 25).
First use Aug. 14, 1946.

SN 343,001. Jeff-Richard, Inc. of Pennsylvania, Philadelphia, Pa. Filed Nov. 7, 1969.

JEFF-RICHARD

The name "Jeff-Richard" is fanciful. Owner of Reg. No. 518,245.
For Children's Dresses (Int. Cl. 25).
First use July 17, 1945.

SN 344,898. Stanly Knitting Mills, Inc., Oakboro, N.C. Filed Nov. 28, 1969.

HUG-A-LON

For Ladies Hosiery and Panty Hose (Int. Cl. 25).
First use Nov. 3, 1969.

SN 345,099. Teen-Age Beachwear Corp., New York, N.Y. Filed Dec. 2, 1969.

WAVERLY

Owner of Reg. No. 777,593.
For Swimwear (Int. Cl. 25).
First use Aug. 26, 1949.

SN 346,715. Broadway-Hale Stores, Inc., Los Angeles, Calif. Filed Dec. 19, 1969.

THE BROADWAY
Young crowd

Owner of Reg. Nos. 879,135 and 861,820.
For Children's Apparel—Namely, Shirts, Pants, Shoes, Underwear, Robes and Sleepwear, Namely, Pajamas, Gowns, and Sleeping Bags (Int. Cl. 25).
First Use as early as August 1966.

SN 347,156. Elise Blouse of Boston, Inc., Boston, Mass. Filed Dec. 29, 1969.

PARADISE BAY ORIGINALS

Applicant disclaims the word "Originals" apart from the mark as shown.
For Women's Sportswear—Namely, Slacks, Skirts, Suits, Pantdresses, Culottes, and Blouses and Shells (Int. Cl. 25).
First use Nov. 22, 1969.

SN 350,210. Blue Bell, Inc., Greensboro, N.C. Filed Feb. 2, 1970.

BOOT CUT

For Jeans (Int. Cl. 25).
First use Jan. 26, 1970.

SN 350,393. Jonathan Logan, Inc., New York, N.Y. Filed Feb. 3, 1970.

Pierre Luceé

The name "Pierre Luceé is fanciful and arbitrary.
For Women's Dresses, Coats, and Suits (Int. Cl. 25).
First use Dec. 24, 1969.

SN 350,493. La Sport, Inc., Asbury Park, N.J. Filed Feb. 4, 1970.

Amphibians

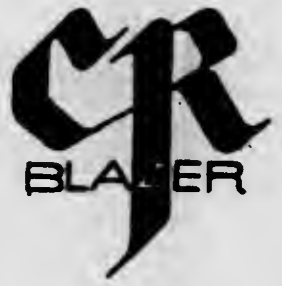
For Ladies', Misses', and Junior Misses' Coats, Pants Suits, Suits, Raincoats, Rain Hats, Car Coats, Jackets, Slacks, and Skirts (Int. Cl. 25).
First use Sept. 3, 1969.

SN 352,462. Dunham Brothers Company, d.b.a. Dunham's, Brattleboro, Vt. Filed Feb. 26, 1970.

DATERS

Owner of Reg. No. 628,327.
For Footwear (Int. Cl. 25).
First use Sept. 2, 1969; Sept. 14, 1954, in a different form.

SN 352,642. Donald S. Lavigne, Inc., Miami, Fla. Filed Feb. 27, 1970.



No claim is made to the word "Blazer."
For Blazers (Int. Cl. 25).
First use Jan. 15, 1970.

SN 352,694. Wembley Industries, Inc., New Orleans, La. Filed Feb. 27, 1970.

ALHAMBRA

For Men's Neckwear (Int. Cl. 25).
First use Dec. 22, 1969.

SN 352,697. Wembley Industries, Inc., New Orleans, La. Filed Feb. 27, 1970.

IMPRIMIS

For Men's Neckwear (Int. Cl. 25).
First use Dec. 19, 1969.

SN 355,719. Munsingwear, Inc., Minneapolis, Min. Filed Apr. 2, 1970.

FORGE/LTD

For Shirts (Int. Cl. 25).
First use on or before Mar. 10, 1970.

SN 359,061. The Lovable Company, Atlanta, Ga. Filed May 7, 1970.

SWEETHEART

For Panty Hose (Int. Cl. 25).
First use Mar. 3, 1970.

SN 360,621. Anvil Brand, Incorporated, New York, N.Y. Filed May 25, 1970.

ANVIL

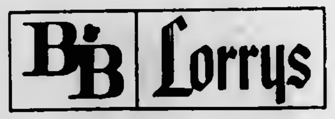
Owner of Reg. Nos. 80,055, 783,711, and others.
For Men's, Women's, Boys', Girls' and Children's Overalls, Dungarees, Shirts, Shorts, Pants, Coats, Jackets, and Vests, and Women's and Girls' Skirts (Int. Cl. 25).
First use May 29, 1910, on men's overalls.

SN 362,198. Hanes Corporation, Winston-Salem, N.C. Filed June 10, 1970.

TEACH-ME-TOY

For Children's Sleepwear (Int. Cl. 25).
First use May 1, 1970.

SN 362,813. Eagle Clothes, Inc., d.b.a. B & B Lorrys Stores, New York, N. Y. Filed June 16, 1970.



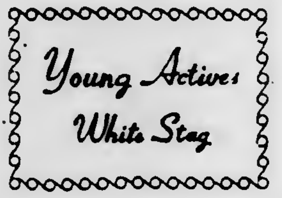
Owner of Reg. Nos. 769,216 and 808,537.
For Men's and Young Men's Overcoats; Topcoats; Suits; Dinner Jackets; Sport Jackets; Shirts; Hats; Caps; Pajamas; Mufflers; Handkerchiefs; Leather Coats and Jackets; Raincoats; Sweaters; Vests; Shoes; Rubbers; Galoshes; Hose; Garters; Gloves; Ties; Ascots; Scarfs; Suspenders; Underwear; Swim Wear; Cummerbunds; Slacks (Worn by Men and Women); and Robes (Int. Cl. 25).
First use August 1965; December 1919, as to "B & B"; and August 1930, as to "Lorrys."

SN 362,979. White Stag Manufacturing Co., Portland, Oreg. Filed June 18, 1970.

EXPERTS CLUB

For Parkas (Int. Cl. 25).
First use June 1969.

SN 363,407. White Stag Manufacturing Co., Portland, Oreg. Filed June 23, 1970.



Owner of Reg. Nos. 369,881, 892,508, and others.
For Pants (Int. Cl. 25).
First use Mar. 27, 1970.

Class 40—Fancy Goods, Furnishings, and Notions

SN 319,740. Temptress Wigs, Inc., Philadelphia, Pa. Filed Feb. 20, 1969.

GODIVA

For Wigs (Int. Cl. 26).
First use Jan. 17, 1969.
Subj. to Intf. with SN 319,173.

SN 325,762. Lengene Company, Inc., New York, N.Y. Filed Apr. 28, 1969.

HOSEY POSEYS

For Ornamental Iron-On Design Patches for Use on Fabrics, Garments, and Ladies' Hose (Int. Cl. 26).
First use Apr. 30, 1968.

SN 334,304. Carmine Merlino Hair Creations, Inc., Brooklyn, N.Y. Filed Aug. 4, 1969.

VIAGGIATORE

The Italian word "Viaggiatore" is translated as "voyager" in English.
For Men's Hair Piece and Accessory Case Containing a Head Form and Mirror (Int. Cl. 26).
First use May 5, 1969.

SN 344,917. Volt Industries, Inc., East Meadows, N.Y. Filed Nov. 28, 1969.

ZIP-STICK

For Zipper Transfer Adhesive Tape (Int. Cl. 26).
First use June 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 323,857. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 7, 1969.

COLTON 90

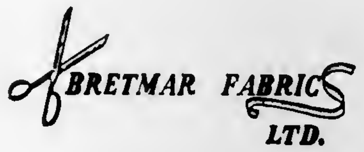
Owner of Reg. No. 718,289.
For Kit Containing Fabric and Sewing Equipment for Constructing a Bathing Suit (Int. Cl. 26).
First use Mar. 17, 1969.

SN 338,023. Albany International Corp., Albany, N.Y. Filed Sept. 16, 1969.

PERMATAIN

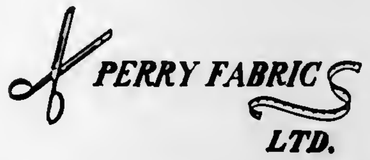
For Needled Filtration Fabric (Int. Cl. 24).
First use on or about Aug. 27, 1969.

SN 352,559. Bretmar Fabrics Ltd., New York, N.Y. Filed Feb. 27, 1970.



Applicant disclaims any exclusive right in both terms "Ltd." and "Fabrics" apart from the mark as shown.
For Woven Fabrics in the Piece Made of Cotton and Synthetic Fabrics, Including Polyesters, Acrylics and Rayons, for Use in Women's Sportswear, Dresses, Swimwear, Rainwear, Loungewear, and Children's Clothing (Int. Cl. 24).
First use March 1963.

SN 352,569. Perry Fabrics Ltd., New York, N.Y. Filed Feb. 27, 1970.



Applicant disclaims any exclusive right in both terms "Ltd." and "Fabrics" apart from the mark as shown.
For Knitted Fabrics in the Piece Made of Cotton, and Synthetic Fabrics, Including Polyesters, Acrylics and Rayons, for Use in Women's Sportswear, Dresses, Swimwear, Rainwear, Lounge Wear, and Children's Clothing (Int. Cl. 24).
First use May 1965.

SN 354,070. Deering Milliken, Inc., New York, N.Y. Filed Mar. 16, 1970.

CARRIAGE TRADE

Owner of Reg. No. 537,394.
For Towels and Washcloths (Int. Cl. 24).
First use November 1969.

SN 354,071. Deering Milliken, Inc., New York, N.Y. Filed Mar. 16, 1970.

LEAPS AND BOUNDS

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).
First use Feb. 18, 1970.

SN 360,622. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 25, 1970.

BRAVA

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 360,623. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 25, 1970.

SHOWTIME

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 360,624. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 25, 1970.

BANKER'S TRUST

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 361,536. Ozite Corporation, Libertyville, Ill. Filed June 3, 1970.

SAFEGUARD

For Carpeting (Int. Cl. 27).
First use Apr. 28, 1970.

SN 361,922. Deering Milliken, Inc., New York, N.Y. Filed June 8, 1970.

LATITUDE

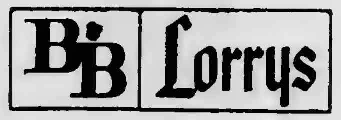
For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use July 10, 1968.

SN 361,923. Deering Milliken, Inc., New York, N.Y. Filed June 8, 1970.

LONGITUDE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use July 10, 1968.

SN 362,811. Eagle Clothes, Inc., d.b.a. B & B Lorrys Stores, New York, N.Y. Filed June 16, 1970.



Owner of Reg. Nos. 769,216 and 808,537.
For Woolen Piece Goods and Goods of Wool and Synthetic Fibers, Stadium Blankets With Cases (Int. Cl. 24).
First use August 1965; December 1919, as to "B & B"; and August 1930, as to "Lorrys."

Class 44—Dental, Medical, and Surgical Appliances

SN 330,958. Sjuco Aktiebolag, Molndal, Sweden. Filed June 25, 1969.

READY-ONE

Owner of Swedish Reg. No. 127,070, dated Apr. 18, 1969.
For Disposable Urine Receptacles (Int. Cl. 10).

SN 348,769. William Eldus, Suffern, N.Y. Filed Jan. 16, 1970.

THERMA-GAUZE

For Surgical Gauze (Int. Cl. 5).
First use Apr. 11, 1969.

SN 349,230. Glenwood Laboratories, Inc., Tenafly, N.J. Filed Jan. 21, 1970.

POLYESTOL

For Bandages (Int. Cl. 5).
First use at least as early as January 1961.

SN 349,363. Linden Laboratories, Inc., State College, Pa. Filed Jan. 22, 1970.

HYDROSONICBATH

For Ultrasonic Therapeutic Bath (Int. Cl. 10).
First use June 9, 1969.

SN 349,859. Guardian Products Company, Inc., North Hollywood, Calif. Filed Jan. 28, 1970.

QUADRI-POISE

For Crutches, Crutch Parts and Accessories, Canes, and Invalid Walking Aids (Int. Cl. 10).
First use Aug. 26, 1968.

SN 350,507. Myerson Tooth Corporation, Cambridge, Mass. Filed Feb. 4, 1970.

DURATOMIC

For Artificial Teeth (Int. Cl. 10).
First use Jan. 20, 1970.

SN 350,625. Union Carbide Corporation, New York, N.Y. Filed Feb. 5, 1970.

NEFLEX

For Dialysis Membrane for Medical and Laboratory Uses (Int. Cl. 10).
First use on or about Jan. 20, 1970.

SN 350,626. Union Carbide Corporation, New York, N.Y. Filed Feb. 5, 1970.

NEPHREX

For Dialysis Membrane for Medical and Laboratory Uses (Int. Cl. 10).
First use on or about Jan. 20, 1970.

SN 351,140. O.E.M. Medical, Inc., Union, N.J. Filed Feb. 11, 1970.

GENT-L-PULSE

Owner of Reg. No. 754,736.
For Alternating Pressure Bed and Seat Pads (Int. Cl. 10).
First use Oct. 22, 1962.

SN 352,784. Computer Instruments Corporation, Hempstead, N.Y. Filed Mar. 2, 1970.

Comput-EK

For Portable Electrocardiographs (Int. Cl. 10).
First use on or about Jan. 3, 1964.

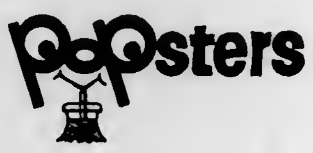
Class 45 — Soft Drinks and Carbonated Waters

SN 314,308. Essential Products Company, Inc., New York, N.Y. Filed Dec. 12, 1968.

SNAP

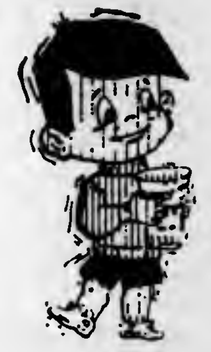
Owner of Reg. No. 68,737.
For Soft Drinks and Flavoring Extracts Therefor (Int. Cl. 32).
First use May 1, 1907.

SN 327,652. Milk-Mart System, Inc., Wauseon, Ohio. Filed May 19, 1969.



For Non-Carbonated, Fruit Flavored Soft Drinks (Int. Cl. 32).
First use May 6, 1969.

SN 342,228. Chilly Willee Sales Corporation, Laurinburg, N.C. Filed Oct. 31, 1969.



The drawing is lined for red, applicant makes no claim to color as a feature of the mark.
For Syrups and Concentrates Used in the Preparation of Slush Type Soft Drinks (Int. Cl. 32).
First use July 8, 1968.

SN 344,732. S.C.S. Corporation, Lubbock, Tex. Filed Nov. 26, 1969.

PRO GO

For Soft Drinks and Concentrates for Making Same (Int. Cl. 32).
First use Sept. 30, 1969.

SN 350,419. The Coca-Cola Company, Atlanta, Ga. Filed Feb. 4, 1970.

SPATS

For Orange Flavored Soft Drink and Syrup for Making Same (Int. Cl. 32).
First use Jan. 26, 1970.

Class 46 — Foods and Ingredients of Foods

SN 228,690. Ward Foods, Inc., New York, N.Y., assignee, by mesne assignment, of Robert A. Johnston Company, Milwaukee, Wis. Filed Sept. 27, 1965.

JOHNSTON

Owner of Reg. Nos. 427,598, 766,026, and others.
For Pie Crusts Adapted To Be Sold in Refrigerated or Un-Refrigerated Condition (Int. Cl. 30).
First use Mar. 4, 1963.

SN 274,527. Kyowa Hakko Kogyo Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed June 22, 1967.

KYOWA

Priority claimed under Sec. 44(d) on Japanese applications filed Jan. 27, 1967; Reg. Nos. 787,980, dated July 29, 1968; and 833,682, dated Oct. 9, 1969.
For Seasonings for Foods—Namely, Chemical Seasonings Including Monosodium Glutamate, Oyster Extract, Amino Acids Mixture, and Hydrolyzed Plant Protein; Livestock Feed; and Livestock Feed Supplements Primarily of a Food Nature (Int. Cls. 5, 30, and 31).

SN 285,063. Rich. Hengstenberg, Esslingen (Neckar), Germany. Filed Nov. 16, 1967.

ALTMEISTER

"Altmeister" is best defined as "Patriarch." Owner of German Reg. No. 611,685, dated Sept. 21, 1951.
For Tinned Pickles, Tinned Vegetable and Fruit, Green, Dried and Pickled Vegetable, Including Sauerkraut, Tinned Cabbage Made With the Use of Wine, Tinned Cabbage Made With the Use of Apples and All Other Types of Cabbage, Vinegars, Mustard, Mustard Flour for Alimentary Purposes (Int. Cls. 29 and 30).

SN 286,682. International Salt Company, Clarks Summit, Pa. Filed Dec. 11, 1967.

R-100

For Salt for Food Purposes (Int. Cl. 30).
First use on or about Jan. 28, 1958.

SN 291,698. André Prost, Inc., Douglaston, N.Y. Filed Feb. 23, 1968.

HONEES

For Honey-Filled Candy (Int. Cl. 30).
First use Oct. 9, 1964.

SN 313,603. Clyde F. Baylor, d.b.a. Peachtree Farms Company, Atlanta, Ga. Filed Dec. 4, 1968.

PEACHTREE FARMS

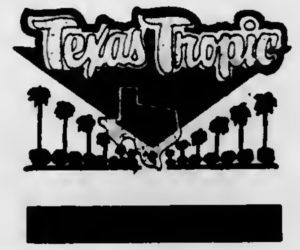
For Pickles (Int. Cl. 29).
First use Nov. 10, 1968.

SN 314,662. Lotte Co., Ltd., Shinjuku-ku, Tokyo, Japan. Filed Dec. 5, 1968.

LOTTE

Owner of Reg. No. 639,809.
For Chewing Gum and Chocolate Candy (Int. Cl. 30).
First use June 1, 1948.

SN 316,796. Lake Delta Citrus Association, Weslaco, Tex. Filed Jan. 16, 1969.



Applicant disclaims the words "Texas," "Brand," and the representation of the map of Texas apart from the mark as shown.
For Fresh Citrus Fruit (Int. Cl. 31).
First use at least as early as Feb. 7, 1968.

SN 318,094. Paradise Fruit Company, Inc., Plant City, Fla. Filed Jan. 31, 1969.

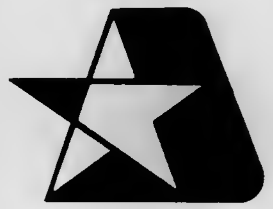
For Mixed Glace Fruit and Fruit Peel, Fruit Cake Mix (Fruit Mixture), and Glace Cherries (Int. Cls. 29 and 30).
First use July 15, 1948.

SN 322,813. Abner Baldinger, d.b.a. Baldinger's Truffade Co., New York, N.Y. Filed Mar. 26, 1969.

BALDINGER'S

For Canned and Packaged Chopped Chicken Livers With Eggs and Onion (Int. Cl. 29).
First use at least as early as 1953.

SN 325,326. Armour and Company, Chicago, Ill. Filed Apr. 23, 1969.



Owner of Reg. Nos. 539,557, 842,172, and others.
For Fresh Meats, Frozen Meats, and Prepared Meat Products (Int. Cl. 29).
First use Mar. 14, 1969.

SN 326,623. Borden, Inc., New York, N.Y. Filed May 7, 1969.

LIFELINE

For Fluid Skim Milk Product (Int. Cl. 29).
First use on or before Nov. 28, 1961.

SN 329,861. Home Town Foods, Inc., Jacksonville, Fla. Filed June 12, 1969.

GO·LO

For Low Fat Fluid Milk (Int. Cl. 29).
First use Feb. 1, 1969.

SN 330,708. Joseph L. Bissett, Dayton, Ohio. Filed June 23, 1969.

ROYAL RIBS

Applicant disclaims exclusive rights to the use of the word "Ribs" apart from the mark as shown.
For Barbecued Meat (Int. Cl. 29).
First use July 12, 1968.

SN 332,770. The Addison Terry Company, Inc., Tulsa, Okla. Filed July 16, 1969.

TERRY

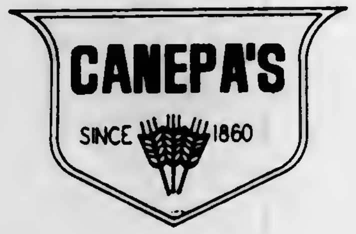
For Canned Dog Food (Int. Cl. 31).
First use Sept. 9, 1968.

SN 333,239. The Amalgamated Sugar Company, Ogden, Utah. Filed July 23, 1969.

White Satin

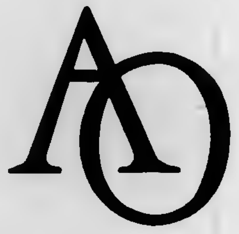
Owner of Reg. Nos. 319,525 and 514,342.
For Granulated Sugar, Powdered Sugar, Cubed Sugar, Fine Graunlated Sugar, Brown Sugar, and Confectioners' Sugar (Int. Cl. 30).
First use July 15, 1921.

SN 334,303. The John B. Canepa Company, Chicago, Ill. Filed Aug. 4, 1969.



The matter "Since 1860" is disclaimed apart from the mark shown.
For Macaroni, Spaghetti, Vermicelli, Noodles, and Other Alimentary Pastes (Int. Cl. 30).
First use Nov. 12, 1968.

SN 334,959. American Optical Corporation, Southbridge, Mass. Filed Aug. 11, 1969.



Owner of Reg. Nos. 268,217 and 855,168.
For Salt Tablets (Int. Cl. 30).
First use May 1965.

SN 335,504. General Mills, Inc., Minneapolis, Minn. Filed Aug. 18, 1969.

BALANCE

For Pet Food for Dogs and Cats (Int. Cl. 31).
First use on or about June 25, 1969.

SN 335,755. La Pasiega Food Distributors, Inc., Hialeah, Fla., assignee of Gustavo Gonzalez, d.b.a. La Pasiega Packing, Miami, Fla. Filed Aug. 20, 1969.

LA PASIEGA

The mark has different meanings in English: One translation is "a girl from Paz," a second meaning "a girl from the highlands of Santander, Spain."
For Fidellini, Noodles, Spaghetti, Macaroni, a Spanish Pasta Known as "Cabello de Angel," Rice, Flour, Corn Meal, and Spaghetti Sauce (Meatless) (Int. Cl. 30).
First use January 1964.

SN 337,099. Seffner Food Products Company, Inc., Seffner, Fla. Filed Sept. 4, 1969.

CORONET

For Pie Fillings Made of Various Fruits and Including Sugar and Starches, Puddings, Meatless Spaghetti Sauce, Parmesan Sauce Comprising Spaghetti Sauce With Parmesan Cheese Added, Syrups for Food Purposes, Cocktail Sauce, Lekvar Which Is a Term Used in Many European Countries, Particularly Austria, and Also in the United States, for a Jam Product or Paste Made Essentially From Prunes, Sugar, and Lesser Ingredients, Jams, Jellys, Barbeque Sauce, and Mince Meat (Int. Cls. 29 and 30).
First use Aug. 21, 1969.

SN 338,751. Carnation Company, Los Angeles, Calif. Filed Sept. 24, 1969.

FORBIDDEN FRUIT

The word "Fruit" is disclaimed separate and apart from the mark as a whole, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Canned Fruit (Int. Cl. 29).
First use July 8, 1969.

SN 338,882. Black River Dairy Products, Inc., Eau Claire, Wis. Filed Sept. 25, 1969.

ROMCO

For Frozen Pizza (Int. Cl. 30).
First use Aug. 1, 1969.

SN 339,276. Del-Mar-Va Packing Company, Federalsburg, Md. Filed Sept. 30, 1969.

Del Mar Va

Owner of Reg. No. 801,579.
For Canned Vegetables (Int. Cl. 29).
First use at least as early as Aug. 15, 1964.

SN 339,516. Uncle Ben's, Inc., Houston, Tex. Filed Oct. 2, 1969.

UNCLE BEN'S

Owner of Reg. Nos. 437,176, 874,378, and others.
For Rice, Dehydrated Vegetables, Dehydrated Meat, Dehydrated Seafood, Dehydrated Poultry, Poultry Dressing Mix, and Peanut Pretzel Snack (Int. Cls. 29 and 30).
First use Aug. 21, 1969.

SN 339,728. Land O'Lakes Creameries, Inc., Minneapolis, Minn. Filed Oct. 3, 1969.

SUNNY HONEY

Applicant disclaims exclusive rights to the term "Honey" apart from the mark as shown.
For Ice Cream (Int. Cl. 30).
First use Aug. 22, 1969.

SN 341,160. Kenai Salmon Packing Co., d.b.a. Parks Canning Company, Seattle, Wash. Filed Oct. 20, 1969.

ROYAL CUTLET

For Canned Salmon (Int. Cl. 29).
First use 1902.

SN 342,653. Maryland Baking Co., Owings Mills, Md. Filed Nov. 4, 1969.

CHOC-O-BUDDY

Owner of Reg. No. 677,442.
For Bakery Products—Namely, Ice Cream Cones (Int. Cl. 30).
First use on or about Oct. 23, 1969.

SN 343,665. Colonial Stores Incorporated, Atlanta, Ga. Filed Nov. 17, 1969.

FARM BRAND

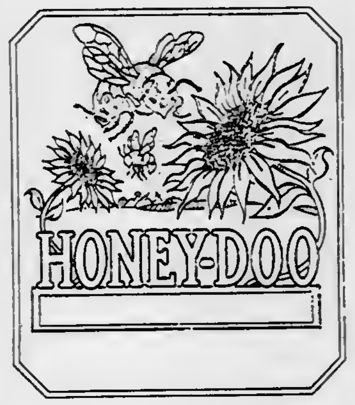
The word "Brand" is disclaimed apart from the mark as a whole.
For Sausage (Int. Cl. 29).
First use Aug. 2, 1957.

SN 344,105. Food Foundation, Inc., Chicago, Ill. Filed Nov. 20, 1969.

BUSHEL BERRY

No claim is made to the word "Berry" apart from the mark without waiving any common law rights therein.
For Table Food Syrups (Int. Cl. 30).
First use on or about July 1, 1968.

SN 346,163. Carl Anderson, d.b.a. Anderson Honey-Doo Products, Kasson, Minn. Filed Dec. 15, 1969.



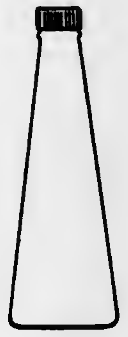
For Salad Dressing (Int. Cl. 29).
First use March 1968.

SN 346,164. Carl Anderson, d.b.a. Anderson Honey-Doo Products, Kasson, Minn. Filed Dec. 15, 1969.

HONEY-DOO

For Salad Dressing (Int. Cl. 29).
First use March 1968.

SN 347,175. Reese Finer Foods, Inc., Chicago, Ill. Filed Dec. 29, 1969.



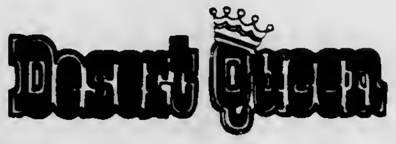
The drawing is shaded to show that the cap for the bottle is a different color from that of the container. Owner of Reg. No. 871,870.
For Salad Dressings, Table Syrups for Food Purposes, Meatless Sauces for Food Purposes, and Marinades (Int. Cls. 29 and 30).
First use Nov. 10, 1969.

SN 347,686. Richard Dunkelberger, Shoemakersville, Pa. Filed Jan. 5, 1970.

TAP'N APPLE

Applicant disclaims the word "Apple" apart from the mark shown.
For Apple Juice (Int. Cl. 32).
First use Sept. 18, 1969.

SN 348,485. Vessey and Company, Inc., d.b.a. Vessey & Co. Inc., El Centro, Calif. Filed Jan. 14, 1970.



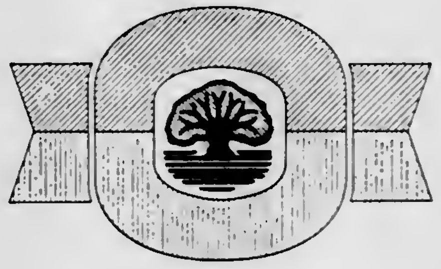
For Fresh Vegetables (Int. Cl. 31).
First use Dec. 26, 1969.

SN 351,292. Wurm Brothers Company, Chicago, Ill. Filed Feb. 13, 1970.

RAREBIT

For Canned Foods—Namely, Tomatoes, Tomato Catsup, Artichokes, Apricots, Peaches, Seedless Grapes, Prunes, Pears, Pineapple, Fruits for Salad, Fruit Cocktail, Strawberries, Raspberries, Blackberries, Loganberries, Cherries, Tuna, Salmon, Shrimp, Peas, Beans, Spinach, Asparagus, Brussel Sprouts, and Corn (Int. Cls. 29 and 30).
First use August 1927.

SN 351,378. International Minerals & Chemical Corporation, Skokie, Ill. Filed Feb. 16, 1970.



The drawing is lined for the colors brown, red, and green.
For Hot Sauces, Worcestershire Sauce, Barbeque Sauce, Ground Peppers, Pickled Peppers, Bottled Peppers, Canned Vegetables, Including Tomatoes, Beans, Corn, and Cut Beets, Gumbo File, Mustard, and Vinegar (Int. Cls. 29 and 30).
First use May 19, 1969.

SN 352,198. P & C Food Markets, Inc., Syracuse, N.Y. Filed Feb. 24, 1970.

COUNTRY MANOR

Owner of Reg. No. 739,091.
For Coffee, Tea Bags, Preserves, Peanut Butter, Canned Vegetables, Including Tomatoes, Beans, Corn, and Cut Beets, Bacon, Ham, Sausage, and Margarine (Int. Cls. 29 and 30).
First use at least as early as July 1, 1969.

SN 352,822. Keebler Company, Elmhurst, Ill. Filed Mar. 2, 1970.

ELFIN DELIGHTS

For Cookies and Crackers (Int. Cl. 30).
First use Dec. 26, 1969.

SN 352,964. Jesse Jones Sausage Company, Garner, N.C. Filed Mar. 3, 1970.

JESSE JO

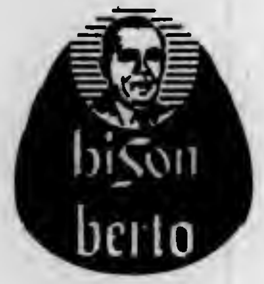
For Various Meat Products—Namely, Fresh and Frozen Sausages, Luncheon Meats, Chili, Cook Sausages, and Meat Patties (Int. Cl. 29.)
First use Feb. 25, 1970.

SN 353,478. General Foods Corporation, White Plains, N.Y. Filed Mar. 9, 1970.

DOUGH-NUPS

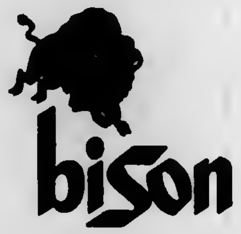
For Food Product, Dough-Like in Nature, With or Without a Fruit Filling, To Be Prepared in a Toaster (Int. Cl. 30).
First use Jan. 19, 1970.

SN 354,390. Bison Products Co., Inc., Buffalo, N.Y. Filed Mar. 18, 1970.



For Genoa Salami (Int. Cl. 29).
First use 1965.

SN 354,391. Bison Products Co., Inc., Buffalo, N.Y. Filed Mar. 18, 1970.



For Variety of Processed Meats Including Salami, Capicola, Mortadella, and Various Types of Soft Sausage (Int. Cl. 29).
First use 1940.

SN 355,720. Nebraska Consolidated Mills Company, d.b.a. Nixon & Company, Omaha, Nebr. Filed Apr. 2, 1970.

TOP FARE

For Livestock Feed (Int. Cl. 31).
First use at least as early as Jan. 22, 1970.

SN 355,721. Nebraska Consolidated Mills Company, d.b.a. Boaz Egg Company and Red Hat Poultry, Omaha, Nebr. Filed Apr. 2, 1970.

MAPLECREST

Owner of Reg. No. 614,026.
For Fresh Eggs and Fresh Dressed Chickens (Int. Cl. 29).
First use on or about Dec. 1, 1968, on fresh dressed chickens.

SN 356,578. Ralston Purina Company, St. Louis, Mo. Filed Apr. 13, 1970.

CALF CROP

The word "Calf" is disclaimed apart from the mark as shown, but no common law rights are waived therein.
For Cattle Feed (Int. Cl. 31).
First use Feb. 8, 1970.

SN 356,914. General Mills, Inc., Minneapolis, Minn. Filed Apr. 15, 1970.

CHEEZ-WILLIKERS

For Cheese Flavored Cereal-Derived Snacks (Int. Cl. 30).
First use on or about Mar. 25, 1970.

SN 357,268. The John B. Canepa Company, Chicago, Ill. Filed Apr. 20, 1970.

AmberGlow

For Macaroni, Spaghetti, Vermicelli, Noodles, and Other Alimentary Pastes (Int. Cl. 30).
First use on or about Dec. 12, 1969.

SN 357,676. Buitoni Foods Corporation, South Hackensack, N.J. Filed Apr. 23, 1970.

TOASTERINOS

For Frozen Food Product—Namely, a Double Crust Filled With Ground Beef, Pizza Sauce, and Cheese (Int. Cl. 30).
First use Apr. 9, 1970.

SN 358,244. Ocean Garden Products, Inc., d.b.a. Mexican Garden Products, San Diego, Calif. Filed Apr. 29, 1970.

MEXICAN GARDEN

For Frozen Strawberries (Int. Cl. 29).
First use Apr. 1, 1970.

SN 358,246. Ocean Garden Products, Inc., d.b.a. Mexican Garden Products, San Diego, Calif. Filed Apr. 29, 1970.

GARDEN LAND

For Frozen Strawberries (Int. Cl. 29).
First use Apr. 1, 1970.

SN 359,051. Carter-Wallace, Inc., New York, N.Y. Filed May 7, 1970.

SANDWICH PRO

For Imitation Mayonnaise (Int. Cl. 5).
First use Mar. 11, 1970.

SN 359,053. Frito-Lay, Inc., Dallas, Tex. Filed May 7, 1970.

MARBLES

For Snack Foods—Namely, Potato Chips, Corn Chips, and Puffed Corn Snacks (Int. Cl. 29).
First use Apr. 24, 1970.

SN 361,220. Gold-Cote, Inc., Vernon, Calif. Filed June 1, 1970.

SILVER-COTE

For Bread Crumbs for Coating Food Products (Int. Cl. 30).
First use Apr. 20, 1970.

SN 361,224. Kelseyville Packing Company, Kelseyville, Calif. Filed June 1, 1970.

Star Point

Owner of Reg. No. 350,818.
For Fresh Deciduous Fruits (Int. Cl. 31).
First use Sept. 23, 1969.

SN 361,937. Miles Laboratories, Inc., Elkhart, Ind. Filed June 8, 1970.

KARATE

For Nutritionally Fortified Candy (Int. Cl. 30).
First use on or before May 19, 1970.

SN 362,963. A. Paladini, Inc., Oakland, Calif. Filed June 18, 1970.

SEA PAL

For Canned Crabmeat and Canned Shrimp (Int. Cl. 29).
First use Apr. 1, 1970.

Class 47 — Wines

SN 325,587. Dufouleur Freres, Nuits-Saint-Georges, Cote-d'Or, France. Filed Apr. 25, 1969.

DUC TRIBERT D'HARGILLY

"Duc Tribert d'Hargilly" is not the name of any living individual.
For Wines (Int. Cl. 33).
First use 1946; in commerce 1965.

SN 333,431. Pedro Domecq, S.A., Jerez de la Frontera, Cadiz, Spain. Filed July 24, 1969.

Pedro Domecq

Venerable

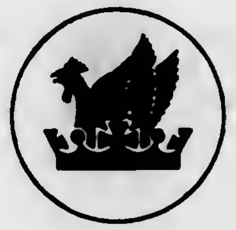
"Pedro Domecq" is the name of the original founder of applicant's company, now deceased. Owner of U.S. Reg. Nos. 89,632, 388,708, and others.
For Wines (Int. Cl. 33).
First use Nov. 21, 1933; in commerce at least as early as Feb. 27, 1934.

SN 347,691. Quality Fruit Wines Corp., Yonkers, N.Y. Filed Jan. 5, 1970.

BERRYCUP

For Wines (Int. Cl. 33).
First use Oct. 8, 1942.

SN 362,485. Cockburn Smithes & Companhia Limitada, Vila Nova de Gaia, Oporto, Portugal. Filed June 12, 1970.



For Port Wines (Int. Cl. 33).
First use March 1957; in commerce May 10, 1965.

Class 48 — Malt Beverages and Liquors

SN 359,566. The National Brewing Co., Baltimore, Md. Filed May 13, 1970.

MALT DUCK

The word "Malt" is disclaimed apart from the mark as a whole.
For Beer Blended With Unfermented Concentrate of Red Grape (Int. Cl. 32).
First use Feb. 24, 1970.

Class 49 — Distilled Alcoholic Liquors

SN 204,484. Majestic Distilling Company, Inc., Landsdowne, Md. Filed Oct. 21, 1964.

CHARRED KEG

For Bourbon Whiskey (Int. Cl. 33).
First use Aug. 20, 1964.

Class 50 — Merchandise Not Otherwise Classified

SN 324,761. William D. Staggs, Phoenix, Ariz. Filed Apr. 16, 1969.

PORT-A-POLE

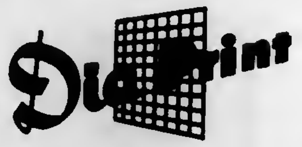
For Portable Flag Pole That Can Be Broken Down for Easy Transport (Int. Cl. 20).
First use Feb. 27, 1969.

SN 331,894. International Assemblix Corporation, Toledo, Ohio. Filed July 7, 1969.

CUSTOMFOAM

For Decorative Three Dimensional Objects Sold in Finished Form or in Kits for Assembly by the Purchaser Such as, Fanciful Figures, Characters, Table and Christmas Tree Decorations and the Like and Three Dimensional Objects for Display and Advertising, Such as Letters, Signs, Symbols, Monograms, Crests, and Enlargements of Three Dimensional Physical Things Such as Flowers, Animals, Bottles, Cans, and the Like (Int. Cls. 16 and 28).
First use Sept. 16, 1966, on three dimensional objects for display and advertising.

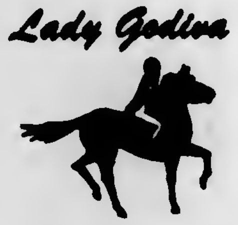
SN 358,900. The Dia-Print Company, Inc., Williamsport, Pa. Filed May 6, 1970.



For Custom Made Screen Chases or Frames for Use in the Printing Industry (Int. Cl. 16).
First use Mar. 15, 1954.

Class 51 — Cosmetics and Toilet Preparations

SN 319,173. Lady Godiva Distributors, Sonora, Calif. Filed Feb. 14, 1969.



For Face Cream, Face Powder, Rouge, Lipsticks, Skin Cleansing Cream, Hand Cream, and Hair Grooming Aid (Int. Cl. 3).
First use on or about July 4, 1939.
Subj. to Intf. with SN 319,740.

SN 320,840. Modern Products, Inc., Kansas City, Mo. Filed Mar. 5, 1969.

For Mouthwash (Int. Cl. 3).
First use Feb. 13, 1969.
Subj. to Intf. with SN 337,482.

SN 326,739. American Home Products Corporation, New York, N.Y. Filed May 8, 1969.

SPRAY OF BEAUTY

Applicant disclaims "Spray" separately and apart from the mark as shown without disclaiming common law rights thereto. Owner of Reg. No. 786,933.
For Hair Spray (Int. Cl. 3).
First use Apr. 14, 1969.

SN 330,063. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 16, 1969.

FACE FRONT

The word "Face" is disclaimed apart from the mark as shown.
For Face Lotion Toner (Int. Cl. 3).
First use May 12, 1969.

SN 336,390. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Aug. 27, 1969.

SEA DUST

The word "Dust" is disclaimed apart from the mark as shown.
For Dusting Powder (Int. Cl. 3).
First use July 28, 1969.

SN 336,392. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Aug. 27, 1969.

SEA SMOOTH

For Cosmetic Skin Lotion (Int. Cl. 3).
First use July 28, 1969.

SN 336,393. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Aug. 27, 1969.

SEA EMOLLIENT

The word "Emollient" is disclaimed apart from the mark as shown.
For Friction Lotion (Int. Cl. 3).
First use July 28, 1969.

SN 353,005. Johnson & Johnson, d.b.a. Personal Products Company, New Brunswick, N.J. Filed Mar. 4, 1970.

SILHOUETTE

For Personal Deodorant Spray (Int. Cl. 5).
First use Jan. 5, 1970.

SN 358,147. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

BARE NECESSITY

For Depilatory (Int. Cl. 3).
First use Mar. 31, 1970.

SN 358,149. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

DANISH GIRL

For Cosmetic Facial Cleanser (Int. Cl. 3).
First use Mar. 31, 1970.

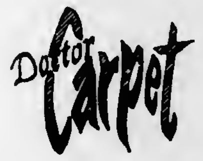
SN 359,709. Cosmetically Yours, Inc., Yonkers, N.Y. Filed May 14, 1970.

LOVE MATES

Owner of Reg. No. 863,729.
For Lipstick (Int. Cl. 3).
First use Apr. 22, 1970.

Class 52 — Detergents and Soaps

SN 334,379. Salan Corporation, Tulsa, Okla. Filed Aug. 4, 1969.



The drawing is lined for the color brown. The word "Carpet" is disclaimed apart from the mark as shown.
For Spot and Stain Remover, Principally Used for Carpet Cleaning (Int. Cl. 3).
First use Apr. 16, 1969.

SN 355,076. H. E. Butt Grocery Company, d.b.a. Park Products Company, Corpus Christi, Tev. Filed Mar. 26, 1970.

For Liquid Detergents for Washing Dishes (Int. Cl. 3).
First use Sept. 25, 1969.

SN 355,176. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 27, 1970.

GENTLE HAND

For Detergent for Washing Dishes and Fine Fabrics (Int. Cl. 3).
First use Feb. 6, 1970.

SN 362,312. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

ECOLOPURE

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SN 362,313. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

EARTH-SAVER

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SN 362,314. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

PRESERVE

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SN 362,315. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

ECOLOGENT

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SERVICE MARKS

Class 100 — Miscellaneous

SN 298,809. Consolidated Analysis Centers Inc., Santa Monica, Calif. Filed May 22, 1968.

SIMOPTIMIZATION

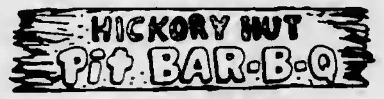
For The Service, Performed for Others, of Analyzing Problems To Be Solved by Others by Simulation Analysis (Int. Cl. 42).
First use Nov. 1, 1965.

SN 304,361. Litchfield Park Properties, Litchfield Park, Ariz. Filed Aug. 5, 1968.

Litchfield Park Properties

The term "Park Properties" is disclaimed apart from the mark as shown.
For Residential, Commercial and Industrial Land Development for Others (Int. Cl. 42).
First use Oct. 9, 1966.

SN 305,489. Leon Poteete, San Antonio, Tex. Filed Aug. 19, 1968.



Applicant disclaims the words "Hut" and "Pit Bar-B-Q" apart from the mark as shown.
For Restaurant and Catering Services (Int. Cl. 42).
First use Dec. 27, 1965.

SN 311,915. Pantone, Incorporated, New York, N.Y. Filed Nov. 12, 1968.

COMPUTACOLOR

For Providing Color Analysis for Matching Against Standards for a Color, Including Its Strength, Tone and Transparency Thereof, Using Spectrophotometric Curves and Colorimetric Data to the Order and/or Specification of Others (Int. Cl. 42).
First use Nov. 4, 1968.

SN 313,013. Mortgage Bankers Association of Greater New Orleans, New Orleans, La. Filed Nov. 25, 1968.

No exclusive claim is made to the term "Master Mortgage Banker" apart from the mark as shown in the drawing.
For Association Services—Namely, the Promotion of the Interest of Those in the Mortgage Banking Business (Int. Cl. 42).
First use Sept. 12, 1967.

SN 319,633. Pizza Pub of America, Inc., Independence, Mo. Filed Feb. 19, 1969.

ROS-A-BEF

For Restaurant Services (Int. Cl. 42).
First use on or about Feb. 1, 1968.

SN 322,051. Control Data Corporation, Minneapolis, Minn. Filed Mar. 18, 1969.

CYBERNET

For Computer Time Sharing Services Comprising an Integrated Network of Remote Terminals and Computer Data Centers (Int. Cl. 42).
First use February 1969.

SN 330,723. Country Style Donuts, Union, N.J. Filed June 23, 1969.

COUNTRY STYLE DONUTS

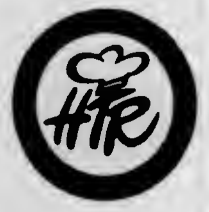
Applicant disclaims the word "Donuts" apart from the mark as shown. Owner of Reg. No. 829,205.
For Doughnut and Coffee Restaurant and Catering Service (Int. Cl. 42).
First use Feb. 16, 1953.

SN 332,883. Bailey's of Boston, Inc., Boston, Mass. Filed July 18, 1969.

BAILEY'S

Owner of Reg. No. 74,451.
For Restaurant Services (Int. Cl. 42).
First use 1890.

SN 335,575. Highway Travelers Restaurant, Inc., Raleigh, N.C. Filed Aug. 18, 1969.



For Restaurant Services (Int. Cl. 42).
First use September 1967.

SN 335,729. The Reader's Digest Association, Inc., New Castle, N.Y. Filed Aug. 20, 1969.

NOTICENTER

For Placing Employment Advertisements for Others in Institutional Newspapers (Int. Cl. 42).
First use Mar. 26, 1969.

SN 337,021. Dixie Kitchens, Inc., Omaha, Nebr. Filed Sept. 4, 1969.

DIXIE KITCHEN

Owner of Reg. No. 842,229.
For Restaurant and Food Catering Services (Int. Cl. 42).
First use June 29, 1964.

SN 337,662. International Industries, Inc., d.b.a. International House of Pancakes, North Hollywood, Calif. Filed Sept. 11, 1969.

JUST FOR THE FUN OF IT

For Restaurant Services (Int. Cl. 42).
First use on or before June 24, 1969.

SN 338,656. Stuckey's, Inc., Eastman, Ga. Filed Sept. 23, 1969.

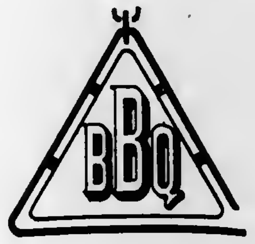
STUCKEY'S

Owner of Reg. Nos. 617,957 and 732,801.
For Restaurant and Motel Services (Int. Cl. 42).
First use Jan. 1, 1939.

SN 352,410. Call for Action, Inc., Washington, D.C. Filed Feb. 26, 1970.

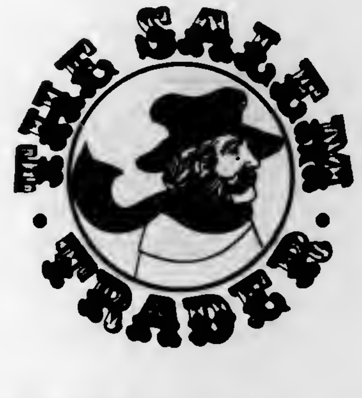
The drawing is lined for the color blue, but no claim is made to color as an essential feature of the mark.
For Providing Information With Respect to Available Governmental or Private Agency Services to Persons Who Request Such Information From Radio or Television Stations (Int. Cl. 42).
First use in 1963.

SN 352,578. Taco Bell, Inc., Torrance, Calif. Filed Feb. 27, 1970.



Applicant disclaims the letters "BBQ" apart from the mark as shown.
For Carrying on a Restaurant Service (Int. Cl. 42).
First use on or about Jan. 15, 1970.

SN 353,629. The Salem Trader Restaurants, Inc., Latham, N.Y. Filed Mar. 10, 1970.



For Restaurant Services (Int. Cl. 42).
First use at least as early as Dec. 1, 1969.

Class 101 — Advertising and Business

SN 277,156. Vinyl Specialties of America, d.b.a. Ethical Business Council of America, Louisville, Ky. Filed July 31, 1967.

EBCOA

For Advertising the Goods and Services of Others on Telephone Book Covers and on Similar Material and Distributions of Said Covers and Material (Int. Cl. 35).
First use Aug. 1, 1966.

SN 322,055. Dynamics Research Corporation, Wilmington, Mass. Filed Mar. 18, 1969.

TIRAS

For Computer Programming Services and Information Retrieval and Analysis Services (Int. Cl. 35).
First use Nov. 25, 1968.

SN 326,375. Hallmark Cards, Incorporated, d.b.a. Ambassador Cards, Kansas City, Mo. Filed May 5, 1969.

FRIENDSHIP CENTER

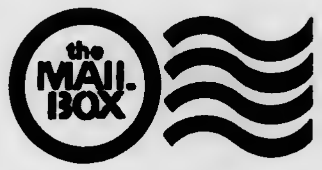
The word "Center" is disclaimed apart from the mark as shown.
For Retail Greeting Cards and Party Goods Store Services (Int. Cl. 35).
First use Sept. 9, 1968.

SN 328,750. The Twin Fair, Inc., Depew, N.Y. Filed May 29, 1969.

TWIN FAIR

For Department Store Services Including the Retailing of Foods, Household Supplies, Health and Beauty Aids, and Clothing (Int. Cl. 35).
First use in or about March 1956.

SN 340,076. Mark A. Wood, Indianapolis, Ind. Filed Oct. 7, 1969.



For Wrapping, Packing and/or Mailing Services (Int. Cl. 35).
First use on or about Aug. 17, 1969.

SN 341,732. Ann Herbert Company, Jeffersontown, Ky. Filed Oct. 13, 1969.

ANN HERBERT

The name "Ann Herbert" is fanciful.
For Retail Clothing Department Store Services (Int. Cl. 35).
First use July 31, 1965.

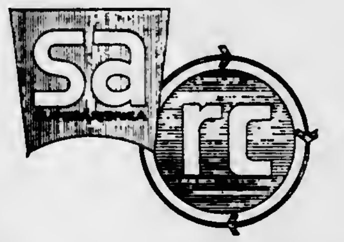
SN 349,921. International Productions, Inc., Jacksonville, Fla. Filed Jan. 29, 1970.

HOLIDAY WONDERLAND

For Promoting the Sale of Goods and/or Services of Others by Means of a Trade Show (Int. Cl. 35).
First use Nov. 27, 1969.

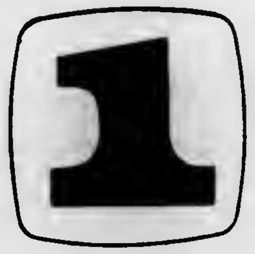
Class 102 — Insurance and Financial

SN 272,294. Northwestern Refining Co., St. Paul Park, Minn. Filed May 24, 1967.



The drawing is lined for the colors red and blue.
For Financial Credit Services (Int. Cl. 36).
First use Nov. 1, 1966.

SN 312,815. Seattle-First National Bank, Seattle, Wash. Filed Nov. 21, 1968.



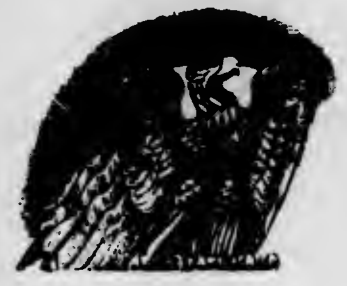
Applicant disclaims the numeral "1" apart from the mark as shown. Owner of Reg. No. 763,685.
For Banking Services (Int. Cl. 36).
First use Feb. 2, 1968.

SN 316,619. Lawrence G. Chait & Co., Inc., New York, N.Y. Filed Jan. 15, 1969.

BABS

For Automatically Paying Bills for Depositors From Their Accounts, Including Making Loans To Pay Bills, When Insufficient Money Is on Account (Int. Cl. 36).
First use Jan. 26, 1968.

SN 354,344. Am-Banks Service Corporation, Boston, Mass. Filed Mar. 18, 1970.



For Travelers Check Services (Int. Cl. 36).
First use at least as early as Dec. 24, 1969.

Class 103 — Construction and Repair

SN 318,978. J. C. Redd, d.b.a. Redd Pest Control Company, Inc., Jackson, Miss. Filed Feb. 12, 1969.

CALL THE REDD MAN

Owner of Reg. Nos. 738,027, 739,548, and 812,713.
For Pest and Termite Control Services (Int. Cl. 37).
First use June 27, 1960.

SN 323,491. Van Dyne-Crotty, Inc., Dayton, Ohio. Filed Apr. 2, 1969.

PRESSTIGE

For Providing Clean Work Clothes on a Rental Basis (Int. Cl. 37).
First use Aug. 4, 1967.

SN 331,855. Bissell Inc., Grand Rapids, Mich. Filed July 7, 1969.

BISSELL

Owner of Reg. Nos. 87,595, 825,676, and others.
For Rug, Carpet, and Upholstery Cleaning Services (Int. Cl. 37).
First use Sept. 22, 1968.

Class 105 — Transportation and Storage

SN 315,796. Travel Industries, Incorporated, Hartford, Conn. Filed Jan. 3, 1969.

TRAVELRAMA

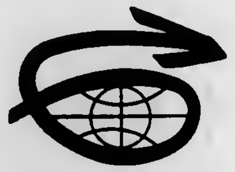
For Arranging, Planning and Organizing of Travel Tours, Including Transportation, Accommodations, and the Like for Individuals, Groups, and Businesses (Int. Cl. 39).
First use on or about Oct. 4, 1968.

SN 316,514. Air Dispatch Inc., New York, N.Y. Filed Jan. 14, 1969.

AIR DISPATCH WHERE GOOD PEOPLE WORK . . . FOR YOU

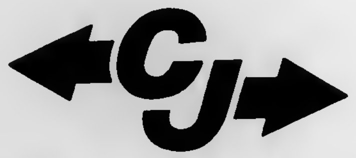
Owner of Reg. No. 874,914.
For Air Freight Forwarding (Int. Cl. 39).
First use Dec. 2, 1968.

SN 317,056. Holiday Inns, Inc., Memphis, Tenn., by change of name from Holiday Inns of America, Inc., Memphis, Tenn. Filed Jan. 21, 1969.



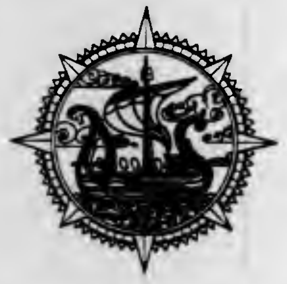
For Travel Services—Namely, Arranging Travel Tours (Int. Cl. 39).
First use as early as Aug. 6, 1968.

SN 323,434. Cooper-Jarrett Inc., Orange, N.J. Filed Apr. 2, 1969.



For Transporting the Goods of Others by Truck (Int. Cl. 39).
First use September 1966.

SN 329,631. Gary M. Sampson, d.b.a. Adventure Travel Service, Detroit, Mich. Filed June 10, 1969.



For Travel Agency Services (Int. Cl. 39).
First use on or about June 1, 1966.

SN 330,834. Group Voyagers, Inc., d.b.a. Globus Tours, New York, N.Y. Filed June 24, 1969.

COSMOS OF LONDON

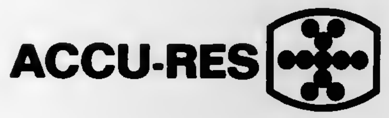
Without waiving its common law rights herein, applicant makes no claim to the word "London" apart from the mark as shown.
For Travel Agency Services (Int. Cl. 39).
First use March 1969.

SN 349,054. Travel Systems/International, Ltd., Oak Brook, Ill. Filed Jan. 20, 1970.

WE PUT THE WORLD TOGETHER FOR YOU

For Conducting Travel Tours; Arranging and Operating Travel Tours for Others (Int. Cl. 39).
First use Nov. 3, 1969.

SN 353,143. Western Air Lines, Inc., Los Angeles, Calif. Filed Mar. 5, 1970.



For Reservation Services Rendered to the Traveling Public Including Reservation of Air Travel Tickets, Automobiles and Hotel Rooms (Int. Cl. 39).
First use Aug. 30, 1968.

SN 353,144. Western Air Lines, Inc., Los Angeles, Calif. Filed Mar. 5, 1970.

ACCU-RES

For Reservation Services Rendered to the Traveling Public Including Reservation of Air Travel Tickets, Automobiles and Hotel Rooms (Int. Cl. 39).
First use Aug. 30, 1968.

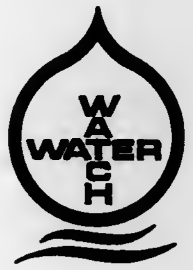
Class 106 — Material Treatment

SN 310,749. Betz Laboratories, Inc., Trevose, Pa. Filed Oct. 29, 1968.

WATER WATCH

For Services in the Treatment of Water (Int. Cl. 40).
First use Mar. 1, 1967.

SN 310,752. Betz Laboratories, Inc., Trevose, Pa. Filed Oct. 29, 1968.



For Services in the Treatment of Water (Int. Cl. 40).
First use Mar. 1, 1967.

SN 319,661. Zyco Manufacturing, Inc., d.b.a. Zyco Magnetic Tracks, Cornwells Heights, Pa. Filed Feb. 19, 1969.

ZYCO

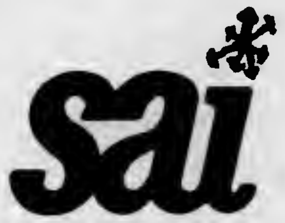
For Treating Movie Film Including Removing Emulsion From Movie Film and Providing a Sound Track on Movie Film (Int. Cl. 40).
First use Oct. 19, 1968.

SN 339,350. Newsfilm Laboratory, Inc., Los Angeles, Calif. Filed Sept. 30, 1969.

The mark comprises a fanciful representation of the letters "NL."
For Processing and Development of Photographic Film Including the Preparation of Prints (Int. Cl. 40).
First use Sept. 2, 1969.

Class 107 — Education and Entertainment

SN 294,675. Skill Advancement Incorporated, New York, N.Y. Filed Apr. 1, 1968.



For Educational Services—Namely, Providing Training Programs in Basic Industrial Skills (Int. Cl. 41).
First use Dec. 19, 1966.

SN 294,676. Skill Advancement Incorporated, New York, N.Y. Filed Apr. 1, 1968.

SAI

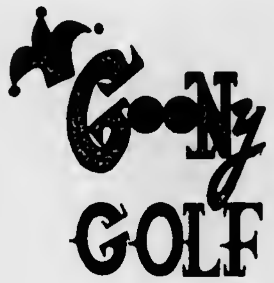
For Educational Services—Namely, Providing Training Programs in Basic Industrial Skills (Int. Cl. 41).
First use Dec. 19, 1966.

SN 313,590. Chester H. Lauck and Norris Goff (partnership), Hot Springs National Park, Ark. Filed Dec. 4, 1968.

LUM AND ABNER

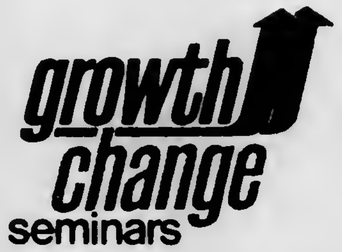
For Entertainment Services—Namely, Comedy Radio Programs Featuring Hillbilly Characters (Int. Cl. 41).
First use May 4, 1931.

SN 315,619. Golf Players, Inc., Chattanooga, Tenn. Filed Dec. 31, 1968.



The term "Golf" is disclaimed apart from the mark as shown. The drawing is lined for the colors orange and yellow. Owner of Reg. No. 835,283.
For Providing of Facilities for Playing Miniature Golf (Int. Cl. 41).
First use Sept. 26, 1960.

SN 317,244. Leasco Systems & Research Corporation, Bethesda, Md. Filed Jan. 22, 1969.



The word "Seminars" is disclaimed apart from the mark as shown.
For Educational Services—Namely, Conducting Short Courses and Seminars on Areas of Current Interest To Help Businesses Plan Market Strategy (Int. Cl. 41).
First use Sept. 10, 1968.

SN 321,479. Data Analysis Associates, New York, N.Y. Filed Mar. 12, 1969.

COPE TRAINING

Applicant disclaims the term "Training" apart from the mark as a whole.
For Training Services for Business Management and Personnel in the Field of Human Relations (Int. Cl. 41).
First use August 1968.

SN 327,010. Burton W. Duenke Building Company, d.b.a. Tan-Tar-A Resort, St. Louis, Mo. Filed May 12, 1969.

TAN-TAR-A

For Resort Services—Namely, Providing Combined Hotel, Entertainment, and Sporting Facilities (Int. Cl. 41).
First use in or about September 1960.

SN 334,864. Harry C. Reimschussel, Toledo, Ohio. Filed Aug. 8, 1969.

RYMIE THE CLOWN ACT

No claim is made to the words "The Clown Act" separate and apart from the mark as shown.
For Entertainment Services in the Nature of a Clown Act Featuring Balloon Tying and Manipulation (Int. Cl. 41).
First use June 4, 1969; April 1941, as to "Rymie."

SN 346,814. Lawrence J. Thompson, Livonia, Mich. Filed Dec. 22, 1969.

MR. WHOODINI

For Services Performed by an Individual Relating to Magic, Comedy, Large Illusions Sometimes With Audience Participation (Int. Cl. 41).
First use Sept. 29, 1968.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

898,021. PATORA. The Toyo Rubber Industry Co., Ltd. MULTIPLE CLASS (Classes 1 and 39). SN 299,528. Pub. 4-29-69. Filed 6-3-68.

898,022. RICON. The Richardson Company. SN 300,844. Pub. 4-22-69. Filed 6-19-68.

898,023. PEDURA. Armstrong Cork Company. SN 310,626. Pub. 4-28-70. Filed 10-28-68.

898,024. HERITAGE. Central States Products Company. SN 324,888. Pub. 2-10-70. Filed 4-18-69.

898,025. ACSA. Chatillon Società Anonima Italiana per le Fibre Tessili Artificiali S.p.A. MULTIPLE CLASS (Classes 1 and 43). SN 326,820. Pub. 6-23-70. Filed 5-9-69.

898,026. WINFLEX. Winzen Research, Inc. SN 326,933. Pub. 6-23-70. Filed 5-9-69.

898,027. DOLITE. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 338,014. Pub. 6-23-70. Filed 9-16-69.

898,028. THRIFTIPLANTS. Old Orchard Gardens, Inc. SN 340,418. Pub. 6-23-70. Filed 10-10-69.

898,029. ALFTALAT. Reichhold-Albert-Chemie AG. SN 341,413. Pub. 6-23-70. Filed 10-22-69.

898,030. ALNOVOL. Reichhold-Albert-Chemie A.G. SN 341,414. Pub. 6-23-70. Filed 10-22-69.

898,031. ALDUROL. Reichhold-Albert-Chemie AG. SN 341,415. Pub. 6-23-70. Filed 10-22-69.

898,032. ALBERTOL. Reichhold-Albert-Chemie AG. SN 341,416. Pub. 6-23-70. Filed 10-22-69.

898,033. ALRESEN. Reichhold-Albert-Chemie AG. SN 341,418. Pub. 6-23-70. Filed 10-22-69.

898,034. ALRESAT. Reichhold-Albert-Chemie AG. SN 341,419. Pub. 6-23-70. Filed 10-22-69.

898,035. ALPRODUR. Reichhold-Albert-Chemie AG. SN 341,420. Pub. 6-23-70. Filed 10-22-69.

898,036. DUROPHEN. Reichhold-Albert-Chemie AG. SN 341,421. Pub. 6-23-70. Filed 10-22-69.

898,037. NAUTAQUILT. The General Tire & Rubber Company. SN 341,810. Pub. 6-23-70. Filed 10-27-69.

898,038. LOPAC. Monsanto Company. SN 343,573. Pub. 6-23-70. Filed 11-14-69.

Class 2 — Receptacles

898,039. E·Z·M·T. Ballin Industrial Design & Development Corp. SN 273,589. Pub. 9-24-68. Filed 6-12-67.

898,040. D PLASTIPAC. Dixico, Inc., by change of name from Dixie Wax Paper Company. MULTIPLE CLASS (Classes 2 and 37). SN 305,640. Pub. 2-3-70. Filed 8-21-68.

898,041. BS & B. Black, Sivalls & Bryson, Inc. MULTIPLE CLASS (Classes 2, 12, 13, 21, 23, 26, 31, 34, 100, and 103). SN 308,835. Pub. 6-23-70. Filed 10-4-68.

898,042. BUTTER UPPER. Centsable Products, Inc. SN 322,040. Pub. 6-23-70. Filed 3-18-69.

898,043. CAMPING GAZ. Application des Gaz. MULTIPLE CLASS (Classes 2 and 34). SN 322,516. Pub. 6-23-70. Filed 3-24-69.

898,044. BENCH-MATE. Akro-Mils, Inc. SN 328,023. Pub. 6-23-70. Filed 5-22-69.

898,045. JEWEL WARE AND DESIGN. Pacific Plastic Products, Inc. SN 335,520. Pub. 4-21-70. Filed 8-18-69.

898,046. EGCART-X. Egcart, Inc. SN 347,593. Pub. 6-23-70. Filed 1-2-70.

898,047. COUNTRYSIDE. Jackes-Evans Manufacturing Company. SN 347,610. Pub. 6-23-70. Filed 1-2-70.

898,048. RWW. Alton Box Board Company. SN 352,055. Pub. 6-23-70. Filed 2-24-70.

898,049. VINYL-ITE. International Metal Polish Co., Inc. SN 321,941. Pub. 6-23-70. Filed 3-17-69.

Class 4 — Abrasives and Polishing Materials

898,050. A DESIGN. Armour-Dial, Inc. MULTIPLE CLASS (Classes 4, 6, 46, 51, and 52). SN 327,800. Pub. 6-23-70. Filed 5-21-69.

Class 5 — Adhesives

898,051. SBCI AND DESIGN. Standard Brands Chemical Industries, Inc. SN 333,763. Pub. 6-23-70. Filed 7-28-69.

Class 6 — Chemicals and Chemical Compositions

898,050. (See Class 4 for this trademark.)

898,052. GLYCON. Glyco Chemicals, Inc. SN 288,213. Pub. 12-30-69. Filed 1-5-68.

898,053. VAPONITE. Shell Oil Company. SN 300,749. Pub. 2-25-69. Filed 6-18-68.

898,054. SETEXTREN. Geigy Chemical Corporation. SN 324,448. Pub. 2-24-70. Filed 4-14-69.

898,055. PHILLIPS PETROLEUM 66 AND SHIELD DESIGN. Phillips Petroleum Company. SN 325,623. Pub. 6-23-70. Filed 4-25-69.

898,056. VAPORETTE. Vaporette Chemical Corporation. SN 326,282. Pub. 12-30-69. Filed 5-5-69.

898,057. REFINAL. Agfa-Gevaert Aktiengesellschaft. SN 328,397. Pub. 4-14-70. Filed 5-27-69.

898,058. DYNAGRAPHIC. Dynagraphic Systems, Inc. MULTIPLE CLASS (Classes 6, 21, and 37). SN 328,616. Pub. 4-21-70. Filed 5-29-69.

898,059. RODFORM. R. T. Vanderbilt Company, Inc. SN 337,730. Pub. 6-23-70. Filed 9-11-69.

898,060. KEN-ECTOR. Conversion Chemical Corporation. SN 337,785. Pub. 6-23-70. Filed 9-12-69.

898,061. KENCAD. Conversion Chemical Corporation. SN 337,892. Pub. 6-23-70. Filed 9-12-69.

898,062. ADCO-LITE. Adco, Inc. SN 338,103. Pub. 6-23-70. Filed 9-17-69.

898,063. POLYMATIC. Eastman Kodak Company. SN 338,139. Pub. 6-23-70. Filed 9-17-69.

Class 7 — Cordage

898,064. THERE'S ALWAYS ONE THAT'S BEST. Berwick Industries Incorporated, by change of name from Berwick Textile Products Co., Inc. SN 319,811. Pub. 6-23-70. Filed 2-24-69.

898,065. POLY-SATIN. Berwick Industries Incorporated, by change of name from Berwick Textile Products Co., Inc. SN 330,899. Pub. 6-23-70. Filed 6-25-69.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

898,066. CHEK-R-GRIP. Robert D. Kachman, d.b.a. The Chek-R-Grip Company. SN 336,121. Pub. 6-23-70. Filed 8-25-69.

Class 10 — Fertilizers

898,067. NOCTIN. Kalo Inoculant Company. SN 315,319. Pub. 6-23-70. Filed 12-27-68.

898,068. TURF-N-TEE. Sequoia Forest Products Co. SN 340,612. Pub. 6-23-70. Filed 10-13-69.

898,069. IDEAL GOLDEN. Kerr-McGee Chemical Corp., assignee of Emhart Corporation. SN 341,450. Pub. 6-23-70. Filed 10-20-69.

Class 12 — Construction Materials

898,041. (See Class 2 for this trademark.)

898,070. ACE HARDWARE AND DESIGN. Ace Hardware Corporation. MULTIPLE CLASS (Classes 12, 16, and 23). SN 226,110. Pub. 9-5-67. Filed 8-20-65.

898,071. ESLON. Sekisui Chemical Company Ltd. of Japan. SN 249,610. Pub. 1-17-67. Filed 7-6-66.

898,072. PARSOL. Compagnie de Saint-Gobain, Societe Anonyme. SN 289,877. Pub. 6-23-70. Filed 1-30-68.

898,073. TRANSIDOR. The Seagrave Corporation, assignee, by mesne assignment, of Continental Curtain Closures, Inc. SN 301,608. Pub. 5-5-70. Filed 6-28-68.

898,074. FULGURIT AND DESIGN. Fulgurit-Vertriebsgesellschaft, m.b.H. SN 303,158. Pub. 6-23-70. Filed 7-19-68.

898,075. OMNIFIX. Rudolf Kurner. SN 312,209. Pub. 312,209. Pub. 6-23-70. Filed 11-14-68.

898,076. ACROVYN. Construction Specialties, Inc. SN 316,883. Pub. 6-23-70. Filed 1-17-69.

898,077. QUIK-ROK. Preco Chemical Corporation. SN 319,729. Pub. 6-23-70. Filed 2-20-69.

898,078. FORMEX AND DESIGN. Formex Corporation. MULTIPLE CLASS (Classes 12, 19, and 22). SN 319,758. Pub. 6-23-70. Filed 2-24-69.

898,079. STAINPLEX. Sensiplex Manufacturing and Research Inc. SN 320,745. Pub. 6-23-70. Filed 3-4-69.

898,080. CRESTELLA. United Africa Company (Timber) Limited. SN 329,293. Pub. 6-23-70. Filed 6-5-69.

898,081. CARIFABRIC. Bau-Stahlgewebe G.m.b.H. SN 330,692. Pub. 6-23-70. Filed 6-23-69.

898,082. FULTON WINDOR. Variety Manufacturing & Engineering Co., Inc. SN 332,675. Pub. 6-23-70. Filed 7-16-69.

898,083. FORUMLA B AND DESIGN. A & T Development Corporation. SN 333,646. Pub. 6-23-70. Filed 7-28-69.

898,084. DASH PATCH. Allied Compositions Corporation. SN 333,890. Pub. 6-23-70. Filed 7-30-69.

898,085. LEV-L-ASTIC. Allied Compositions Corporation. SN 333,891. Pub. 6-23-70. Filed 7-30-69.

898,086. GOLD-LINE. Johns-Manville Corporation. SN 334,475. Pub. 6-23-70. Filed 8-5-69.

898,087. MISER WALL. Miser Wall, Inc., assignee of William J. Navarre Corporation. SN 336,144. Pub. 6-23-70. Filed 8-25-69.

898,088. NOTCHLINE. International Minerals & Chemical Corporation. SN 339,795. Pub. 6-23-70. Filed 10-6-69.

898,089. LAVKILN. International Minerals & Chemical Corporation. SN 340,218. Pub. 6-23-70. Filed 10-9-69.

898,090. YORKTOWN WALNUT. U.S. Plywood-Champion Papers Inc. SN 341,763. Pub. 6-23-70. Filed 10-27-69.

898,091. PROFILE. Johns-Manville Corporation. SN 343,303. Pub. 6-23-70. Filed 11-12-69.

898,092. THRUSTITE. Johns-Manville Corporation. SN 343,308. Pub. 6-23-70. Filed 11-12-69.

898,093. CONTIBOARD. Aaronson Bros. Limited. SN 343,371. Pub. 6-23-70. Filed 11-13-69.

898,094. CYCLO-PANEL. Cyclops Corporation. SN 343,955. Pub. 6-23-70. Filed 11-19-69.

898,095. O'DOME. Tension Structures, Inc. SN 344,743. 344,743. Pub. 6-23-70. Filed 11-26-69.

898,096. MARINECRETE. American Davits Corporation. SN 353,357. Pub. 6-23-70. Filed 3-9-70.

898,097. BB-III. U.S. Plywood-Champion Papers Inc. SN 354,558. Pub. 6-23-70. Filed 3-19-70.

898,098. BB-VII. U.S. Plywood-Champion Papers Inc. SN 354,559. Pub. 6-23-70. Filed 3-19-70.

898,099. BARNBOARD-THREE. U.S. Plywood-Champion Papers Inc. SN 354,560. Pub. 6-23-70. Filed 3-19-70.

898,100. BARNBOARD-SEVEN. U.S. Plywood-Champion Papers Inc. SN 354,561. Pub. 6-23-70. Filed 3-19-70.

898,101. PRIMITIVE. American Olean Tile Company, Inc. SN 354,570. Pub. 6-23-70. Filed 3-19-70.

898,102. TUSCANY AND DESIGN. American Olean Tile Company, Inc. SN 354,571. Pub. 6-23-70. Filed 3-19-70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

898,041. (See Class 2 for this trademark.)

898,103. BU-T-BRITE. Everingham Brothers Limited. SN 313,402. Pub. 6-23-70. Filed 12-2-68.

898,104. LEE JET AND DESIGN. The Lee Company. SN 321,662. Pub. 6-23-70. Filed 3-13-69.

898,105. LEE PLUG JET AND DESIGN. The Lee Company. SN 321,663. Pub. 6-23-70. Filed 3-13-69.

898,106. LEECHEK AND DESIGN. The Lee Company. SN 321,665. Pub. 6-23-70. Filed 3-13-69.

898,107. VANITY FAIR. Amerock Corporation. SN 324,158. Pub. 6-23-70. Filed 4-10-69.

898,108. GENO-WELD. Genova Products. MULTIPLE CLASS (Classes 13 and 23). SN 331,566. Pub. 6-23-70. Filed 7-2-69.

898,109. FANNER. Textron, Inc. SN 334,142. Pub. 6-23-70. Filed 7-31-69.

898,110. ACRO-LUMA. Continental Nonferrous Foundry, Inc. SN 339,069. Pub. 6-23-70. Filed 9-29-69.

898,111. SUPERHINGE. David Allison Co., Inc. SN 342,930. Pub. 6-23-70. Filed 11-7-69.

Class 14 — Metals and Metal Castings and Forgings

898,112. DF-10. Neebars, Inc. SN 343,630. Pub. 6-23-70. Filed 11-17-69.

Class 15 — Oils and Greases

898,113. GP. Continental Oil Company. SN 256,070. Pub. 8-29-67. Filed 10-10-66.

898,114. RALLY. E. I. du Pont de Nemours and Company. SN 328,619. Pub. 6-23-70. Filed 5-29-69.

898,115. WING DESIGN. Union Oil Company of California. SN 330,966. Pub. 4-28-70. Filed 6-25-69.

898,116. VAPOR TUNE. Vapco, Inc. SN 336,197. Pub. 6-23-70. Filed 8-25-69.

898,117. WAYCLING. Sun Oil Company. SN 337,722. Pub. 6–23–70. Filed 9–11–69.

898,118. PHILTAC. Phillips Petroleum Company. SN 343,421. Pub. 6–23–70. Filed 11–13–69.

898,119. CYPRUS. Phillips Petroleum Company. SN 343,422. Pub. 6–23–70. Filed 11–13–69.

898,120. ANCUS. Phillips Petroleum Company. SN 343,423. Pub. 6–23–70. Filed 11–13–69.

898,121. DANCING LIGHTS. Avon Products, Inc. SN 344,530. Pub. 6–23–70. Filed 11–25–69.

898,122. ZEREX. E. I. du Pont de Nemours and Company. SN 345,045. Pub. 6–23–70. Filed 12–2–69.

Class 16 — Protective and Decorative Coatings

898,070. (See Class 12 for this trademark.)

898,123. EPODUR. W. R. Grace & Co. SN 290,600. Pub. 6–23–70. Filed 2–8–68.

898,124. AQUA-TONE Standard Oil Company. SN 327,214. Pub. 2–24–70. Filed 5–14–69.

898,125. POLANE. The Sherwin-Williams Company. SN 338,617. Pub. 6–23–70. Filed 9–22–69.

898,126. MARVELUSTRE. Cotter & Company. SN 353,130. Pub. 6–23–70. Filed 3–5–70.

Class 17 — Tobacco Products

898,127. GELBE SORTE. Reemtsma Cigarettenfabriken G.m.b.H. SN 318,819. Pub. 6–23–70. Filed 2–10–69.

898,128. EDGEWORTH AND LABEL DESIGN. Larus & Brother Company. SN 322,716. Pub. 6–23–70. Filed 3–25–69.

898,129. PULLMAN BY ROTHMANS AND DESIGN. Rothmans of Pall Mall Limited. SN 323,131. Pub. 6–23–70. Filed 3–28–69.

898,130. CON MIL AMORES. Schimmelpenninck Sigarenfabrieken V/H Geurts & Van Schuppen N.V. SN 323,133. Pub. 6–23–70. Filed 3–28–69.

898,131. CIGALET. Consolidated Cigar Corporation. SN 326,502. Pub. 2–3–70. Filed 5–6–69.

898,132. GRADUATES. R. G. Dun Cigar Corporation. SN 330,482. Pub. 4–7–70. Filed 6–19–69.

898,133. HIP-TIP. Consolidated Cigar Corporation. SN 350,062. Pub. 6–23–70. Filed 1–30–70.

898,134. STROLLER. Consolidated Cigar Corporation. SN 350,063. Pub. 6–23–70. Filed 1–30–70.

898,135. TRAVELER. Consolidated Cigar Corporation. SN 350,064. Pub. 6–23–70. Filed 1–30–70.

898,136. TRIPS. Consolidated Cigar Corporation. SN 350,065. Pub. 6–23–70. Filed 1–30–70.

Class 18 — Medicines and Pharmaceutical Preparations

898,137. SELFSERT. Marion Laboratories, Inc. SN 320,831. Pub. 6–23–70. Filed 3–5–69.

898,138. MINI-Q-DEE. E. R. Squibb & Sons, Inc. SN 324,941. Pub. 6–23–70. Filed 4–18–69.

898,139. CHASER. Cary Corporation. SN 326,289. Pub. 4–28–70. Filed 5–5–69.

898,140. F-G LOTION. Fife Pharmaceuticals, Inc. SN 330,273. Pub. 6–23–70. Filed 6–17–69.

898,141. GRICELD HAIR CREAM. Gricelda Guerrero. SN 334,844. Pub. 6–23–70. Filed 8–8–69.

898,142. CANICTERO-BAC. Philips Roxane, Inc. SN 335,254. Pub. 6–23–70. Filed 8–13–69.

898,143. FUN MATES. The Vitarine Co., Inc. SN 336,356. Pub. 6–23–70. Filed 8–26–69.

898,144. ALL-ALERT. Drug Guild Co-Operative, Inc. SN 336,548. Pub. 6–23–70. Filed 8–28–69.

898,145. EPINAL. Alcon Laboratories, Inc. SN 336,904. Pub. 6–23–70. Filed 9–3–69.

898,146. ASTRODINE. The Purdue Frederick Company. SN 337,096. Pub. 6–23–70. Filed 9–4–69.

898,147. BENASED. Parke, Davis & Company. SN 337,137. Pub. 5–26–70. Filed 9–5–69.

898,148. STRESSTABS. American Cyanamid Company. SN 338,110. Pub. 6–23–70. Filed 9–17–69.

898,149. GENRATE. Block Drug Company Inc. SN 338,351. Pub. 6–23–70. Filed 9–19–69.

898,150. HISTASPAN-D. USV Pharmaceutical Corporation. SN 338,701. Pub. 6–23–70. Filed 9–23–69.

898,151. PRAMILET. Abbott Laboratories. SN 339,109. Pub. 6–23–70. Filed 9–29–69.

898,152. DIMETHACOL. Pennwalt Corporation. SN 339,451. Pub. 6,23–70. Filed 10–1–69.

898,153. SURF - EYES. Broemmel Pharmaceuticals. SN 339,550. Pub. 6–23–70. Filed 10–2–69.

898,154. THE GOOD LIFE. The Good Life. SN 339,793. Pub. 6–23–70. Filed 10–6–69.

898,155. MINK-PLUS. Ralston Purina Company. SN 339,822. Pub. 6–23–70. Filed 10–6–69.

898,156. VANQULES. DeWitt Drug and Beauty Products, Inc., by change of name from DeWitt International Corporation. SN 342,205. Pub. 4–7–70. Filed 10–31–69.

898,157. ACTROGEN. The Upjohn Company. SN 350,435. Pub. 6–23–70. Filed 2–4–70.

898,158. MEDROCORT. The Upjohn Company. SN 350,437. Pub. 6–23–70. Filed 2–4–70.

Class 19 — Vehicles

898,078. (See Class 12 for this trademark.)

898,159. HOBO. Graham Products Limited, assignee of Excelite (Quebec) Limited. SN 259,096. Pub. 6–23–70. Filed 11–21–66.

898,160. TRANSCO. Transco Inc. SN 309,703. Pub. 6–23–70. Filed 10–15–68.

898,161. THE TREND AND DESIGN. White Motor Corporation. SN 316,492. Pub. 6–23–70. Filed 1–13–69.

898,162. PUG·LUG. Bruce Manufacturing, Inc. SN 326,274. Pub. 6–23–70. Filed 5–2–69.

898,163. PRE-RACER AND DESIGN. Crockey Peterson, d.b.a. Crockey Peterson Racing Enterprises. SN 332,522. Pub. 6–23–70. Filed 7–14–69.

898,164. MISCELLANEOUS DESIGN. Barry Galloway. SN 336,690. Pub. 6–23–70. Filed 8–29–69.

898,165. PUFFIN AND BIRD DESIGN. Polycell-Prout Limited. SN 339,928. Pub. 6–23–70. Filed 10–6–69.

898,166. MISCELLANEOUS DESIGN. Coot Industries. SN 345,107. Pub. 6–23–70. Filed 12–3–69.

898,167. MISCELLANEOUS DESIGN. Coot Industries. SN 345,109. Pub. 6–23–70. Filed 12–3–69.

898,168. MARK III. Winston Industries, Inc. SN 346,142. Pub. 6–23–70. Filed 12–12–69.

898,169. CRIMSON. Winston Industries, Inc. SN 346,146. Pub. 6–23–70. Filed 12–12–69.

898,170. ESCAPE. Winston Traveller, Inc. SN 346,150. Pub. 6–23–70. Filed 12–12–69.

898,171. ENGLISH SQUIRE. Winston Industries, Inc. SN 346,152. Pub. 6–23–70. Filed 12–12–69.

898,172. SALEM. Winston Industries, Inc. SN 346,154. Pub. 6–23–70. Filed 12–12–69.

898,173. MAGNUM MARINE. American Photocopy Equipment Company. SN 352,596. Pub. 6–23–70. Filed 2–27–70.

Class 20 — Linoleum and Oiled Cloth

898,174. ALLURA. Congoleum Industries, Inc. SN 322,048. Pub. 6–23–70. Filed 3–18–69.

898,175. PACEMAKER. Congoleum Industries, Inc. SN 322,049. Pub. 6–23–70. Filed 3–18–69.

898,176. SIERRA. GAF Corporation. SN 322,708. Pub. 6–23–70. Filed 3–25–69.

Class 21 — Electrical Apparatus, Machines, and Supplies

898,041. (See Class 2 for this trademark.)

898,058. (See Class 6 for this trademark.)

898,177. BABCOCK. Babcock Electronics Corporation. SN 288,769. Pub. 6–23–70. Filed 1–15–68.

898,178. °KRYOCONDUCTOR. Air Reduction Company, Incorporated. SN 300,546. Pub. 6–23–70. Filed 6–17–68.

898,179. DUO-LUX. The Lodestar Corporation. SN 315,422. Pub. 6–23–70. Filed 12–30–68.

898,180. S.O.S. DEFENDER AND DESIGN. Schwartz Protective Systems, Inc. SN 319,737. Pub. 6–23–70. Filed 2–20–69.

898,181. CERROTROL. Cerro Corporation. SN 325,716. Pub. 6–23–70. Filed 4–28–69.

898,182. BIGSTON. Toyomenka, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 327,180. Pub. 6–23–70. Filed 5–13–69.

898,183. DEMOULAS. James M. Nutton, d.b.a. J. M. Nutton Co. SN 328,999. Pub. 6–23–70. Filed 6–3–69.

898,184. SURE-GUARD. American Optical Corporation. SN 330,813. Pub. 6–23–70. Filed 6–24–69.

898,185. DI DESIGN. Dracon Industries. SN 331,274. Pub. 6–23–70. Filed 6–30–69.

898,186. CIPHER. Cipher Data Products. SN 332,451. Pub. 6–23–70. Filed 7–14–69.

898,187. PEAVEY AND DESIGN.. Hartley D. Peavey, d.b.a. Peavey Electronics. SN 332,516. Pub. 6–23–70. Filed 7–14–69.

898,188. INFINETICS AND DESIGN. Infinetics Inc. SN 332,954. Pub. 6–23–70. Filed 7–18–69.

898,189. DYNAHERTZ. Eaton Yale & Towne Inc. SN 333,113. Pub. 6–23–70. Filed 7–22–69.

898,190. SMOKONTROL. Smokontrol Corporation of America, assignee of Conveyor Heat Products Corp. SN 335,123. Pub. 6–23–70. Filed 8–12–69.

898,191. AMPLITONE. The Telex Corporation. SN 335,274. Pub. 6–23–70. Filed 8–13–69.

898,192. MOON-LITE. Anes Automotive Electronics, Inc. SN 335,932. Pub. 6–23–70. Filed 8–22–69.

898,193. VM. V-M Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 339,975. Pub. 6–23–70. Filed 10–6–69.

898,194. BENCHMASTER. Fedtro, Inc. SN 341,981. Pub. 6–23–70. Filed 10–29–69.

898,195. CURRENT-TRANSENDER. S & C Electric Company. SN 348,057. Pub. 6–23–70. Filed 1–8–70.

898,196. MICOR. Motorola, Inc. SN 348,563. Pub. 6–23–70. Filed 1–14–70.

898,197. SAFETY FIRST. Gold Line Connector, Inc. SN 349,178. Pub. 6–23–70. Filed 1–21–70.

Class 22 — Games, Toys, and Sporting Goods

898,078. (See Class 12 for this trademark.)

898,198. SNO KART. Dentor Enterprises Limited. SN 274,193. Pub. 6–23–70. Filed 6–19–67.

898,199. PEEK-A-VIEW. Kenner Products Company. SN 323,308. Pub. 5–19–70. Filed 4–1–69.

898,200. ISO-WEIGHT. Richard L. Chapman, d.b.a. Iso-Weight Industries. SN 317,438. Pub. 6–23–70. Filed 1–24–69.

898,201. SAMMY SUN. Sifo Company. SN 321,994. Pub. 6–23–70. Filed 3–17–69.

898,202. TUFABET. Peter A. Brett. SN 322,550. Pub. 6–23–70. Filed 3–24–69.

898,203. BULLDOG. Cramer Products, Inc. SN 328,672. Pub. 6–23–70. Filed 5–29–69.

898,204. SATURN. Columbia Industries, Inc. SN 328,823. Pub. 6–23–70. Filed 6–2–69.

898,205. MADISON. The Orvis Company, Inc. SN 329,002. Pub. 6–23–70. Filed 6–3–69.

898,206. MYRTLE. Mattel, Inc. SN 338,483. Pub. 6–23–70. Filed 9–22–69.

898,207. SPORTY TALK. Mattel, Inc. SN 338,723. Pub. 6–23–70. Filed 9–24–69.

898,208. MPC. Model Products Corporation. SN 339,102. Pub. 6–23–70. Filed 9–29–69.

898,209. MATTEL AND SEAL DESIGN. Mattel, Inc. SN 339,805. Pub. 6–16–70. Filed 10–6–69.

898,210. PICTURE PERFECT. Mattel, Inc. SN 340,723. Pub. 6–23–70. Filed 10–15–69.

898,211. DOLLY DRAW-A-LOT. Mattel, Inc. SN 340,888. Pub. 6–23–70. Filed 10–16–69.

898,212. PRO-FORM. Northstar Athletic Industries, Inc. SN 342,937. Pub. 6–23–70. Filed 11–7–69.

898,213. CHATTER WAGON CHUCKERS. Mattel, Inc. SN 345,243. Pub. 6–23–70. Filed 12–4–69.

898,214. DON'T BE A DUMBELL. Rainbow Crafts, Inc. SN 352,302. Pub. 6–23–70. Filed 2–25–70.

898,215. PLAY-STONE. Rainbow Crafts, Inc. SN 352,308. Pub. 6–23–70. Filed 2–25–70.

898,216. WOBBLE 'N GOBBLE-IT. Rainbow Crafts, Inc. SN 352,309. Pub. 6–23–70. Filed 2–25–70.

898,217. FABULOUS FAKES. Mattel, Inc. SN 353,624. Pub. 6–23–70. Filed 3–10–70.

898,218. FLO. Mattel, Inc. SN 353,625. Pub. 6–23–70. Filed 3–10–70.

898,219. LIVE WIRE. Mattel, Inc. SN 354,085. Pub. 6–23–70. Filed 3–16–70.

898,220. OCTRIX. Minnesota Mining and Manufacturing Company. SN 354,263. Pub. 6–23–70. Filed 3–17–70.

898,221. ROUNDSIES. Mattel, Inc. SN 354,357. Pub. 6–23–70. Filed 3–18–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

898,041. (See Class 2 for this trademark.)

898,070. (See Class 12 for this trademark.)

898,108. (See Class 13 for this trademark.)

898,222. SOLUTEC. Solutec Corporation. SN 274,132. Pub. 9–30–69. Filed 6–19–67.

898,223. VANGUARD. Charles Baynes Limited. SN 300,556. Pub. 12–16–69. Filed 6–17–68.

898,224. NOVADEL VARI-FEEDER. Novadel Limited. SN 304,808. Pub. 6–23–70. Filed 8–9–68.

898,225. LONE STAR. Globemaster, Inc. SN 305,044. Pub. 12–23–69. Filed 8–13–68.

898,226. HYDRO-AIRE. Fuller Company. SN 305,777. Pub. 2–17–70. Filed 8–22–68.

898,227. VIBRAVATOR. Rotary Hoes Limited. SN 307,238. Pub. 12–16–69. Filed 9–12–68.

898,228. POLYPUMP. Polypump Limited. SN 308,809. Pub. 3–17–70. Filed 10–3–68.

898,229. DOG CADDY. Sidney Zuritsky. SN 311,084. Pub. 6–23–70. Filed 10–31–68.

898,230. AUTOPERF. Star-New Era, Inc., by change of name from Powers & Eaton Industries, Inc. SN 322,738. Pub. 6–23–70. Filed 3–25–69.

898,231. GAF. GAF Corporation. MULTIPLE CLASS (Classes 23 and 26). SN 325,297. Pub. 6–23–70. Filed 4–23–69.

898,232. STR. Edelbrock Equipment Company. SN 326,641. Pub. 6–23–70. Filed 5–7–69.

898,233. PROGRAMATIC. Medalist Industries, Inc. SN 327,949. Pub. 6–23–70. Filed 5–21–69.

898,234. SEA BROOM. Sunshine Chemical Corporation. SN 327,969. Pub. 6–23–70. Filed 5–21–69.

898,235. GEM. G.E.M. Products, Inc. SN 330,128. Pub. 6–23–70. Filed 6–16–69.

898,236. AEROSTAR. Johann Hochreuter, d.b.a. Hochreuter & Baum. SN 330,508. Pub. 6–23–70. Filed 6–19–69.

898,237. DEVELCO AND DESIGN. Develco Manufacturing Co. SN 330,912. Pub. 6–23–70. Filed 6–2–69.

898,238. CENTAC. Ingersoll-Rand Company. SN 331,206. Pub. 1–6–70. Filed 6–27–69.

898,239. LAMFLO. Carpco Research & Engineering, Inc. SN 331,994. Pub. 4–28–70. Filed 7–8–69.

898,240. A ACME AND DESIGN. Acme Metal Goods Mfg. Co. SN 332,596. Pub. 6–23–70. Filed 7–15–69.

898,241. MODERN HANDLING SYSTEMS AND DESIGN. Modern Handling Systems. SN 332,841. Pub. 6–23–70. Filed 7–17–69.

898,242. KALAMAZOO. KTS Industries, Inc. SN 333,410. Pub. 6–23–70. Filed 7–24–69.

898,243. PIERCED BAROQUE. Textron Inc. SN 333,456. Pub. 6–23–70. Filed 7–24–69.

898,244. AIRMATIC. Black Clawson, Inc., by change of name from Black Clawson-Sumner, Inc. SN 333,663. Pub. 6–23–70. Filed 7–28–69.

898,245. CARDMASTER. John D. Hollingsworth on Wheels, Inc. SN 333,713. Pub. 6–23–70. Filed 7–28–69.

898,246. GUYSON. Guyson Industrial Equipment Limited. SN 334,583. Pub. 6–23–70. Filed 8–6–69.

898,247. STELCHROME. Stelchrome Manufacturing, Inc. SN 334,636. Pub. 6–23–70. Filed 8–6–69.

898,248. DAVIS COMMANDO. G. W. Davis Corporation. SN 334,819. Pub. 6–23–70. Filed 8–8–69.

898,249. LO-PRO. J. Frank Mack, d.b.a. Mack Company. SN 339,905. Pub. 4–28–70. Filed 10–6–69.

898,250. WHISPERIZED. Ingersoll - Rand Company. SN 344,242. Pub. 6–23–70. Filed 11–21–69.

898,251. MPH. Modern Plastic Machinery Corporation. SN 344,875. Pub. 6–23–70. Filed 11–28–69.

898,252. SYLLOGRAPH. Syllographic Machines, Inc. SN 347,971. Pub. 6–23–70. Filed 1–7–70.

898,253. SYLLOGRAPHIC. Syllographic Machines, Inc. SN 347,972. Pub. 6–23–70. Filed 1–7–70.

898,254. CONOMIX–R. Conoflow Corporation. SN 348,267. Pub. 6–23–70. Filed 1–12–70.

898,255. TORWELL. Torrey's Engineering & Welding Services, Inc. SN 348,366. Pub. 6–23–70. Filed 1–12–70.

898,256. ELECTRO-LIFT AND DESIGN. Stero Dishwashing Machine Mfg. Co. SN 348,590. Pub. 6–23–70. Filed 1–14–70.

898,257. KARI KRETE AND DESIGN. Symons Mfg. Company. SN 348,592. Pub. 6–23–70. Filed 1–14–70.

898,258. ROSEWOOD. Oneida Ltd. SN 348,679. Pub. 6–23–70. Filed 1–15–70.

898,259. PHOTO-TEX. Standard International Corporation. SN 349,005. Pub. 6–23–70. Filed 1–19–70.

898,260. PLASTIMATIC. W. S. Rockwell Company. SN 352,573. Pub. 5–26–70. Filed 2–27–70.

898,261. ELECTROPHONIC AND DESIGN. Morse Electro Products Corp. SN 355,842. Pub. 6–23–70. Filed 4–3–70.

Class 24 — Laundry Appliances and Machines

898,262. BIG CHIEF AND INDIAN HEAD DESIGN. Susie J. Richards, d.b.a. Indian Nation Press Co. SN 327,171. Pub. 6–23–70. Filed 5–13–69.

898,263. SAVE - O - SOLV. McGraw - Edison Company. SN 346,267. Pub. 6–23–70. Filed 12–15–69.

Class 25 — Locks and Safes

898,264. HINES AND DESIGN. New England Lock and Hardware Company. SN 336,836. Pub. 6–23–70. Filed 9–2–69.

Class 26 — Measuring and Scientific Appliances

898,041. (See Class 2 for this trademark.)

898,231. (See Class 23 for this trademark.)

898,265. NOVA. Harmonic Reed Corporation, d.b.a. Nova Laboratories. SN 288,016. Pub. 3–11–69. Filed 1–3–68.

898,266. GLO-ESCENT. "Automatic" Sprinkler Corporation of America. SN 306,869. Pub. 6–23–70. Filed 9–9–68.

898,267. MAGNESCALE. Sony Corporation. SN 309,792. Pub. 3–31–70. Filed 10–16–68.

898,268. ATCO AND DESIGN. Astro Tool Co., Inc. SN 316,401. Pub. 3–24–70. Filed 1–13–69.

898,269. HYJOULE. Associated Research, Inc. SN 319,798. Pub. 6–23–70. Filed 2–24–69.

898,270. POLYMAR. Anken Chemical & Film Corporation SN 321,143. Pub. 12–16–69. Filed 3–10–69.

898,271. CENTURY. Charles Beseler Company. SN 321,623. Pub. 12–2–69. Filed 3–13–69.

898,272. SCOPE-SHELF. Robert N. Reblaender, d.b.a. Plastic Engineered Products Company. SN 321,982. Pub. 6–23–70. Filed 3–17–69.

898,273. FILMINDER. Moss Corporation. SN 323,887. Pub. 6–23–70. Filed 4–2–69.

898,274. VP AND DESIGN. Vicon Products Corp. SN 324,547. Pub. 6–23–70. Filed 4–14–69.

898,275. LOGALOG. Industrial Inventions, Inc. SN 324,594. Pub. 3–10–70. Filed 4–15–69.

898,276. SPEC AND DESIGN. Seminole Pollution Equipment Corp. SN 324,758. Pub. 6–23–70. Filed 4–16–69.

898,277. PYRAMITOME. LKB-Produkter Aktiebolag. SN 326,240. Pub. 6–23–70. Filed 5–2–69.

898,278. METRIKIT AND DESIGN. Information General Corporation. SN 328,056. Pub. 6–23–70. Filed 5–22–69.

898,279. EDUQUIPMENT. Eduquip, Inc. SN 329,036. Pub. 6–23–70. Filed 6–4–69.

898,280. DELTA DESIGN AND DESIGN. Delta Design, Inc. SN 331,735. Pub. 6–23–70. Filed 7–3–69.

898,281. FORMULABS. Formulabs Industrial Inks, Incorporated. SN 331,887. Pub. 6–23–70. Filed 7–7–69.

898,282. SAFE-O-MATIC. Technology Systems Incorporated. SN 331,972. Pub. 6–23–70. Filed 8–27–69.

898,283. MINI-SPEED. Electro Products Laboratories, Inc. SN 341,582. Pub. 6–23–70. Filed 10–24–69.

898,284. MARKETRON RETAILER. Inventory Management Systems, Inc. SN 347,609. Pub. 6–23–70. Filed 1–2–70.

898,285. CAL-O-PUTER. Scale Data Systems, Inc. SN 348,343. Pub. 6–23–70. Filed 1–12–70.

898,286. ALUMESTATE. Alumestate, Inc. SN 348,827. Pub. 6–23–70. Filed 1–19–70.

Class 27 — Horological Instruments

898,287. AS2. A. Schild A.G. SN 321,991. Pub. 6–23–70. Filed 3–17–69.

898,288. ELECTRODYNE. Waltham Watch Company. SN 332,299. Pub. 4–28–70. Filed 7–11–69.

898,289. BON TON. Sunbeam Corporation. SN 342,910. Pub. 6–23–70. Filed 11–6–69.

Class 28 — Jewelry and Precious-Metal Ware

898,290. CHELSEA. Textron, Inc., assignee of Gorham Corporation. SN 237,339. Pub. 4–25–67. Filed 1–26–66.

898,291. CELLINI ROMANESQUE. New York Merchandise Co., Inc. SN 327,212. Pub. 6–23–70. Filed 5–14–69.

898,292. THE VIKING DRIP-STOPPER. . . . Hugo R. Norbeck, d.b.a. Viking Trading Company. SN 332,274. Pub. 6–23–70. Filed 7–10–69.

898,293. TAMERAC. Textron Inc. SN 337,724. Pub. 6–23–70. Filed 9–11–69.

898,294. 144 144 144 AND DESIGN. Huisman Bros. Inc. SN 338,245. Pub. 6–23–70. Filed 9–18–69.

898,295. PASSEPORT. Telmont Corporation. SN 340,954. Pub. 6–23–70. Filed 10–16–69.

898,296. RUGGER. Aquarius, Ltd. SN 342,610 Pub. 6–23–70. Filed 11–4–69.

898,297. MALVERN. Rogers, Lunt & Bowlen Company, d.b.a. Lunt Silversmiths. SN 342,904. Pub. 6–23–70. Filed 11–6–69.

Class 29 — Brooms, Brushes, and Dusters

898,298. POWER STRIP. The Drackett Company. SN 347,088. Pub. 6–23–70. Filed 12–24–69.

Class 30 — Crockery, Earthenware, and Porcelain

898,299. CLAYS IN CALICO. Wesley Van Gorden and Virginia Van Gordon (partnership), d.b.a. Clays in Calico. SN 324,376. Pub. 6–23–70. Filed 4–14–69.

Class 31 — Filters and Refrigerators

898,041. (See Class 2 for this trademark.)

Class 32 — Furniture and Upholstery

898,300. RELAXABLES. Broyhill Furniture Industries. SN 330,714. Pub. 6–23–70. Filed 6–23–69.

898,301. CATAMARAN. Textron, Inc. SN 335,075. Pub. 6–23–70. Filed 8–11–69.

898,302. FEATHERLIFT. Castro Convertible Corporation. SN 347,372. Pub. 6–23–70. Filed 12–30–69.

898,303. ADVENT. Douglas Furniture Corporation. SN 350,372. Pub. 6–23–70. Filed 2–3–70.

Class 33 — Glassware

898,304. GCP. Owens-Illinois, Inc. SN 340,420. Pub. 6–23–70. Filed 10–10–69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

898,041. (See Class 2 for this trademark.)

898,043. (See Class 2 for this trademark.)

898,305. CENTRALTEMP. Hydronic Industries Inc. SN 309,585. Pub. 6–23–70. Filed 10–14–68.

898,306. CONTINUATOR. The Strong-Scott Manufacturing Company. SN 313,994. Pub. 6–23–70. Filed 12–9–68.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

898,307. TURF-TRAC. The Armstrong Rubber Company. SN 347,195. Pub. 6–23–70. Filed 12–29–69.

Class 36 — Musical Instruments and Supplies

898,182. (See Class 21 for this trademark.)

898,193. (See Class 21 for this trademark.)

898,308. BROTHER RECORDS. Brother Records, Inc. SN 280,853. Pub. 8–20–68. Filed 9–21–67.

898,309. WW AND DESIGN. Edu-Cast Incorporated. MULTIPLE CLASS (Classes 36 and 38). SN 299,445. Pub. 4–21–70. Filed 5–31–68.

898,310. DUOVOX. Bell Accordion Corporation. SN 330,245. Pub. 6–23–70. Filed 6–17–69.

898,311. KRASKIN. Kraskin Baton Company. SN 330,514. Pub. 6–23–70. Filed 6–19–69.

898,312. SUPER ROCKET. Kraskin Baton Company. SN 330,516. Pub. 6–23–70. Filed 6–19–69.

898,313. HIGH FLYER. Kraskin Baton Company. SN 345,647. Pub. 6–23–70. Filed 12–8–69.

898,314. DYNASOUND. Data Packaging Corporation. SN 346,687. Pub. 6–23–70. Filed 12–19–69.

898,315. DOVE AND DESIGN. Gibson, Inc. SN 352,808. Pub. 6–23–70. Filed 3–2–70.

Class 37 — Paper and Stationery

898,040. (See Class 2 for this trademark.)

898,058. (See Class 6 for this trademark.)

898,316. KOKUYO AND DESIGN. Kokuyo Co., Ltd. SN 300,458. Pub. 6–23–70. Filed 6–14–68.

898,317. FLING. Berol Corporation, assignee of Brooks-Melrose, Inc. SN 324,276. Pub. 6–23–70. Filed 4–11–69.

898,318. DESK-VUE. Acme Visible Records, Inc. SN 331,134. Pub. 6–23–70. Filed 6–27–69.

898,319. REVELATION. Combined Paper Mills, Inc. SN 338,755. Pub. 6–23–70. Filed 9–24–69.

898,320. MONTEGO. Consolidated Papers, Inc. SN 339,303. Pub. 6–23–70. Filed 9–30–69.

898,321. PUMA. Consolidated Papers, Inc. SN 339,304. Pub. 6–23–70. Filed 9–30–69.

898,322. GLENWOOD. Lincoln Pulp & Paper Co., Inc. SN 341,044. Pub. 6–23–70. Filed 10–17–69.

898,323. WIS-TONE. Wisconsin Tissue Mills. SN 346,013. Pub. 6–23–70. Filed 12–11–69.

Class 38 — Prints and Publications

898,309. (See Class 36 for this trademark.)

898,324. LE LIVRE DE POCHE AND DESIGN. Hachette, Inc. SN 312,770. Pub. 9–16–69. Filed 11–21–68.

898,325. DIAL & BUY. Comput-A-Credit, Inc. SN 316,498. Pub. 6–23–70. Filed 1–14–69.

898,326. MISCELLANEOUS DESIGN. Pandora Productions, Inc. SN 324,809. Pub. 6–23–70. Filed 4–17–69.

898,327. WHO'S WHO OF THE WILD WEST. Marquis-Who's Who, Inc. SN 326,395. Pub. 6–23–70. Filed 5–5–69.

898,328. TREASURE TREK. National Bellas Hess, Inc. SN 327,400. Pub. 6–23–70. Filed 5–15–69.

898,329. JL DESIGN. The Soncino Press Limited. SN 334,492. Pub. 6–23–70. Filed 8–5–69.

898,330. PSYCHIC AND BIRD DESIGN. The Bolen Company. SN 334,973. Pub. 6–23–70. Filed 8–11–69.

898,331. THE WAY IT IS. Xerox Corporation. SN 339,827. Pub. 6–23–70. Filed 10–6–69.

898,332. THE OARSMAN. National Association of Amateur Oarsmen. SN 340,180. Pub. 6–23–70. Filed 10–8–69.

898,333. THE TAMPA TIMES. The Tribune Company. SN 341,295. Pub. 6–23–70. Filed 10–21–69.

898,334. THE TEXAS LAWMAN. The Sheriffs' Association of Texas. SN 341,552. Pub. 6–23–70. Filed 10–23–69.

898,335. THE MUSICAL QUARTERLY. G. Schirmer, Inc. SN 344,019. Pub. 6–23–70. Filed 11–19–69.

898,336. OSCEOLA SUN AND DESIGN. Florida Sunpapers, Inc. SN 344,104. Pub. 6–23–70. Filed 11–20–69.

898,337. PLANNING TODAY. Kennedy Sinclaire, Inc. SN 344,263. Pub. 6–23–70. Filed 11–21–69.

898,338. POULTRY INTERNATIONAL. Watt Publishing Company. SN 344,481. Pub. 6–23–70. Filed 11–24–69.

898,339. KALCO. Kalamazoo Label Company. SN 344,993. Pub. 4–7–70. Filed 12–1–69.

898,340. KAL-GUM. Kalamazoo Label Company. SN 344,997. Pub. 4–7–70. Filed 12–1–69.

898,341. INSTA-DEX. United Medical Laboratories, Inc. SN 345,032. Pub. 6–23–70. Filed 12–1–69.

898,342. WORD WATCHING. G. & C. Merriam Company. SN 345,085. Pub. 6–23–70. Filed 12–2–69.

898,343. GLOVER. William L. Glover. SN 347,262. Pub. 6–23–70. Filed 12–29–69.

898,344. THE NORTH VALLEY FARMER. The Willows Publishing Company. SN 352,550. Pub. 6–23–70. Filed 2–26–70.

898,345. BRINEWELL. The Dow Chemical Company. SN 353,044. Pub. 6–23–70. Filed 3–4–70.

Class 39 — Clothing

898,021. (See Class 1 for this trademark.)

898,346. ELEGANTE. The Joseph & Feiss Company (Delaware corporation), by assignment and change of name from The Joseph & Feiss Company (Ohio corporation). SN 230,652. Pub. 2–27–68. Filed 10–20–65.

898,347. THE MINERVA COLLECTION. Evans, Inc. SN 280,032. Pub. 6–17–69. Filed 9–11–67.

898,348. DOLLIE AND DESIGN. Serbin, Inc. SN 304,257. Pub. 4–22–69. Filed 8–2–68.

898,349. SALERO AND DESIGN. Rice Shinkle Imports. SN 327,689. Pub. 6–23–70. Filed 5–19–69.

898,350. BARCO OF CALIFORNIA. Barco of California. SN 330,896. Pub. 6–23–70. Filed 6–25–69.

898,351. BARKERS. Franklin Stores Corporation, d.b.a. Barkers. SN 332,009. Pub. 6–23–70. Filed 7–8–69.

898,352. KAY LYNN BY TIPCO. Tipco Sportswear, Inc. SN 333,458. Pub. 6–23–70. Filed 7–24–69.

898,353. CHANNEL CROSSING. Manhattan Industries, Inc. SN 333,587. Pub. 6–23–70. Filed 7–25–69.

898,354. OVER BROOK. Manhattan Industries, Inc. SN 333,588. Pub. 6–23–70. Filed 7–25–69.

898,355. MINI-FLEX. Bear Brand Hosiery Co. SN 333,659. Pub. 4–21–70. Filed 7–28–69.

898,356. IMP PRINT AND DESIGN. Bernblum International, Incorporated. SN 333,662. Pub. 6–23–70. Filed 7–28–69.

898,357. JUDY BOND. Judy Bond, Inc. SN 335,921. Pub. 6–23–70. Filed 8–22–69.

898,358. BAYARD. Bayard Shirt Corporation. SN 336,406. Pub. 6–23–70. Filed 8–27–69.

898,359. ONLI·ONE. AFM, Inc. SN 342,348. Pub. 6–23–70. Filed 11–3–69.

898,360. S/K EUROPETIES AND DESIGN. Caine's Mutiny, Inc. SN 342,408. Pub. 6–23–70. Filed 11–3–69.

898,361. CHECKADELICS. Maidenform, Inc. SN 345,548. Pub. 6–23–70. Filed 12–8–69.

898,362. SWEET SECRET. Maidenform, Inc. SN 345,550. Pub. 6–23–70. Filed 12–8–69.

898,363. FIORENTINAS BY JACQUES BALDI. Fiorentina Shoes Societa a Responsabilita Limitata. SN 346,074. Pub. 6–23–70. Filed 12–12–69.

898,364. NUVOS. Levi Strauss & Co. SN 346,978. Pub. 6–23–70. Filed 12–22–69.

898,365. NATURLON. The Lovable Company. SN 351,762. Pub. 6–23–70. Filed 2–19–70.

Class 40 — Fancy Goods, Furnishings, and Notions

898,366. MINI-CLIPS. B. B. Greenberg Co. SN 292,096. Pub. 10–1–68. Filed 2–28–68.

898,367. CAROUSEL AND DESIGN. Carousel Fashions, Inc., assignee of Carousel Products Inc. SN 310,861. Pub. 1–20–70. Filed 10–30–68.

898,368. BUSTER. David and David, Inc. SN 336,320. Pub. 6–23–70. Filed 8–26–69.

898,369. INSTA APPLY. Cournoyer Industries, Inc. SN 350,814. Pub. 6–23–70. Filed 2–9–70.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

898,370. K–20. Klopman Mills, Inc. SN 317,847. Pub. 2–24–70. Filed 1–29–69.

898,371. AFRICAN INCA. Marcstrate Fashions, Inc. SN 328,711, Pub. 6–23–70. Filed 5–29–69.

898,372. DRYLON. Sears, Roebuck and Co. SN 329,276. Pub. 11–11–69. Filed 6–5–69.

898,373. STONEHAVEN. Quaker Fabric Corporation. SN 340,192. Pub. 6–23–70. Filed 10–8–69.

898,374. PERRAH. Klopman Mills, Inc. SN 342,287. Pub. 6–23–70. Filed 10–31–69.

898,375. HIDDEN TREASURE. E. T. Barwick Industries, Inc. SN 349,108. Pub. 6–23–70. Filed 1–21–70.

898,376. POLYTEX. E. T. Barwick Industries, Inc. SN 349,116. Pub. 6–23–70. Filed 1–21–70.

898,377. SHAGMENDOUS. E. T. Barwick Industries, Inc. SN 349,119. Pub. 6–23–70. Filed 1–21–70.

898,378. SOFT APPROACH. E. T. Barwick Industries, Inc. SN 349,121. Pub. 6–23–70. Filed 1–21–70.

898,379. SOFTWALL. E. T. Barwick Industries, Inc. SN 349,122. Pub. 6–23–70. Filed 1–21–70.

Class 43 — Thread and Yarn

898,025. (See Class 1 for this trademark.)

898,380. LIFE SAVER PACK. Consolidated Foods Corporation. SN 330,106. Pub. 3–24–70. Filed 6–16–69.

898,381. ENKALITE. American Enka Corporation. SN 339,112. Pub. 6–23–70. Filed 9–29–69.

Class 44 — Dental, Medical, and Surgical Appliances

898,382. QUAD. Minnesota Rubber Company. SN 326,407. Pub. 6–23–70. Filed 5–5–69.

898,383. MACH IX. Southwestern Drug Corporation. SN 329,522. Pub. 6–23–70. Filed 6–9–69.

898,384. TONATRONE. Elisabeth Ungar-Skin Care, Inc. SN 336,682. Pub. 6–23–70. Filed 8–29–69.

Class 45 — Soft Drinks and Carbonated Waters

898,385. ORANGE DELITE. Sunrise Home Juices, Inc. SN 323,968. Pub. 5–5–70. Filed 4–8–69.

898,386. NOISY KOOL-AID. General Foods Corporation. SN 324,911. Pub. 6–23–70. Filed 4–18–69.

898,387. ARROWHEAD FAMOUS AND DESIGN. Arrowhead Syrup Sales, Inc. SN 346,843. Pub. 6–23–70. Filed 12–22–69.

Class 46 — Foods and Ingredients of Foods

898,050. (See Class 4 for this trademark.)

898,388. GRAHAM CHARGERS. General Mills, Inc. SN 266,827. Pub. 6–23–70. Filed 3–16–67.

898,389. JOHNSTON AND DESIGN. Ward Foods, Inc., assignee, by mesne assignment, of Robert A. Johnston Company. SN 284,669. Pub. 9–3–68. Filed 11–13–67.

898,390. OQUENDO ETC. AND DESIGN. Oquendo Roasting Company. SN 306,799. Pub. 6–23–70. Filed 9–6–68.

898,391. CIRCLE "A" AND DESIGN. Allied Meat Company. SN 307,956. Pub. 7–22–69. Filed 9–23–68.

898,392. A AND DESIGN. Aquatrol, Inc. SN 316,068. Pub. 6–23–70. Filed 1–8–69.

898,393. K'NOODLES. Alfonso Gioia & Sons, Incorporated, d.b.a. Bravo Macaroni Company. SN 320,591. Pub. 6–23–70. Filed 3–3–69.

898,394. CORONADO AND DESIGN. Frigorifico Bordon S/A. SN 323,051. Pub. 6–23–70. Filed 3–28–69.

898,395. WILD. Kellogg Company. SN 323,301. Pub. 12–9–69. Filed 4–1–69.

898,396. FOOD TECHNOLOGY. Food Technology, Inc. SN 335,969. Pub. 6–23–70. Filed 8–22–69.

898,397. MAGIC PUFFS. General Mills, Inc. SN 337,927. Pub. 4–28–70. Filed 9–15–69.

898,398. KENCO. The Kenco Coffee Company Limited. SN 342,708. Pub. 4–7–70. Filed 11–5–69.

898,399. THE "MOST." Federal Sweets & Biscuits Co., Inc. SN 345,814. Pub. 6–23–70. Filed 12–10–69.

898,400. COMPANY. Riviana Foods Inc. SN 346,117. Pub. 6–23–70. Filed 12–12–69.

898,401. MAIN DISH. Riviana Foods Inc. SN 346,120. Pub. 6–23–70. Filed 12–12–69.

898,402. SPREE. Lever Brothers Company. SN 350,823. Pub. 6–23–70. Filed 2–9–70.

898,403. SPREE. Lever Brothers Company. SN 352,904. Pub. 6–23–70. Filed 3–3–70.

898,404. LOOK-ME-OVER AND DESIGN. Joseph Oscola. SN 353,377. Pub. 6–23–70. Filed 3–9–70.

898,405. CORN TOP. Dietzen's Bakeries, Inc. SN 355,495. Pub. 6–23–70. Filed 3–31–70.

Class 48 — Malt Beverages and Liquors

898,406. LITE AND DESIGN. Meister Brau, Inc. SN 311,283. Pub. 6–23–70. Filed 11–4–68.

898,407. BORN IN THE LAND OF SKY BLUE WATERS. Theodore Hamm Brewing Co. SN 341,813. Pub. 6–23–70. Filed 10–27–69.

898,408. FABACHER AND JMC DESIGN. Jackson Brewing Company. SN 342,474. Pub. 6–23–70. Filed 11–3–69.

898,409. DESIGN OF 3 HUMANS. Lone Star Brewing Co. SN 352,830. Pub. 6–23–70. Filed 3–2–70.

Class 49 — Distilled Alcoholic Liquors

898,410. LOCHAN ORA. Joseph E. Seagram & Sons (Scotland) Limited. SN 316,685. Pub. 6–23–70. Filed 1–15–69.

Class 50 — Merchandise Not Otherwise Classified

898,411. HIDAC. Andre Rubber Company Limited. SN 311,563. Pub. 4–7–70. Filed 11–7–68.

898,412. CLOROCELL. Pirelli S.p.A. SN 325,503. Pub. 6–23–70. Filed 4–24–69.

898,413. BETTERWAY. Dan O. Turner. SN 335,079. Pub. 6–23–70. Filed 8–11–69.

898,414. MISCELLANEOUS DESIGN. Benco Plastics, Inc. SN 340,901. Pub. 6–23–70. Filed 10–16–69.

898,415. STEPS TO THE STARS. Salesco Inc. SN 343,634. Pub. 6–23–70. Filed 11–17–69.

Class 51 — Cosmetics and Toilet Preparations

898,050. (See Class 4 for this trademark.)

898,416. NO SET. Helene Curtis Industries, Inc. SN 299,763. Pub. 6–23–70. Filed 6–5–68.

898,417. DARE. Bristol-Myers Company. SN 307,082. Pub. 6–17–69. Filed 9–11–68.

898,418. MANUCREME. Laboratoire Lachartre S.A. SN 307,847. Pub. 3–24–70. Filed 9–20–68.

898,419. SPRING RAIN BATH SOFT. Church & Dwight, Co., Inc., assignee of Tidy House Products Co. SN 310,526. Pub. 9–2–69. Filed 10–25–68.

898,420. PROTEIN 21. The Mennen Company. SN 325,985. Pub. 6–23–70. Filed 4–30–69.

898,421. SUPER℞. The Kroger Co., d.b.a. Super Drugs. SN 339,196. Pub. 6–23–70. Filed 9–29–69.

898,422. VONA. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,629. Pub. 6–23–70. Filed 10–3–69.

898,423. MAGNIFISCENTS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). S ; 339,631. Pub. 6–23–70. Filed 10–3–69.

898,424. THE TOTABLE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,632. Pub. 6–23–70. Filed 10–3–69.

898,425. WESKIT. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,633. Pub. 6–23–70. Filed 10–3–69.

898,426. JODPHUR. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,635. Pub. 6–23–70. Filed 10–3–69.

898,427. WINDOWS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,636. Pub. 6–23–70. Filed 10–3–69.

898,428. COMMUNIQUE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,637. Pub. 6–23–70. Filed 10–3–69.

898,429. DEEP WOODS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,638. Pub. 6–23–70. Filed 10–3–69.

898,430. OFFSHORE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,640. Pub. 6–23–70. Filed 10–3–69.

898,431. LOOKSTICK. Avon Products, Inc. SN 339,696. Pub. 6–23–70. Filed 10–3–69.

898,432. SUN SEEKERS. Avon Products, Inc. SN 339,697. Pub. 6–23–70. Filed 10–3–69.

898,433. SUN CIRCUIT. Avon Products, Inc. SN 339,698. Pub. 6–23–70. Filed 10–3–69.

898,434. HERCO. Richardson-Merrell Pty. Limited. MULTIPLE CLASS (Classes 51 and 52). SN 339,952. Pub. 5–19–70. Filed 10–7–69.

Class 52 — Detergents and Soaps

898,050. (See Class 4 for this trademark.)

898,422. (See Class 51 for this trademark.)

898,423. (See Class 51 for this trademark.)

898,424. (See Class 51 for this trademark.)

898,425. (See Class 51 for this trademark.)

898,426. (See Class 51 for this trademark.)

898,427. (See Class 51 for this trademrak.)

898,428. (See Class 51 for this trademark.)

898,429. (See Class 51 for this trademark.)

898,430. (See Class 51 for this trademark.)

898,434. (See Class 51 for this trademark.)

898,435. LONGING. Avon Products, Inc. SN 298,556. Pub. 6–23–70. Filed 5–20–68.

898,436. PROFESSIONAL TREAT. Phillip A. Brooks, d.b.a. Alan Manufacturing Co. SN 311,824. Pub. 6–23–70. Filed 11–12–68.

898,437. FLUSHO. The Drackett Company. SN 312,285. Pub. 6–23–70. Filed 11–15–68.

898,438. BARKERS. Franklin Stores Corporation, d.b.a. Barkers. SN 332,008. Pub. 6–23–70. Filed 7–8–69.

898,439. NOVA. Lever Brothers Company. SN 343,219. Pub. 4–14–70. Filed 11–12–69.

Service Marks

Class 100 — Miscellaneous

898,041. (See Class 2 for this trademark.)

898,440. TRUST THRIFT DRUG AND DESIGN. Thrift Drug Company of Pennsylvania. SN 250,535. Pub. 8–13–68. Filed 7–18–66.

898,441. THRIFT DRUG AND "TRUST" DESIGN. Thrift Drug Company of Pennsylvania. SN 250,536. Pub. 7–23–68. Filed 7–18–66.

898,442. THRIFT DRUG AND DESIGN. Thrift Drug Company of Pennsylvania. SN 250,537. Pub. 8–6–68. Filed 7–18–66.

898,443. BALCHEM. Balchem Corporation. MULTIPLE CLASS (Classes 100 and 106). SN 289,869. Pub. 6–23–70. Filed 1–30–68.

898,444. PUP 'N' TACO. Pup 'N' Taco Drive Up. SN 304,119. Pub. 6–23–70. Filed 8–1–68.

898,445. SCOTTY'S CHUCKWAGON AND DESIGN. Scotty's of Raleigh, Inc. SN 305,252. Pub. 4–28–70. Filed 8–15–68.

898,446. EAGLE AND DESIGN. Harry S. Johnson Land Surveyors, Inc., by change of name from Harry S. Johnson Associates, Inc. SN 316,538. Pub. 6–23–70. Filed 1–14–69.

898,447. GAERTNER. The Gaertner Scientific Corporation. SN 322,161. Pub. 6–23–70. Filed 3–19–69.

898,448. MISCELLANEOUS DESIGN. Eddy Arnold's Tennessee Fried Chicken, Inc. SN 325,695. Pub. 6–23–70. Filed 4–28–69.

898,449. ADTEC AND DESIGN. Advanced Technology Consultants Corp. MULTIPLE CLASS (Classes 100 and 101). SN 329,030. Pub. 2–17–70. Filed 6–4–69.

898,450. JR HOT SHOPPES AND DESIGN. Marriott Corporation. SN 335,411. Pub. 6–23–70. Filed 8–15–69.

898,451. THE LOB STEER. The Lob Steer Inns, Inc. SN 338,414. Pub. 6–23–70. Filed 9–19–69.

898,452. "CRACKER BARREL" OLD COUNTRY STORE. Consolidated Oil Company, Inc. SN 341,439. Pub. 5–12–70. Filed 10–20–69.

898,453. HAPPY CHEF. Happy Chef Systems, Inc. SN 354,546. Pub. 6–23–70. Filed 3–19–70.

898,454. CHEF DESIGN. Happy Chef Systems, Inc. SN 354,547. Pub. 6–23–70. Filed 3–19–70.

898,455. THE NIP AND DESIGN. Mayflower Resaurant Enterprises, Inc. SN 355,317. Pub. 6–23–70. Filed 3–30–70.

Class 101 — Advertising and Business

898,449. (See Class 100 for this trademark.)

898,456. THRIFTOWN. The Kroger Co. SN 253,658. Pub. 8–8–67. Filed 9–1–66.

898,457. FROLIC. Frolic Outlet Warehouse, Inc. SN 283,520. Pub. 6–23–70. Filed 10–27–67.

898,458. ALL STAR BINGO. Imagineering, Inc., assignee of James R. Shaughnessy. SN 285,586. Pub. 6–23–70. Filed 11–24–67.

898,459. PAR. Remote Computing Corporation. SN 323,473. Pub. 6–23–70. Filed 4–2–69.

898,460. STATE LIQUORS AND DESIGN. Castlewood International Corporation. SN 323,625. Pub. 6–23–70. Filed 4–4–69.

898,461. VENETIAN. Venetian International, Inc. SN 325,314. Pub. 6–23–70. Filed 4–23–69.

898,462. MARKETRONIX. Volume Builders, Inc. and Schaffer Diversified Corporation (joint venture). SN 330,810. Pub. 6–23–70. Filed 6–24–69.

898,463. SCAN. Management Recruiters International, Inc. SN 332,500. Pub. 6–23–70. Filed 7–14–69.

898,464. BULLOCK'S. Federated Department Stores, Inc., d.b.a. Bullock's. SN 334,066. Pub. 6–23–70. Filed 7–31–69.

898,465. CHRISTMAS FAIRYLAND. International Productions, Inc. SN 337,404. Pub. 6–23–70. Filed 9–9–69.

898,466. AD/MARK. Sherwood Publications Company. SN 338,813. Pub. 6–23–70. Filed 9–24–69.

898,467. SYNERGISM. Robert E. Burket, d.b.a. Synergism Associates. SN 344,278. Pub. 6–23–70. Filed 11–24–69.

898,468. TICKETRON. Ticket Reservation Systems, Inc. SN 344,464. Pub. 6–23–70. Filed 11–24–69.

898,469. ILAND AND DESIGN. Intertherm, Inc. MULTIPLE CLASS (Classes 101, 102, and 103). SN 347,992. Pub. 6–23–70. Filed 1–8–70.

898,470. ID DESIGN. H. C. Prange Company. SN 349,048. Pub. 6–23–70. Filed 1–20–70.

Class 102 — Insurance and Financial

898,469. (See Class 101 for this trademark.)

898,471. REDDY RESERVE. Washington-Lee Savings and Loan Association. SN 289,550. Pub. 6–23–70. Filed 1–23–68.

898,472. SILHOUETTE DESIGN OF A MEETING OF MEN. The Boston Company, Inc. SN 314,408. Pub. 6–23–70. Filed 12–13–68.

Class 103 — Construction and Repair

898,041. (See Class 2 for this trademark.)

898,469. (See Class 101 for this trademark.)

Class 105 — Transportation and Storage

898,473. ICS. Integrated Container Service, Inc. SN 318,788. Pub. 6–23–70. Filed 2–10–69.

898,474. THREE BIRD DESIGN. Ozark Air Lines, Inc. SN 337,411. Pub. 6–23–70. Filed 9–9–69.

Class 106 — Material Treatment

898,443. (See Class 100 for this trademark.)

898,475. CAPITAL CITY AND DESIGN. Capital City Discount Film Developing Service. SN 328,531. Pub. 4–28–70. Filed 5–28–69.

898,476. PLASTIMATIC. W. S. Rockwell Company. SN 352,574. Pub. 5–26–70. Filed 2–27–70.

Class 107 — Education and Entertainment

898,477. THE TIDAL WAVES. Alexander F. McDonald, Jr. SN 247,040. Pub. 3–21–67. Filed 6–1–66.

898,478. ATC DESIGN (DARKER COLOR). Harold Weiss, d.b.a. Automation Training Center. SN 294,101. Pub. 6–23–70. Filed 3–25–68.

898,479. DENVER SPURS. Sports Holdings, Inc. SN 304,870. Pub. 6–23–70. Filed 8–12–68.

898,480. THE FALL GUYS. Herbert Paloff. SN 308,027. Pub. 6–23–70. Filed 9–23–68.

898,481. CUSTOM RADIO. Cine-Vox Productions, Inc. SN 308,466. Pub. 6–23–70. Filed 9–30–68.

898,482. MEDALLION DESIGN. Nantucket Historical Trust. SN 310,350. Pub. 6–23–70. Filed 10–23–68.

898,483. MILLION DOLLAR MIDWAYS. Gooding's Million Dollar Midways, Inc. SN 311,259. Pub. 6–23–70. Filed 11–4–68.

898,484. SUNFACE DESIGN. 16 Concerto Soloists, Inc. SN 316,034. Pub. 6–23–70. Filed 12–27–68.

898,485. MARY JOHNSON SEWING STUDIOS INC. AND DESIGN. Mary Johnson Sewing Studios, Inc. SN 322,596. Pub. 6–23–70. Filed 3–24–69.

898,486. BEC AND DESIGN. Basic Education Computers, Inc. SN 323,674. Pub. 6–23–70. Filed 4–4–69.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 14 — Metals and Metal Castings and Forgings

898,487. CF & I Steel Corporation, Denver, Colo. SN 327,740. Filed P.R. 5–20–69 ; Am. S.R. 5–22–70.

HI-CANT

For Tie Plates, a Support Structure for Railroad Rails (Int. Cl. 6).
First use Apr. 25, 1969.

Class 16 — Protective and Decorative Coatings

898,488. McCloskey Varnish Co., Philadelphia. Pa. SN 291,083. Filed P.R. 2–14–68 ; Am. S.R. 1–27–70.

BE-TWEEN-KOTE

For Combination Cleaning and Adhesive Coating Composition or Preparation for Use Between Coats (Int. Cl. 2).
First use Dec. 4, 1967.

Class 17 — Tobacco Products

898,489. Johan Henrik Andresen, d.b.a. J. L. Tiedemanns Tobaksfabrik, Oslo, Norway. SN 315,142. Filed P.R. 12–24–68 ; Am. S.R. 4–22–70.

TIEDEMANNS

For Smoking Tobacco, Cigars, and Cigarettes (Int. Cl. 34).
First use Sept. 5, 1934 ; in commerce May 1, 1967.

Class 22 — Games, Toys, and Sporting Goods

898,490. Milton Bradley Company, Springfield, Mass. SN 322,265. Filed P.R. 3–20–69 ; Am. S.R. 6–1–70.

CUT UP

For Equipment Sold as a Unit for Playing a Game for Little Girls Involving Materials for Cutting With Scissors, for Simulating Spending Money in a Fashion Store, and for Fashion Coordinating Outfits for Dolls (Int. Cl. 28).
First use Dec. 15, 1968.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

898,491. Inventors Products Company, Minneapolis, Minn. SN 317,059. Filed P.R. 1–21–69 ; Am. S.R. 2–24–70.

COHO

For Fish Filleting Boards (Int. Cl. 20).
First use Sept. 19, 1968.

Class 46 — Foods and Ingredients of Foods

898,492. Wardley Products Company, Inc., Long Island City, N.Y. SN 293,186. Filed P.R. 3–13–68 ; Am. S.R. 6–1–70.

VACATION FOOD

For Food for Fish (Int. Cl. 31).
First use July 18, 1966.

898,493. Ward Foods, Inc., d.b.a. Plymouth Rock Provision Co., New York, N.Y. SN 320,204. Filed P.R. 2–26–69. Am. S.R. 3–9–70.

Quebec

For Boiled, Canned and Refrigerated Hams, and Refrigerated Salami, Baloney, and Liverwurst (Int. Cl. 29).
First use November 1966.

898,494. Mama Cookie Bakeries, Inc., Chicago, Ill. SN 343,052. Filed P.R. 11-10-69; Am. S.R. 6-17-70.

Mama's LEMON RINGS

For Cookies (Int. Cl. 30).
First use 1946.

898,495. Mama Cookie Bakeries, Inc., Chicago, Ill. SN 343,053. Filed P.R. 11-10-69; Am. S.R. 6-17-70.

Mama's Orange RINGS

For Cookies (Int. Cl. 30).
First use 1946.

Class 47 — Wines

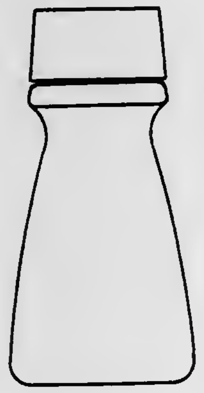
898,496. Alliance Vinicole de Bourgogne, Societe Anonyme, Nuits-Saint-Georges (Cote d'Or), France. SN 333,240. Filed P.R. 7-23-69; Am. S.R. 2-9-70.

COLCOMBET

Priority claimed under Sec. 44(d) on French Reg. No. 762,352, dated May 8, 1969.
For Wines (Int. Cl. 33).

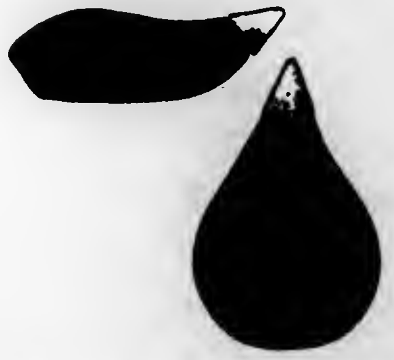
Class 52 — Detergents and Soaps

898,497. Beecham Inc., Clifton, N.J. SN 310,297. Filed P.R. 10-23-68; Am. S.R. 12-31-69.



For Anti-Dandruff Hair Shampoo (Int. Cl. 3).
First use Aug. 5, 1968.

898,498. Molnlycke Aktiebolag, Krokslatt, Goteborg, Sweden. SN 312,793. Filed P.R. 11-21-68; Am. S.R. 5-13-70.



Priority claimed under Sec. 44(d) on Swedish application filed July 12, 1968; Reg. No. 127,109, dated Apr. 25, 1969. The mark consists of the representation of a tear-shaped container.
For Liquid Bath and Toilet Soap (Int. Cl. 3).

898,499. The Drackett Company, Cincinnati, Ohio. SN 323,437. Filed P.R. 4-2-69; Am. S.R. 6-15-70.

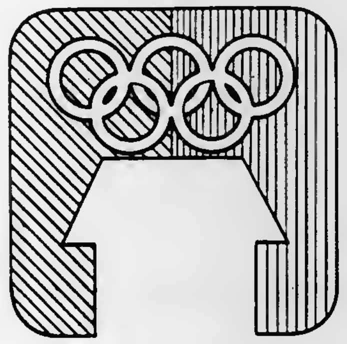
CHLORIDE-PLUS

For Disinfectant Toilet Bowl Cleaner (Int. Cl. 3).
First use Feb. 19, 1969.

Service Mark

Class 100 — Miscellaneous

898,500. Comite Organizador de los Juegos de la XIX Olimpiada, Mexico City, Mexico. SN 286,570. Filed 12-11-67.



The drawing is lined for the colors green and red. Applicant disclaims all rights to Olympic symbols embodied in the mark.
For Furnishing Housing Facilities for Contestants and Officials Participating in International Amateur Sporting Events (Int. Cl. 42).
First use on or about Sept. 1, 1967; in commerce at least as early as Sept. 4, 1967.

TRADEMARK REGISTRATIONS RENEWED

35,212. PEACH BLOSSOMS. Cl. 46 (Int. Cl. 30). 10-19-1900.
79,954. MERCER. Cl. 43 (Int. Cl. 23). 10-25-10.
79,955. MERLIN. Cl. 43 (Int. Cl. 23). 10-25-10.
80,055. "ANVIL" AND DESIGN. Cl. 39 (Int. Cl. 25). 11-1-10.
80,276. FARMSIDE. Cl. 46 (Int. Cl. 29). 11-29-10.
80,287. OAKITE. Cl. 52 (Int. Cl. 3). 11-29-10.
268,493. JAEGER. Cl. 39 (Int. Cl. 25). 3-18-30.
270,231. NISSEN. Cl. 11 (Int. Cl. 16). 4-29-30.
271,378. "DRIP-O-LATOR" AND TWO UNDERLINES. Cl. 13 (Int. Cl. 21). 6-3-30.
272,073. THE WRIGHT SHOE FOR MEN. Cl. 39 (Int. Cl. 25). 6-24-30.
272,355. DUALWEAR. Cl. 39 (Int. Cl. 25). 7-8-30.
272,635. MORISCA. Cl. 51 (Int. Cl. 3). 7-8-30.
272,638. POLYCHROME FLINTS. Cl. 12 (Int. Cl. 19). 7-8-30.
272,804. USG. Cl. 16 (Int. Cl. 2). 7-15-30.
273,064. MICROMATIC. Cl. 23 (Int. Cl. 8). 7-22-30.
274,266. Q.O.C. Cl. 13 (Int. Cl. 6). 8-26-30.
275,403. SEWHANDY. Cl. 23 (Int. Cl. 7). 9-23-30.
275,745. CALUBE. Cl. 15 (Int. Cl. 4). 9-30-30.
276,005. MEN-ZO-LIN. Cl. 18 (Int. Cl. 5). 10-7-30.
276,458. "B" AND DESIGN. Cl. 18 (Int. Cl. 5). 10-21-30.
276,855. POLO. Cl. 39 (Int. Cl. 25). 10-28-30.
277,191. WAXGLO. Cl. 16 (Int. Cl. 3). 11-11-30.
277,495. MICRO-CEL. Cl. 1 (Int. Cl. 1). 11-11-30.
277,566. ACEY-DEUCY. Cl. 22 (Int. Cl. 28). 11-18-30.
277,582. LITTLE DARLING. Cl. 46 (Int. Cl. 29). 11-18-30.
443,881. DANCING PIG (DESIGN). Cl. 46 (Int. Cl. 29). 4-4-50.

517,080. HOOVER. Cl. 39 (Int. Cl. 25). 11-1-49.
521,944. GAME WELL AND DESIGN. Cl. 21 (Int. Cl. 9). 3-7-50.
521,961. CLENCHED FIST (DESIGN). Cl. 21 (Int. Cl. 9). 3-7-50.
522,351. PHONOLOG. Cl. 38 (Int. Cl. 16). 3-14-50.
523,323. DONCASTER. Cl. 39 (Int. Cl. 25). 4-4-50.
525,474. VALENTINES. Cl. 39 (Int. Cl. 25). 5-23-50.
525,952. MONITOR AND DESIGN. Cl. 21 (Int. Cl. 9). 6-6-50.
526,494. DUBLIN TWIST. Cl. 39 (Int. Cl. 25). 6-20-50.
526,552. WYANDOTTE AND DESIGN. Cl. 52 (Int. Cl. 3). 6-20-50.
526,562. CORDENKA. Cl. 43 (Int. Cl. 23). 6-20-50.
526,665. LOW'N'BEHOLD. Cl. 39 (Int. Cl. 25). 6-20-50.
526,668. MEYOA. Cl. 39 (Int. Cl. 25). 6-20-50.
526,880. MARIMA. Cl. 39 (Int. Cl. 25). 6-27-50.
527,030. OPERATOR 25 AND DESIGN. Cl. 101 (Int. Cl. 35). 6-27-50.
527,060. LA CROSS. Cl. 51 (Int. Cl. 3). 7-4-50.
527,086. LOKWEAVE. Cl. 42 (Int. Cl. 27). 7-4-50.
527,145. ACME. Cl. 23 (Int. Cl. 7). 7-4-50.
527,162. PK PERMA-KOOL AND DESIGN. Cl. 12 (Int. Cl. 6). 7-4-50.
527,173. CORONA. Cl. 23 (Int. Cl. 8). 7-4-50.
527,301. PLUSMIN. Cl. 42 (Int. Cl. 27). 7-4-50.
528,000. PW. Cl. 23 (Int. Cl. 7). 7-25-50.
528,144. UNION LABEL. Cl. 39 (Int. Cl. 25). 7-25-50.
528,276. INKOL. Cl. 6 (Int. Cl. 1). 8-1-50.
528,329. ROLLS. Cl. 27 (Int. Cl. 14). 8-1-50.
528,591. HOLLAND HOUSE. Cl. 45 (Int. Cl. 32). 8-8-50.
528,743. FLOWER CLUSTER. Cl. 51 (Int. Cl. 3). 8-8-50.
528,802. MOUNTAIN VALLEY. Cl. 45 (Int. Cl. 32). 8-8-50.
528,845. KIT. Cl. 19 (Int. Cl. 12). 8-8-50.
528,858. MELODEE. Cl. 42 (Int. Cl. 24). 8-8-50.
528,871. DBB AND DESIGN. Cl. 100 (Int. Cl. 42). 8-8-50.
528,891. THREAD SEAL. Cl. 12 (Int. Cl. 17). 8-8-50.
529,452. RAMON ALLONES AND DESIGN. Cl. 17 (Int. Cl. 34). 8-22-50.
529,594. PAINT WITHOUT PAINTS. Cl. 22 (Int. Cl. 28). 8-22-50.
529,595. STICK 'EM. Cl. 22 (Int. Cl. 28). 8-22-50.
529,723. CERBERUS. Cl. 21 (Int. Cl. 9). 8-29-50.
529,784. MISCELLANEOUS DESIGN. Cl. 2 (Int. Cl. 3). 8-29-50.
529,804. NAN FLOWER. Cl. 39 (Int. Cl. 25). 9-29-50.
530,147. KELTROL. Cl. 16 (Int. Cl. 2). 9-5-50.
530,359. CRAFTSMAN. Cl. 12 (Int. Cl. 19). 9-5-50.
530,406. CAREY. Cl. 100 (Int. Cl. 42). 9-5-50.
530,452. ARMSTRONG. Cl. 23 (Int. Cls. 7 and 8). 9-12-50.
530,568. UNIVERSAL. Cl. 2 (Int. Cl. 20). 9-12-50.
530,831. HULSTKAMP AND DESIGN. Cl. 49 (Int. Cl. 33). 9-19-50.
531,207. CRAFTSMAN. Cl. 14 (Int. Cl. 6). 9-26-50.
531,237. GAHNA RANCHO. Cl. 1 (Int. Cl. 18). 9-26-50.
531,279. ARMAOA. Cl. 42 (Int. Cl. 24). 9-26-50.
531,437. SEASIDE. Cl. 15 (Int. Cl. 4). 10-3-50.
531,520. AMOTROCIN. Cl. 18 (Int. Cl. 5). 10-3-50.
531,602. IDEAL AND DESIGN. Cl. 23 (Int. Cls. 7 and 8). 10-10-50.
531,624. JERZEE. Cl. 46 (Int. Cl. 29). 10-10-50.
531,705. PYLE-NATIONAL. Cl. 21 (Int. Cl. 9). 10-10-50.
531,732. FIBREMASTER. Cl. 23 (Int. Cl. 7). 10-10-50.
531,868. FULLERGRIPT. Cl. 23 (Int. Cl. 7). 10-10-50.
531,952. SIMONDS AND DESIGN. Cls. 4, 14, 23, and 26 (Int. Cls. 3, 6, 7, 8, and 9). 10-17-50.
531,954. SADDLER'S RAILROAD TIME BOOK. Cl. 37 (Int. Cl. 16). 10-17-50.
532,012. GEM-ART. Cl. 28 (Int. Cl. 14). 10-17-50.
532,217. PRESIDENT. Cl. 3 (Int. Cl. 18). 10-17-50.
532,275. DELL CROSSWORD PUZZLES. Cl. 38 (Int. Cl. 16). 10-24-50.
532,283. OVER-KNEE. Cl. 39 (Int. Cl. 25). 10-24-50.
532,319. SIMMONS. Cl. 32 (Int. Cl. 20). 10-24-50.
532,371. USCO AND DESIGN. Cl. 21 (Int. Cl. 9). 10-24-50.
532,521. LUVEX. Cl. 21 (Int. Cl. 11). 10-24-50.
532,533. KING. Cl. 43 (Int. Cl. 23). 10-24-50.
532,587. TWIST TWILL. Cl. 42 (Int. Cl. 24). 10-24-50.
532,660. MASONITE. Cl. 12 (Int. Cls. 17 and 19). 10-31-50.
532,689. PETER'S. Cl. 46 (Int. Cl. 30). 10-31-50.
532,781. ORENOL. Cl. 18 (Int. Cl. 5). 10-31-50.
532,808. PORTO-MULLER. Cl. 23 (Int. Cl. 7). 10-31-50.
532,832. UNI TEMP UNIFORM TEMPERATURE. Cl. 12 (Int. Cl. 17). 10-31-50.
532,864. WEBSTAY. Cl. 13 (Int. Cl. 6). 10-31-50.
532,873. MANOR HILL. Cl. 46 (Int. Cls. 29 and 30). 10-31-50.
532,937. FOREST PARK. Cl. 49 (Int. Cl. 33). 10-31-50.
533,064. XL RIPPER AND DESIGN. Cl. 23 (Int. Cl. 7). 11-7-50.
533,246. WILSON'S ICE CREAM—IT'S SO-O-O GOOD. Cl. 46 (Int. Cl. 30). 11-7-50.
533,311. NELSON OAK. Cl. 1 (Int. Cl. 18). 11-14-50.
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CF & I Steel Corp., Denver, Colo. 898,487. Cl. 14.
Cadre Industries Corp., Endicott, N.Y. 773,559, canc. Cl. 21.
Caine's Mutiny, Inc., New York, N.Y. 898,360, pub. 6–23–70. Cl. 39.
Callaway Mills Company, La Grange, Ga. 773,740, canc. Cl. 42.
Cam Corp., Greensboro, N.C. 773,628, canc. Cl. 26.
Canterbury Belts, Ltd., New York, N.Y. 773,712, canc. Cl. 39.
Capital City Discount Film Developing Service, Richmond, Va. 898,475, pub. 4–28–70. Cl. 106.
Carousel Fashions, Inc., New York, to Carousel Products Inc., Brooklyn, N.Y. 898,367, pub. 1–20–70. Cl. 40.
Carousel Products Inc.: *See*—
  Carousel Fashions, Inc.
Carpco Research & Engineering, Inc., Jacksonville, Fla. 898,239, pub. 4–28–70. Cl. 23.
Carter Motor Co., Chicago, Ill. 534,095, ren. 9–8–70. Cl. 21.
Carton Closing Corp., Pittsburgh, Pa. 773,484, canc. Cl. 13.
Cary Corp., Westport, Conn. 898,139, pub. 4–28–70. Cl. 18.
Castlewood International Corp., Miami, Fla. 898,460, pub. 6–23–70. Cl. 101.
Castro Convertible Corp., New Hyde Park, N.Y. 898,302, pub. 6–23–70. Cl. 32.
Cecil Foods, Inc., Milford, Ind. 773,791, canc. Cl. 46.
Central States Products Co., St. Louis, Mo. 898,024, pub. 2–10–70. Cl. 1.
Centsable Products, Inc., Schiller Park, Ill. 898,042, pub. 6–23–70. Cl. 2.
Cerberus A.G., Maennedorf, Switzerland. 529,723, ren. 9–8–70. Cl. 21.
Cerro Corp., New York, N.Y. 898,181, pub. 6–23–70. Cl. 21.
Chaban, Joseph M., d.b.a. Chaban Enterprises, Bensenville, Ill. 773,414, canc. Cl. 2.
Chapman, Richard L., d.b.a. Iso-Weight, Waterloo, Iowa. 898,200, pub. 6–23–70. Cl. 22.
Chase-Shawmut Co., The, Newburyport, Mass. 534,033, ren. 9–8–70. Cl. 21.
Chatillon Societa Anonima Italiana Per Le Fibre Tessili Artificial S.p.A., Milan, Italy. 898,025, pub. 6–23–70. Multiple Class (Classes 1 and 43).
Child Guidance Products, Inc., Toledo, Ohio. 529,594-5, ren. 9–8–70. Cl. 22.
Church & Dwight Co., Inc., New York, from Tidy House Products, Co., Omaha, Nebr. 898,419, pub. 9–2–69. Cl. 51.
Ciba Corp., Summit, N.J. 534,295, ren. 9–8–70. Cl. 18.
Cifuentes y Compania, Madrid, Spain. 529,452, ren. 9–8–70. Cl. 17.
Cine Vox Productions, Inc., New York, N.Y. 898,481, pub. 6–23–70. Cl. 107.
Cipher Data Products, San Diego, Calif. 898,186, pub. 6–23–70. Cl. 21.
Cleanamation, Inc., Anderson, Ind. 773,843, canc. Cl. 103.
Columbia Industries, Inc., San Antonio, Tex. 898,204, pub. 6–23–70. Cl. 22.
Columbia Products Co., Columbia, S.C. 773,569, canc. Cl. 22.
Colonial Seafood, Inc., Pass Christian, Miss. 773,783, canc. Cl. 46.
Colonial Stores Inc., Norfolk, Va. 773,720, canc. Cl. 39.
Columbia Minerva Corp., New York, N.Y. 773,743, canc. Cl. 43.
Combined Paper Mills, Inc., Combined Locks, Wis. 898,319, pub. 6–23–70. Cl. 37.
Comite Organizador de Los Juegos de la XIX Olimpiada, Mexico City 20, Mexico. 898,500. Cl. 100.
Commercial Solvents Corp., New York, N.Y. 773,513, canc. Cl. 18.
Compagnie de Saint-Gobain, (Hauts-de-Seine), France. 898,072, pub. 6–23–70. Cl. 12.
Comput-A-Credit, Inc., New York, N.Y. 898,325, pub. 6–23–70. Cl. 38.
Congoleum Industries, Inc., Kearny, N.J. 898,174, pub. 6–23–70. Cl. 20.
Conoflow Corp., Blackwood, N.J. 898,254, pub. 6–23–70. Cl. 23.
Congoleum Industries, Inc., Kearny, N.J. 898,175, pub. 6–23–70. Cl. 20.
Coot Industries, San Francisco, Calif. 898,166–7, pub. 6–23–70. Cl. 19.
Construction Specialties, Inc., Cranford, N.J. 898,076, pub. 9–8–70. Cl. 12.
Conversion Chemical Corp., Rockville, Conn. 898,060–1, pub. 6–23–70. Cl. 6.
Consolidated Oil Co., Inc., Lebanon, Tenn. 898,452, pub. 5–12–70. Cl. 100.
Continental Curtain Closures, Inc.: *See*—
  Seagrave Corp., The.
Continental Nonferrous Foundry, Inc., Minneapolis, Minn. 898,110, pub. 6–23–70. Cl. 13.
Continental Oil Co., Ponca City, Okla. 898,113, pub. 8–29–67. Cl. 15.
Conveyor Heat Products Corp.: *See*—
  Smokontrol Corp. of America.
Cooper's, Inc., Kenosha, Wis. 532,283, ren. 9–8–70. Cl. 39.
Consolidated Cigar Corp., New York, N.Y. 898,131, pub. 2–3–70. Cl. 17.
Consolidated Cigar Corp., New York, N.Y. 898,133–6, pub. 6–23–70. Cl. 17.
Consolidated Foods Corp., New York, N.Y. 898,380, pub. 3–24–70. Cl. 43.
Consolidated Papers, Inc., Winconsin Rapids, Wis. 533,535, ren. 9–8–70. Cl. 37.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 898,320–1, pub. 6–23–70. Cl. 37.
Continental Aluminum Co., Inc., McPherson, Kans. 532,832, ren. 9–8–70. Cl. 12.
Corning Leader, Inc., Corning, N.Y. 773,696, canc. Cl. 38.
Corona Clipper Co., Corona, Calif. 527,173, ren. 9–8–70. Cl. 23.
Cotter & Co., Chicago, Ill. 898,126, pub. 6–23–70. Cl. 16.
Cournoyer Industries, Inc., Hialeah, Fla. 898,369, pub. 6–23–70. Cl. 40.
Cramer Products, Inc., Gardner, Kans. 898,203, pub. 6–23–70. Cl. 22.
Curtis, Helene, Industries, Inc., Chicago, Ill. 898,416, pub. 6–23–70. Cl. 51.
Cyclops Corp., Pittsburgh, Pa. 898,094, pub. 6–23–70. Cl. 12.
Data Packaging Corp., Cambridge, Mass. 898,314, pub. 6–23–77. Cl. 36.
David and David, Inc., Long Island City, N.Y. 898,368, pub. 6–23–70. Cl. 40.
Davis, G. W., Corp., Richmond, Ind. 898,248, pub. 6–23–70. Cl. 23.
Dejur-Amsco Corp., Long Island City, N.Y. 773,677, canc. Cl. 37.
Dell Publishing Co., Inc., New York, N.Y. 532,275, ren. 9–8–70. Cl. 38.
Delta Design, Inc., La Mesa, Calif. 898,280, pub. 6–23–70. Cl. 26.
De Luxe Reading Corp., Elizabeth, N.J. 773,572, canc. Cl. 22.
Dentor Enterprises Ltd., Toronto, Ontario, Canada. 898,198, pub. 6–23–70. Cl. 22.
Detroit Ball Bearing Co. of Michigan, Detroit, Mich. 528,871, ren. 9–8–70. Cl. 100.
Develco Mfg. Co., Cleveland, Ohio. 898,237, pub. 6–23–70. Cl. 23.
De Witt Drug & Beauty Products, Inc., from De Witt International Corp., Great Neck, N.Y. 898,156, pub. 4–7–70. Cl. 18.
De Witt International Corp.: *See*—
  De Witt Drug & Beauty Products, Inc.
Diehl, Inc., Defiance, Ohio. 531,624, ren. 9–8–70. Cl. 46.
Dietzen's Bakeries, Inc., Kokomo, Ind. 898,405, pub. 6–23–70. Cl. 46.
Dixico, Inc., from Dixie Wax Paper Co., Dallas, Tex. 898,040, pub. 2–3–70. Multiple Class (Classes 2 and 37).
Dixie Wax Paper Co.: *See*—
  Dixico, Inc.
Dolly Madison Foods, Inc., d.b.a. Woodlawn Farm Dairy Co., Scranton, Pa. 773,785, canc. Cl. 46.
Drackett Co., The, Cincinnati, Ohio. 898,437, pub. 6–23–70. Cl. 52.
Dracon Industries, Van Nuys, Calif. 898,185, pub. 6–23–70. Cl. 21.
Do-It-Yourself Playhouse-Theatre, New York, N.Y. 773,866, canc. Cl. 38.
Douglas Furniture Corp., Chicago, Ill. 898,303, pub. 6–23–70. Cl. 32.
Dover Corp., New York, N.Y. 533,541, ren. 9–8–70. Cl. 13.
Dow Chemical Co., The, Midland, Mich. 898,345, pub. 6–23–70. Cl. 38.
Drackett Co., The, Cincinnati, Ohio. 898,298, pub. 6–23–70. Cl. 29.
Drackett Co., The, Cincinnati, Ohio. 898,499. Cl. 52.
Drug Guild Co-Operative, Inc., Brooklyn, N.Y. 898,144, pub. 6–23–70. Cl. 18.
Dumas-Wilson & Co., St. Louis, Mo. 773,530, canc. Cl. 18.
Dun, R. G., Cigar Corp., Lima, Ohio. 898,132, pub. 4–7–70. Cl. 17.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 773,458, canc. Cl. 10.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 898,114, pub. 6–23–70. Cl. 15.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 787,122, pub. 6–23–70. Cl. 15.
Dynagraphic Systems, Inc., Cedar Knolls, N.J. 898,058, pub. 4–21–70. Multiple Class (Classes 6, 21, and 37).
Dynamit Nobel Aktiengesellschaft, Troisdorf, Bez, Cologne, Germany. 773,401, canc. Cl. 1.

Eastman Kodak Co., Rochester, N.Y. 898,063, pub. 6–23–70. Cl. 6.
Eastpac Paper Converting Co., San Francisco, Calif. 773,674, canc. Cl. 37.
Eaton Chemical Corp., Detroit, Mich. 773,460, canc. Cl. 11.
Eaton Yale & Towne Inc., Cleveland, Ohio. 898,189, pub. 6–23–70. Cl. 21.
Eberle Tanning Co., Westfield, Pa. 533,311, ren. 9–8–70. Cl. 1.
Economics Laboratory, Inc., St. Paul, Minn. 773,829, canc. Cl. 52.
Edelbrock Equipment Co., El Segundo, Calif. 898,232, pub. 6–23–70. Cl. 23.
Edu-Cast Inc., Detroit, Mich. 898,309, pub. 4–21–70. Multiple Class (Classes 36 and 38).
Eduquip, Inc., Dorchester, Mass. 898,279, pub. 6–23–70. Cl. 26.
Egcart, Inc., Woodridge, N.Y. 898,046, pub. 6–23–70. Cl. 2.
Eigen, Dorothy, Inc., Chicago, Ill. 773,731, canc. Cl. 40.
Electra Megadyne, Inc., Los Angeles, Calif. 773,554, canc. Cl. 21.
Electro-Mechanical Research, Inc., d.b.a. Solartron, Inc., Anaheim, Calif. 773,634, canc. Cl. 26.
Electro Producers Laboratories, Inc., Chicago, Ill. 898,283, pub. 6–23–70. Cl. 26.
Emerson Electric Co., St, Louis, Mo. 532,521, ren. 9–8–70. Cl. 21.
Emerson Electric Co., St. Louis, Mo. 534,094, ren. 9–8–70. Cl. 21.
Emhart Corp.: *See*—
  Kerr-McGee Chemical Corp.
Enka N.V., Arnhem, Netherlands. 526,562, ren. 9–8–70. Cl. 43.
Entech Corp., Des Plaines, Ill. 773,592–3, canc. Cl. 23.
Enterprise Aluminum Co., The, Massillon, Ohio. 271,378, ren. 9–8–70. Cl. 13.
Evans, Inc., Chicago, Ill. 898,347, pub. 6–17–69. Cl. 39.
Everingham Brothers Ltd., Toronto, Ontario, Canada. 898,103, pub. 6–23–70. Cl. 13.
Excelite (Quebec) Ltd.: *See*—
  Graham Products Ltd.
Federal Pacific Electric Co., Newark, N.J. 773,635, canc. Cl. 26.
Federal Sweets & Biscuits Co., Inc., Clifton, N.J. 898,399, pub. 6–23–70. Cl. 46.
Federated Department Stores, Inc., d.b.a. I. Magnin & Co., Cincinnati, Ohio. 526,668, ren. 9–8–70. Cl. 39.
Federated Department Stores, Inc., d.b.a. I. Magnin & Co., Cincinnati, Ohio. 526,880, ren. 9–8–70. Cl. 39.
Federated Department Stores, Inc., d.b.a. Bullock's, Los Angeles, Calif. 898,464, pub. 6–23–70. Cl. 101.
Fedtro, Inc., Rockville Centre, N.Y. 898,194, pub. 6–23–70. Cl. 21.
Fidelity Alarm Systems, Inc., Athens, Tenn. 773,551, canc. Cl. 21.
Field Enterprises, Inc., Chicago, Ill. 534,291, ren. 9–8–70. Cl. 38.
Fieldcrest Mills, Inc., Spray, N.C. 773,563, canc. Cl. 21.
Fife Pharmaceuticals, Inc., Elberton, Ga. 898,140, pub. 6–23–70. Cl. 18.
Florentina Shoe Societa a Responsabilita Limitata, Italy. 898,363, pub. 6–23–70. Cl. 39.
Florida Sunpapers, Inc., Kissimmee, Fla. 898,336, pub. 6–23–70. Cl. 38.
Food Technology, Inc., Chicago, Ill. 898,396, pub. 6–23–70. Cl. 46.
Formex Corp., Elkhart, Ind. 898,078, pub. 6–23–70. Multiple Class (Classes 12, 19, and 22).
Formulabs Industrial Inks, Inc., Escondido, Calif. 898,281, pub. 6–23–70. Cl. 26.
Franklin Stores Corp., d.b.a. Barkers, Bronx, N.Y. 898,351, pub. 6–23–70. Cl. 39.
Franklin Stores Corp., d.b.a. Barkers, Bronx, N.Y. 898,438, pub. 6–23–70. Cl. 52.
Frigorifico Bordon S/A, Sao Paulo, Brazil. 898,394, pub. 6–23–70. Cl. 46.
Frolic Outlet Warehouse, Inc., Jonesboro, Ark. 898,457, pub. 6–23–70. Cl. 101.
Fruehauf Corp., Fairless Hills, Pa. 773,536, canc. Cl. 19.
Fulgurit- Vertriebsgesellschaft m.b.H., Luthe via Wunstorf, Germany. 898,074, pub. 6–23–70. Cl. 12.
Fuller Brush Co., The, East Hartford, Conn. 531,868, ren. 9–8–70. Cl. 23.
Fuller Co., Catasauqua, Pa. 898,226, pub. 2–17–70. Cl. 23.
GAF Corp., New York, N.Y. 898,176, pub. 6–23–70. Cl. 20.
GAF Corp., New York, N.Y. 898,231, pub. 6–23–70. Multiple Class (Classes 23 and 26).
G.E.M. Products, Inc., Carol Stream, Ill. 898,235, pub. 6–23–70. Cl. 23.
Gaertner Scientific Corp., The, Chicago, Ill. 898,447, pub. 6–23–70. Cl. 100.
Galloway, Barry, Lawndale, Calif. 898,164, pub. 6–23–70. Cl. 19.
Garfinckel, Brooks Brothers, Miller & Rhoads, Inc., New York, N.Y. 276,855, ren. 9–8–70. Cl. 39.
Geigy Chemical Corp., Ardsley, N.Y. 898,054, pub. 2–24–70. Cl. 6.
General Foods Corp., White Plains, N.Y. 80,276, ren. 9–8–70. Cl. 46.
General Foods Corp., White Plains, N.Y. 898,386, pub. 6–23–70. Cl. 45.
General Mills, Inc., Minneapolis, Minn. 898,388, pub. 6–23–70. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 898,397, pub. 4–28–70. Cl. 46.
General Time Corp., Phoenix, Ariz. 534,019, ren. 9–8–70. Cl. 27.
General Tire & Rubber Co., The, Akron, Ohio. 898,037, pub. 6–23–70. Cl. 1.
Genesco Inc., Nashville, Tenn. 525,474, ren. 9–8–70. Cl. 39.
Genesco Inc., Nashville, Tenn. 773,717, canc. Cl. 39.
Genova Products, Davison, Mich. 898,108, pub. 6–23–70. Multiple Class (Classes 13 and 23).
Gibson, Inc., Kalamazoo, Mich. 898,315, pub. 6–23–70. Cl. 36.
Gioia, Alfonso, & Sons, Inc., Rochester, N.Y. 898,393, pub. 6–23–70. Cl. 46.
Globemaster, Inc., Houston, Tex. 898,225, pub. 12–23–69. Cl. 23.
Glover, William L., Ridgely, Tenn. 898,343, pub. 6–23–70. Cl. 38.
Glyco Chemicals, Inc., New York, N.Y. 898,052, pub. 12–30–69. Cl. 6.
Goldcraft Jewelers Inc., New York, N.Y. 773,641, canc. Cl. 28.
Gold Line Connector, Inc., Norwalk, Conn. 898,197, pub. 6–23–70. Cl. 21.
Gooding's Million Dollar Midways, Inc., Boston, Mass. 898,483, pub. 6–23–70. Cl. 107.
Good Life, The, North Hollywood, Calif. 898,154, pub. 6–23–70. Cl. 18.
Goodrich, B. F., Co., The, Akron, Ohio. 773,665, canc. Cl. 35.
Gorham Corp.: *See*—
  Textron, Inc.
Grace, W. R., & Co., New York, N.Y. 533,701, ren. 9–8–70. Cl. 46.
Grace, W. R., & Co., New York, N.Y. 898,123, pub. 6–23–70. Cl. 16.
Graff, George B., Co., Cambridge, Mass. 773,679, canc. Cl. 37.
Graham Products Ltd., Inglewood, Ontario, from Excelite (Quebec) Ltd., Montreal, Quebec, Canada. 898,159, pub. 6–23–70. Cl. 19.
Grant, Joseph A., d.b.a. Raz-Mor Products Co., Newport Beach, Calif. 773,767, canc. Cl. 46.
Greenberg, B. B., Co., Cranston, R.I. 898,366, pub. 10–1–68. Cl. 40.
Guerrero, Gricelda, Elmhurst, N.Y. 898,141, pub. 6–23–70. Cl. 18.
Gulf+Western Precision Engineering Co., Manchester, Conn. 521,944, ren. 9–8–70. Cl. 21.
Gulf+Western Precision Engineering Co., Manchester, Conn. 521,961, ren. 9–8–70. Cl. 21.
Guyson Industrial Equipment Ltd., Otley, England. 898,246, pub. 6–23–70. Cl. 23.
Hachette, Inc., New York, N.Y. 898,324, pub. 9–16–69. Cl. 38.
Hafnia Konserves A/S, Albertslund, Denmark. 443,881, ren. 9–8–70. Cl. 46.
Hamm, Theodore, Brewing Co., St. Paul, Minn. 898,407, pub. 6–23–70. Cl. 48.
Happy Chef Systems, Inc., Mankato, Minn. 898,453–4, pub. 6–23–70. Cl. 100.
Harmonic Reed Corp., d.b.a. Nova Laboratories, West Conshohocken, Pa. 898,265, pub. 3–11–69. Cl. 26.
Heesemann, Karl, Bad Oeynhausen, Germany. 773,577, canc. Cl. 23.
Helme Products, Inc., New York, N.Y. 534,601, ren. 9–8–70. Cl. 17.
Henckels, J. A., Zwillingswerk Aktiengesellschaft, Solingen, Germany. 773,491, canc. Cl. 14.
Heritage House Products, Inc., Pittsburgh, Pa. 773,589, canc. Cl. 23.
Hermes S.A., Paris, France. 773,814, canc. Cl. 51.
Heritage House Products, Inc., Pittsburgh, Pa. 773,788, canc. Cl. 46.
Heublein, Inc., Hartford, Conn. 532,937, ren. 9–8–70. Cl. 49.
Heyden Newport Chemical Corp., New York, N.Y. 773,399, canc. Cl. 1.
Hi-G Inc., New York, N.Y. 534,738, ren. 9–8–70. Cl. 39.
Hill Top Orchards & Nurseries, Inc., Hartford, Conn. 773,398, canc. Cl. 1.
Hochreuter, Johann, d.b.a. Hochreuter & Baum, Ansbach, Germany. 898,236, pub. 6–23–70. Cl. 23.
Hoggson & Pettis Mfg. Co., The, Orange, Conn. 773,611, canc. Cl. 23.
Holland House Brands, Inc., Ridgefield, N.J. 528,591, ren. 9–8–70. Cl. 45.
Hollingsworth, John D., on Wheels, Inc., Greenville, S.C. 898,245, pub. 6–23–70. Cl. 23.
House for Men, Inc., The, Chicago, Ill. 773,815, canc. Cl. 51.
Hubro N.V. and Hoppe's Distilleerderij N.V., d.b.a. Hulstkamp's Distilleerderij, Rotterdam, Holland. 530,837, ren. 9–8–70. Cl. 49.
Huisman Bros. Inc., New York, N.Y. 898,294, pub. 6–23–70. Cl. 28.
Hydronic Industries Inc., Pelham Manor, N.Y. 898,305, pub. 6–23–70. Cl. 34.
Ideal Industries, Inc., Sycamore, Ill. 531,002, ren. 9–8–70. Cl. 23.
Imagineering, Inc., University City, from J. R. Shaughnessy, Clayton, Mo. 898,458, pub. 6–23–70. Cl. 101.
Industrial Electronics Co., Inc., d.b.a. Monitor Controller Co., Rockland, Mass. 525,952, ren. 9–8–70. Cl. 21.
Industrial Fabricators, Inc., Doraville, Ga. 773,579, canc. Cl. 23.
Industrial Inventions, Inc., Monmouth Junction, N.J. 898,275, pub. 3–10–70. Cl. 26.
Infinetics Inc., Wilmington, Del. 898,188, pub. 6–23–70. Cl. 21.
Information General Corp., Woodland Hills, Calif. 898,278, pub. 6–23–70. Cl. 26.
Ingersoll-Rand Co., New York, N.Y. 898,238, pub. 1–6–70. Cl. 23.
Ingersoll-Rand Co., New York, N.Y. 898,250, pub. 6–23–70. Cl. 23.
Integrated Container Service, Inc., New York, N.Y. 898,473, pub. 6–23–70. Cl. 105.
International Duralin Corp., Chicago, Ill. 773,735, canc. Cl. 42.

International Metal Polish Co., Inc., Indianapolis, Ind. 898,049, pub. 6-23-70. Cl. 4.
International Minerals & Chemical Corp., Skokie, Ill. 898,088-9, pub. 6-23-70. Cl. 12.
International Productions, Inc., Jacksonville, Fla. 898,465, pub. 6-23-70. Cl. 101.
International Rectifier Corp., El Segundo, Calif. 773,547, canc. Cl. 21.
Intertherm, Inc., St. Louis, Mo. 898,469, pub. 6-23-70. Multiple Class (Classes 101, 102, and 103).
Inventors Products Co., Minneapolis, Minn. 898,491. Cl. 23.
Inventory Management Systems, Inc., Los Angeles, Calif. 898,284, pub. 6-23-70. Cl. 26.
Ipco Hospital Supply Corp., New York, N.Y. 517,080, ren. 9-8-70. Cl. 39.
Itali Handbags, Inc., New York, N.Y. 773,428, canc. Cl. 3.
JATO Mfg., Inc., Salina, Kans. 773,539, canc. Cl. 19.
Jackes-Evans Mfg. Co., St. Louis, Mo. 898,047, pub. 6-23-70. Cl. 2.
Jackson Brewing Co., New Orleans, La. 898,408, pub. 6-23-70. Cl. 48.
Jaeger Co. Ltd., The, London, England. 268,493, ren. 9-8-70. Cl. 39.
Jeffrey Galion Inc., Columbus, Ohio. 528,000, ren. 9-8-70. Cl. 23.
Johns-Manville Corp., New York, N.Y. 277,495, ren. 9-8-70. Cl. 1.
Johns-Manville Corp., New York, N.Y. 898,086, pub. 6-23-70. Cl. 12.
Johns-Manville Corp., New York, N.Y. 898,091-2, pub. 6-23-70. Cl. 12.
Johnson, Harry S., Associates, Inc. : *See—*
    Johnson, Harry S., Land Surveyors, Inc.
Johnson, Harry S., Land Surveyors, Inc., from Harry S. Johnson Associates, Inc., Minneapolis, Minn. 898,446, pub. 6-23-70. Cl. 100.
Johnson & Johnson, New Brunswick, N.J. 533,626, ren. 9-8-70. Cl. 44.
Johnson, Mary, Sewing Studios, Inc., Madison, Conn. 898,485, pub. 6-23-70. Cl. 107.
Johnston, Robert A., Co. : *See—*
    Ward Foods, Inc.
Joseph & Feiss Co., The, Cleveland, from The Joseph & Feiss Co., Cleveland, Ohio. 898,346, pub. 2-27-68. Cl. 39.
KTS Industries, Inc., Kalamazoo, Mich. 898,242, pub. 6-23-70. Cl. 23.
Kabushiki Kaisha Morisawa Shashin Shokujiki Seisakusho, Naniwa-ku, Osaka, Japan. 773,619, canc. Cl. 26.
Kachman, Robert D., d.b.a. The Chek-R-Grip Co., Royal Oak, Mich. 898,066, pub. 6-23-70. Cl. 9.
Kalamazoo Label Co., Kalamazoo, Mich. 898,339-10, pub. 4-7-70. Cl. 39.
Kalo Inoculant Co., Quincy, Ill. 898,067, pub. 6-23-70. Cl. 10.
Kay Mfg. Corp., Brooklyn, N.Y. 532,864, ren. 9-8-70. Cl. 13.
Kearney & Trecker Corp., West Allis, Wis. 533,791, ren. 9-8-70. Cl. 23.
Keller, William, d.b.a. William Keller Company, San Francisco, Calif. 773,771, canc. Cl. 46.
Kellogg Co., Battle Creek, Mich. 898,395, pub. 12-9-69. Cl. 46.
Kenco Coffee Co. Ltd., The, London, S.W., England. 898,398, pub. 4-7-70. Cl. 46.
Kennedy Sinclaire, Inc., Wayne, N.J. 898,337, pub. 6-23-70. Cl. 38.
Kenner Products Co., Cincinnati, Ohio. 898,199, pub. 5-19-70. Cl. 22.
Kerr-McGee Chemical Corp., Oklahoma City, Okla., from Emhart Corp., Hartford, Conn. 898,069, pub. 6-23-70. Cl. 10.
Kit Mfg. Co., Long Beach, Calif. 528,845, ren. 9-8-70. Cl. 19.
Kiwi Polish Co. Proprietary Ltd., The, Richmond, near Melbourne, Australia. 773,804, canc. Cl. 50.
Klopman Mills, Inc., Rockleigh, N.J. 898,370, pub. 2-24-70. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J. 898,374, pub. 6-23-70. Cl. 42.
Knapp, Cliffor H., Pittsburgh, Pa. 531,954, ren. 9-8-70. Cl. 87.
Kokuyo Co., Ltd., Higashinari-ku, Osaka, Japan. 898,316, pub. 6-23-70. Cl. 37.
Kraskin Baton Co., Minneapolis, Minn. 898,311-12, pub. 6-23-70. Cl. 36.
Kroger Co., The, d.b.a. Super Drugs, Cincinnati, Ohio. 898,421, pub. 6-23-70. Cl. 51.
Kroger Co., The, Cincinnati, Ohio. 898,456, pub. 8-8-67. Cl. 101.
Kurner, Rudolf, Stuttgart-W, Germany. 898,075, pub. 6-23-70. Cl. 12.
Kutz Kwik, Inc., Maywood, Ill. 773,590, canc. Cl. 23.
L.C.C.-Steafix, Paris, France. 773,549, canc. Cl. 21.
LKB-Produkter Aktiebolag, Stockholm-Bromma 1, Sweden. 898,277, pub. 6-23-70. Cl. 26.
Laboratoire Lachartre S.A., Paris, France. 898,418, pub. 3-24-70. Cl. 51.
Larus & Brother Co., Richmond, Va. 773,512, canc. Cl. 17.
Larus & Brother Co., Richmond, Va. 898,128, pub. 6-23-70. Cl. 17.
Laurel Uniform Shoppe, Denver, Colo. 773,718, canc. Cl. 39.
Lear Siegler, Inc., Cleveland, Ohio. 773,605, canc. Cl. 23.
Lee Co., The, Westbrook, Conn. 898,104-6, pub. 6-23-70. Cl. 13.
Lee, H. D., Co., Inc., The, Kansas City, Mo. 773,723, canc. Cl. 39.
Le Gear, Dr., Inc., St. Louis, Mo. 773,518, canc. Cl. 18.
Leonard, Harold, & Co. Inc., New York, N.Y. 773,315, canc. Cl. 50.
Les Parfums De Dana, Inc., New York, N.Y. 529,784, ren. 9-8-70. Cl. 2.
Lever Brothers Co., New York, N.Y. 898,402-3, pub. 6-23-70. Cl. 46.
Lever Brothers Co., New York, N.Y. 898,439, pub. 4-14-70. Cl. 52.
Lincoln Pulp & Paper Co., Inc., Lincoln, Maine. 898,322, pub. 6-23-70. Cl. 37.
Lob Steer Inns, Inc., The, Rocky Mount, N.C. 898,451, pub. 6-23-70. Cl. 100.
Lodestar Corp., The, Los Angeles, Calif. 898,179, pub. 6-23-70. Cl. 21.
Lowengart, G., Co., Inc., New York, N.Y. 531,237, ren. 9-8-70. Cl. 1.
Logistics Industries Corp., Philadelphia, Pa. 534,224, ren. 9-8-70. Cl. 23.
Lone Star Brewing Co., San Antonio, Tex. 898,409, pub. 6-23-70. Cl. 48.
Longwood Equipment Co. Ltd., Toronto, Ontario, Canada. 773,601, canc. Cl. 23.
Lovable Co., The, Atlanta, Ga. 898,365, pub. 6-23-70. Cl. 39.
McCloskey Varnish Co., Philadelphia, Pa. 898,488. Cl. 16.
MacDonald, Alexander F., Jr., Dover, N.H. 898,477, pub. 3-21-67. Cl. 107.
McGraw-Edison Co., Elgin, Ill. 898,263, pub. 6-23-70. Cl. 24.
Mack, J. Frank, d.b.a. Mack Company, Flagstaff, Ariz. 898,249, pub. 4-28-70. Cl. 23.
Mackay, Hugh, & Co., Ltd., Durham City, England. 527,301, ren. 9-8-70. Cl. 42.
Macklin Co., Jackson, Mich. 773,831, canc. Cl. 100.
McNeil Laboratories, Inc., Fort Washington, Pa. 531,520, ren. 9-8-70. Cl. 18.
McNeil Laboratories, Inc., Fort Washington, Pa. 532,781, ren. 9-8-70. Cl. 18.
McNeil Laboratories, Inc., Fort Washington, Pa. 533,769, ren. 9-8-70. Cl. 18.
Maidenform, Inc., New York, N.Y. 898,361-2, pub. 6-23-70. Cl. 39.
Mama Cookie Bakeries, Inc., Chicago, Ill. 898,494-5. Cl. 46.
Management Recruiters International, Inc., Cleveland, Ohio. 898,463, pub. 6-23-70. Cl. 101.
Mangel Stores Corp., New York, N.Y. 773,663, canc. Cl. 35.
Manhattan Industries, Inc., New York, N.Y. 898,353-4, pub. 6-23-70. Cl. 39.
Manor Hill Salad Co., Inc., Baltimore, Md. 532,873, ren. 9-8-70. Cl. 46.
Mfg. d'Horlogerie Rayville S.A. Monties Blancpain, Villeret, Switzerland. 528,329, ren. 9-8-70. Cl. 27.
Marcstrate Fashions, Inc., New York, N.Y. 898,371, pub. 6-23-70. Cl. 42.
Marion Laboratories, Inc., Kansas City, Mo. 898,137, pub. 6-23-70. Cl. 18.
Marquis-Who's Who, Inc., Chicago, Ill. 898,327, pub. 6-23-70. Cl. 38.
Marriott Corp., Washington, D.C. 898,450, pub. 6-23-70. Cl. 100.
Marquettw Petroleum Products, Inc., Chicago, Ill. 533,556, ren. 9-8-70. Cl. 15.
Masonite Corp., Chicago, Ill. 532,660, ren. 9-8-70. Cl. 12.
Matthews, Mignon, d.b.a. Mignon's, Bay City, Tex. 773,427, canc. Cl. 3.
Mattel, Inc., Hawthorne, Calif. 773,565, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,206-7, pub. 6-23-70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,209-11, pub. 6-16-70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,213, pub. 6-23-70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,217-19, pub. 6-23-70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,221, pub. 6-23-70. Cl. 22.
Mayflower Restaurant Enterprises, Inc., New York, N.Y. 898,455, pub. 6-23-70. Cl. 100.
Maymar, Peter P., d.b.a. Fleetwood Co., San Francisco, Calif. 773,726, canc. Cl. 39.
May Way Sales Co., Kansas City, Mo. 773,842, canc. Cl. 103.
Medalist Industries, Inc., Milwaukee, Wis. 898,233, pub. 6-23-70. Cl. 23.
Meister Brau, Inc., Chicago, Ill, 898,406, pub. 6-23-70. Cl. 48.
Mennen Co., The, Morristown, N.J. 898,420, pub. 6-23-70. Cl. 51.
Merriam, G. & C., Co., Springfield, Mass. 898,342, pub. 6-23-70. Cl. 38.
Metal Awnings, Inc., Dallas, Tex. 527,162, ren. 9-8-70. Cl. 12.
Metalart Buckle Co., Providence, R.I. 773,729, canc. Cl. 40.
Minnesota Mining and Mfg. Co., St. Paul, Minn. 898,220, pub. 6-23-70. Cl. 22.
Minnesota Rubber Co., Minneapolis, Minn. 898,382, pub. 6-23-70. Cl. 44.
Miser Wall, Inc., Ecorse, from William J. Navarre Corp., Riverview, Mich. 898,087, pub. 6-23-70. Cl. 12.
Model Products Corp., Mount Clemens, Mich. 898,208, pub. 6-23-70. Cl. 22.
Modern Handling Systems, Alabaster, Ala. 898,241, pub. 6-23-70. Cl. 23.
Modern Plastic Machinery Corp., Clifton, N.J. 898,251, pub. 6-23-70. Cl. 23.
Molnlycke Aktiebolag, Krokslatt, Gothenburg, Sweden. 898,498. Cl. 52.
Monrovia Nursery Co., Azusa, Calif. 534,014, ren. 9-8-70. Cl. 1.
Monsanto Co., St. Louis, Mo. 898,038, pub. 6-23-70. Cl. 1.
Montello Products Co., Montello, Wis. 533,624, ren. 9-8-70. Cl. 23.
Morris, Philip, Inc., d.b.a. American Safety Razor Co., New York, N.Y. 273,064, ren. 9-8-70. Cl. 23.
Morse Electro Products Corp., Ozone Park, N.Y. 898,261, pub. 6-23-70. Cl. 23.

Moss Corp., Lincolnwood, Ill. 898,273, pub. 6-23-70. Cl. 26.
Motorola, Inc., Franklin Park, Ill. 898,196, pub. 6-23-70. Cl. 21.
Murdock Inc., Cincinnati, Ohio. 274,266, ren. 9-8-70. Cl. 13.
Myrurgia, S.A., Barcelona, Spain. 272,635, ren. 9-8-70. Cl. 51.
Nan-Flower Lingerie, Inc., New York, N.Y. 529,804, ren. 9-8-70. Cl. 39.
Nantucket Historical Trust, Nantucket, Mass. 898,482, pub. 6-23-70. Cl. 107.
National Association of Amateur Oarsmen, Philadelphia, Pa. 898,332, pub. 6-23-70. Cl. 38.
National Bellas Hess, Inc., North Kansas City, Mo. 898,328, pub. 6-23-70. Cl. 38.
National Engineering Co., Chicago, Ill. 532,808, ren. 9-8-70. Cl. 23.
National Plastic Products Co., Inc., Odenton, Md. 773,402-4, canc. Cl. 1.
Navarre, William J., Corp. : *See—*
    Miser Wall, Inc.
Neebars, Inc., Los Angeles, Calif. 898,112, pub. 6-23-70. Cl. 14.
Nestlé Co., Inc., The, White Plains, N.Y. 532,689, ren. 9-8-70. Cl. 46.
Nethercutt Laboratories, d.b.a. Cosgenic Labs, Los Angeles, Calif. 773,884-5, canc. Cl. 51.
Nethercutt Laboratories, d.b.a. Cosgenic Labs, Los Angeles, Calif. 773,887, canc. Cl. 51.
New England Confectionery Co., Cambridge, Mass. 35,212, ren. 9-8-70. Cl. 46.
New England Lock and Hardware Co., South Norwalk, Conn. 898,264, pub. 6-23-70. Cl. 25.
New York Merchandise Co., Inc., New York, N.Y. 898,291, pub. 6-23-70. Cl. 28.
Nissen, John P., Jr., Co., Glenside, Pa. 270,231, ren. 9-8-70. Cl. 11.
Norbeck, Hugo R., d.b.a. Viking Trading Co., Oakland, Calif. 898,292, pub. 6-23-70. Cl. 28.
Norden Laboratories, Inc., Lincoln, Nebr. 773,532-3, canc. Cl. 18.
Northstar Athletic Industries, Inc., Minneapolis, Minn. 898,212, pub. 6-23-70. Cl. 22.
Novadel Ltd., Wandsworth, London. 898,224, pub. 6-23-70. Cl. 23.
Noxzema Chemical Co., The, Baltimore, Md. 773,889, canc. Cl. 51.
Nutton, James M., d.b.a. J. M. Nutton Co., North Andover, Mass. 898,183, pub. 6-23-70. Cl. 21.
Oakite Products, Inc., Berkeley Heights, N.J. 80,287, ren. 9-8-70. Cl. 52.
Old Orchard Gardens, Inc., Manchester, Mo. 898,028, pub. 6-23-70. Cl. 1.
Oneida Ltd., Oneida, N.Y. 898,258, pub. 6-23-70. Cl. 23.
Oquendo Roasting Co., Miami, Fla. 898,390, pub. 6-23-70. Cl. 46.
Orvis Co., Inc., The, Manchester, Vt. 898,205, pub. 6-23-70. Cl. 22.
Oscola, Joseph, Pompano Beach, Fla. 898,404, pub. 6-23-70. Cl. 46.
Owens-Illinois Glass Co., Toledo, Ohio. 773,808, canc. Cl. 50.
Owens-Illinois, Inc., Toledo, Ohio. 898,304, pub. 6-23-70. Cl. 33.
Ozark Air Lines, Inc., St. Louis, Mo. 898,474, pub. 6-23-70. Cl. 105.
Pacific Plastic Products, Inc., South San Francisco, Calif. 898,045, pub. 4-21-70. Cl. 2.
Paloff, Herbert, New York, N.Y. 898,480, pub. 6-23-70. Cl. 107.
Panacon Corp., Cincinnati, Ohio. 530,406, ren. 9-8-70. Cl. 100.
Pandora Productions, Inc., Wayzatta, Minn. 898,326, pub. 6-23-70. Cl. 38.
Paper Service Co., Inc., Kansas City, Kans. 773,680, canc. Cl. 37.
Parke, Davis & Co., Detroit, Mich. 898,147, pub. 5-26-70. Cl. 18.
Peavey, Hartley D., d.b.a. Peavey Electronics, Meridian, Miss. 898,187, pub. 6-23-70. Cl. 21.
Pedi-Bares, Inc., San Francisco, Calif. 773,700, canc. Cl. 39.
Pennwalt Corp., Philadelphia, Pa. 898,152, pub. 6-23-70. Cl. 18.
Pennzoil United, Inc., Oil City, Pa. 533,753, ren. 9-8-70. Cl. 15.
Perdiz, M. L., d.b.a. Zidrep Laboratories, Buffalo, N.Y. 276,005, ren. 9-8-70. Cl. 18.
Peter Pan International, Inc., New York, N.Y. 526,665, ren. 9-8-70. Cl. 39.
Peterson, Crockey, Racing Enterprises, Flat River, Mo. 898,163, pub. 6-23-70. Cl. 19.
Pfizer, Chas., & Co., Inc. : *See—*
    Pfizer Inc.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 898,027, pub. 6-23-70. Cl. 1.
Philips Roxane, Inc., New York, N.Y. 898,142, pub. 6-23-70. Cl. 18.
Phillips Petroleum Co., Bartlesville, Okla. 898,055, pub. 6-23-70. Cl. 6.
Phillips Petroleum Co., Bartlesville, Okla. 898,118-20, pub. 6-23-70. Cl. 15.
Pirelli S.p.A., Milan, Italy. 898,412, pub. 6-23-70. Cl. 50.
Plasticsmith, Inc., Pittsburg, Calif. 773,721, canc. Cl. 39.
Polycell-Prout Ltd., Welwyn Garden City, England. 898,165, pub. 6-23-70. Cl. 19.
Polypump Ltd., Toronto, Ontario, Canada. 898,228, pub. 3-17-70. Cl. 23.
Powers & Eaton Industries, Inc. : *See—*
    Star-New Era, Inc.
Prange, H. C., Co., Sheboygan, Wis. 898,470, pub. 6-23-70. Cl. 101.
Preco Chemical Corp., Plainview, N.Y. 898,077, pub. 6-23-70. Cl. 12.
Pretty Products, Inc., Coshocton, Ohio. 773,537, canc. Cl. 19.
Printing Views, Inc., Chicago, Ill. 773,693, canc. Cl. 38.
Promotional Sales, Inc., New Orleans, La. 773,840, canc. Cl. 101.
Prudential Paper Products Co., Inc., Ridgewood, N.Y. 534,300, ren. 9-8-70. Cl. 37.
Pup 'N' Taco Drive Up, Inglewood, Calif. 898,444, pub. 6-23-70. Cl. 100.
Purdue Frederick Co., The, Yonkers, N.Y. 898,146, pub. 6-23-70. Cl. 18.
Pyle-National Co., The, Chicago, Ill. 531,705, ren. 9-8-70. Cl. 21.
Quaker Fabric Corp., New York, N.Y. 898,373, pub. 6-23-70. Cl. 42.
Quaker Oats Co., The, Chicago, Ill. 773,774, canc. Cl. 46.
R & K Plastic Industries Co., The, Cleveland, Ohio. 773,456, canc. Cl. 9.
Rainbow Crafts, Inc., Cincinnati, Ohio. 898,214-16, pub. 6-23-70. Cl. 22.
Ralston Purina Co., St. Louis, Mo. 898,155, pub. 6-23-70. Cl. 18.
Ramos, J. S., d.b.a. Ramos Shrimp Co., Bayou La Batre, Ala. 773,878, canc. Cl. 46.
Randolph-Holmes Corp., The, Chicopee, Mass. 773,805, canc. Cl. 50.
Reemtsma Cigarettenfabriken G.m.b.H., Parkstr, Germany. 898,127, pub. 6-23-70. Cl. 17.
Regent-Sheffield, Ltd., Whiteston, N.Y. 773,603, canc. Cl. 23.
Rehlaender, Robert N., d.b.a. Plastic Engineered Products Co., San Carlos, Calif. 898,272, pub. 6-23-70. Cl. 26.
Reichhold-Albert-Chemie AG., Hamburg, Germany. 898,029-36, pub. 6-23-70. Cl. 1.
Reliance International Mfg. Ltd., Hempstead, N.Y. 773,573, canc. Cl. 22.
Remote Computing Corp., Los Angeles, Calif. 898,459, pub. 6-23-70. Cl. 101.
Resi Crete, Inc., Longmont, Colo. 773,470, canc. Cl. 12.
Rice Shinkle Imports, St. Louis, Mo. 898,349, pub. 6-23-70. Cl. 39.
Richards, Susie J., d.b.a. Indian Nation Press Co., Yukon, Okla. 898,262, pub. 6-23-70. Cl. 24.
Richardson Co., The, Melrose Park, Ill. 898,022, pub. 4-22-69. Cl. 1.
Richardson-Merrell Pty. Ltd., New South Wales, Australia. 898,434, pub. 5-19-70. Multiple Class (Classes 51 and 52).
Riviana Foods Inc., Houston, Tex. 898,400-1, pub. 6-23-70. Cl. 46.
Robertshaw Controls Co., Richmond, Va. 773,625, canc. Cl. 26.
Rockwell, W. S., Co Fairfield, Conn. 898,260, pub. 5-26-70. Cl. 23.
Rockwell, W. S., Co., Fairfield, Conn. 898,476, pub. 5-26-70. Cl. 106.
Rogers, Lunt & Bowlen Co., d.b.a. Lunt Silversmiths, Greenfield, Mass. 898,297, pub. 6-23-70. Cl. 28.
Rose, Phil, of California, Inc., Los Angeles, Calif. 773,716, canc. Cl. 39.
Rotary Hoes Ltd., West Horndon, Essex, England. 898,227, pub. 12-16-69. Cl. 23.
Roth, Emanuel, Co. Inc., Secaucus, N.J. 534,588, ren. 9-8-70. Cl. 42.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 898,129, pub. 6-23-70. Cl. 17.
S & C Electric Co., Chicago, Ill. 898,195, pub. 6-23-70. Cl. 21.
S.A.I.V.O. S.p.A. Societa Anonima Italiana del Vetro di Ottica, Castello, Firenze, Italy. 773,463, canc. Cl. 12.
Safeway Stores, Inc., d.b.a. Svenska Products Co., Oakland, Calif. 773,768, canc. Cl. 46.
St. Thomas Inc., Gloversville, N.Y. 532,217, ren. 9-8-70. Cl. 3.
Salesco Inc., Greens Farms, Conn. 898,415, pub. 6-23-70. Cl. 50.
Sanger Citrus Association, Sanger, Calif. 534,728, ren. 9-8-70. Cl. 46.
Scale Data Systems, Inc., Van Nuys, Calif. 898,285, pub. 6-23-70. Cl. 26.
Schenley Distillers, Inc., New York, N.Y. 773,796-9, canc. Cl. 49.
Schild, A., A.G., Grenchen, Solothurn, Switzerland. 898,287, pub. 6-23-70. Cl. 27.
Schimmelpenninck Sigarenfabrieken V/H Geurts & Van Schuppen N.V., Wageningen, Netherlands. 898,130, pub. 6-23-70. Cl. 17.
Schirmer, G., Inc., New York, N.Y. 898,335, pub. 6-23-70. Cl. 38.
Schneierson, I., & Sons, Inc., New York, N.Y. 773,706, canc. Cl. 39.
Schoeneman, J., Inc., Owings Mills, Md. 272,355, ren. 8-9-70. Cl. 39.
Schoeneman, J., Inc., Owings Mills, Md. 523,323, ren. 9-8-70. Cl. 39.
Schoeneman, J., Inc., Owings Mills, Md. 526,494, ren. 9-8-70. Cl. 39.
Schwartz Protective Systems, Inc., Philadelphia, Pa. 898,180, pub. 6-23-70. Cl. 21.
Scott, Jack M., d.b.a. National Beauty Products Co., Dallas, Tex. 773,812, canc. Cl. 51.
Scotty's of Raleigh, Inc., Raleigh, N.C. 898,445, pub. 4-28-70. Cl. 100.
Seagram, Joseph E., & Sons (Scotland) Ltd., Paisley, Scotland. 898,410, pub. 6-23-70. Cl. 49.
Seagrave, O. O., Denver, Colo. 773,838, canc. Cl. 101.

Seagrave Corp., The, New York, N.Y., from Continental Curtain Closures, Inc., Salt Lake City, Utah. 898,073, pub. 5–5–70. Cl. 12.
Sears, Roebuck & Co., Chicago, Ill. 531,207, ren. 9–8–70. Cl. 14.
Sears, Roebuck and Co., Chicago, Ill. 898,372, pub. 11–11–69. Cl. 42.
Seaside Oil Co., Santa Barbara, Calif. 531,437, ren. 9–8–70. Cl. 15.
Sekisui Chemical Co. Ltd., Osaka, Japan. 898,071, pub. 1–17–67. Cl. 12.
Seminole Pollution Equipment Corp., Rochester, N.Y. 898,276, pub. 6–23–70. Cl. 26.
Sensiplex Mfg. & Research Inc., Hackensack, N.J. 898,079, pub. 6–23–70. Cl. 12.
Sequoia Forest Products Co., Dinuba, Calif. 898,068, pub. 6–23–70. Cl. 10.
Serbin, Inc., Miami, Fla. 898,348, pub. 4–22–69. Cl. 39.
Shaughnessy, James R.: *See*—
  Imagineering, Inc.
Shell Oil Co., New York, N.Y. 898,053, pub. 2–25–69. Cl. 6.
Sheriffs' Association of Texas, The, Austin, Tex. 898,334, pub. 6–23–70. Cl. 38.
Sherwin-Williams Co., The, Cleveland, Ohio. 898,125, pub. 6–23–70. Cl. 16.
Sherwood Publications Co., Detroit, Mich. 898,466, pub. 6–23–70. Cl. 101.
Sifo Co., Minneapolis, Minn. 898,201, pub. 6–23–70. Cl. 22.
Signal Oil & Gas Co., Houston, Tex. 773,448, canc. Cl. 6.
Simmons Co., New York, N.Y. 532,319, ren. 9–8–70. Cl. 32.
Sinclair Research, Inc., New York, N.Y. 773,632, canc. Cl. 26.
Singer Co., The, New York, N.Y. 275,403, ren. 9–8–70. Cl. 23.
16 Concerto Soloists, Inc., Philadelphia, Pa. 898,484, pub. 6–23–70. Cl. 107.
Slaughter, William E., North Little Rock, Ark. 773,640, canc. Cl. 28.
Smith-Lee Co., Inc., Oneida, N.Y. 773,811, canc. Cl. 50.
Smokontrol Corp. of America, from Conveyor Heat Products Corp., Cinnaminson, N.J. 898,190, pub. 6–23–70. Cl. 21.
Societe Candy Co., Seattle, Wash. 534,543, ren. 9–8–70. Cl. 46.
Solutec Corp., Largo, Fla. 898,222, pub. 9–30–69. Cl. 23.
Soncino Press Ltd., The, London, England. 898,329, pub. 6–23–70. Cl. 39.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 898,267, pub. 3–21–70. Cl. 26.
Sorg Paper Co., The, Middletown, Ohio. 773,676, canc. Cl. 37.
Southwestern Drug Corp., Dallas, Tex. 898,383, pub. 6–23–70. Cl. 44.
Spinnerin Yarn Co., Inc., South Hackensack, N.J. 534,356, ren. 9–8–70. Cl. 43.
Sports Holdings, Inc., Denver, Colo. 898,479, pub. 6–23–70. Cl. 107.
Squibb, E. R., & Sons, Inc., New York, N.Y. 898,138, pub. 6–23–70. Cl. 18.
Standard Brands Chemical Industries, Inc., Dover, Del. 898,-051, pub. 6–23–70. Cl. 5.
Standard International Corp., Andover, Mass. 898,259, pub. 6–23–70. Cl. 23.
Standard Oil Co., Flemington, N.J. 898,124, pub. 2–24–70. Cl. 16.
Standard Oil Co. of California, San Francisco, Calif. 277,191, ren. 9–8–70. Cl. 16.
Standard-Thomson Corp., Waltham, Mass. 773,538, canc. Cl. 19.
Star-New Era, Inc., South Hackensack, from Powers & Eaton Industries, Inc., South Hackensack, N.J. 898,230, pub. 6–23–70. Cl. 23.
Steichrome Mfg., Inc., Odessa, Tex. 898,247, pub. 6–23–70. Cl. 23.
Stero Dishwashing Machine Mfg. Co., San Francisco, Calif. 898,256, pub. 6–23–70. Cl. 23.
Stetson-Ross Machine Co., Inc., Seattle, Wash. 533,064, ren. 9–8–70. Cl. 23.
Stevens, J. P., & Co., Inc., New York, N.Y. 532,587, ren. 9–8–70. Cl. 42.
Strauss, Levi, & Co., San Francisco, Calif. 898,364, pub. 6–23–70. Cl. 39.
Strong-Scott Mfg. Co., The, Minneapolis, Minn. 898,306, pub. 6–23–70. Cl. 34.
Stuart Sales Engineering Co., to Division of Jerren Affiliated Companies Ltd., Toronto, Ontario, Canada. 773,476, canc. Cl. 13.
Sunbeam Corp., Chicago, Ill. 898,289, pub. 6–23–70. Cl. 27.
Sun Oil Co., Philadelphia, Pa. 898,117, pub. 6–23–70. Cl. 15.
Sunshine Chemical Corp., Jacksonville, Fla. 898,234, pub. 6–23–70 Cl. 23.
Sunrise Home Juices, Inc., Far Rockaway, N.Y. 898,385, pub. 5–5–70. Cl. 45.
Syllographic Machines, Inc., Amarillo, Tex. 898,252–3, pub. 6–23–70. Cl. 23.
Symons Mfg. Co., Des Plaines, Ill. 898,257, pub. 6–23–70. Cl. 23.
TVL Products Co., Inc., Uniondale, N.Y. 773,571, canc. Cl. 22.
Talk-A-Phone Co., Chicago, Ill. 534,049, ren. 9–8–70. Cl. 21.
Taylor Biscuit Co., Raleigh, N.C. 772,914, canc. Cl. 46.
Technology Systems Inc., Cockeysville, Md. 898,282, pub. 6–23–70. Cl. 26.
Tel-A-Stop Electronics, Inc., Spokane, Wash. 773,615, canc. Cl. 26.
Telex Corp., The, Tulsa, Okla. 898,191, pub. 6–23–70. Cl. 21.
Telmont Corp., St. Paul, Minn. 898,295, pub. 6–23–70. Cl. 28.
Tension Structures, Inc., New York, N.Y. 898,095, pub. 6–23–70. Cl. 12.
Textron Inc., Providence, R.I. 530,147, ren. 9–8–70. Cl. 16.
Textron, Inc., Providence, R.I. 898,109, pub. 6–23–70. Cl. 13.
Textron Inc., Providence, R.I. 898,243, pub. 6–23–70. Cl. 23.
Textron, Inc., Providence, from Gorham Corp., Providence, R.I. 898,290, pub. 4–25–67. Cl. 28.
Textron Inc., Providence, R.I. 898,293, pub. 6–23–70. Cl. 28.
Textron, Inc., Providence, R.I. 898,301, pub. 6–23–70. Cl. 32.
Theriot, Allison, J., Jr., Opelousas, La. 773,669, canc. Cl. 36.
Thomas & Bette Corp., Elizabeth, N.J. 533,858, ren. 9–8–70. Cl. 37.
Thrift Drug Co. of Pennsylvania, Pittsburgh, Pa. 898,440–2, pub. 8–13–68. Cl. 100.
Ticket Reservation Systems, Inc., New York, N.Y. 898,468, pub. 6–23–70. Cl. 101.
Tidy House Products, Co.: *See*—
  Church & Dwight Co., Inc.
Tipco Sportswear, Inc., Smyrna, Ga. 898,352, pub. 6–23–70. Cl. 39.
Torrey's Engineering & Welding Services, Inc., Framingham Centre, Mass. 898,255, pub. 6–23–70. Cl. 23.
Toyomenka, Inc., Chicago, Ill. 898,182, pub. 6–23–70. Multiple Class (Classes 21 and 36).
Toyo Rubber Industry Co., Ltd., The, Nishi-ku, Osaka, Japan. 898,921, pub. 4–29–69. Multiple Class (Classes 1 and 39).
Trade Service Publications, Inc., Los Angeles, Calif. 522,351, ren. 9–8–70. Cl. 38.
Transco Inc., Chicago, Ill. 898,160, pub. 6–23–70. Cl. 19.
Tribune Co., The, Tampa, Fla. 898,333, pub. 6–23–70. Cl. 38.
Tri-State Laundry Supply Co., Middletown, Conn. 773,822, canc. Cl. 52.
Turner, Dan O., Chattanooga, Tenn. 898,413, pub. 6–23–70. Cl. 50.
USCO Power Equipment Corp., Birmingham, Ala. 532,371, ren. 9–8–70. Cl. 21.
USV Pharmaceutical Corp., New York, N.Y. 898,150, pub. 6–23–70. Cl. 18.
Ungar, Elisabeth. Skin Care, Inc., New York, N.Y. 898,384, pub. 6–23–70. Cl. 44.
Unimat Coin Wrapping Paper Corp., Dallas, Tex. 773,678, canc. Cl. 37.
Union Oil Co. of California, Los Angeles, Calif. 898,115, pub. 4–28–70. Cl. 15.
United Africa Co. (Timber) Ltd., London, England. 898,080, pub. 6–23–70. Cl. 12.
United Medical Laboratories, Inc., Portland, Oreg. 898,341, pub. 6–23–70. Cl. 38.
United Biscuit Co. of America, Melrose Park, Ill. 773,761, canc. Cl. 46.
United Garment Workers of America, New York, N.Y. 528,144, ren. 9–8–70. Cl. 39.
United Newspapers Magazine Corp., New York, N.Y. 773,690, canc. Cl. 38.
United States Borax & Chemical Corp., Los Angeles, Calif. 773,431, canc. Cl. 4.
United States Borax & Chemical Corp., Los Angeles, Calif. 773,446–7, canc. Cl. 6.
United States Borax & Chemical Corp., Los Angeles, Calif. 773,450–1, canc. Cl. 6.
United States Gypsum Co., Chicago, Ill. 272,804, ren. 9–8–70. Cl. 16.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 530,359, ren. 9–8–70. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 898,090, pub. 6–23–70. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 898,099–100, pub. 6–23–70. Cl. 12.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 898,-097–8, pub. 6–23–70. Cl. 12.
United States Plywood Corp., New York, N.Y. 773,465, canc. Cl. 12.
Universal Optical Co., Inc., Providence, R.I. 773,633, canc. Cl. 26.
Universal Producing Co., Fairfield, Iowa. 530,568, ren. 9–8–70. Cl. 2.
Upjohn Co., The, Kalamazoo, Mich. 898,157–8, pub. 6–23–70. Cl. 18.
V-M Corp., Benton Harbor, Mich. 898,193, pub. 6–23–70. Multiple Class (Classes 21 and 36).
Vanderbilt, R. T., Co., Inc., New York, N.Y. 898,059, pub. 6–23–70. Cl. 6.
Van Gorden, Wesley, and Virginia Van Gorden, d.b.a. Clavs in Calico, Cardwell, Mont. 898,299, pub. 6–23–70. Cl. 30.
Vapco, Inc., Oklahoma City, Okla. 898,116, pub. 6–23–70. Cl. 15.
Vaporette Chemical Corp., Dallas, Tex. 898,056, pub. 12–30–69. Cl. 6.
Variety Mfg. & Engineering Co., Inc., Chicago, Ill. 898,082, pub. 6–23–70. Cl. 12.
Venetian International, Inc., Dallas, Tex. 898,461, pub. 6–23–70. Cl. 101.
Vicon Products Corp., Mamaroneck, N.Y. 898,274, pub. 6–23–70. Cl. 26.
Victor Corp., The, Cincinnati, Ohio. 532,012, ren. 9–8–70. Cl. 28.
Vitarine Co., Inc., The, Springfield Gardens, N.Y. 898,143, pub. 6–23–70. Cl. 18.
Volume Builders, Inc. and Schaffer Diversified Corp., Cleveland, Ohio. 898,462, pub. 6–23–70. Cl. 101.
Wallace-Murray Corp., New York, N.Y. 531,952, ren. 9–8–70. Multiple Class (Classes 4, 14, 23, and 26).
Wallace-Murray Corp., d.b.a. Heller Tool Division, New York, N.Y. 533,794, ren. 9–8–70. Cl. 23.
Wallace-Murray Corp., d.b.a. Heller Tool Division, New York, N.Y. 533,796, ren. 9–8–70. Cl. 23.
Wallace-Murray Corp., New York, N.Y. 534,118, ren. 9–8–70. Cl. 23.
Waltham Watch Co., Chicago, Ill. 898,288, pub. 4–28–70. Cl. 27.
Ward Foods, Inc., New York, N.Y., from Robert A. Johnston Co., Milwaukee, Wis. 898,389, pub. 9–3–68. Cl. 46.

Ward Foods, Inc., d.b.a. Plymouth Rock Provision, New York, N.Y. 898,493. Cl. 46.
Wardley Products Co., Inc., Long Island City, N.Y. 898,492. Cl. 46.
Watt Publishing Co., Mount Morris, Ill. 898,338, pub. 6–23–70. Cl. 38.
Washington-Lee Savings and Loan Association, Alexandria, Va. 898,471, pub. 6–23–70. Cl. 102.
Washington Forge, Inc., Englishtown, N.J. 773,488, canc. Cl. 13.
Webster, William A., Co., The, Memphis, Tenn. 534,102, ren. 9–8–70. Cl. 18.
Weiss, Harold, d.b.a. Automation Training Center, Reston, Va. 898,478, pub. 6–23–70. Cl. 107.
West Point-Pepperell, Inc., West Point, Ga. 531,279, ren. 9–8–70. Cl. 42.
Western Oil & Fuel Co., Minneapolis, Minn. 773,454, canc. Cl. 6.
Western Union Telegraph Co., The, New York, N.Y. 527,030, ren. 9–8–70. Cl. 101.
Westinghouse Air Brake Co., Chicago, Ill. 533,922, ren. 9–8–70. Cl. 21.
Westminster Recording Co., Inc., Broadway, N.Y. 773,668, canc. Cl. 36.
Wheeling-Pittsburgh Steel Corp., d.b.a. Wheeling Corrugating Co., Wheeling, W. Va. 533,553, ren. 9–8–70. Cl. 12.
White Motor Corp., Cleveland, Ohio. 898,161, pub. 6–23–70. Cl. 19.
Wilbert, Inc., Broadview, Ill. 533,495, ren. 9–8–70. Cl. 2.
Wilkens Instrument & Research, Inc., Walnut Creek, Calif. 773,861, canc. Cl. 26.
Willows Publishing Co., The, Willows, Calif. 898,344, pub. 6–23–70. Cl. 38.
Wilner Wood Products Co., Norway, Maine. 773,713, canc. Cl. 39.
Wilson Ice Cream Co., Lumberton, N.C. 533,246, ren. 9–8–70. Cl. 46.
Wilton Corp., Schiller Park, Ill. 533,620, ren. 9–8–70. Cl. 23.
Winarick, Ar., Inc., New York, N.Y. 527,060, ren. 9–8–70. Cl. 51.
Winston Industries, Inc., Birmingham, Ala. 898,168–71, pub. 6–23–70. Cl. 19.
Wisconsin Tissue Mills, Menasha, Wis. 898,323, pub. 6–23–70. Cl. 37.
Winzen Research, Inc., Minneapolis, Minn. 898,026, pub. 6–23–70. Cl. 1.
Wood Chemical Co., Inc., Lubbock, Tex. 773,457, canc. Cl. 10.
Woolworth, F. W., Co., New York, N.Y. 773,416, canc. Cl. 2.
Woolworth, F. W., Co., New York, N.Y. 773,574, canc. Cl. 22.
Woolworth, F. W., Co., New York, N.Y. 773,644, canc. Cl. 29.
Woolworth, F. W., Co., New York, N.Y. 773,708, canc. Cl. 39.
Woolworth, F. W., Co., New York, N.Y. 773,727, canc. Cl. 40.
Woolworth, F. W., Co., New York, N.Y. 773,734, canc. Cl. 42.
Woolworth, F. W., Co., New York, N.Y. 773,745, canc. Cl. 44.
Woolworth, F. W., Co., New York, N.Y. 773,802, canc. Cl. 50.
Wright, E. T., & Co., Inc., Rockland, Mass. 272,073, ren. 9–8–70. Cl. 39.
Wyandotte Chemicals Corp., Wyandotte, Mich. 526,552, ren. 9–8–70. Cl. 52.
Wynn Oil Co., Azusa, Calif. 773,503, canc. Cl. 15.
Xerox Corp., Rochester, N.Y. 898,331, pub. 6–23–70. Cl. 38.
Yttrium Laboratories, Inc., Chicago, Ill. 773,515, canc. Cl. 18.
Zappia-Paradiso, S.A., Lugano, Switzerland. 773,412, canc. Cl. 2.
Zeropest Products Ltd., Burnaby, Vancouver, British Columbia, Canada. 773,552, canc. Cl. 21.
Ziff-Davis Publishing Co., New York, N.Y. 773,698, canc. Cl. 38.
Zuritsky, Sidney, Browns Mills, N.J. 898,229, pub. 6–23–70. Cl. 23.

U.S. GOVERNMENT PRINTING OFFICE: O—1970

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U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

September 15, 1970 Volume 878 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of August 1970

Examiner affirmed	116
Examiner affirmed in part	12
Examiner reversed	25
Total	153

Patents Available for Licensing or Sale

D. 190,334. WEED-CUTTING TOOL. Andrew C. Popivalo, 2028 Webster St., Sanger, Calif., 93657.

D. 215,183. FLEXIBLE TRANSMISSION COUPLING FOR THREE-WHEELED VEHICLE. James H. Mayland, 173 Southwood Drive, Old Bridge, N.J., 08857.

3,342,228. NAILING DEVICE. W. Earl Reid, 7529 Kalamazoo Drive, Citrus Heights, Calif., 95610.

3,431,428. SAFETY VEHICLE POWER DISTRIBUTION SYSTEM. A. F. Van Valer, P.O. Box 87, Grass Valley, Calif., 95945.

3,486,863. METHOD AND APPARATUS FOR MIXING FLOWABLE SUBSTANCES. Georg Steuler, Grenzhausen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,499,304. FLAT KEYS FOR CYLINDER LOCKS. C. Ed. Schulte GmbH, Rhineland, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,511,159. CAMERA AND LENS SUPPORT. H. P. Hobbs, Jr., 2719 36th Place NW., Washington, D.C., 20007.

3,514,788. BEAUTY CARE PROTECTIVE GARMENT. Betty Miller, 177 Du Bois Ave., Woodbury, N.J., 08096.

3,516,270. AUTO WHEEL LOCKS. Calvin Dowell, Route 6, Ripley, Tenn., 38063.

The following 2 patents are offered by: Daniel P. Caprioli, P.O. Box 792, Devon, Pa., 19333.

3,432,871. SCRAPER.

3,486,183. PIPE SCRAPER.

The following 2 patents are offered by: Lavinia G. Klempay. Correspondence to: Peter L. Klempay, 1310 Mahoning Bank Bldg., Youngstown, Ohio, 44503.

3,192,865. HYDRAULICALLY ACTUATED PUMP.

3,215,316. POWER SPRAYING EQUIPMENT.

The following 3 patents are offered by: Laurel A. Hendricks, P.O. Box 943, Palo Alto, Calif., 94302.

3,463,154. DISPOSABLE SANITARY PANTY SHIELD.

3,454,008. SANITARY NAPKIN ADHESIVE ATTACHMENT.

3,508,549. SANITARY NAPKIN ADHESIVE ATTACHMENT.

The following 3 patents are offered by: John W. Barmd, 32 Hollybrook Road, Paramus, N.J.

3,351,128. MULTI-ZONE TEMPERATURE CONTROL.

3,496,991. FLUID TEMPERATURE REGULATING METHOD AND APPARATUS.

3,515,345. MULTI-ZONE TEMPERATURE CONTROL.

Norton Company is prepared to grant non-exclusive licenses under the following patent upon reasonable terms to domestic manufacturers.

Applications for license may be addressed to: Herbert L. Gatewood, Patent Counsel, Coated Abrasive and Tape Divisions, Norton Company, Troy, N.Y., 12181.

3,333,828. HOMOGENIZER.

General Electric Company is prepared to grant non-exclusive licenses under the following 30 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 4 patents may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

Re. 26,866. PHASE CONTROLLED ALTERNATING CURRENT POWER CIRCUITS USING BIDIRECTIONAL CONDUCTING DEVICES.

3,492,510. LEVEL DETECTOR AND SWITCH.

3,466,743. SPIRAL COIL COMPRISING A TUBULAR BLANK WITH PARALLEL RECTILINEAR CUTS THEREIN.

3,474,436. FUSE MONITORING CIRCUIT.

Applications for license under the following 27 patents may be addressed to: General Electric Company, Aircraft Engine Group, 1000 Western Ave., West Lynn, Mass., 01905, Attention: Patent Counsel.

3,071,207. LUBRICATION SYSTEM FOR HIGH TEMPERATURE ENVIRONMENTS.

3,112,026. TUBE SIZING TOOL.

3,164,367. GAS TURBINE BLADE.

3,216,699. AIRFOIL MEMBER ASSEMBLY.

3,241,312. THRUST DEFLECTOR.

3,241,313. THRUST DEFLECTOR.

3,241,771. THRUST DEFLECTOR AND REVERSER.

3,262,268. THRUST REVERSER.

3,262,270. THRUST REVERSER.

New Applications Received During June 1970

Patents	9,583
Designs	567
Plant Patents	7
Reissues	39
Total	10,196

Issue—September 15, 1970

Patents	1200	—No. 3,528,106 to No. 3,529,305, incl.
Designs	55	—No. 218,671 to No. 218,725, incl.
Total	1255	

3,266,770.	TURBOMACHINE ROTOR ASSEMBLY.
3,303,998.	STATOR CASING.
3,314,595.	ADJUSTMENT MECHANISM FOR AXIAL FLOW COMPRESSORS.
3,314,648.	STATOR VAN ASSEMBLY .
3,314,649.	TURBOMACHINE COOLING SYSTEM.
3,319,930.	STATOR ASSEMBLY FOR TURBOMACHINES.
3,335,567.	MULTI-NOZZLE FUEL DELIVERY SYSTEM.
3,357,645.	THRUST DIRECTING MEANS FOR AIRCRAFT.
3,365,173.	STATOR STRUCTURE.
3,408,812.	COOLED JOINT CONSTRUCTION FOR COMBUSTION WALL MEANS.
3,416,754.	VECTORABLE EXHAUST NOZZLE.
3,460,748.	RADIAL FLOW MACHINE.
3,465,518.	RADIAL OUTFLOW TURBOSHAFT ENGINE.
3,465,778.	PRESSURE CONTROL VALVE.
3,467,312.	EJECTOR NOZZLE.
3,479,268.	METHOD OF APPLYING A BINDER TO ELECTROPHORETICALLY DEPOSITED POROUS MATRIX.
3,501,090.	COMPOSITE BLADED ROTORS.

Certificates of Correction for the Week of Sept. 15, 1970

Re. 26,571
3,325,250
3,326,957
3,352,212
3,400,080
3,409,218
3,414,808
3,422,313
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PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF AUGUST 25, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	12-09-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halidea.	5-10-68
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	2-19-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	1-13-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-06-68
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches: Miscellaneous.	9-02-69
SECURITY, GROUP 220—C. D. QUARFORTH, Acting Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	11-14-68
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	2-03-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-20-69
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-05-69
DESIGNS, GROUP 290—C. D. QUARFORTH, Acting Director Industrial Arts; Household, Personal and Fine Arts.	11-29-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	6-02-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	1-13-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-03-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	8-01-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	7-10-69

Total number of pending applications (excluding Designs)	182, 635
Total number of Design applications pending	2,866

Expiration of patents: The patents within the range of numbers indicated below expire during August 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,647,259 to 2,650,359, inclusive
Plant Patents	Numbers 1,208 to 1,212, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re John L. Szajna and Ronald G. Lump

No. 8270. Decided March 5, 1970

[57 CCPA —; 422 F.2d 443; 164 USPQ 632]

1. Appeal to U.S. Court of Customs and Patent Appeals—Jurisdiction—Claims Twice Rejected—35 U.S.C. 132 and 134.

"* * * it is well settled that it is incumbent upon an appellate court to inquire as to the absence or presence of jurisdiction of the subject matter, lest the lack of such jurisdiction render any decision which it might make on the merits a nullity. We have, therefore examined the record and considered appellants' arguments and the statutes in support thereof to determine whether claims 11–13, 15, 16 and 18 are properly before us for decision. We conclude that they are. A careful reading of sections 132 and 134 renders untenable appellants' position. Those sections do not require that *each and every* claim presented during the prosecution of an application must be twice examined and twice rejected on the *same ground*. Section 134 appears to imply the contrary since it permits an appeal to be taken when *any* claim has been twice rejected."

2. Claim—Construction of Claims—Preamble.

"The preamble ['an insert for converting a mold having a smooth molding surface to produce articles having an engraved appearing surface'] appears to be more than a mere statement of intended use since it gives 'life and meaning' to recitations in the body of the claims referring to 'configurated complementary to the desired molded surface' and 'adhesives * * * for securing the insert within a mold.' Considering the introductory language as providing the setting or background for the words that follow, it becomes clear that one skilled in the art would not be expected to consult the decorative indicia art for a mold insert."

3. Patentability—Combining References—Obviousness.

"While Haines discloses the over-all concept of blow molding and providing the blown hollow article with indicia during the molding process, we find particularly pertinent the teachings of Lawson. Lawson clearly discloses appellants' basic concept of providing a mold with readily interchangeable engraving inserts to obviate expensive duplication of engraved molds. We share the view of the Examiner and Board that notwithstanding the presence of the dovetail groove in Lawson, a smooth molding surface could obviously be provided, if no indicia were desired on the article, by placing a blank dovetail in the groove without the embossing insert member. While we recognize that Lawson utilizes mechanical means to detachably mount his mold insert, other means such as magnetic or adhesive are fairly suggested by the references Graham and Benson which disclose holding inserts to mold surfaces also. The use of an adhesive of a bonding strength sufficient to maintain the insert fast to the mold surface when the blown article is removed does not appear to be unobvious to one of ordinary skill in the art. We note that Graham provides a magnetic force of such magnitude. Appellants treat the references individually; however, it is our opinion that they are properly viewed together and that when so considered render obvious each of the claims in question."

4. Same—Particular Subject Matter—"Method of Blowing Engraved Appearing Bottles Without the Use of Engraving Molds, and Molds for Same."

The refusal of certain claims in an application entitled "Method of Blowing Engraved Appearing Bottles Without the Use of Engraving Molds, and Molds for Same," as unpatentable over the prior art, is reversed as to certain claims and affirmed as to the remaining claims.

Appeal from Patent Office. Serial No. 391,068.

MODIFIED.

Mason, Porter, Diller & Brown (*Vincent L. Ramik, Charles J. Diller*, of counsel) for appellants.

Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before Rich, *Acting Chief Judge*, Almond, Baldwin, Lane, *Associate Judges*, and Ford, *Judge*, United States Customs Court, sitting by designation

Almond, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals, adhered to upon reconsideration, affirming the Examiner's rejection of claims 1–19, all of the claims in appellants' application entitled "Method of Blowing Engraved Appearing Bottles Without the Use of Engraved Molds, and Molds for Same." [1]

In the forming of plastic bottles by expanding a plastic tube under internal pressure within a mold, it is apparently desirous at times to produce bottles having surface ornamentation or indicia having the appearance of engraving. In order to achieve this, appellants have provided a manner of quickly and economically modifyingthe smooth internal molding surface of a typical split-half blow mold so that the mold is capable of forming an engraved-appearing surface on a bottle blown within the mold without permanently altering the molding surface itself. This conversion is accomplished by adhesively securing to the mold interior a flexible insert having the desired configuration. Thus, the insert can be stripped from the mold after molding.

The claims fall in three groups: (1) Claims 1, 10 and 19 to an insert per se; (2) claims 2–7 and 11–15 to a blow molding method, and (3) claims 8, 9, 16–18 to a modified mold. Representative are claims 1, 2 and 8:

> 1. An insert for converting a mold having a smooth molding surface to produce articles having an engraved appearing surface, said insert including a plastic base and metallic surface layer on one face of said base, the surface of said metallic surface layer being configurated complementary to the desired molded surface, and a low pressure adhesive on the base remote from said metallic surface layer for securing the insert within a mold.
>
> 2. A method of blow molding an engraved appearing plastic bottle utilizing a two part mold specifically formed for the molding of a plastic bottle having a surface configuration divided by a mold parting line with at least one half of said mold having a normally smooth molding surface, comprising the steps of temporarily modifying said mold half smooth molding surface by releasably applying to said smooth molding surface remote from the edges of said mold a thin insert having a desired surface configuration, blow molding a bottle within said modified mold with said insert projecting into the outer surface of the bottle during the molding process to provide the desired engraved appearance, setting the plastic of the bottle within said modified mold, and stripping the blow molded bottle from said mold with said insert remaining in place and intact on said modified mold half.
>
> 8. A mold particularly adapted for the blow molding of plastic bottles comprising two mold halves with at least one of said mold halves having a smooth molding surface remote from the edges thereof, said mold being complete and capable of use in blow molding usable plastic bottles, and a removable insert overlying at least a part of said smooth molding surface and forming a part of the molding surfaces of said mold, said insert presenting a three dimensional molding surface to produce engraved appearing impressions in bottles blow molded in said mold.

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[1] Serial No. 391,068, filed August 17, 1964, alleged to be a continuation-in-part of application Serial No. 57,994, filed September 23, 1960.

The references relied upon are: [2]

Benson, 1,744,438, Jan. 21, 1930.
Lawson, 1,969,083, Aug. 7, 1934.
Haines, 2,632,202, Mar. 24, 1953.
Graham et al., 2,779,057, Jan. 29, 1957.
Frank, 2,904,918, Sept. 22, 1959.

Benson discloses imprinting inner tubes while vulcanize molding them. A transfer is temporarily secured to a mold section by means of a dab of rubber cement, while an exposed face of the transfer is provided with ink or bronze. When a tube is inflated within the mold, the transfer attaches to the tube and is removed from the mold upon removal of the tube. The transfer is then stripped from the tube leaving the printing thereon.

Lawson relates to molding articles from plastic materials and especially the branding or marking of rubber or other plastic articles as they are formed in a mold and has as an object interchangeability of design. Illustrating his invention by reference to vulcanizing inner tubes, the patentee states:

> In order to brand the tube with identifying indicia it is customary to provide one or more of the mold members with either raised or sunk lettering to impress the tube. Where it is desired to provide different indicia on tubes of the same size, this would ordinarily require different molds. In order to obviate this difficulty, one of the mold parts 16 is formed with a dove tailed recess 22 extending from the parting of the members 15, 16, along a face of the member 16 and a removable branding plate 23, having on its back a dove-tailed key 24, adapted to slidably engage the recess, is provided to be detachably mounted in the mold.

Haines discloses blow molding hollow containers by extruding a plastic tube into a split-half mold, closing the mold about the tube and directing air into the tube to expand it within the mold. The mold interior may be provided with a recess into which is placed a printed plastic film which is fused to the expanded container upon contact or the recess may be omitted.

Graham discloses a molding apparatus for molding printing plaques in which letters are magnetically held on the molding surface while plastic material is poured thereon. After curing, the printing plaque is removed while the magnetically held elements remain fixed to the surface.

Frank discloses a method of mounting decorative indicia by means of a sheet having pressure-sensitive adhesives on opposite faces thereof. One of the cover strips is removed and metal particles are applied to the exposed adhesive layer. Thereafter the other cover strip is removed and the sheet is applied to the desired surface.

The examiner rejected claims 2–7 and 11–15 on the ground of *res judicata* based upon the prior Board decision in appellants' parent application. The Examiner also rejected claims 1–19 on prior art under 35 U.S.C. 103.

Prior to treating the Examiner's rejections and the Board's affirmance thereof, we turn to what appellants contend is the first issue involved in this appeal, viz, the jurisdictional propriety of the presence of claims 11–13, 15, 16 and 18 before the court for decision thereon. In his answer, the Examiner withdrew a multiplicity rejection and for the *first and only time* rejected the above claims on prior art. It is appellants' contention that, under the requirements of 35 U.S.C. 132, 134, [3] they were entitled to have the claims reexamined or twice examined and therefore the claims were not properly before the Board for consideration and are not properly jurisdictionally presented to this court. The Solicitor responds by pointing out that, upon petition of appellants, the Commissioner reviewed this procedural aspect and failed to find error; thus, appellants' dissatisfaction therewith was reviewable only in the District Court under Title 5 U.S.C.

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[2] Three additional references cited by the Examiner in support of a rejection are not set out here since the Board found them "to be cumulative thereto."

[1] While the Solicitor's position possesses practical merit, it is well settled that it is incumbent upon an appellate court to inquire as to the absence or presence of jurisdiction of the subject matter, lest the lack of such jurisdiction render any decision which it might make on the merits a nullity. We have, therefore, examined the record and considered appellants' arguments and the statutes in support thereof to determine whether claims 11–13, 15, 16 and 18 are properly before us for decision. We conclude that they are. A careful reading of sections 132 and 134 renders untenable appellants' position. Those sections do not require that *each and every* claim presented during the prosecution of an application must be twice examined and twice rejected on the *same ground*. Section 134 appears to imply the contrary since it permits an appeal to be taken when *any* claim has been twice rejected. Nevertheless, the claims here in question have been twice rejected, contrary to appellants' allegations, since the Examiner rejected them on the grounds of undue multiplicity and as being based on new matter prior to the rejection in his answer.

Considering next the Examiner's rejections on prior art under 35 U.S.C 103, we find first that the Board sustained the rejection of claims 1, 10 and 19 directed to the insert based upon Frank alone. The Board held:

> Frank discloses a flexible, three-dimensional, metalized adhesive-coated article which alone responds to all the structure of appellants' insert as claimed. We considered it well settled in law that claims drawn to structure must distinguish from the prior art in terms of structure rather than function.

The Board further affirmed the Examiner's rejection of claims 2–7 and 11–15 based upon either Lawson or Graham in view of Benson and alternatively upon Haines in view of Lawson, Graham or Benson. Of the latter, the Board stated:

> As we view the Haines disclosure it is even more pertinent to the claimed process than the basic references used in the preceding rejection since the process disclosed in Haines is one of marking plastic bottles during the blow molding thereof by using an insert that is positioned over a surface of the two part mold that can be either recessed or smooth * * *. We find no error in our previous holding that the prior art, as evidenced by the secondary references here applied by the Examiner, would render it obvious in the Haines process to choose between a marking of the bottle by an insert that either attaches itself to the bottle or is retained in the mold for embossing. The means for retention in the mold obviously could take the form of a mechanical fastener, as in Lawson, of a magnet in the wall of the mold, as in Graham et al. or of an adhesive, as in Benson.

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[3] The statutory provisions state, in pertinent part:

§ 132. *Notice of rejection; reexamination.*

Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Commissioner shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application: and if after receiving such notice, the applicant persists in his claim for a patent, with or without amendment, the application shall be reexamined.

§ 134. *Appeal to the Board of Appeals.*

An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Board of Appeals, having once paid the fee for such appeal.

The Board also affirmed the rejection of claims 8, 9 and 16–18 as being unpatentable over Haines in view of Lawson, Graham and Benson, specifically adding:

> Haines shows the advantage of convertibility of a smooth surface mold to one which can mark the bottle and both Graham et al. and Benson show how a marking insert can be attached to a smooth molding surface at any location desired within the boundaries of that surface.

Appellants contend that the Board erred in affirming the rejection of claims 1, 10 and 19 by disregarding the preamble in each claim calling for, in essence, "An insert for converting a mold smooth molding surface into a three-dimensional contoured surface * * *." The failure to consider this functional recitation to be a proper limitation distinguishing over the reference cited is alleged to run contrary to this court's decisions in *In re Myers*, 56 CCPA 1129, 410 F.2d 420, 161 USPQ 668 (1969) and *In re Attwood*, 53 CCPA 784, 354 F.2d 365, 148 USPQ 203 (1966), each of which refers to *Kropa* v. *Robie*, 38 CCPA 858, 187 F.2d 150, 88 USPQ 478 (1951), for the proposition that introductory words give life and meaning to the claims. Hence, while effectively admitting that the structural recitations in the claims in question find response in Frank, appellants point out that that reference relates to decorative indicia to be applied to packages, wrapping paper etc. and is silent as to a *mold insert*, thus failing to render the claims obvious.

The Solicitor counters by contending that this court's holding in *Kropa* v. *Robie*, supra, was to the effect only that "claims limitations as to use which necessarily imply structural features may be given weight." In *Kropa* v. *Robie*, the Solicitor points out, the court surveyed its prior cases dealing with the question of preambles as limitations and found that the preamble had been denied the effect of a limitation where the claims was drawn to a structure and the portion of the claim following the preamble was a self-contained description of the structure not depending for completeness upon the introductory clause.

We are, however, inclined to agree with appellants under the circumstances here. **[2]** The preamble appears to be more than a mere statement of intended use since it gives "life and meaning" to recitations in the body of the claims referring to "configurated complementary to the desired molded surface" and "adhesives * * * for securing the insert within a mold." Considering the introductory language as providing the setting or background for the words that follow, it becomes clear that one skilled in the art would not be expected to consult the decorative indicia art for a mold insert. We emphasize that our only consideration is with the disclosure of Frank *alone* and we fail to find therein any suggestion of a mold insert. Under the precedents of this court, we are constrained to agree with appellants that claims 1, 10 and 19 have not been shown to be obvious in view of the sole reference, Frank, applied thereto.

With respect to the rejection of method claims 2–7 and 11–15 and mold claims 8, 9 and 16–18, appellants argue that their singular concept is nowhere disclosed in the prior art and that the Patent Office has improperly chosen from each reference only those teachings which support its position. The prior art, even as combined, it is contended, fails to render obvious the claimed invention. We disagree. **[3]** While Haines discloses the over-all concept of blow molding and providing the blown hollow article with indicia during the molding process, we find particularly pertinent the teachings of Lawson. Lawson clearly discloses appellants' basic concept of providing a mold with readily interchangeable engraving inserts to obviate expensive duplication of engraved molds. We share the view of the Examiner and Board that notwithstanding the presence of the dovetail groove in Lawson, a smooth molding surface could obviously be provided, if no indicia were desired on the article, by placing a blank dovetail in the groove without the embossing insert member. While we recognize that Lawson utilizes mechanical means to detachably mount his mold insert, other means such as magnetic or adhesive are fairly suggested by the references Graham and Benson which disclose holding inserts to mold surfaces also. The use of an adhesive of a bonding strength sufficient to maintain the insert fast to the mold surface when the blown article is removed does not appear to be unobvious to one of ordinary skill in the art. We note that Graham provides a magnetic force of such magnitude. Appellants treat the references individually; however, it is our opinion that they are properly viewed together and that when so considered render obvious each of the claims in question.

Having carefully considered appellants' arguments, we are not convinced that the Board erred in affirming the rejections of claims 2–9 and 11–18 as unpatentable over the references applied.

The view we have taken with respect to claims 2–9 and 11–18 renders it unnecessary to consider the rejection of claims 2–7 and 11–15 on *res judicata*. **[4]** Accordingly, the decision of the Board is reversed as to claims 1, 10 and 19 and affirmed as to claims 2–9 and 11–18.

MODIFIED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,544,246, G. H. Butterfield, CORNEAL CONTACT LENS, **filed** Apr. 7, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–735–FW, *George H. Butterfield, Sr.* v. *Cushman Contacts*. **Same, filed** Apr. 7, 1970, D.C., E.D. Mo. (St. Louis), Doc. 70C160(1), *George H. Butterfield, Sr.* v. *Ostertag Optical Service, Inc.* **Same, filed** Apr. 8, 1970, D.C., E.D. Mo. (St. Louis), Doc. 70C167(1), *George H. Butterfield, Sr.* v. *No-Con Laboratories, Inc.* **Same, filed** Apr. 8, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–744–FW, *George H. Butterfield, Sr.* v. *Hunter Optical Company, Inc.* **Same, filed** Apr. 14, 1970, D.C.N.J. (Newark), Doc. 448–70, *George H. Butterfield, Sr.* v. *Herman Pollack*. Notice of dismissal, May 30, 1970. **Same, filed** Apr. 8, 1970, D.C., E.D. Mo. (St. Louis), Doc. 70C166(2), *George H. Butterfield, Sr.* v. *Eye Lab., Inc. and Eye Lab. Associates*. Plaintiff's dismissal of cause pursuant to Rule 41(a)(1), F.R.C.P., Apr. 28, 1970.

2,707,601, G. W. Magill, TANDEM ROTOR HELICOPTER AND METHOD OF OPERATION, **filed May** 22, 1970, D.C., District of Columbia (Washington), Doc. 1559–70, *Gilbert W. Magill* v. *Boeing Aircraft Corporation, Vertol Division*.

2,727,470. M. Ludwig, PULSATION DAMPENER, **filed** June 3, 1970, U.S. Ct. of Cl., Washington, D.C., Doc. 185–70, *Pulsation Controls Corporation* v. *United States of America*.

2,750,055, J. D. Huffines, REFUSE COMPRESSOR MECHANISM FOR VEHICLES, **filed** Dec. 21, 1966, D.C., N.D. Tex. (Fort Worth), Doc. CA–4–765, *James Donle Huffines* v. *Fruehauf Corporation*. Judgment, claims 1, 2 and 3 valid; plaintiff is owner of patent. Defendant has infringed said claims and is enjoined, Jan. 23, 1970.

2,800,060, E. Chapman, APPARATUS FOR SHAPING TEST SPECIMENS, **filed** June 11, 1965, D.C., S.D.N.Y., Doc. 65–C–1795, *Everett Chapman* v. *Polarizing Instrument Co., Inc. et ano*. Final Judgment, patent valid; defendant has infringed and is enjoined. Defendant's counterclaim against the plaintiff is dismissed, June 1, 1970.

2,907,585, Sornberger and Wakeman, MANIFOLDING ASSEMBLIES, **filed** May 25, 1970, D.C., S.D. Ohio (Columbus), Doc. 3864, *The Standard Register Co.* v. *Moore Business Forms, Inc.*

2,958,593, Hoover, Dupre and Rank, LOW DENSITY OPEN NON-WOVEN FIBROUS ABRASIVE ARTICLE, **filed** Aug. 28, 1961, U.S. Ct. of App., 6th Cir., Ohio (Cincinnati), Doc. 18596 and 18597, *Minnesota Mining & Manufacturing Company* v. *Norton Company et al.* District Judge finding that patent is invalid. The judgment of the District Court is affirmed, June 1, 1970.

2,963,834, Stanle and Rousseau, FILLING AND SEALING RECEPTACLES, **filed** Apr. 10, 1969, D.C.N.J. (Camden), Doc. 424–69, *Consolidated Packaging Machinery Corporation* v. *The Kartridg Pak Co.* Stipulation of dismissal without prejudice, May 28, 1970.

3,026,148, E. J. Ruof, ADAPTIVE BRAKE PRESSURE CONTROL, **filed** Dec. 17, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2603, *The Goodyear Tire & Rubber Co.* v. *Crane Co.* Order cause removed from the active calendar of this court with leave to reinstate within 30 days, June 1, 1970.

3,035,372, K. F. Mayers, METHOD OF MAKING A GLASS TO METAL SEAL, **filed** Nov. 22, 1963, D.C.N.J. (Newark), Doc. C-999–63, *Philips Electronic and Pharmaceutical Industries Corp.* v. *Glasseal Products Co., Inc.* Action dismissed, Feb. 18, 1970.

3,068,528, J. E. Owens, METHOD FOR CONVEYING AND STRETCHING THERMOPLASTIC FILM, **filed** Feb. 21, 1968, D.C., S.D.N.Y., Doc. 68–C–723, *E. I. du Pont de Nemours and Co.* v. *Celanese Corp. et al.* Stipulation and order of dismissal with prejudice as to issue of priority of invention and without prejudice as to any question of patentability or validity of any claim of any patent or application involved herein, May 20, 1970.

3,138,875, F. L. Christensen, DIAMOND SCRIBER, **filed** Sept. 18, 1968, D.C., S.D.N.Y., Doc. 68–C–3748, *Tempress Research Co.* v. *Clipper Diamond Tool Co., Inc.* Stipulation and order of discontinuance without prejudice, Mar. 13, 1970.

3,155,766, Eichert, Procter, and Polsky, ELECTRICAL COMPONENT ASSEMBLAGE AND CASING THEREFOR, **filed** Nov. 30, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2067, *Technitrol, Inc.* v. *Aladdin Industries, Inc.* Judgment and order, claims 1 through 4 and 6 through 9 of plaintiff's patent invalid and void, May 8, 1970.

3,182,119, P. V. Millard, INSULATING GROMMETS, **filed** Apr. 22, 1970, D.C., E.D. Mich. (Detroit), Doc. 34769, *Arco Industries Corp.* v. *Midwest Rubber Co.*

3,182,808, Benoit, Gingras and Duprey, ARTICLE HOLDER, **filed** May 26, 1970, D.C.N.J. (Newark), Doc. C–677–70, *Roland A. Benoit, David Ziedman and Joseph Mirkin* v. *Frederick M. Ballard, doing business as BBB Plastics Products.*

3,235,277, B. Bernier, COLLET CLOSING MECHANISM, **filed** May 26, 1970, D.C. Mass. (Boston), Doc. 70–656–J, *Bayne Bernier* v. *Simonds Machine Company, Inc.*

3,268,597, Clemons and Overbeek, CONTINUOUS PREPARATION OF 2,3-DIBROMOPROPANOL-1 COMPOUND, **filed** May 6, 1970, D.C., E.D. Mich. (Detroit), Doc. 34823, *Michigan Chemical Corp.* v. *Great Lakes Chemical Corp.*

3,268,798, L. J. G. Burski, ADJUSTABLE VOLTAGE CONTROL CIRCUIT, **filed** May 5, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1060, *Superior Electric Co.* v. *Major Corp.*

3,269,751. (See 3,400,949.)

3,270,251, W. R. Evans, ELECTRICAL CONNECTING SYSTEM AND PARTS; **3,363,224,** Gluntz, Lightner and Shue, ELECTRICAL CONNECTOR, **filed** Apr. 29, 1970, D.C., N.D. Tex. (Dallas), Doc. CA–3–3801–B, *AMP Incorporated* v. *Collins Radio Company and Texas International Airlines, Inc.*

3,291,417, R. W. Peters, WIRE TENSION DEVICE; **3,467,324,** same, STATOR WINDING MACHINE, **filed** May 25, 1970, D.C., E.D. Wis. (Milwaukee), Doc. No. 70–C–283, *Lincoln Tool & Mfg. Co.* v. *Adam Products, Inc., Adam Products & Associates, Inc.*

3,351,289, R. J. Demaison, APPARATUS FOR APPLYING A PROTECTIVE REFRACTORY COATING TO THE REFRACTORY LININGS OF BASIC OXYGEN FURNACES; **3,351,460,** same, METHOD FOR PROLONGING THE LIFE OF REFRACTORY LININGS IN FURNACES OF THE KALDO, LINZ-DONOWITZ, DEMAY OR BASIC OR ACID CONVERTER TYPES; **3,460,933,** same, METHOD OF CONCURRENTLY OPERATING FURNACES OF THE ACID OR BASIC CONVERTER TYPES, **filed** Mar. 20, 1970, D.C. Del. (Wilmington), Doc. 3862, *Quigley Company, Inc.* v. *Bethlehem Steel Corporation.*

3,351,460. (See 3,351,289.)

3,359,460, Ragone and Winston, RF SIGNAL DISTRIBUTION STATION, **filed** May 7, 1970, D.C. Del. (Wilmington), Doc. 3894, *Jerrold Electronics Corporation* v. *Vikoa, Inc.*

3,359,573, R. T. Casebolt, GLASS SHOWER ENCLOSURE DOOR, **filed** May 18, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1097–HP, *Agalite Bronson Co., Inc.* v. *American Shower Door Co., Inc.*

3,363,224. (See 3,270,251.)

3,380,927, Edelstein and Welles, BROAD SPECTRUM SURFACE ACTIVE AGENT AND METHOD OF MAKING THE SAME, **filed** Apr. 24, 1969, D.C.N.J. (Camden), Doc. C–480–69, *Quaker Chemical Corporation* v. *Dexter Chemical Corporation and Sidney M. Edelstein.* Consent order of dismissal, without prejudice, Apr. 17, 1970. **Same, filed** June 24, 1969, D.C.N.J. (Camden), Doc. C–715–69, *Dexter Chemical Corporation* v. *Quaker Chemical Corporation et al.* Consent order of dismissal, without prejudice, Apr. 17, 1970.

3,388,752, Hanes and Huntsinger, COMBINATION PILE-DRIVER AND DRIVABLE THREADED PIPE SECTIONS, **filed** July 14, 1969, D.C., E.D. Tex. (Tyler), Doc. 5019, *Vetco Offshore Industries, Inc., formerly known as Ventura Tool Company* v. *Richard J. Hacker and Mrs. Rose E. Hacker, doing business as Hacker Machine & Supply Company, and Corey Supply Co., Inc.* Perpetual and permanent injunction directed to defendants and third party defendant, enjoining them. Judgment entered, Apr. 3, 1970.

3,400,949, R. E. Kendall, TRAILER HITCH WITH VERTICALLY ADJUSTABLE BALL; **3,269,751,** V. J. Whattoff, ADJUSTABLE HITCH, **filed** May 22, 1970, D.C., S.D. Iowa (Des Moines), Doc. 1020–C–2, *Ray E. Kendall and Arthur L. Hosek* v. *Vernard J. Whattoff and Whattoff Motor Company.*

3,460,933. (See 3,351,289.)

3,461,591, W. H. Nicola, DUAL-TAP BEER DISPENSING APPARATUS, **filed** Feb. 12, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–328–AAH, *Swingspout Measure Co.* v. *William H. Nicola and Inventrol Corporation.*

3,467,324. (See 3,291,417.)

3,502,785, A.D. Nickola, MOUNTING PEDESTAL FOR UTILITIES, **filed** Apr. 30, 1970, D.C., E.D. Mich. (Flint), Doc. 34801, *Anne D. Nickola, doing business as Adnic Products Co.* v. *Woodland Mobile Home Manor, Inc. and D & B, Inc.*

Re. 26,725, J. W. Sellner, COMBINED RECLINING EXERCISING AND MASSAGING DEVICE, **filed** May 11, 1970, D.C., W.D. Wis. (Madison), Doc. 70–C–112, *Embro Co., Inc.* v. *JTL Manufacturing, Inc. and Douglas A. Dale.*

Re. 25,905, P. Davidson, METHOD OF MAKING HOT TOPS FOR INGOT MOLDS, **filed** Apr. 2, 1970, D.C., N.D. Ohio (Cleveland), Doc. C70–329, *Sandvikens Jernverks AB* v. *Consolidated Ceramic Products, Inc.*

D. 217,082, H. Koenig, PANTS, **filed** Apr. 30, 1970, D.C., S.D. Fla. (Miami), Doc. 70–608–C–CA, *Harold Koenig* v. *Proper Industries, Inc., doing business as Terry Sue Casuals.* Order, cause dismissed, May 14, 1970.

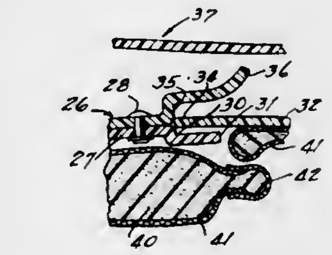
PATENTS

GRANTED SEPTEMBER 15, 1970

GENERAL AND MECHANICAL

3,528,106
SHOULDER GUARD

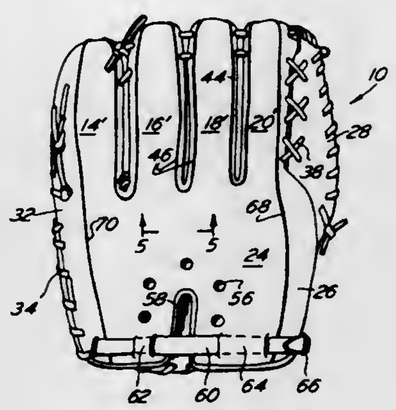
Russell A. Austin, Lubbock, Tex., assignor to Austin Sporting Goods, Inc., Lubbock, Tex., a corporation of Texas
Filed Apr. 9, 1969, Ser. No. 814,759
Int. Cl. A41d *13/00*
U.S. Cl. 2—2 **3 Claims**



A shoulder and upper body guard for football players comprising a semi-rigid protective covering for the breast, back and shoulders while engaged in the game of football, and consists of a pair of right and left similarly shaped members of light and resilient material, such as semi-rigid plastics, and conformable to the upper body of the wearer and flexibility connected across the front and back by suitable fastening devices. Shoulder caps or epaulets are hingedly attached to each member in a manner which will limit their downward movement under applied force, to protect the shoulders of the wearer, while possessing limited flexibility.

3,528,107
BASEBALL GLOVE

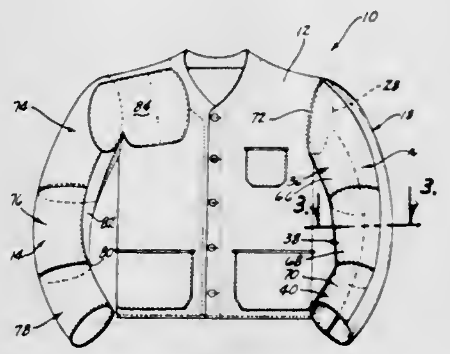
Harold Rosenbaum, Philadelphia, Pa.
(20 Rock Glen Road, Overbrook Hills, Pa. 19151)
Filed July 15, 1968, Ser. No. 744,904
Int. Cl. A41d *13/10*
U.S. Cl. 2—19 **7 Claims**



A baseball infielder's glove is disclosed having a one-piece back notched for adjustment. The construction of the back facilitates the provision of a better pocket, prevents slipping of the glove off the player's hand, enables welts along the finger positions to be eliminated, while providing for maximum safety against spiking the back of the player's hand.

3,528,108
SHOOTING GARMENT

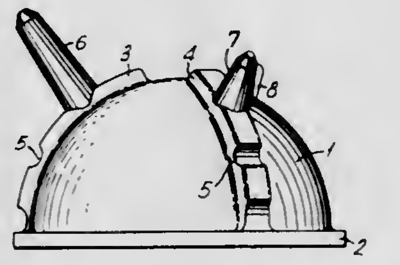
Howard O. Smith, Des Moines, Iowa, assignor to 10–X Manufacturing Company, Des Moines, Iowa
Filed Dec. 2, 1968, Ser. No. 780,545
Int. Cl. A41d *1/00*
U.S. Cl. 2—94 **5 Claims**



A shooting garment including a body portion having a pair of sleeve portions secured thereto. At least one of the sleeves is comprised of an elongated length of a single piece of seamless material extending downwardly from the shoulder to the waist of the shooter and adapted to generally engage the back of the shooter's arm and his elbow. The said one sleeve also includes three pieces of material which are secured together and to the single piece and comprise upper, intermediate and lower sleeve sections. The intermediate sleeve section extends from above the front portion of the elbow to a location below the front portion of the elbow. The construction of the single piece of seamless material and the three sleeve sections is such to eliminate seams from the center of the elbow area to provide the maximum comfort to the shooter.

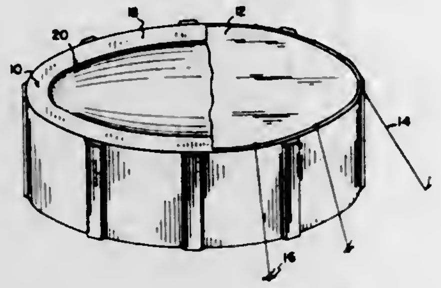
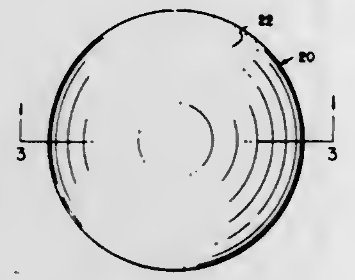
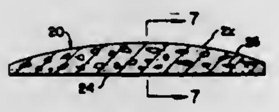
3,528,109
PROSTHETIC BONE JOINT SOCKET

John Tracey Scales, Stamnore, Middlesex, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Jan. 31, 1968, Ser. No. 701,901
Claims priority, application Great Britain, Feb. 2, 1967, 5,158/67
Int. Cl. A61f *1/24*
U.S. Cl. 3—1 **9 Claims**



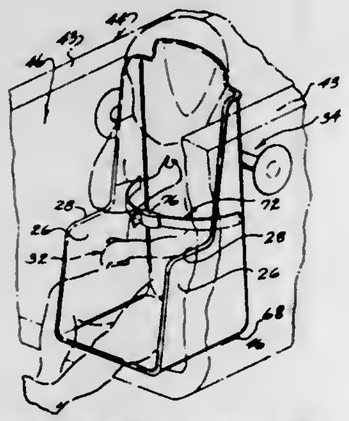
A prosthetic device for use as an acetabular replacement which comprises a generally cup-shaped member having divergent fixation means attached to or integral with its outer surface and extending therefrom for a sufficient length to achieve an intramedullary fixation when the device is in position in a patient.

3,528,110
BUOYANT SWIMMING POOL COVERS
Edward E. Woycik, 15031 Cedargrove,
Detroit, Mich. 48205
Filed Nov. 16, 1967, Ser. No. 683,733
Int. Cl. E04h *3/16*
U.S. Cl. 4—172.12 **7 Claims**

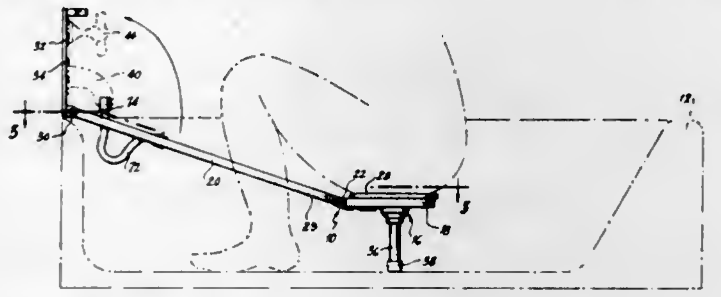
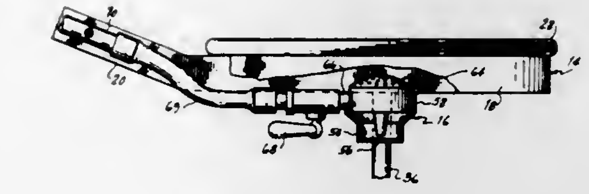
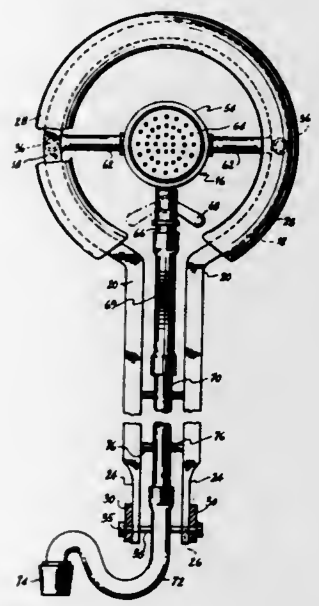
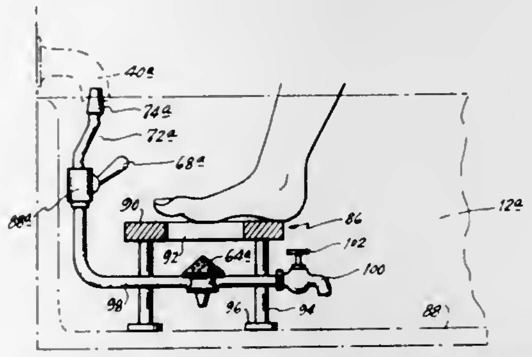
A buoyant swimming pool cover made of a substantially thick sheet of foam plastic capable of floating on the surface of the water in the swimming pool. The cover may be made in one piece or of several elements fastened together.

3,528,111
DEVICE FOR HOLDING AND POSITIONING A BABY WITHIN A BATHTUB
Don W. Chou, 1121 Brightwood St.,
Monterey Park, Calif. 91754
Filed Mar. 4, 1968, Ser. No. 709,971
Int. Cl. A47k *3/074, 3/12*
U.S. Cl. 4—185 **4 Claims**



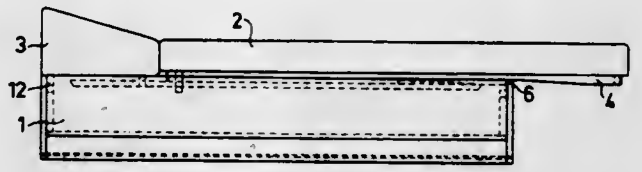
The specification discloses a seat and carrier structure in which a baby is adapted to sit, with the seat and carrier structure being provided with a transversely extendable and retractable locking bar member adapted to be positively locked against opposite inside surfaces of a bathtub whereby to firmly mount and position the seat and carrier structure within a bathtub, and with said seat and carrier structure being further provided with body-retaining strap means for fastening a baby's body in seated relationship within the seat and carrier structure.

3,528,112
COMBINED BATHTUB SEAT AND SPRAY HEAD ASSEMBLY
Philip Warnick, 228 W. 25th St.,
New York, N.Y. 10001
Filed Feb. 14, 1969, Ser. No. 799,401
Int. Cl. A47k *3/22*
U.S. Cl. 4—185 **9 Claims**

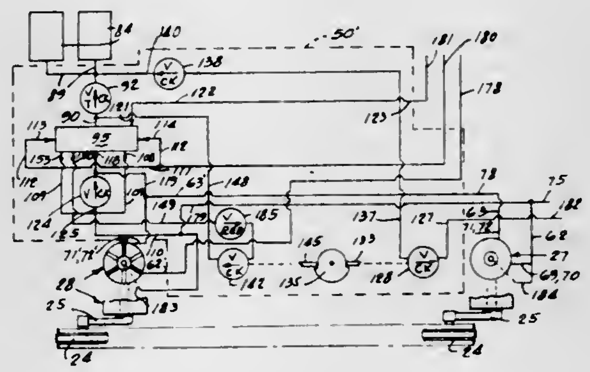
Bathing apparatus including a combined bathtub seat and spray head assembly movable as a unit into and out of operative position in a bathtub. The seat has a vertically disposed split annular body with a split horizontally disposed seat on the top edge of the annular body for supporting a person in seated position. The seat has spaced parallel bars extending radially therefrom for hinge connection to the side wall of the bathroom. The spray head assembly is nested in the seat with the spray head below and in line with the opening in the seat for treating the rectal area of the body of a person. The spray head is operatively connected to a source of water supply which connection includes a needle valve and means for rotating the spray head.

3,528,113
COMBINED SITTING AND LYING FURNITURE
Nils Tage Olofsson, 24 Gastgivarvagen, Tibro, Sweden
Filed May 14, 1968, Ser. No. 728,998
Claims priority, application Sweden, May 17, 1967, 6,880/67
Int. Cl. A47c *17/14*
U.S. Cl. 5—18 **6 Claims**



The disclosure relates to a sofa bed comprising a bottom frame portion and a rigid seat cushion which is supported on the frame. The cushion is slidable longitudinally relative to the frame and is thus movable to an overhanging position which uncovers a portion of the frame, with an auxiliary cushion then being adapted to fit over the portion so uncovered. A means is provided for engaging the rigid cushion with the frame so as to maintain the two parallel to each other even when the rigid cushion is in a substantially overhanging position.

3,528,114
ROTARY VANE SUSPENSION UNITS FOR ENDLESS TRACK VEHICLES AND THE LIKE
Paul E. Gies, Eggertsville, Gottlieb Sperl, Buffalo, and Ralph A. Braaten, Kenmore, N.Y., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Original application Mar. 28, 1966, Ser. No. 537,916, now Patent No. 3,444,787, dated May 20, 1969. Divided and this application Dec. 12, 1968, Ser. No. 798,538
Int. Cl. F15b *1/02;* **F01c** *11/00*
U.S. Cl. 60—51 **9 Claims**

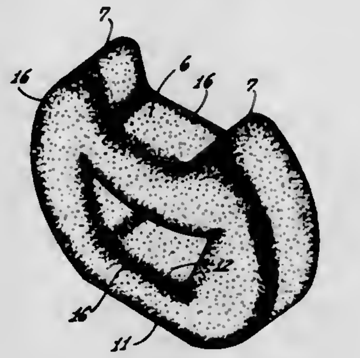


For use in rotary vane suspension units, a rotary hydraulic actuator has a chambered housing with abutment means therein and a wing shaft is oscillatably mounted in the working chamber. An end closure unit on one end of the housing body closes the working chamber and journals the adjacent end of the wing shaft. The closure unit comprises a one-piece casting having passages cored and drilled therein to effect operating communication between the working chamber and hydraulic working circuitry connected to the casting, control valve means being mounted in the casting in controlling relation to the passages. Such control valve means include a pair of distributor sleeves mounted in endwise abutment and providing respective annular valve seats and passages communicating past the seats, with a pair of coaxially relatively reciprocably related poppet valve plunger members, one of which is slidably mounted in one of the sleeves and has a poppet head opposing the seat of such sleeve and the other of which is slidably mounted in the other of the sleeves and has a poppet head opposing the seat thereof, there being pressure responsive surfaces on the valve members for automatically shifting the valve members relative to each other and to the seats.

3,528,115
BLEACHING FABRICS WITH PERACETIC ACID FORMED IN SITU THEREON
Bernard C. Lawes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 22, 1967, Ser. No. 692,691
Int. Cl. D06l *3/02*
U.S. Cl. 8—111 **7 Claims**

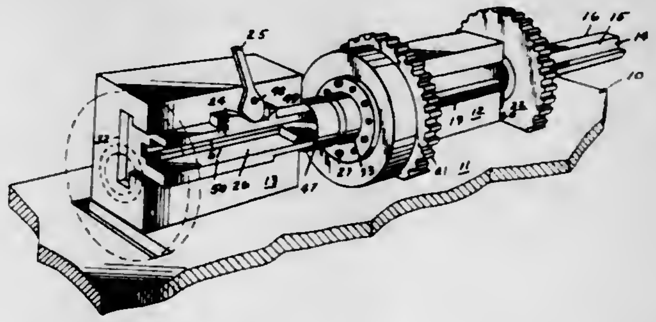
Textile fabrics which are amenable to bleaching with peracetic acid are saturated with an alkaline solution of hydrogen peroxide, the saturated fabric is contacted with acetic anhydride vapor, whereby peracetic acid is formed in situ on the fabric, and the fabric is then bleached with the peracetic acid.

3,528,116
FLOATABLE SWIMMING ACCESSORY
Olga A. Fenar, Burbank, Calif. (620 N. Wilcox L, Montebello, Calif. 90640)
Filed June 12, 1968, Ser. No. 736,386
Int. Cl. B63c *9/10*
U.S. Cl. 9—347 **3 Claims**



A partially doughnut-shaped floating body made of plastic foam or similar material. In the vertical position, a saddle-type seat is provided at the top, and an inside foot rest is provided by the flat shape of the central opening.

3,528,117
TAPPING MACHINE
Clarence B. Daniels, Brandt School Road,
Wexford, Pa. 15090
Filed Sept. 11, 1967, Ser. No. 666,778
Int. Cl. B23g *1/02, 1/04*
U.S. Cl. 10—129 **12 Claims**

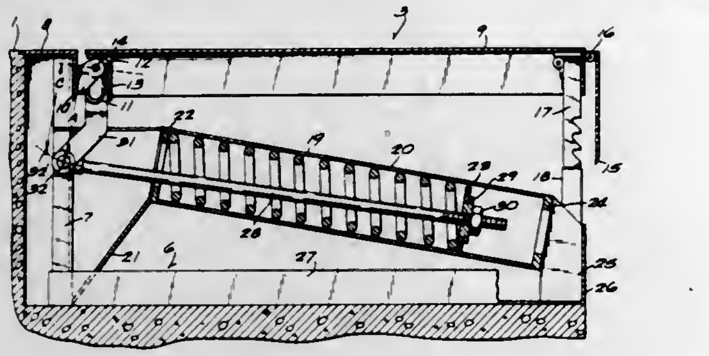


The invention disclosed herein involves a machine for threading collars or pipe couplings with internal tapered threads. A chuck for holding the collars is supported and rotated on the machine. The collars are fed to the chuck, and the bar having threading teeth on it. The bar is fed through the collar at a predetermined rate and at an angle corresponding to the desired taper on the threads to be cut. It cuts the threads as it passes through. The bar may have one or more teeth. The teeth may be spaced apart by multiples of thread pitch. The chuck can be rotated at any desired speed and can take any reasonable depth of cut. The arbor carries cuttings away from the coupling. The teeth can be spaced apart as far as desired. The units can be changed in a very short time. The chucks rotate continuously on the automatic version of this machine.

3,528,118
COUNTERBALANCING MECHANISM FOR A DOCKBOARD

Matthew Smith, West Allis, Wis., assignor to Kelley Company, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 23, 1968, Ser. No. 770,054
Int. Cl. B65g *11/00*
U.S. Cl. 14—71 11 Claims



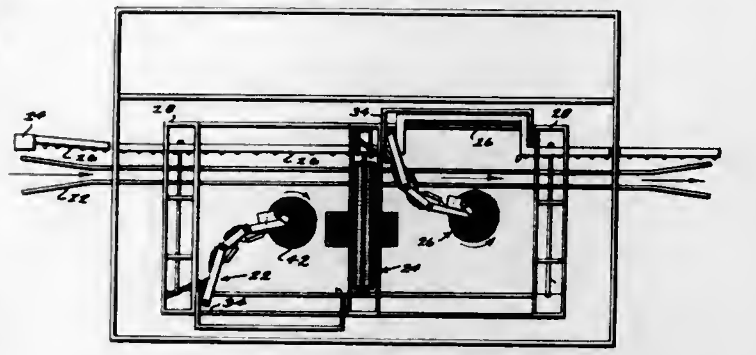
An improved counterbalancing mechanism for a dockboard adapted to bridge the gap between a loading dock and a carrier. The dockboard is mounted in a pit in the dock and includes a ramp having its rear edge hinged to the upper surface of the dock. When the dockboard is in a storage position, the ramp is located generally flush with the upper surface of the dock, and when released from its storage position, a coil spring mounted beneath the ramp acts to bias the ramp upwardly to an inclined position. The rear end of the coil spring is fixed to the dock, while the forward end of the spring carries a rod which extends axially within the spring and the inner or rear end of the rod is pivotally connected to a lever arm secured to the inner edge of the ramp. The lever and the spring are arranged so that the moment acting about the pivotal connection of the ramp to the dock and produced by the spring force acting through the rod against the lever arm will tend to balance the changing moment of the ramp throughout the arc of pivotal movement of the lever arm.

3,528,119
BRUSH MEANS FOR VEHICLE CLEANING APPARATUS

William Fergerson, Dallas, N.C., assignor to Associated Sales Enterprises Inc., Kings Mountain, N.C., a corporation of North Carolina

Filed Jan. 24, 1968, Ser. No. 700,145
Int. Cl. B60s *3/06*
U.S. Cl. 15—21 14 Claims

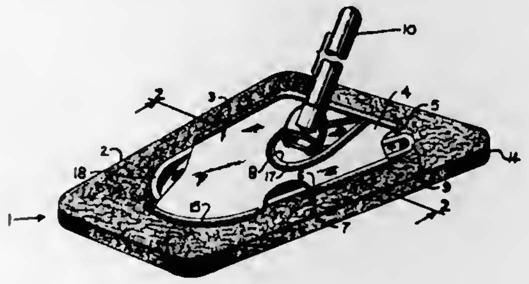
Brush means for cleaning vehicles as they advance through a washing apparatus, which brush means includes a pair of spaced complementary brush assemblies, each having a rotating brush element carried by a support linkage that permits movement of the brush element along part of the front and rear of the vehicle and along one side thereof. The support linkage includes at least two links, one of which provides a component of movement to the brush element across the rear of the vehicle in an arc generally transverse to the direction of vehicle advance and the other of which simultaneously provides a component of brush element movement in an arc initially following generally the direction of vehicle advance and ultimately generally transverse to the direction of vehicle advance. An additional brush assembly may be provided between the assemblies of the aforementioned pair, which additional assembly includes vertically hanging strands supported for movement back and forth across the upper surface of the vehicle in a path generally parallel to the direction of vehicle advance.



3,528,120
DISPOSABLE MOP AND HOLDER FOR MOP FRAME

Robert J. Lindstrom, 400–410 W. 2nd St., Sedalia, Mo. 65301

Filed Nov. 4, 1968, Ser. No. 773,179
Int. Cl. A47l *13/20*
U.S. Cl. 15—228 4 Claims



A cleaning assembly includes a generally planar disposable pad of unwoven fiber, a fabric body member having upper and lower panel portions joined together at their respective peripheral edges, an aperture in said body member for access between said upper and lower panel portions for receiving a holder member for moving the structure, and attaching means secured to a lower surface of said lower panel portion for removably attaching said pad to said body member.

3,528,121
VACUUM SQUEEGEE

Edward B. Krause, 20 Meadow Wood Road, Trumbull, Conn. 06611

Filed Apr. 4, 1968, Ser. No. 718,849
Int. Cl. A47l *5/38*
U.S. Cl. 15—308 12 Claims

A vacuum squeegee for use in a film strip developing apparatus, the squeegee including pairs of laterally opposed flexible wiper blades between which the normally vertically moving strip is threaded for wiping engagement of said blades with opposite surfaces of the film strip, said pairs of blades being spaced from each other in the direction of movement of the film strip and disposed in such relation to a vacuum chamber that the film strip moving between said spaced pairs of blades moves through said vacuum chamber. The vacuum squeegee comprises a body part fixed to a wall of the developing apparatus at one edgewise side of the film strip having a vacuum passage connected to a vacuum or suction source, and a blade holder and vacuum chamber part

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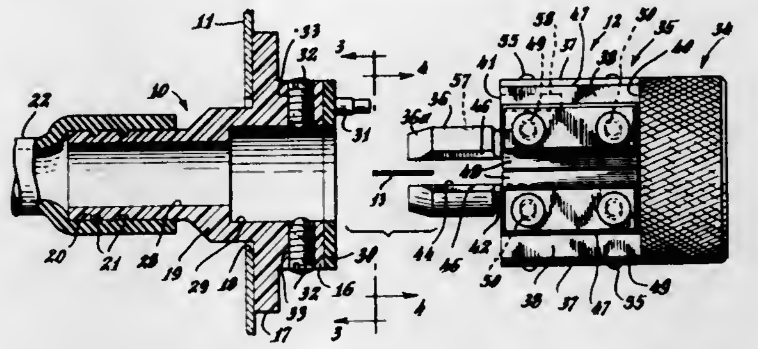
having a plug portion for insertion in a socket end portion of the vacuum passage of the body part, said plug portion having a slot opening to its outer end and connected at its inner end with said vacuum chamber and the film strip receiving spaces between said pairs of wiper blades so that said blade holder and vacuum chamber part may be readily connected to or disconnected from said body part by allowing said film strip to pass freely through said slot during said connecting or disconnecting operation for the purpose of permitting the rapid and convenient threading of the film strip between the blades, and/or the adjustment of the film engaging pressure of said wiper blades upon the surfaces of the film strip, without excessive handling of the film or disturbing its normal movement through the developing apparatus.

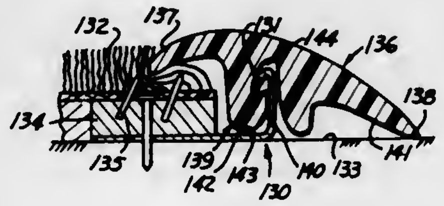


3,528,122
EDGE-FORMING MEANS FOR FLOORING

Robert T. Fuller, 449 S. Rancheria Road, and Keith A. Smith, 528 Torito Lane, both of Diamond Bar, Calif. 91766

Continuation-in-part of application Ser. No. 549,295, May 11, 1966. This application May 9, 1967, Ser. No. 641,106

Int. Cl. A47g *27/04*
U.S. Cl. 16—16 9 Claims

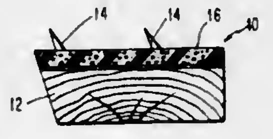


This invention relates to edge-forming means for various types of flooring materials, especially of carpets. A preferred feature of the invention resides in the use of an edging strip which is held down against the floor and the pile of a carpet as a second class lever, and which possesses viscoelastic properties.

3,528,123
CARPET FASTENING DEVICE

James L. Dipelesi, Union Valley Road, Mahopac, N.Y. 10541

Filed July 1, 1968, Ser. No. 741,516
Int. Cl. A47g *27/04*
U.S. Cl. 16—16 6 Claims



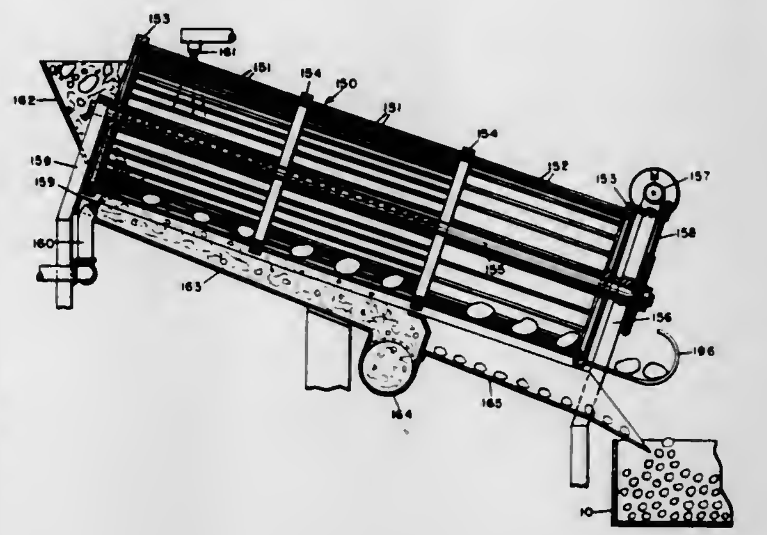
A carpet fastening device, adapted to be secured to a surface, having an elongated thin strip of rigid material with inclined protruding projections, and a layer of resilient padding material on the top surface of the strip.

3,528,124
METHOD OF SHUCKING SHELLFISH

Richard T. Wenstrom, St. Simons Island, Ga. (Sealevel, Carteret County, N.C. 28577), and Thomas S. Gorton, Jr., Cambridge, Mass. (92 Central St., Boston, Mass. 02109)

Continuation-in-part of application Ser. No. 627,470, Mar. 31, 1967. This application July 17, 1967, Ser. No. 659,274

Int. Cl. A22c *29/00*
U.S. Cl. 17—48 6 Claims

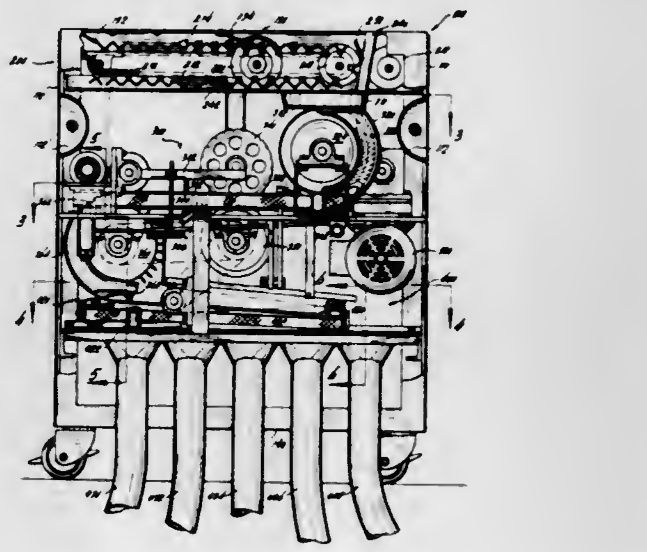


A method and apparatus for shucking raw uncooked unfrozen shellfish of the bivalve type which includes the method of opening the shells by shocking the shellfish, cleaning the viscera from the edible muscle of the shellfish and the apparatus for opening and cleaning the same.

3,528,125
METHOD OF PROCESSING SHRIMP AND RELATED SHELLFISH

John M. Jones, Jr., Mobile, Ala., assignor to General Tool Company, Inc.

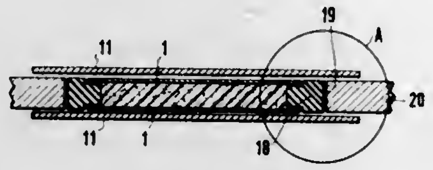
Filed Feb. 12, 1968, Ser. No. 704,630
Int. Cl. A22c *29/00*
U.S. Cl. 17—48 3 Claims



This system and apparatus is designed to take freshly caught shrimp and related shellfish from the ocean and seas and to process on board the trawler whereby they may be immediately preserved for human consumption. In short, the system includes a means for setting individual shellfish to excise the heads thereof; sequentially orienting the deheaded shellfish for conveyance to and through a deveining step, sequentially deshelling the shellfish and thereafter grading same for storage, be it either form of cold storage at freezing or non-freezing temperatures. The apparatus involved is peculiarly mobile and highly compact as will appear from the following description.

3,528,126
CONTINUOUS PRODUCTION APPARATUS FOR HARD CORE FOAM PLATES HAVING RIGID COVER LAYERS PARTICULARLY ON A POLYURETHANE BASE

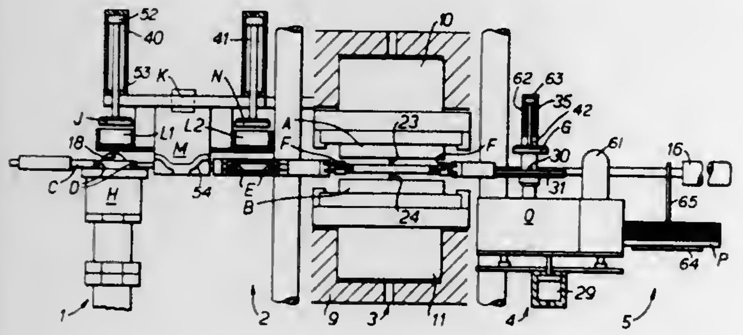
Rudolf Ernst, Strasslach, near Munich, and Karl-Josef Kraft, Leverkusen, Germany, assignors to Maschinenfabrik Hennecke Gesellschaft mit beschrankter Haftung, Leverkusen, Germany
Filed July 26, 1968, Ser. No. 747,944
Int. Cl. B29d *7/08, 9/00*
U.S. Cl. 18—4 **7 Claims**



Apparatus for the production of hard foam core plates having rigid cover plates or layers where the starting materials is introduced between the cover layers disposed at a vertical distance from one another which are moved continuously by a conveyor, where after the introduction of the foam material the upper plates which are connected to each other by sealing means are carried in the area between limiting foils on both sides by supporting disposed between the plates.

3,528,127
APPARATUS FOR THE AUTOMATIC PRODUCTION OF GRAMOPHONE RECORDS

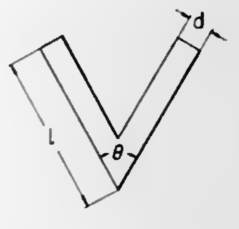
Kurt Damm, Hurth-Hermulheim, Hermann Strausfeld, Cologne-Ehrenfeld, Werner Krahn, Lovenich near Cologne, and Theodor Kronchen, Porz-Langel, Germany, assignors to Carl Lindstrom Gesellschaft m.b.H., Cologne-Braunsfeld, Germany, a company of Germany
Filed Feb. 24, 1967, Ser. No. 618,410
Claims priority, application Germany, Mar. 5, 1966, L 53,024
Int. Cl. B29d *17/00*
U.S. Cl. 18—5.3 **10 Claims**



The disclosure relates to apparatus for the automatic production of gramophone records. The apparatus comprising a moulding material supply source, a record moulding press, and a record edge trimming device arranged in line. Two longitudinal reciprocating slides are supported respectively at the front and rear of the apparatus and they carry transfer means in such locations that the forward stroke of the slides causes a first of the transfer means to deliver to the press a quantity of mouldable material obtained from the source, causes a second transfer means to transfer a record from the press to the trimming device, and causes a third transfer means to transfer a trimmed record from the trimming device to a delivery station. The return stroke of the slides restores the three transfer means to initial positions in readiness for the manufacture of another record. The press includes upper and lower moulds both of which are moved toward and away from each other to close and open the press and the second of the transfer means comprises four grabs disposed at angularly spaced positions around the press. The moulds of the press when closed are arranged to mould a record substantially in the plane of the grab devices so that they can seize the flash.

3,528,128
SPINNERET FOR MANUFACTURE OF ODD-SHAPED HOLLOW FILAMENTS

Shoichi Murakami and Haruhiko Toda, Mihara-shi, Japan, assignors to Teijin Limited, Osaka, Japan
Filed Aug. 28, 1967, Ser. No. 663,866
Claims priority, application Japan, Sept. 1, 1966, 41/57,731
Int. Cl. D01d *3/00*
U.S. Cl. 18—8 **4 Claims**



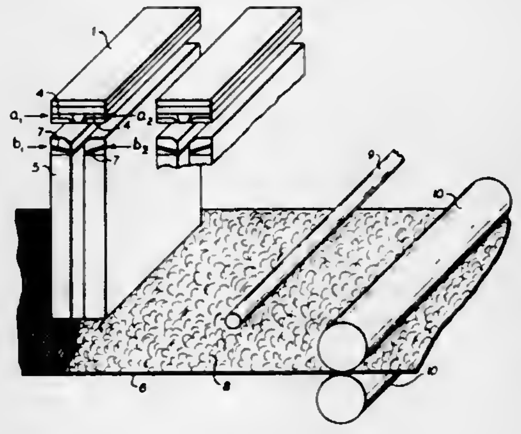
Spinneret suitable for the manufacture of hollow filaments of odd-shaped cross section which utilizes the character of the flow of a polymer melt from a specific orifice to bend spontaneously after extrusion. The orifice consists of at least two V-shaped elemental extrusion orifices each of which is made by causing one end of two rectangular slots to meet with each other.

The shape and arrangement of the elemental orifice should satisfy the three mathematical expressions given in the specification.

3,528,129
APPARATUS FOR PRODUCING NONWOVEN FLEECES

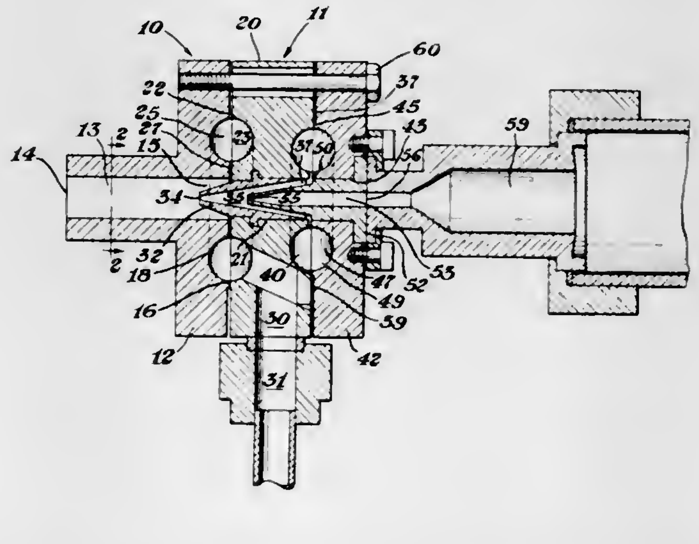
Ludwig Hartmann, Oberflockenbach, Germany, assignor to Carl Freudenberg Kommanditgesellschaft, Weinheim, Bergstrasse, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 495,929, Oct. 14, 1965. This application Nov. 7, 1966, Ser. No. 592,545
Claims priority, application Germany, Oct. 24, 1964, 1,435,466; Nov. 11, 1965, 1,660,297
Int. Cl. B28b *21/54*
U.S. Cl. 18—8 **2 Claims**

Apparatus for producing a nonwoven fabric having filaments of noncircular cross section by melt spinning filament-forming material through spinneret holes having noncircular cross-sections, which filament holes are linearly aligned to form at least one row of melt spun filaments, the axes of which are substantially parallel, air-drawing all of these filaments substantially simultaneously directly out of the spinneret holes, passing these filaments and the drawn air through channel means, and then laying down these drawn filaments on a suitable substrate while still in the tacky condition, whereby to cause these filaments to bond together predominantly at their crossing points.



3,528,130
EXTRUSION APPARATUS

Lloyd Edward Lefevre, Bay City, and Peter Breidt, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application July 22, 1965, Ser. No. 474,094, now Patent No. 3,479,425. Divided and this application July 18, 1968, Ser. No. 763,034
Int. Cl. B29d *23/04*
U.S. Cl. 18—13 **4 Claims**

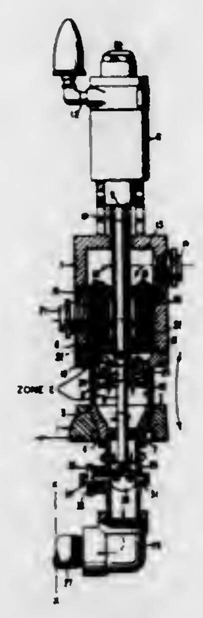


Apparatus is disclosed for the formation of simultaneously extruded laminar film wherein a composite stream consisting of coaxial streams of plastic is provided, passed to the sheeting die wherein the coaxial stream is deformed to provide a layered sheet.

3,528,131
CAST SIMULATED MARBLE BUILDING PRODUCT AND ITS MANUFACTURE

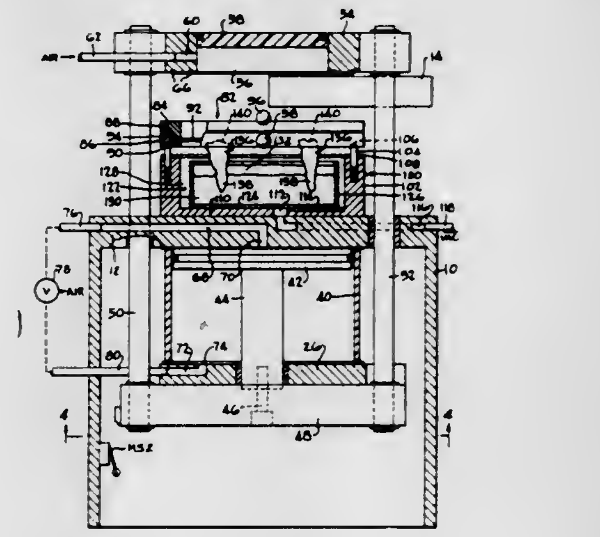
Ray Brown Duggins, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Aug. 31, 1966, Ser. No. 576,303. Divided and this application Dec. 19, 1968, Ser. No. 794,837
Int. Cl. B29f *3/02*
U.S. Cl. 18—13 **5 Claims**

This disclosure relates generally to the field of improved cast slabs, panels, and units useful in the building arts and having a predetermined controlled appearance and structure pleasingly similar to natural stone, such as marble, in a number of respects. More specifically, it relates to an improved commercially feasible apparatus arrangement by which these products can be made from certain polymeric compositions.



3,528,132
APPARATUS FOR MOLDING PLASTIC COPINGS AND SIMILAR ARTICLES

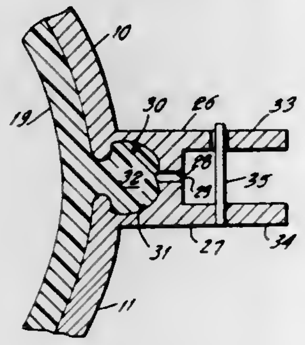
Samuel Greenberg, Philadelphia, Pa. (Stump Road and Commerce Drive, Montgomeryville, Pa. 18936), and Abe Jacobs, Philadelphia, and Davis B. Northnagel, Green Lane, Pa.; said Jacobs and Northnagel assignors to said Samuel Greenberg, Philadelphia, Pa.
Filed Sept. 3, 1968, Ser. No. 756,750
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **11 Claims**



Apparatus for molding copings, full models, teeth guards, and medicament applicators of plastic in which the desired male mold is removably mounted in a holder, a plastic sheet is mounted in another holder above the mold and means are provided to automatically effect a timed sequence in which the plastic sheet is first heated to softness, the soft sheet is then lowered onto the male mold, positive air pressure alone or in conjunction with vacuum is applied until the article is molded or formed, the air pressure is released, the plastic sheet holder is raised and the molded article then removed for cutting and trimming.

3,528,133
ROTATIONAL MOLD STRUCTURE HAVING SHORT ABUTTING FLANGES WITH ENLARGED BEAD-FORMING SECTIONS

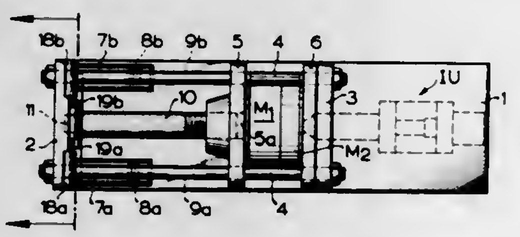
Harold H. Morse, Cincinnati, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 22, 1967, Ser. No. 685,108
Int. Cl. B29c *5/00*
U.S. Cl. 18—26 **6 Claims**



A rotational mold design formed of two or more separable mold parts having short abutting flanges to permit easy escape of expanding air from between the flanges, and having bead-forming recesses to form an enlarged bead of resin around the mold parting line.

3,528,134
INJECTION MOLDING APPARATUS

Alfred Fischbach, Am Scheffert, Runderoth, Cologne District, Germany
Filed Mar. 28, 1968, Ser. No. 716,825
Claims priority, application Germany, Apr. 26, 1967, F 52,248
Int. Cl. B29f *1/03*
U.S. Cl. 18—30 **17 Claims**

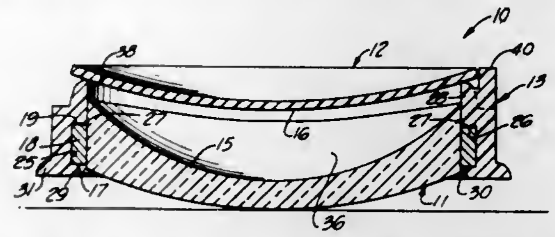


An injection molding apparatus wherein a movable platen which carries one of the two mold sections is held in an operative position, in which its mold section abuts against the other mold section, by a locking rod which is connected to the platen and is engaged by jaws mounted on a fluid-operated sealing plunger serving to apply sealing pressure and to move the platen beyond operative position during injection of plasticized material into the mold cavity. The sealing plunger is reciprocable in a cylinder which is defined by an upstanding wall forming part of the frame.

3,528,135
GASKET FOR MOLDING PLASTIC OPTICAL ELEMENTS

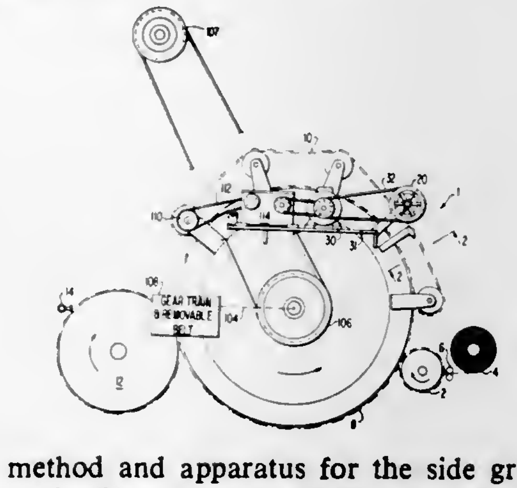
Donald R. Reiterman, Sierra Madre, Calif., assignor to Armorlite Lens Company, Inc., Burbank, Calif., a corporation of California
Filed Feb. 19, 1968, Ser. No. 706,717
Int. Cl. B21h *5/00*
U.S. Cl. 18—39 **10 Claims**

A mold assembly for casting plastic optical elements includes upper and lower mold members held separated at their peripheries by a resilient elastomeric gasket. The lower inner side wall of the gasket is formed with an inwardly facing groove adapted to seat over a ring bonded to the periphery of the lower mold member. The upper inner side wall of the gasket forms the peripheral side wall of the mold cavity and its sharp-edged inner rim edges have continuous line contact, respectively, with the lower surface of the upper mold member and the upper surface of the ring secured to the lower mold member.



3,528,136
METHOD AND APPARATUS FOR SIDE GRINDING FLATS ON A CARDING MACHINE

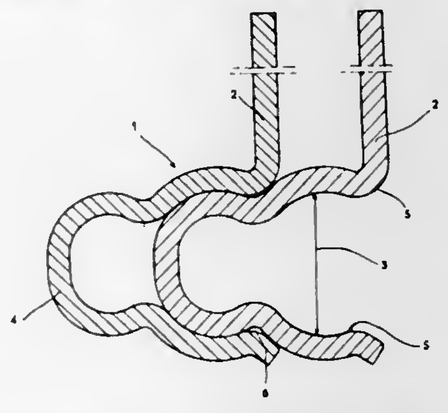
Alfred R. Bechtel, Jr., Portsmouth, R.I., and Luther W. Bridges, Jr., and Norman F. Chandler, Greenville, S.C., assignors to Ashworth Bros. Inc., Fall River, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 649,206, June 27, 1967. This application Mar. 5, 1968, Ser. No. 717,062
Int. Cl. D01g *15/08*
U.S. Cl. 19—102 **15 Claims**



A method and apparatus for the side grinding of the wire teeth of card flats as the flats are cycled about their drive path on a carding machine.

3,528,137
LINING ASSEMBLY FOR CARDING ROLLER

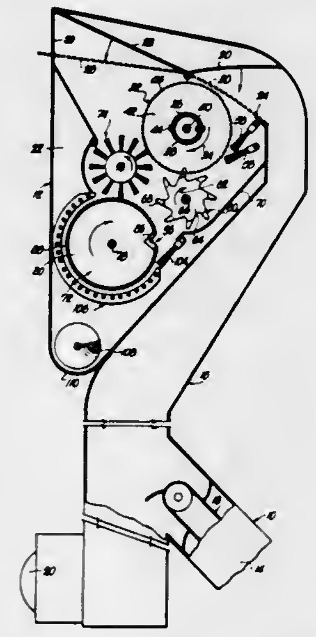
Georges Rotsaert, 40 Rue de Beaucourt 59, Roubaix, France
Filed Oct. 21, 1968, Ser. No. 769,162
Claims priority, application France, Nov. 24, 1967, 129,474
Int. Cl. D01g *15/84*
U.S. Cl. 19—114 **8 Claims**



Rigid lining for cylinder or drum and caps for cards constituted from a sheet of metal profiled so as to form a blade in which are teeth and a height flexible heel, this heel fitting in and pinched within the inside of the lower part of a contiguous coil.

3,528,138
COTTON CLEANER

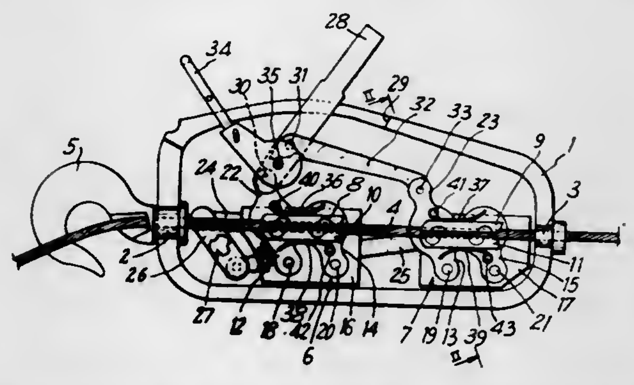
Robert L. Elder, Newton, Kans., assignor to Hesston Corporation, Hesston, Kans., a corporation of Kansas
Filed June 3, 1968, Ser. No. 734,088
Int. Cl. D01b *3/00*
U.S. Cl. 19—203 **1 Claim**



A cleaner for cotton pickers feeds the harvested cotton into an air stream directed toward a zone of collection of the cleaned cotton. The cotton and trash entrained therein are intercepted by a rotary grid capable of permitting continued flow of the air to the collection zone. Trash is combed from the grid to extract it from the cotton, whereas the clean cotton is doffed from the grid and redirected into the air stream. A reclaimer saw assembly receives the trash and such cotton still entrained therein, such additional cotton also being extracted and redirected into the air stream. Both the grid and the reclaimer saw assembly are constructed so as to be especially adapted for the aforesaid purposes.

3,528,139
PIVOTED CABLE CLAMPS

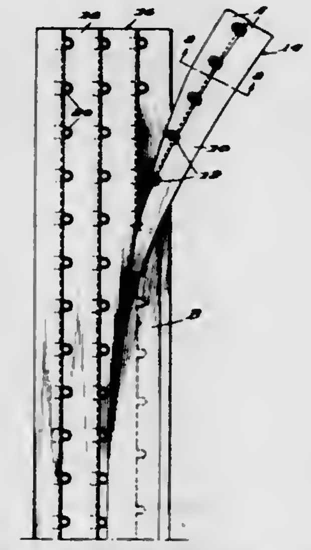
André Emile Evariste Desplats, Boulogne-Billancourt, France, assignor to Tractel S.A., Paris, France, a corporation of France
Filed Oct. 20, 1967, Ser. No. 676,941
Claims priority, application France, Oct. 25, 1966, 81,465
Int. Cl. F16g *11/00;* **B66f** *3/00*
U.S. Cl. 24—134 **1 Claim**



The present clamp is for acting on a cable passing therethrough with a self-gripping effect and includes plate springs which ensure the pre-clamping of the jaws thereof to permit a permanent contact of the jaws on the cable and separation of lateral extensions of the jaws and the opening of control links particularly in the event of small movements of the control links.

3,528,140
HOOK-AND-EYE FASTENERS

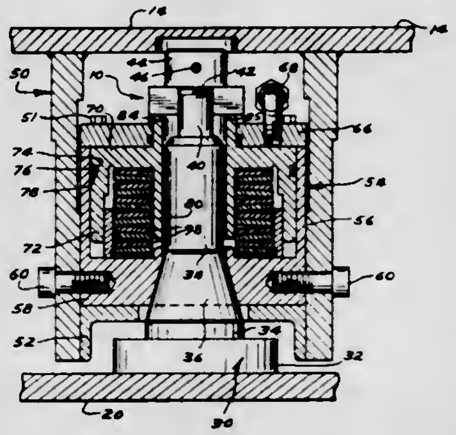
Milo Waldes, Roslyn, N.Y., assignor to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed Jan. 22, 1969, Ser. No. 793,110
Int. Cl. A44b *19/34*
U.S. Cl. 24—203 **4 Claims**



A hook tape for a hook-and-eye fastener wherein the tape proper comprises a facing ply of a sightly material and a backing of a less sightly material and is so folded that only the sightly facing material is viewable throughout all exposed surfaces and along all exposed edges of the assembled hooked tape.

3,528,141
SPRING-BIASED LOCKING MECHANISM WITH HYDRAULIC RELEASE

Ronald E. Andersen and John A. Dorumsgaard, Minneapolis, and Loren E. Swanson, St. Paul, Minn., assignors to Central Engineering Company, Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 25, 1968, Ser. No. 762,574
Int. Cl. A44b *17/00*
U.S. Cl. 24—211 **8 Claims**

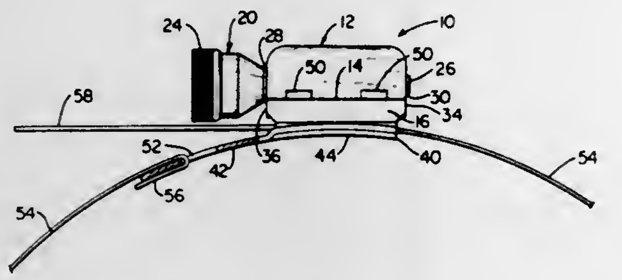


At least one disc spring normally biases a piston in one direction to cause a sliding latch to be securely locked in place. To unlock or release the sliding latch, fluid under pressure is forced against the piston to overcome the action of the disc spring or springs.

3,528,142
WORM SCREW CLAMP

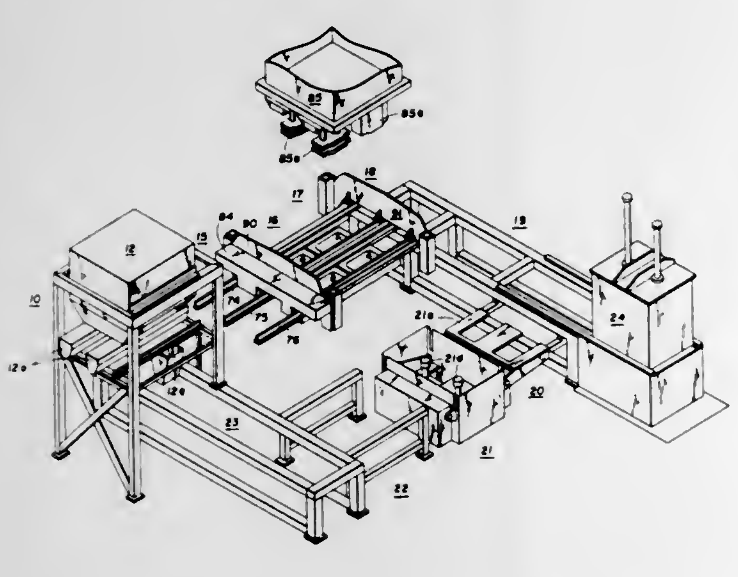
Valdemar Lodholm, Golden, Colo., assignor to Band-It Company, Denver, Colo., a corporation of Colorado
Filed May 31, 1968, Ser. No. 733,338
Int. Cl. B65d *63/02*
U.S. Cl. 24—274 **2 Claims**

Band clamp comprises band, worm screw, and housing. One end of band closes open side of housing and is directly connected, with no intermediary components, to produce accurate size passage for free end of a band member. Band may be long enough to encircle hose or be shorter, with attachment aperture in free end, with auxiliary band having one re-bent hook end passing through aperture and other end slidable in passage. Auxiliary band may pass again through aperture to form double wrap clamp. A toothed band may drivenly engage in passage and have attachment aperture at free end. Auxiliary third band may be plain strap of any selected length with re-bent ends to engage apertures of first and second bands.



3,528,143
CERAMIC EXTRUSION AND CONVEYOR SYSTEM

Jene A. Beneke, Dallas, Tex., assignor to Verson Manufacturing Company, Dallas, Tex., a corporation of Texas
Filed Aug. 9, 1967, Ser. No. 659,446
Int. Cl. B28b *15/00*
U.S. Cl. 25—2 **18 Claims**

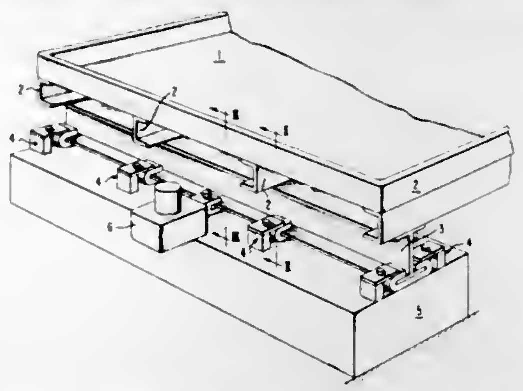


Rigid, relatively thin wall liners having flanges at the mouth thereof are moved successively through a charging station where the liners are charged with dry clay and then through forming stations in a pressure forming system. A conveyor loop moves the liners to an extraction station wherein the extruded clay articles are removed, and then the liners are conveyed to a washing station and back to the charging station for reuse in another cycle of operation.

3,528,144
CONCRETE CASTING TABLE

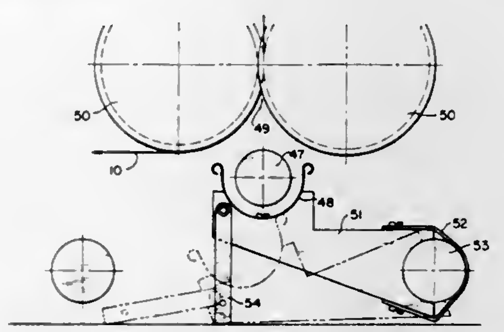
Edward L. Haponski, 239 Flamingo Road, P.O. Box 3772, West Hollywood, Fla. 33023
Filed July 12, 1966, Ser. No. 564,574
Int. Cl. B28b *7/22*
U.S. Cl. 25—41 **1 Claim**

A table for precasting concrete construction panels, wherein the table is mounted for movement with respect to its foundation only in a horizontal plane and a horizontal vibrator is attached to the table for distributing the concrete during pouring and improving its properties, particularly density.



3,528,145
SPLIT DETECTOR FOR FABRICS UNDERGOING INCREMENTAL LATERAL STRETCHING

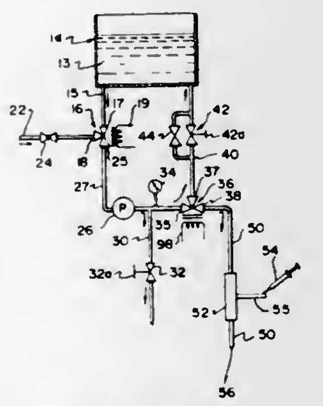
Walter S. Troope, Latham, and Charles G. Corp, Mechanicville, N.Y., assignors to Cluett, Peabody & Co., Inc., Troy, N.Y., a corporation of New York
Filed Oct. 31, 1968, Ser. No. 772,221
Int. Cl. D06c *3/06*
U.S. Cl. 26—63 **7 Claims**



This invention is directed to a method and apparatus for stretching and elongating a continuously advancing web of textile fabric transversely to its direction of travel by subjecting it progressively to a multiplicity of simultaneously applied, closely spaced, laterally aligned, sets of stretching forces while simultaneously restraining the selvages against movement toward each other. An ultrasonic scanner is employed to detect and indicate the presence of any fabric splits that may occur. The transverse stretching may be effected either with or without prior or subsequent chemical treatment of the web.

3,528,146
EMBALMING MACHINE

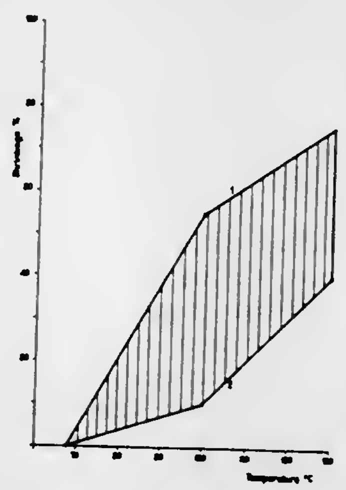
Armen Markarian, Chicago, and Thadeus Skuba, Hoffman Estates, Ill., assignors to Armen Markarian, Chicago, Ill.
Filed June 27, 1968, Ser. No. 740,603
Int. Cl. A01n *1/00*
U.S. Cl. 27—24 **9 Claims**



A compact portable electrically controlled machine combining the aspirating and embalming functions including a motor driven pump, easily operated controls and system interlocks to change the flow of embalming fluid through the system.

3,528,147
PROCESS FOR PREPARING NON-WOVEN FABRICS

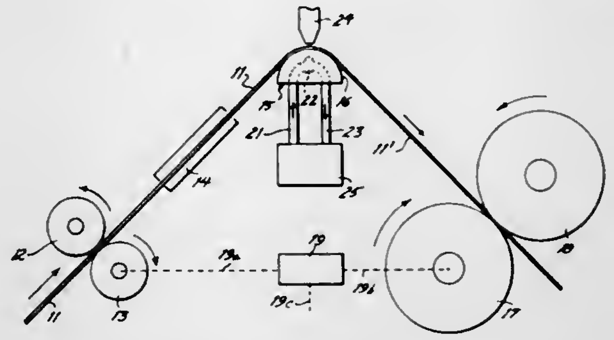
Aldo Fior, Goteborg, Sweden, and Mauro Navone, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed Apr. 8, 1968, Ser. No. 719,310
Claims priority, application Italy, July 25, 1967, 18,760A/67
Int. Cl. D04h *18/00*
U.S. Cl. 28—72.2 **6 Claims**



Non-woven fabrics made up of non-woven lap and backing prepared by making up a non-woven lap comprising a blend of fibers containing from 5 to 50% of heat-shrinkable fibrous component, laying such lap upon a backing, mechanically interlocking portions of the lap with the backing, as by passage of the lap-backing through a needle-punching machine, and heating so as to shrink the fibrous component.

3,528,148
APPARATUS FOR STRAND TREATMENT

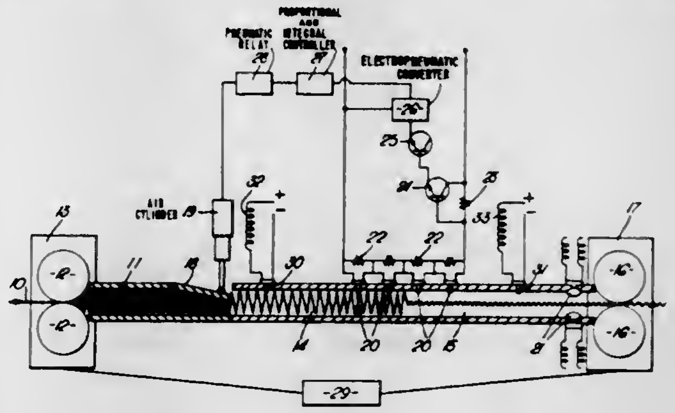
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Kennett Square, Pa., a corporation of Pennsylvania
Continuation-in-part of applications Ser. No. 476,933, Aug. 3, 1965, and Ser. No. 511,929, Dec. 6, 1965. This application Dec. 1, 1967, Ser. No. 687,391
Int. Cl. D02g *1/00*
U.S. Cl. 28—1.2 **9 Claims**



This invention relates to novel apparatus for drawing molecularly orientable textile strands to increased length and thereby orienting them and also for crimping such textile strands. Means are provided for pulling a molecularly orientable textile strand over a snubbing surface to draw it to increased length and thereby orient it, as are means for simultaneously cooling the side of the strand in snubbing contact therewith. Additionally, in one embodiment of the invention, means are provided for heating the exposed side of the strand while the opposite side is maintained cool by contact with the snubbing surface. Upon subsequent relaxation from tension, with or without the aid of heat, the strand assumes a crimped configuration. Optional preheating means are also provided.

3,528,149
CRIMPING OF YARN

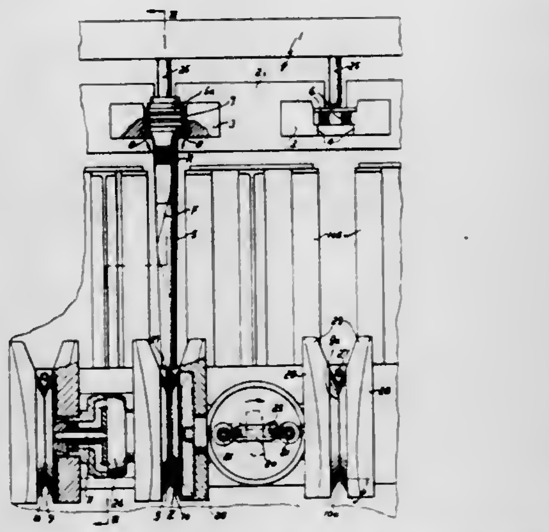
Angelo Luigi Alfredo Tambini, Leslie George Williams, and John Charles Oliver Rochester, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Mar. 29, 1968, Ser. No. 717,290
Claims priority, application Great Britain, Apr. 14, 1967, 17,271/67
Int. Cl. D02g *1/12*
U.S. Cl. 28—1.7 **18 Claims**


PNEUMATIC RELAY
PROPORTIONAL AND INTEGRAL CONTROLLER
ELECTROPNEUMATIC CONVERTER
AIR CYLINDER
-29-

Apparatus for controlling uniformity of crimp comprises a stuffer box having adjustable counterpressure means and contiguous therewith a detection chamber provided with photoelectric means for detecting the amount of crimped yarn therein, and means for adjusting the counterpressure means in response to any change in the amount of yarn in the detection chamber. In operation the apparatus varies backpressure exerted on the yarn as it enters the stuffer box in response to changes in crimp ratio in the yarn.

3,528,150
METHOD FOR REMOVING THE RESIDUAL THREADS FROM A SPOOL

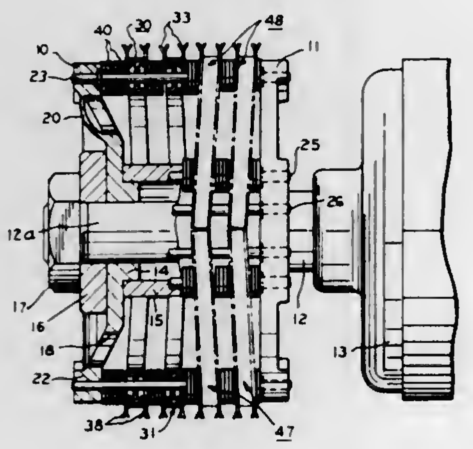
Erwin Schmid, Augsburg, Germany, assignor to Firma Knotex Maschinenbau G.m.b.H., Augsburg, Germany, a corporation of Germany
Filed Feb. 2, 1968, Ser. No. 702,739
Claims priority, application Germany, Feb. 4, 1967, K 61,346; June 2, 1967, K 62,445
Int. Cl. D03d *45/58*
U.S. Cl. 28—72 **3 Claims**



Residual thread is removed from spools by blowing the start of the thread into the gap between two separated rotating coaxially mounted discs, which are then pressed together so that the thread is clamped between them and winds on them. The opposed faces of the discs are frustoconical so that when they are separated the wound annulus of thread slides readily off them.

3,528,151
RASP HEAD CONSTRUCTION

Ernest W. Walter, P.O. Box 2119, 2411 Cypress Gardens Road, Winter Haven, Fla. 33880
Filed Aug. 13, 1969, Ser. No. 849,783
Int. Cl. B23d *71/00;* **B27l** *1/00*
U.S. Cl. 29—78 **16 Claims**

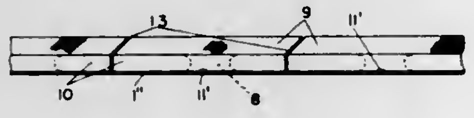


An improved rasp head is provided especially adapted for removing rubber from a carcass of a tire prior to retreading, recapping, or the like. Among the advantages afforded by the present construction are: easy and quick assembly and disassembly of the component parts; flexible mounting of the cutting teeth, so that they may flexibly assume an outward position under the influence of centrifugal force and can deflect inwardly and/or laterally to minimize breakage of the teeth; adjustable spacing between blades of cutting teeth to vary the distance between the blades and/or the angular pitch or rake of the teeth with respect to a direction of movement; and a self-induced purge of ambient air through the head to cool the cutting teeth.

In a preferred embodiment, the cutting teeth take the form of a warp-resistant, integral, dual-bladed unit of U-shaped cross-section in which each leg of the U-shape terminates in cutting teeth. The dual-bladed unit may be detachably mounted with respect to the rasp head or the like.

3,528,152
BAND-TYPE FILE

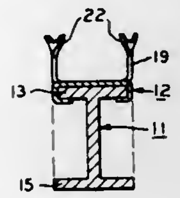
Shinnosuke Funakubo, 19 3-chome Fukagawa Takabashi Koto-ku, Tokyo, Japan, and Toshio Saito, 543 Oaza Okimachiya, Musashi-machi, Irima-gun, Saitama, Japan
Filed Mar. 8, 1967, Ser. No. 621,640
Claims priority, application Japan, Mar. 17, 1966, 41/16,084; Dec. 9, 1966, 41/80,532
Int. Cl. B23d *71/00*
U.S. Cl. 29—78 **1 Claim**



The disclosure of the present application might be abstracted as related to a novel file consisting of a metallic band having a griding surface with teeth or grains which is integral with said bond, and a band saw type filing machine mounted with such novel file.

3,528,153
RASP BLADE CONSTRUCTION

Ernest W. Walter, P.O. Box 2119, 2411 Cypress Gardens Road, Winter Haven, Fla. 33880
Filed Aug. 13, 1969, Ser. No. 849,782
Int. Cl. B23d *71/00;* **B27f** *1/00*
U.S. Cl. 29—79 **22 Claims**

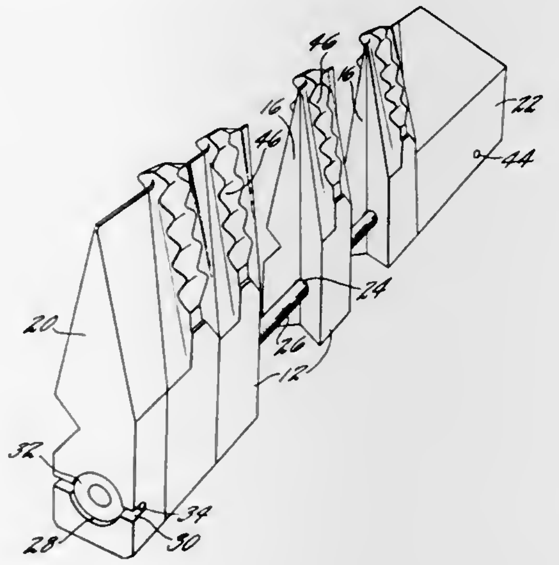


An improved rasp blade is provided for removing rubber from a carcass of a tire prior to retreading, recapping, or the like. Different shapes of cutting teeth are described adapted for various cutting actions, but all teeth have in common elevating portions which raise the teeth with respect to a support. The elevating portions are spaced apart to define exits therebetween, so that cuttings and the like formed by the teeth readily clear the blade.

In a preferred form, the rasp blade has a warp-resistant, integral U-shaped cross-section in which each leg of the U-shape has a blade structure as described. The dual blade unit may be detachably mounted with respect to a rasp head or the like.

3,528,154
INDIVIDUAL TOOTH BROACH

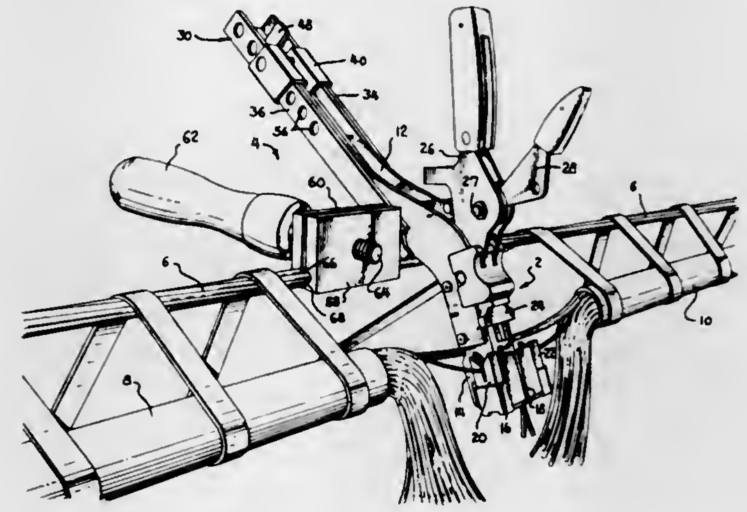
Frederick W. Schmidt, 19 Windmill Hill Road, Branford, Conn. 06405
Filed Mar. 28, 1968, Ser. No. 716,919
Int. Cl. B23p *15/42*
U.S. Cl. 29—95.1 **10 Claims**



In the present disclosure a form broach is composed of a number of individual interlocking cutting elements which combine in an interdependent relationship to create the form broach. Each individual cutting element in the broach alignment interlocks with a neighboring cutting element by a male and female V-groove interlock structure which forms a part of each tooth in the assembly.

3,528,155
CABLE SPLICING APPARATUS

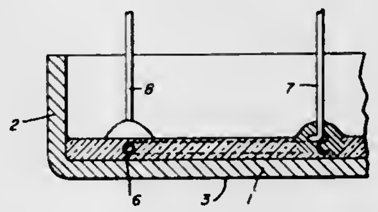
James Fredrick Marshall, Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 17, 1967, Ser. No. 683,856
Int. Cl. H01r *43/04, 5/10;* **B23q** *3/04*
U.S. Cl. 29—203 **1 Claim**



Plier-type tool for crimping electrical connector onto wires extending axially towards each other has fixed and movable handle. Upon relative movement of movable handle towards fixed handle, connector is crimped onto wires to form connection. Adjustable clamping means is provided on fixed handle and extends laterally therefrom. Fixed handle can be secured to messenger cable by means of this clamping means so as to locate tool head adjacent to telephone cable which is supported by the messenger cable.

3,528,156
METHOD OF MANUFACTURING HEATED CATHODE

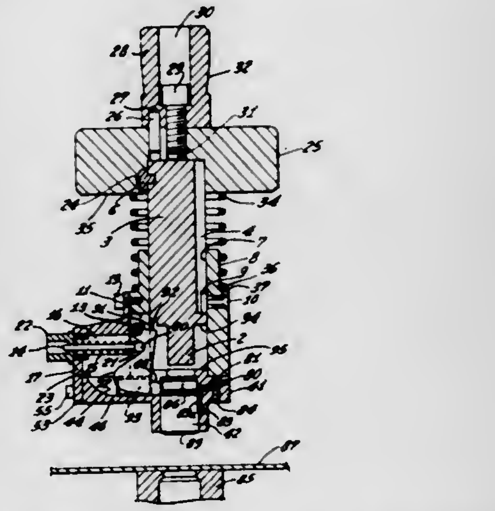
August J. Kling, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Application Dec. 7, 1964, Ser. No. 418,591, now Patent No. 3,400,294, dated Sept. 3, 1968, which is a continuation-in-part of application Ser. No. 247,171, Dec. 26, 1962. Divided and this application Nov. 3, 1967, Ser. No. 680,517
Int. Cl. H01j *9/00*
U.S. Cl. 29—25.17 **8 Claims**



A low-mass, high-temperature cathode is formed by roughening the underside of the planar metal surface by depositing powdered metal particles on such underside and sintering. A ceramic slurry is deposited on the sintered metal particles to provide interlocking engagement with the metal particles. A heating coil is at least partially embedded in the ceramic slurry which is fired and sintered to form a quick-heating rigid structure, the interlocking engagement between the ceramic and the sintered metal particles preventing separation of the sintered slurry and the embedded heater coil from the planar metal surface during operation. Metal powder or particles may also be sintered to the upper surface of the cathode to provide interlocking anchorages for electron emitting materials.

3,528,157
PRESS TOOLS

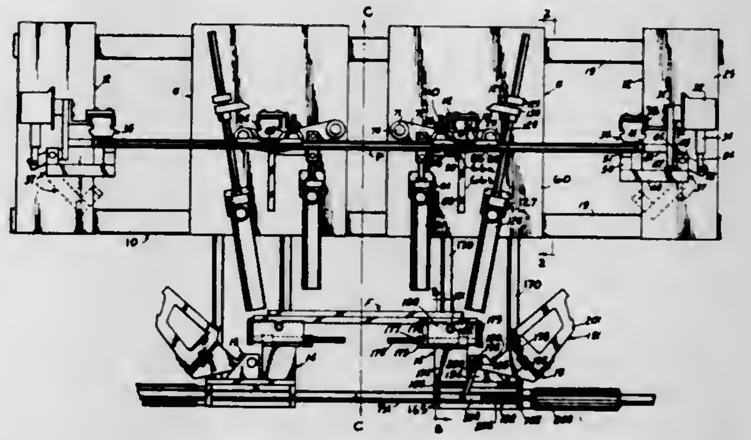
Edward Charles McGee, Bishops Stortford, England, assignor to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 662,014
Claims priority, application Great Britain, Aug. 24, 1966, 37,892/66
Int. Cl. B23p *19/04;* **B23q** *7/10;* **B22p** *11/00*
U.S. Cl. 29—200 **10 Claims**



An apparatus for punching inserts into sheet material. The inserts may be punched into holes previously formed in the material, or the inserts may be of the self-punching type. This apparatus may be attached to a pressure-applying member of a press, e.g., the ram of a reciprocating ram type press. A feeding mechanism is provided to facilitate the punching of a succession of inserts.

3,528,158
AUTOMATIC DRAWER FORMING AND ASSEMBLING MACHINE AND METHOD AND PRODUCT THEREOF

William Horace Black, 3060 Pharr Court N., and Clarence Edward Pittman, 2479 Peachtree Road, Apt. 1116, both of Atlanta, Ga. 30305, and George E. von Gal, Jr., P.O. Box 1241, Montgomery, Ala. 36102
Filed July 12, 1968, Ser. No. 744,578
Int. Cl. B23p *19/04*
U.S. Cl. 29—200 **4 Claims**



An automatic drawer forming and assemblying machine wherein spaced transverse supports retain therebetween a median portion of a plastic sheet or panel in parallel relationship above a drawer front. The outer portions of the panel protrude in opposite directions beyond the supports. The machine supports a rectangular drawer bottom perpendicular to and between the drawer front and the median portion of the panel. Heating elements, at spaced intervals, heat narrow transverse intermediate increments of the plastic panel above the supports, to render these narrow portions pliable. Pivotally mounted fold plates, outwardly of the heating elements bend or deform the outer portions of the plastic panel downwardly and inwardly about the pliable increments to abut the sides of the drawer bottom and so that the ends of the panel abut opposed sides of the drawer front. Staplers, mounted on the machine, move inwardly adjacent the ends of the plastic panel to staple the lower end portions of the plastic panel to the sides of the drawer front.

Additional heating elements are provided for heating the end portions of the panel so that they are pliable to facilitate the stapling operation. Also, fingers are provided, to operate in conjunction with the staplers, to tuck in the ends of the plastic panel into the drawer front.

Modifications include a mechanism for moving a slotted drawer front upwardly so as to insert the ends of the plastic panel into slots in the drawer front after deformation of the panel.

The process or method is recited above in describing the machine for carrying out the process.

The drawer thus formed has its back wall and two sides formed from the single panel of plastic, the panel having a recess or channel which receives and restricts the side and back edges of the drawer bottom. The upper flange of the plastic panel projects outwardly, on the opposed sides, and projects rearwardly of the back side, the flange curving around the corners. A fillet is used in the event that the flange is cut, rather than being drawn around the corner. The tucked-in ends of the plastic panel and the staples retard shearing of the drawer front from the plastic panel. The drawer has a drawer guide attached manually during the assembly process.

3,528,159

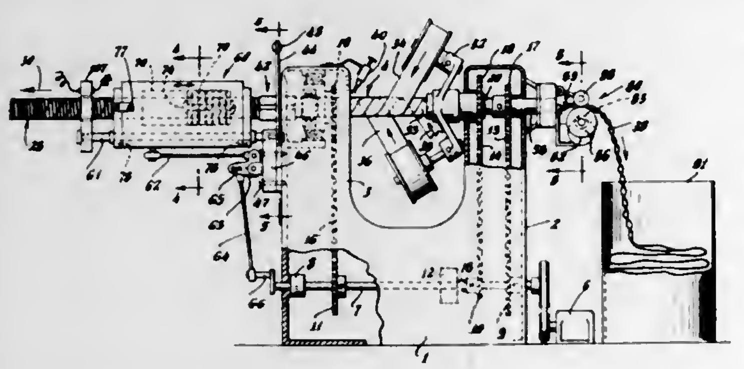
METHOD OF MAKING HELICALLY CORRUGATED FLEXIBLE TUBULAR DUCT OF METAL FOIL AND FOR INSULATING SAME

George N. Miles, Tenafly, N.J., assignor to Calmac Manufacturing Corporation, Englewood, N.J., a corporation of New York

Filed July 10, 1968, Ser. No. 743,878

Int. Cl. B23p *17/00*

U.S. Cl. 29—423 **8 Claims**



Process and machine for manufacturing helically corrugated flexible tubular duct from metal foil strips and for insulating same, the metal foil strips being initially wound around a hollow mandrel with a left-hand helix on top of a similarly wound strip of paper so as to form a tubular wall having multiple plies of metal foil with a single interior ply of paper. The tubular wall is fed between revolving inner and outer meshing screw threaded dies which corrugate the tubular wall with a closely packed right-hand helix while at the same time feeding the corrugated wall forwardly by its screw action. Reciprocating ratchet means engage the valleys of the corrugated wall for axially stretching the closely packed corrugations, the paper strip then being separated from the corrugated tubular wall by peeling it off from the interior of the duct and pulling it out rearwardly through the hollow mandrel structure. Sensing means is responsive to the locus of the peeling separation of the paper strip from the duct wall for automatically synchronizing the average rate at which the paper is being pulled out rearwardly, the pulling force being controlled to be less than the breaking strength of the paper, thus creating an all metal multiple-ply foil duct which is substantially air-tight, and a layer of insulation enclosed by an outer covering is applied to the all-metal duct as it continues to feed forwardly, thus making long lengths of such insulated duct at a minimum expense.

3,528,160

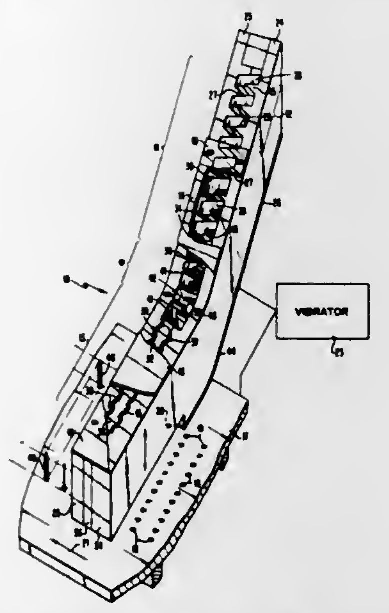
APPARATUS AND PROCESS FOR HANDLING NEEDLE-LIKE OBJECTS

James R. Wadleigh, Williston, Vt., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Dec. 5, 1967, Ser. No. 688,154

Int. Cl. B23p *11/00;* **H01h** *11/00;* **H05k** *13/00*

U.S. Cl. 29—429 **11 Claims**



An apparatus for the vibratory feeding of needle-like objects and for loading the objects into a matrix is described. The apparatus comprises an inclined channel into which the needle-like objects are loaded in substantially parallel alignment, a substantially horizontal channel into which the objects move in a substantially parallel and vertical alignment for dispensing from the apparatus, and means connecting the two channels through which the objects may pass. The channels contain a plurality of baffles for regulating the movement of the needle-like objects and for maintaining them in substantially parallel alignment. The disclosed apaparatus will provide the needle-like objects to a desired location at a relatively constant density. It may be used with a matrix having a succession of holes into which the objects may be loaded, means for moving the matrix relative to the apparatus to bring the holes near the feed point sequentially, and means for vibrating the objects. The claimed apparatus and process is particularly useful for loading reed switch levers.

3,528,161

METHOD AND APPARATUS FOR FABRICATING JOINTED STRUCTURES

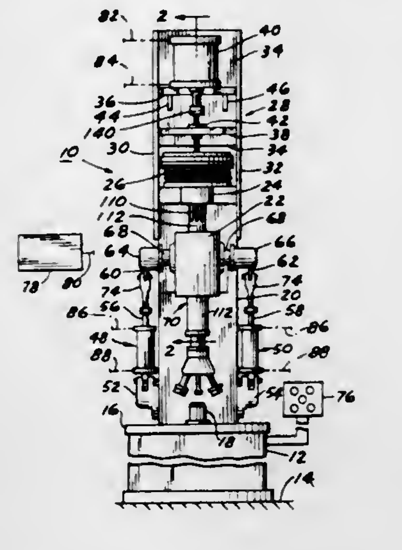
Jack Cedar, 53067 Saturn Drive,
Utica, Mich. 48087

Filed Apr. 26, 1968, Ser. No. 724,349

Int. Cl. B23p *11/00, 19/00*

U.S. Cl. 29—434 **11 Claims**

A method for fabricating or assembling jointed structures having a housing containing therein at least an end of a cooperating linkage, intended to be movable relative to the housing, and a closure or retainer member employs the steps of providing a first relatively high loading force against the housing, linkage end and retainer in order to seat at least the linkage end against a seating surface carried by the housing, reducing the first loading force and applying at least a second relatively low loading force against the same components and working the material of at least the housing so as to hold the retainer in a prescribed position relative to the housing and the linkage end in order to provide for a certain degree of relative movement between the linkage and housing.



An apparatus for performing the above method has a clamping rod positioned by pressure responsive means so as to apply the said first loading force against the housing, linkage end and retainer and then to apply said second relatively low loading force thereto during which time a rotating spindle provided with a metal-forming tool is lowered by pressure responsive means against the workpiece, comprised of at least said housing, so as to work the material comprising the workpiece to hold the retainer in a prescribed relationship relative to the housing and linkage.

3,528,162

METHOD OF FORMING A WOUND TUBULAR MEMBER

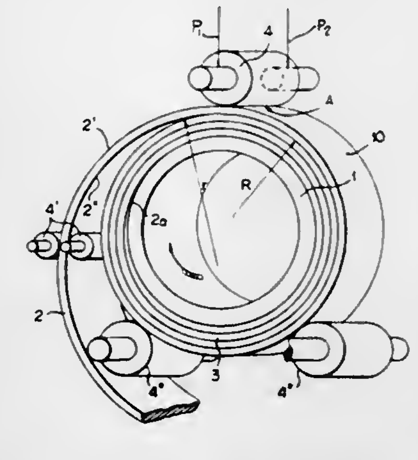
Hideo Sagara, Hiroshima-shi, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Sept. 13, 1967, Ser. No. 667,547

Claims priority, application Japan, Sept. 27, 1966, 41/63,598

Int. Cl. B21d *39/04*

U.S. Cl. 29—473.9 **9 Claims**



A tubular member adapted to withstand high internal pressure formed of a hollow core member, a continuous strip of metal having a thickness greater than 5 mm. tightly wound in overlapping layers about the core member and an outer cover member disposed about the outer layer of the strip of metal for securing the spirally wound metal in place.

3,528,163

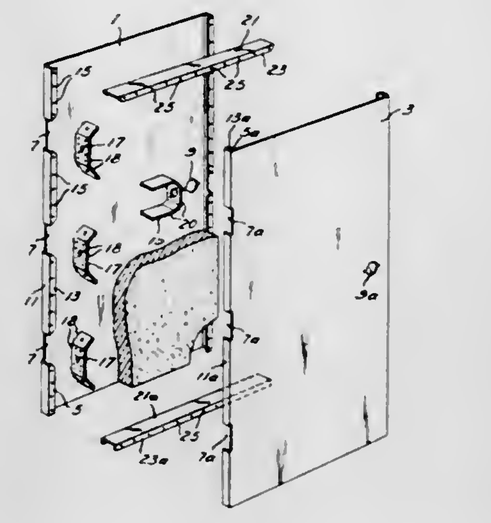
METHOD OF MAKING METAL DOOR

Arthur S. Brown, Girard, Harold E. Leiby, Southington, and Earle A. Miller, Warren, Ohio, assignors to The American Welding & Manufacturing Company

Original application Oct. 19, 1966, Ser. No. 587,903, now Patent No. 3,455,078, dated July 15, 1969. Divided and this application Aug. 5, 1968, Ser. No. 750,093

Int. Cl. B21d *39/00;* **B23p** *19/04;* **B23k** *31/02*

U.S. Cl. 29—455 **4 Claims**



The present door invention comprises front and rear metal sheets connected together along their longitudinal edge portions and along their end portions to top and bottom closures and to the edges of interior parts, such as hinge and lock reinforcements, all by projection welds.

3,528,164

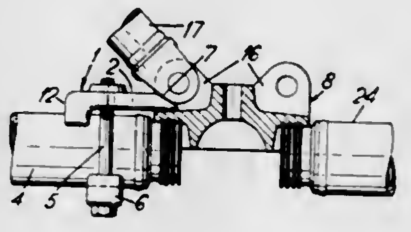
METHOD OF ASSEMBLING TUBULAR STRUCTURES

Percival J. Packman, Twyford, and Hubert B. Walker, East Barnet, England, assignors to Stewarts and Lloyds Limited, London, England, a British company

Filed Feb. 5, 1968, Ser. No. 703,088

Int. Cl. B23q *3/00, 19/00*

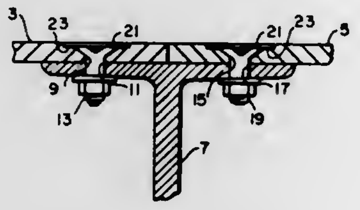
U.S. Cl. 29—468 **5 Claims**



A method of assembling a joint between the ends of a number of tubular steel members lying substantially in a common plane and forming part of a space frame, the joint being made by means of a pair of clamping elements between which the ends of the tubular members are gripped. In this method the ends of one or more of the tubular members are connected temporarily and independently to one of the clamping elements, each by an individual device which does not impede the subsequent fitting of the second clamping element, the ends of the remaining tubular members are brought into their correct positions in relation to the first clamping element, and finally the second clamping element is secured to the first to grip the ends of the tubular members and thus complete the joint.

3,528,165
CORROSION INHIBITING PROCESS

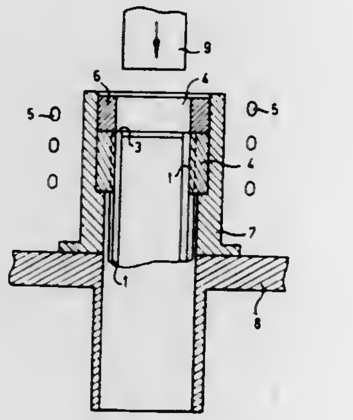
Forrest S. Williams, Springfield, Pa., and Robert L. Abbott, Medford Lakes, N.J., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 24, 1967, Ser. No. 634,057
Int. Cl. B23k *21/00*
U.S. Cl. 29—470.1 1 Claim



Subject invention relates to an improved process for inhibiting corrosion at and around fastening devices that are used to join two or more load carrying structural elements one to the other. The improved method involves the use of a metallic patch or strip ultrasonically welded over the exposed extremities of the fastening devices to provide a hermetic seal from the external environment.

3,528,166
PROCESS FOR THE WELDING OF METAL OBJECTS

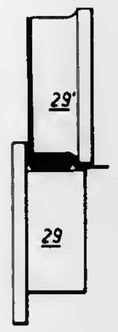
Marcel Portal, Brebbia, and Giuseppe Musso, Cadrezzate, Italy, assignors to European Atomic Energy Community (EURATOM), Brussels, Belgium
Filed Feb. 19, 1968, Ser. No. 707,023
Claims priority, application Belgium, Apr. 14, 1967, 42,436
Int. Cl. B23k *5/22, 31/02*
U.S. Cl. 29—493 5 Claims



Openings in metal bodies are sealed by placing thereover a metal closure element of a greater size than the opening so as to contact the body about the opening, placing this assembly in a die having the size and configuration to closely fit said assembly, heating said assembly to a temperature that the metal becomes plastic and applying pressure to said heated closure element until intermetallic diffusion occurs at the contacting surfaces. The metal in at least one of the body and closure elements is a dispersion hardened alloy such as sintered aluminum powder.

3,528,167
METHOD FOR CONNECTING EDGES OF SHEET METAL

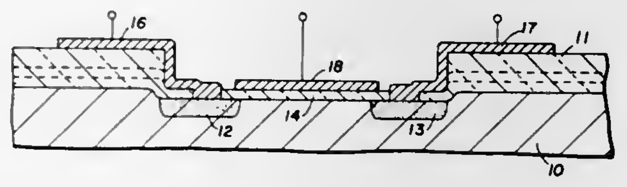
Xaver Lipp, Aalen, Germany, assignor to Reinhardt Maschinenbau G.m.b.H., Sindelfingen, Wurttemburg, Germany
Original application Oct. 7, 1965, Ser. No. 493,737, now Patent No. 3,407,640, dated Oct. 29, 1968. Divided and this application June 13, 1968, Ser. No. 736,661
Claims priority, application Germany, Jan. 30, 1965, L 49,857
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—509 3 Claims



A method of foldably interconnecting sheet metal portions which are perpendicular to each other. The mutually perpendicular sheet metal portions extend parallel to each other, and while their edges are spaced from and parallel to each other one of these edges is bent through an angle of 90°. Then this bent portion is placed against the other sheet metal portion at a location spaced slightly from the free edge of the latter. This latter free edge is then bent around the first bent free edge portion. Then the folded edge portions are together folded against the surface of the first sheet.

3,528,168
METHOD OF MAKING A SEMICONDUCTOR DEVICE

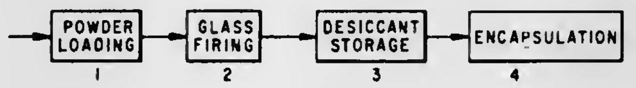
Joseph W. Adamic, Jr., Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 26, 1967, Ser. No. 670,635
Int. Cl. H01l *11/14*
U.S. Cl. 29—571 5 Claims



A semiconductor device wherein the process of fabrication includes forming a layer of impurities into a semiconductor substrate in a predetermined pattern through a diffusion mask. A thick dielectric is deposited over the entire surface of the semiconductor substrate including the diffused area and the diffusion mask. A section of the dielectric is removed exposing a portion of the doped impurity region which is then etched away to define separate and distinct doped regions. Next, a thin insulating layer is grown or deposited on the semiconductor substrate in the etched region between the two doped regions and openings formed in the thick dielectric to expose the doped regions to a metal layer deposited directly onto the dielectric and extending over the insulating layer. Electrical contacts are formed by selective removal of the metal layer; the metal gate covering the insulating layer extends over the thick dielectric but is electrically isolated from the doped regions by the thick dielectric.

3,528,169
METHOD OF MAKING A PROTECTIVE ELEMENT FOR HERMETICALLY ENCLOSED SEMICONDUCTOR DEVICES

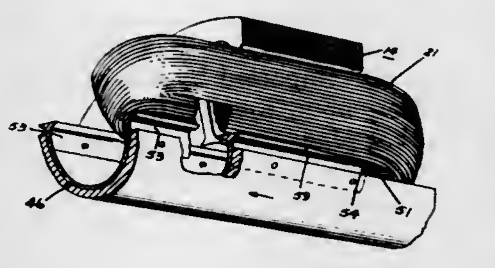
William P. Perrin, Richardson, and Joe Gentle, Prosper, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Sept. 7, 1965, Ser. No. 485,207. Divided and this application Jan. 23, 1969, Ser. No. 810,431
Int. Cl. H01l *1/10*
U.S. Cl. 29—588 5 Claims



Disclosed in a method of making a semiconductor device that includes a sealed envelope for enclosing a semiconductor body within an ambient atmosphere. This method includes the steps of securing a piece of boron anhydride glass to at least a portion of the inner surface of the envelope and securing the envelope to a header assembly so as to form a hermetically sealed semiconductor device wherein the piece of glass, which is spaced from the semiconductor body, minimizes the moisture content within the device.

3,528,170
METHOD AND APPARATUS FOR AXIALLY DEVELOPING ELECTRICAL COILS

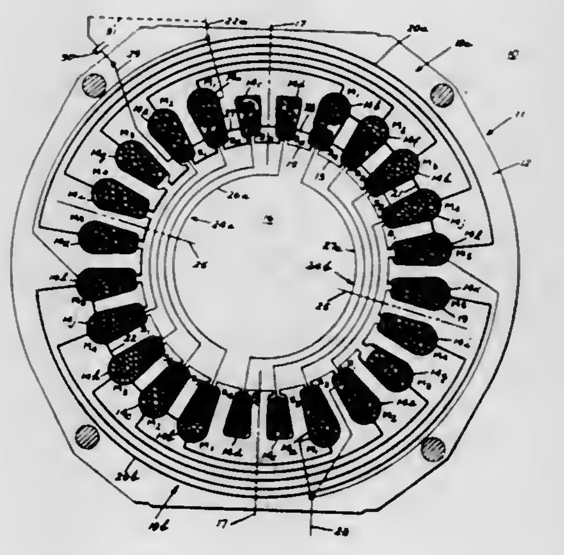
James B. Duff and Lowell M. Mason, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Aug. 1, 1967, Ser. No. 657,666
Int. Cl. H02k *15/00*
U.S. Cl. 29—596 15 Claims



Method and apparatus for axially inserting electrical coils into selected slots of a dynamoelectric machine core through slot entrances which forces insulated turn portions of the coils in the slots away from the slot entrances without deleteriously affecting either the turn portions or the insulation covering the portions. Curved wall sections of tools engage the turn portions and axially enter the slots as they inject the portions into the slots through the slot entrances. Tapered sections trailing the curved sections assist in the proper injection of the turn portions axially into the slots while facilitating axial removal of the tools after the portions have been properly inserted. With the turn portions pressed away from the slot entrances, their tendency to pass back through the entrances and to either interfere with the removal of the tools or a subsequent indexing of the core into another angular position for receiving additional coils is minimized.

3,528,171
METHOD OF MANUFACTURING A STATOR ASSEMBLY FOR AN INDUCTION MOTOR

Jack A. Houtman, Holland, Mich., assignor to General Electric Company, a corporation of New York
Original application July 26, 1968, Ser. No. 747,870. Divided and this application May 29, 1969, Ser. No. 828,969
Int. Cl. H02k *15/00*
U.S. Cl. 29—596 6 Claims

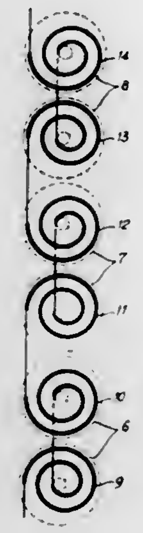


A method of manufacturing a stator assembly to provide an induction motor with improved locked rotor torque characteristics. At least first and second phase windings displaced in phase are carried in slots of a core, with each winding including a plurality of coils formed of a preselected number of turns of wire to provide a predetermined number of angularly spaced apart poles. The at least first and second phase windings are arranged in the slots of the core, with at least one side of certain coils of the second phase winding sharing the same slots with at least one side of certain coils of the first phase winding, and with the number of turns of wire in each of the coils being preselected so that the algebraic product of the third harmonic effective first and second phase winding turns is in the range from a relatively small positive number to a relatively large negative number. Prior to the arranging of the second phase winding in the slots, the at least one side of certain coils of the first phase winding is compacted by the application of generally radial forces in the slots of the core of sufficient magnitude, for instance 6,500 pounds per square inch, to provide a space factor for the at least one side of at least 80%.

3,528,172
METHOD FOR THE MANUFACTURING OF COILS

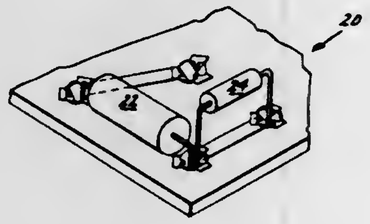
Olgierd Smulkowski, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 17, 1964, Ser. No. 375,725
Claims priority, application France, June 15, 1964, 939,117
Int. Cl. H01f *7/06*
U.S. Cl. 29—602 3 Claims

The disclosure has for object a new method for manufacturing a coil, made of a non ductile compound, such as Nb_3Sn, wound around an insulating frame. In this method, the frame is covered by a thin layer of the compound. The deposit is formed by placing the frame in an oven, in which a gaseous mixture of the components of the compound is fed. Through a photoengraving method, a helical strip of the compound is then removed from the coil frame.



3,528,173
MAKING CIRCUIT BOARDS

Andrew S. Gall, 10537 Leo Road,
Fort Wayne, Ind. 46805
Filed Aug. 15, 1966, Ser. No. 572,579
Int. Cl. H05k *3/30, 3/00;* **H01r** *43/00*
U.S. Cl. 29—626 9 Claims

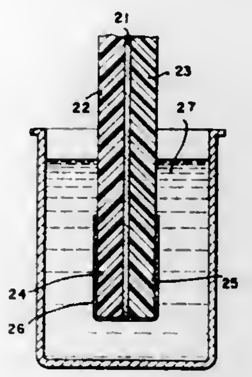


The instant disclosure is a process of providing a circuit assembly by first providing a circuit pattern upon a heat dissipatable carrier and bonding said carrier and attached circuit to an apertured insulator board with at least a part of the circuit and carrier extending over the edge of each aperture. A terminal is then forced into the hole and against the overhanging circuit carrier to bend some therein. Then a flow solder operation secures the terminal to the circuit during which time the carrier in the aperture is heat dissipated.

3,528,174
CABLE TERMINATION PROCESS

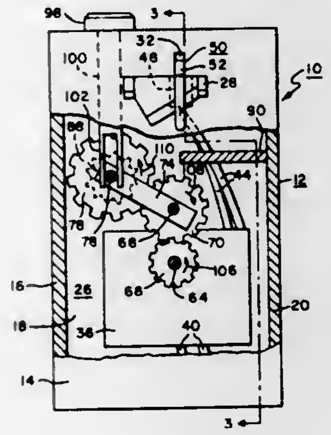
Don E. Harrison, Pittsburgh, Pa., assignor to Electro Connective Systems, Inc., Brockton, Mass., a corporation of Massachusetts
Filed June 1, 1967, Ser. No. 642,942
Int. Cl. H02g *15/00*
U.S. Cl. 29—629 4 Claims

Termination of electric cable having a plurality of conductors which are coplanar by depositing electrically conductive metal on the ends of conductors exposed at an end of the cable, such deposit extending on to a side surface or surfaces of the cable insulation adjacent such end, and by slotting through the cable end between the conductors within the cable to assure that the deposit is in portions electrically isolated one from the other, each being in electrical contact with a conductor within the cable thereby to provide exposed conductive surfaces with which contact can readily be made to permit electrical connection with the conductors within the cable. The sequence of depositing and slotting can be reversed.



3,528,175
CAN OPENERS

Donald S. Rich, Elizabeth, N.J., assignor to Hilric, Inc., a corporation of New York
Filed Dec. 11, 1967, Ser. No. 689,700
Int. Cl. B67b *7/38*
U.S. Cl. 30—4 19 Claims



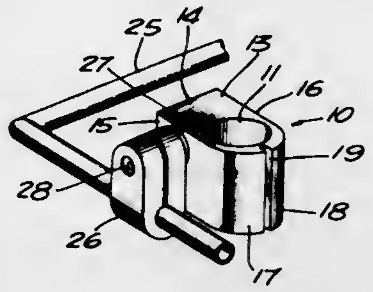
An electric can opener has a feeding wheel joined by a common shaft to planet gear. The planet gear is enmeshed with a drive gear and retained therewith by a link. Within an aperture in the link is a resiliently held ball bearing. The friction imparted by the ball bearing to the planet gear causes, upon the rotation of the drive gear, the plane gear to planet about the drive gear raising the feeding wheel into a can engaging position. An L-shaped member is pivotally mounted above the can opener blade and detects the presence of a can and, by pivotal movement, opens and closes an electrical switch. The can opener blade has laterally extending boss-like supports as a part thereof for holding a can in a level position.

3,528,176
DISPOSABLE PLASTIC MOUNTING MEMBER FOR THREE-DIMENSIONALLY-ADJUSTABLE FACE BOW SUPPORT

Robert L. Lee, Colton, and Jacob L. Schwartz, Covina, Calif., assignors to DentoNamics Corporation, Inglewood, Calif., a corporation of California
Filed June 13, 1968, Ser. No. 736,829
Int. Cl. A61c *9/00*
U.S. Cl. 32—19 6 Claims

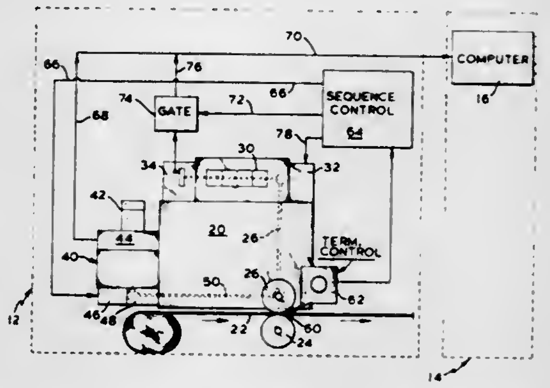
A disposable mounting member which is integrally formed of rigid but frangible plastic material, which has a cavity for receiving the end of a supporting rod in

spaced relationship thereto so that quick-setting plaster may be poured in the cavity to fix the relative positions of the member and the rod, and also having a hole aligned perpendicular to the longitudinal axis of the cavity for receiving another support member in an adjustable position relative thereto.



3,528,177
INVENTORY SYSTEM

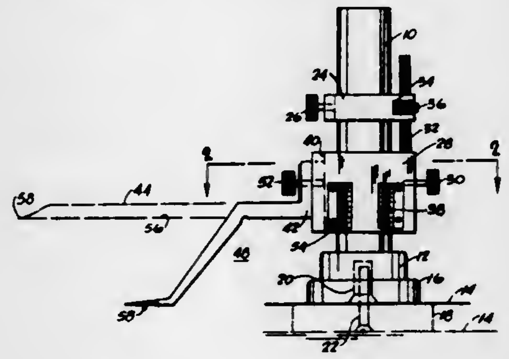
Luther G. Simjian, Greenwich, Conn., assignor to General Research, Inc., Greenwich, Conn., a corporation of Connecticut
Filed Feb. 12, 1968, Ser. No. 704,626
Int. Cl. G01b *5/04*
U.S. Cl. 33—129 11 Claims



An inventory system for use with dispensable material from bulk comprises a measuring device for measuring the quantity of material dispensed and is operable for dispensing material only when a check provided with data identifying the material is engaged by it. Sensing means sense the material identifying data provided on the check and the quantity of material dispensed, as available from a counter, and transmit such data to a remote computer for inventory maintenance purposes.

3,528,178
LAYOUT APPARATUS

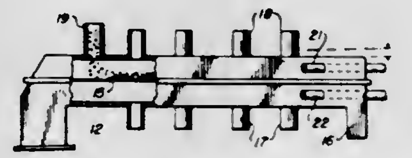
Fred E. Kunzler, 9027 149th St.,
Jamaica, N.Y. 11435
Filed June 27, 1968, Ser. No. 740,685
Int. Cl. G01d *5/00*
U.S. Cl. 33—169 3 Claims



A measuring gauge having a vertical shaft for receiving a first hollow cylinder which slidably engages the shaft, and a second hollow cylinder disposed below the first cylinder on the shaft and threadably engaged to the first cylinder through a calibrated bolt. The second cylinder includes a vertical slot for receiving one of a plurality of different scriber extension linkages for measuring the dimensional properties of working pieces.

3,528,179
MICROWAVE FLUIDIZED BED DRYER

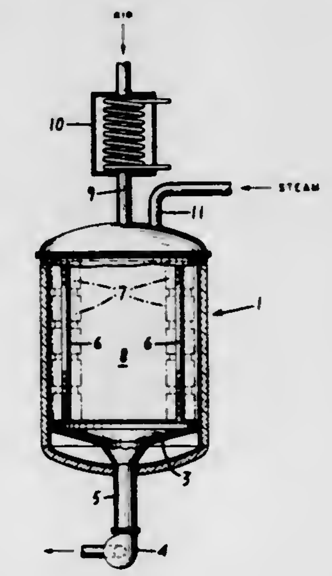
Franklin J. Smith, Diablo, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California
Filed Oct. 28, 1968, Ser. No. 771,128
Int. Cl. H05b *9/06*
U.S. Cl. 34—1 8 Claims



An apparatus and method for drying granular products in which a fluid-bed dryer is configured to act as a waveguide for microwave energy and the fluidized-bed of material is rapidly dried through the addition of microwave heating.

3,528,180
METHOD OF TREATING FIBROUS OR FILAMENTARY MATERIAL

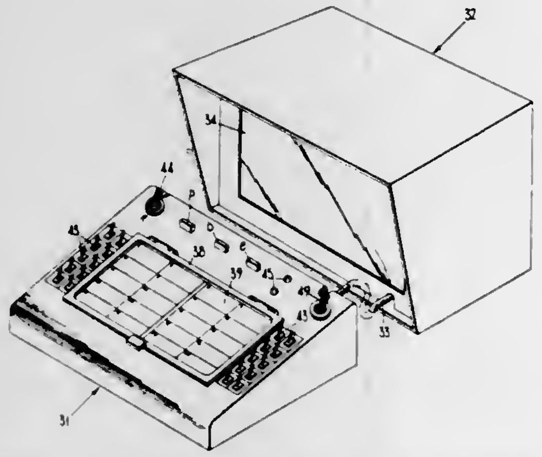
Friedrich Wilhelm Johann Karrer, Strandvagen 37, Stockholm O, Sweden, and Alberto Pedretti, Via Chelini 9, Rome, Italy
Filed Mar. 25, 1968, Ser. No. 715,782
Claims priority, application Sweden, Jan. 18, 1968, 665/68
Int. Cl. F26b *3/00*
U.S. Cl. 34—9 10 Claims



A method of treating fibrous or filamentary materials in a closed container in which two chambers are formed and the only communiction between the chambers is through the material. The material is first treated with one or more liquid treating agents, such as dye, bleach, and wash, and is then dried. The drying procedure is composed of an initial phase in which both air and steam are simultaneously passed through the material by establishing a pressure difference between the two chambers, the air and steam being introduced in a proportion such that a minimum amount of steam leaves the downstream side of the material and the major portion of the steam is condensed to transfer the heat of vaporization thereof into the material. The air serves both to mechanically expel moisture from the material and as a condensing assistant for the transfer of heat. When the material has been preheated and mechanically dried to a maximum practical degree, further drying is accomplished substantially by vaporization of moisture from the material by passing hot air through it. In the later phases of the drying procedure, a small amount of steam may also be introduced with the hot air to add heat and thereby provide a greater rate of vaporization.

3,528,181
TEACHING MACHINES

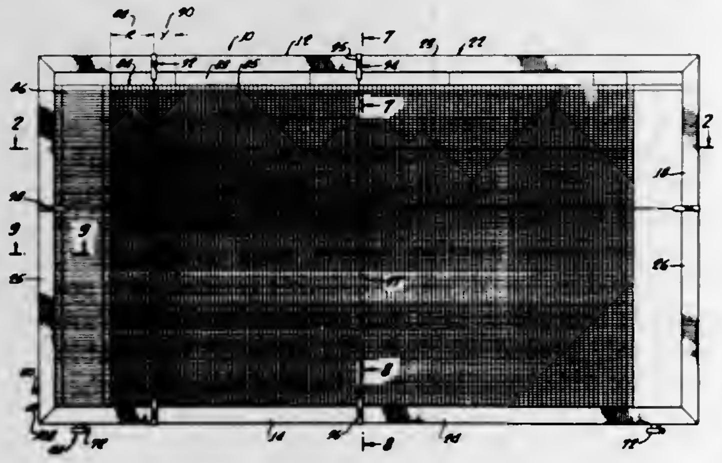
Robert Stanley Arbon, Rickmansworth, John Godolphin Bennett, Kingston-on-Thames, Colin Douglas Bright, London, and Anthony Malcolm Hodgson, Kingston-on-Thames, England, assignors, by direct and mesne assignments, to Structural Communication Systems Limited, London, England, a British company
Filed Jan. 25, 1967, Ser. No. 611,728
Claims priority, application Great Britain, Jan. 27, 1966, 3,696/66
Int. Cl. G09b *7/00*
U.S. Cl. 35—9 **8 Claims**



A teaching machine having an array of response buttons which are identified with respective conceptual elements pertaining to a problem context and which the machine designates with a range of degrees of significance according to stored or inserted data, a range of corrective or confirmatory information displays being presented automatically in accordance with the particular selection of buttons operated by the student to constitute a response.

3,528,182
VISUAL SCHEDULING BOARD

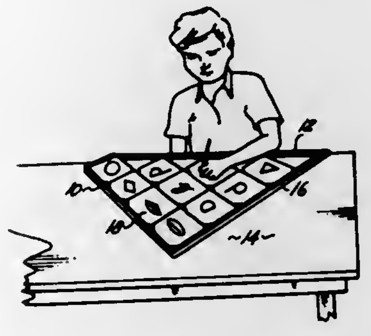
Claude William Johnson, Berkeley, Calif., assignor to Quill Products, Inc.
Filed Apr. 3, 1968, Ser. No. 718,456
Int. Cl. G09b *19/18*
U.S. Cl. 35—24 **10 Claims**



A roll of translucent grid paper is advanced across a lighted translucent panel having two vertical, colored zones along one edge. The vertical grid lines represent time intervals, and scheduling data is entered on the horizontal lines to correspond with other scheduling information on an index at the colored edge of the panel. By advancing the paper so that the current vertical time line is aligned with the intersection between the two colored sections, the status of various tasks to be performed may be easily seen on the illuminated board.

3,528,183
PENMANSHIP TRAINING BOARD

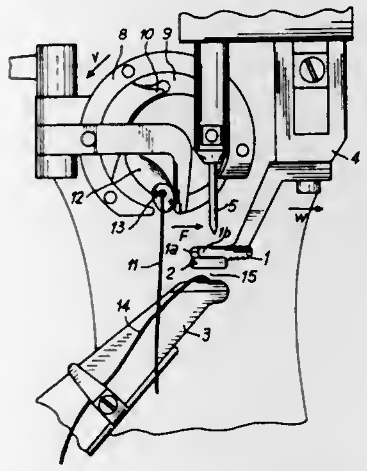
Noe B. Lucero, 7453 Indiana, Riverside, Calif. 92504
Filed May 8, 1968, Ser. No. 727,628
Int. Cl. G09b *11/04*
U.S. Cl. 35—37 **5 Claims**



Apparatus for teaching penmanship by continued habitual letter forming practice in grooved tiles on an arm positioning board and then transferring to free hand letter formation on the board itself.

3,528,184
ASSEMBLY OF PREMOULDED SOLES AND ATTACHMENT FOR SEWING MACHINE PERMITTING SOLING OF SAID SOLE TO AN ARTICLE OF FOOTWEAR

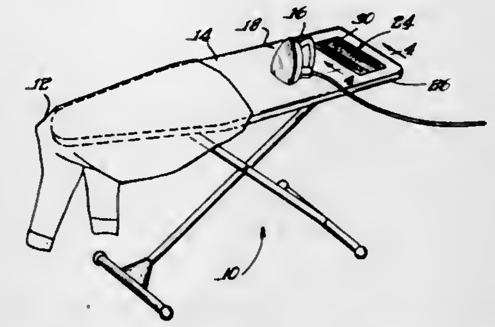
Gabriel Maudouit, Blanquefort, France, assignor to Ets. Maudouit & Fils, Blanquefort, France, a company
Filed Mar. 15, 1968, Ser. No. 713,333
Claims priority, application France, June 30, 1967, 7,968
Int. Cl. A43b *13/00*
U.S. Cl. 36—25 **4 Claims**



This disclosure relates to a premoulded sole having a continuous hollow groove premoulded perpendicular to the plane thereof and helically or in gimlet fashion along the flanks of the arch support and obliquely under the heel making it possible to sew the sole along its entire periphery with the upper of the footwear article. Also disclosed is an attachment for securing to an ordinary sewing machine for permitting sewing of the sole and of the heel to the upper of an article of footwear.

3,528,185
IRONING ARTICLE

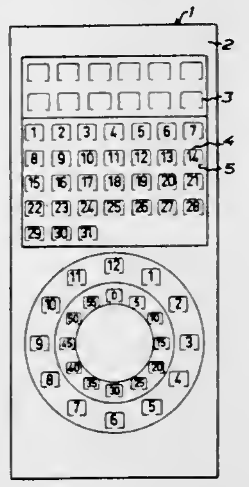
Mary E. Ellison, 44 Industrial Road, Crystal Lake, Ill. 60014
Filed Dec. 23, 1966, Ser. No. 604,221
Int. Cl. D06f *79/00*
U.S. Cl. 38—141 **2 Claims**



An article including a discrete layer of a polymeric substance, such as a silicone rubber compound as a source for application of a lubricating film to the working surface of an iron, and a base carrying the layer and having adhesive for mounting the assembly to an ironing board in accessible position for renewing the film on the working surface of the iron by passing the same in contact therewith; and the method of ironing or smoothing a fabric on an ironing board with such an arrangement.

3,528,186
CAR PARKING CONTROL CARDS

Luigi Roda, Viganello, Switzerland, assignor to Park System AB, Partille, Sweden
Filed May 1, 1968, Ser. No. 725,736
Int. Cl. G09f *3/00*
U.S. Cl. 40—5 **5 Claims**

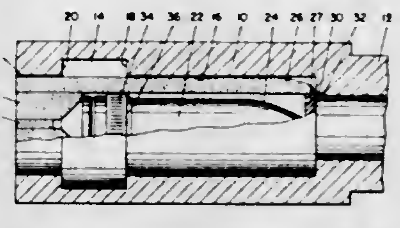


A card particularly for the control of parked cars is provided on one face with groups of frames bearing sundry indications, and within each group of frames one frame is intended for actuation to provide a clear and definite marking of the parking time. Each frame is defined by a weakening line in such a manner that for providing the marking the frames can be folded about one of their edges into engagement with one of the card faces.

3,528,187
FREE-VOLUME CHAMBER FOR TELESCOPED CASELESS AMMUNITION

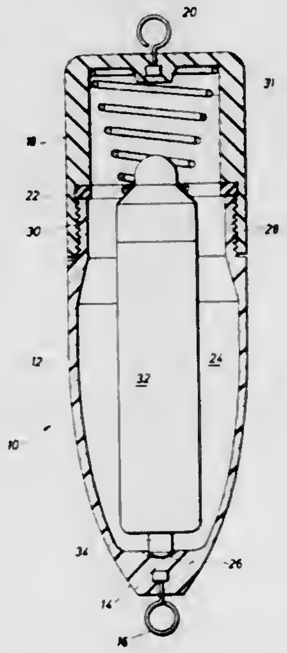
Joseph I. Harrell, Sparta, N.J., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 769,908
Int. Cl. F41c *21/00, 21/12;* **F41b** *5/18*
U.S. Cl. 42—76 **6 Claims**

A chamber designed for the firing of telescoped caseless ammunition is provided. The chamber has one or more cavities in its interior surface which provide areas of support and non-support at specific locations for the propellant charge of the telescoped round. Ballistic efficiency of telescoped rounds fired in this chamber is substantially improved.



3,528,188
FISHING FLOAT

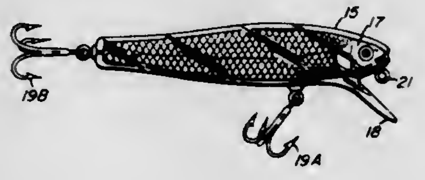
Bobby D. Manross, P.O. Box 14380, Houston, Tex. 77021
Filed June 13, 1968, Ser. No. 736,774
Int. Cl. A01k *75/02*
U.S. Cl. 43—17.5 **2 Claims**



A fishing float comprising a hollow body formed from at least two separable portions with one portion having a transparent or translucent end. A pen-light assembly is disposed in the hollow body in a manner for light therefrom to be transmitted through the transparent or translucent end to the fisherman.

3,528,189
FISH LURE

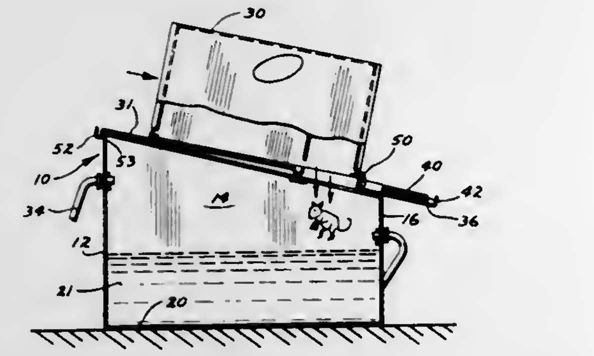
David L. Lilley, Jr., 8808 Loch Raven Blvd., Towson, Md. 21204
Filed June 3, 1968, Ser. No. 734,112
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.33 **3 Claims**



A fishing lure which includes a photographic, lithographic or similar representation of a bait fish contained in a clear plastic form having the exterior shape and surface structure of the bait fish. Right and left side views of the bait fish are suitably mounted on a clear backing material and processed by retouching to remove or omit certain sections of the representations, especially about the fish scales and gills so as to allow exposure of the clear backing. The right and left hand views are then attached back to back with a colorful reflective foil material sandwiched therebetween so as to show through the removed sections of the representation. A clear plastic form having the exterior shape of the bait fish is then sealed about the prepared representation to for a buoyant, waterproof lure. In a slightly different embodiment, the representations are embossed into a generally cylindrical shape of the bait fish before being encased in the clear plastic form.

3,528,190
DEATH CHAMBER FOR RODENTS AND OTHER PESTS

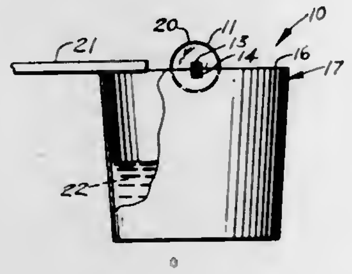
Bernhard T. Voorhees, Roy, Utah, assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Dec. 27, 1968, Ser. No. 787,420
Int. Cl. A01m *23/02*
U.S. Cl. 43—58 **3 Claims**



A box or chamber has a top surface provided with an opening normally closed by a spring biased sliding lid. The chamber is used with an imprisoning type mouse trap that includes a bottom sliding door adapted to rest on the top surface of the chamber with a portion overlying an edge thereof. The chamber lid has a flanged portion which engages an end wall of the trap. When the trap is moved across the top surface of the chamber the bottom door remains fixed and the lid is moved to its open position to permit the mice to fall into the chamber.

3,528,191
RODENT ELIMINATING DEVICE

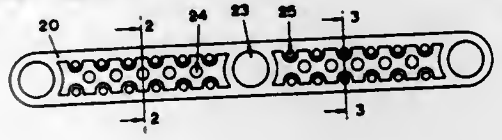
Richard W. Hand, 142 Swallow Drive, Dayton, Ohio 45415
Filed Apr. 28, 1969, Ser. No. 819,725
Int. Cl. A01m *23/10*
U.S. Cl. 43—64 **4 Claims**

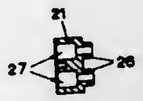


A stationary ramp formed from a scented strip of wood rests upon the rim of a standard pail containing a quantity of water. A rod clamped to the rim of the pail by adjustable U-shaped clamps supports a rotating cylinder having a food paste along its center exterior, the rodent trying to get to the paste on the rotatable cylinder falls into the water and drowns.

3,528,192
TOY CONSTRUCTION KIT COMPRISING INTEGRABLE STRUCTURAL ELEMENTS OF DIFFERENT TYPES

Kevin F. Meates, 6 Clifford Ave., Christchurch, New Zealand
Filed Nov. 8, 1967, Ser. No. 681,372
Claims priority, application New Zealand, Oct. 9, 1967, 150,301
Int. Cl. A63h *33/04*
U.S. Cl. 46—16 **8 Claims**

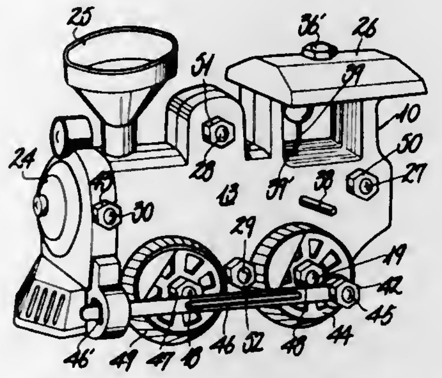




A toy construction kit comprising a first set of structural elements, each formed with three pluralities of holes, a second set of structural elements, each formed with mating protrusions and recesses and with holes, and pegs adapted in part to engage in the holes of one of the pluralities in the first structural elements and in part to engage in the recesses in the second structural elements. The projections, recesses and holes of the second elements are arranged to enable connection with the first elements through respective pluralities of holes.

3,528,193
DISMOUNTABLE MOVING TOY

Kazumi Yamakawa, % Tomy Kogyo Co. Ltd., 10, 9, 7-chome, Tateishi, Katsushika-ku, Tokyo, Japan
Filed June 8, 1967, Ser. No. 644,579
Claims priority, application Japan, Nov. 25, 1966, 41/107,804
Int. Cl. A63h *33/06*
U.S. Cl. 46—17 **7 Claims**

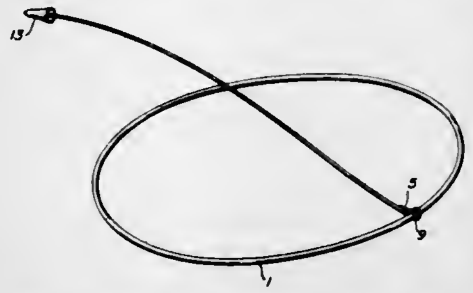


A dismountable moving toy comprising a body composed of a pair of molded hollow sections which are secured together by a plurality of bolts and nuts, a power means and a plurality of toothed wheels mounted in the body, and wheel assemblies mounted on the body, and characterized in that the toy can be readily disassembled and reassembled by children.

3,528,194
ROPE-SPINNING HOOP

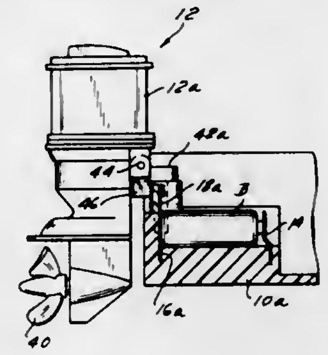
Eugene Motluk, 60 Halliwell Drive, Kitchener, Ontario, Canada
Filed Sept. 16, 1969, Ser. No. 858,354
Int. Cl. A63h *1/17*
U.S. Cl. 46—51 **5 Claims**

An article of amusement comprising a rigid hoop preferably made of plastic or other light weight material to which is fastened a cord of sufficient length to enable a person to hold onto one end and twirl the hoop. The cord is attached to the hoop in a manner such that the hoop can revolve on an axis tangential to the hoop at the locus of attachment, but the hoop cannot move circumferentially relatively to the cord at the locus of attachment. A handle is provided at the end of the cord which enables the hoop to be twirled without twisting the rope.



3,528,195
TOY BOAT AND SIMULATED ELECTRIC OUTBOARD MOTOR

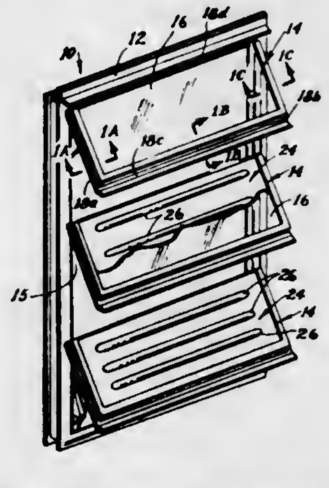
Julius Cooper, New Hyde Park, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed July 30, 1968, Ser. No. 748,876
Int. Cl. A63h *33/26, 23/04*
U.S. Cl. 46—243 **8 Claims**



A toy boat with a simulated outboard motor tiltable between a boat-powering position and a raised clearance position, the energization circuit for the motor being completed only when the motor is in its boat-powering position.

3,528,196
WINDOW AND HURRICANE PANEL THEREFOR

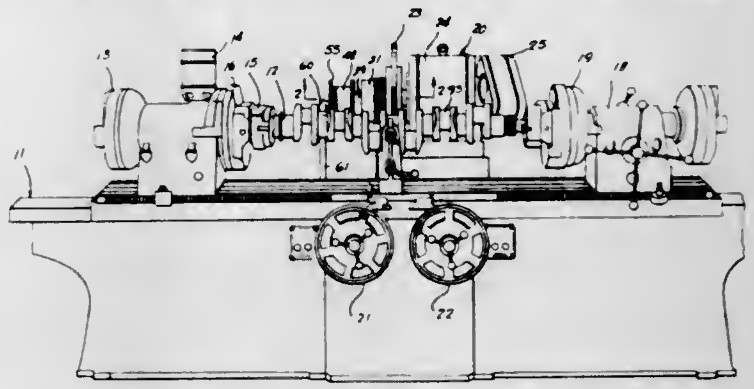
Manuel Luke, 1240 SE. 10th St., Deerfield Beach, Fla. 33441
Filed Mar. 24, 1969, Ser. No. 809,836
Int. Cl. E05b *65/04*
U.S. Cl. 49—62 **6 Claims**



A sheet-like hurricane panel is provided for rapid and safe insertion into channels integral with the window. The top of the channels is open and accessible for insertion of the panels from a position within the building when the lower portion of the window is pivoted outwardly about a horizontal axis that is intermediate the upper and lower extremities of the window.

3,528,197
PNEUMATIC OSCILLATING ROTATING GRINDING WHEEL HUB

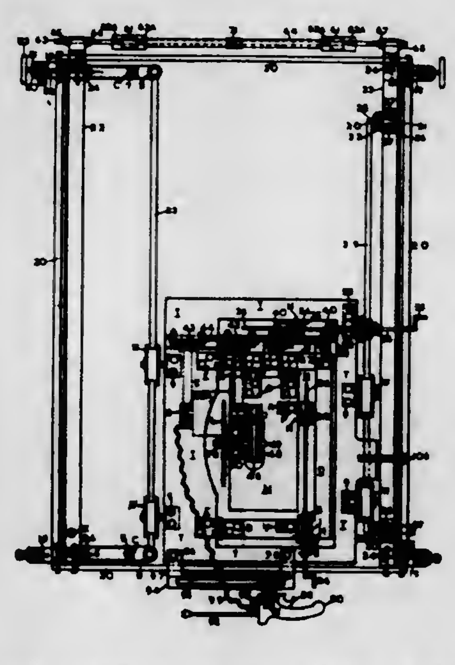
Clyde A. Wallace, 1816 Greenvale Road, Albany, Ga. 31705
Continuation-in-part of application Ser. No. 620,464, Mar. 3, 1967. This application Sept. 27, 1968, Ser. No. 763,337
Int. Cl. B24b *5/00, 7/00*
U.S. Cl. 51—34 **26 Claims**



A grinding wheel having a power-driven hollow spindle provided with an external annular piston element, with a cylindrical housing slidably-mounted on the spindle and slidably and sealingly-receiving the piston element. A grinding wheel is secured on the cylindrical housing. The cylindrical housing is keyed to the spindle. A fixed stop member is provided on the spindle at one side of the housing and an adjustable stop member is provided at the other side of the housing to limit the reciprocating stroke of the grinding wheel. Compressed air is supplied through an axially-extending tube and is delivered through a reversing valve arrangement alternately on opposite sides of the piston element to the housing while it is being rotated by the spindle. One form of the invention includes an adjustable grinding wheel dressing fixture arranged to dress the grinding wheel automatically during operation thereof. The fixture includes an arrangement for providing fine adjustments of the position of its dressing tool.

3,528,198
WOOD AND METAL SAWING AND TOOL GRINDING MACHINE

Mike Klisowsky, 3427 Dewdney Ave., Regina, Saskatchewan, Canada
Filed June 15, 1967, Ser. No. 646,320
Int. Cl. B24b *5/18, 7/00*
U.S. Cl. 51—37 **1 Claim**



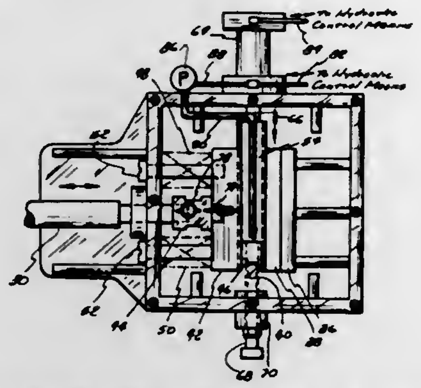
A supporting frame is provided with rails for a carriage which has a U-shaped plate hinged thereto for raising and lowering movement about a longitudinal axis.

A mandril plate is disposed in and hinged to the U-shaped plate for raising and lowering movement about a transverse axis. A work engaging disc is rotatably mounted no the mandril plate and projects through a slot in a work supporting table mounted on the frame, the extent of projection of the disc through the slot being adjustable by raising or lowering the mandril plate about its hinge axis, while the plane of rotation of the disc is adjustable by raising or lowering the U-shaped plate about its hinge axis.

3,528,199
AUTOMATIC IN-FEED ATTACHMENT FOR CENTERLESS GRINDERS

Edward W. Marley, Dearborn, Mich., assignor to Ferro Equipment Co., Detroit, Mich., a corporation of Michigan

Filed May 1, 1968, Ser. No. 725,859
Int. Cl. B24b *5/18*
U.S. Cl. 51—103 **6 Claims**

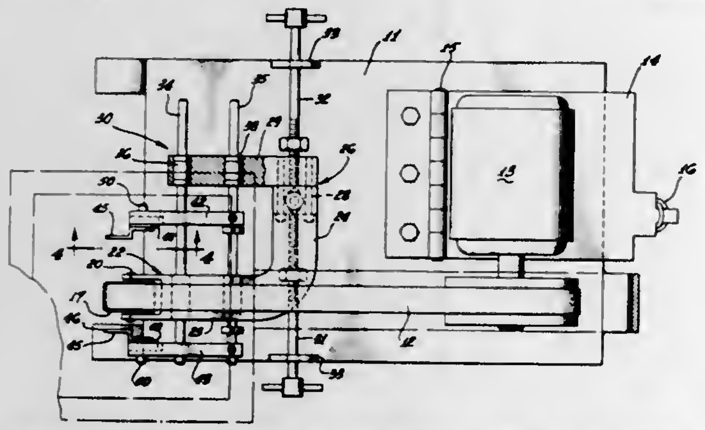


A centerless grinding machine having a grinding wheel and a regulating wheel and an in-feed attachment for moving the regulating wheel toward and away from the grinding wheel. The in-feed attachment comprises a first cam which moves with the regulating wheel, a second cam which is fixed with respect to the grinding wheel, the two cams having confronting cam surfaces, one being inclined with respect to the other and a wedge member supported between the cams. Motion of the wedge in a feed direction moves the movable cam and the regulating wheel away from the fixed cam and toward the grinding wheel. Motion of the wedge in its return direction allows the regulating wheel to separate from the grinding wheel under the influence of a spring bias at the termination of the grinding cycle.

3,528,200
APPARATUS FOR CONTOUR GRINDING OF VANES AND BLADES

Irwin T. Allen, Torrance, and Santiago Martinez, Gardena, Calif., assignors to Chromalloy American Corporation, New York, N.Y., a corporation of New York

Filed June 17, 1968, Ser. No. 737,435
Int. Cl. B24b *21/00*
U.S. Cl. 51—143 **11 Claims**

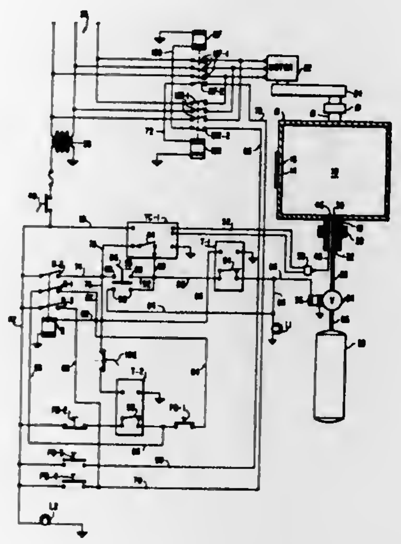


The invention is directed to apparatus for the contour grinding of turbine or jet engine vanes as well as other vane or blade-like forms, after repair by welding. Removal of excess weld deposits from the vane surfaces is accomplished by a rotating abrasive head having circularly arcuate curvature against which the vane is engageable, abrasion of the vane surface being limited by gauges at opposite sides of the head and presenting surfaces in alignment with and curved substantially in accordance with the effective grinding head curvature.

3,528,201
LOW TEMPERATURE APPARATUS FOR DEFLASHING MOLDED ARTICLES

Robert D. Jones, Allentown, and David J. Klee, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware

Original application Oct. 25, 1966, Ser. No. 589,457, now Patent No. 3,468,077, dated Sept. 23, 1969. Divided and this application Feb. 28, 1969, Ser. No. 828,035
Int. Cl. B24b *31/02*
U.S. Cl. 51—164 **12 Claims**

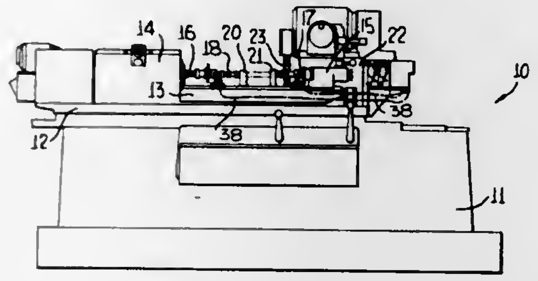


Apparatus for low temperature deflashing of resilient articles including a drum tumbler with both timber means and temperature sensing means controlling the introduction of coolant into the drum.

3,528,202
ECCENTRICITY GAGE FOR MACHINE TOOLS

William E. Happel, Waynesboro, Pa., assignor, by mesne assignments, to Litton Industries, Inc., a corporation of Delaware

Filed May 12, 1967, Ser. No. 638,143
Int. Cl. B24b *17/02, 49/08*
U.S. Cl. 51—165 **16 Claims**

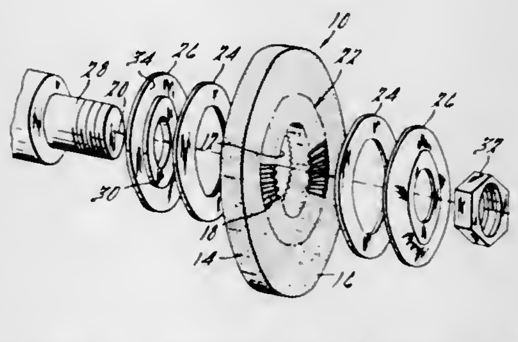


This disclosure relates to a device for inspecting spaced portions of a workpiece mounted in a machine tool. A workpiece such as a camshaft or the like is placed in a machine tool, such as a grinding machine, between centers thereof. The workpiece is rotated such that gages at spaced portions of the workpiece may determine whether the condition of those portions is such as to permit an accurate machining operation, such as grinding cam contours. The gages are of the air jet type utilizing differences in resistance caused by size fluctuations in the workpiece portions to be measured to result in fluctuations at pressure switches. If the workpiece portions being gaged are within a specified tolerance range, the pressure switches will produce a signal in an electrical circuit to start a workpiece traverse movement, to place the workpiece in the first one of a series of predetermined grinding positions. In the event that any workpiece portion being gaged exceeds the specified tolerance range, no signal will be given by the pressure switches, and actuation of a grinding cycle will not be effected.

3,528,203
GRINDING WHEEL

Robert C. Franklin and Richard O. Lane, Jackson, Mich., assignors to The Bendix Corporation, a corporation of Delaware

Filed May 2, 1968, Ser. No. 725,997
Int. Cl. B24b *41/00*
U.S. Cl. 51—168 **5 Claims**

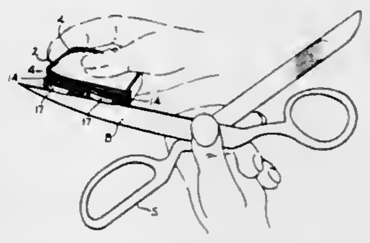


A grinding wheel mountable on an arbor by engagement with a pair of flanges and deformable blotters having radially oriented ridges in its lateral surfaces at the flange portion.

3,528,204
SCISSOR SHARPENER

James H. McCue, 2200 Arroyo Blvd., Altadena, Calif. 91002

Filed Jan. 31, 1968, Ser. No. 702,063
Int. Cl. B24b *23/00*
U.S. Cl. 51—173 **7 Claims**

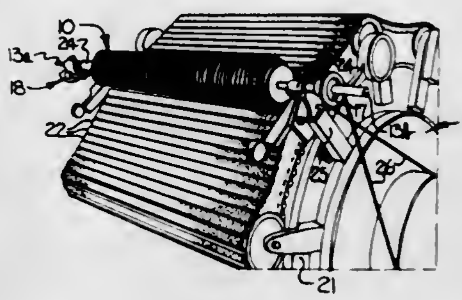


A scissor sharpener comprising a base on which a pair of freely rotatable grinding wheels are mounted side by side for rotation about parallel axes with the blade contacting side faces thereof located in a common plane. The grinding wheels each carry a resilient rubber disc of lesser diameter than the wheel disposed at the grinding face side thereof for contact by the side of the blade being ground. Frictional engagement of the peripheries of these discs by the side of the blade being ground incident to relative movement longitudinally of the blade provides rotative power to the grinding wheels as the blade moves across the face thereof in a line tangent to the peripheries of the rubber disc.

3,528,205
DISC GRINDER FOR CARD FLATS

Harry M. Roberts, 605 Clyde St., Gastonia, N.C. 27832

Filed Nov. 27, 1968, Ser. No. 779,443
Int. Cl. B24b *19/00*
U.S. Cl. 51—243 **7 Claims**

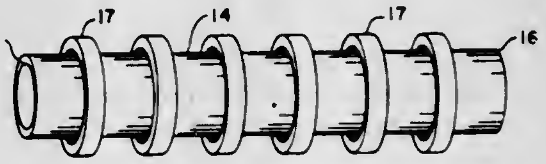


Grinding apparatus comprising an elongate cylindrical roll means and a plurality of planar, circular, disc members mounted in longitudinally spaced apart relation along the roll means and each having an annular flexible portion extending radially outwardly of the roll means and abrasive material on the opposing side faces of the flexible portion, so that the side faces of the disc members, when at least slightly flexed and moved relative to card wire clothing of the flats of a textile card, are wiped across the clothing of the flats to grind and sharpen the same.

3,528,206
THERMAL EXPANSION COMPENSATION DEVICE

Kenneth M. Baird, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed July 16, 1968, Ser. No. 745,187
Claims priority, application Canada, Aug. 3, 1967, 997,017
Int. Cl. E04c *3/00*
U.S. Cl. 52—1 **8 Claims**



A thermal expansion compensation device formed by placing in contact with the solid structure whose thermal expansion effects are to be compensated for in a chosen direction, a second structure of solid material that will on change of temperature compress or expand, by means of its thermal expansion or contraction, the first solid structure generally at right angles to the said chosen direction, the coefficient of thermal expansion of the second structure being such as to cause the first structure to undergo a length change in the chosen direction sufficient to compensate for or neutralize the normal thermal expansion or contraction in that direction.

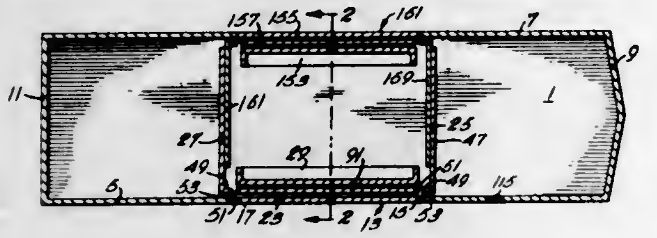
3,528,207
HOUSETRAILER CONSTRUCTION

Nickolas Howera, 7245 Birnam St., Apt. 7, Montreal 15, Quebec, Canada

Filed Mar. 6, 1968, Ser. No. 710,808
Claims priority, application Canada, Feb. 13, 1968, 012,401
Int. Cl. E04b *7/16*
U.S. Cl. 52—67 **11 Claims**

A housetrailer constructed to provide additional living area when the trailer is parked.

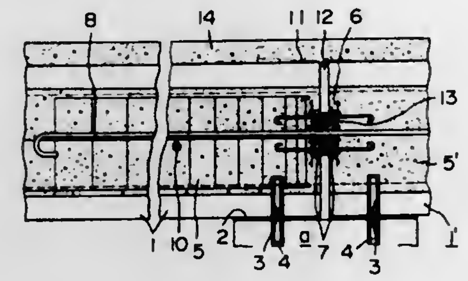
In one embodiment, the trailer has hinged or pivoted panels which can be moved from within the trailer through an opening in the wall of the trailer to be connected together to provide an additional room extending from the trailer. In another embodiment, the trailer may have a set of connected panels overlying the roof and sides of the trailer which can be easily raised as a unit to form a second storey on the roof of the trailer.



3,528,208
HINGE CONNECTING METHOD OF SIMPLE BEAMS ON PRESTRESSED CONCRETE BRIDGE

Akira Sugawa, Fuchu-shi, Tokyo, Japan, assignor to Kyushu Kogen Concrete Co., Tenjin, Fukioka-shi, Japan

Filed Dec. 26, 1968, Ser. No. 787,011
Int. Cl. E04b *5/06, 5/26*
U.S. Cl. 52—259 **11 Claims**

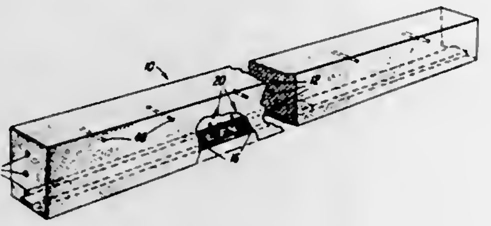


This invention relates to a method of hinge connecting simple beams on prestressed concrete bridges in which filler concrete is filled in the gap between simple beams and a steel bearing plate is mounted on the end surface of each filler concrete, the steel bearing plate being formed with a protruding rib on its surface so that the bearing plates anchored on the end surface of filler concretes opposed to each other are maintained in abutting relation, and a connecting steel rod being inserted in the abutment so as to connect the opposed bridge members to each other.

3,528,209
PRESTRESSED CONCRETE BEAMS WITH WOODEN INSERTS AND METHOD OF FORMING THE SAME

Jack Schillinger, 1225 NE. 93rd St., Miami, Fla. 33138

Filed Oct. 20, 1967, Ser. No. 676,944
Int. Cl. E04c *3/10, 3/26, 3/29*
U.S. Cl. 52—223 **9 Claims**

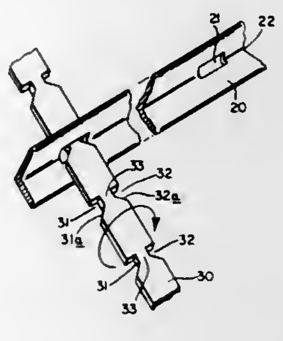


The joist comprises a prestressed concrete joist having three spaced superposed tensioned wire ropes extending the length of the beam and a wooden insert embedded in a side face of the beam to provide a nailing surface. The wooden insert includes a plurality of wooden strips arranged in end-to-end relation and having a plurality of nails partially driven into opposite sides thereof to extend into the surrounding concrete at an upwardly extending angle. A plurality of longitudinally spaced upwardly projecting yoke formations are provided and comprise a pair of finishing nails forming the sides of the yoke and a roofing nail spaced between the finishing nails, the head of which provides the base of the yoke. In forming the beam, the wooden strips are presoaked in water to preclude absorption of water from the poured concrete, the nails driven into the wood at the above-noted positions, and the strips placed in end-to-end relation in the bottom of a concrete form with the lower wire rope seating in the yoke formation to wedge the strips against the bottom of the form and thereby maintain the same in position during pouring and curing of the concrete.

3,528,210
MANHOLE GRATE

John E. Johnson, 110 W. Clearfield Road, Havertown, Pa. 19083, and Archibald T. Flower, Gwynedd, Pa.; said Flower assignor to said Johnson

Filed Nov. 12, 1968, Ser. No. 774,817
Int. Cl. E04c *5/04, 2/42*
U.S. Cl. 52—656 **14 Claims**



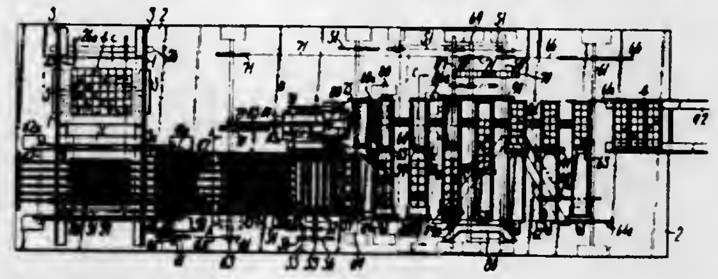
A manhole grate is provided for a transformer manhole in an electric power residential distribution system. The grate has a circular rim and a series of parallel closely-spaced angle bars extending between opposing edges of the rim and supported on the rim flange. A plurality of tie rods extend in an orthogonal direction relative to the angle bars, and pass through openings in the angle bars. The angle bars are so disposed angularly, relative to the longitudinal axis of the angle bar, that the two end edges of each bar lie in the same vertical plane, with the vertex of the next adjacent angle bar in a vertical plane closely spaced from the first-mentioned vertical plane. The openings in the angle bars through which the tie rods pass are located in the vertex region of the bars. The tie rods have opposite-edge notches spaced along the tie rod to correspond with the spacing between angle bars. One wall of each notch is inclined to mate with and wedge against the inclined wall of the angle bar.

3,528,211
METHOD AND APPARATUS FOR AUTOMATICALLY PACKING CONFECTIONS

Kaoru Kawasaki, Sakai, Japan, assignor to Tenchi Kikai Kabushiki Kaisha, Sakai, Osaka Prefecture, Japan

Filed June 28, 1968, Ser. No. 741,164
Claims priority, application Japan, Aug. 10, 1967, 42/51,575
Int. Cl. B65b *61/08, 63/00*
U.S. Cl. 53—23 **8 Claims**

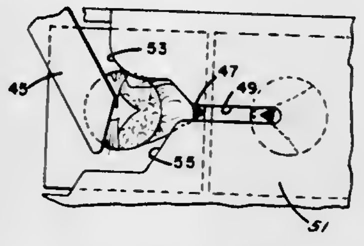
A method and apparatus for automatically packing confections with base sheets of paper. The packing operation comprises transferring orderly arranged confections from flat plates onto a conveyor belt, dividing the confections in transit on the belt into packing units, delivering each unit of confections and each base sheet respectively into each of confection receiving members and base sheet carriers advancing on endless chains, transferring the confections from each of the receiving members onto the respective base sheets after the flaps of the sheets have been unfolded, and sending out the packed confections onto a chute for further packaging operation.



3,528,212
WRAPPING OF DISCOIDAL-SHAPED PRODUCTS

Allen P. Jones, Fredericksburg, Va., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Sept. 1, 1967, Ser. No. 665,117
Int. Cl. B65b *11/00;* **B65d** *75/18*
U.S. Cl. 53—33 **1 Claim**

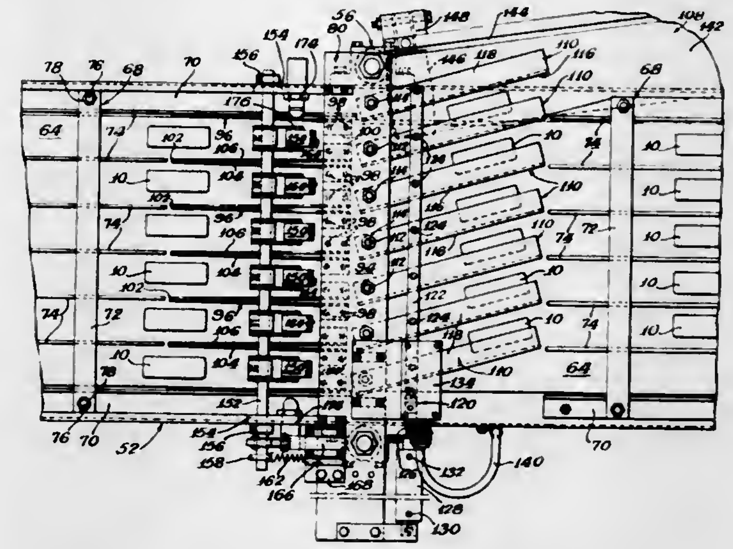


A method for wrapping products having a discoidal shape in a wrapper blank of diamond-shape configuration.

3,528,213
CONVEYING SYSTEM

Bruce Mottweiler, Alexandria, Ind., assignor to Lynch Corporation, a corporation of Indiana

Filed Sept. 27, 1967, Ser. No. 670,906
Int. Cl. B65g *47/46;* **B23q** *7/14*
U.S. Cl. 53—77 **8 Claims**

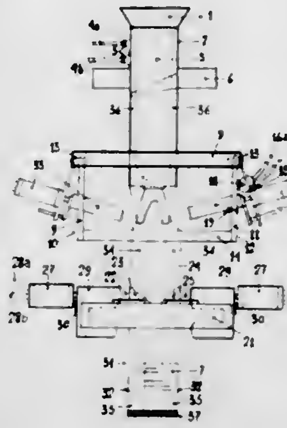


A method and system for conveying and processing a plurality of articles. A conveyor moves the articles in a plurality of spaced rows and a plurality of machines are provided for individually processing the articles and are positioned along a side of the conveyor. Apparatus is provided for diverting the outermost row of moving articles from the conveyor to a first machine for processing while the apparatus simultaneously diverts the other rows on the conveyor a distance of one row's spacing in a direction towards the processing machines. Subsequent diverting apparatus is provided for moving each successive outermost row of articles to each successive article processing machine.

3,528,214
HEAT-SEALING APPARATUS

Ferruccio C. Calvano, Buenos Aires, Argentina, assignor to Mainar S.A. Industrial Inmobiliaria Financiera Agricola Ganadera, Buenos Aires, Argentina, a corporation of Argentina

Filed June 24, 1968, Ser. No. 739,336
Claims priority, application Argentina, July 17, 1967, 160,702
Int. Cl. B65b *31/00, 9/12*
U.S. Cl. 53—112 **6 Claims**

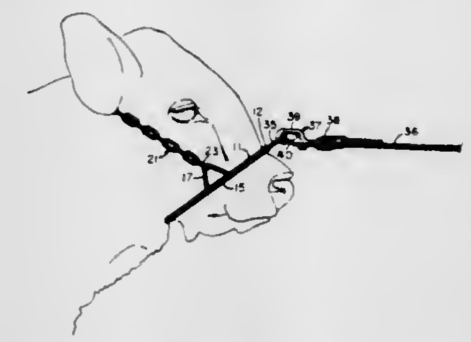


A heat-sealing apparatus for machines for automatically packaging powdered or like material, of the type comprising a charging hopper located at the top of an inner upstanding tube for feed material to be packaged, an outer container-forming tube, a pair of juxtaposed strips for forming opposed pleats in said container, and a heat-sealing assembly including a pair of sealing jaws. The heat-sealing assembly further comprises two pairs of flanged teeth-like sealing members mounted on the top surface of the sealing jaws, the flanges on said sealing members being aligned with the sealing faces of the respective jaws, and a double-action strip member movable between each opposing pair of sealing member flanges, the apparatus being controlled by electro-pneumatic means.

3,528,215
RESTRAINING DEVICE

Lee R. Johnson, Rte. 1, Box 52, Gatesville, Tex. 76528

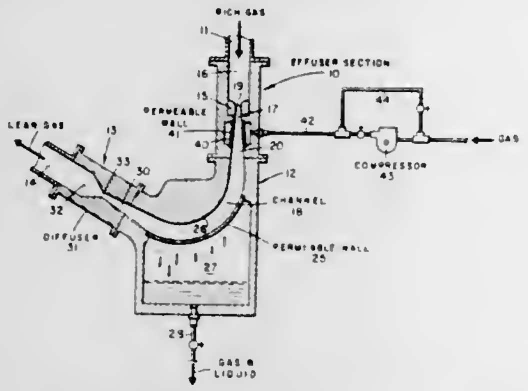
Filed Mar. 22, 1968, Ser. No. 715,272
Int. Cl. B68b *1/02, 1/08*
U.S. Cl. 54—24 **5 Claims**



A halter for animals, such as cattle, which includes an elliptical body positionable on the head of the animal and having flexible means positionable about the back of the head of the animal for holding the elliptical body thereon and permitting pivotal movement of the elliptical body about an axis spaced rearwardly of the body to cause a forward pull exerted on the top portion of the elliptical body to pivot said body and cause the bottom portion thereof to exert an upwardly and rearwardly directed force on the bottom portions of the lower jaw of the animal and a forwardly and downwardly directed force on the back of the head of the animal.

3,528,216
JET PUMP AND SUPERSONIC FLOW SEPARATOR

Robert L. Garrett, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,372
Int. Cl. B01d *51/08*
U.S. Cl. 55—15 **12 Claims**

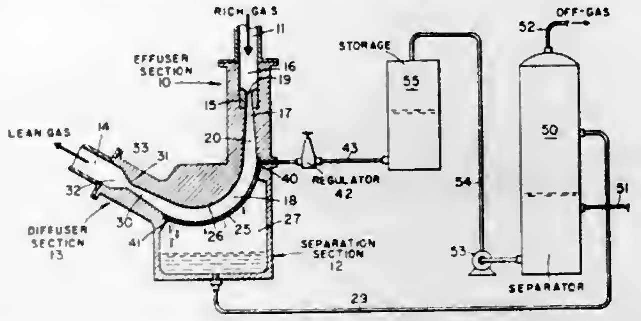


Method and apparatus for separating one or more components from a multicomponent high-pressure gas stream. The gas stream is expanded to supersonic velocities through a supersonic effuser to achieve low temperatures and low pressures in the supersonic gas stream and cause liquid particles (drops) and/or solid particles to form. The supersonic gas stream is made to traverse a planar bend provided with a permeable outer wall to and through which the condensed particles are inertially moved and thereby separated from the gas stream. The separated condensed particles are collected along with dissolved and entrained gas which also separates from the gas stream. The supersonic gas stream is then decelerated to subsonic flow through a diffuser and part of the pressure of the gas stream is recovered. The jet pump principle is employed to introduce low pressure stagnant gas into the supersonic (motive gas) stream where energy and heat transfer occur upon mixing of the two gas streams.

3,528,217
SUPERSONIC FLOW SEPARATOR WITH FILM FLOW COLLECTOR

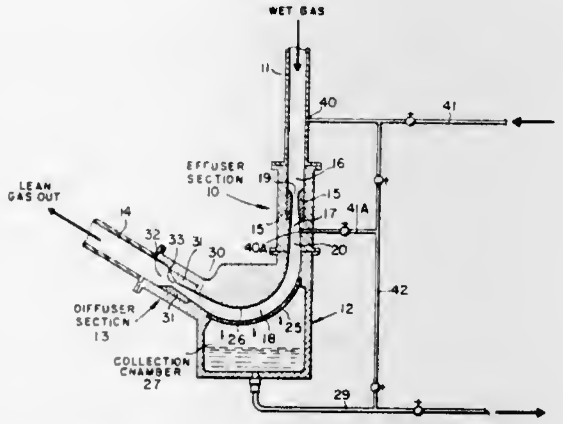
Robert L. Garrett, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,373
Int. Cl. B01d *51/08*
U.S. Cl. 55—15 **13 Claims**

Method and apparatus for separating one or more components from a multicomponent, high-pressure gas stream. The gas stream is expanded to supersonic velocities through a supersonic effuser to achieve low temperatures and low pressures in the supersonic gas stream and cause condensed particles or droplets to form. The supersonic gas stream is made to traverse a planar bend provided with a permeable outer wall to and through which the condensed particles are inertially moved and thereby separated from the gas stream. The separated condensed particles are collected along with dissolved and entrained gases or vapors which also separate from the gas stream. The supersonic gas stream is then decelerated to subsonic flow through a diffuser and part of the pressure of the gas stream is recovered. A flowing liquid film is formed on the permeable outer wall to collect condensate droplets inertially moved to the outer wall by centrifugation. Additionally, the liquid film fills the pores, keeping a high liquid saturation and prevents the vapors from passing through the permeable wall, serving to make a more efficient separation of phases possible than would occur without the added liquid.



3,528,218
SUPERSONIC FLOW SEPARATOR WITH ADMIXING

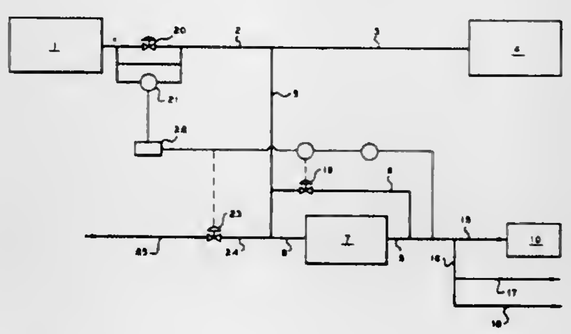
Robert L. Garrett and William J. McDonald, Jr., Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,374
Int. Cl. B01d *51/08*
U.S. Cl. 55—15 **19 Claims**



Method and apparatus for separating one or more components from a multicomponent, high-pressure gas stream. The gas stream is expanded to supersonic velocities through a supersonic effuser to achieve low temperatures and low pressures in the supersonic gas stream and cause liquid (drops) and/or soild particles to condense. The supersonic gas stream is made to traverse a planar bend provided with a permeable outer wall to and through which the condensed particles are inertially moved and thereby separated from the gas stream. The separated particles are collected along with the dissolved and entrained gases which also separate from the gas stream. The supersonic gas stream is then decelerated to subsonic flow through a diffuser and part of the pressure of the gas is recovered. A material is intimately mixed with components of the gas stream to improve the efficiency of recovery of some components of the gas stream. The mechanisms involved in improving such inertial recovery efficiency include making condensed particles grow larger; providing a more dense or massive agent onto which components dissolve, react chemically or adsorb; and/or maintaining a free flowing system by inhibiting certain solids formation in the cold gas stream. The material may be a vapor, solid or liquid (or mixtures of these). The permeable outer wall may be heated to melt certain solids which form in the cold stream and deposit on the permeable wall.

3,528,219
PRESSURE CONTROL SYSTEMS

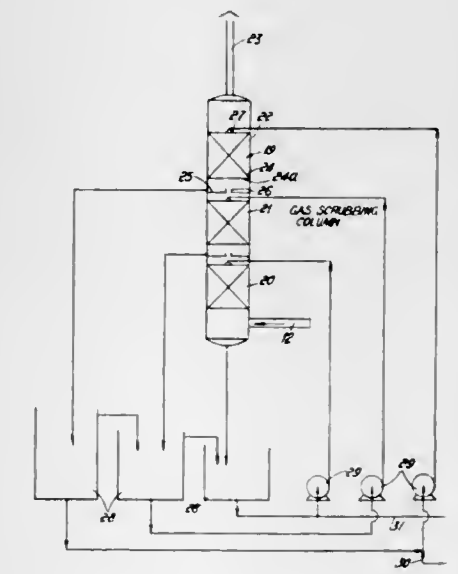
Sal S. DeMarco, Bartlesville, Okla., and Frank R. Silva, Jr., Elkhart, Kans., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 7, 1968, Ser. No. 774,140
Int. Cl. B01d *53/00*
U.S. Cl. 55—66 **6 Claims**



A method of controlling a first operating process discharging a process stream to a second operating process which involves establishing a pressure drop in the discharge line and regulating the by-pass around a compressor to discharge to a third operating pressure in response to changes in the pressure drop.

3,528,220
AVOIDANCE OF AIR POLLUTION IN THE MANUFACTURE OF GLASS FIBRE PRODUCTS

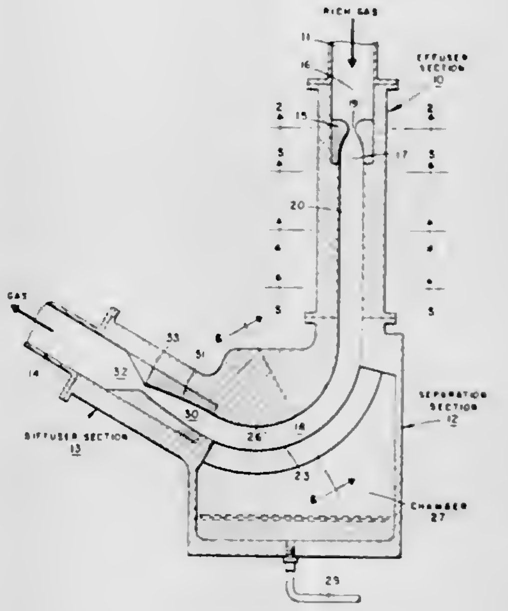
Frederick E. Warner and Alexander P. Rice, London, England, assignors to Fibreglass Limited, St. Helens, Lancashire, England, a British company
Filed June 18, 1968, Ser. No. 738,053
Claims priority, application Great Britain, Aug. 21, 1967, 38,490/67
Int. Cl. B01d *47/12*
U.S. Cl. 55—89 **8 Claims**



In removing phenolic air pollutants in the production of glass fibre products, the polluted air is passed sequentially through at least two low energy contacting zones in each of which it is contacted with descending scrubbing liquor, each succeeding contacting zone having at its bottom individual liquor collecting means. In passing from one contacting zone to the next zone the air stream undergoes acceleration in a transfer passage in which no interzone flow of liquor occurs, and then impinges on baffle means disposed in its path as it enters the next zone at a level above the pool of scrubbing liquor collected at the bottom of the next zone in the liquor collecting means.

3,528,221
TRIANGULAR SUPERSONIC FLOW SEPARATOR

Robert L. Garrett and William J. McDonald, Jr., Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,375
Int. Cl. B03c *3/14*
U.S. Cl. 55—127 **19 Claims**

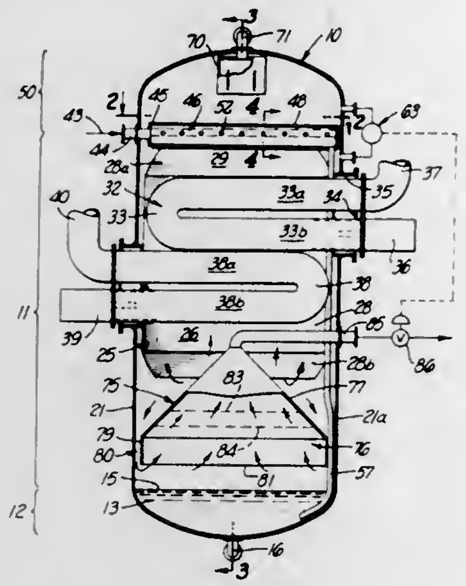


An apparatus for separating one or more components from a multicomponent high-pressure gas stream. The gas stream is expanded to supersonic velocities through a supersonic effuser to achieve low temperatures and low pressures in the supersonic gas stream and cause condensed particles to form. The supersonic gas stream is made to traverse a planar bend flow path or passageway in which the particles are inertially moved to the outer boundary of the planar bend where they are separated from the gas stream. The separated particles are collected along with dissolved and entrained gases which also separate from the gas stream. The supersonic gas stream is then decelerated to subsonic flow through a supersonic diffuser and part of the pressure of the gas stream is recovered. Opposing side walls of the planar bend flow path converge toward the outer boundary thereof to an apex. This convergent-type flow path causes concentration of particles as they are inertially moved toward the outer boundary of the planar bend flow path. Convergence of the walls terminates at the apex in a narrow passageway or strait to and through which the condensed particles are inertially moved. A suitable planar bend flow path cross-sectional configuration is triangular or may be essentially triangular having curved walls. An electric field may be applied across the planar bend flow path to increase the rate of liquid particle collision, coalescence and drop growth. A replaceable wall material, either movable or stationary, may be positioned in the narrow passageway at the outer boundary apex of the planar bend flow path.

3,528,222
METHOD AND APPARATUS FOR SEPARATING MIXTURES OF GAS, WATER AND OIL

Logan C. Waterman, Houston, Tex., assignor to Petrolite Corporation, St. Louis, Mo., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,777
Int. Cl. B01d *19/00*
U.S. Cl. 55—175 **26 Claims**

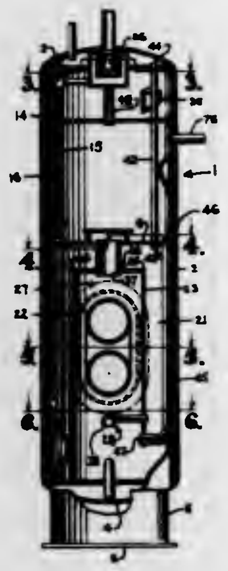
A separator for oil-water or other mixtures in which a liquid is thermally circulated in a closed path, the mixture is supplied to such circulation at one position and a partially-treated mixture is withdrawn from the circulation at another position and separated in a zone shielded from the circulation. Gas-containing mixtures are subjected to an initial gas separation step before joining the circulation.



3,528,223

PETROLEUM TREATER-SEPARATOR

David J. O'Neill, Great Bend, Kans., assignor to O'Neill Tank Company, Inc., Great Bend, Kans., a corporation of Kansas
Filed Sept. 3, 1968, Ser. No. 757,021
Int. Cl. B01d *19/00*
U.S. Cl. 55—175 7 Claims

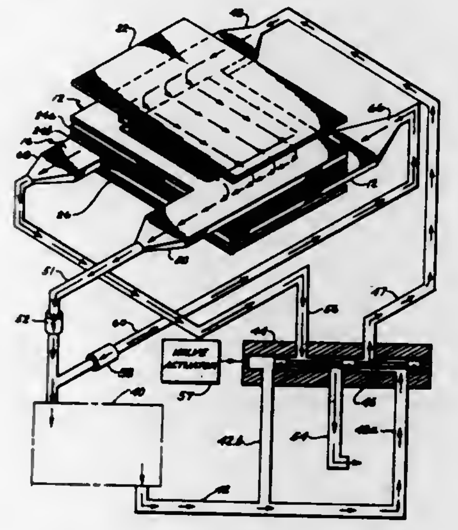


A petroleum well production treater-separator for separating gas, oil and water has an upright shell with two vertically spaced horizontal portions defining an upper receiving chamber, an intermediate oil collecting chamber and a lower heating chamber. The receiving chamber contains a mist eliminator and has a vertical wall depending from the upper partition and with a minor portion of the shell defining a flume to a lower portion of the shell. An inverted U-shaped partition in the treating zone is spaced from the vertical wall, the shell wall and the lower horizontal partition to define a heater containing heating zone and a U-shaped passage from the lower end of the flume up and over the heating zone. Well production flows from the receiving chamber downwardly to the treating zone through a preheat zone in the U-shaped passage and into and through the heating zone whereby the oil flows upwardly into the oil collection chamber and water flows downwardly into a lower portion of the treating chamber for discharge respectively therefrom.

3,528,224

AIR-CONDITIONING APPARATUS

Charles E. Warn, La Palma, Calif., assignor to North American Rockwell Corporation, El Segundo, Calif., a corporation of Delaware
Filed Dec. 27, 1967, Ser. No. 693,869
Int. Cl. B01d *53/00*
U.S. Cl. 55—179 7 Claims

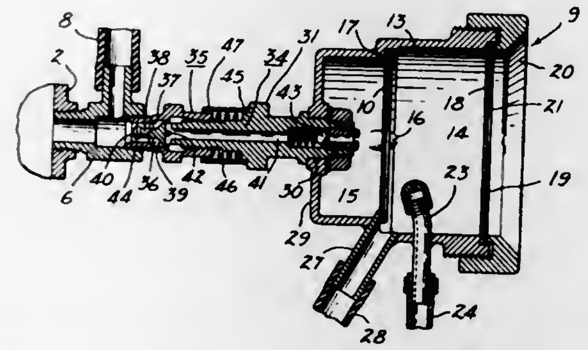


This disclosure relates to an air-conditioning system using molecular-sieves that have the ability to "adsorb" selected elements, and to then "desorb" the previously adsorbed elements. The disclosed arrangement uses the heating-effect of the adsorbing-state molecular-sieve to warm the desorbing-state molecular-sieve; and uses the cooling-effect of the desorbing-state molecular-sieve to cool the adsorbing-state molecular-sieve. Thus, the overall structure acts as a substantially-constant temperature heat-sink that encourages each sieve-operation to occur at or near optimum temperature, without external cooling and heating apparatus. This molecular-sieve arrangement combines several environmental functions: (1) removal of water; (2) removal of carbon dioxide; (3) removal of contaminants, such as odor-producing compositions; and (4) rejection of latent heat of water.

3,528,225

FLUID INJECTING APPARATUS FOR INTERNAL COMBUSTION ENGINES

Frank A. Manfredi, 2026 W. 95th St., Cleveland, Ohio 44102
Continuation-in-part of application Ser. No. 512,475, Dec. 8, 1965, This application Dec. 7, 1966, Ser. No. 601,502
Int. Cl. B01d *47/00, 50/00;* **F02m** *25/04*
U.S. Cl. 55—258 13 Claims

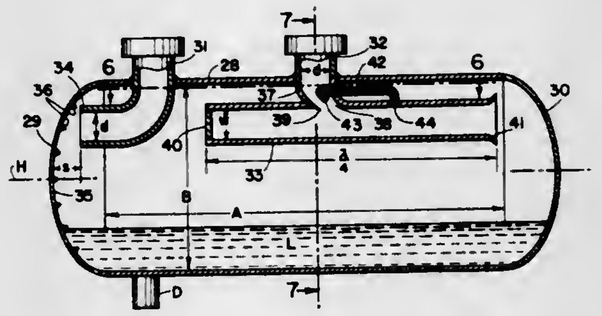


The apparatus for supplying an air aqueous vapor mixture into the intake system of an internal combustion engine comprises a reservoir for aqueous liquid, a mixing chamber for mixing air with the aqueous liquid and a valve system for regulating the flow of the air aqueous vapor mixture between the mixing chamber and the intake system. The mixing chamber has an air inlet and an aqueous liquid inlet which directs a spray into the air flow from the air inlet to form a mist in the mixing chamber. The outlet of the mixing chamber includes foraminous means for catching droplets and from which the droplets vaporize substantially completely into the air prior to introduction of the air vapor mixture into the intake system.

3,528,226

HORIZONTAL VAPOR-LIQUID SEPARATOR

Wilhelm S. Everett, 126 W. Santa Barbara St., Santa Paula, Calif. 93060
Continuation-in-part of application Ser. No. 492,243, Oct. 1, 1965. This application Oct. 18, 1968, Ser. No. 772,449
Int. Cl. B01d *51/08*
U.S. Cl. 55—277 4 Claims

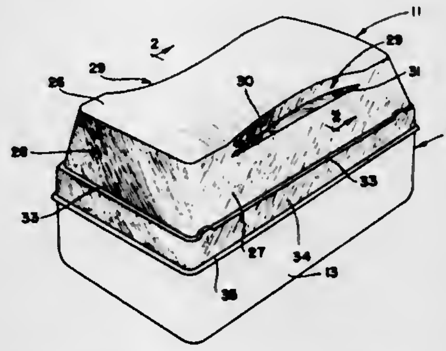


An elongated horizontally disposed vessel is provided with inlet and outlet openings through which a fluid mixture passes. The vessel includes at least one acoustically resonant chamber or organ pipe having a flow diverting obstruction proximate to the inlet and/or outlet openings such that the fluid passing the obstruction will cause reverberations in the chamber to generate infrasonic noise to effect separation of vapor and liquid comprising the fluid mixture.

3,528,227

PROTECTIVE ANIMAL CAGE COVER

Charles A. Lee and Frank D. Sorrells, Knoxville, Tenn., assignors, by mesne assignments, to Appleton Wire Works Corporation, Appleton, Wis., a corporation of Wisconsin
Filed Oct. 11, 1968, Ser. No. 766,755
Int. Cl. A01k *1/00;* **B01d** *39/00, 39/14*
U.S. Cl. 55—524 6 Claims



A protective cover for an animal cage is formed from a fibrous web material and is made to withstand autoclaving. The cover may be made by thermoforming the fibrous web into a shape to fit over and seal with the animal cage.

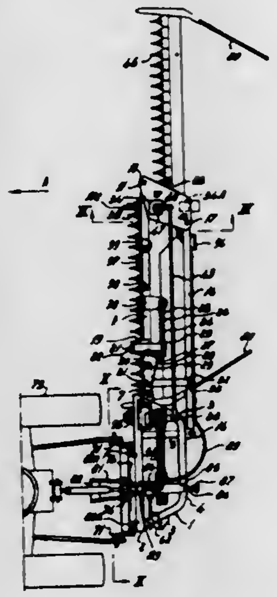
ERRATUM

For Class 55—384 see:
Patent No. 3,528,236

3,528,228

MOWING MACHINES

Cornelis van der Lely, Bruschenrain 7, Zug, Switzerland, and Ary van der Lely, Weverskade 10, Maasland, Netherlands
Filed June 13, 1967, Ser. No. 645,641
Claims priority, application Netherlands, June 17, 1966, 6608501
Int. Cl. A01d *75/30, 35/02*
U.S. Cl. 56—6 28 Claims

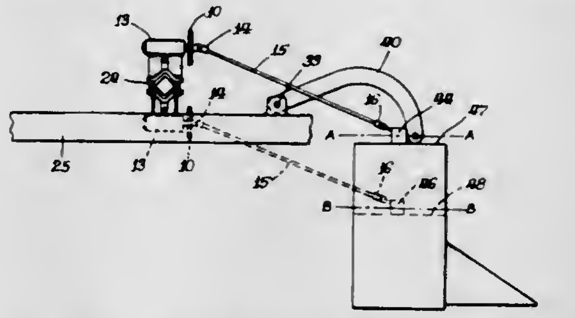


This invention is a mowing machine in which a frame supports two or more mowing bars laterally of the frame and on the same side of the prime mover during mowing operation. The mowing bars are arranged side-by-side and a pivotable parallelogram linkage connects the mowing bars to the frame. A displaceable retaining member is included with other supporting elements, which retaining member can be tripped by one of the bars striking an obstacle whereupon the linkage is displaced and the mowing bars can be moved to the rear. The frame is connectable to the three-point lifting mechanism of a tractor and power means are associated with the lifting mechanism to raise the mowing bars at the same time the lifting mechanism is operated. The entire parallelogram linkage with mowing bars can be pivoted to several transport positions of less width than the mowing position.

3,528,229

COTTON PICKER DRIVE THEREOF

Robert S. Brace and Edward L. Robinson, Jr., Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 7, 1968, Ser. No. 711,381
Int. Cl. A01d *45/18*
U.S. Cl. 56—11 10 Claims

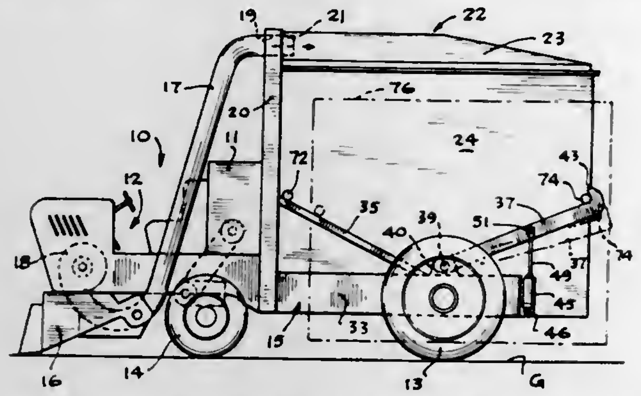


A cotton picker having several different picker drums; a power transfer mechanism so structured that several different sized picker drums are accommodated by the same mechanism merely by transposing the position and reassembling the components of the power transfer mechanism frame member while retaining a range of optimum angular drive relationships and operational requisites in the several positions.

3,528,230

COTTON HARVESTER WITH REMOVABLE BASKET AND TRANSPORT VEHICLE THEREFOR

Forrest L. Simpson, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 16, 1968, Ser. No. 729,682
Int. Cl. A01d *45/18*
U.S. Cl. 56—14 **10 Claims**

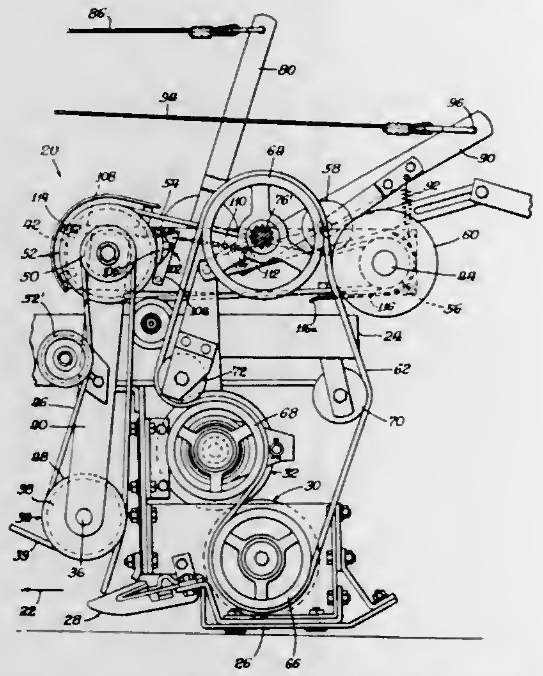


A system and combination of a vehicle carrier and a cotton basket for transporting the basket during field harvesting, for transporting the basket to a transfer station, and for picking up the basket at the transfer station for transport to a processing station. Vehicle carriers are provided as cotton harvesters and as carts, with both carriers having means for engaging the basket when grounded, for lifting the basket, and for lowering the basket to ground position. The basket has lateral projections which contact cams at the forward end of the carriers, and other lateral projections which are engageable by pivotable means mounted at the back of the carriers. Such pivotable means lift the basket and hold the basket in raised position during transport.

3,528,231

MOWER CRUSHER WITH REEL SELECTIVELY POSITIONABLE AND SELECTIVELY DRIVEN, BRAKED AND FREE-WHEELING

Arthur H. Keller, Western Springs, Charles V. Everett, Warrenville, Peter J. Peacock, Western Springs, and Frank J. Macha, Jr., Chicago, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,951
Int. Cl. A01d *43/00*
U.S. Cl. 56—23 **12 Claims**

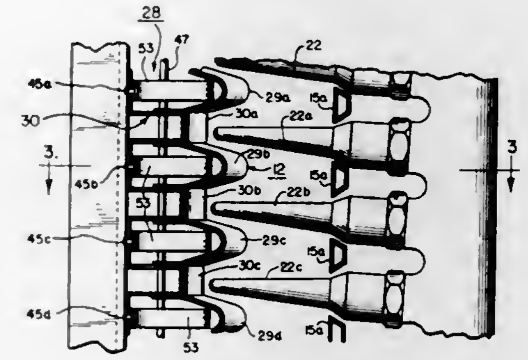


Mower crusher with power driven reel located at the front, selectively positionable as to height and also selectively driven, braked and free-wheeling independently of vertical positioning.

3,528,232

COMPRESSION SHEET STRUCTURES, ROD AND CORRUGATED TYPES

Robert M. Fachini, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 19, 1968, Ser. No. 722,706
Int. Cl. A01d *45/20*
U.S. Cl. 56—44 **11 Claims**



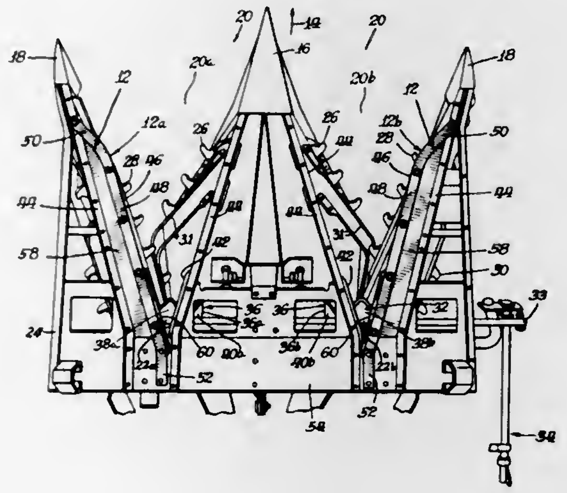
A multi-element compressor plate structure for non-destructively urging cotton plants into the effective picking zone of a series of picker spindles is disclosed.

A cotton harvesting machine has a plant receiving passageway and a plurality of picker spindles spaced vertically one from another and extending laterally into the plant receiving passageway through a first generally vertical sidewall thereof. The compressor plate structure defines an opposite sidewall of the passageway and is composed of a series of yieldably biased members normally projecting laterally inward into interdigitation with the vertically spaced array of picker spindles for yieldably compressing cotton plants into the effective picking zone of the spindle arms.

3,528,233

VARIABLE SPACING ROW CROP HARVESTER

Robert E. Martner, Plano, and Carmen S. Phillips, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,740
Int. Cl. A01d *45/02*
U.S. Cl. 56—119 **7 Claims**

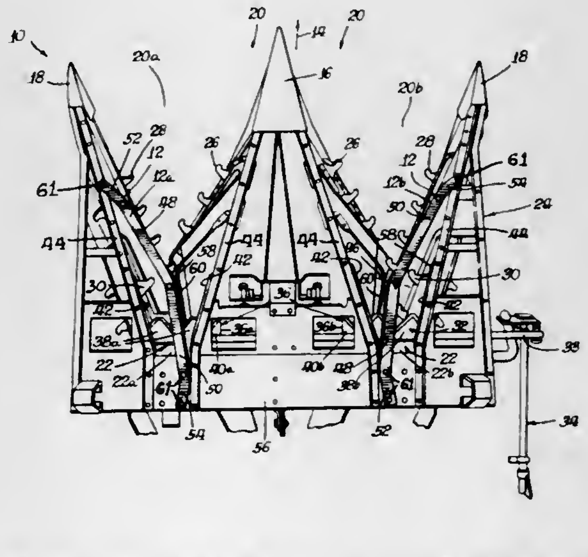


Multiple row harvester having a frame defining fixed passages for the respective crop rows, each passage being of substantial width to accommodate wide variation of spacing of the rows, and having a guide selectively positionable therein according to predetermined spacing of the rows; the guides being removable and re-positionable on corresponding sides of the different passages for different spacings of rows.

3,528,234

VARIABLE SPACING ROW CROP HARVESTER

John J. Kowalik, Glenview, and Ronald F. Zitko, Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,742
Int. Cl. A01d *45/02*
U.S. Cl. 56—119 **10 Claims**

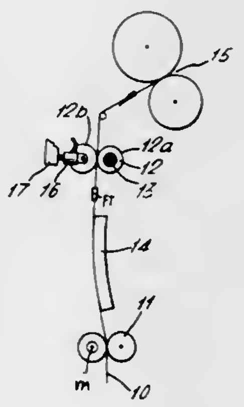


Multiple row harvester having a frame defining fixed passages for the respective crop rows, each passage being of substantial width to accommodate wide variation of spacing of the rows, and having guides detachably mounted and selectively positionable on opposite sides of the passages, to guide and confine the crop plants at different lateral locations in the respective passages according to the spacing of the rows.

3,528,235

APPARATUS FOR PROCESSING ELONGATED FILAMENTS

Joseph Fitton, Great Hawarth House, Wardle Road, Rochdale, England
Filed Feb. 23, 1968, Ser. No. 707,652
Int. Cl. D02g *1/02;* **D02j** *3/08*
U.S. Cl. 57—34 **11 Claims**

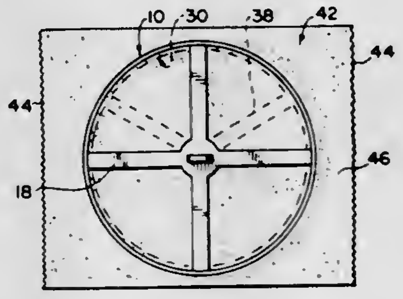


An apparatus for processing elongated filaments includes feed means which feeds at least one elongated crimped filament of given cross section towards a filament processing station. A pair of cooperating pressure rollers are arranged at the processing station and the filament passes through the nip of these pressure rollers whereby the cross section of the filament is deformed transversely of the elongation thereof.

3,528,236

PAN COVER

Keith F. Merrick, 1418 Shermer Road, Northbrook, Ill. 60062
Filed June 10, 1968, Ser. No. 735,817
Int. Cl. B01d *53/20;* **B65d** *51/16*
U.S. Cl. 55—384 **5 Claims**

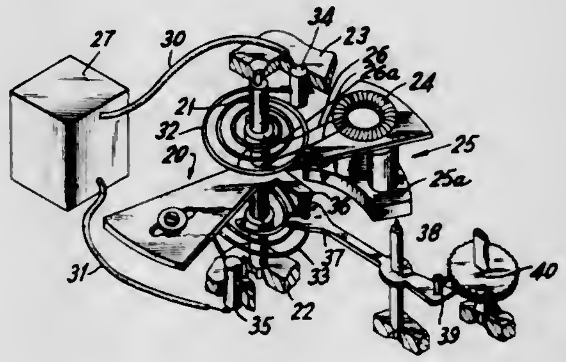


The disclosure describes a pan lid or cover adapted to allow the escape of steam and retain grease particles whereby to eliminate or mitigate odor and smoke during frying processes, while attaining the proper browning and flavor-retention of fried foods. In one embodiment there is provided a pair of concentrically nesting tubular flanges or hoops adapted to retain the peripheral edge of a piece of absorbent paper, and hold same in distended, taut condition as the primary vapor and liquid barrier over the top of a pan. The inner flange has a thin, flat radial spoke member to support the absorbent paper in part and the outer or top flange has a knob to facilitate assembly of the piece of paper therein and handling the unit as a cover. The device is characterized by simple design, being adapted for use with paper towels and the ease with which it can be used and cleaned after use.

3,528,237

HOROLOGICAL HAIRSPRING

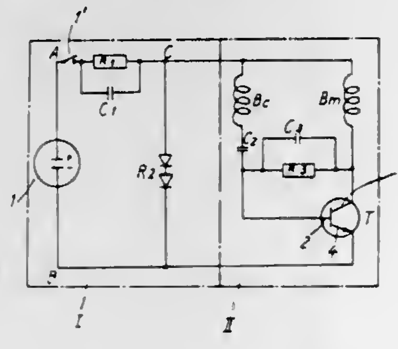
Jean G. Suard, Besancon, France, assignor to Timex Corporation, Waterbury, Conn., a corporation of Delaware
Filed Apr. 30, 1968, Ser. No. 725,275
Int. Cl. G04c *3/04*
U.S. Cl. 58—23 **2 Claims**



A horological movement includes a balance wheel fixed to a balance wheel staff. A hairspring, attached between the balance wheel assembly and the frame, permits oscillation of the balance wheel. The hairspring is formed in an irregular convolute, i.e., with a non-uniform pitch, and is round in cross-section.

3,528,238
FEEDING DEVICE OF AN ELECTRIC CLOCKWORK

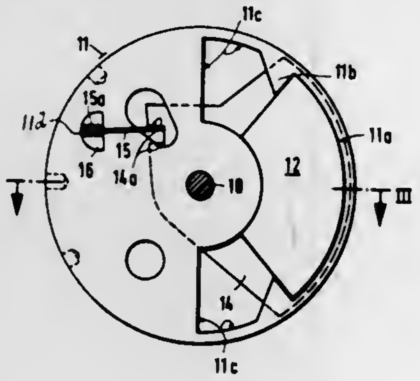
Jean-Marcel Stampfli, Le Landeron, Switzerland, assignor to Fabrique d'Horlogerie de Fontainemelon, Succursale du Landeron S.A., Le Landeron, Canton of Neuchate, Switzerland, a firm of Switzerland
Filed June 4, 1968, Ser. No. 734,370
Claims priority, application Switzerland, June 8, 1967, 8,150/67
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **1 Claim**



A feeding device producing a stabilized feeding current to an electric clockwork and comprising, a pair of resistances, a condenser connected in parallel with one of the resistances to permit the alternate pulses coming from the clockwork to close themselves on a low impedance circuit constituted by the condenser and by a source of direct feeding current while producing the self-starting of the clockwork at the time of switching on the clockwork as the condenser operates substantially as a short circuit with respect to the resistance with which it is connected in parallel.

3,528,239
BALANCE CONSTRUCTION

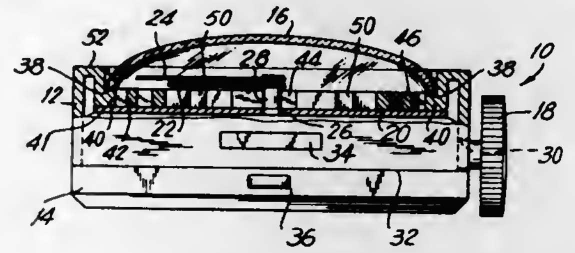
Wolfgang Ganter, Schramberg-Sulgen, Wurttemberg, and Horst Dinger, Tennenbronn, Wurttemberg, Germany, assignors to Messrs. Gebruder Junghans Gesellschaft mit beschraenkter Haftung, Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Oct. 3, 1968, Ser. No. 764,891
Claims priority, application Germany, Oct. 4, 1967, J 17,023
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 **5 Claims**



A time-keeping electric device particularly for clocks in which a circular carrying plate is mounted on a shaft and the plate having recesses therein, one of which is to receive a permanent magnet and also a spring member on the plate is operative and projects through the recess.

3,528,240
WATCHCASE WITH INTEGRAL NUMERALS

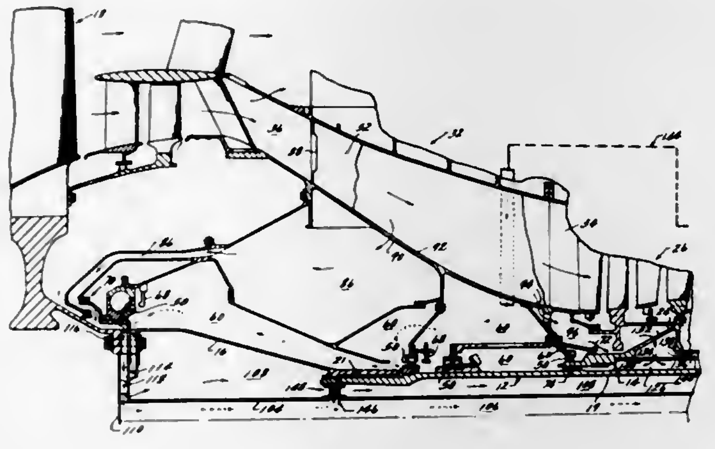
Julius Kupchick, 35 Eastern Parkway, Brooklyn, N.Y. 11238
Filed June 7, 1968, Ser. No. 735,310
Int. Cl. G04b *39/00*
U.S. Cl. 58—91 **4 Claims**



The crystal supporting bezel, ordinarily made as a separate structure in watchcases, according to the invention is stamped or cast integrally with the watchcase. The bezel-forming member is extended inwardly toward the center of the watchcase and shaped as integral hour-designating indicia. The thickness of the bezel-forming member defines a space between its bezel or crystal-supporting surface and its lower surface resting against the dial face. The hour and minute hands are disposed to revolve between the dial face and the crystal, either above the integral indicia or in the space between the top and bottom of the novel spacer member, integral with the watchcase. One of the basic novel features of the invention is that the spacer member, forming an extension of the bezel, is formed into numerals or time-indicating indicia shapes around the periphery of the dial, between the dial face and the crystal.

3,528,241
GAS TURBINE ENGINE LUBRICANT SUMP VENT AND CIRCULATING SYSTEM

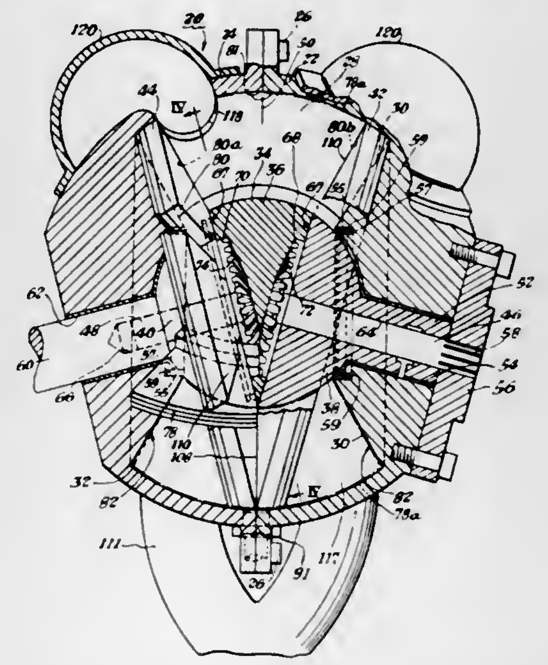
Lawrence B. Venable and John A. Gill, Jr., Cincinnati, and Roger T. Earle, Jr., Loveland, Ohio, assignors to General Electric Company, a corporation of New York
Filed Feb. 24, 1969, Ser. No. 801,288
Int. Cl. F02c *7/06*
U.S. Cl. 60—39.08 **14 Claims**



A system is disclosed for venting bearing lubricant sump chambers of a single or multiple shafted gas turbine engine through a central vent passage in the innermost shaft in a manner minimizing lubricating fluid losses from the sump chambers. Means are also provided to deliver relatively cool pressurized air from a fan or compressor of the engine into the upstream sump chamber and into the remaining sump chambers through the engine shaft or shafts to thereby establish, in conjunction with the venting system, a flow of relatively cool air through each lubricant sump.

3,528,242
ROTARY POSITIVE DISPLACEMENT MACHINES

Michael D. Hartmann, 87 King St., Morgantown, W. Va. 26505
Filed Mar. 21, 1968, Ser. No. 715,002
Int. Cl. F01c *3/04;* **F02b** *55/08*
U.S. Cl. 60—39.61 **20 Claims**



A positive displacement rotary engine is disclosed which is capable of use as a pump, internal combustion engine, external combustion engine, fluid motor and the like. The machine includes an annular stator cavity in which a pair of rotary discs are rotated in phase and inclined relative to one another. In one arrangement the discs are generally frusto-conical in shape and contact or nearly contact along a line extending radially across their conic surfaces. The rotor discs are provided with axially aligned slots whereby they slidably engage a number of vanes, each of which conforms substantially to the entire cross-sectional area of the annular cavity. Relative movement between the discs and the vanes therefor is directed substantially axially of the rotor rather than radially. Thus, the usual biasing springs necessitated by radially sliding vanes are eliminated. Moreover, a much larger positive displacement is obtained through the use of the inclined rotor discs than is possible with the eccentric rotors or irregularly shaped cavities of conventional rotary machines.

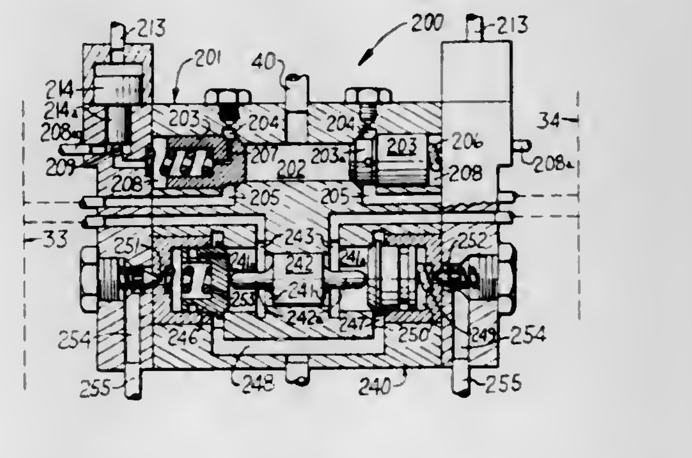
ERRATUM

For Class 60—51 see:
Patent No. 3,528,114

3,528,243
RELIEF AND REPLENISH PACKAGE FOR A HYDROSTATIC TRANSMISSION

John R. Cryder, Joliet, Willard J. Haak, John L. Hufeld, and Lionel L. Kinney, Peoria, Kenneth R. Lohbauer, Joliet, and Howard A. Marsden, Pekin, Ill., Ralph W. Matthews, Franklin, Wis., and William B. Norick, Joliet, Glen E. Stewart, Springfield, Rollin P. Vanzandt, Peoria, and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Original application June 14, 1967, Ser. No. 645,912, now Patent No. 3,477,225, dated Nov. 11, 1969. Divided and this application Aug. 1, 1968, Ser. No. 763,458
Int. Cl. F15b *15/18*
U.S. Cl. 60—52 **6 Claims**

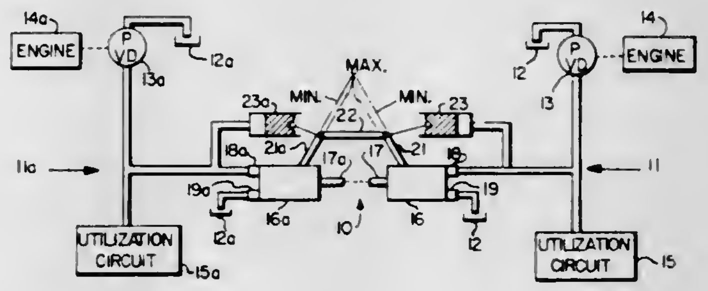
In a hydrostatic transmission having a variable displacement pump coupled to a hydraulic motor in a hydrostatic loop wherein power is transmitted by the circulation of pressurized hydraulic fluid between the pump and the motor, a relief and replenishing package interconnected across the hydrostatic loop which employs a replenishing chamber connected to a source of external pressurized hydraulic fluid and that is in communication with the opposite sides of the hydrostatic loop through two valve spools, one associated with each side of the hydrostatic loop, to replenish the lower pressure side of the hydrostatic loop with hydraulic fluid and a relief



section also having connections to opposite sides of the hydrostatic loop through passages that are closed by spring-loaded valves and arranged so that a shuttle will cause the low pressure side of the loop to vent to reservoir by opening one or the other spring-loaded valves while a small poppet element controls the pressure in the balance chamber behind the closed spring-loaded valve to establish the maximum relief pressure level in the hydrostatic loop.

3,528,244
HYDRAULIC POWER TRANSFER DEVICE

Charles O. Weisenbach, Watertown, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Jan. 17, 1969, Ser. No. 791,890
Int. Cl. F01b *23/08*
U.S. Cl. 60—53 **5 Claims**

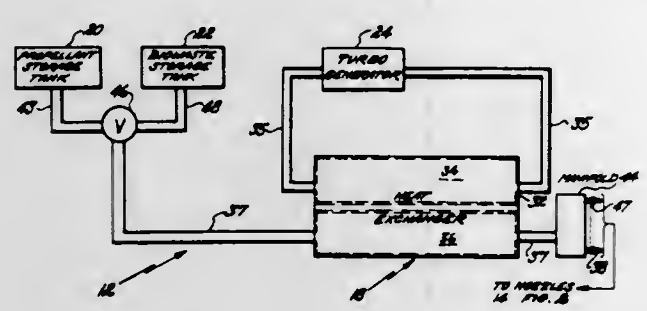


A device for transferring hydraulic power back and forth between separate hydraulic systems without intermixing the oils used in those systems. The power transfer device comprises a pair of motor-pump units whose drive shafts are interconnected, and control means which insures that the driven or pumping unit operates at a smaller displacement per unit of time than the driving or motoring unit. In the illustrated transfer device, the units run at the same speed, and the control means responds to the difference between the pressures at their high pressure ports and sets the motoring unit to a maximum displacement per revolution and the pumping unit to a minimum displacement per revolution.

3,528,245

COMBINED RADIOISOTOPE POWER AND PROPULSION SYSTEM

Lawrence R. Sitney, 30440 Oceanaire Drive,
Palos Verdes Peninsula, Calif. 90274
Filed May 27, 1968, Ser. No. 732,340
Int. Cl. G21d *5/00;* **G21h** *1/00*
U.S. Cl. 60—203 3 Claims

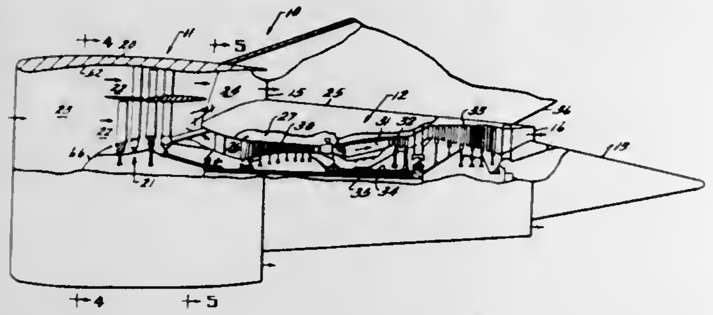


A combined power and propulsion system for a manned space vehicle which utilizes the heat generated by a radioisotope heat source for heating a working fluid and a propellant. The above system is also capable of exhausting biowaste products in order to achieve additional useful thrust and to further enhance the spacecraft performance.

3,528,246

FAN ARRANGEMENT FOR HIGH BYPASS RATIO TURBOFAN ENGINE

Lee J. Fischer, deceased, late of Marblehead, Mass., by Helen M. Fischer, executrix, Marblehead, Mass., assignor to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 416,681, Dec. 2, 1964. This application Dec. 29, 1966, Ser. No. 605,932
Int. Cl. F02k *3/02*
U.S. Cl. 60—226 10 Claims

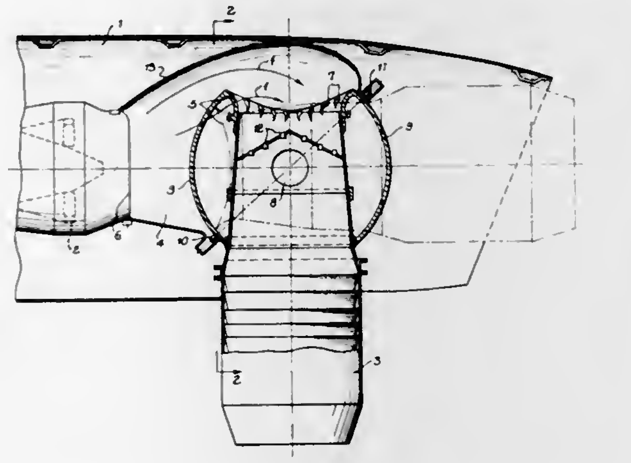


An axial flow compressor or fan for a turbofan engine having two axially spaced rows of rotor blades housed in an annular casing and supported by a rotor hub. One row of blades extends radially from the hub only a portion of the distance between the hub and the casing while the other row of blades is comprised of an inner tier of blades, which extends radially from the hub to a shroud, and an outer tier of blades extending from the shroud to the casing. A row of stator vanes having a portion intermediate the spaced rows of blades is supported by the casing. A second row of stator vanes supported by the casing may be provided downstream of the rows of blades. Means are provided to divide the passage formed between the hub and the casing into an inner annulus where the fluid is subjected to two stages of compression and an outer annulus where the fluid is subjected to a single stage of compression. Such means may comprise one or more rotating annular members carried by the rotor blades and one or more stationary annular members carried by the stator vanes. The shroud means and casing are preferably contoured to smoothly transition the fluid flow and to minimize the axial slope of the tips of the outer tier of blades.

3,528,247

EXHAUST SYSTEM FOR VTOL AIRCRAFT

Fritz Riemerschmid, Starnberg, Germany, assignor to Motoren- und Turbinen-Union, Munich, Germany
Filed Mar. 11, 1968, Ser. No. 712,237
Claims priority, application Germany, Mar. 17, 1967, M 73,226
Int. Cl. F02k *1/20;* **B64c** *15/06*
U.S. Cl. 60—232 4 Claims

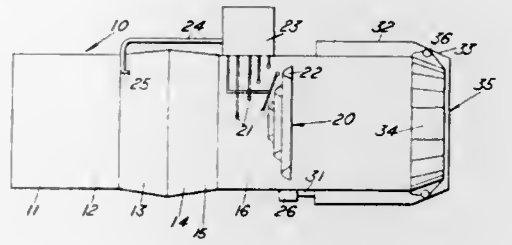


The exhaust gas jet pipe is connected to the turbine through a chamber having a bulge positioned above the turning axis of the jet pipe. The bulge provides a space through which exhaust gases can flow without essential flow loss when the jet pipe is in position for vertical flight of an aircraft.

3,528,248

GAS TURBINE ENGINE

Walter George Cross, Mickleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed July 1, 1968, Ser. No. 741,569
Claims priority, application Great Britain, July 4, 1967, 30,817/67
Int. Cl. F02k *1/16, 1/18, 3/10*
U.S. Cl. 60—235 19 Claims

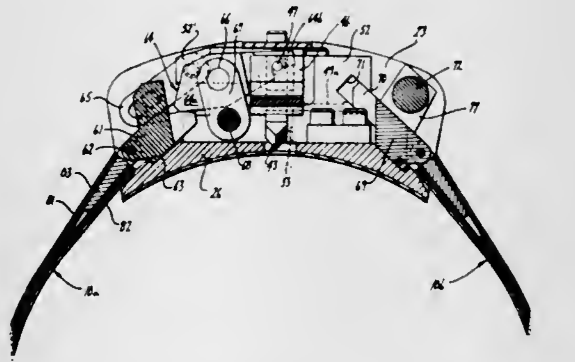


The invention concerns a gas turbine engine having a jet pipe, reheat combustion equipment mounted in said jet pipe, a variable area nozzle mounted at the downstream end of the jet pipe, a power-operated device for varying the area of the nozzle, a pressure responsive device which normally controls operation of the power-operated device and which is adjusted in functional dependence upon the value of the jet pipe pressure, fuel supply means for supplying fuel to the reheat combustion equipment, a manually operable member for controlling operation of the fuel supply means, and control means, effective only during a predetermined period initiated by predetermined movement of the manually operable member, for preventing the pressure responsive device from controlling operation of the power-operated device and for ensuring that the latter is controlled by means of the said manually operable member.

3,528,249

STORED ENERGY THRUST TERMINATION DEVICE

Robert B. Weaver, Palo Alto, and Stuart E. Weaver, Los Angeles, Calif., assignors to Weaver Associates, Inc., Palo Alto, Calif., a corporation of California
Filed May 29, 1968, Ser. No. 732,954
Int. Cl. F02k *9/04*
U.S. Cl. 60—254 11 Claims

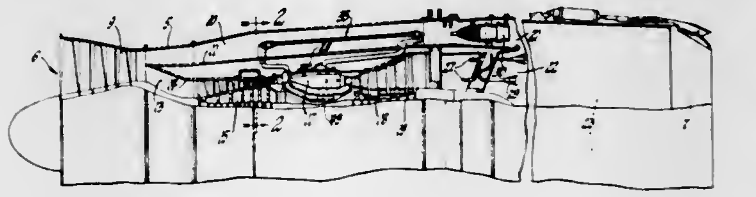


A device for terminating the thrust on an accidentally ignited solid propellant rocket including metal bands which encompass the rocket casing to retard expansion of it during pressure built-up within the casing caused by burning of its solid propellant. Coupled to the encompassing bands are rupturing means which are actuated by the build-up of tension in the band to cause a longitudinal cutter to penetrate the casing thus rupturing it. The cutter is driven by the combination of stored energy from two pairs of Belleville springs and the tension in the bands. The springs are coupled to the cutter by off-center toggle struts; these are located at an angle to the casing to provide a bias or lockout force which prevents accidental triggering. Thus, before the spring force can move the cutter into the casing the lockout force also provided by the springs must be overcome by the band tension.

3,528,250

BYPASS ENGINE WITH AFTERBURNING AND COMPRESSOR BLEED AIR HEAT EXCHANGER IN BYPASS DUCT

Douglas Johnson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 16, 1969, Ser. No. 816,498
Int. Cl. F02c *7/18;* **F02k** *3/04, 3/10*
U.S. Cl. 60—261 8 Claims

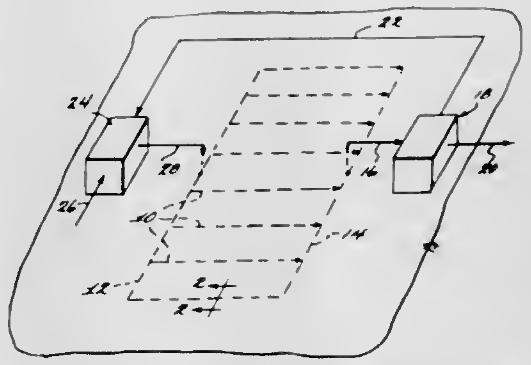


A bypass turbojet engine includes an afterburner for reheating the turbine exhaust and also a burner in the bypass duct. Air flowing to the bypass burner is warmed by heat exchangers mounted in the line of air flow to the burner through which air is circulated from a high pressure stage of the compressor to the turbine for cooling the turbine.

3,528,251

SALT WATER IRRIGATION SYSTEM

David C. Falk, 131 26th St., Newport News, Va. 23607
Filed Sept. 16, 1968, Ser. No. 760,005
Int. Cl. E02b *13/00*
U.S. Cl. 61—13 9 Claims

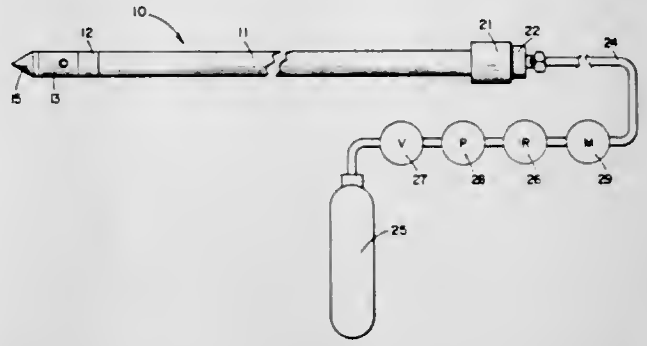


An irrigation system for utilizing salt water comprises a plurality of subsurface, trough-like structures extending generally parallel to the surface of the ground at about the depth of the root system of the crop to be grown. The troughs are perforated above the level of the salt water therein to prevent soil from entering. Upon evaporation of part of the salt water by ground heat the resulting water vapor passes through the perforation into the soil.

3,528,252

ARRANGEMENT FOR SOLIDIFICATIONS OF EARTH FORMATIONS

Charles P. Gall, 123 Patero de Oro,
San Clemente, Calif. 92672
Filed Jan. 29, 1968, Ser. No. 701,277
Int. Cl. E02d *3/12*
U.S. Cl. 61—36 4 Claims



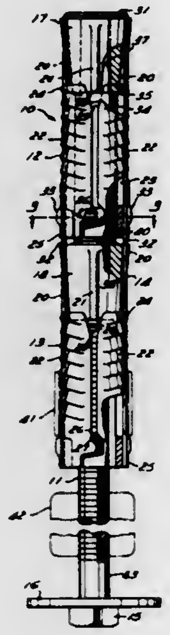
An arrangement for freezing an earth formation in which liquefied gas is allowed to evaporate for withdrawing heat from such a formation.

3,528,253

MINE ROOF SUPPORT

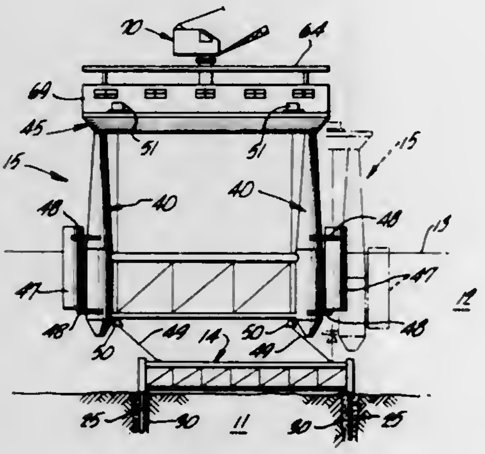
Lajos J. Kovacs, Mansfield, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Continuation-in-part of application Ser. No. 692,847, Dec. 22, 1967. This application Mar. 13, 1969, Ser. No. 806,988
Int. Cl. E21d *21/00;* **E04b** *1/48*
U.S. Cl. 61—45 7 Claims

A shield assembly for a mine roof comprising a plurality of expansion shells arranged in tandem on a single bolt. The expansion shells are maintained in position by a single bail and are forced into contact with the wall of an opening in the mine roof by a plurality of expansion plugs on the bolt which expansion plugs are secured to each other to form a unitary structure.



3,528,254
OFFSHORE PLATFORM STRUCTURE AND CONSTRUCTION METHOD

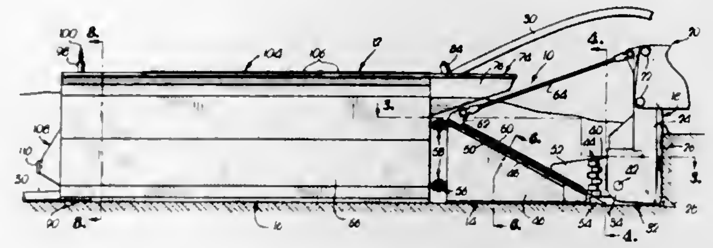
John R. Graham, Newport Beach, Calif., assignor to Global Marine Inc., Los Angeles, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 560,477, June 27, 1966. This application Dec. 3, 1968, Ser. No. 805,058
Int. Cl. E02b *17/00*
U.S. Cl. 61—46.5 **20 Claims**



An offshore drilling structure which includes a drilled-in and cemented, wholly submerged base structure defining a plurality of upwardly open receptacles disposed a selected distance below the water surface, and an upper platform which is floated into place over the base structure and secured to the receptacles of the base structure. The receptacles and the platform are arranged so that the platform is engageable with the receptacles by ballasting the platform to sink into mating contact with the base structure. The platform unit is removable from the base structure and transferable to another similar base structure at a different location in a different depth of water, for example.

3,528,255
APPARATUS FOR LAYING PLASTIC PIPE

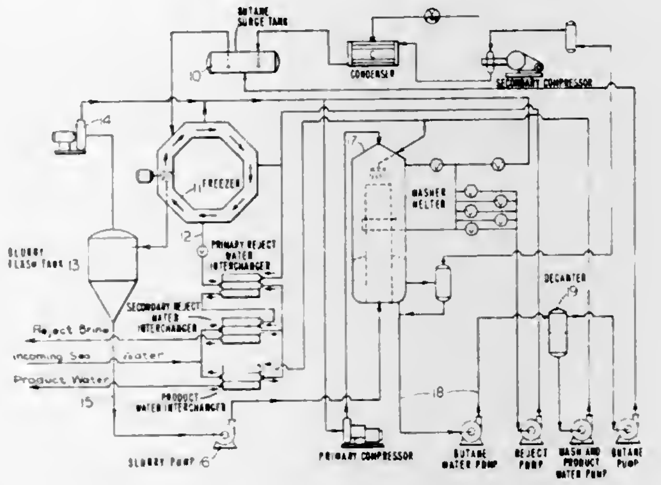
Charles F. Blinne, P.O. Box 445, Poplar Bluff, Mo. 63901
Filed Dec. 12, 1967, Ser. No. 689,962
Int. Cl. F16l *1/00;* **E02f** *5/18*
U.S. Cl. 61—72.6 **6 Claims**



A plow for forming a ditch and installing an elongated element in the ditch. A socket on the ground breaking shank houses a connector extending between the plow and the shank to shield against dirt and to permit relative movement between the plow and shank about a pair of axes. The plow comprises a ditch widening section and a ditch maintaining and element guiding section. Inclined vanes on the widening section conduct loosened material upwardly whereupon the material encounters a deflector on the maintaining section for moving the dirt to the edges of the ditch as the element is conducted down along a curved track into the bottom of the ditch. An adjustable hold-down roller near the end of the track is disposed to engage the element to insure proper positioning in the ditch.

3,528,256
FREEZE CRYSTALLIZATION USING DIRECT REFRIGERANT

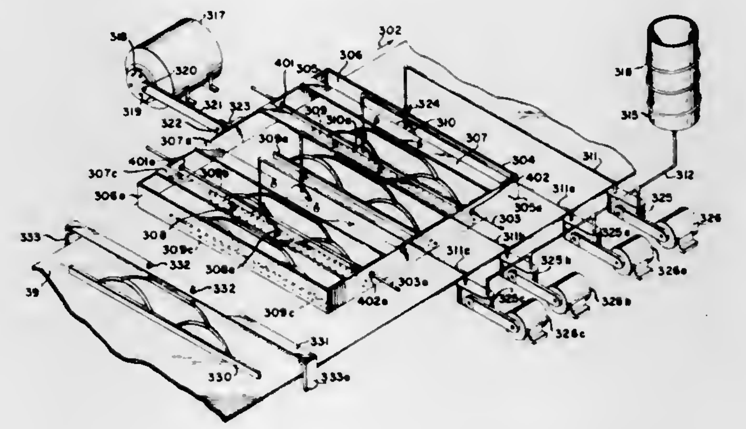
George B. Karnofsky, Mount Lebanon, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 13, 1967, Ser. No. 615,479
Int. Cl. B01d *9/04*
U.S. Cl. 62—58 **9 Claims**



This invention relates to method and apparatus for producing pure crystals by partial crystallization of aqueous solutions by direct contact with refrigerant and particularly to the partial freezing of sea water or brackish water. By this method, aqueous solution is partially crystallized by vaporization of a refrigerant such as normal butane in direct contact with the solution; the crystals are washed to free them from adhering solution, and then if the crystals be ice, they are melted to produce potable water. This invention is applicable to crystallization of chemical compounds such as caustic, metal sulfates, and other compounds formed by chilling saturated solutions but the specific example described is the production of pure ice from brine.

3,528,257
METHOD AND APPARATUS FOR FREEZING PRODUCTS AND THE FROZEN PRODUCTS

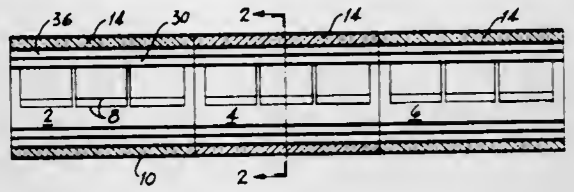
Crosby Field, 8029 Harbor View Terrace, Brooklyn, N.Y. 11209
Filed June 3, 1968, Ser. No. 734,126
Int. Cl. F25c *1/14*
U.S. Cl. 62—72 **20 Claims**



A method and apparatus for extremely rapid freezing and the product it produces. Thin layers of product are frozen and subcooled on a flexible strip in consecutive layers. The product is then removed from the strip and processed.

3,528,258
REFRIGERATED DISPLAY CASE

James H. Brennan, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Oct. 8, 1968, Ser. No. 765,753
Int. Cl. A47f *3/04*
U.S. Cl. 62—256 **9 Claims**

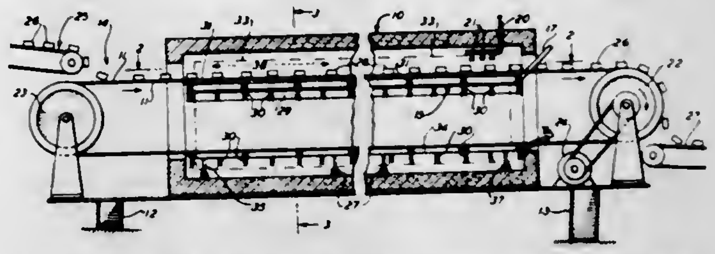


Refrigerated display equipment having an access opening in the front thereof is provided with longitudinally adjacent areas which are maintained at different temperatures. An air curtain is established adjacent the access opening whereas other transversely extending air curtains are arranged at right angles to the access opening and between adjacent areas of the equipment permitting articles on display in such areas to be maintained at selected predetermined temperatures. The transverse air curtains preferably embody two parallel layers of air having temperatures substantially equal to the temperatures of the areas adjacent thereto.

3,528,259
COMBINATION CLEANING AND SUPPORTING RACK

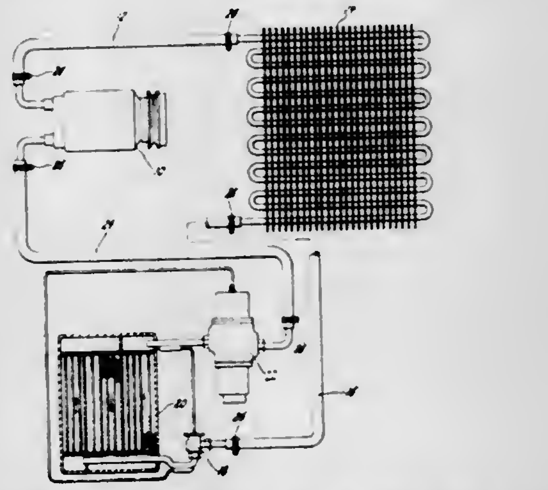
Stanley Saal, Elizabeth, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 18, 1967, Ser. No. 668,475
Int. Cl. B08b *9/08;* **F25d** *3/10*
U.S. Cl. 62—303 **11 Claims**

This invention relates to an apparatus for cleaning liquid nitrogen refrigerated food freezing equipment. More specifically, the support structure of the equipment is also used as a means to deliver a cleaning fluid to the interior surfaces of the equipment, particularly those surfaces that are normally inaccessible or extremely difficult to reach.



3,528,260
REFRIGERATION APPARATUS WITH COMPONENTS CONNECTED BY CHLORINATED POLYETHYLENE HOSES

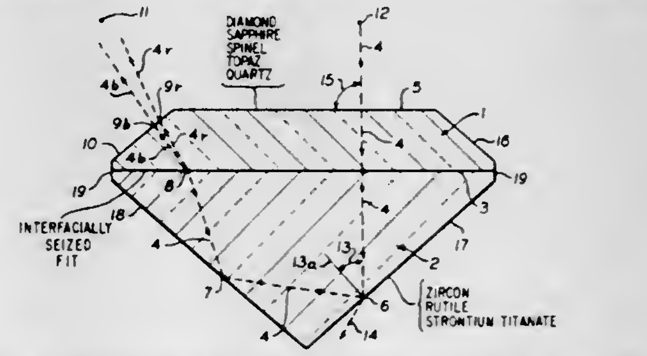
Charles R. Binder, Romeo, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,543
Int. Cl. F25b *1/00*
U.S. Cl. 62—498 **6 Claims**



An automotive air conditioner is disclosed as a preferred embodiment of the invention wherein the functional components of the apparatus are connected by chlorinated polyethylene hoses. Chlorinated polyethylene is suitable for prolonged usage in an automobile engine compartment and is particularly desirable in an air conditioner hose because it is highly impermeable to the conventionally employed Freon-type refrigerant fluids.

3,528,261
DOUBLET GEM CONSTRUCTION

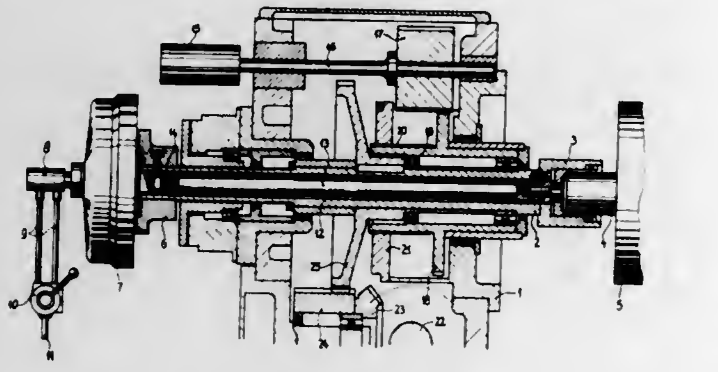
Harry S. Jones, 50 Navesink Drive, Monmouth Beach, N.J. 07750
Continuation-in-part of application Ser. No. 441,477, Mar. 22, 1965. This application Apr. 12, 1968, Ser. No. 720,903
Int. Cl. A44c *17/00*
U.S. Cl. 63—32 **9 Claims**



Doublet gemstone having a crown or upper portion of relatively high hardness and predetermined optical dispersion having its undersurface disposed in interfacially seized engagement with a complementally configured upper surface of a lower or pavilion portion of lesser hardness and higher optical dispersion.

3,528,262
AUTOMATIC COUPLING FOR THE PLATE CYLINDER DRIVE OF A ROTARY PRESS

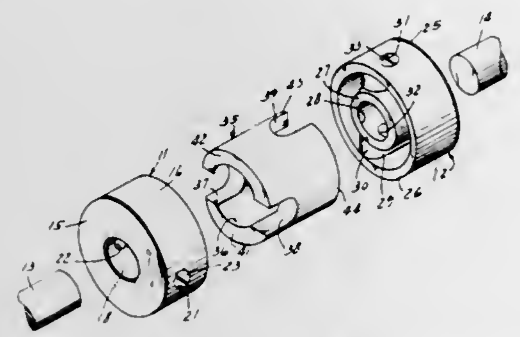
Boris Fuchs, Ittigen, near Bern, Switzerland, assignor to Winkler Fallert & Co. AG, Bern, Switzerland
Filed Apr. 16, 1968, Ser. No. 721,781
Claims priority, application Sweden, Apr. 18, 1967, 5,399/67
Int. Cl. F16c *3/00*
U.S. Cl. 64—1 **3 Claims**



A coupling is provided by a fast acting chuck arranged to engage the spindle bearing of a plate cylinder. The chuck is mounted on an axially movable spindle in a drive housing. Pneumatically operated means are secured to the drive housing for opening and closing the chuck. In addition, a motor and gear means are arranged on the drive housing for moving the spindle and the check attached to it in the axial direction for withdrawing and replacing the chuck on the spindle bearing of the plate cylinder.

3,528,263
FLEXIBLE COUPLING FOR CONNECTING GENERALLY ALIGNED AND ROTATING SHAFTS

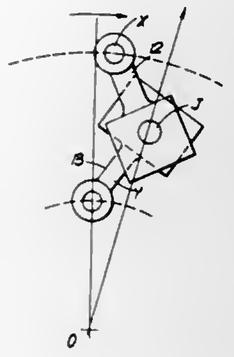
Arnold S. Stern, 2905 W. 86th Place, Chicago, Ill. 60652
Filed Jan. 27, 1969, Ser. No. 794,017
Int. Cl. F16d *3/18*
U.S. Cl. 64—9 **7 Claims**



A flexible coupling in which each of a pair of cup-shaped coupling end members is connectable to one of a pair of generally aligned rotating shafts and includes an internal diametrically located formed rib having a tapped hole extending longitudinally therethrough for receiving a pair of diametrically-opposed set screws, and an annular coaxially disposed hollow cylindrical member for receiving the corresponding shaft. A third coupling member is in the form of a hollow cylinder and has a pair of diametrically located relatively orthogonal slots in separate ends thereof for receiving the respective ribs of the end members as the end members receive the third member within the cups.

3,528,264
ROTATABLE COUPLINGS

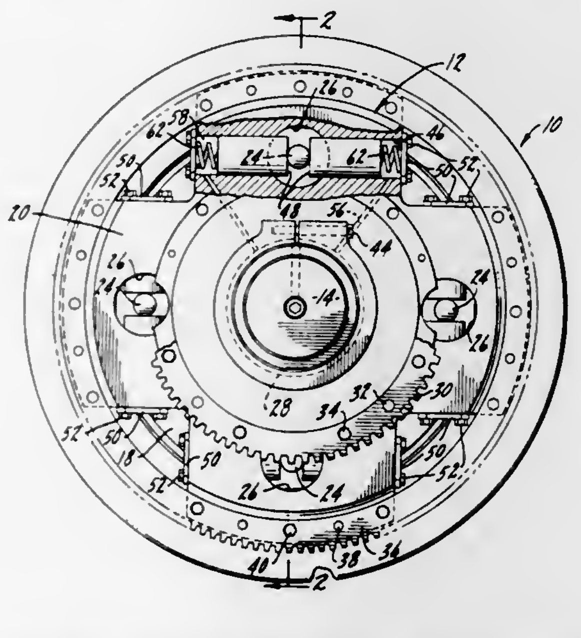
Charles Wallace Chapman, Winchelsea, England, assignor to Twiflex Couplings Limited, Twickenham, Middlesex, England, a British company
Filed Mar. 25, 1968, Ser. No. 715,634
Claims priority, application Great Britain, Apr. 5, 1967, 15,704/67
Int. Cl. F16d *3/60*
U.S. Cl. 64—19 **7 Claims**



A coupling comprises rotatable driving and driven members between which is pivotally connected a number of linkages each comprising two links connected together by a pivotal connection, the links being so arranged that the linkage is deformed by relative rotation between the driving and driven members in at least one direction. The pivotal connection between the links is the only connection between them, and the centre of gravity of the linkage is so so arranged that, in the normal operating speed range of the coupling, the major part of the torque transmitted by the coupling is transmitted by the centrifugal force acting on the linkage. The centre of gravity of the linkage is at the pivotal connection between the links or is spaced from that connection on the leading side with respect to the direction of rotation of the coupling.

3,528,265
VISCOUS DAMPENING MEANS

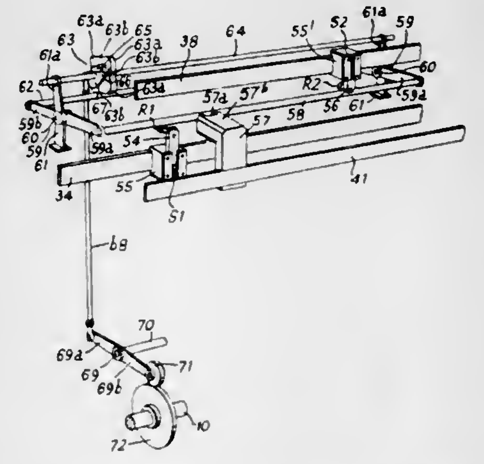
Leo T. Brinson, Milwaukee, Wis., assignor to Nordberg Mfg. Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 16, 1968, Ser. No. 760,277
Int. Cl. F16d *3/80, 3/14;* **F16f** *15/16*
U.S. Cl. 64—26 **10 Claims**



A viscous dampening means operable within a coupling mechanism adapted to reduce and absorb vibratory motion in a drive shaft including at least one cylindrical opening each having a pair of similar, oppositely disposed pistons therein, each piston being spring-biased inwardly for slidably receiving a connecting pin therebetween. In addition there is a passage means leading to at least one chamber formed by the walls of the cylindrical opening and pistons for introducing a viscous fluid therein, an outlet in each chamber for discharging a measured amount of fluid, and a means for controlling the amount of fluid in each chamber.

3,528,266
DRAW MECHANISM FOR STRAIGHT-BAR KNITTING MACHINES

Barry Frederick Swanwick, Melton Mowbray, and Ernest West, Kirkby-in-Ashfield, England, assignors to S. A. Monk (Sutton-in-Ashfield) Limited, Sutton-in-Ashfield, Nottingham, England, a British company
Filed June 3, 1968, Ser. No. 733,913
Claims priority, application Great Britain, June 14, 1967, 27,405/67
Int. Cl. D04b *15/64*
U.S. Cl. 66—126 **9 Claims**

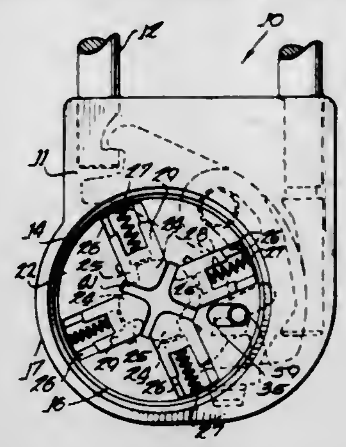


A draw motion for a straight-bar knitting machine. The cross shaft and the draw cam continuously rotate and the draw lever thus continuously oscillates to reciprocate the main rack irrespective of whether machine is knitting or fashioning. Means are included to transmit a drive from this rack to yarn carrier and slur cam drive systems. Between the rack and the said drive systems are provided automatically operable means to disconnect the drive-transmitting means from the rack, prior to fashioning, and to re-establish the connection between the drive-transmitting means and the rack upon resumption of knitting.

3,528,267
FENCE TUMBLER LOCK

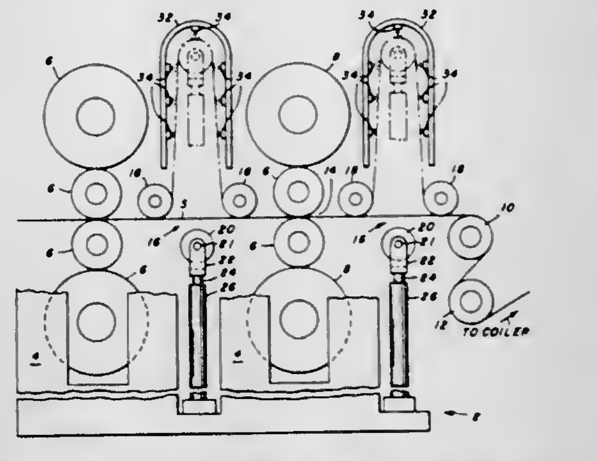
John L. Orr, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., a corporation of Delaware
Filed Jan. 19, 1968, Ser. No. 699,190
Int. Cl. E05b *37/10, 37/04*
U.S. Cl. 70—21 **14 Claims**

A fence-type tumbler for use in a lock assembly such as a combination shackle lock to release the shackle without the necessity of dialing the proper combination thereof. The fence tumbler lock utilizes a key of a generally cruciform cross section which is conformably received in the wall of a lock casing to actuate radially reciprocable tumblers to a position where the tumblers and their rotatable tumbler guide are free to rotate with the key relative to the lock casing. The tumbler guide is operatively connected to a lock bolt for actuation thereof where the lock is actuated by the proper key. A combination shackle lock is provided with a shackle bolt which is allowed to rotate and release a shackle upon the actuation of combination disks to align a gate formed thereby with a fence integral with a fence bolt which is both rotatable and reciprocable in the combination lock housing. The fence bolt and shackle bolt rotate simultaneously upon dialing of the proper combination and pulling of the shackle, and the fence bolt may be reciprocated to a second position by a key-actuated lock in the combination lock housing. A recess is formed in the shackle bolt to be aligned with the fence when the fence bolt is in its second position; the recess allowing rotation of the shackle bolt relative to the fence bolt to release the shackle.



3,528,268
PASS-LINE DISPLACEMENT ROLL FOR COOLING STRIP IN COLD-ROLLING MILL

William L. Roberts, Murrysville, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Feb. 12, 1968, Ser. No. 704,820
Int. Cl. B21b *37/10*
U.S. Cl. 72—13 **1 Claim**

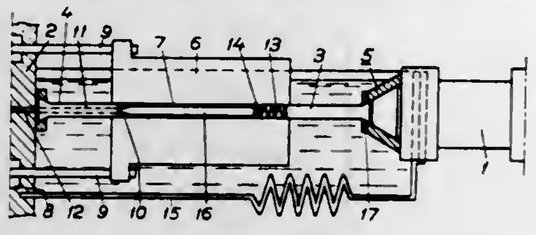


Roll of invention cooperates with two fixed rolls to loop a continuous metal strip being cold rolled in a tandem rolling mill. Such looping extends the length of the strip pass-line and lowers the temperature of the strip. Fluid spray means may be provided adjacent the loop path of the strip to effect further lowering of the strip temperature. Also disclosed is a temperature-sensing element and electrical control means whereby the roll of the invention is actuated automatically in response to strip temperature.

3,528,269
METHOD OF EXTRUSION WITH LIQUID-PRESSURE AND MEANS FOR CARRYING OUT THE METHOD

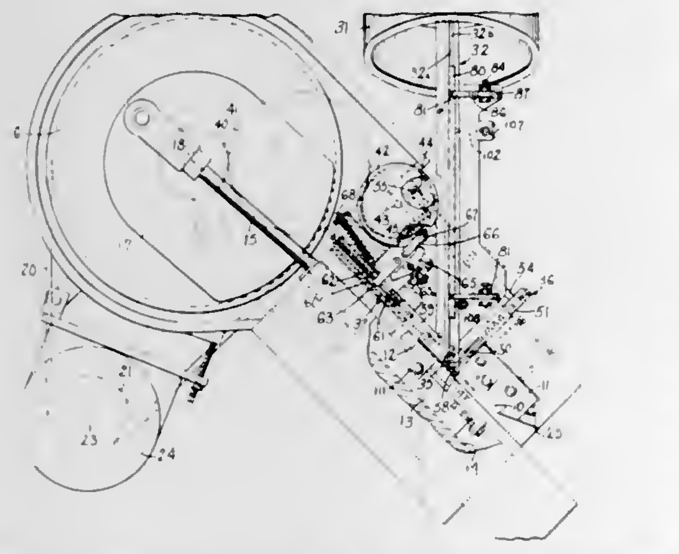
Jan Nilsson, Robertsfors, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Feb. 29, 1968, Ser. No. 714,159
Claims priority, application Sweden, Mar. 3, 1967, 3,001/67
Int. Cl. B21c *23/08*
U.S. Cl. 72—60 **5 Claims**

A pressure cylinder having a bore therethrough is arranged horizontally within a collapsible open-topped container for liquid. At one end of this container is arranged a rod having a central opening therethrough, the end of which fits into the bore of the cylinder, and carries a die. The other end of the container is connected to a hydraulic pressure piston which has a projecting plunger engaging in the other end of the bore in the pressure cylinder, with a spring on the end of this rod supporting a pressure member. A billet is inserted into the bore and is pressed by the hydraulic pressure piston until the carrier for the rod connected to this piston engages the cylinder, whereupon the cylinder is caused to move along with the rod over the rod connected to the fixed end, so as to express the billet completely.



3,528,270
THREAD ROLLER

Erwin B. Byam, Wolcott, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Continuation of application Ser. No. 593,542, Nov. 10, 1966. This application Feb. 10, 1969, Ser. No. 802,723
Int. Cl. B21h *3/06, 9/02*
U.S. Cl. 72—90 **10 Claims**

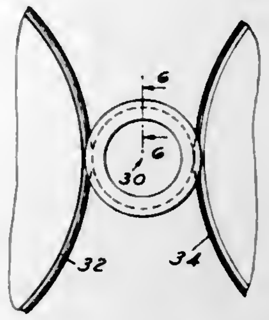


A thread rolling machine for machining a workpiece between a first and second die, wherein one of the dies is stationary and the other is movable. The workpieces are fed to the dies by a chute whose axis lies in straight line, wherein the top surfaces of the chute lie in substantially the same plane as the surfaces of the dies. The axis of the chute forms an angle of between 30–60° with respect to the die line of the dies and the top surfaces of the chute are at an angle of 27–35° with respect to the horizontal. The machine further includes a chute cover, injector means for closing the chute, and starter means for positioning the workpiece between the dies.

3,528,271
METHOD FOR ROLLING A RACE FOR A BALL BEARING

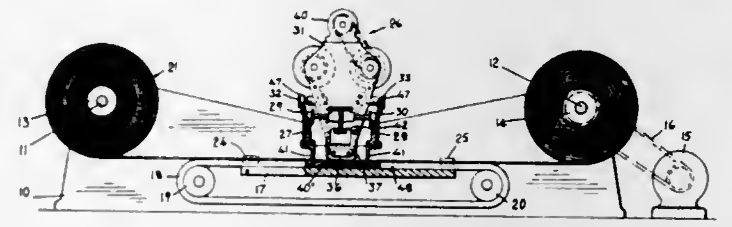
John J. Di Ponio, Union Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 2, 1968, Ser. No. 702,682
Int. Cl. B21h *1/12*
U.S. Cl. 72—108 **2 Claims**

This specification describes a method for cold rolling a ball bearing race for a ball bearing assembly. The race is formed from a piece of bar stock or tubing and is cold rolled by rolling dies that are fed into the workpiece under pressure at a controlled rate and for a controlled dwell time to produce the annular trackway with which the ball bearings register after assembly. It describes also the characteristics of the rolling die that are necessary in carrying out the cold rolling method steps.



3,528,272
MACHINE FOR DEFORMING SHEET METAL FROM THE FLAT STATE INTO A TUBULAR FORM

Eli I. Robinsky, 301 Jedburgh Road, Toronto, Ontario, Canada
Filed Oct. 28, 1968, Ser. No. 770,997
Int. Cl. B21d *5/08, 11/14;* **B21c** *47/00*
U.S. Cl. 72—146 **9 Claims**



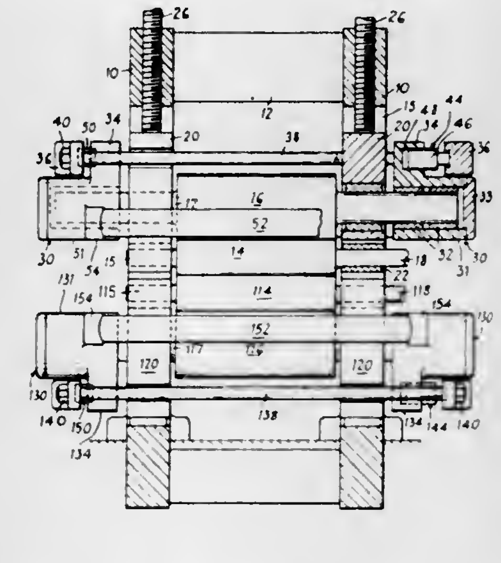
A machine is provided which will automatically stress a thin resilient metallic sheet to coil about its longitudinal axis to form a tube which will flatten out when wound into a roll and will resume the tubular shape when unwound. The metallic sheet which may conveniently be wound into a roll is slowly unwound to move over a compressible pad that is supported on a fixed horizontal table. A scribing tool is reciprocated back and forth across the sheet deforming the sheet progressively by pressing a narrow portion thereof into the compressible pad. The hardness and thickness of the compressible pad, the pressure applied by the scribing tool, the shape of the tool and the type and thickness of the metallic sheet determine the resulting curvature imparted to the sheet. By uniformly varying the pressure in a wave cycle from a maximum to zero to maximum, longitudinal corrugations may also be formed in the metallic sheet.

3,528,273
ROLLING MILL WITH ROLL-DEFLECTING ATTACHMENT

Derek A. L. Elton, Poole, Dorset, Robert J. Harlow, Parkstone, Dorset, and John A. Tracy, Bournemouth, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain
Filed June 27, 1966, Ser. No. 560,404
Claims priority, application Great Britain, July 12, 1965, 29,502/65
Int. Cl. B21b *13/14*
U.S. Cl. 72—237 **5 Claims**

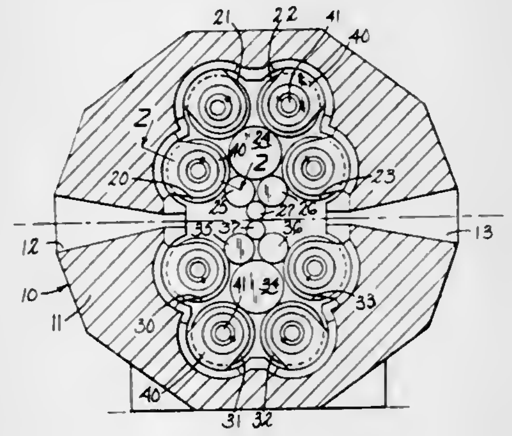
This invention relates to a rolling mill having housing and chocks for supporting the rolls of the mill in said housings and includes a roll—deflecting attachment providing for at least one roll, said attachment comprises

bearing support from said chocks and mounted on the end of said roll; pressure means acting on said bearings so as to apply couples of forces to said bearings and to deflect said roll for the purpose of varying the pass opening of the mill, said bearing having radial extensions to which the roll-deflecting forces are applied by said pressure means, and members extending longitudinally of said roll from one of said bearings to the other, said longitudinally-extending members being so arranged with respect to said bearings and to said pressure means as to be in pressure-transmitting contact with the radial extensions of said bearings.



3,528,274
ROLL BENDING

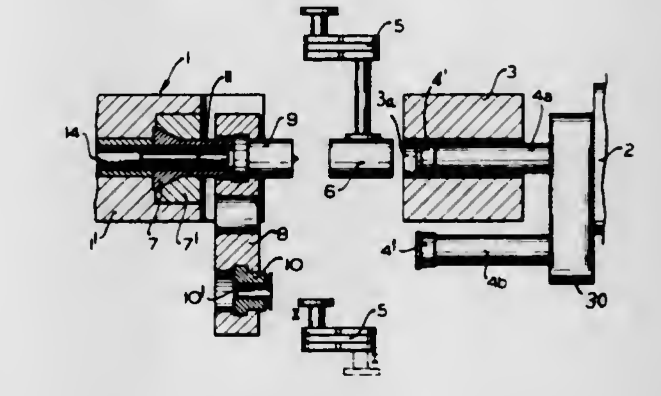
Telesfore Rastelli, Cheshire, Conn., assignor to Textron, Inc., Cheshire, Conn., a corporation of Rhode Island
Filed Oct. 11, 1967, Ser. No. 674,542
Int. Cl. B21b *13/14, 29/00*
U.S. Cl. 72—242 **13 Claims**



This invention is directed to means for shaping work rolls. More particularly, work rolls are shaped by rotating a bearing shaft which has eccentric mounted rings attached thereto, the degree of eccentricity of each eccentric ring determining the mill shape which may be effected. The preferred embodiment discloses a rolling mill having work rolls and a plurality of backing bearings, the improvement characterized in that at least one of the backing bearings is mounted on a supporting shaft, said bearings comprising a plurality of segments spaced apart along said shaft, a plurality of rings having bores therein for mounting said rings on said shaft, said rings positioned intermediate at least some of said backing bearing segments, means securing said rings to said shaft for rotation therewith, the centers of some of the bores of said rings positioned along a common radius of the rings between the center of the ring and the circumference of the ring, and saddle means having bores therein for supporting said rings.

3,528,275
METHOD AND APPARATUS FOR EXTRUDING HOLLOW ARTICLES

Günter Sibler, Duisburg, Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany
Filed Sept. 13, 1966, Ser. No. 579,015
Claims priority, application Germany, Nov. 11, 1965, H 57,656
Int. Cl. B21c *23/08, 23/20*
U.S. Cl. 72—256 **11 Claims**



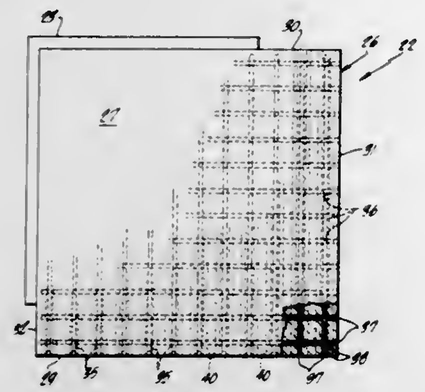
A method of forming metal pipes using an indirect extrusion press including a receptacle having a bore for the ingot, an extrusion ram with an indirect die arranged in alignment with one end of the bore of the receptacle, and a movable plunger with an interchangeable upsetting ram or main die and a hollow plug member which is alignable with the opposite end of the receptacle bore in conjunction with a piercing mandrel which is movable through the plug, comprises inserting the ingot into the bore of the receptacle of the indirect die, closing one end and advancing the main die against the ingot to upset it. Thereafter the upsetting ram carrying the main die is moved out of alignment with the receptacle bore and the plug is inserted into the bore up to a location at which its inner end is spaced outwardly from a position occupied by the inner end of the main die when it was positioned there. Thereafter, the piercing mandrel is moved through the bore of the plug and through the upset ingot to pierce it and the indirect die and the plug are moved relatively toward each other in order to extrude the upset ingot around the mandrel.

The apparatus for the method includes a press plunger which is located adjacent a movable ingot receptacle having a bore into which a press die is movable. The press plunger carries a pivotal arm with a plunger die on one end and a plug having a through bore at the opposite end. The plunger die may be moved with the press plunger or ram to upset the billet placed in the receptacle. Thereafter, the arm may be shifted to align the plug with the receptacle bore. The press plunger also carries a piercing mandrel which is mounted for reciprocation through the bore of the plug to pierce the billet. After extrusion the plug is again shifted in respect to the associated plunger receptacle bore and it carries the residue with it from the receptacle to a position in which it may be dropped into a packing press located therebeneath. In the packing press a plunger compresses the residue to compact it into a small size mass which is dumped into a collecting receptacle.

3,528,276

HOT-FORMING PRESS

James H. Schmidt, Berkeley, and Warren W. Hedstrom, Rolling Hills, Calif., assignors to Sheridan-Gray, Inc., Huntington Park, Calif., a corporation of California
Filed Jan. 26, 1968, Ser. No. 700,926
Int. Cl. B21d *37/16*
U.S. Cl. 72—342 11 Claims

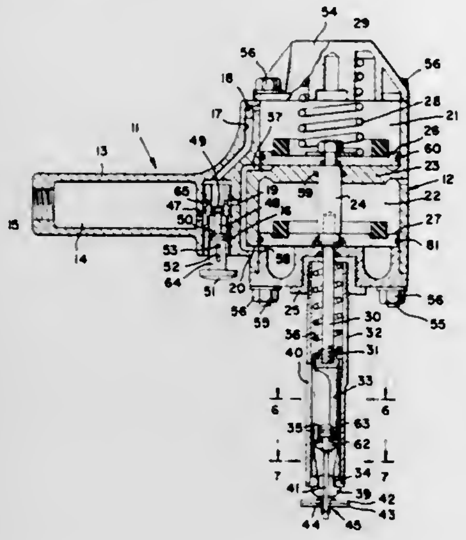


An improved hot-forming press for forming and hot-sizing of metals such as titanium. The press operates at temperatures in the range of 1500° F., and includes a pair of platens which have internal sealed chambers in which bodies of a liquid metal (such as a sodium-potassium alloy) are disposed. The metal is in both liquid and vapor phases when the press is at a desired operating temperature. Electric heaters are provided for the platens, and the liquid metal circulates freely within each platen to equalize temperature non-uniformities in the platens.

3,528,277

FLUID ACTUATED RIVET PULLING TOOL FOR BLIND RIVETS

Garry R. Perkins, West Chicago, Ill., assignor to Swingline Inc., Long Island City, N.Y., a corporation of New York
Filed May 8, 1968, Ser. No. 727,440
Int. Cl. B21d *9/05*
U.S. Cl. 72—391 4 Claims

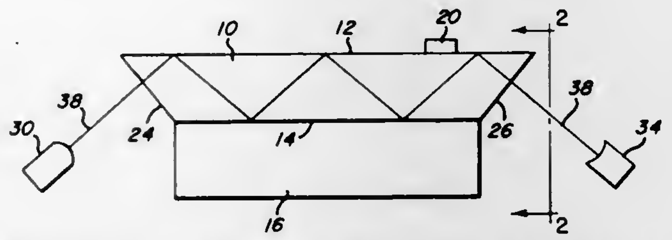


A fluid actuated rivet pulling tool for blind rivets is shown. The tool includes a housing, a piston sleeve in the housing, and piston means within the housing. The piston means include a projecting support and a pair of spaced spool members upon the support. A fluid conduit is operatively connected with each of the spools of the piston and an additional fluid conduit is provided which is open to atmosphere. A trigger which includes a stem having a pair of spaced spool members thereupon is disposed within a trigger housing. The trigger selectively blocks either the first-named fluid conduit or the additional fluid conduit. The first-named conduits are selectively attached to a source of pressure fluid. A return spring normally biases the piston into non-actuated position. The piston support is secured to a rivet pulling mechanism.

3,528,278

METHOD AND APPARATUS FOR DETERMINING THE PRESENCE OF VAPOR IN A GAS

John Jerome Sterling, Yellow Springs, Ohio, assignor to Technology Incorporated, Dayton, Ohio, a corporation of Ohio
Filed Sept. 5, 1967, Ser. No. 665,570
Int. Cl. G01n *25/02*
U.S. Cl. 73—17 19 Claims

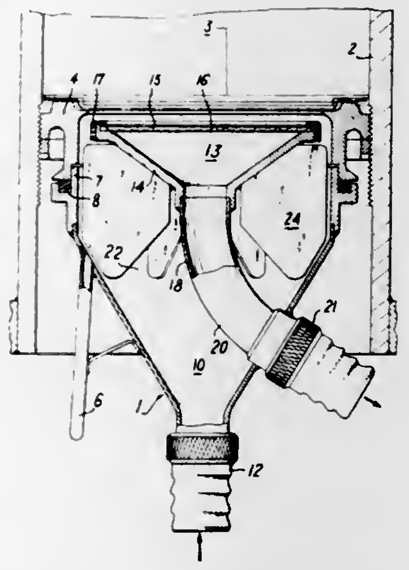


Apparatus and method for determining the presence of vapor in a gas. One of the uses of this invention is the determination of the dew point of the air of the atmosphere. In this invention optical principles are employed. A translucent body and a source of radiant energy are employed. Light energy enters the translucent body and engages a surface thereof at such an angle of incidence that it is normally substantially totally reflected internally. However, if the translucent body has condensed vapor or condensate thereupon, such as is formed by dew, some of the light energy which engages the surface is refracted therethrough and a lesser amount of the energy is reflected therefrom. Means are provided for sensing the flow of reflected energy.

3,528,279

DEVICE FOR SAMPLING AEROSOLS

Claude Lasseur, Clamart, Claude Tonneller, Verneuil-sur-Seine, and Jean Claude Zerbib, Antony, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Jan. 22, 1968, Ser. No. 699,453
Claims priority, application France, Jan. 31, 1967, 93,277
Int. Cl. B01d *29/04;* **G01n** *1/24*
U.S. Cl. 73—28 6 Claims

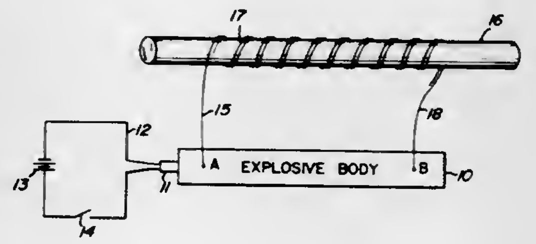


A device for sampling aerosols contained in a fluid, comprising means for circulating said fluid through a filter for retaining aerosols. Said filter separates a sampling chamber from a chamber for the discharge of said fluid, said discharge chamber being disposed within said sampling chamber and so arranged as to define therewith an annular space through which the fluid is circulated upstream of the filter. Radial fins for distributing said fluid are provided in said annular space.

3,528,280

APPARATUS AND METHOD FOR MEASURING DETONATION VELOCITIES IN EXPLOSIVES

Thomas Q. Ciccone, Langhorne, and James F. Kowalick, Southampton, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 27, 1968, Ser. No. 779,335
Int. Cl. G01n *33/22*
U.S. Cl. 73—35 4 Claims

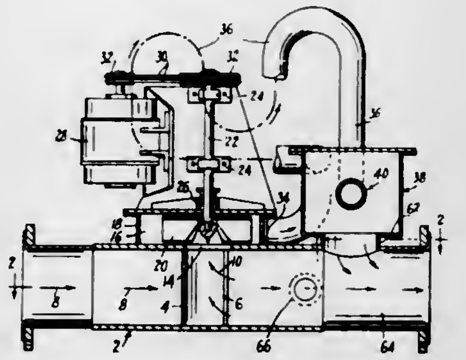


Two lengths of explosive-detonating cord are adhesively joined together to form a double length of cord intermediate their ends. The double cord length is helically wrapped around an elongated metallic rod and one end of each length of cord is secured to a body of explosive for initiation in response to detonation of the body. A detonator, attached to the body near one of the secured cord ends, detonates the body and initiates the cord length. Initiation fronts, travelling along the cord length, form a mark in the metallic rod where the fronts meet. The mark location relative to the cord lengths, detonation velocity of the cords and the distance between the secured ends is representative of the detonation velocity of the explosive body.

3,528,281

PULP STOCK CONSISTENCY REGULATOR

Ben Cowan, 5460 Patricia Ave., Montreal 29, Quebec, Canada
Filed Apr. 19, 1968, Ser. No. 730,673
Int. Cl. G01n *11/04*
U.S. Cl. 73—61 14 Claims

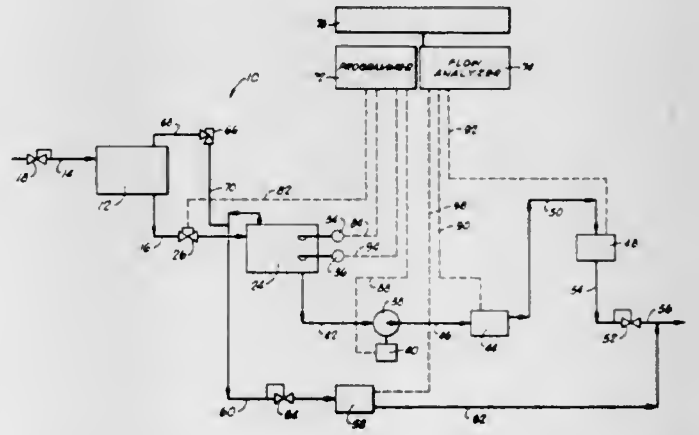


A stock consistency regulator consisting of a housing inserted in the stock feed line, the housing having a stock sampling pipe located vertically therein and having an opening throughout its length on the downstream side, a pump drawing the stock from the stock sampling pipe and passing it through a friction tube terminating in a diffuser and a nozzle in a discharge box, an outlet from the discharge box leading back into the housing downstream of the sampling pipe. A pair of diaphragm type pressure cells are located in the discharge box opposite the discharge end of the nozzle and the other located in the wall of the housing downstream of the sampling pipe, and a differential pressure controller connected to said diaphragm pressure cells and actuating a control valve to regulate the feed water into the stock upstream of the housing.

3,528,282

WELL TESTER

John D. Stotts, Jr., Norman, and Harold H. Holden, Oklahoma City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Jan. 28, 1969, Ser. No. 794,496
Int. Cl. G01n *27/22, 33/26*
U.S. Cl. 73—61.1 11 Claims

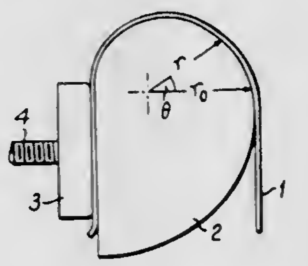


An oil well tester, having two storage tanks, wherein the fluid flowing therethrough is retained in one of the storage tanks for a period of time, thereby allowing the constituents therein to settle out, prior to pumping the fluid through a capacitance probe. The well tester is, therefore, capable of accurately measuring the oil/water ratio in the output flow of any well, notwithstanding the fact that the percentage of water may be high, and the well tester is provided with components, sufficiently compact, with respect to size and number, that the well tester may be portable.

3,528,283

TENSILE TESTING CLAMP

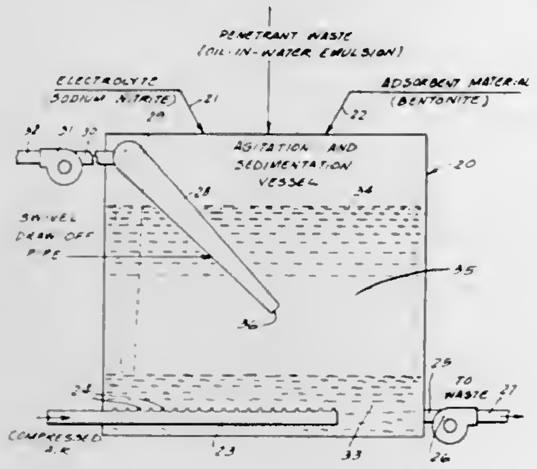
Michael Stephen Gadd, Finham, Coventry, England, assignor to Courtaulds Limited, London, England, a British company
Filed Nov. 13, 1967, Ser. No. 682,101
Int. Cl. G01n *3/00, 3/08*
U.S. Cl. 73—103 3 Claims



This invention relates to a filament clamp for a tensile testing apparatus comprising a bollard around which a filament can be passed and a clamping member for gripping a filament to the bollard in which at least a part of the surface of the bollard, between the point at which it is met by a filament passed over it, and the point on the surface at which the clamping member contacts the filament, is a smooth curve having a radius of curvature decreasing in the direction towards the clamping member.

3,528,284
METHOD FOR PURIFYING PENETRANT WASTE LIQUORS

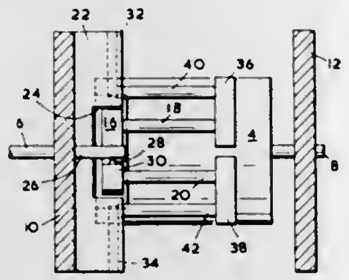
Harold N. Skoglund, Chicago, and Adolph Mlot-Fijalkowski, Elmwood Park, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 609,883, Jan. 17, 1967. This application Aug. 1, 1969, Ser. No. 846,736
Int. Cl. G01n *19/08;* **B08b** *3/10;* **B01d** *17/04*
U.S. Cl. 73—104 **6 Claims**



Method for detecting surface discontinuities in objects employing the penetrant-type inspection process wherein the penetrant waste liquor, containing oily penetrant materials, an emulsifier and wash water are introduced into an agitation zone where the waste liquor is combined with an electrolyte emulsion breaker and a clay, the mixture is thoroughly agitated, and then stratified to produce a plurality of layers one of which is essentially an oil free layer of water which can be reused in the washing zone or disposed of without causing pollution.

3,528,285
TORQUE-SENSITIVE MACHINES

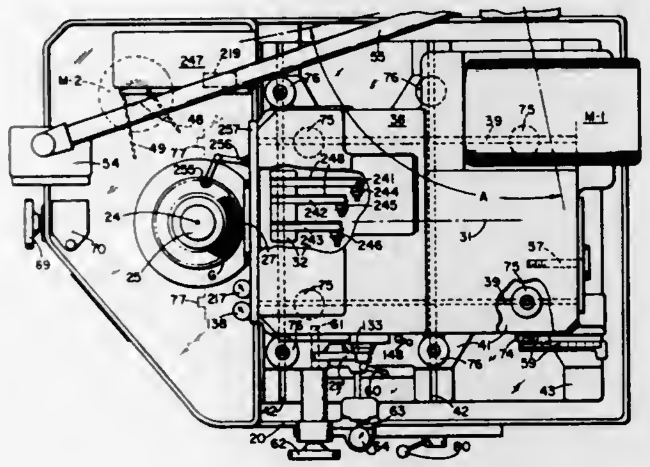
John Peter Jackson, Netherton, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Mar. 8, 1968, Ser. No. 711,570
Claims priority, application Great Britain, Mar. 8, 1967, 10,828/67
Int. Cl. G01l *3/20*
U.S. Cl. 73—134 **4 Claims**



This invention is concerned with a torque-sensitive machine which may be in the form either of a dynamometer or of a torque-controlled hydraulic motor. The machine includes a hydraulic pump or motor which is mounted so that it is free to swing slightly about the axis of its shaft, with a resilient arrangement restraining the pump or motor against such swinging movement, and with means for indicating the torque tending to bring about such movement. The resilient restraint is imposed by the stiffness of a resilient pipe serving as the inlet or outlet pipe for the pump or motor. This pipe is preferably so arranged that it is subjected to a bending stress when the pump or motor swings about the axis of the shaft. The machine is completed by a device which is sensitive to the degree of angular movement of the pump or motor and which serves as a torque indicator.

3,528,286
MACHINE FOR RUNNING TOGETHER BEVEL OR HYPOID GEARS

Werner E. Bergemann and Thomas W. Dentinger, Rochester, and Edwin W. Newton, Penfield, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Sept. 29, 1967, Ser. No. 671,769
Int. Cl. G01m *13/02*
U.S. Cl. 73—162 **23 Claims**

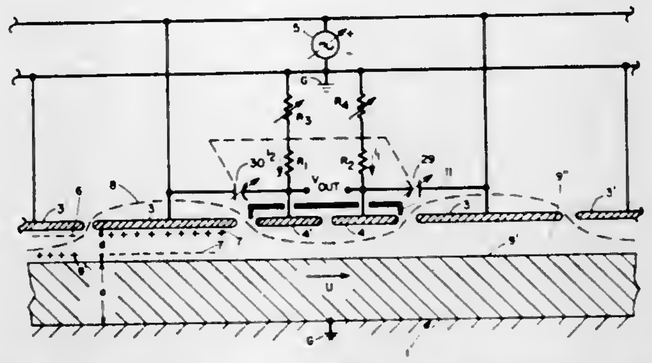


Machine for testing pairs of bevel or hypoid gears having a vertical, axially adjustable, spindle for the gear of the pair and a horizontal spindle for the pinion of the pair. The pinion spindle housing is on horizontal slides which are adjustable in the direction of the pinion spindle axis and transversely thereof. The housing is also pivotable about an axis parallel to the spindle axis to carry the pinion between an elevated loading position and a lowered position in which it may run in mesh with the gear. A preselected amount of backlash between the gears is established by elevating the housing, about the same pivot axis, from a fully lowered position in which the gears mesh without backlash. The housing is also movable in the pinion axial direction while the gears are being run together at a selected speed, to find their quietest running position. This search motion is effected either manually or by power operated means. Vibration measuring means sense the quietest position and cause the search motion, when power operated, to stop in this position. During the search the machine components that are movable for purposes of adjustment and backlash setting are rigidly secured together by clamps.

3,528,287
ELECTROHYDRODYNAMIC INDUCTION FLOWMETER AND CONDUCTIVITY MEASURING DEVICE

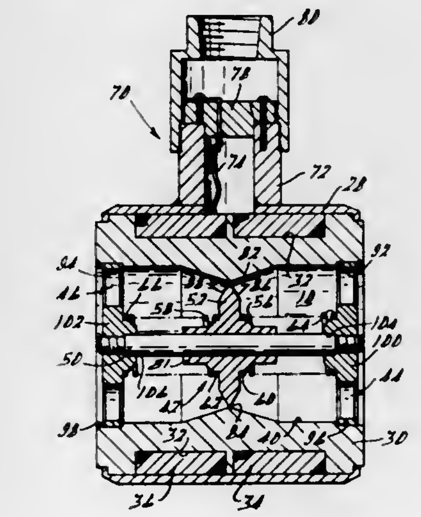
James R. Melcher, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Dec. 6, 1967, Ser. No. 688,552
Int. Cl. G01p *5/08*
U.S. Cl. 73—194 **23 Claims**

Apparatus for determining the velocity and electrical conductivity of a moving material of high electrical resistance by subjecting the material to a transverse electroquasistatic field and sensing position changes of charge accumulations induced within the material by the field, by virtue of relative movement between the material and the position sensing means. In a broad sense, the apparatus is useful to detect relative movement between the material and the sensing means irrespective of which, in fact, is moving.



3,528,288
FLUID FLOW TRANSDUCER SYSTEM

George Scourtes, Detroit, Mich., assignor to Cox Instruments Division, Lynch Corporation, Detroit, Mich., a corporation of Indiana
Filed Oct. 8, 1965, Ser. No. 494,164
Int. Cl. G01f *1/00*
U.S. Cl. 73—207 **10 Claims**



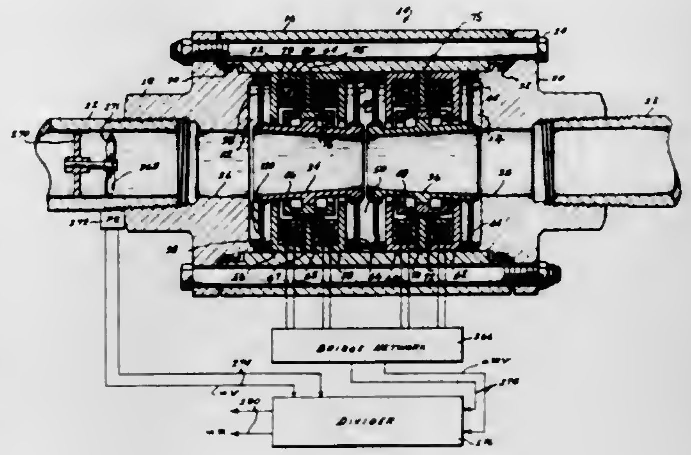
A transducer assembly for indicating the rate of flow of a fluid in a pressure line including a magnetic armature which is centrally located by means of centering springs within a bore, the bore being connected in fluid communication with the pressure line by means of a coupling assembly.

The variation in position of the bore due to changes in the characteristics of the fluid within the pressure line are sensed by means of variations in a magnetic circuit including a pair of differentially coacting coils and the armature. The circuit includes a capacitance bridge network which is interconnected to provide a multiplication of the output signal due to variations in positioning of the armature member.

3,528,289
FLOWMETER APPARATUS

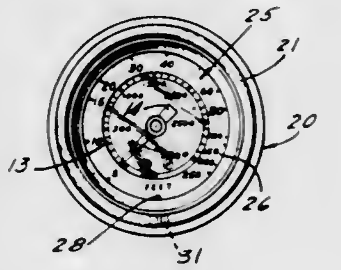
Everett H. Schwartzman, 457 34th St., Manhattan Beach, Calif. 90266
Original application Feb. 23, 1965, Ser. No. 434,179, now Patent No. 3,374,674, dated Mar. 26, 1968. Divided and this application Feb. 28, 1968, Ser. No. 708,971
Int. Cl. G01p *5/14*
U.S. Cl. 73—213 **10 Claims**

A fluid-flow metering structure is disclosed which functions as a true mass meter, providing an electrical signal that is proportional to the mass flow per unit of time in a stream through a conduit containing the structure. As disclosed, an outer hollow cylindrical body encloses a pair of venturi members that are resiliently supported for axial movement. The venturi members are supported with their internal tapers opposed so that as the flow varies, the related Bernoulli effect variously displaces them. Such axial movement displaces paramagnetic pistons carried on the venturi members, which in turn affects a magnetic electric network to provide a signal indicative of mass rate of flow times the fluid velocity. The true mass rate of flow is then obtained, essentially by developing a signal representative of the fluid velocity and performing a division operation, e.g. $Mv/v=M$. Structurally, in the disclosed embodiment, a magnetic propeller device is provided in cooperation with a magnetic pickup to provide a signal that is proportional to the fluid velocity. An analog divider then performs the electrical division to accomplish an output representative of mass flow.



3,528,290
DEPTH METER ATTACHMENT FOR UNDERWATER PRESSURE GAUGES

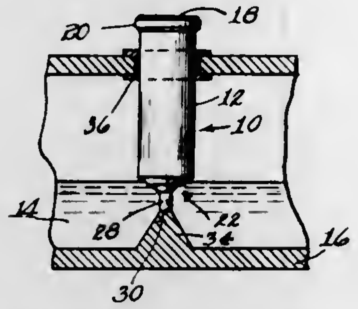
Samuel G. Lecocq, Huntington Park, Calif., assignor to Pittman Products, Inc., Huntington Park, Calif., a corporation of California
Filed Aug. 15, 1969, Ser. No. 850,475
Int. Cl. G01f *23/14*
U.S. Cl. 73—291 **6 Claims**



A depth meter attachment for mounting on an underwater diving pressure gauge to provide a combined depth meter and pressure gauge. The attachment comprises an adaptor bezel which fits on the body member of the pressure gauge. The adaptor bezel carries on its periphery a ring and moving fluid type depth gauge. A depth gauge dial plate is mounted between the adaptor bezel and the glass cover of the pressure gauge. The depth gauge dial plate has a central opening through which the pressure gauge dial plate and indicator are visible, so that both dial plates are simultaneously visible and arranged concentrically.

3,528,291
LIQUID LEVEL INDICATOR

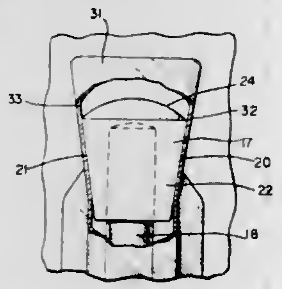
Robert R. Melone, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1969, Ser. No. 819,182
Int. Cl. G01f *23/02*
U.S. Cl. 73—327 **6 Claims**



An optical liquid level indicator having a body of light transmitting material provided with a plurality of prismatic surfaces at the lower end for immersion within a liquid and an upper portion provided with an exposed liquid level indicating surface. The lower end of the body is provided with an extension for positioning the body relative to the surface of an associated container.

3,528,292
LONG LIFE THERMOMETER

John L. Maynard, Willingboro, N.J., assignor to Medical Devices Company, Inc., Willingboro, N.J., a company of New Jersey
Filed July 2, 1968, Ser. No. 742,009
Int. Cl. G01k *1/08*
U.S. Cl. 73—374 **4 Claims**

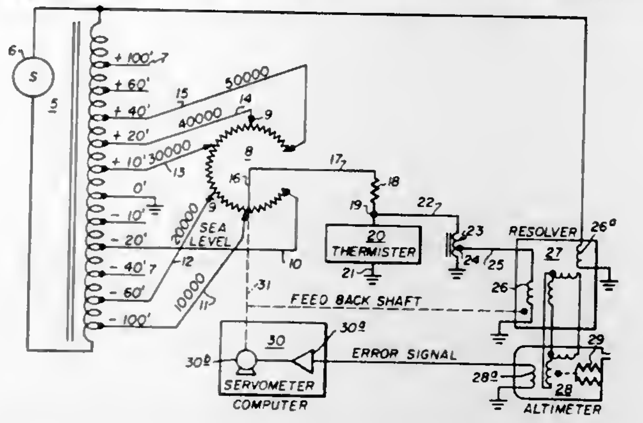


A thermometer is provided having a resilient grip at one end, which, besides functioning as a grip for purposes of shaking the thermometer, also functions as a seal for seating the thermometer within a package, with the grip being engaged with an open end of the package. The thermometer may be provided with a transparent rubber coating for precluding shattering as well as breakage. A bubble package is provided for the thermometer, comprising a bubble member secured to a backing member, with one end of the bubble member being removable for insertion of the thermometer therein with its grip seated in the open end of the package, as for example when the package is hung with the thermometer disposed vertically.

3,528,293
THERMISTOR TEMPERATURE COMPENSATOR

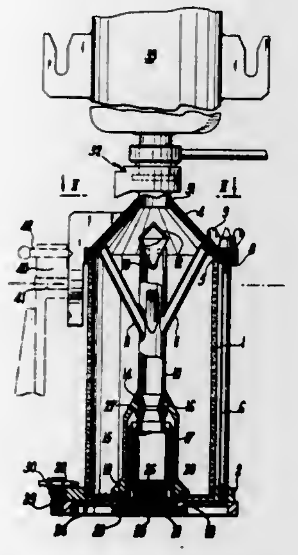
William Brandau, Westwood, and Peter van der Sluys, Wayne, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,475
Int. Cl. G01l *7/12*
U.S. Cl. 73—386 **15 Claims**

A temperature compensated device for measuring a condition has a servo controlled by signals corresponding to the condition and operates a potentiometer providing predetermined correction voltages, at discrete values of the condition, corresponding to temperature corrections required for those values at low temperatures and interpolating correction voltages between the discrete values. A temperature sensitive bridge attenuates the correction voltages in accordance with the correction required at increased temperature. The correction voltages are used to correct the condition signals for variations due to temperature.



3,528,294
APPARATUS FOR TAKING SAMPLES OF POWDER

Georges Manevy, Antony, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed July 30, 1968, Ser. No. 748,877
Int. Cl. G01n *1/00*
U.S. Cl. 73—421 **2 Claims**

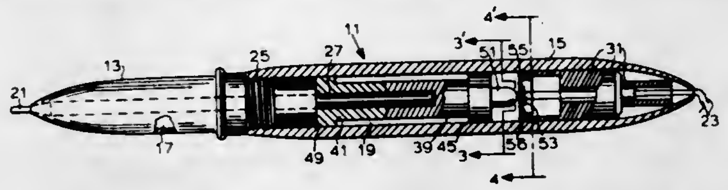


An apparatus adapted to be connected to a vessel for taking samples of the powdered contents of the vessel. A cylindrical shell is connected to the vessel and encloses a branched collector tube in communication with a sample flask. The sample is taken by inverting the assembly so that powder runs into the apparatus whereupon the sample is separated, returning the assembly to its original position to return the unsampled powder to the vessel.

3,528,295
STYLUS WITH PRESSURE RESPONSIVE TRANSDUCER

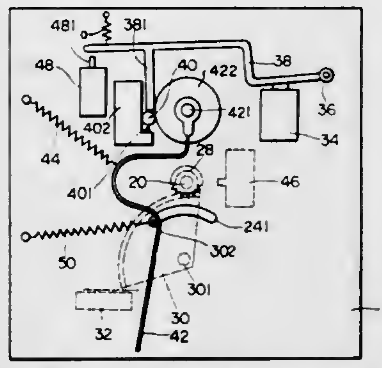
Robert R. Johnson, Franklin, Edwin O. Roggenstein, Birmingham, and Nallicheri T. Viswanathan, Plymouth, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed June 25, 1968, Ser. No. 739,817
Int. Cl. G01l *5/00*
U.S. Cl. 73—432 **10 Claims**

A writing instrument useful in automatically utilizing and/or characterizing unique, repeatable characteristics of handwriting in terms of an analogue waveform. In accordance with the preferred embodiment of applicants' disclosure, a force-responsive transducer is fixedly mounted within the housing of a writing instrument, such as a ball point pen. During use of the writing instrument the forces exerted on the writing surface by the pen or stylus marking tip simultaneously actuates the transducer thereby generating electrical signals which are proportional to the varying degree or magnitude of the force exerted on the writing surface by the marking tip. These electrical signals or waveforms may be coupled to an amplifier and recorder thereby recording the analogue pressure waveform which is characteristic of the pressure or forces generated during the writing operation.



3,528,296
SPEED METER WITH MEANS TO INDICATE INSTANTANEOUS VEHICULAR SPEED AND REGISTER MAXIMUM SPEED

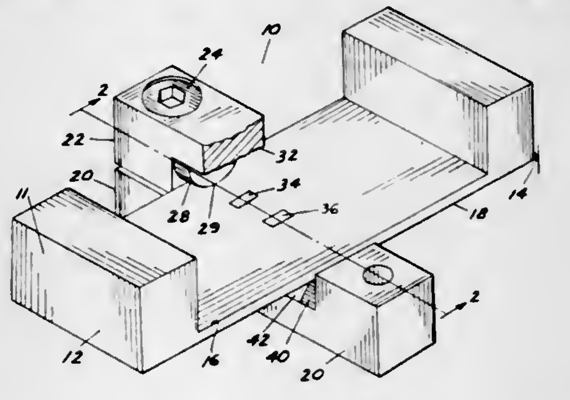
Hiyoshi Tatsuno, 3–10–8 Minami-Azabu Minato-ku, Tokyo, Japan
Filed Mar. 29, 1968, Ser. No. 717,181
Claims priority, application Japan, Sept. 30, 1967, 42/83,332
Int. Cl. G01p *15/04*
U.S. Cl. 73—491 **5 Claims**



A speed meter for a vehicle having an instantaneous speed indicator, which is actuated by an axle of a vehicle through a gearing means and a maximum speed pointer to register the maximum speed assumed by the vehicle in each trip. The maximum speed pointer is associated with a lock means and a reset means. The lock means locks said pointer at a position corresponding to the maximum speed regardless of the instantaneous speed even when the vehicle comes to a stop, while the reset means resets the pointer only when the vehicle speed increases to a certain predetermined level.

3,528,297
DOUBLE CANTILEVER ACCELEROMETER

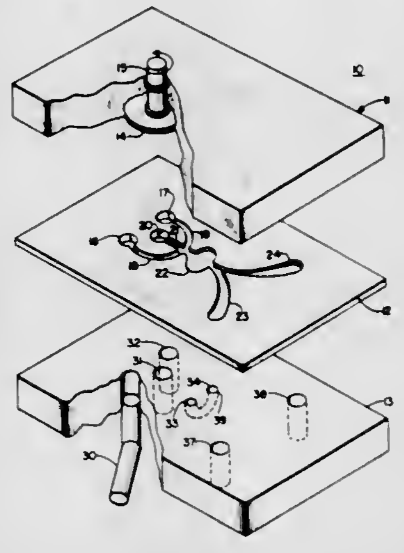
Richard A. Lee, Warren, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 16, 1968, Ser. No. 753,134
Int. Cl. G01p *15/08*
U.S. Cl. 73—517 **10 Claims**



A double cantilever accelerometer including a beam supported at its midpoint by line contact with a support member. Recesses are formed in the support member to receive acceleration detectors which are secured at the midpoint of the beam.

3,528,298
FLUIDIC SENSING APPARATUS

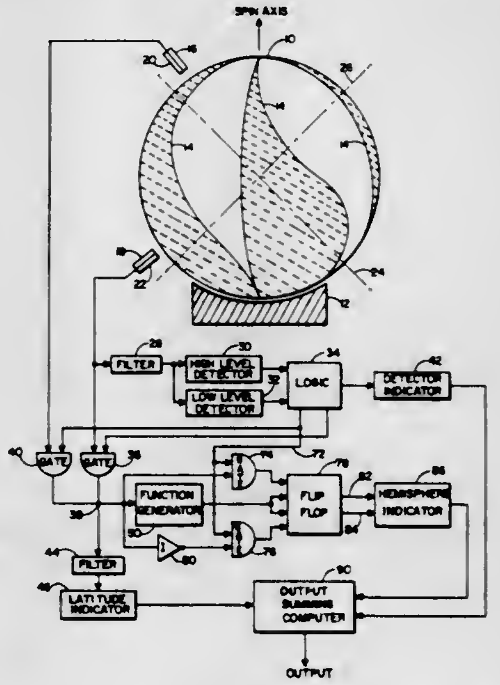
Edward G. Zoerb, Roseville, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,044
Int. Cl. G01p *3/34*
U.S. Cl. 73—521 **6 Claims**



Apparatus for providing a fluid signal indicative of the direction and velocity of a moving member comprising a fluid amplifier having the moving member in communication with its control region so that viscous coupling is achieved. A fluid stream within the amplifier is, thus deflected in accordance with the movement of said member.

3,528,299
PATTERNED ROTOR WITH REFLECTIVE CHARACTERISTICS

Helmut M. Volk, Falcon Heights, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,660
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **5 Claims**



A gyroscope rotor attitude pickoff utilizing a patterned rotor with reflective characteristics that vary with latitude and optical sensors. Electronic circuitry operates to select the sensor which will provide an optimum reading of the rotor position.

3,528,300

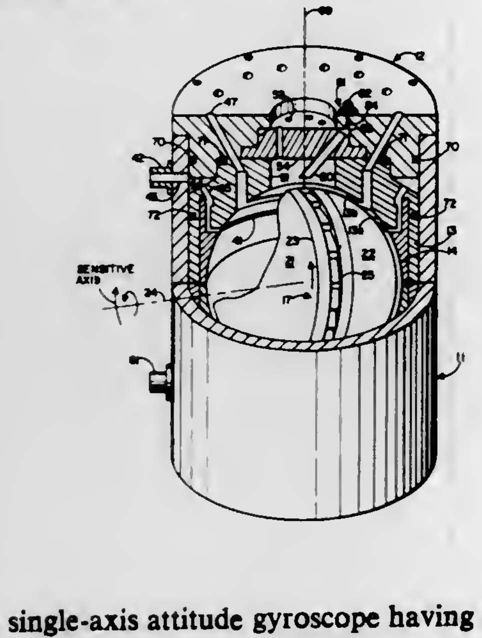
ATTITUDE GYROSCOPE

David L. Paine, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 707,755

Int. Cl. G01c *19/12, 19/26*

U.S. Cl. 74—5.7 8 Claims



A single-axis attitude gyroscope having a spherical rotor with impeller buckets located on a great circle thereof. The rotor is hydrostatically supported and driven by two annular, arcuate bearing pads.

3,528,301

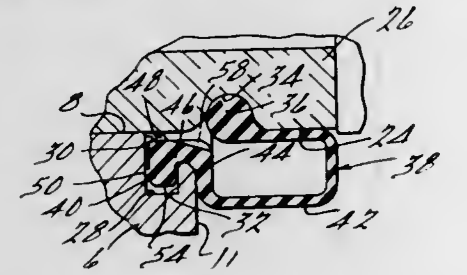
DUST SEAL FOR BRAKE PISTON

Darwin A. Wasmer, Detroit, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed July 1, 1968, Ser. No. 741,734

Int. Cl. F16j *15/16*

U.S. Cl. 74—18.2 3 Claims



A disk brake incorporating a novel dust seal construction. The dust seal is provided with annular beads at its opposite ends, one bead being fitted in an annular groove on the piston and the other bead being fitted in an annular groove formed at one end of the cylinder bore. This latter bead is compressed between opposite radial walls of the cylinder bore groove and has a lip which is slidably engaged by the piston to hold this bead in its groove.

3,528,302

VIBRATORY UNIT FOR CABLE PLOWS

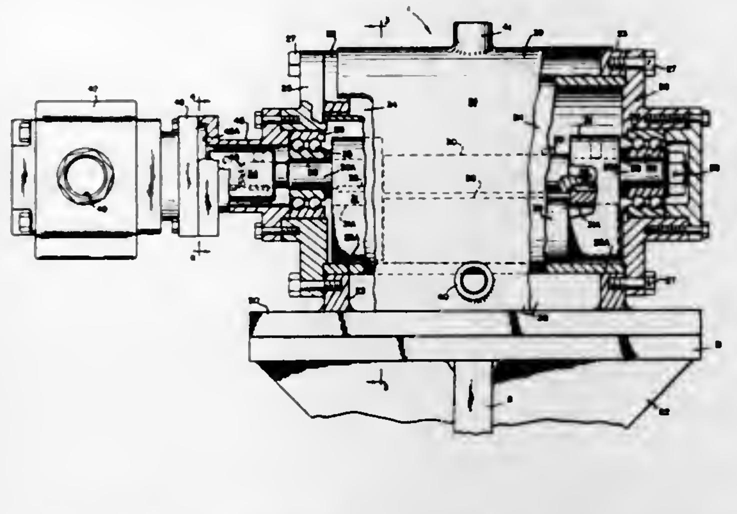
Frank R. Kinnan, Camas Valley, Oreg., assignor to Henkels and McCoy, Inc., Blue Bell, Pa., a corporation of Pennsylvania

Filed Aug. 17, 1967, Ser. No. 661,313

Int. Cl. B06b *3/00*

U.S. Cl. 74—87 3 Claims

A vibration inducing unit mounted upon an earth penetrating blade of a cable laying apparatus for lessening the resistance of earthen material to blade passage. The vibration unit includes orbiting means operable within a liquid cooled, cylindrical raceway and in driven engagement with a motor to impart centrifugal force against the raceway and ultimately inducing vibratory movement in the blade. Associated in a trailing manner with the blade is a guide for depositing linear material into a kerf formed by the blade for embedding of said material within a layer of granular earthern particles. Resilient mounting means insulate the prime mover vehicle from the vibratory motion of the cable plow apparatus.



3,528,303

SPINDLE DRIVE MECHANISM

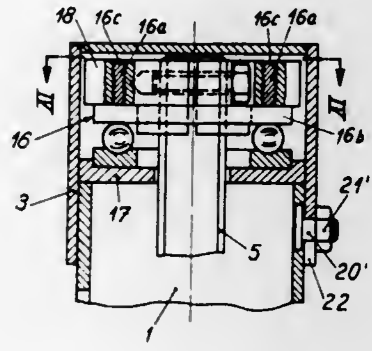
Richard Haller, Ueberlandstr. 240, Dubendorf-Zurich, Switzerland

Filed Aug. 27, 1968, Ser. No. 755,588

Claims priority, application Switzerland, Aug. 31, 1967, 12,214/67

Int. Cl. F16h *25/12*

U.S. Cl. 74—89.15 5 Claims



A spindle drive mechanism has a tensile pre-stressed spindle and a non-rotatable nut engaging the spindle and arranged to be driven thereby axially.

3,528,304

POWER LIFT

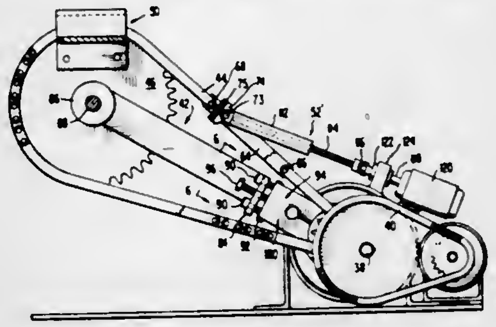
William C. N. Hopkins, P.O. Box 551, Walnut Creek, Calif. 94596

Filed Mar. 20, 1968, Ser. No. 714,514

Int. Cl. F16h *27/02, 29/02, 29/20*

U.S. Cl. 74—89.21 10 Claims

One end of an arm having driven sprocket means rotatably mounted on its free end is pivotally mounted coaxially with a power shaft having drive sprocket means fixed thereon. An endless chain means trained about the sprocket means provided with a strut to anchor the chain so that rotation of the drive sprocket means in one direction imparts swinging motion to the arm in the opposite direction without effecting any net angular movement of the driven sprocket means. The driven sprocket means serves as the load bearing portion of the assembly.



3,528,305

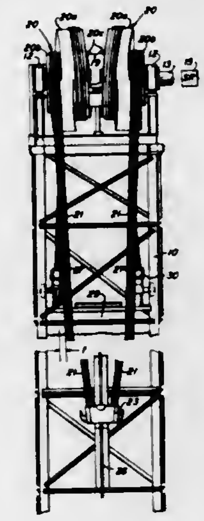
WELL PUMPING APPARATUS

John P. Kuhns and Michael L. Rizzone, Dallas, Tex., assignors to United States Steel Corporation, a corporation of Delaware

Filed Sept. 27, 1968, Ser. No. 763,317

Int. Cl. F16g *9/00;* **B66d** *1/74*

U.S. Cl. 74—89.22 6 Claims



A long stroke well-pumping unit in which power is transmitted to a rod string and counterweight through a plurality of parallel small diameter cables. The drums which drive the cables have smooth circumferential faces; embodies novel anchors for attaching the cables. Otherwise, similar to an earlier Pat. No. 3,285,081 of the same parties.

3,528,306

DRIVE MECHANISM FOR A TELEVISION CONTINUOUS TUNER

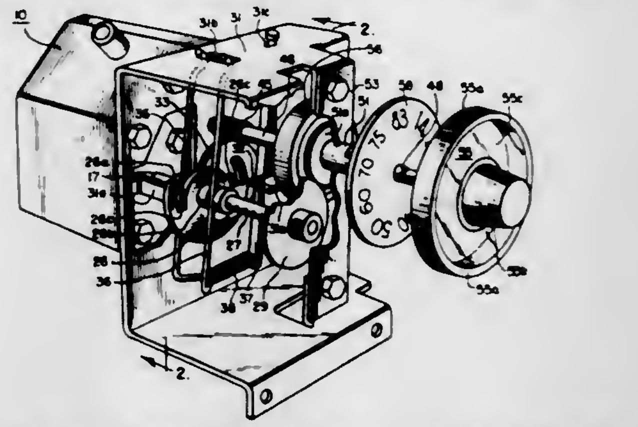
George R. Dickinson and Richard G. Schmid, Norridge, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 4, 1968, Ser. No. 780,951

Int. Cl. F16h *35/18*

U.S. Cl. 74—10.8 7 Claims

A drive mechanism for achieving both coarse and fine tuning of a continuously adjustable type turner, such as a UHF tuner, is provided by employing a channel selector knob to rotate a drive pin which in turn frictionally drives a disc connected to the tuner's tuning shaft. The friction drive is established by a pair of spring-loaded levers which engage and bear against the disc and pin, respectively, to urge their peripheries into engagement. The forces applied by the levers are statically balanced and diametrically opposed in order to preclude side loading of the tuning shaft and thus loading of the shaft's bearings. As a consequence, very low torque is required to actuate the drive mechanism and position the tuning shaft; and, with the aid of a flywheel, permits the selector knob to be spun to obtain fast advance or coarse tuning, while slower knob rotation achieves fine tuning.



3,528,307

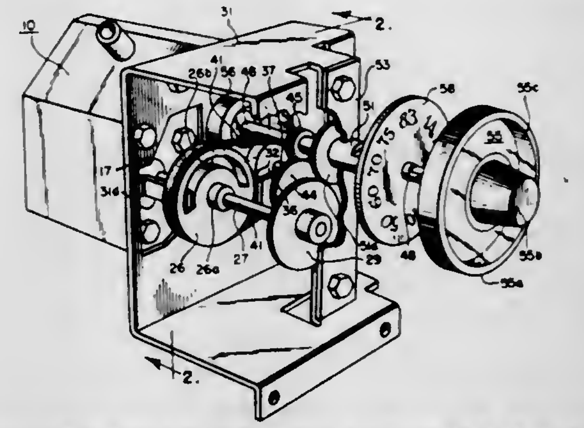
DRIVE MECHANISM FOR A TELEVISION CONTINUOUS TUNER

John F. Bell, Wilmette, and George R. Dickinson, Norridge, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Dec. 4, 1968, Ser. No. 780,952

Int. Cl. F16h *35/18*

U.S. Cl. 74—10.8 11 Claims



A drive mechanism for achieving both coarse and fine tuning of a continuously adjustable type tuner, such as a UHF tuner, is provided by employing a channel selector knob to rotate a drive pin which in turn frictionally drives a disc connected to the tuner's tuning shaft. The friction drive is established by a clamping arrangement which applies statically balanced, diametrically opposed forces to the drive pin and to the disc to urge their peripheries into engagement without introducing any side loading or thrust to the tuning shaft and thus without loading the shaft's bearings. As a consequence, very low torque is required to actuate the drive mechanism and position the tuning shaft; and, with the aid of a flywheel, permits the selector knob to be spun to obtain fast advance or coarse tuning, while slower knob rotation achieves fine tuning.

3,528,308

MECHANICAL RESONATOR OF ROTATION

Robert Favre, Lausanne, Switzerland, assignor to Fabriques Movado, La Chaux-de-Fonds, Switzerland

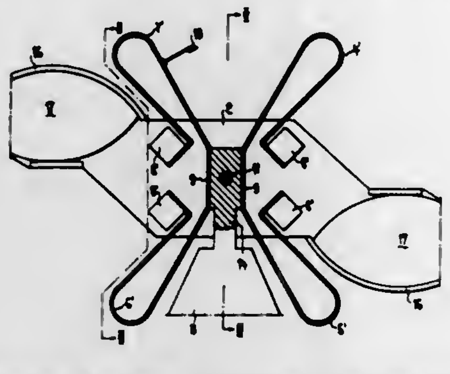
Filed June 14, 1968, Ser. No. 737,002

Claims priority, application Switzerland, June 27, 1967, 9,110/67; May 3, 1968, 6,629/68

Int. Cl. F16h *27/02;* **G04b** *15/00*

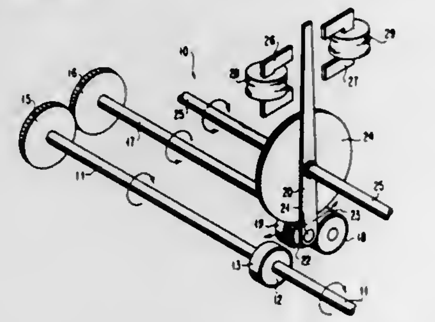
U.S. Cl. 74—142 17 Claims

A timepiece movement includes an oscillatory mass having an axis of symmetry and a spring system supporting the mass for oscillation preferentially about such axis of symmetry. The spring system includes a number of leaf springs each secured at one end to a support and at their other ends to the mass with the widths of the springs lying parallel to the axis of symmetry and with the springs containing looped portions such that essentially radial arm portions thereof lie in closely spaced relation. These relations minimize displacements of the mass axially of the axis of symmetry and radially of such axis while allowing oscillations about the axis.



3,528,309
MECHANICAL DRIVE

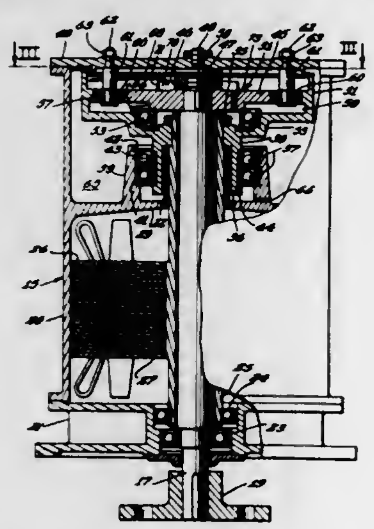
Robert J. Laybourn, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 30, 1968, Ser. No. 763,730
Int. Cl. F16h *13/10, 15/00, 57/00*
U.S. Cl. 74—404 **11 Claims**



A mechanical drive for providing either multispeed or reversible drive of an output shaft wherein a driven element is positioned for movement of the periphery thereof into contact with the periphery of either of two spaced drive elements rotating about parallel axes. Thus, the driven element is rotated at a speed and in a direction responsive to that of the contacted drive element peripheral speed and direction.

3,528,310
PUMP TRANSMISSION AND MOTOR

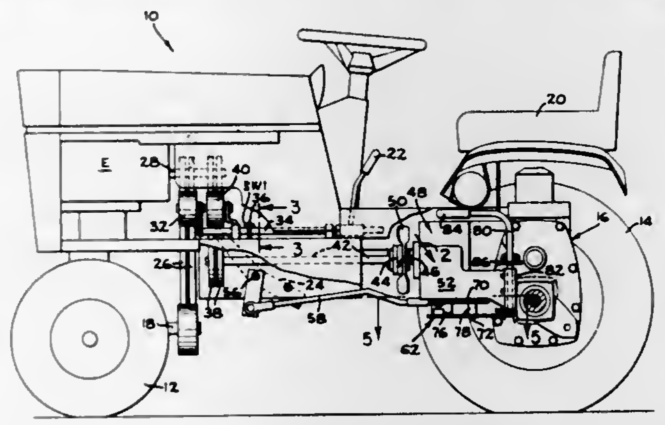
Walter D. Haentjens, R.D. 1, Sugarloaf, Pa. 18249
Filed Aug. 21, 1968, Ser. No. 754,241
Int. Cl. H02k *7/06;* **F16h** *1/20*
U.S. Cl. 74—421 **6 Claims**



Induction 60 cycle alternating current motor for pumps and the like, designed to fill the speed gap between two and four pole 60 cycle motors rotating at 3600 r.p.m. and 1800 r.p.m. respectively and to provide a 2500 r.p.m. 60 cycle motor as a standard type of motor. This 2500 r.p.m. motor cannot be attained electrically at 60 cycles and is achieved by stepping up the speed of the rotor of a four pole motor and by providing a motor drive shaft concentric with the rotor shaft and driven at the stepped up speed by a step up geared unit contained within the motor housing.

3,528,311
HYDROSTATIC TRANSMISSION CONTROL

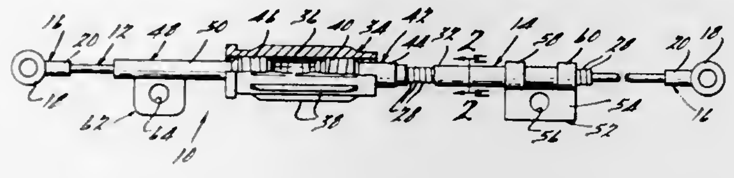
Walter F. Fieber, Saukville, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 777,587
Int. Cl. G05g *11/00*
U.S. Cl. 74—481 **9 Claims**



A tractor with a hydrostatic transmission is controlled for speed and directing by a rocking pedal. A parking lever locks the transmission and its associated drive train in neutral. Electrical interlocks complete an ignition circuit only when the transmission is in neutral and the power take off is idle. The pedal actuates the control shaft of the transmission, which by means of a centering mechanism is maintained in neutral position in the absence of pedal actuation. The pedal is locked when the parking lever locks the transmission.

3,528,312
PUSH-PULL CABLE ASSEMBLY

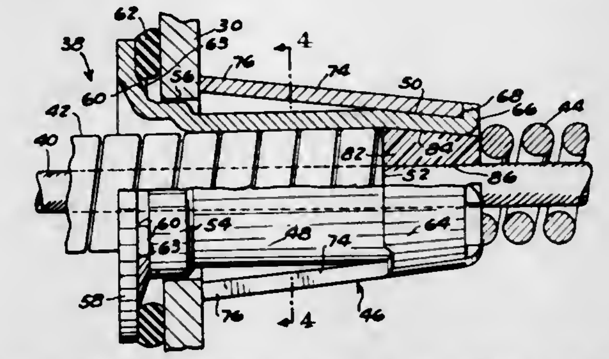
Hans B. Nielsen, Birmingham, Mich., assignor, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California
Filed June 14, 1968, Ser. No. 737,185
Int. Cl. F16c *1/22*
U.S. Cl. 74—501 **9 Claims**



A push-pull cable assembly for operating a remotely located mechanism in response to movement of an actuating device, the assembly comprising an elongted, relatively light weight cylindrically configured cable member extending between the mechanism and the actuating device; means operatively connecting one end of the cable member to the mechanism and the opposite end of the cable member to the actuating device; an elongated helically configured housing member disposed in surrounding relationship with respect to the cable member and spaced radially outwardly from the periphery of the cable member a predetermined distance, whereby the assembly may be bent to various arcuate and/or angular configurations without impairing the push-pull reciprocal movement of the cable member with respect to the housing member.

3,528,313
CONTROL CABLE AND ANCHOR STRUCTURE ASSEMBLY

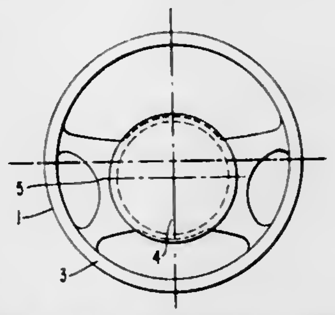
Harmond E. Berno, Farmington, Mich., assignor to Pennsylvania Wire Rope Corporation, Williamsport, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1968, Ser. No. 752,906
Int. Cl. F16c *1/10*
U.S. Cl. 74—501 **23 Claims**



An anchor on the outer sheath of a control cable for brakes or the like has outwarlly tapered spring fingers which deflect inwardly upon being forced through an opening in a support and then snap outwardly to prevent withdrawal of the sheath from the opening. An abutment on the sheath limits further insertion thereof through the opening. The anchor includes a conical ring on the inserted portion of the sheath, and the spring fingers project therefrom in straight, unbent condition substantially along the conical slant height of the ring. The free ends of the fingers are flattened and/or tapered to increase their widths adjacent the opening. The anchor is fastened to the sheath by welding, crimping, or combinations thereof.

3,528,314
SAFETY STEERING WHEEL FOR MOTOR VEHICLES

Béla Barényi, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 30, 1968, Ser. No. 748,844
Claims priority, application Germany, Aug. 2, 1967, 1,630,327
Int. Cl. B62d *1/04*
U.S. Cl. 74—552 **13 Claims**

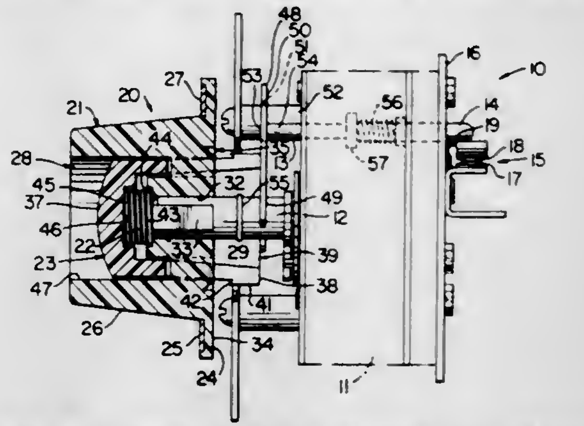


A safety steering wheel for a motor vehicle which is connected with the steering column by the interposition of a deformation member and which, reinforced or inherently rigid substantially only in its lower half, has a greater form rigidity than the deformation member.

3,528,315
CONTROL KNOB CONSTRUCTION AND THE LIKE

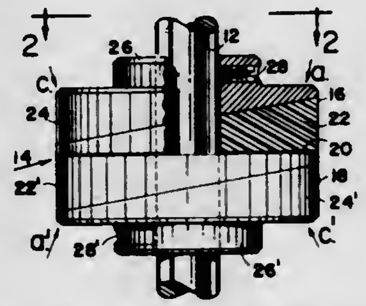
Edgar E. Marquis, Newtown, Conn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Feb. 24, 1969, Ser. No. 801,648
Int. Cl. G05b *1/10*
U.S. Cl. 74—553 **20 Claims**

A control knob construction having an outer dial member interconnected to a control shaft for rotating the control shaft in unison therewith, the outer dial member having an opening means passing therethrough and receiving a push button member that is axially movable relative thereto and is snap fitted to the outer dial member to interconnect the same together while permitting such axial movement therebetween.



3,528,316
SHAFT BALANCER

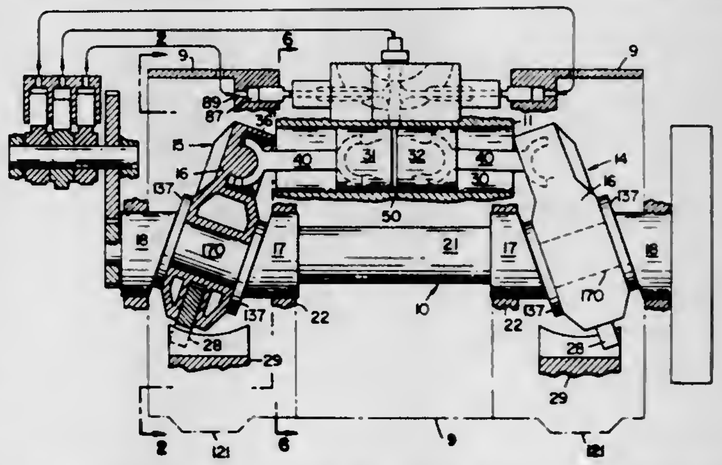
Kenneth E. Hammer, 1776 Lunsford, McKinleyville, Calif. 95521
Filed Dec. 9, 1968, Ser. No. 782,387
Int. Cl. F16f *15/32*
U.S. Cl. 74—573 **5 Claims**



A balancer for installation on a shaft or like rotatable member, which balancer has two relatively rotatable bodies. Each body is composed of two segments of dissimilar material, one material being relatively dense, the other material being relatively lightweight. The two segments are of truncated cylindric form and are complementary to one another so that the mass of each sector around the periphery of the body varies linearly with the position of the sector.

3,528,317
INTERNAL COMBUSTION ENGINE

Clessie L. Cummins, P.O. Box 785, Sausalito, Calif.
Original application Feb. 8, 1968, Ser. No. 704,115. Divided and this application Apr. 14, 1969, Ser. No. 829,838
Int. Cl. F16c *3/12*
U.S. Cl. 74—598 **12 Claims**

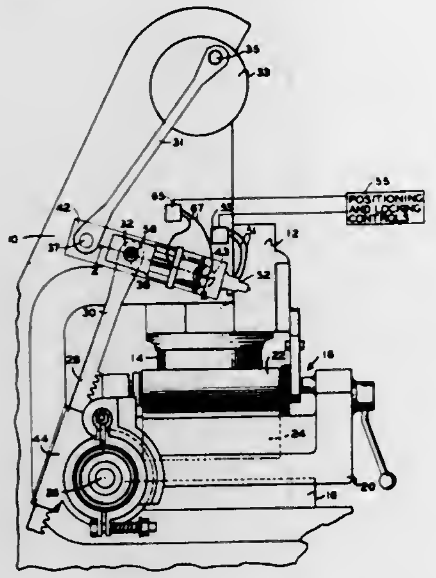


A Z-crankshaft is assembled from novel converter units, some crank webs, and a tubular cylindrical shaft, in a manner enabling inexpensive machining and manufacturing costs.

3,528,318

FEED CONTROL MEANS

Walter R. Huston and Paul D. Limpach, Napoleon, Ohio, assignors to Automatic Feed Company, Napoleon, Ohio, a corporation of Ohio
Filed June 21, 1968, Ser. No. 738,947
Int. Cl. F16c *3/28;* **F16h** *21/20*
U.S. Cl. 74—600 7 Claims

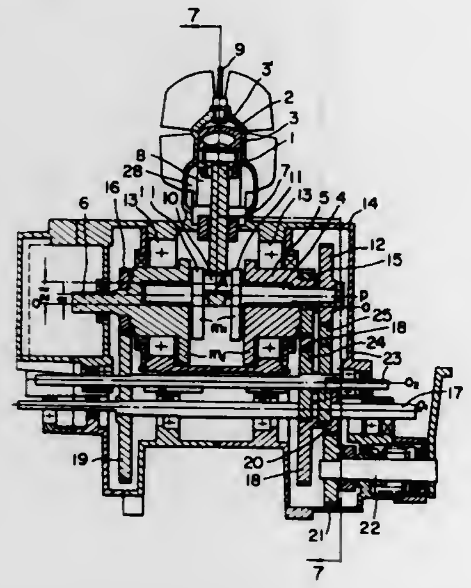


An automatically operated mechanism for adjusting the length of the stroke of a reciprocating driven shaft or rack member of a strip stock feeding apparatus. The length of the stroke of the drive shaft or rack is controlled by adjusting the position of a crank pin on a throw block of a metal working machine. Once the desired position of the crank pin has been established, a remotely controlled pressure fluid actuated camming mechanism is energized to effectively lock the crank pin in the desired position.

3,528,319

PERFECTLY BALANCED VIBRATIONLESS ROTATION-RECIPROCATION DEVICE OF CRANKSHAFT PLANETARY MOTION SYSTEM

Kenjiro Ishida, Hamamatsu, Japan, assignor to President Shizuoka University
Filed Jan. 15, 1969, Ser. No. 791,436
Claims priority, application Japan, Jan. 30, 1968, 43/5,634, 43/5,638
Int. Cl. G05g *21/00*
U.S. Cl. 74—603 4 Claims

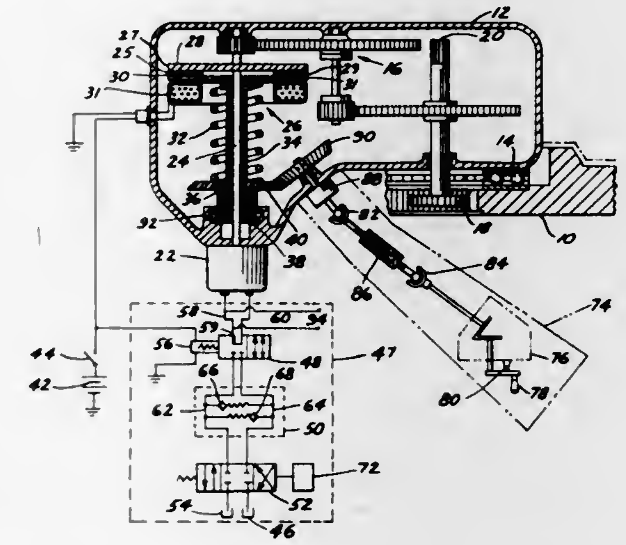


Perfectly balanced rotation-reciprocation device having a planetary rotating and revolving crankshaft, an eccentric means rotating in reverse direction and at the same uniform angular velocity to the crankshaft and a linearly reciprocating rod. The crankshaft and the eccentric means each provides balance weight to theoretically balance the caused unbalance forces.

3,528,320

TURRET TRAVERSE MECHANISM

Aaron Maniker, Southfield, and John H. Rowe, Berkley, Mich., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 28, 1968, Ser. No. 756,015
Int. Cl. F16h *5/48*
U.S. Cl. 74—625 3 Claims

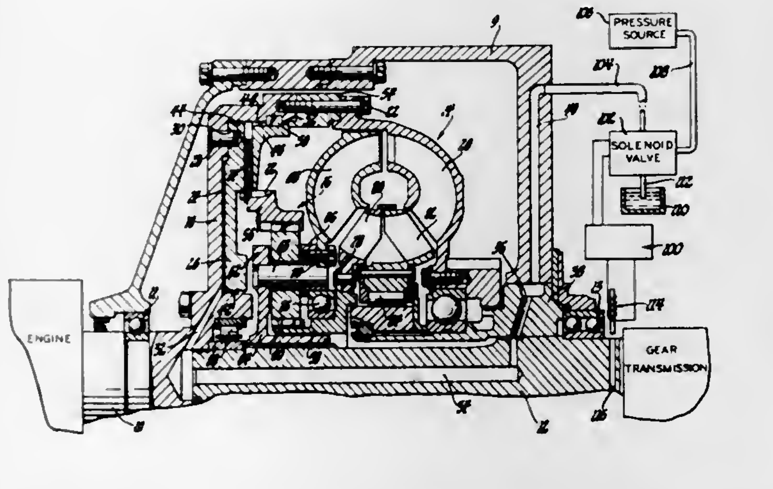


A turret traverse mechanism for rotating the turret about the traverse axis of a support hull. Motor and manual power means alternately and selectively drive the turret housing depending upon the positon of a clutch mechanism which is connected with each of the power means and also the position of a motor control means.

3,528,321

MULTIPLE TURBINE CONVERTER AND PLANETARY GEAR ARRANGEMENT

Kenneth B. Harmon and Robert E. Nelson, Indianapolis, and Robert K. Sanders, Whitestown, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 25, 1969, Ser. No. 802,057
Int. Cl. F16h *47/08*
U.S. Cl. 74—677 9 Claims

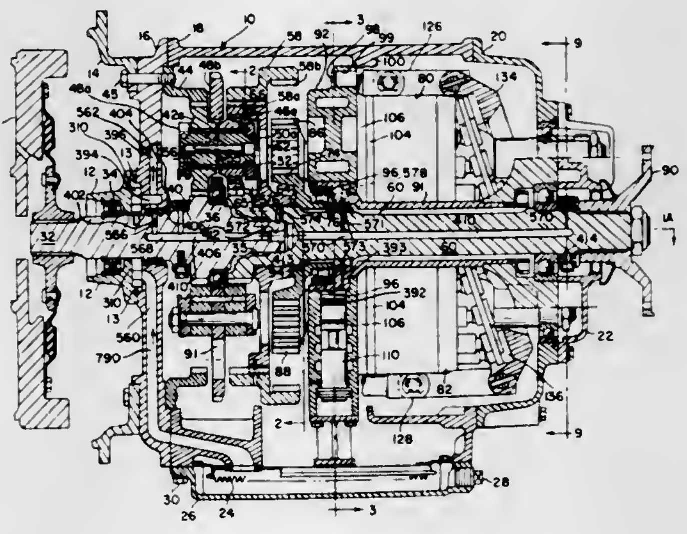


A torque converter and planetary gearing arrangement is disclosed in which one turbine is drivingly connected to the output member of the gearing and the output shaft of the transmission, a second turbine is drivingly connected to the input reaction member of the gearing and the pump member is selectively connectable through a clutch to the input member of the gearing. The second turbine rotates opposite to the pump at low speed ratios, is stationary at an intermediate speed ratio and rotates in the same direction as the pump at high speed ratios. The planetary gear ratio is so designed that when the second turbine is stationary, the input member of the planetary gearing and the pump are rotating at equal speeds thus permitting the clutch to be engaged with a zero speed differential between the components to be clutched. When the clutch is engaged, a split power path is established with a portion of the power being transmitted mechanically from input to output and the remainder of the power being transmitted through both turbines of the torque converter from input to output.

3,528,322

TRANSMISSION ASSEMBLY

Carl E. Schou, Bloomfield Hills, Mich., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Original application Sept. 1, 1966, Ser. No. 576,696, now Patent No. 3,465,616, dated Sept. 9, 1969. Divided and this application Mar. 24, 1969, Ser. No. 809,815
Int. Cl. F16h *47/04*
U.S. Cl. 74—687 15 Claims



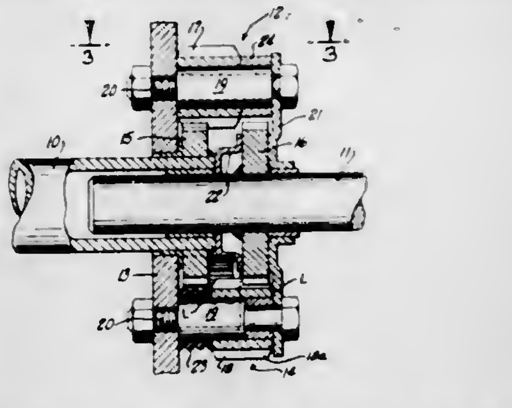
A transmission assembly housing structure has longitudinal compartments spaced by a fixed internal valve housing and hydraulic passage defining member. Input torque transmitting gearing is disposed in one compartment, and torque transmitting assembly in the other compartment comprises a pump and a plurality of hydraulic motors. The pump is driven by the input gearing, and an output shaft is drive connected to the hydraulic torque transmitting assembly. The housing structure contains a hydraulic system comprising a sump and passages interconnecting the sump, pump and motor. These passages are disposed substantially wholly in the internal housing member and movable control valves are mounted in the passages between said pump and the motors.

3,528,323

DIFFERENTIAL TRANSMISSION FOR COAXIAL AXLE SHAFTS WITH MEANS TO FRICTIONALLY RESIST RELATIVE ROTATION THEREBETWEEN

Igor Kamlukin, Milwaukee, Wis., assignor to Simplicity Manufacturing Company, Inc., Port Washington, Wis., a corporation of Wisconsin
Filed July 19, 1968, Ser. No. 754,520
Int. Cl. F16h *1/44, 1/42*
U.S. Cl. 74—710.5 6 Claims

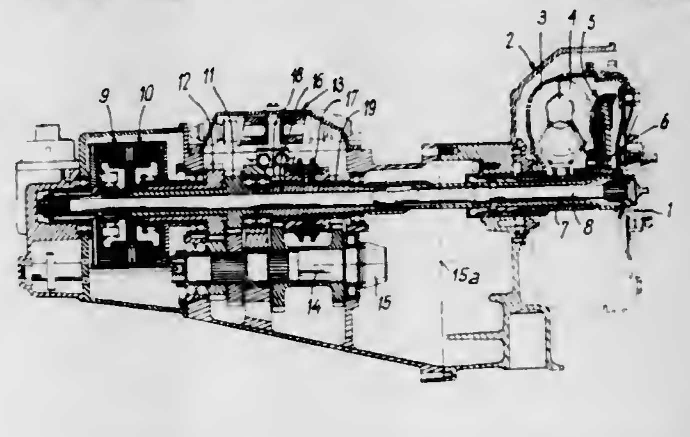
A differential transmission of the spur gear type and also the bevel gear type to transmit torque to coaxial axle shafts, having friction means incorporated therein to resist free spinning of one of the axle shafts with respect to the other.



3,528,324

AUTOMATIC GEAR BOXES FOR AUTOMOBILES

Raymond A. Ravenel, Sceaux, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society
Filed Jan. 23, 1968, Ser. No. 699,872
Claims priority, application France, Jan. 26, 1967, 92,566
Int. Cl. F16h *47/00;* **F16d** *67/00*
U.S. Cl. 74—720 3 Claims



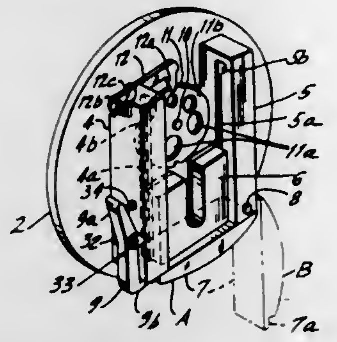
This invention relates to automatic gear boxes for automobiles, of the kind that comprise a hydraulic converter having an output in the form of two coaxial shafts passing into the gear box, the outer shaft being coupled to a turbine element of the converter by means of a clutch. According to the present invention, the reverse drive torque and the highest gear reduction torque in forward drive each comprise a loose pinion and a keyed pinion mounted on said outer shaft and on the output shaft of the gear box. These two loose pinions are mounted on a common shaft and are selectively securable to said shaft by a coupling and synchronisation device.

3,528,325

HELICAL CUTTER

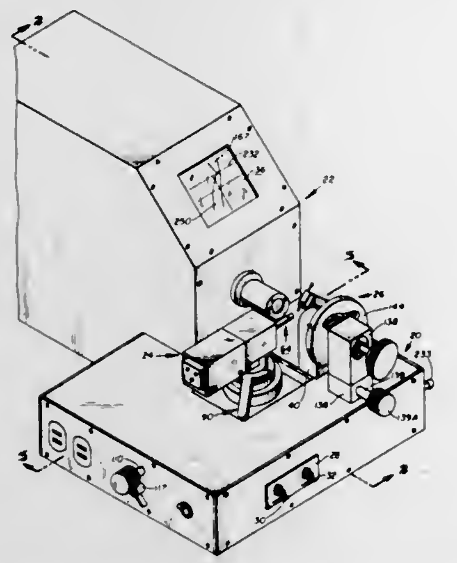
Masato Kamimura and Saburo Fukui, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan
Filed Nov. 28, 1967, Ser. No. 686,046
Claims priority, application Japan, Nov. 29, 1966, 41/78,543
Int. Cl. H02g *1/12*
U.S. Cl. 81—9.5 11 Claims

A tool adapted for either hand operation or substantially fully automatic operation for removing a layer or coating of insulation material surrounding a cable or other similar structure with a slot or opening for receiving the member to be stripped, and is provided with a cutting blade for stripping the sleeve or outer cover to a predetermined depth. The tool and cable are rotated relative to one another to form a substantially annular cut until the cable is brought into surface contact with the diagonally aligned base of the opening, causing the blade to be aligned diagonally relative to the cable. Relative rotation is continued with the tilting of the cable and tool causing the blade to form a helical cut.



The blade and tool move toward one end of the cable during the helical cutting operation until it becomes separated from the end of the cable. The portion of the sheathing to be removed is then simply stripped or unwound without the need for any significant pulling or removing force, as is required with conventional stripping devices.

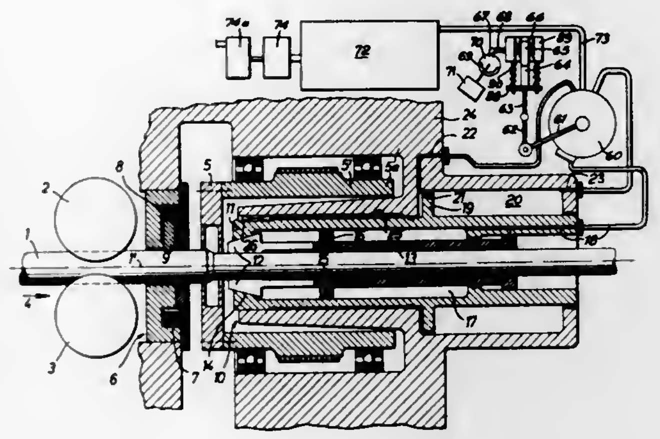
3,528,326
CONTACT LENS EDGING APPARATUS
Lauren G. Kilmer, 1927 E. 35th Place 74105, and McCabe C. Lively, 2667 S. Winston 74114, both of Tulsa, Okla.
Filed Aug. 30, 1967, Ser. No. 664,544
Int. Cl. B23b *3/28*
U.S. Cl. 82—14 **9 Claims**



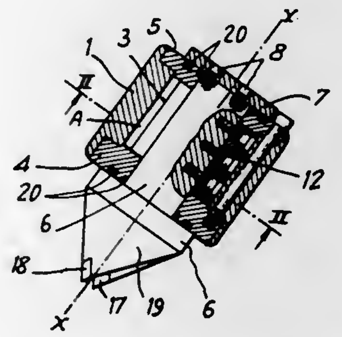
A contact lens edging and polishing apparatus include a lens holding and centering mechanism which is rotatable relative to an edge cutting and/or polishing tool. The tool is caused to follow a fixed path in a semi-generation process. The edge of the lens and the tool are projected upon a comparator screen in order that the operator may know the relationship of the lens edge to the cutting or polishing tool.

3,528,327
MACHINE TOOL WITH ROTARY CUTTER HEAD AND FEEDING MECHANISM THEREFOR
Hans Lindemann, Lendenstrasse 39, Grossdornberg, near Bielefeld, Germany
Filed Jan. 18, 1968, Ser. No. 698,818
Claims priority, application Germany, Feb. 10, 1967, L 55,712
Int. Cl. B23b *5/12*
U.S. Cl. 82—20 **4 Claims**

A machine tool called a "scalping" machine in which solid or tubular rod stock is clamped nonrotatably and fed continuously to and through a revolving cutter head by two clamping and feeding devices in front of and behind the cutter head. At least this second clamping device carries out short longitudinal reciprocating movements close to the cutter head by first clamping the workpiece tightly shortly behind the cutter head and drawing it for a short distance in the feeding direction, then releasing it sufficiently so as to be able to slide back along the workpiece to its original position while remaining in guiding engagement with the workpiece so as to form a vibration node to eliminate the vibrations of the workpiece which are caused by the cutting operation. If two similar reciprocating clamping devices are provided in front of and behind the cutter head, they are operated in alternate succession so that while one clamps and feeds the workpiece, the other slides back along and guides the workpiece.

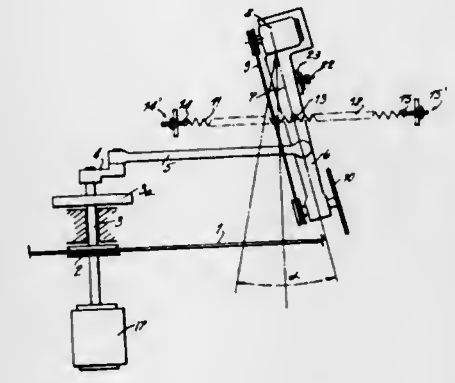


3,528,328
HYDRAULICALLY CONTROLLED TURRET
Jules Louis Jeanneret, 21 Rue Henri Gelin, Niort, Deux-Sevres, France
Filed Feb. 9, 1968, Ser. No. 704,429
Claims priority, application France, Mar. 17, 1967, 99,224
Int. Cl. B23b *29/00*
U.S. Cl. 82—36 **4 Claims**



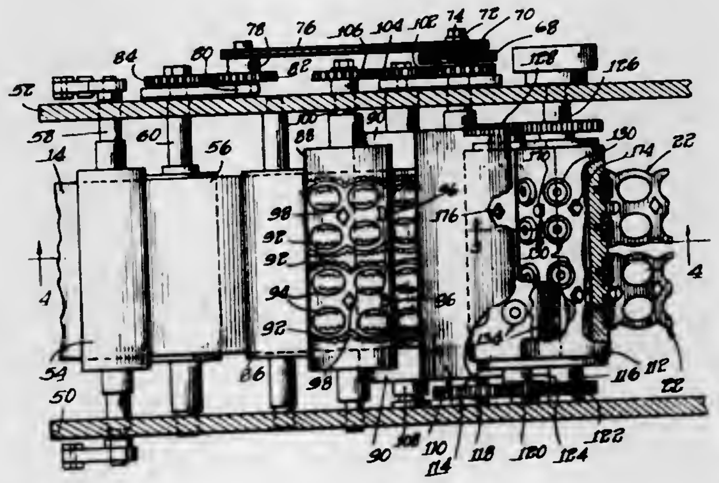
In a lathe, a turret carrying two tools to be brought selectively into an operative position with reference to the work on the lathe as provided by the angular movement of a revolvable part rigid with said tools and shifted between two extreme positions for which the corresponding tool enters its operative position. Said tool-carrying part revolves inside a cylindrical chamber in which an arcuate bearing is provided for said part, the substantially radial terminal surfaces of which form abutment surfaces for a radial blade carried by the revolvable part and urged selectively by a hydraulic fluid towards said surfaces defining the corresponding extreme positions of the revolvable part.

3,528,329
PROCESS AND DEVICE FOR CUTTING THIN ELEMENTS SUCH AS TUBES FOR RADIATORS INTO PARTS OF EQUAL LENGTH
André Chartet, Meudon, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, Hauts-de-Seine, France a company of France
Filed March 6, 1968, Ser. No. 711,079
Claims priority, application France, April 14, 1967, 102,777
Int. Cl. B23d *45/12, 45/24*
U.S. Cl. 83—37 **10 Claims**



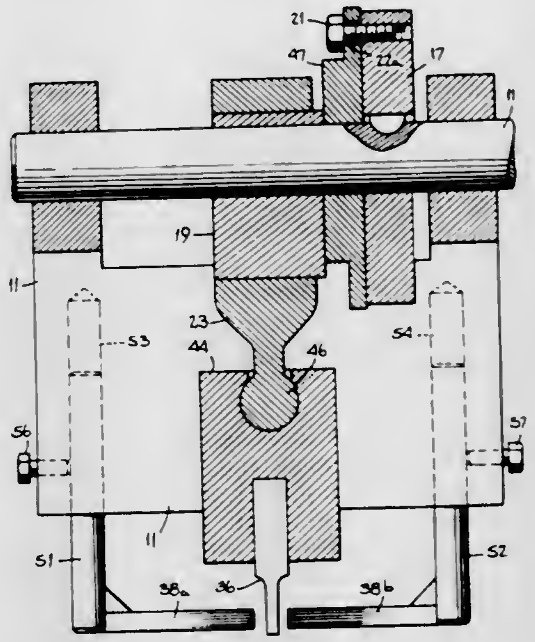
An oscillating arm carries a rotatable circular saw as well as means for rotating the saw. A reading wheel is in contact with the element to be cut and is at least partly driven by the element. A crank-and-connecting-rod transmission drivingly connects the reading wheel with the oscillating arm. Spring means is operatively connected with the oscillating arm so as to exert a force on the arm proportional to the oscillating movement of the arm. The spring means applies forces to the arm in phase opposition to the inertia forces produced by movement of the arm, the force applied by the spring means being applied at a natural frequency substantially the same as the frequency of the oscillation of the arm.

3,528,330
APPARATUS FOR CONTINUOUSLY FORMING ARTICLES FROM SHEET MATERIAL STOCK
David Ehlert, Lake Zurich, Illinois, assignor to Illinois Tool Works Inc., Chicago, Illinois a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 770,021
Int. Cl. B26d *7/18*
U.S. Cl. 83—103 **10 Claims**



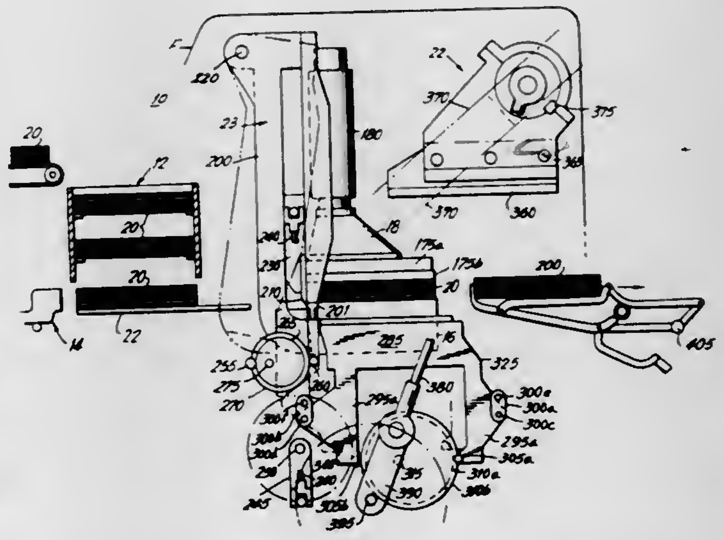
There is disclosed an apparatus comprising rotary dies for continuously forming articles such as can carriers from a strip of sheet material. The dies are constructed for severing various pieces from the strip for providing the end product with the desired configuration. Cooperable knock-out elements are provided on rolls for gripping the severed pieces and insuring removal thereof from the strip.

3,528,331
PUNCH MACHINE
Gerald S. Ikelheimer, 1215 Fifth Ave., New York, New York
Filed Jan. 17, 1968, Ser. No. 698,639
Int. Cl. B26f *1/02*
U.S. Cl. 83—145 **13 Claims**



A punch press having an automatic reset adjustable to halt the punch at a selected starting position at the end of each cycle and including a clutch, a drive shaft and an eccentric, any of which can be angularly offset with respect to the others to change the starting position of the punch.

3,528,332
CONTINUOUS ONE-STATION THREE-KNIFE BOOK TRIMMER
Carl Thumim and James Des Jardins, Chicago, Illinois, assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Illinois a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,276
Int. Cl. B26d *5/20*
U.S. Cl. 83—214 **16 Claims**



A continuous book and magazine trimming machine arranged to cut the front edge and top and bottom edges of the material with guillotine type of action. High accuracy is maintained by performing all the cutting operations while the book remains in a single cutting position. To effectuate such single station cutting of three edges, the front knife and frame associated therewith are movable out of the path of movement of the side knife apparatus once the front edge has been trimmed.

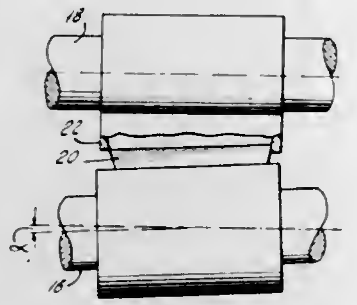
3,528,333
DIE CUTTER

Helmut Hornung, Scarsdale, New York, assignor to F.L. Smithe Machine Company, Inc., Duncansville, Pennsylvania a corporation of New York

Filed Dec. 4, 1967, Ser. No. 687,793

Int. Cl. B26d *1/56*

U.S. Cl. 83—341 **1 Claim**



An improved shear cutting operation is provided by mounting cooperating male and female die means on rotary shafts extending substantially transversely to the direction of feed of the material to be cut. The die means, having continuous, cooperating cutting edges are arranged to rotate about converging axes such that contact between the die means starts at the juncture of the leading cutting edge that is linear and one of the side cutting edges that is arcuate and continues, as the shafts rotate, in opposite directions along the cutting edges to terminate at the juncture of the trailing cutting edge which is also linear and the opposite side cutting edge which is also arcuate.

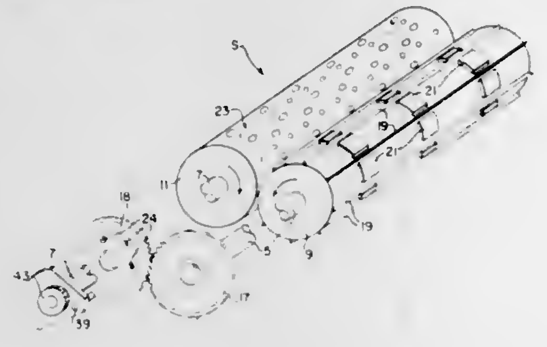
3,528,334
FABRICATION OF HONEYCOMB TYPE CELLULAR MATERIALS

Robert C. Geschwender, 1800 Center Park Road, Lincoln, Nebraska

Filed July 11, 1967, Ser. No. 652,555

Int. Cl. B26d *1/56*

U.S. Cl. 83—346 **6 Claims**



A strip of suitable material, such as treated kraft paper, metal foil or the like is drawn between rolls of a slitter, so designed that by means of a very simple adjustment the finished product may have a selected one of a number of sizes and angles of honeycomb type cells. After slitting, the strip passes through an adhesive applicator having outlets to imprint staggered areas of adhesive on opposite sides of the strip between rows of slits. The applicator is constructed to prevent access of air to the adhesive during its travel from a supply to the imprinting region thus preventing premature setting of the adhesive and clogging of moving parts. Next the slitted web with applied adhesive passes between substantially spaced folding wheels which will accept strips of various thicknesses for pleating and designed to minimize smearing of the adhesive. As the strip passes through the folding wheels the adhesive spacedly joins adjacent pleats. After the pleated material leaves the pleating wheels it is sent to braking apparatus which forms a compaction wherein the adhesive sets. Then the material is drawn from the compaction by pulling apparatus to stretch it, thereby forming the honeycomb type cells. As the cellular band is pulled its width becomes less. Width-sensing means provides a signal indicating any deviation from a desired width. This signal is applied to control means for the speed of operation of the pulling apparatus to compensate for any incipient deviation from the desired width.

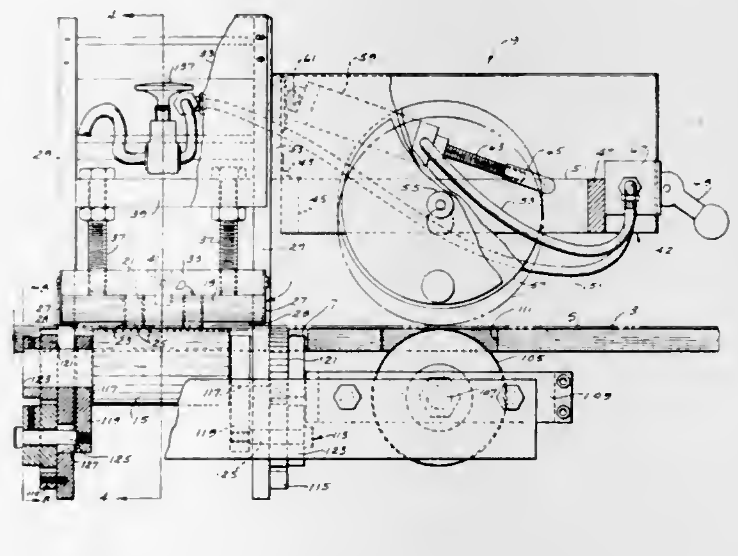
3,528,335
STENCIL CUTTING APPARATUS

Rudolph A. Andolsek, Marion, Illinois, assignor to Diagraph Bradley Industries, Inc., Herrin, Illinois a corporation of Missouri

Filed April 12, 1968, Ser. No. 720,918

Int. Cl. B26d *7/06*

U.S. Cl. 83—416 **17 Claims**



A machine for cutting one or two lines of three to six inch stencil characters in a sheet of stencil material. The machine comprises a table having an opening therein with a feed mechanism adjacent the opening for intermittent feeding of a sheet of stencil material across the opening. A die holder is carried by the table over the opening for receiving in stencil-cutting position any one of a plurality of individual dies each having a cutting edge corresponding to a character to be cut, with the cutting edge of the die facing downward over the opening. A hardened steel roller is mounted for movement transverse to its axis in a generally horizontal plane by an air cylinder and rack and pinion drive, with the top of the roller extending in the opening for rolling contact with the sheet to press it upward against the cutting edge of the die to cut the character in the sheet. After the character is cut, the die is replaced with a die corresponding to the next character to be cut and the sheet is advanced one character width by rotation of knurled rollers in the sheet feeding mechanism, this process being repeated until all of the stencil characters have been cut.

3,528,336
MUZZLE ASSEMBLY FOR SMOOTH-BORE PROJECTILES

Fredrik Donner, Helsinki, Finland, assignor to Oy Tampella AB, Tampere, Finland

Filed March 27, 1968, Ser. No. 716,519

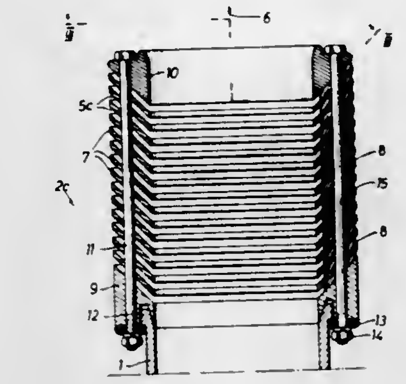
Claims priority, application Germany, April 1, 1967,O 12,403

Int. Cl. F41f *17/12*

U.S. Cl. 89—14 **2 Claims**

A muzzle assembly for use at the end of a smooth-bore barrel on firearrrs such as mortars, grenade launchers and the like which fire smooth-bore, fin-stabilized projectiles. The muzzle assembly includes a radial opening section which has a plurality of disc members and spacer discs mounted at the end of the barrel. The spacer discs are located between the disc members to form outlet openings along the periphery of the assembly to exhaust firing gases therethrough. The disc members form an inner diameter

along the entire length of the radial opening section. This inner diameter is substantially identical to the inner diameter of the barrel on the firearm. The outlet openings extend from the inner diameter of the radial opening section to the periphery of the assembly at an acute angle of inclination with respect to the trajectory of the projectile.



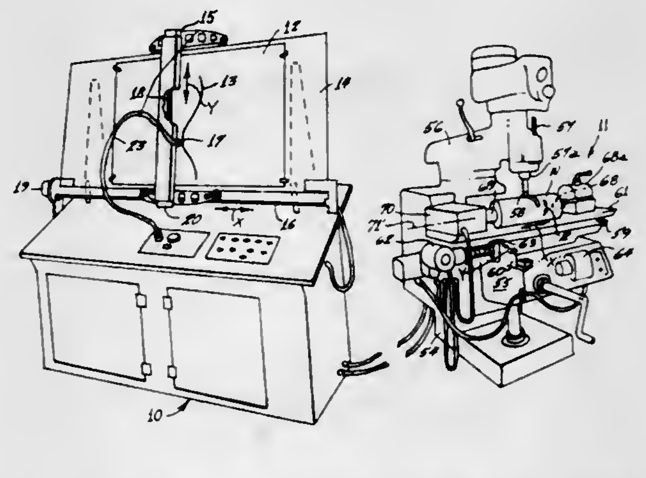
3,528,337
TRACING MACHINE

David H. Dulebohn, Minneapolis, Minnesota, assignor, by direst and mesne assignments of one-half to Andrew Engineering Company, Minneapolis, Minnesota a corporation of Minnesota, and one-half to Oerlikon Italiana SIPA, Milan, Italy, a corporation of Italy

Filed June 17, 1968, Ser. No. 737,669

Int. Cl. B23q *35/128*

U.S. Cl. 90—13.7 **14 Claims**



A tracing machine and control system interchangeably moving a cylindrical or flat workpiece relative to a tool under the control of a line drawing lying in a plane, and over which a sensing head travels parallel to the plane.

3,528,338
METHOD AND APPARATUS FOR CLEANING WORKPIECE EDGES

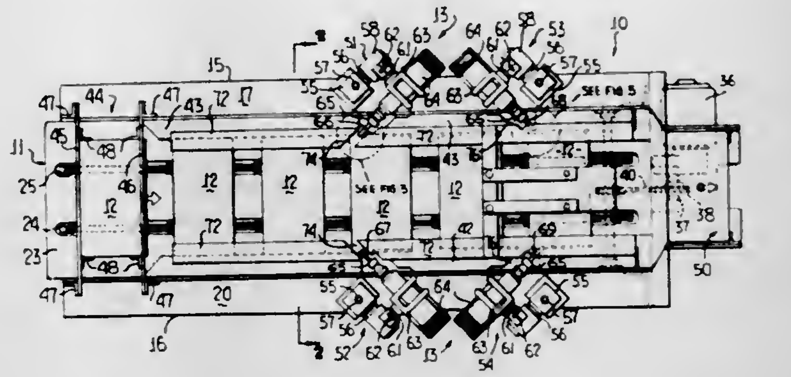
Anthony J. Cuma, Hinsdale, Illinois and Kenneth W. Maurer, Blue Island, Illinois, assignors to Continental Can Company, Inc., New York, New York a corporation of New York

Filed March 8, 1968, Ser. No. 711,749

Int. Cl. B23c *3/12*

U.S. Cl. 90—17 **22 Claims**

A method and apparatus for cleaning workpiece edge portions are disclosed wherein a thin metallic blank or workpiece is conveyed along a predetermined path, rotary file members are disposed along that path and extend into contact with the edge portions of the blank lying parallel to the path and disposed upon upper and lower surfaces of the blank. The rotary file members are disposed angularly with respect to the direction of movement of the edge portions to define an acute angle between the axis of rotation thereof and such direction of movement and the file members are rotated in a direction to provide climb cutting of the edge portions in contact therewith. Relieved areas lying opposite the file members allow flexure of the blank edge portions in response to cutting pressure applied thereto via the file members.



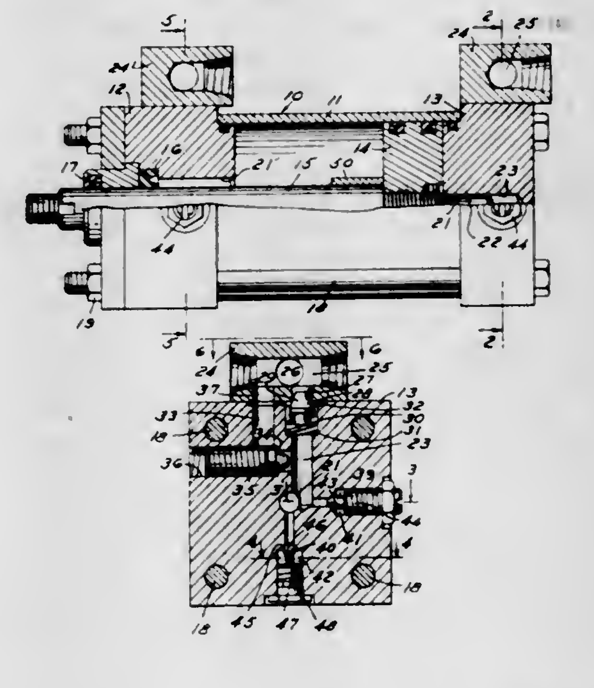
3,528,339
AIR MOTOR

Donald E. Darnell, Northville, Michigan (5740 Chase Road, Dearborn, Michigan

Filed May 27, 1968, Ser. No. 732,183

Int. Cl. F15b *15/22, 11/08, 13/04*

U.S. Cl. 91—26 **18 Claims**



The air motor disclosed herein comprises a cylinder having substantially identical heads that have axial and transverse passages therein which are adapted to be selectively provided with valves so that one or both ends can be adapted for cushioning or speed control or combined cushioning and speed control.

3,528,340
CONTROL ARRANGEMENT FOR FLASH WELDER AND THE LIKE

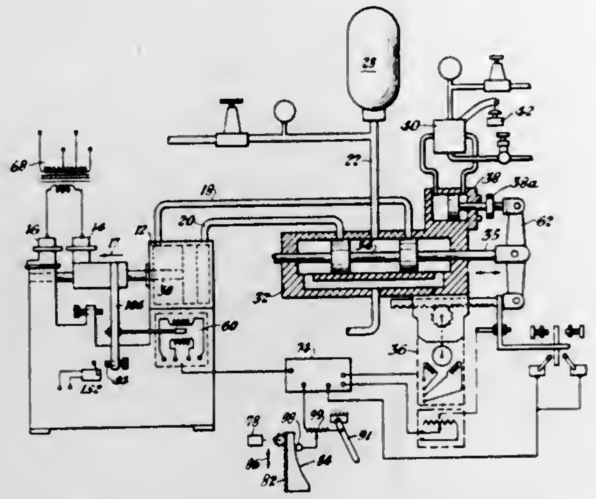
Paul M. Lowy, Pittsburgh, Pennsylvania, assignor to Mesta Machine Company, Pittsburgh, Pennsylvania, a corporation of Pennsylvania

Filed Aug. 28, 1968, Ser. No. 756,023

Int. Cl. F15b *21/02*

U.S. Cl. 91—37 **10 Claims**

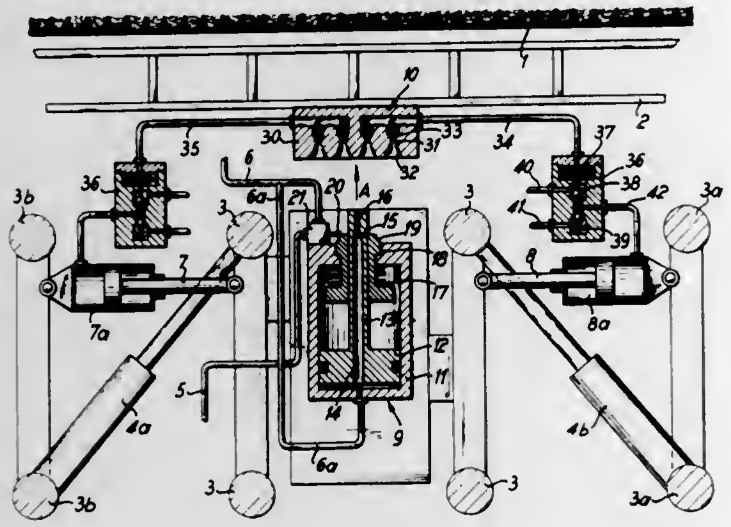
I disclose hydraulic apparatus for controlling the relative movement of the platens of welding machines or the like. The apparatus is particularly adapted for use with flash butt-welding machines. Through the use of a single integrated valve and associated controls, I provide a single control means by which platen motions suitable for most flash butt-welding applications can be consistently obtained. This apparatus eliminates the use of several diverse mechanisms previously required for this purpose. Both linear and non-linear flashing motions and control of weld upset are readily



obtained. My apparatus in addition permits non-welding platen motions for work gauge clearance, gauge takeup or work annealing.

3,528,341
SELF-ADVANCING MINE ROOF SUPPORT UNITS

Hans Rieschel, Essen-Holsterhausen, Germany, assignor to Bergwerksverband G.m.b.H., Essen, Germany a company of Germany
Filed Feb. 28, 1968, Ser. No. 708,843
Claims priority, application Germany, March 7, 1967, B 91,489
Int. Cl. F15b *9/10, 13/06*
U.S. Cl. 91—368 **7 Claims**

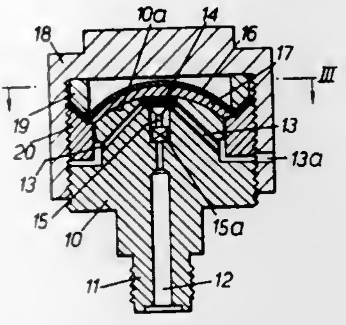


The specification describes a mine roof support system of the self-advancing type in which forward movement is guided by means of a jet extending forwards from a nozzle on the system and arranged to be received by pressure-responsive means mounted on a conveyor or the like in front of the system.

3,528,342
PRESSURE RELIEF VALVE

David Simcock, Culcheth, near Warrington, England, assignor to Gullick Limited, Wigan, Lancashire, England, a British company
Filed Feb. 9, 1968, Ser. No. 704,321
Int. Cl. F16k *17/06*
U.S. Cl. 91—468 **12 Claims**

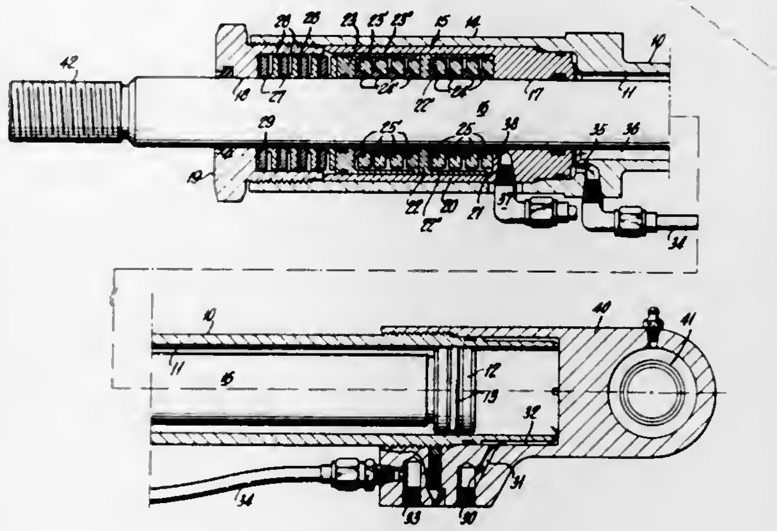
A pressure relief valve has a pressure-fluid flow passage through it and a valve closure member, for a fluid exit end of said passage, is urged thereagainst by a resilient diaphragm which acts on the valve closure member through a deformable body. The diaphragm may be of domed or concave form. The deformable body may be a substantially incompressible solid of such a character that it is not susceptible to temperature changes to the extent that such temperature changes will appreciably upset accurate setting of the valve. Rubber or a synthetic material of rubber-like character is one such solid. Means may be provided in said exit end of said passage to prevent the extrusion of the closure member thereinto. A



particular application of the valve is to a hydraulic mine roof support, the valve being connected in a pressure-fluid supply system for a hydraulic prop or props of the support so that hydraulic fluid is bled off from said prop when the load on the support becomes excessive.

3,528,343
HYDRAULIC CYLINDER AND PISTON LOCK

Walter A. Sherwood, Hempstead, New York, assignor to Lourdes Industries, Inc., Farmingdale, New York a corporation of New York
Continuation-in-part of application Ser. No. 776,490, Nov. 18, 1968. This application May 12, 1969, Ser. No. 823,824
Int. Cl. F15b *15/26;* **F16d** *65/24*
U.S. Cl. 92—28 **9 Claims**



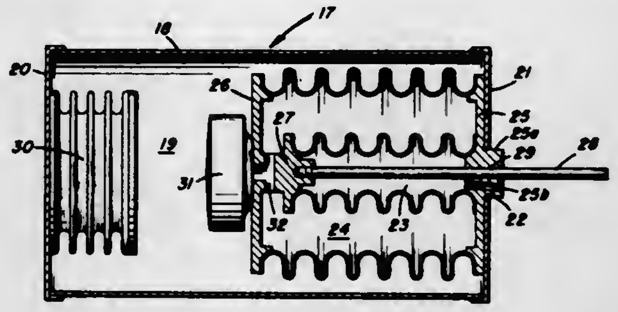
A hydraulic cylinder and piston designed to move a load to a desired position and to lock in that position until released, even though fluid pressure to the cylinder may be interrupted, the locking being effected by the frictional engagement of one or more collets with the piston rod under the influence of one or more spring-biased collet closure rings, with the added provision of one or more protective devices designed to prevent communication to the rings and collets of compressive loads in excess of a predetermined maximum.

3,528,344
PASSIVE DELAY TIMER

David W. Ravenhorst, Silver Spring, Maryland, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 23, 1968, Ser. No. 707,592
Int. Cl. F16j *3/00;* **F01b** *19/04*
U.S. Cl. 92—35 **4 Claims**

A passive delayed timing device, comprising fluid-containing chambers at standard atmospheric pressure, which, on exposure to a lower pressure environment such as the vacuum of outer space, performs work at a certain time after introduction into the lower pressure environment. The

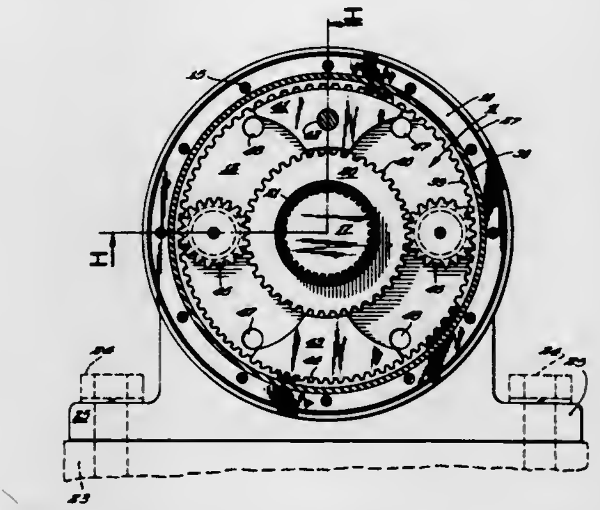
present invention is a pneumatic device capable of accurate timing cycles of over one year and which is operable on exposure to ambient low pressure regions, said low pressure exposure causing pressure differentials across a fluid-metering



device and activating the timing device without use of batteries, wiring, or other electrical components. The present invention lowers weight requirements and can easily be integrated into existing spacecraft systems.

3,528,345
LONG TRAVEL ROTARY ACTUATOR/DAMPER

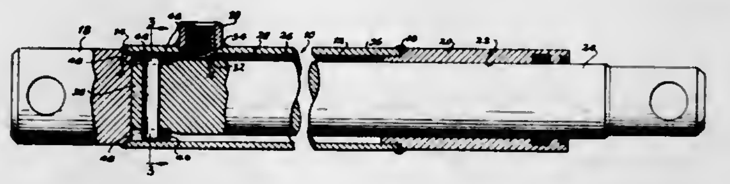
Rollin Douglas Rumsey, Buffalo, New York, assignor to Houdaille Industries Inc., Buffalo, New York a corporation of Michigan
Filed Feb. 12, 1968, Ser. No. 704,730
Int. Cl. F01c *9/00;* **F16j** *15/18*
U.S. Cl. 92—120 **8 Claims**



A rotary actuator/damper has within its working chamber one or more planet gears meshing with an internal ring gear on the housing and a sun gear on the rotary shaft, at least one abutment fixed with respect to the housing and ring gear and slidably cooperating with the sun gear, and fluid in the chamber controlling the planet gears.

3,528,346
HYDRAULIC CYLINDER

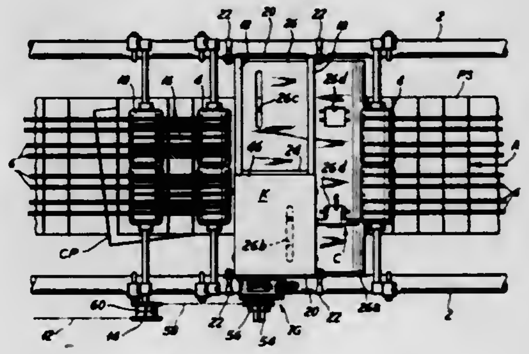
Patrick P. Lee, Tonawanda, New York, assignor, by mesne assignments, to Integrated Dynamics, Incorporated, Hartford, Connecticut, a corporation of Connecticut
Continuation-in-part of application Ser. No. 735,666, June 10, 1968. This application April 16, 1969, Ser. No. 816,691
Int. Cl. F01b *29/08*
U.S. Cl. 92—128 **9 Claims**



The piston of an hydraulic actuator is removable from its cylinder by withdrawing a pin through the fluid inlet for the cylinder. The pin engages behind a stop collar received on the inner end of the piston. The collar engages a stop shoulder on the cylinder, and is slidable from the piston upon removing the pin which fits loosely in an opening through the piston.

3,528,347
COUNTER-KICKER FOR NEWSPAPERS IN A LAPPED STREAM

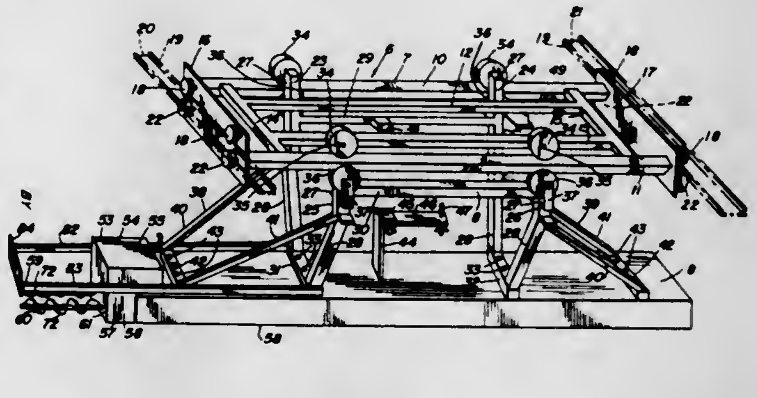
Robert C. Gutberlet, Milwaukee; Frederic E. Howdle, Wauwatosa and George D. Simonds, Marinette, Wisconsin, assignors to Cutler-Hammer, Inc., Milwaukee, Wisconsin a corporation of Delaware
Filed April 3, 1968, Ser. No. 718,494
Int. Cl. B65h *33/06*
U.S. Cl. 93—93 **9 Claims**



A mechanism is supported on a newspaper conveyor transversely of the paper stream. A solenoid operated pin is driven into the stream near one lateral edge to intercept the leading edge of a specified paper. The pin is then translated laterally outwardly of the stream transversely to the stream direction at a linear velocity equal to the stream velocity to arrest the forward travel of one corner of the paper and displace the paper angularly in the stream. The transverse movement of the pin is provided by a barrel cam driven through a single revolution clutch which is powered in synchronism with the conveyor. The operation is under the control of a counting system which, in response to adjustable set counts, electronically compensates for conveyor speed, distance between the counting and intercept points and solenoid operating times.

3,528,348
CONCRETE FINISHING MACHINES

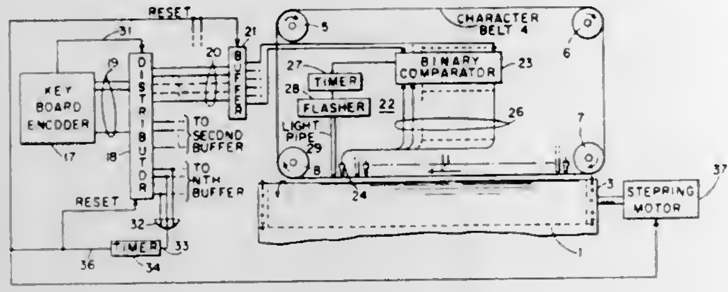
Murray A. Rowe, Canton, South Dakota; John E. Kessel, Canton, South Dakota; and Burnham C. Loveland, Canton, South Dakota, assignors to K&R Industries, Inc., Canton, South Dakota, a corporation of South Dakota
Filed Nov. 7, 1968, Ser. No. 774,078
Int. Cl. E01c *19/22*
U.S. Cl. 94—45 **10 Claims**



A concrete finishing machine embodying a concrete-spreading unit in the form of a float or strike-off, with conveyor mechanism at one end of the surfacing unit for keeping the end thereof free of piled up concrete.

3,528,349
PRINTER

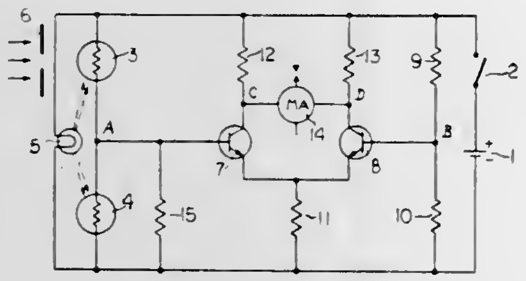
John Bragg, Sherborn, Massachusetts and Albert Eng, Brookline, Massachusetts, assignors to Itek Corporation, Lexington, Massachusetts a corporation of Delaware
Filed May 2, 1966, Ser. No. 547,030
Int. Cl. B41b *17/10*
U.S. Cl. 95—4.5 **13 Claims**



A photoelectric printer for printing the characters from a family having a large number of characters, such as the Japanese or Chinese alphabet. An elongated belt having one reproduction of each character thereon with a separate binary code for each character, located adjacent each character, is driven along a row of a photosensitive recording media. A plurality of printing lamps are positioned over the belt with one lamp located above each column of characters to be printed. Each printing lamp has a sensor for sensing the binary code on the belt as the belt is driven along the row of the photosensitive recording material. The binary code of each character to be printed in each column of the row is recorded beforehand in a buffer storage stage, and the output of each sensor is compared with the recorded code for each column. When the correct code is sensed for a column, the printing light is flashed and that character is printed on the photosensitive recording media. After the belt cycles once along the row, the recording media is then stepped to the next row where the printing process is repeated.

3,528,350
PHOTORESISTOR CIRCUIT FOR LIGHT MEASURING ARRANGEMENTS

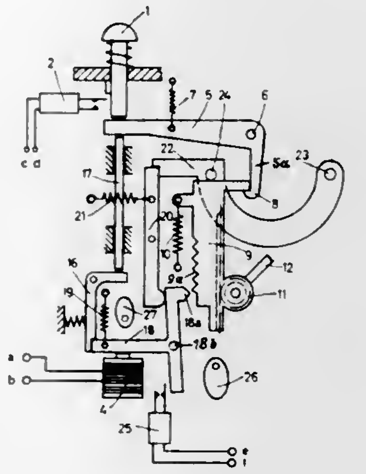
Helmut Schmitt, Hausen, Germany, assignor to P. Gossen & Co. GmbH., Erlangen, Bavaria, Germany
Filed Aug. 22, 1967, Ser. No. 662,482
Claims priority, application Germany, Aug. 24, 1966, G 47,741; July 27, 1967, G50,749
Int. Cl. G01j *1/44;* **G03b** *7/04*
U.S. Cl. 95—10 **12 Claims**



A photoresistor circuit for light measuring devices for use with photocameras in which a pair of photoresistors are connected in a voltage divider relationship across a source of potential and are under constant illumination by a light source. While one of the photoresistors is also illuminated by the light received from the object being photographed, whereby the time delay and light memory effects adversely accompanying the photoresistors are eliminated.

3,528,351
PHOTOGRAPHIC CAMERA WITH AUTOMATIC EXPOSURE ADJUSTMENT

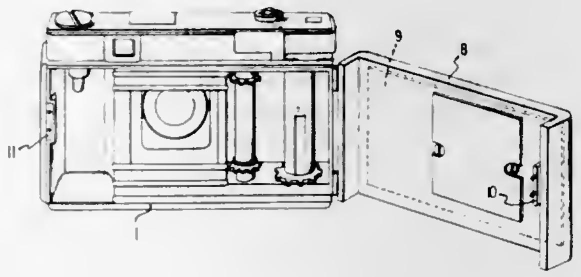
Karl-Heinz Köenig, Stuttgart, Germany, and Heinz Thiele, Leinfelden, near Stuttgart, Germany, assignors to Zeiss Ikon Aktiengesellschaft, Stuttgart, Germany a corporation of Germany
Filed June 24, 1968, Ser. No. 739,339
Claims priority, application Germany, June 29, 1967, Z 12,923
Int. Cl. G03b *7/08, 9/58*
U.S. Cl. 95—10 **4 Claims**



A photographic camera equipped with a photoelectric exposure meter employing a photo-resistance cell illuminated by light passing through the camera objective. A group of resistors stores all of the exposure factors, such as shutter speed, film speed necessary for making a correct exposure with one exception, for instance the diaphragm aperture, in an automatic exposure-determining mechanism or circuit, and the remaining exposure factor, for instance the diaphragm aperture, which is represented by a variable resistor which during its adjustment produces a balance between a constant resistance value ratio and the photo-resistance cell.

3,528,352
CAMERA WITH DETACHABLE SPEED LIGHT POWER SOURCE

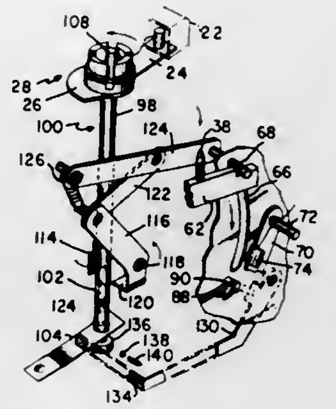
Yoshizo Ikegami, Hyogo, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed Jan. 31, 1968, Ser. No. 702,088
Claims priority, application Japan, Jan. 31, 1967, 42/6212
Int. Cl. G03b *19/00*
U.S. Cl. 95—11 **2 Claims**



An electrical cell detachably coupled to a camera body which acts as the power source for a detachable or integral camera speed light. The camera body is provided with a cover which carries a plate-shaped condenser. The plate-shaped condenser is operatively connected to the speed light.

3,528,353
PHOTOGRAPHIC APPARATUS

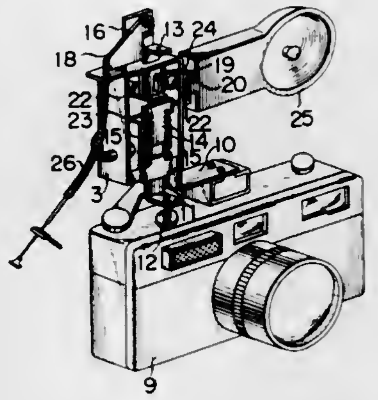
William T. Colville, Williamsport, Pennsylvania, assignor, by mesne assignments, to Eastman Kodak Company, Rochester, New York a corporation of New Jersey
Continuation of application Ser. No. 662,695, Aug. 23, 1967
This application Aug. 26, 1969, Ser. No. 854,026
Int. Cl. G03s *19/00*
U.S. Cl. 95—11 **4 Claims**



A photographic still camera having a rotatable multilamp unit with percussive-type flashlamps, a film advancing mechanism, a shutter release arm and a shutter. The multilamp unit is secured to a socket that is coupled to the film advancing mechanism. Also coupled to the film advancing mechanism is a mechanism for cocking a hammer which has a firing pin mounted thereon. When the shutter release arm of the camera is activated the hammer is released and the firing pin mounted thereon is permitted to engage the primer cup of a flashlamp at a firing station. The camera is also provided with a mechanism which is activated by the hammer during the firing stroke to trip the shutter. The camera also has a clutch mechanism to index the multilamp unit socket in response to the operation of the film winding mechanism. When the socket has been indexed, rotary motion caused by further actuation of film winding mechanism will not be transmitted to the socket through the clutch mechanism.

3,528,354
DEVICE FOR FLASHING A PHOTO-FLASH LAMP

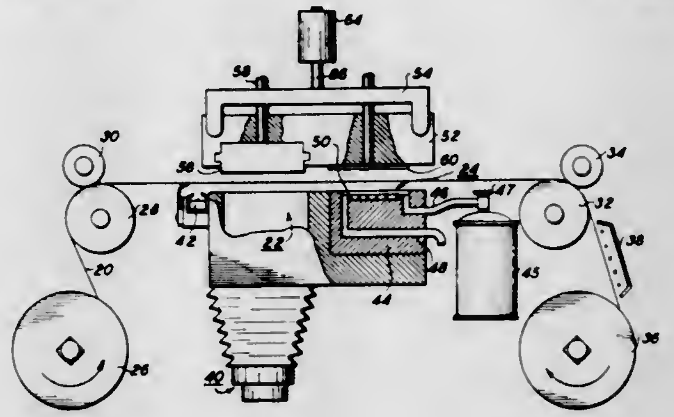
Hiroshi Nakagawa, Tokyo, Japan and Sizuyasu Yanagisawa, Tokyo, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan a corporation of Japan
Filed Jan. 26, 1968, Ser. No. 700,980
Claims priority, application Japan, Jan. 31, 1967, 42/5769
Int. Cl. G03b *9/70*
U.S. Cl. 95—11.5 **6 Claims**



A photo-flash lamp firing device utilizing a piezo electric element which includes an impact device interlocked with the shutter release button actuator for impacting the piezo-electric element to cause it to generate an impulse voltage synchronously with the releasing of the shutter of a camera. The impression of the high impulse voltage to the photo-flash lamp causes the flashing thereof. The impacting device and the shutter release actuator are slideably mounted to the frame of the firing device and are coupled together by a pin and slot connection.

3,528,355
CAMERA-PROCESSOR

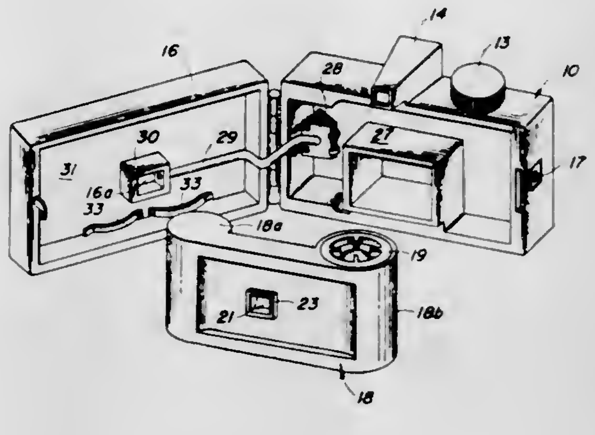
John Edward Blackert, Webster, New York, assignor to Xerox Corporation, Rochester, New York a corporation of New York
Filed Sept. 1, 1967, Ser. No. 665,048
Int. Cl. G03b *17/50*
U.S. Cl. 95—14 **25 Claims**



An apparatus for exposing and processing photosensitive films wherein the film is forwarded and indexed to an exposure station and then forwarded to a separate apertured processing chamber along the path of travel of the film. The film is situated so as to allow processing of one frame of previously exposed film, which is sealed against the aperture in the processing chamber, while at the same time exposing a subsequent frame of film. Also provided is a system to transport fluid to the processing chamber for contact with the sensitive side of the film to effect development. The apparatus is particularly useful for exposing and processing electrostatically charged photoelectrically sensitive film to achieve migration imaging.

3,528,356
PHOTOGRAPHIC CAMERA AND CARTRIDGE

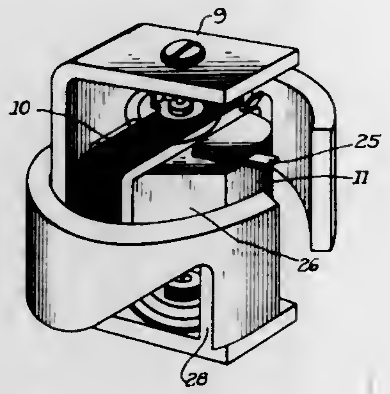
John H. Eagle, Rochester, New York, assignor to Eastman Kodak Company, Rochester, New York a corporation of New Jersey
Filed Aug. 25, 1966, Ser. No. 575,056
Int. Cl. G03b *1/52, 17/28*
U.S. Cl. 95—31 **13 Claims**



A camera includes a vacuum source with a vacuum-present indicator and a conduit interconnecting the source and a film cartridge receivable in the camera. The cartridge contains paper-backed film and a planar film support surface having open channels for transmitting the vacuum over the support surface. The backing paper has holes therethrough to transmit the vacuum from the support surface to the film.

3,528,357
AUTOMATIC EXPOSURE CONTROL FOR CAMERAS

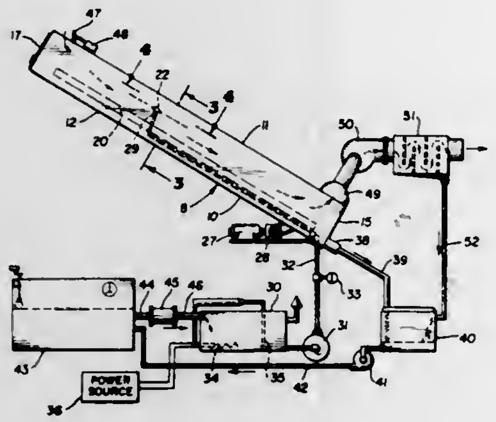
Wilhelm E. Bertram, Jr., Munich, Germany (2a Hans Corneliusstrasse, 8032 Munich-Graefelfing, Germany)
Filed Jan. 21, 1966, Ser. No. 522,188
Int. Cl. G03b *7/08, 19/18;* **G01r** *5/06*
U.S. Cl. 95—64 **4 Claims**



An improved galvanometer is provided with a relatively weak hairspring having a substantially linear torque characteristic and being coupled to a coil movable through a deflection range by a substantially linear electrical torque. The mechanical torque curve of the hairspring is balanced against the electrical torque curve of the coil to cause the coil to remain stationary at most points in the deflection range.

3,528,358
PRINTING PLATE PROCESSING APPARATUS

John E. Pickard, Selma, Indiana, assignor to Ball Corporation, Muncie, Indiana a corporation of Indiana
Filed April 19, 1966, Ser. No. 543,675
Int. Cl. G03d *3/06*
U.S. Cl. 95—89 **14 Claims**



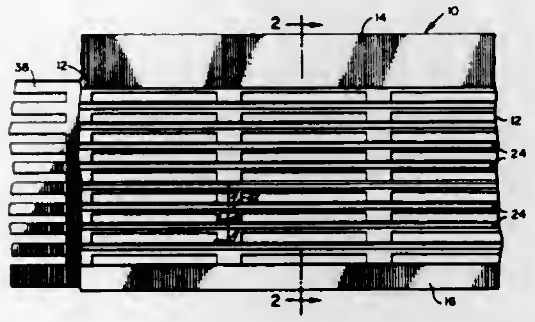
Apparatus for developing and desensitizing lithographic plates having latent images in the form of a polymer coating of varying solubilities in differing areas. The apparatus includes a support element to maintain the plate at an angle of at least 30° to the horizontal, spray heads for dispersing a developer solvent or desensitizer solution, a dryer for drying the plate, and a solvent-cleaning device preferably in the form of a still to clean the solvent after use and prepare it for reuse.

ERRATUM

For Class 95—93 see:
Patent No. 3,528,760

3,528,359
LOUVERED VALVE

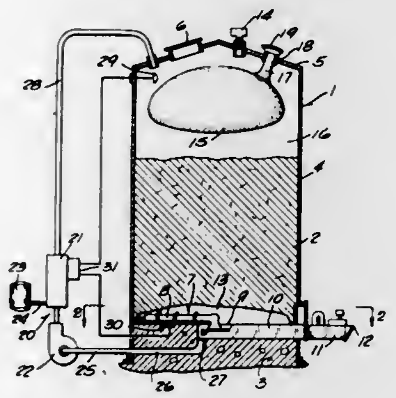
Robert H. Sand, Canton, Connecticut, assignor to The Vulcan Radiator Company, Hartford, Connecticut a corporation of Connecticut
Filed May 19, 1969, Ser. No. 825,646
Int. Cl. F24f *13/06*
U.S. Cl. 98—103 **6 Claims**



A slide valve is disclosed for use in an elongated enclosure, and has a fixed valve body with side portions for receiving panels or other sections of the enclosure. The valve body includes elongated louvers connected to one another in a single extrusion by integral web portions, which web portions have a pattern of apertures therein. A flat valve element has a corresponding pattern of apertures, and is slidable laterally in the valve body between maximum and minimum flow condition positions. The side edges of the flat valve element are slidably received in opposed grooves in the side portions of the valve body just below the web portions thereof. Manually operated means is also provided for pre-positioning the valve element from outside the enclosure.

3,528,360
SEALED STORAGE STRUCTURE INCORPORATING A CATALYTIC BURNER ATMOSPHERE GENERATOR

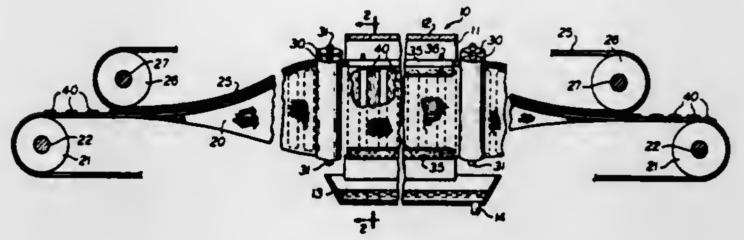
Leonard E. Broberg, Milwaukee, Wisconsin, assignor to A. O. Smith Harvestore Products, Inc., Arlington Heights, Illinois a corporation of Delaware
Filed Nov. 19, 1968, Ser. No. 776,987
Int. Cl. A01f *25/16*
U.S. Cl. 99—235 **7 Claims**



The invention relates to a sealed storage structure for storing a perishable material such as silage. An atmosphere control apparatus is provided for rapidly reducing the oxygen content in the structure. The control apparatus includes a catalytic reactor located on the outside of the structure, and when the oxygen content in the structure increases beyond a predetermined value, a circulating system draws gas from the structure to the reactor and returns the gas to the structure in a condition of reduced oxygen concentration.

3,528,361
BACON BROILING APPARATUS

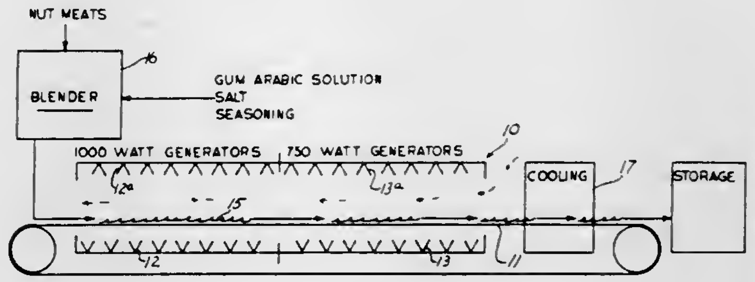
Wayne P. Le Van, 310 East 44th St., New York, New York
Filed Nov. 25, 1964, Ser. No. 413,846
Int. Cl. A47j *37/00*
U.S. Cl. 99—349 **7 Claims**



An apparatus for broiling strips of bacon and the like is disclosed in which the strips are loaded on and unloaded from a moving conveyor while the latter has a substantially horizontal orientation, and are transported through a broiling oven with at least a terminal portion of each strip disposed nearly vertical or in either a 1 o'clock or 11 o'clock position. Thereby, the strips may be heated on both surfaces, as by infrared heating means, while passing through the oven, and the melted fat readily drips off the strips.

3,528,362
INFRARED OVEN FOR ROASTING

Fred W. Arnold, Jr., Eastman, Georgia, assignor to Pet Incorporated, St. Louis, Missouri a corporation of Delaware
Original application March 15, 1965, Ser. No. 439,689, now Patent No. 3,383,220, dated May 14, 1968. Divided and this application April 25, 1968, Ser. No. 749,228
Int. Cl. A47j *37/00*
U.S. Cl. 99—357 **9 Claims**

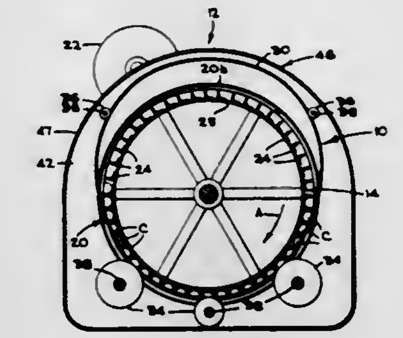


A nut roaster includes an endless wire mesh belt having a conveying pass which extends through a chamber. The chamber contains reflectors which face each side of the conveying pass and infra red heaters which are positioned adjacent to the reflectors for heating the nuts on the conveying pass. An airstream is drawn through the chamber along the conveying pass.

3,528,363
CONTAINER HANDLING APPARATUS

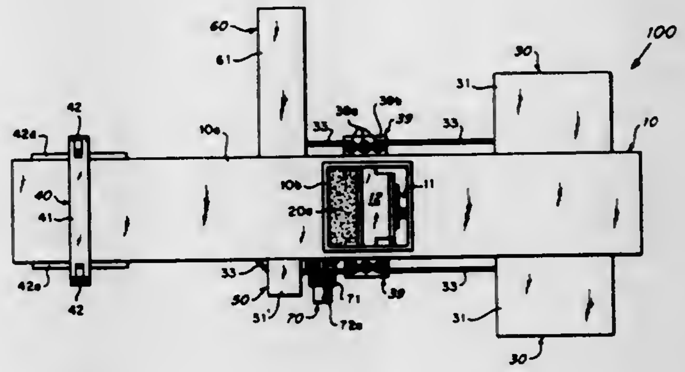
Sherman H. Creed, San Jose, California, assignor to FMC Corporation, San Jose, California a corporation of Delaware
Filed Aug. 22, 1968, Ser. No. 754,632
Int. Cl. A23l *3/00;* **B65g** *29/00*
U.S. Cl. 99—365 **8 Claims**

A reel and spiral cooker having a reel supporting mechanism in the form of an endless flexible band disposed intermediate the ends of the cooker to prevent excessive deflection of the reel at its longitudinal midpoint and to permit use of reels that are more than twice as long as reels supported only at their ends.



3,528,364
BALE TYING METHOD AND APPARATUS

William G. Freund, Bordentown, New Jersey, assignor to Munro Systems Corporation, Huntingdon Valley, Pennsylvania a corporation of Pennsylvania
Filed July 25, 1968, Ser. No. 747,571
Int. Cl. B65b *13/28*
U.S. Cl. 100—3 **13 Claims**

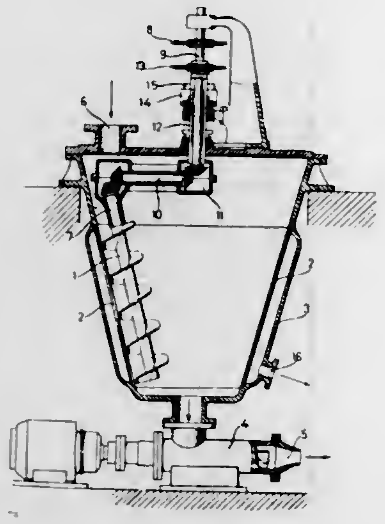


A method and apparatus for use with a baling machine for automatically tying bales of compressed shredded material formed by the baling machine. Spools of wire are provided on each side of the baling machine and the wire runs from a spool on one side to a corresponding spool on the other. A wire carrier carries a plurality of strands of wire through ports in the baling machine ram across the face of the ram. A twisting mechanism twists together the wire on side of the bale and the wire carried across from the other side of the bale to form two twisted ties. A cutting mechanism cuts the wire between the ties. The wire carrier returns to its original position.

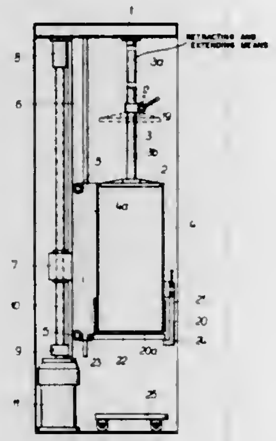
3,528,365
PROCESS FOR MECHANICALLY AFTER-DEHUMIDIFYING AND FURTHER TREATING FILTER PRESS CAKES OF PIGMENT OR DISPERSION DYES

Karl-Hermann List Frankfurt am Main, Germany, and Gerhard Noltner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius and Bruning, Frankfurt am Main, Germany a corporation of Germany
Original application Feb. 1, 1966, Ser. No. 524,117, now Patent No. 3,460,681, dated Aug. 12, 1969. Divided and this application March 3, 1969, Ser. No. 822,777
Int. Cl. B30b *9/14*
U.S. Cl. 100—37 **1 Claim**

A process is provided for mechanically after-dehumidifying filter press cakes of pigment or dispersion dyes. This involves the steps of converting a stiff dyestuff mass to a pasty-liquid state with the help of a kneader, shifting the mass, while kneading continuously, on a filter layer about 0.5 to 8 millimeters thick built up of the same dyestuff mass, stripping off each unit area about 8 to 25 times per minute and filtering under pneumatic pressure. The kneading, shifting and stripping off motion is then reduced to a value of about one-fifth to about one-twentieth of the initial speed, filtering being continued until no more liquid flows off the mass, which becomes stiffer and stiffer. This sequence of steps is repeated until no more liquid flows off the mass even immediately after the latter has been reconverted to a pasty-liquid state.

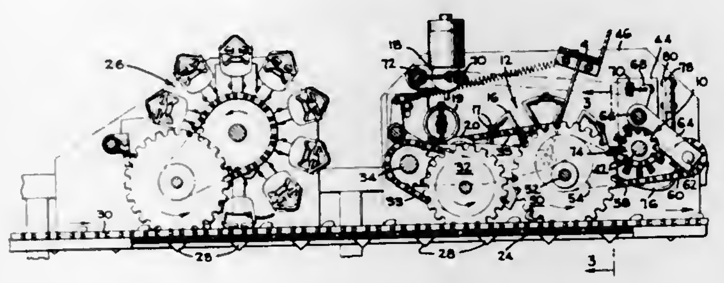


3,528,366
APPARATUS FOR COMPRESSING AND PACKING RUBBISH
Klaus Neuenburg, Duisburg, Germany and Heinz Born, Duisburg, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany
Filed April 25, 1968, Ser. No. 724,203
Claims priority, application Germany, April 26, 1967, D52927
Int. Cl. B30b *15/32*
U.S. Cl. 100—218 **9 Claims**



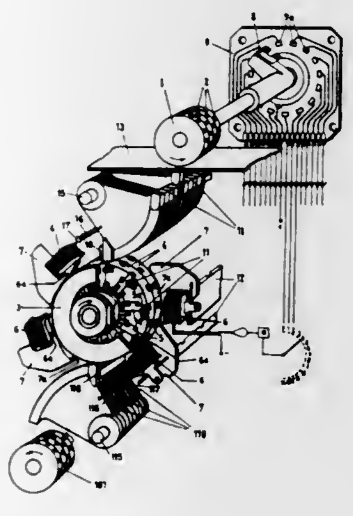
Apparatus for compressing and packing rubbish is formed of an open-ended container with a stationary head in one end and a removable cover member in the other end. For charging rubbish into the container, the head is displaceable into a retracted position, and after it is replaced in the container, the container is moved relative to the head for compressing the rubbish. A bag is attached to the other end of the container with its end located inwardly of the cover member. When the cover member is removed, the compressed rubbish is removable in the bag.

3,528,367
NEEDLE CLEANING BRUSH
Harold J. Mumma, Riverside, California, and Arthur F. Kalmar, Riverside, California, assignors to FMC Corporation, San Jose, California, a corporation of Delaware
Original application June 13, 1967, Ser. No. 645,799. Divided and this application Oct. 23, 1967, Ser. No. 677,161
Int. Cl. B44b *5/00*
U.S. Cl. 101—26 **5 Claims**



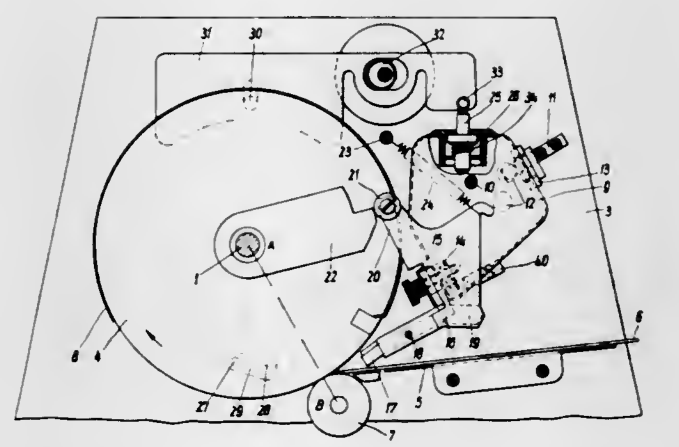
A rotary brush is used to clean a rotary fruit marking wheel which has a plurality of marking needles projecting radially from the periphery thereof with the brush being mounted for tangential engagement with the wheel. The brush is driven by a conveyor chain which, in turn, is driven by an eccentrically mounted sprocket so that the brush will be moved at tangential speeds sometimes slower and sometimes faster than the constant tangential speed of the wheel whereby the needles will be alternately brushed in both directions for a thorough cleaning.

3,528,368
DEVICE FOR INITIATION OF THE PRINTING ACTION ON A HIGH-SPEED PRINTER
Max Oberholzer, Liebefeld, near Bern, Switzerland; Robert Locher Schonbuhl, Switzerland; and Heinz Brechbühl, Bern, Switzerland, assignors to Hasler A. G., Bern, Switzerland, a company of Switzerland
Filed Jan. 17, 1968, Ser. No. 698,481
Claims priority, application Switzerland, Jan. 19, 1967, 750/67
Int. Cl. B41j *9/14, 9/16*
U.S. Cl. 101—93 **6 Claims**



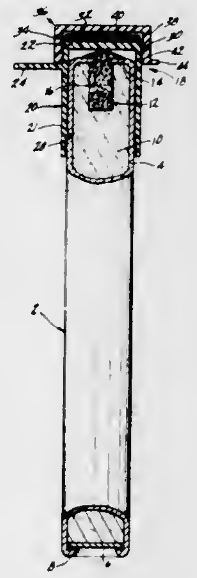
A high speed printer including a rotating type drum, a plurality of strikers arranged to press, when actuated, a recording medium against a character on the periphery of the type drum, and actuating means for actuating selected strikers and including a cam drum having cams selectively movable between an active and an inactive position to actuate in the active position a selected striker.

3,528,369
MOISTENING ARRANGEMENT FOR DUPLICATING MACHINES
Gerhard Ritzerfeld, 14 Schorlemer Allee, 33 Berlin-Dahlem, Germany
Filed April 5, 1968, Ser. No. 719,142
Claims priority, application Germany, April 11, 1967, R 45,729
Int. Cl. B41f *7/32;* **B41l** *7/08*
U.S. Cl. 101—132.5 **9 Claims**



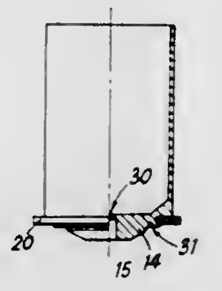
The absorbent applicator felt pad of the moistening device of a duplicating machine remains in contact with another absorbent felt pad, which receives liquid from a container, in the inoperative as well as in the operative moistening position of the moistening device so that the liquid flows from the container through both absorbent felt pads onto the copy sheet which is being supplied to the printing means of the machine.

3,528,370
FUSEE HAVING A NO-ROLL DEVICE
Norman Gaither, Morgan Hill, California and Perry K. Spangler, Morgan Hill, California, assignors to Olin Corporation, a corporation of Virginia
Filed Jan. 10, 1968, Ser. No. 696,746
Int. Cl. C06d *1/10*
U.S. Cl. 102—37.8 **6 Claims**



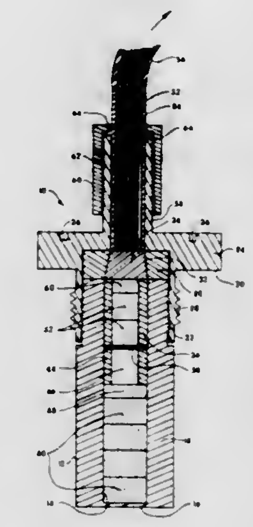
A fusee cap including a tubular sheath having a scratch mix thereon and covered with a lid. A post-like projection extends from the tubular sheath in a direction substantially perpendicular to the axis thereof to provide a no-roll feature.

3,528,371
MANUFACTURE OF CARTRIDGES
Bryan Hedley Hook, Hackhurst Lane, Lower Dicker, Hailsham, Sussex, England
Filed Jan. 19, 1968, Ser. No. 699,082
Int. Cl. F42b *9/28*
U.S. Cl. 102—43 **4 Claims**



A rimmed or rimless cartridge case and the method of making the same which consists essentially in making, for each type, a standard shell on the one hand and as many different forms of annuli as are necessary for various uses or customers' requirements on the other hand, the saleable cartridge case being completed by simultaneously securing the rim (for the rimmed cartridge case) or the head (for the rimless cartridge case) to said shell and ringing the primer or percussion cap.

3,528,372
EXPLOSIVE DETONATING DEVICE
Donald J. Lewis, Marina Del Rey and Frank H. Gardner, Huntington Beach, California, assignors to Space Ordnance Systems, Inc., El Segundo, California a corporation of California
Filed Sept. 8, 1967, Ser. No. 666,365
Int. Cl. F42c *19/00*
U.S. Cl. 102—70.2 **4 Claims**



The invention relates to an explosive detonating device adapted to be initiated by a sufficient amount of laser energy in the form of coherent infra-red light applied by means of stranded fiber optics through a small shielded glass window to a first consolidated charge of relatively insensitive high explosive in a cup having a thin metallic bottom, the infra-red light igniting the charge which deflagrates at progressively increasing burning rates with accompanying high pressures and temperatures. The thin bottom then fractures and the metallic fragments are propelled at high velocities through a metal sleeve, which acts as a gun barrel for impacting the fragments upon the surface of a second consolidated charge of relatively insensitive high explosive charge at velocities sufficient to cause it to detonate, which in turn sets off the main charge.

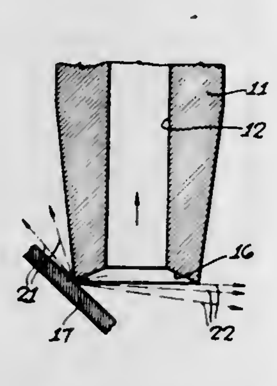
3,528,373
FLASH PRODUCING PROJECTILE

Benoit Jean, James A. Park, Ottawa, Ontario, Canada; and George P. T. Wilenius, Pottersville, New Jersey, assignors to Computing Devices of Canada Limited, Ottawa, Ontario, Canada

Continuation-in-part of application Ser. No. 744,010, July 11, 1968, which is a continuation-in-part of application Ser. No. 623,961, March 17, 1967. This application Sept. 11, 1969, Ser. No. 857,074

Int. Cl. F42b *13/36, 11/18*

U.S. Cl. 102—87 **7 Claims**



A projectile having a central longitudinally extending passageway and a recess at the nose end of the projectile joining the passageway. The recess has a surface inclined inwardly and rearwardly towards the central passageway so that, upon impact on a target, a spray of projectile material and/or target material is directed into and along the central passageway to exit at the rear of the passageway. The fragments in the spray interact with one another and with the atmosphere to generate light. Because the recess and central passageway concentrate the spray and the interaction, the light generated is enhanced.

3,528,374
RAILWAY TRUCK RESILIENTLY INTERCONNECTED AXLE BOXES

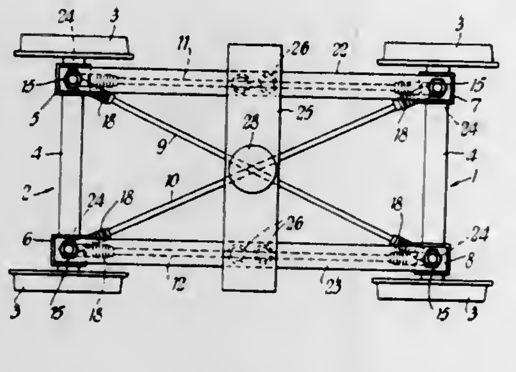
Alan Herbert Wickens, Duffield, England, assignor to British Railways Board, London, England

Filed Jan. 31, 1968, Ser. No. 701,975

Claims priority, application Great Britain, Feb. 3, 1967, 5,371/67

Int. Cl. B61f *5/00, 5/30, 5/41*

U.S. Cl. 105—182 **15 Claims**



A railway vehicle or a bogie thereof having at least two wheel-sets, each with a live axle mounted at each of its ends in a respective axle bearing, the two axle bearings of one wheel-set each being elastically interconnected either by mechanical or fluid linkages with both axle bearings of the other wheel-set to provide bracing therebetween, and the vehicle body being supported on the wheel-sets in a manner offering substantially no restraint to horizontal rotation of the vehicle body relative to the wheel-sets.

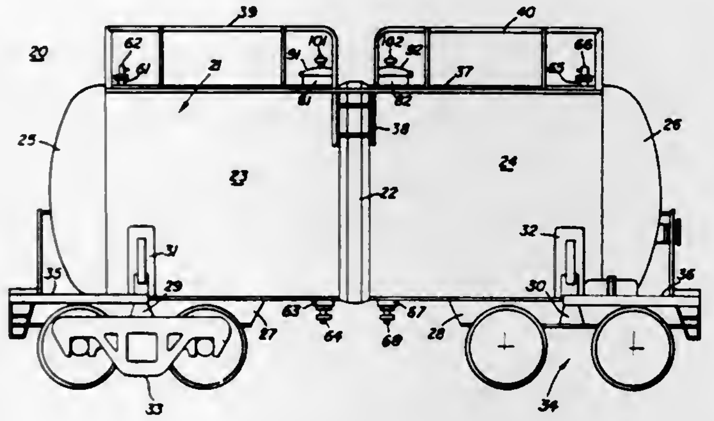
3,528,375
RAILWAY TANK CAR BODIES

George Trausch, Masury, Ohio, assignor to General American Transportation Corporation, Chicago, Illinois a corporation of New York

Filed May 2, 1967, Ser. No. 635,581

Int. Cl. B61d *5/00, 5/02*

U.S. Cl. 105—358 **9 Claims**



A railway tank car body adapted to contain at different times two non-compatible liquid ladings; a liquid-impervious flexible diaphragm of cup-shaped form arranged within the body, and sealed thereto around the peripheral thereof to divide the interior of the body into complementary liquid lading compartments respectively disposed on opposite sides of the diaphragm, the diaphragm being readily reversible upon itself and thus selectively movable between first and second positions within and in contact with the body to minimize the volume of a first of the liquid lading compartments and to maximize the volume of a second of the liquid lading compartments, first and second inlet connectors communicating respectively with the liquid lading compartments, and first and second outlet connectors communicating respectively with the liquid lading compartments.

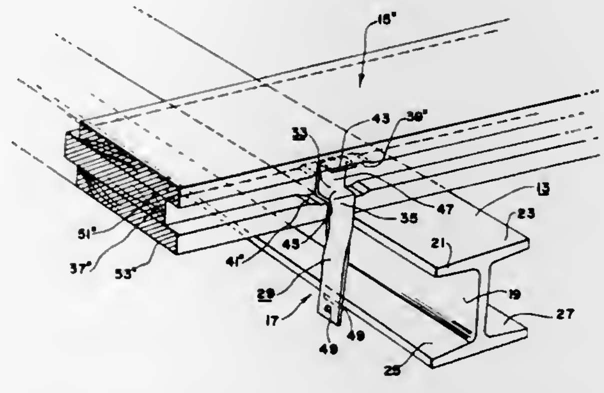
3,528,376
TIE MEANS FOR RAILROAD FREIGHT CAR DECKING

Albert B. Curtis, Jr., 3088 Fairborn, Memphis, Tennessee

Filed April 2, 1968, Ser. No. 718,134

Int. Cl. E61d *17/10*

U.S. Cl. 105—422 **11 Claims**



Basically includes clip-like tie member means adapted to fasten tongue and groove rail car deck planks on the rail car deck plank supporting stringers. This patent disclosure illustrating and describing various embodiments of the invention. The clip-like tie members each are adapted to secure the typical tongue and groove rail car planking, with but slight modification to the tongue or groove parts of the existing planking.

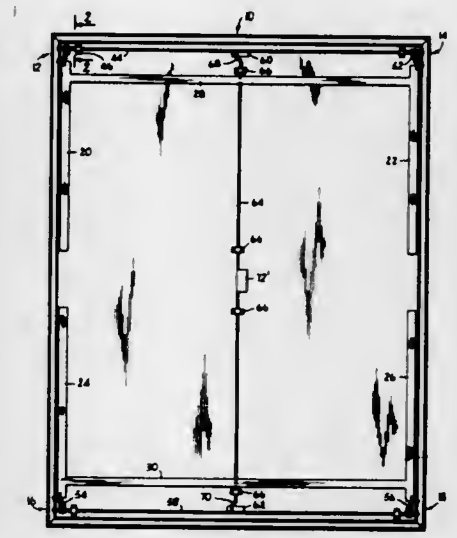
3,528,377
FOLDING-LEG TABLE WITH MEANS TO LATCH LEGS IN EXTENDED POSITION

William P. De Saussure, Englewood, New Jersey, assignor to De Saussure Equipment Company, Inc., Maywood, New Jersey a corporation of New Jersey

Filed Aug. 6, 1968, Ser. No. 750,631

Int. Cl. A47b *3/08*

U.S. Cl. 108—129 **2 Claims**



A folding-leg table has a latching member for each leg engageable in a slot formed in the leg to latch the leg in an extended position. Each latching member is mounted loosely on a rotatable shaft, and a spring biases each latching member towards the latching position. Each latching member is formed with a cam surface engageable with the associated leg during movement by the leg from the folded position to the extended position, so that the latching members are forced away from the latching position by the legs during such movement but snap into the latching position when the legs are fully extended. The surface of each latching member engaging the associated leg is inclined to a reference line at an angle *a* to improve the latching function. The shaft supports release arms which, when the shaft is rotated, move the associated latching members away from the latching position to permit the legs to be folded.

3,528,378
MACHINE FOR SEWING POCKETS ON GARMENTS

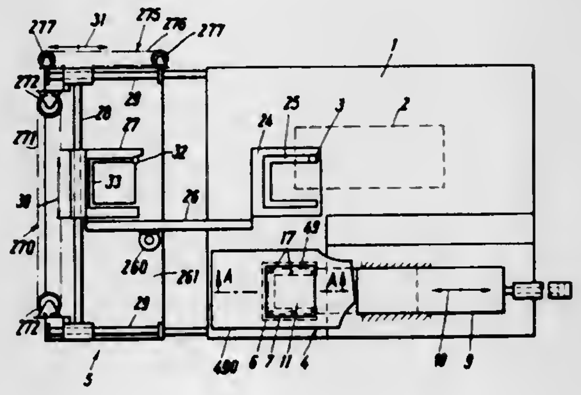
Hermann Westhoff, Rueckertstrasse 74, Osnabrueck, and Manfred Brokmann, Rehmstrasse 58, Osnabrueck, Germany

Filed April 11, 1968, Ser. No. 720,631

Claims priority, application Germany, April 14, 1967, T 22,390; March 1, 1968, T 23,814

Int. Cl. D05b *21/00*

U.S. Cl. 112—121.15 **21 Claims**



A machine for sewing pockets on garments. The machine has a support with an upwardly directed working surface which is substantially horizontal, and at this support there is a sewing station as well as a preparing station which is adjacent the sewing station. At the preparing station there is a positioning means for positioning a pocket member with respect to the garment with the edges of the pocket member turned inwardly so as to be situated between the remainder of the pocket member and the garment, this positioning means also serving to hold the pocket member positioned with respect to the garment. A transporting means transports the garment and pocket member, thus-positioned therewith, from the preparing station to the sewing station. At the sewing station is a sewing means for sewing the pocket member to the garment along a seam which extends through the inwardly turned edges of the pocket member.

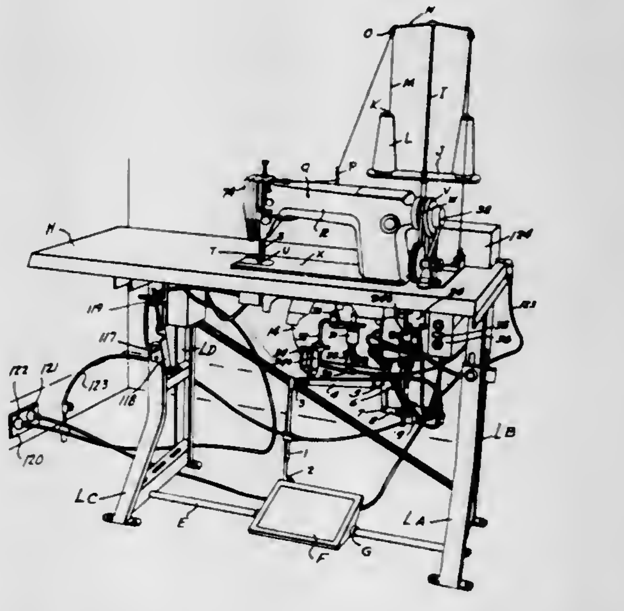
3,528,379
AUTOMATIC CONTROL AND THREAD CUTTER FOR SEWING MACHINES

Robert F. Miller, 128 W. Clearview Drive, Camp Hill, Pennsylvania and Roy E. Miller, 1301 Stuart Street, Mechanicsburg, Pennsylvania

Continuation-in-part of application Ser. No. 432,721, Feb. 15, 1965. This application April 19, 1968, Ser. No. 725,579

Int. Cl. D05b *69/00*

U.S. Cl. 112—219 **14 Claims**



The present attachment for sewing machines automatically positions the needle, raises and lowers the pressure foot, properly tensions the sewing thread, and severs said sewing thread and includes a control for starting, speeding up, slowing down, or stopping the operation of the sewing machine. The attachment also permits the operator thereof to put a plurality of stiches or single stitch at a time into the workpiece before automatically severing the thread therefrom and also provides means for automatically positioning the needle in its top position or lowermost position as well as means for stopping the sewing machine when the needle is in its up position opening said positioning means so that the operator can down position the needle and lift the pressure foot for turning the workpiece around the needle.

3,528,380
TRIMARAN WITH SPRUNG CENTER HULL SECTION

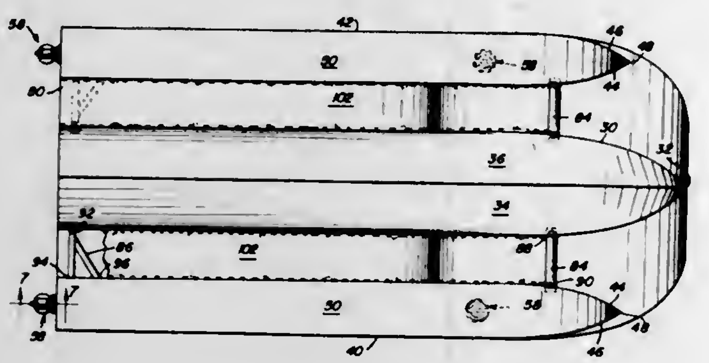
John V. Yost, 2233 Riverside Drive, Trenton, Michigan

Continuation-in-part of application Ser. No. 604,763, Dec. 27, 1966, now Pat. No. 3,401,663, dated Sept. 17, 1968, which is a continuation-in-part of application Ser. No. 519,618, Jan. 10, 1966, now Pat. No. 3,326,166, dated June 20, 1967. This application June 6, 1968, Ser. No. 735,079

Int. Cl. B63b *1/18*

U.S. Cl. 114—66.5 **10 Claims**

A boat construction comprising a hull assembly having a depending longitudinally extending and centrally disposed hull portion of the displacement and planing type. The center hull portion depends downwardly from the remainder of the hull assembly and the latter includes a pair of opposite side pontoon-like hull members disposed on opposite sides of the center hull member. The opposite side hull members are supported from the center hull member by means of radius arms projecting inwardly from the front and rear ends of each opposite side hull member and pivotally secured to opposing portions of the center hull member for rotation about horizontal longitudinal axes, there being means provided and interconnected between the center hull member and the opposite side hull members defining limits of downward movement of the side hull members relative to the center hull member and yieldingly urging the side hull members toward their lowermost positions and also flexible spray shield and planing surface panel members secured between the innermost marginal edge portions of the planing surfaces of the side hull members and the adjacent outer marginal edge portions of the center hull member.



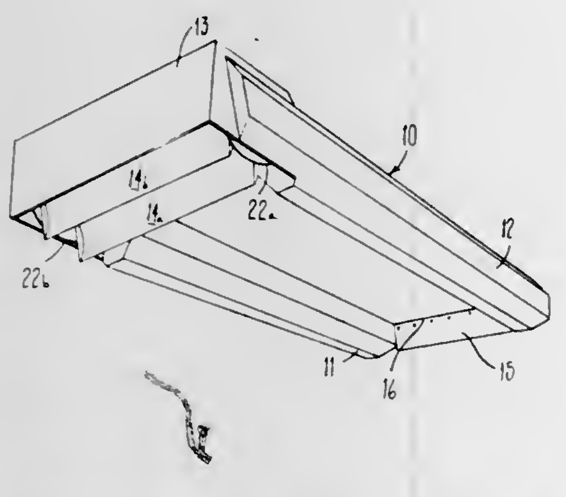
3,528,381
AQUATIC VEHICLES

Wyly Kenneth Crowder, 3255 Wyndcroft Drive, Pontiac, Michigan

Filed Sept. 26, 1968, Ser. No. 762,687

Int. Cl. B63b *1/34*

U.S. Cl. 114—67 **7 Claims**



An aquatic vehicle involving a new principle of water propulsion, employing a paddle wheel assembly driven by a pressure supplied by pneumatic or hydraulic means to effect propelling action. This action is achieved by containing the air positively beneath the vehicle, during the driving action at a substantially reduced power expenditure.

3,528,382
PROPULSIVE SYSTEMS FOR VESSELS

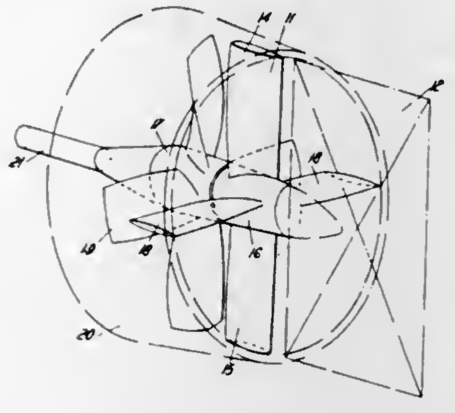
Ronald Clark, Basingstoke, England, and Ewan Christian Brew Corlett, Basingstoke, England, assignors to Hydroconic Limited, Basingstoke, Hampshire, England, a British company

Original application Nov. 28, 1966, Ser. No. 597,283. Divided and this application Aug. 29, 1968, Ser. No. 756,105

Int. Cl. B63h *25/06, 5/16*

U.S. Cl. 114—162 **6 Claims**

A propulsive device for a marine vessel, comprising a screw propeller in combination with a contra-stator having arms or blades that straighten out, at least in part, the screw race produced in the water by the propeller and thereby convert at least some of the rotational energy of the screw race into propulsive effort.



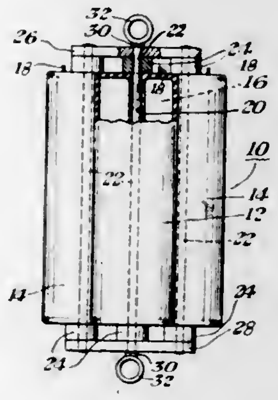
3,528,383
BOAT FENDERS

Karl L. Fetters, 2 Oak Drive, Poland, Ohio

Filed March 8, 1968, Ser. No. 711,616

Int. Cl. B63b *59/02*

U.S. Cl. 114—220 **12 Claims**



I disclose an improved fender or bumper for protecting boats and similar vessels from contact with pilings, locks or the like or while at dock, approaching a dock or wharf or when two or more vessels are moored together. My invention includes a number of bracket members holding at least two rotatable bumpers in contact with the boat and at least one additional rotatable bumper spaced therefrom for contact with another boat or with a dock or other stationary structure.

3,528,384
VISUAL INDICATOR FOR FLUID OPERATED SYSTEM

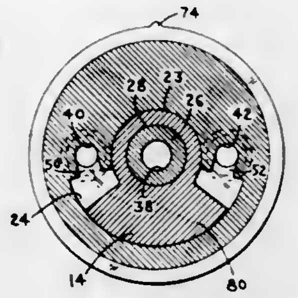
Walter L. Lechner, New Providence, New Jersey, assignor to Worthington Corporation, Harrison, New Jersey, a corporation of Delaware

Continuation-in-part of application Ser. No. 737,627, June 17, 1968. This application Nov. 7, 1968, Ser. No. 778,376

Int. Cl. G01f *15/00*

U.S. Cl. 116—117 **7 Claims**

A visual indicator for indicating the occurrence of fluid flow in two fluid flow lines. The indicator is a three-piece construction which includes a rotatable indicating element which is inherently self centering and supported by point contact at one end of the element and line contact at another area of the element. Inlet ducts in the base of the device maximize the torque exerted on the indicating element by the fluid flowing in the fluid flow lines.



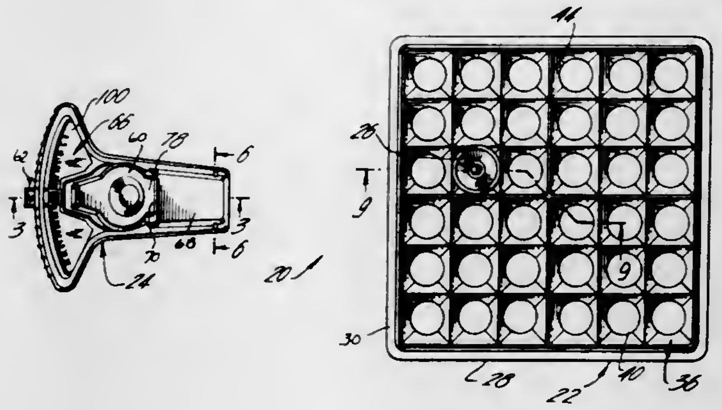
3,528,385
GAME WITH CATAPULT LAUNCHER AND TARGET GRID

Frank Kohner, New York, New York and Albert Stubbman, Franklin Lakes, New Jersey, assignors to Kohner Bros., Inc., East Paterson, Jew Jersey, a corporation of New York

Original application Oct. 25, 1967, Ser. No. 678,076. Divided Divided and this application Jan. 29, 1969, Ser. No. 794,997 794,997

Int. Cl. G09f *9/00*

U.S. Cl. 116—121 **3 Claims**



A game constituting a target grid, projectiles and a catapult launcher, wherein the target grid is composed of an array of columns and rows of abutting perforated square inverted pyramidal seats the bases of which lie in a common horizontal plane, the seats being subdivided into differently colored areas for selective target objectives, wherein the projectiles are cones with weighted balls frictionally held interiorly of the noses of the cones and different projectiles are differently colored for intended reception in areas of matching color in the target grid, and wherein the catapult launcher is a base with a spring actuated launching lever pivotally connected thereto by a locked wishbone fulcrum, the base being provided with a scoring marker that is slidably captive on the base along a row of scoring graduations.

3,528,386
APPARATUS FOR DISPENSING PARTICULATE MATERIAL ONTO MOVING MEMBERS

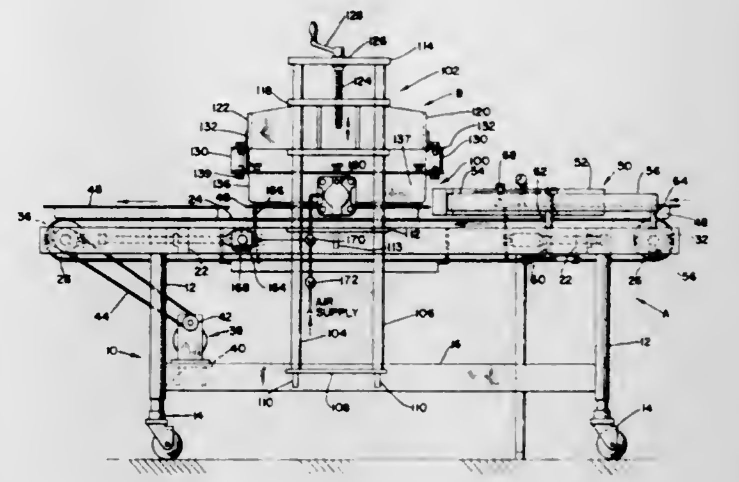
Richard L. Morine, c/o Food Equipment Dev. Corporation, 8202 Concord Drive, Mentor, Ohio

Filed Oct. 9, 1968, Ser. No. 766,122

Int. Cl. B05c *11/00*

U.S. Cl. 118—7 **7 Claims**

Apparatus for dispensing particulate material in a predetermined pattern onto a subjacent surface. The apparatus includes a frame which resiliently supports a material holding hopper with its bottom wall above and facing the subjacent surface. The bottom wall of the hopper is open in the predetermined pattern and a reticulated means, preferably wire mesh, is connected across the open pattern. The openings in the reticulated means are sized so as to be only slightly larger than the average maximum cross-section of the material particles. Additionally, selectively actuable power means are arranged to impart a relatively high frequency, short amplitude vibration to the hopper. The openings in the mesh are selected so that the material will not pass through the mesh until the hopper is vibrated. This, in effect, provides a valving action without the complexity and limitations inherent in standard valve structures.



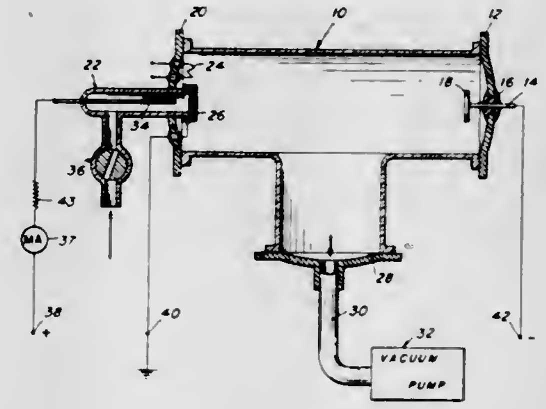
3,528,387
ION CLEANING AND VAPOR DEPOSITION

Harold J. Hamilton, Sylmar, California, assignor to Singer-General Precision, Inc., a corporation of Delaware

Continuation of application Ser. No. 352,456, Mar. 17, 1964. This application May 24, 1968, Ser. No. 740.803

Int. Cl. C23c *13/12*

U.S. Cl. 118—49.1 **2 Claims**



Vacuum deposition apparatus for operation at low deposition pressures contains an ion gun in a separate chamber maintained at a higher pressure required for the production of a glow discharge. The ion gun is supplied with an inert gas to maintain its pressure and the ions are emitted into the deposition vacuum chamber through a small port generally aligned toward the substrate. The ions are used to bombard the substrate to clean its surface prior to deposition, or may bombard the substrate during or after the deposition step to improve adherence of the deposited film on the substrate.

3,528,388
PAINT SHIELD

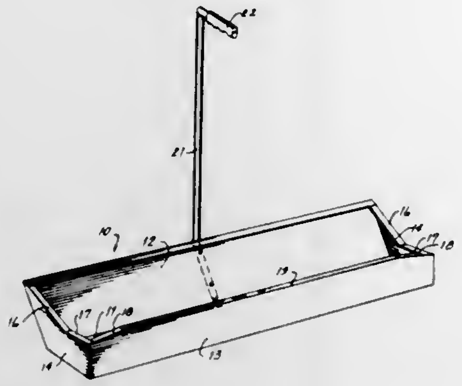
Berton P. McLain, 3659 Rolando Drive, Palm Harbor, Florida

Filed June 25, 1968, Ser. No. 739,729

Int. Cl. B05c *11/16*

U.S. Cl. 118—504 **3 Claims**

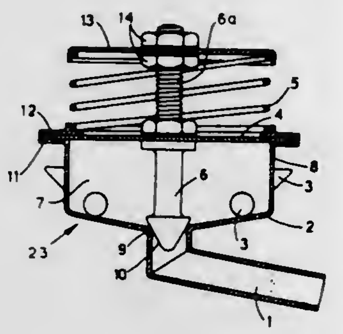
A paint shield for preventing spattering of and even catching of paint when a roof is being painted consisting of a tray-like receptable body with a front wall adapted to acquaint the roof eave, and side walls and a back wall to pro-



vide maximum protection, the entire shield being easily manipulated by one hand.

3,528,389
VACUUM MILKING SYSTEM

Sigismund Flöter, Horst in Holstein, Germany, assignor to Alfa-Laval AB, Tumba, Sweden a corporation of Sweden
Filed May 31, 1967, Ser. No. 642,457
Claims priority, application Germany, June 10, 1966, A 52,715
Int. Cl. A01z *5/00*
U.S. Cl. 119—14.55 **3 Claims**

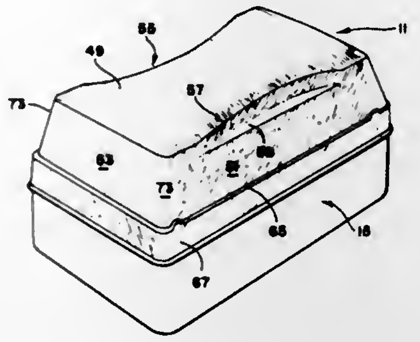


The milk from a cluster of teat cups is conveyed by way of an ascending pipe to a milk pipe-line maintained under vacuum to suck the milk into the pipe-line. The teat cups are connected to the ascending pipe through a vacuum reduction valve having a milk outlet and control means which automatically diminish the throughflow area of the outlet in response to an increase in the vacuum at the outlet. The control means preferably include a valve element movable by a diaphragm wall of the valve housing to vary said throughflow area, the diaphragm being subjected to the vacuum at the outlet and being biased by means adjustable to determine the maximum vacuum in the housing and interconnected teat cups.

3,528,390
FILTER TYPE ANIMAL CAGE COVER

Charles A. Lee, Knoxville, Tennessee, assignor, by mesne assignments, to Appleton Wire Works Corporation, Appleton, Wisconsin a corporation of Wisconsin
Filed Oct. 11, 1968, Ser. No. 766,866
Int. Cl. A01k *1/00*; B01d *39/00*, *39/14*
U.S. Cl. 119—15 **8 Claims**

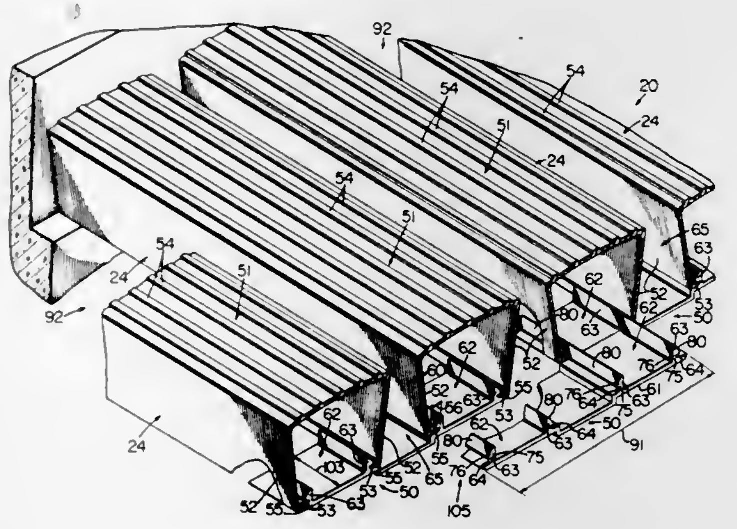
A protective cover for an animal cage is made with a low permeability to prevent an air current or air movement from attaining a velocity to transport air-borne contaminants into or from the cage. The cover is formed of a fibrous web



material having a resin material therein added to control and obtain the low permeability for the cover.

3,528,391
FLOOR CONSTRUCTION FOR AN ANIMAL ENCLOSURE AND METHOD OF MAKING SAME

Robert C. Johnson, Pikeville, Kentucky, assignor to Reynolds Metals Company, Richmond, Virginia a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,557
Int. Cl. A01j *1/00*
U.S. Cl. 119—28 **27 Claims**



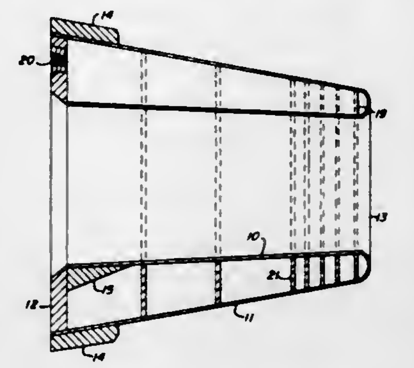
A lightweight floor construction for an animal enclosure defined by a plurality of channel members arranged in parallel spaced relation and fastened together by associated connector clips which engage the channel members solely at their lower ends. The channel members are then supported on an associated supporting structure.

3,528,392
TUYERE OR LIKE BLAST-FURNACE APPLIANCE

Marinus L. Brown, Wilkins Township, Allegheny County, Pennsylvania and Charles M. Sciulli, Jr., Whitehall Borough, Pennsylvania, assignors to United States Steel Corporation, a corporation of Delaware
Filed March 20, 1969, Ser. No. 808,879
Int. Cl. F22b *37/00*
U.S. Cl. 122—6.6 **2 Claims**

A tuyere or like appliance for a blast-furnace comprises inner and outer co-axial frusto-conical shells. Spaced parallel walls extending longitudinally therebetween form an entrance passage for cooling water. A plurality of plane segmental baffles or rings spaced axially of the tuyere and abutting alternately against said passage walls, respectively,

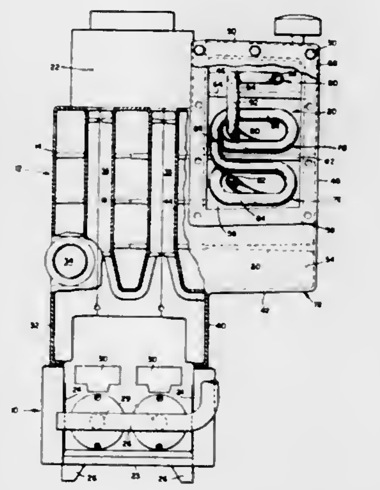
form a continuous circulating passage back and forth around the tuyere. This passage communicates at one end with the entrance passage. An inlet and an outlet for cooling water



are connected to the ends of the entrance passage and the circulating passage, respectively, at the larger end of the tuyere.

3,528,393
HEATING BOILER

Anthony J. Donohue, deceased, late of Paoli, Pennsylvania; by Marguerite M. Donohue, Wisteria Drive, Paoli, Pennsylvania; The First Pennsylvania Bank and Trust Company, 15th and Chestnut Sts., Philadelphia, Pennsylvania, trustees
Filed Oct. 1, 1968, Ser. No. 764,267
Int. Cl. F22b *1/16*
U.S. Cl. 122—33 **5 Claims**

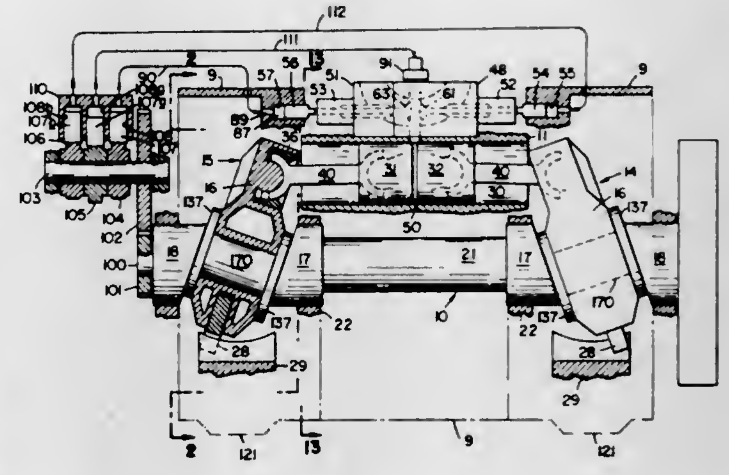


A cast iron sectional heating boiler is provided with a tankless water heater wholly accommodated by an end section of the boiler which is of such size and weight that the boiler may be supported upon a base for a boiler of comparable size, but of the type using a tank.

3,528,394
INTERNAL COMBUSTION ENGINE

Clessie L. Cummins, P.O. Box 785, Sausalito, California
Filed Feb. 8, 1968, Ser. No. 704,115
Int. Cl. F02b *75/26*; F01m *1/06*; F01s *3/00*
U.S. Cl. 123—58 **22 Claims**

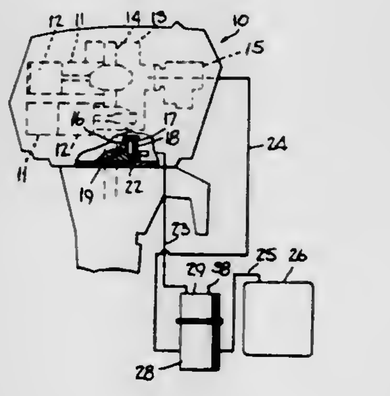
This two-cycle or four-cycle Z-crankshaft engine has several pairs of opposed pistons symmetrically reciprocating in open-end cylinders. The combustion chamber lies mainly to one side at the center of each cylinder in an exhaust-valve housing, which also carries the exhaust and intake ports. Where fuel injection is used, a flat fan-like spray substantially fills the flat generally fan-shaped combustion chamber. The exhaust-valve housing, intake-valve cage and a pair of stem-aligning assemblies are removable as a unit with their valves, for maintenance or repair or replacement, with subsequent disassembly quite simple. A simple, oblong ring gasket between the exhaust-valve housing and the cylinder casting is the only gasket at or near the combustion chamber, and it is quite small in area. Timing of the valves and injector or ignition is by a cam-operated hydraulic system. A pair of novel converter units on the Z-crank-shaft takes off the power from the pistons and converts the thrust of the pistons into torque. A force-lubrication system with a pair of dry sumps insures wear-reduction. The Z-crankshaft itself is assembled from the converter units, some crank webs, and a tubular cylindrical shaft, in a manner enabling inexpensive machining and



manufacturing costs. The complete engine is also readily assembled from relatively inexpensive components; each cylinder can be a separate and relatively inexpensive casting, as can be each intake-valve cage and exhaust-valve housing, and all such cylinders are identical, as are all intake-valve cages and all exhaust-valve housings. A novel engine brake may be included.

3,528,395
APPARATUS AND METHOD FOR MIXING ENGINE DRAINAGE INTO THE FUEL FLOW TO AN ENGINE

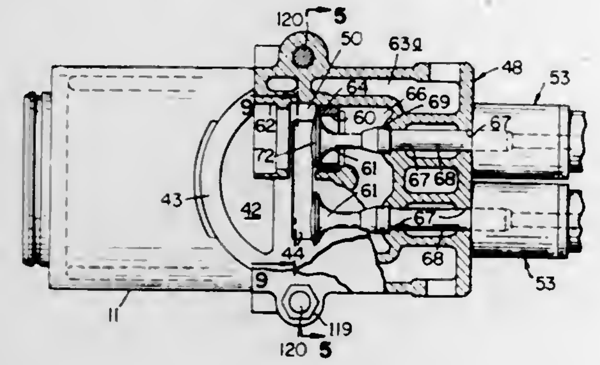
Charles P. Goggi, Staten Island, New York, assignor to Goggi Corporation, Staten Island, New York a corporation of New York
Filed June 20, 1968, Ser. No. 738,536
Int. Cl. F02b *33/04*
U.S. Cl. 123—73 **12 Claims**



Apparatus and method for use associated with an internal combustion engine whereby drainage of fuel, vapor and oil drainage from the crankcase thereof is recovered and introduced in a metered fashion into the principal fuel line of the engine. A dual-chambered device is employed, one chamber connected to the crankcase for accumulating drainage, the other serving as a mixing chamber connected in series with the principal fuel line, whereby fuel from the principal fuel supply is mixed in the mixing chamber with drainage, which is metered into the mixing chamber from the accumulating chamber.

3,528,396
INTERNAL COMBUSTION ENGINE

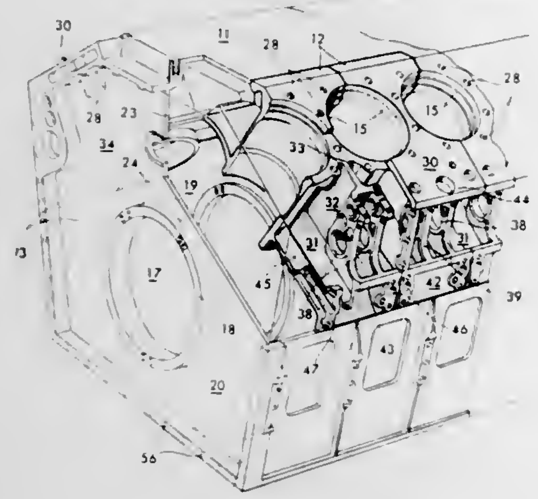
Clessie L. Cummins, P.O. Box 785, Sausalito, California
Original application Feb. 8, 1968, Ser. No. 704, 115. Divided and this application Apr. 14, 1969, Ser. No. 844,687
Int. Cl. F02b *75/26, 77/00*
U.S. Cl. 123—191 **10 Claims**



This two-cycle or four-cycle Z-crankshaft engine has several pairs of opposed pistons symmetrically reciprocating in open-end cylinders. The combustion chamber lies mainly to one side at the center of each cylinder in an exhaust-valve housing, which also carries the exhaust and intake ports. Where fuel injection is used, a flat fan-like spray substantially fills the flat generally fan-shaped combustion chamber. The exhaust-valve housing, intake-valve cage and a pair of stem-aligning assemblies are removable as a unit with their valves, for maintenance or repair or replacement, with subsequent disassembly quite simple. A simple, oblong ring gasket between the exhaust-valve housing and the cylinder casting is the only gasket at or near the combustion chamber, and it is quite small in area. Timing of the valves and injector or ignition is by a cam-operated hydraulic system. The complete engine is readily assembled from relatively inexpensive components; each cylinder can be a separate and relatively inexpensive casting, as can be each intake-valve cage and exhaust-valve housing, and all such cylinders are identical, as are all intake-valve cages and all exhaust-valve housings.

3,528,397
WELDED CYLINDER AND CRANKSHAFT HOUSING

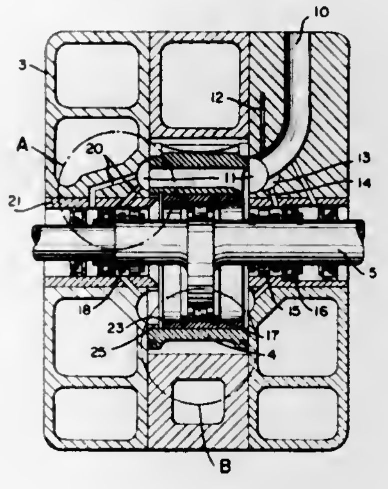
Richard Seifert, Friedrichshafen-Manzell, Germany, assignor to Motoren- und Turbinen-Union Friedrichshafen Gesellshaft mit beschrankter Haftung
Filed Nov. 28, 1967, Ser. No. 686,174
Claims priority, application Germany, Dec. 3, 1966, M 71,880
Int. Cl. F02f *7/00, 1/10*
U.S. Cl. 123—195 **8 Claims**



A cylinder-crankshaft housing which is welded together of cast steel parts and/or sheet material for a multi-cylinder liquid cooled engine in which the housing is subdivided transversely to its longitudinal axis into individual housing elements; the housing elements are comprised within the cylinder area of one-half each of two adjacent continuous cylinder parts shaped as approximately semi-cylindrical supports to accommodate a cylinder cooling jacket and provided with support flanges, and within the area of the crankshaft bearing of a support wall having an opening for the crankshaft; the individual parts are connected by means of welding seams transmitting the dynamic stresses; the cylinder support flanges as well as a wall extending parallelly and longitudinally may be integrally cast to the cylinder supports together with bosses for the cylinder head mounting bolts.

3,528,398
LUBRICATING SYSTEM FOR ROTARY PISTON INTERNAL COMBUSTION ENGINES

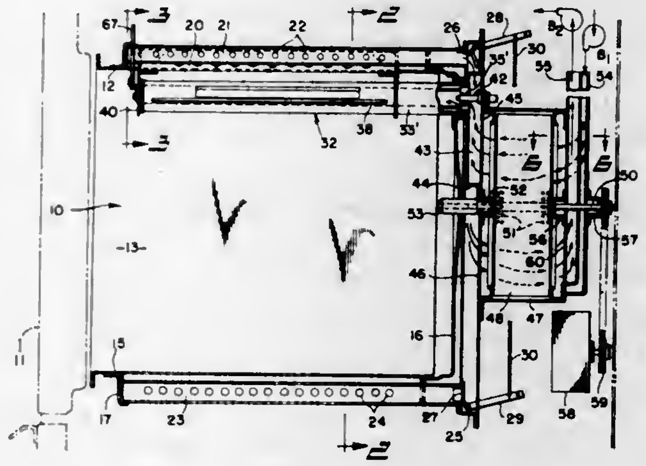
Sieghard Weissflog, Lugau, Erzgebirge, Germany; Karl-Heinz Müller, Lichtentanney, Saxony, Germany; and Winfried Tausch, Zeickau, Germany, assignors to VEB Sachsenring Automobilwerke, Zwickau, Zwickau, Germany
Filed June 2, 1967, Ser. No. 643,094
Int. Cl. F01m *3/00*
U.S. Cl. 123—196 **9 Claims**



A lubricating system for a rotary piston internal combustion engine wherein the oil compartment is located in the exterior housing jacket and a pump operatively connected to the mainshaft directs oil to the interior of the engine and to a lemon shaped recess, the recess having pockets for collecting oil and having passages heading therefrom to the mainshaft bearings whereby oil will be collected and directed to the bearings from these pockets.

3,528,399
GAS COOKING OVEN

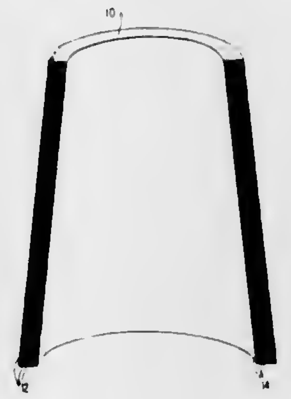
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio a corporation of Ohio
Filed June 23, 1967, Ser. No. 648,483
Int. Cl. F24c *15/32*
U.S. Cl. 126—21 **12 Claims**



A single-cavity gas cooking oven having a top burner configuration in which two blue flame burner tubes are angularly adjustable to direct flame at each side either below or above stationary shields. The flame is above the shields for baking, with the heated products caused to flow to a bottom collector duct over the walls either interiorly or exteriorly through a surrounding wrapper. The flame is below the shields for broiling, with flue products exhausted through a top collector duct, the two ducts being damper controlled. The oven is also operated for self-cleaning with the flame below the shields and only the bottom duct used for both radiant and convective heating within the cavity. The oven is powered by blower means for forced air supply to the burner assembly and the selected exhausting of the cavity, with both inlet and outlet fans preferred. The oven exhaust is brought into heat exchange relationship to the incoming air supply within a rotating regenerator wheel.

3,528,400
LAMELLAR CERAMIC BODY

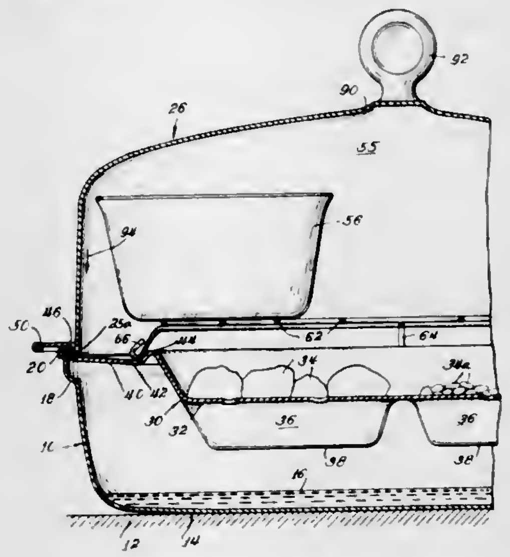
Marshall H. Norwalk, Watkins Glen, New York, assignor to Corning Glass Works, Corning, New York a corporation of New York
Filed Dec. 21, 1964, Ser. No. 419,920
Int. Cl. F23m *5/00;* **F27d** *1/00*
U.S. Cl. 126—144 **19 Claims**



A high strength, thermal shock resistant, precracked laminar ceramic body formed from a plurality of thin alternate layers of spinel, magnesia or mixtures of spinel and magnesia, wherein each adjacent layer is a material having a different coefficient of thermal expansion.

3,528,401
COOKING UTENSIL

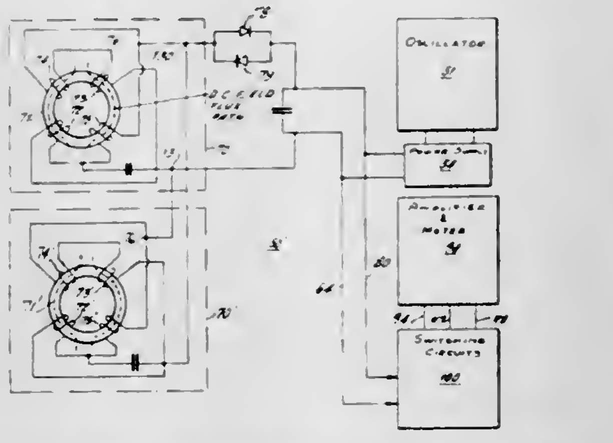
Herbert L. Moore, 4507 N. Magnolia, Chicago, Illinois
Filed Sept. 22, 1966, Ser. No. 581,274
Int. Cl. A47j *27/06*
U.S. Cl. 126—369 **2 Claims**



A cooking utensil includes a bottom pan, a cover and an intermediate pan which fits between the bottom pan and the cover. The intermediate pan includes a depressed food supporting portion and a flange portion which extends beyond the lip of the bottom pan to serve as a handle and which has a downwardly and inwardly sloping perforated portion.

3,528,402
MEANS AND METHOD FOR INTERNALLY DETECTING THE PRESENCE OF AN INTRAUTERINE CONTRACEPTIVE DEVICE

William L. Abramowitz, 330 Stuart St., Boston, Massachusetts
Filed Feb. 2, 1966, Ser. No. 524,516
Int. Cl. A61b *5/06*
U.S. Cl. 128—2 **5 Claims**

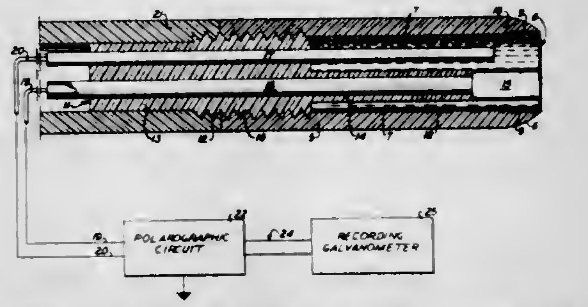


A method and apparatus for detecting the presence of contraceptive devices which are either provided with a magnetized member or are formed of a magnetizable material which is transversely magnetized before positioning in the uterus.

The detection device is comprised of an electronic circuit coupled to probe means which includes a magnetic core for generating an even harmonic function signal in the presence of the contraceptive device detection being performed by positioning the patient near the probe or passing by the probe and in close proximity thereto. Nulling means are provided for cancelling out the effect of any extraneous field such as, for example, the earth's magnetic field so that the extraneous fields will not affect the sensitivity of the detection device in the presence of the contraceptive device.

3,528,403
CATHETER OXYGEN ELECTRODE

Denis S. Imredy, Lyme, New Hampshire and Fred P. Schleipman, Norwich, Vermont, assignors to United States Catheter & Instrument Corporation, Glens Falls, New York a corporation of Delaware
Filed Feb. 8, 1966, Ser. No. 525,926
Int. Cl. A61b *5/00*
U.S. Cl. 128—2 **12 Claims**

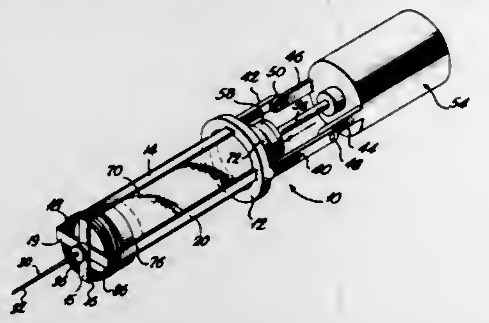


A catheter-mounted oxygen polarographic electrode for in vivo testing of body fluids having an insulated cathode and uninsulated anode mounted by an insulated plug in an electrolyte-filled cavity and separated from the fluid to be tested by a gas-permeable membrane.

3,528,404
APPARATUS FOR DRAWING BLOOD

John Y. S. Chan, 10065 Elm Ave., Loma Linda, California
Filed July 7, 1967, Ser. No. 651,852
Int. Cl. A61b *5/10*
U.S. Cl. 128—2 **6 Claims**

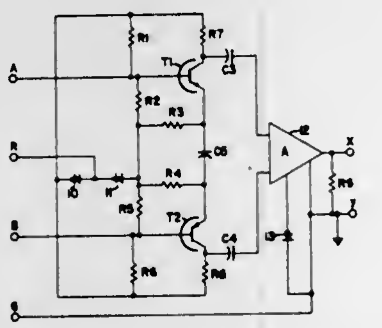
A support means is provided for slidably supporting a vacuum container. A cannula includes inner and outer piercing ends and an intermediate portion which is supported on a part of the support means to hold the cannula in place. The cannula is adapted to be forced through the stopper means of the vacuum container when a power-operated means mounted on the support means forces the vacuum container toward the cannula. The power-operated means is mounted on a part of the support means which is pivoted with respect to the remainder thereof. A resilient sealing means is disposed in surrounding relationship to the inner piercing end of the cannula and is slidable with respect thereto. A spring is disposed between the sealing means and one end of the support means for urging the sealing means and a vacuum container engaged therewith toward the power-operated means to remove the inner piercing end of the cannula from the vacuum container.



3,528,405
LOW NOISE DIFFERENTIAL AMPLIFIER FOR MEASURING BIOLOGICAL SIGNALS

Graham Travers Schuler, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada a corporation of Canada

Filed April 10, 1967, Ser. No. 629,534
Int. Cl. A61b *5/04;* **H03f** *3/68*
U.S. Cl. 128—2.1 **1 Claim**

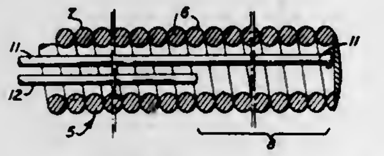


A low noise differential amplifier for biological applications comprising two transistors whose inputs are connected directly to two electrodes positioned on the subject and which operate with reference to a voltage obtained from a third reference electrode also positioned on the subject. The emitters of the transistors are connected through a capacitor of large capacitance value and the outputs of the transistors are fed to a difference amplifier that provides a difference voltage output in relation to ground. A fourth electrode positioned on the subject is connected to ground.

3,528,406
FLEXIBLE SPRING GUIDE TIP FOR INSERTION OF VASCULAR CATHETERS

Norman C. Jeckel; Ronald N. Jeckel; and Charles C. Roach, Glens Falls, New York, assignors to United States Catheter & Instrument Corporation, Glens Falls, New York a corporation of Delaware

Filed Oct. 29, 1965, Ser. No. 505,610
Int. Cl. A61b *5/02;* **A61m** *23/00*
U.S. Cl. 128—2.05 **3 Claims**

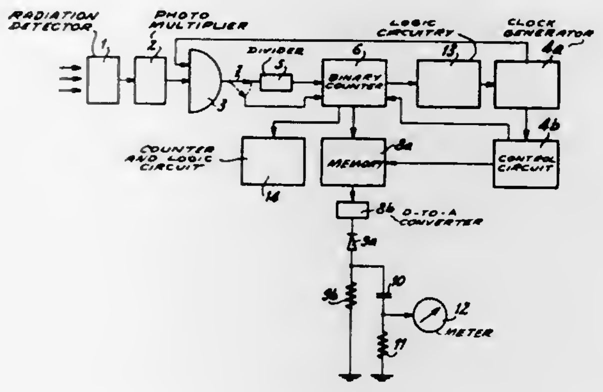


A spring guide for use in connection with the insertion of cardiac or vascular catheters having internal reinforcement throughout its length, the reinforcing means having reduced stiffening effect within the distal tip to provide relatively greater flexibility of the guide in the tip portion thereof.

3,528,407
RADIOACTIVITY SENSING APPARATUS FOR MEASURING THE BLOOD FLOW

Jacques Espagno, Vigoulet, France; Lucien Espagno, Pau, France; and Chanh Trung Huynh, Pau, France, assignors to Societe Nationale des Petroles d'Aquitaine

Filed Feb. 18, 1966, Ser. No. 528,592
Claims priority, application France, Feb. 22, 1965, 6,567; Sept. 28, 1965, 32,859, 32,860
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **4 Claims**

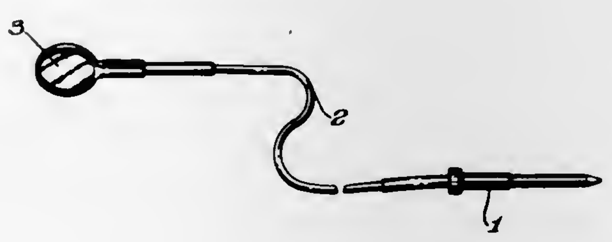


A device for measuring blood flow through the use of radio-active isotopes. The radio-active tracer is injected into the organ through which blood flow is to be measured. A detector measures the level of radio-activity by passing pulses at selected intervals to a counter. Successive counts for successively equal time periods are accumulated into the counter wherein the counter is cleared between the accumulation of each count during the successively equal length time period. Any changes in the counts appear at an output meter to indicate a differentiated version of the count which is proportional to blood flow. Circuitry is provided for adjusting the rate of application of pulses to the counter to maintain the count near the capacity of the counter for more accurate measurement. Further means are provided for developing a count of the number of pulses generated during each time interval to provide an operator with the rate of change of decay occurring during succeeding time intervals.

3,528,408
CHEMICAL ADHESIVE ELECTRODE

Berta Opperman, 2401 Pennsylvania Ave., Wilmington, Delaware

Filed Oct. 6, 1966, Ser. No. 584,694
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.1 **3 Claims**

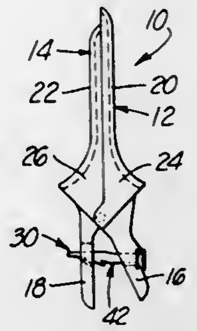


An electrically conductive mixture is provided for use as contact media in electro-medical applications such as electro-encephalography. The mixture comprises an electrode jelly, kaolin and aqueous alcohol. Prior to use it is contained in jars as a paste-like material. During use on exposure to air it hardens rapidly keeping the electrodes firmly in place with excellent capacity for electrical conductance through the electrode.

3,528,409
DISPOSABLE MEDICAL SPECTRUM

Samuel M. Bruder, 2107 E. Vine Ave., West Covina, California

Filed Jan. 29, 1968, Ser. No. 701,486
Int. Cl. A61b *1/30;* **A61m** *29/00*
U.S. Cl. 128—17 **2 Claims**

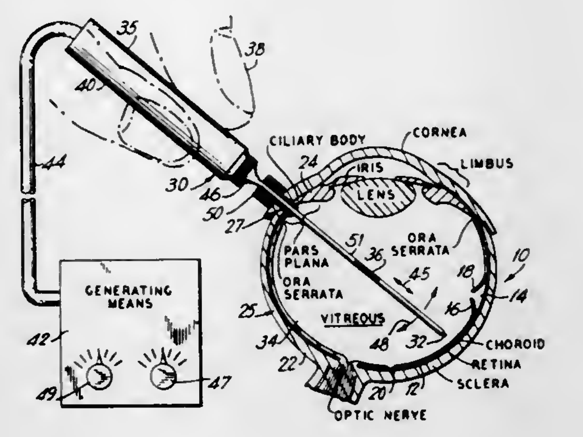


A disposable medical spectrum consisting of two molded plastic body members pivotally joined by separable pivot means and a separate molded plastic ratchet member inserted axially through openings in handle forming ends of the body members for releasably locking their opposite jaw forming ends in adjustable spread positions, the body members and ratchet member being adapted for rapid assembly by the examining physician to form a completed spectrum.

3,528,410
ULTRASONIC METHOD FOR RETINAL ATTACHMENT

Anton Banko, Brooklyn, New York, assignor to Surgical Design Corporation, Queens, New York, a corporation of New York

Filed Sept. 16, 1968, Ser. No. 760,003
Int. Cl. A61f *9/00;* **H04r** *15/02*
U.S. Cl. 128—24 **25 Claims**



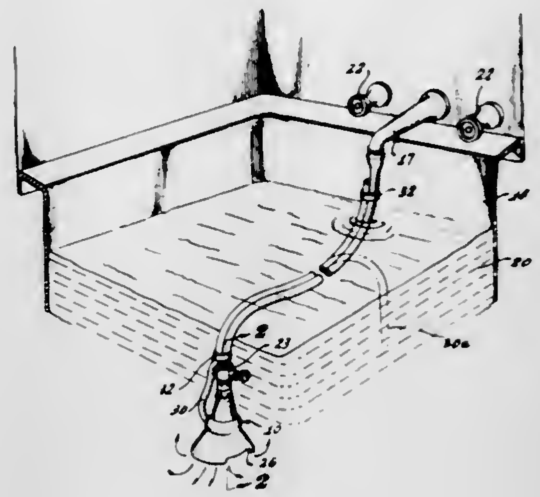
The method and apparatus of the invention relate to performing surgical operations on the eye in vivo, including retina reattachment by the insertion of an ultrasonic probe within the eye.

3,528,411
THERAPEUTIC HYDRO-MASSAGE DEVICE

Edwin F. Clements, 680 Alexander Way, Palm Springs, California

Filed June 28, 1967, Ser. No. 649,558
Int. Cl. A61h *9/00*
U.S. Cl. 128—66 **8 Claims**

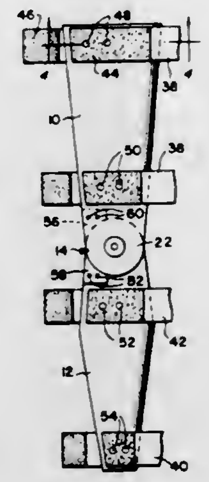
A flexible massage cup is provided with a plurality of fluid conduits to supply selected combinations of water and/or air to the massage cup. One conduit supplies the primary water stream while another provides air for aerating the water or recirculates water from the tub into the primary stream. The conduits are flexible to allow movement of the cup for massage purposes and to permit manipulation of the secondary conduit in order to supply either air or water as desired.



3,528,412
KNEE BRACE

Robert F. McDavid, Hattiesburg, Mississippi (1438 S. 6th St., Terre Haute, Indiana)

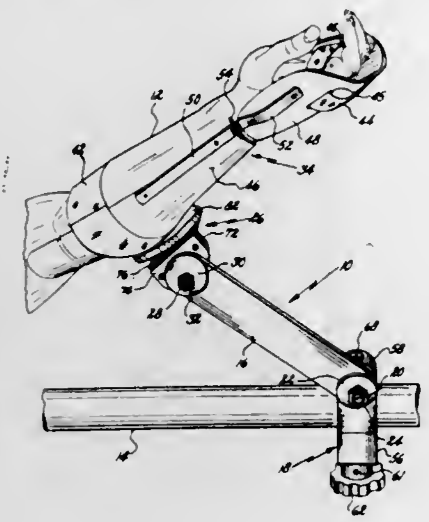
Filed July 26, 1967, Ser. No. 656,198
Int. Cl. A61f *3/00*
U.S. Cl. 128—80 **1 Claim**



A knee brace having upper and lower portions adapted to secure to the upper and lower legs, a pivotal connection between the upper and lower portions having bumper stops to limit pivotal movement preventing hyperextension of the leg, the pivotal joint being offset on the outside of the leg, straps for securing the brace to the leg, and resilient covering for the brace for preventing medial and lateral displacement of the knee joint is disclosed.

3,528,413
LIMB SUPPORT

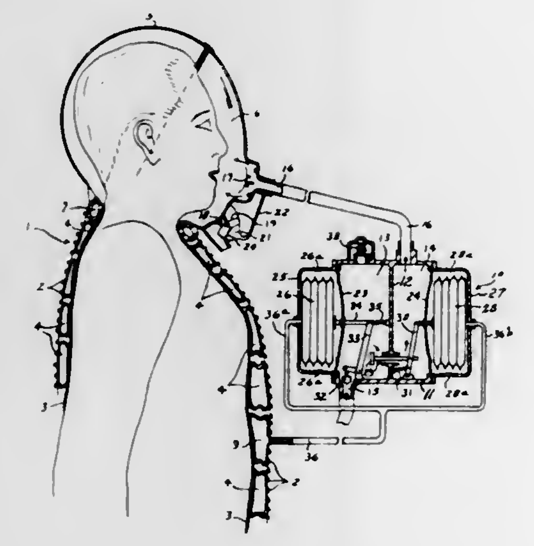
Marion L. Aydt, 2802 Lasses, Apt. 43, San Antonio, Texas
Filed Jan. 23, 1968, Ser. No. 699,859
Int. Cl. A61f *5/04*
U.S. Cl. 128—88 **1 Claim**



An adjustable limb support having a main member pivotally mounted on one end to a clamp and at the other end to an end support means and a preformed adjustable limb holding means rotatably mounted on the end support means for supporting an injured limb.

3,528,414
AUTOMATIC ANALOGUE BREATHING SYSTEM FOR MULTICELL PRESSURE SUITS

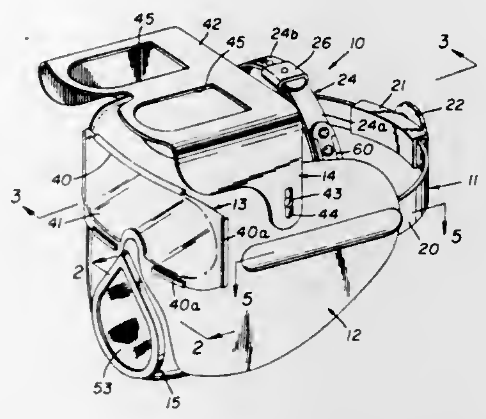
Otto Schueller, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 15, 1968, Ser. No. 729,333
Int. Cl. A62b *7/00*
U.S. Cl. 128—142.5 **10 Claims**



An automatic breathing system and apparatus for multicell pressure suits which compensates for pressure changes in an expandable pressure medium in the cells of the suit during breathing and balances the expansion and compression forces of the lungs and cells during the entire breathing cycle and compensates for volume deviations of different individuals in the same size range of standardized multicell pressure suits which apply mechanical pressure to the skin by the expansion of air sealed in a multitude of expandable and collapsible cells or tubes between the body of the wearer and an outer restraint garment, operating upon the "Boyle's Law" principle. Means are provided in the suit which automatically vary the breathing pressure supplied to the wearer to substantially balance any increase or decrease in the expansion or reduction of pressure of the cells on the body of the wearer during the breathing cycle, especially in the thorax area.

3,528,415
DENTAL MASK

Oscar Malmin, 2075 S. Main St., Akron, Ohio
Filed March 6, 1967, Ser. No. 620,988
Int. Cl. A62b *7/10;* **A61f** *11/02*
U.S. Cl. 128—142.6 **4 Claims**

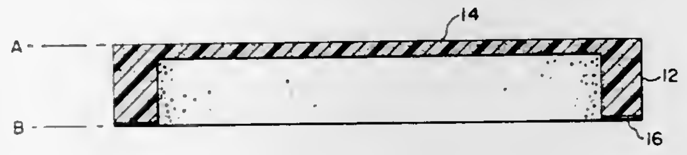


A dental mask or shield having adjustable bands adapted to fit the same to different shapes of heads is provided with several protective devices for the dentist including an eye shield, ear obturators and a mouth and nose mask.

The housing or frame carrying the protective measures is slidable relatively of the band mounting portion so as to permit easy movement between the down and up positions of the dental mask.

3,528,416
PROTECTIVE BANDAGE

Lawrence J. Chamberlain, 6856 W. Gunnison, Harwood Heights, Chicago, Illinois
Filed Nov. 6, 1967, Ser. No. 680,652
Int. Cl. A61f *15/00*
U.S. Cl. 128—154 **3 Claims**

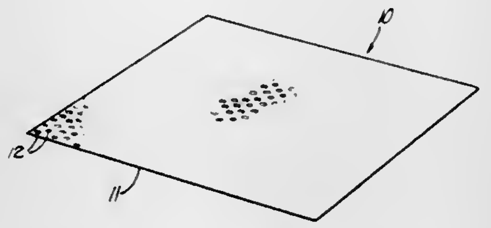


A bandage having a flat, resilient air-permeable, liquid-impermeable membrane with a supporting peripheral flanged edge on one side adapted to adhere to the skin of a patient and provide an enclosure for the wound which is water-proof and allows air to pass to and from the enclosure so that healing is promoted. The membrane of the bandage is constructed of a resilient, foamed plastic material which has interstices that are pervious to air and impervious to liquids. Other embodiments are disclosed including the use of a medicated gauze overlay for the wound which is temporarily held in place within the enclosure of the bandage.

3,528,417
WOUND RELEASE DRESSING

Jack H. Gardner, Highland Park, New Jersey, and Sam Rizzo, Highland Park, New Jersey, assignors to Johnson & Johnson a corporation of New Jersey
Filed Sept. 7, 1967, Ser. No. 666,214
Int. Cl. A61l *15/00*
U.S. Cl. 128—156 **13 Claims**

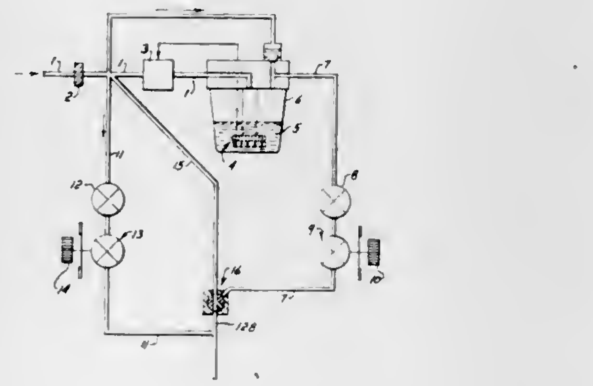
A dressing adapted to be placed over open wounds in which the dressing or at least the wound-contacting surface of the dressing is formed of a fabric having a low degree of adhesion to healing wounds, the fabric comprising a perforate fiber base, the fibers of which are coated and bonded together with a plasticized polyvinyl chloride. The plasticizer is preferably of the polyester type, the polyester being a polyester of long chain poly basic acids esterified with polyhydric alcohols. The plasticized polyvinyl chloride composition is present in an amount of 0.2 to 0.8 parts by weight



based on the total weight of the plasticized polyvinyl chloride-treated fabric. The fiber base may comprise an open-mesh gauze fabric but, preferably, is a bundled nonwoven fabric of the type disclosed, for example, in Griswold U.S. Pat. Nos. **3,081,514** and **3,081,515** where the fibers of the nonwoven fabric are bundled together around openings formed through the fabric.

3,528,418
ANESTHETIC VAPORIZING APPARATUS

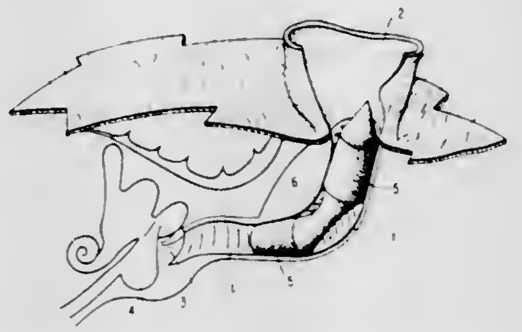
James R. Grosholz, Strafford, Pennsylvania and Harry J. Lowe, Chicago, Illinois, assignors to Air-Shields, Inc., Hatboro, Pennsylvania a corporation of Delaware
Filed July 3, 1967, Ser. No. 650,940
Int. Cl. A61m *17/00*
U.S. Cl. 128—188 **15 Claims**



Apparatus is disclosed for the delivery of a constant mixture of anesthesia for vaporizing an anesthetic liquid and for maintaining a substantially constant ratio of vaporized anesthesia to diluent gas. This constant ratio is achieved by maintaining a substantially fixed relationship between the total pressure in the vaporizing vessel and the saturation partial pressure of the anesthetic liquid. A temperature responsive element in the vaporizing vessel controls the pressure regulator in the supply conduit for changing the total pressure in the vessel in accordance with the changes in temperature. Given a known concentration of vapor and means to control the pressure of the diluent gas, a constant volume percentage can be maintained.

3,528,419
DEVICES AND METHODS FOR ADMINISTERING PHARMACEUTICAL PREPARATIONS

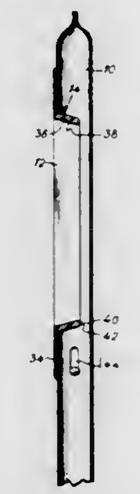
Wolfgang Joechle, Mexico City, Mexico, and Emanuele C. Amoroso, London, England, assignors to Syntex Corporation, Panama, Panama a corporation of Panama
Filed Sept. 7, 1967, Ser. No. 670,508
Claims priority, application, Great Britain, Sept. 8, 1966, 40,261/66
Int. Cl. A61f *13/20*
U.S. Cl. 128—270 **10 Claims**



Methods for administering pharmaceutical preparations to domestic animals and, as novel devices therefor, resilient tampons designed for removeable insertion into the auditory canal of the outer ears of the animals, at least one of which is capable of being impregnated with a predetermined amount of a pharmaceutical preparation.

3,528,420
COLOSTOMY APPLIANCE

John Henning Schiott Nielsen, Lille Vaerlose, Denmark, assignor to Pharma-Plast A/S, Lille Vaerlose, Denmark
Filed March 8, 1968, Ser. No. 711,606
Claims priority, application Denmark, March 10, 1967, 1266/67
Int. Cl. A61f *5/44*
U.S. Cl. 128—283 **6 Claims**

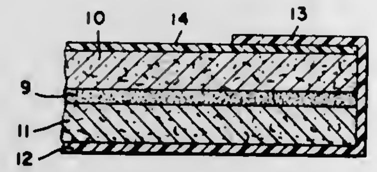


A colostomy appliance comprising a connecting member and a detachable bag adapted to be connected to the connecting member. Said connecting member having at one end a carrying flange attached to an adhesive flange adapted to be attached to the body, and at the other end an outer lock flange. Between said carrying flange and said lock flange the connecting member consists of an annular supporting member being outwardly tapered towards the lock flange. The bag is provided with an opening in the one side, the edges of which opening being secured to an outer flange of a retaining ring, having an axially extending annular engaging flange extending into the bag and being provided with a tapered inner side having cross sectional dimensions corresponding to but slightly smaller than the corresponding dimensions of the outside of the connecting member, so that when the retaining ring is arranged on the connecting member it squeezes around the same. Further the axial length of the said inner side being slightly smaller than the axial length of said outer side, so that the retaining ring is easy to arrange on the connecting member, but when arranged tends to slide towards the lock flange, whereby airtightness is ensured. The connecting member as well as the retaining ring being made from a relatively hard, but nevertheless resilient mouldable material, the ring preferably being somewhat more resilient than the connecting member.

3,528,421
DISPOSABLE ABSORBENT UNDERPAD OR THE LIKE

Vincent L. Vaillancourt, Livingston, New Jersey; Thomas Thackston, Florham Park, New Jersey; and Donald R. Roberts, North Plainfield, New Jersey, assignors to C. R. Bard Inc., Murray Hill, New Jersey a corporation of New York

Filed Dec. 18, 1968, Ser. No. 784,668
Int. Cl. A61f *13/18*; B32b *3/24*, *3/26*
U.S. Cl. 128—284 21 Claims

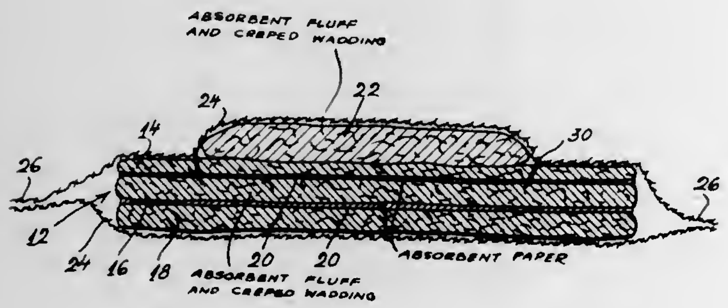


A disposable absorbent underpad for hospital patients, or similar product, in which a powdered chemical absorbent such as hydrous calcium silicate is deposited in retentive relation to a sheet or sheets of cotton linters or the like, the combination sheet or sheets and powder being preferably faced upwardly with a permeable sheet of non-wetting material such as spun-bonded polyester and backed with a liquid impervious sheet of polyethylene or the like extending across the entire bottom surface and folded over the edges of the underpad.

3,528,422
VESTIBULE TYPE SANITARY NAPKIN

Blossom E. Hodas, 200 S. Middle Neck Road, Great Neck, New York

Filed Dec. 1, 1967, Ser. No. 687,266
Int. Cl. A61f *13/18*
U.S. Cl. 128—290 2 Claims


ABSORBENT FLUFF AND CREPED WADDING
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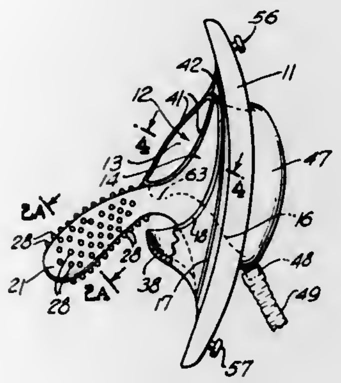
ABSORBENT FLUFF AND CREPED WADDING
ABSORBENT PAPER

A sanitary napkin comprising a primary pad of three layers of absorbent fluff and creped wadding and absorbent paper, a secondary layer centrally located on the top layer of the primary pad, a wrapping with stitching around the secondary layer and through the wrapping and connecting the secondary layer to the top layer of the primary pad. The other layers of the primary pad are added to the stitched primary top layer and secondary layer and the stitched wrapper folded over and under the bottom layers of the primary pad to enclose the same within the wrapper stitched to the top layer of the primary pad.

3,528,423
FEMALE INCONTINENCE DEVICE

John W. Lee, Residence No. 55, State Veterans Hospital, Rocky Hill, Connecticut

Filed June 20, 1967, Ser. No. 647,357
Int. Cl. A61f *5/44*
U.S. Cl. 128—295 10 Claims

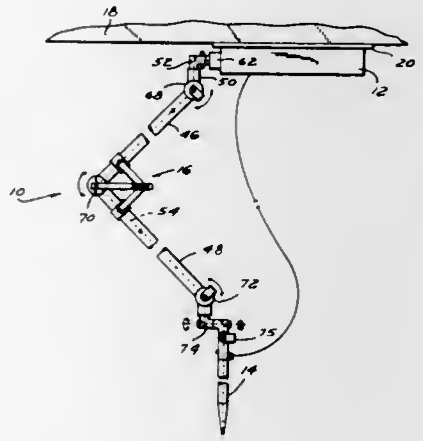


Device for collecting urine from incontinent females wherein improved means are provided for stabilizing the apparatus and for conforming it to the anatomical structure of the patient.

3,528,424
LASER SURGICAL KNIFE EQUIPMENT

Waldemar A. Ayres, 401 Park Ave., Rutherford, New Jersey

Filed Feb. 17, 1967, Ser. No. 616,959
Int. Cl. A61b *17/36*
U.S. Cl. 128—303.1 15 Claims

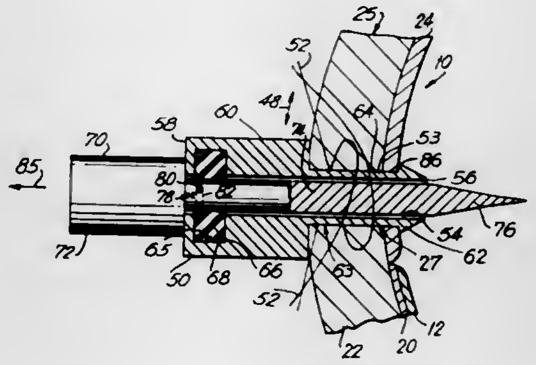


A closed conduit system for conducting energy, particularly laser light energy, from a source to a hand manipulatable instrument. The system includes plural elongated conduits connected at their ends with articulatable joints to allow that adjacent conduit sections are movable with respect to one another. The joints carry reflecting surfaces that are mounted to insure that the laser beam is conducted along the axis of the system to the instrument which optically focuses the beam longitudinally thereof. By the articulatable joints the focused beam may be readily moved to any point in space within three mutually perpendicular planes for use, for example, in surgical procedures.

3,528,425
APPARATUS FOR PERFORMING SURGICAL PROCEDURES ON THE EYE

Anton Banko, Brooklyn, New York, assignor to Surgical Design Corporation, Long Island City, New York a corporation of New York

Filed Sept. 16, 1968, Ser. No. 762,286
Int. Cl. A61f *9/00*; A61n *3/00*; A61b *17/32*
U.S. Cl. 128—305 12 Claims

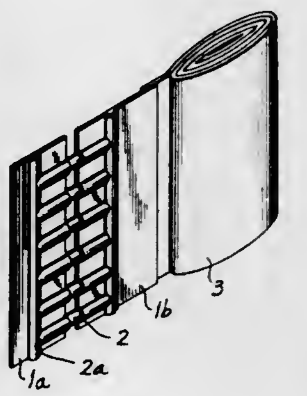


The method and apparatus of the invention relate to performing surgical procedures on the eye in vivo, including forming of an opening therein to permit the insertion of instrumentation within the eye for various procedures.

3,528,426
ADHESIVE BAND FOR REPLACING CUTANEOUS STITCHING

Radivoje Vukojevic, Bulevar Revolucije 287, Belgrade, Yugoslavia

Filed Jan. 9, 1968, Ser. No. 696,540
Claims priority, application Yugoslavia, Jan. 10, 1967, 266-P-37/67
Int. Cl. A61b *17/04*
U.S. Cl. 128—335 8 Claims



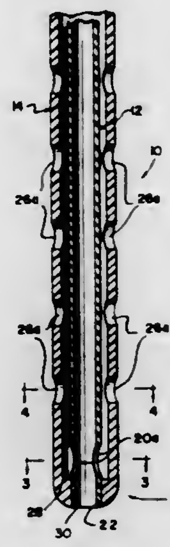
An adhesive band has two longitudinal portions which are connected to each other by transverse elastic members of semi-circular cross-section. The elastic members are secured to the longitudinal portions with their convex surfaces in contact therewith, a rolled dressing being secured to one of the longitudinal portions.

3,528,427
POOLE SUCTION CATHETER

David S. Sheridan, Argyle and Ralph D. Alley, Loudonville, New York, assignors by mesne assignments, to Sherwood Medical Industries Inc., a corporation of Delaware

Filed Sept. 26, 1967, Ser. No. 670,564
Int. Cl. A61m *27/00*
U.S. Cl. 128—350 4 Claims

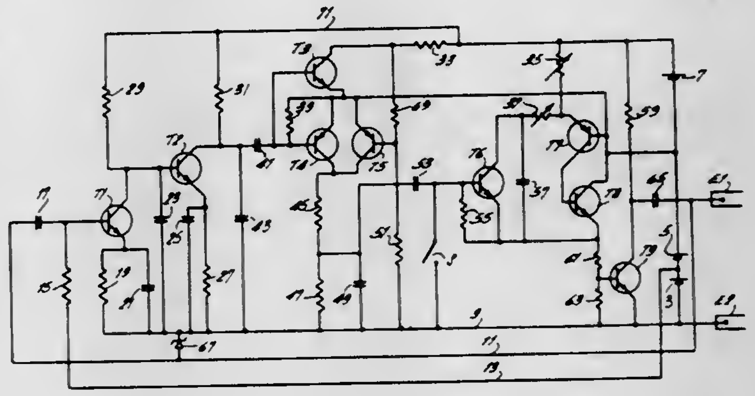
A surgical drain catheter including a cannula having a plurality of radially facing drain apertures and a tubular casing over the cannula, the tubular casing also having a plurality of radially facing drain apertures, characterized by the provision of a generally axially facing drain aperture at the distal end of the catheter for directly axially draining fluid from a surgical field.



3,528,428
DEMAND PACER

Barouh V. Berkovits, Newton Highlands, Massachusetts, assignor to American Optical Corporation, Southbridge, Massachusetts a corporation of Delaware

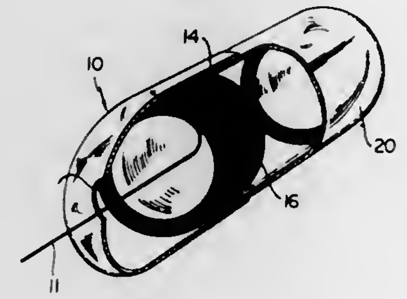
Filed April 11, 1968, Ser. No. 727,129
Int. Cl. A61n *1/36*
U.S. Cl. 128—421 42 Claims



A demand pacer which provides electrical heart-stimulating impulses in the absence of natural heartbeats. In a pacer of this type, if the natural heartbeat detector is erroneously triggered, it is possible for impulses to be inhibited when they are actually needed. Erroneous operation of the detector in the invention is partially prevented by tuning it to the dominant frequencies in the electrical signal which is generated as a result of a localized ventricular depolarization. These frequencies, however, are relatively close to 60 Hz, and thus 60 Hz stray signals might erroneously cut off the generation of impulses. For this reason, a capacitor charging circuit is provided in the detecting circuit. All input signals are processed so that the capacitor is fed by unipolar pulses. Pulses occuring at a 120 Hz rate (from the processing of stray 60 Hz signals) occur so rapidly compared to the discharge time constant of the capacitor circuit that the voltage across the capacitor does not change appreciably. Heartbeat signals, on the other hand, occurring at the much slower rate of approximately 72 per minute, allow the capacitor to discharge sufficiently after each charging pulse such that a large pulsating signal is developed across the capacitor. It is each pulsating signal which shuts off the generation of an impulse. In the presence of 60 Hz stray signals, the pacer functions in its continuous mode.

3,528,429
METHOD AND DEVICE FOR ORALLY ADMITTING AN ELONGATED FLEXIBLE ELEMENT IN THE ALIMENTARY CANAL

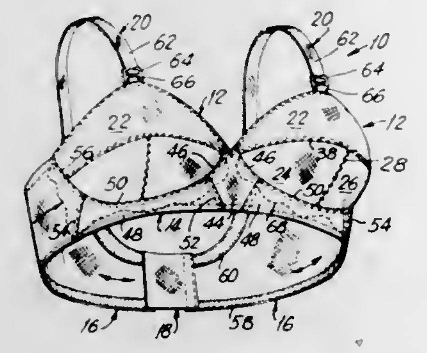
Charles B. Beal, 700 Hilier Drive, Oakland, Calif. 94618, and James E. Brown, Jr., 1200 Marin St., Vallejo, Calif. 94590
Continuation-in-part of application Ser. No. 441,154, Mar. 19, 1965. This application Oct. 21, 1968, Ser. No. 769,111
Int. Cl. A61b *10/00, 5/07*
U.S. Cl. 128—2 **10 Claims**



A device consisting of a hollow capsule with a flexible elongated element such as a line or tube coiled within in a single non-overlapping layer in radial compression against the inner capsule wall. The elongated element: (a) having an electrical conductor when used to record electrocardiograms, (b) being a ribbon or having a roughened surface to obtain cells from mucous lining of esophagus for diagnosis of cancer of esophagus, (c) being impregnated with an indicator solution which will change color in the presence of varying degrees of hydrogen ion concentration for pH tests, (d) being a single or double hollow tube for aspiration of stomach contents or, (e) made from an absorptive material to obtain a sample of stomach contents.

3,528,430
BRASSIERE

Elaine Child, New Haven, Conn., assignor to Flexnit Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 3, 1968, Ser. No. 726,419
Int. Cl. A41c *1/14*
U.S. Cl. 128—465 **6 Claims**

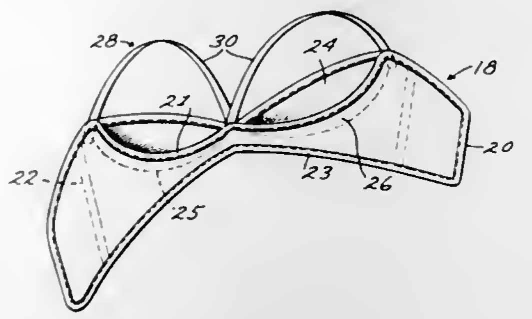


Brassiere having a frame at least partially encircling the bust.

3,528,431
BRASSIERE

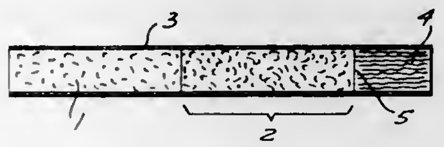
John W. Abramo, 2089 Oak Valley Road, Glendale, Calif. 91208
Filed Apr. 8, 1968, Ser. No. 721,133
Int. Cl. A41c *3/00*
U.S. Cl. 128—484 **9 Claims**

A brassiere construction providing both freedom of movement and vertically adjustable, three-point suspension for the wearer. The construction includes a first cradle member made up of a pair of semi-cups attached to a body support band for supporting the lower portions of the breasts, each semi-cup having a hammock-type support, plus an outer shell comprising a pair of vertically-adjustable pockets which envelope the breasts and body and shoulder straps for securing the brassiere to the wearer.



3,528,432
CIGARETTE OR THE LIKE HAVING COMBUSTION STOP

Ernest Stossel, 203 W. 81st St., New York, N.Y. 10024
Filed Oct. 4, 1967, Ser. No. 672,762
Int. Cl. A24d *1/06, 1/10*
U.S. Cl. 131—4 **10 Claims**



A smoking product including a tubular wrapper in which a first tobacco filler extends inwardly from one end of the wrapper towards the other end thereof, and in which a gas permeable second filler having the structure of a packed column is located in the tubular wrapper between the other end thereof and the first filler. The second filler consists at least in the portion thereof which is located adjacent to the first filler of a material which inhibits propagation of combustion. Preferably the second filler or at least the portion thereof adjacent the first filler consists of tobacco material which has been flameproofed by a coating or impregnation consisting essentially of a polyamide of an oxyacid of phosphorus.

3,528,433
SMOKING PRODUCT HAVING MICRORETICULATED FILTER

William R. Johnson, Jerome S. Osmalov, and Richard N. Thomson, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Filed Mar. 21, 1968, Ser. No. 714,762
Int. Cl. A24d *1/04*
U.S. Cl. 131—10.5 **5 Claims**

A smoking product is disclosed having a porous microreticulated mass of interconnected aggregates of thermoplastic resin particles. The porous mass is made by mixing the thermoplastic resin particles with an organic liquid which is a non-solvent therefor to a temperature at which the resin fuses while maintaining the mixture under a pressure sufficient to maintain the liquid in a liquid phase.

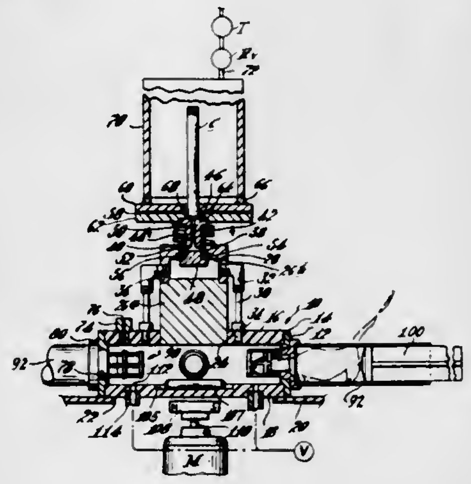
3,528,434
METHOD OF MAKING RECONSTITUTED TOBACCO

Howard M. Halter, Norwalk, and Joseph V. Fiore, Fairfield, Conn., Anthony R. Cacciola, Pleasantville, N.Y., and Thomas I. Ito, Norwalk, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Continuation of abandoned application Ser. No. 627,581, Oct. 25, 1967, which is a division of application Ser. No. 223,261, Sept. 12, 1962. This application Apr. 12, 1968, Ser. No. 721,033
Int. Cl. A24b *3/14, 9/00*
U.S. Cl. 131—140 **4 Claims**

A reconstituted tobacco product created from a slurry of tobacco particles in water having an equilibrium amount of dissolved air and thermogelling gum in which the slurry is uniformly heated throughout without adding a foaming agent or additional air or gas to sequentially liberate the said dissolved air prior to the gelling of the gum and thereafter micro-wave drying the same to a preselected moisture content.

3,528,435
CIGARETTE SMOKING MACHINE

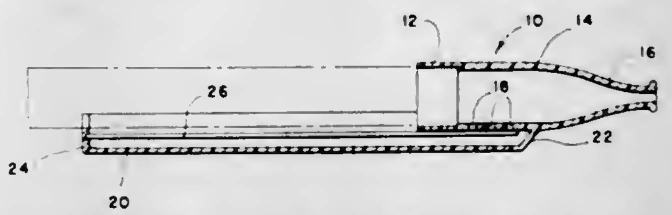
Colin A. Morrissey, Cambridge, Mass., assignor to Bio-Research Consultants, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 7, 1968, Ser. No. 727,288
Int. Cl. A24f *47/00;* **A61d** *3/00*
U.S. Cl. 131—171 **14 Claims**



Apparatus comprising a hollow circular specimen heating chamber containing openings circumferentially thereof, a cage at the inner side of each opening, a tunnel at the outer side of each opening for holding a specimen with its head projecting through the opening into the cage, a pressure chamber to which air is supplied under pressure, a valved passage connecting the pressure chamber to the specimen treating chamber through which smoke is transmitted under pressure to the specimen treating chamber, a holder in the pressure chamber in communication with the valved passage, into which the butt end of a burning cigarette is adapted to be placed whereby the products of combustion produced by a burning cigarette fixed in the holder are blown through the cigarette and through the valved passage into the specimen treating chamber and ducts at the bottom of the specimen treating chamber through which the products of combustion may be evacuated following treatment.

3,528,436
CIGARETTE HOLDER

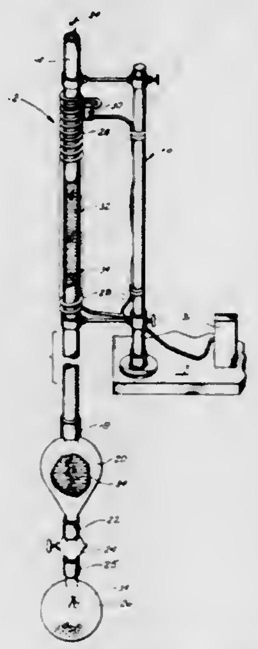
John T. Stephens, Washington, D.C., assignor of one-half to John W. Berhman
Filed Dec. 17, 1968, Ser. No. 784,406
Int. Cl. A24d *1/12;* **A24f** *5/04*
U.S. Cl. 131—198 **6 Claims**



A cigarette holder of the type having a cigarette receiving end, a throat and a mouthpiece, the throat having a channel therethrough for the ingress of fresh air and a heat zone thermal proximity switch responsive to the burning end of the cigarette after a predetermined burning thereof for controlling the ingress of air through the throat channel. The holder has an upwardly open concave member attached to the throat portion of the holder, integral therewith and extending beyond the cigarette receiving end. A relatively narrow bi-metallic strip is fixed to a wall portion at to the free end of the concave member, is spaced from the bottom and extends along the length thereof and terminates beyond the cigarette receiving portion of the holder and covers the air admitting channel in one form and has a frusto-conical extension which enters the channel providing a closure therefore in another. A fresh cigarette placed in the holder extends slightly beyond the end wall and upon being lit, will burn for a short period of time before the heat from the burning end will cause the bi-metallic switch to bend and open the channel for the ingress of air to the interior of the holder.

3,528,437
SOLDER REFLOWING DEVICE

Wendell C. Johnson, Jr., Agoura, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed June 30, 1967, Ser. No. 650,533
Int. Cl. B05c *3/10*
U.S. Cl. 134—107 **9 Claims**

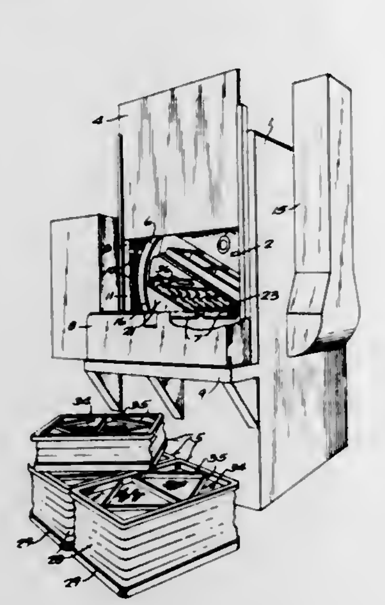


An apparatus for reconditioning partially deteriorated solder deposited on metal parts by reflowing the solder as the articles are descended through a vertical tube containing a viscous fluid. Fluid in the upper portion of the tube is sufficiently heated to cause reflowing of the solder and as the part descends, cooler fluid in the lower portion of the tubes resolidifies the solder.

3,528,438
ROTATABLE APPARATUS FOR CLEANING ARTICLES

John A. Skladanek, Brookfield, Wis., assignor to Waukee Engineering Company, Milwaukee, Wis., a corporation of Wisconsin

Filed May 17, 1968, Ser. No. 730,100
Int. Cl. B08b *3/02*
U.S. Cl. 134—112 **22 Claims**

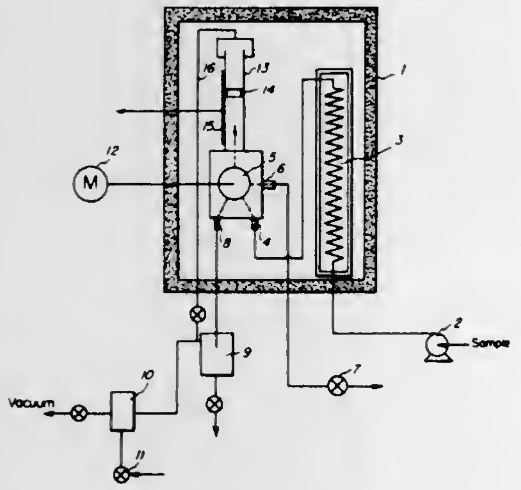


This invention relates to an apparatus for cleaning metal parts. The parts to be cleaned are contained within a basket having a removable cover of open construction and the apparatus includes a rotatable drum within which the baskets are loaded. A clamping mechanism clamps the baskets to the drum frame and a locking unit locks the clamping mechanism in clamping position so that the baskets can rotate with the drum. During rotation of the drum, water is directed from a series of jets toward the basket to clean the parts. Both the operating mechanism for actuating the clamping frame and the operating mechanism for operating the locking unit are withdrawn from engagement with the drum prior to rotation of the drum so that the drum can rotate freely without interference.

3,528,439
VAPOR-LIQUID RATIO MONITOR

Julius Plucker III, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Continuation of application Ser. No. 562,621, July 5, 1966. This application July 23, 1969, Ser. No. 861,211
Int. Cl. F17d *1/02, 3/00;* **G05d** *11/00*
U.S. Cl. 137—3 **14 Claims**

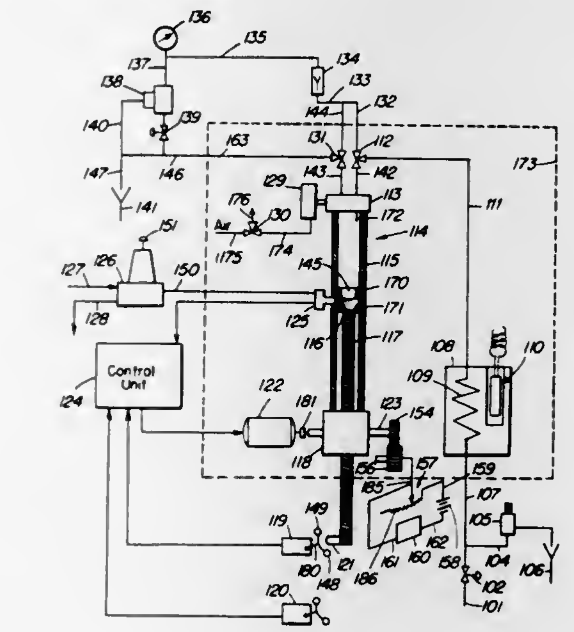


A vapor-liquid ratio monitor comprising valve means for feeding a motor fuel sample of fixed volume to a chamber wherein vaporization of the sample acts to drive a float upwardly in the chamber. The height of the float in the chamber provides an indication of the vapor-liquid ratio of the sample.

3,528,440
VAPOR-LIQUID RATIO MONITOR

Julius Plucker III, Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Continuation-in-part of application Ser. No. 861,211, July 23, 1969, which is a continuation of application Ser. No. 562,621, July 5, 1966. This application Oct. 20, 1969, Ser. No. 867,544
Int. Cl. G01n *7/14*
U.S. Cl. 137—3 **11 Claims**



A vapor-liquid ratio monitor is disclosed which comprises valve means for feeding a predetermined volume of a motor fuel to a chamber. Vertically movable means within the chamber is adapted to move in response to the vapor pressure of the fuel until a predetermined pressure is present above the sample within the chamber. The amount of the vertical movement of the movable means provides an indication of the vapor-liquid ratio of the sample.

3,528,441
ACCELERATION ACTUATED VALVE

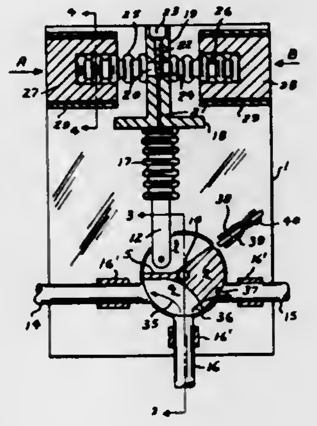
Charles W. Clark, Dumont, N.J., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Apr. 3, 1968, Ser. No. 718,623
Int. Cl. F16k *17/36*
U.S. Cl. 137—48 **7 Claims**

A valve is disclosed which operates on the force exerted by the acceleration of a fast moving body such as a missile, rocket or train. It employs two oppositely disposed bellows, arranged horizontally, to which heavy weights are attached and these weights respond to an increase in speed or acceleration. The contents of the bellows communicate through a metering passageway with a third bellows arranged vertically. All three bellows are filled with an incompressible fluid and an adjustable needle valve is provided in the passageway to control the rate of flow of the fluid into the third bellows.

A push rod is secured to the free end of the third bellows and this rod is pivotally secured to a circular plate. The latter has two milled out portions along its flat side, one portion receiving the pivot of the push rod and the other portion constituting a passageway across the face of the plate. The milled out portions are separated from one another by a narrow ledge at one side and a larger area at the opposite side which form the outer surface of the plate. The circular plate is rotatably mounted on a stationary shaft and is inclosed within a casing.

There are three conduits presented to the periphery of the plate through the openings in the casing, one constituting an "inlet" conduit carrying fluid under pressure, and the other two constituting "first" and "second" outlet conduits. The latter are arranged on opposite sides of the peripheral edge of the plate, and the inlet conduit is located midway between the other two. The inlet conduit and the "first" conduit are normally in communication through the lower milled out portion of the plate and the fluid is caused to flow into a sump or drain.



When one of the horizontal bellows is caused to contract on account of an increase in speed or accelerating force acting against its attached weight, the liquid in that bellows will be forced into the lower or vertical bellows and cause the push rod to turn the circular plate in such a way as to bring the "inlet" conduit in communication with the "second" conduit. Thus the fluid introduced into the inlet conduit, which normally would have passed through the milled out compartment in the plate into the "first" outlet conduit, is now caused to pass into the "second" conduit in order to actuate the necessary control devices which will respond to the change in speed or acceleration.

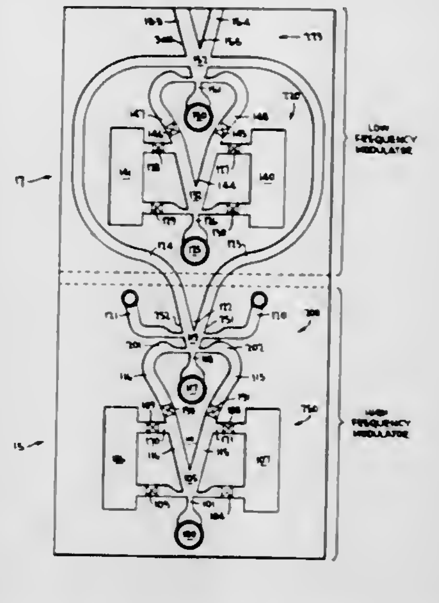
The same operation would apply if the other of the two horizontal bellows were caused to contract by a change in speed in the opposite direction and cause the fluid in the last mentioned bellows to flow through the same metering passageway into the third bellows to turn the circular plate in the same direction as before.

3,528,442
FLUID MODULATOR SYSTEM

Carl J. Campagnuolo, Chevy Chase, Md., assignor to the United States of America as represented by the Secretary of the Army

Filed July 14, 1967, Ser. No. 654,040
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 **10 Claims**

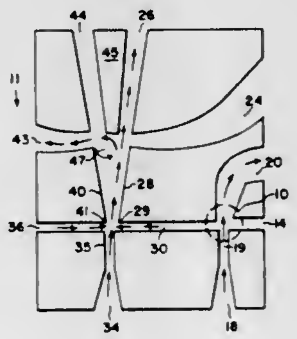
A high frequency fluid modulator comprising a fluid oscillator staged with a bistable fluid amplifier is placed in series with a low frequency fluid modulator. The low frequency fluid modulator comprises a second fluid oscillator that is in turn staged with a second bistable fluid amplifier. The high frequency fluid modulator includes high impedance means to modulate its output and to amplify a low energy fluid signal. Because of the high impedance means associated with the high frequency fluid modulator the amplification of a low energy fluid signal obtained in the high frequency fluid modulator will not include amplification of the noise associated with the low energy fluid signal thus eliminating a problem long associated with prior art amplifying systems.



3,528,443
FLUID INDUCTION NOR GATE

Elmer L. Swartz, Falls Church, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed June 4, 1968, Ser. No. 734,279
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 **4 Claims**



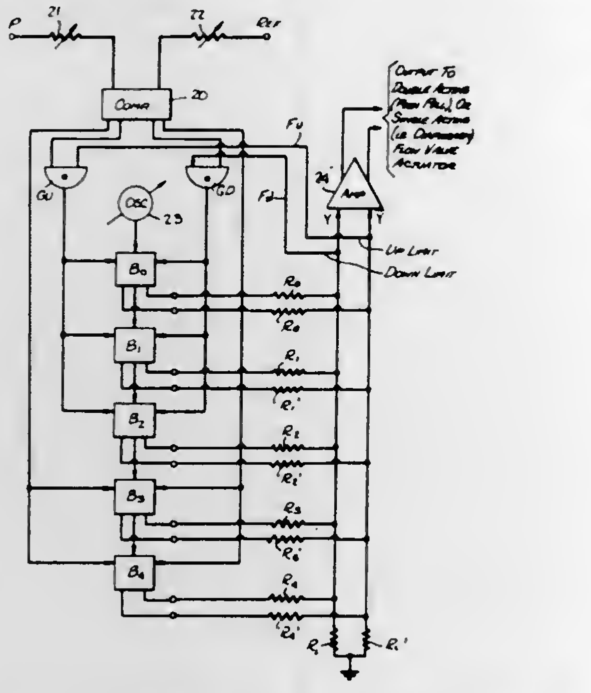
A fluid NOR gate wherein the actuating signal flow does not enter the control channel or flow into the main power stream as with most fluid amplifiers. A monostable fluid amplifier of the close wall variety is used with an aspirator located at the end of the active control channel. When the control signal passes through the aspirator section it lowers the pressure within the control channel causing the main power stream to switch channels.

3,528,444
FLUIDIC DIGITAL CONTROLLER

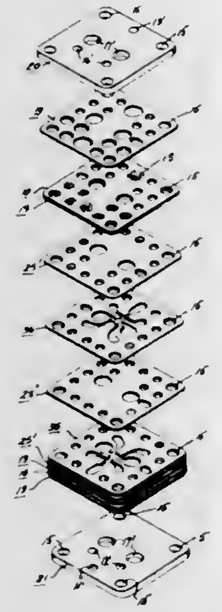
Hyman Hass, Stamford, Conn., assignor to Applied Fluidics, Inc., Stamford, Conn., a corporation of Delaware

Filed Aug. 28, 1968, Ser. No. 756,058
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 **9 Claims**

A fluidic digital process controller for comparing a pneumatic input signal representing a set point value with a pneumatic input signal representing a process variable to produce a pneumatic output signal proportional to the error therebetween in order to govern a final control element in a direction and to an extent causing said process variable to return to the set point value. The controller is constituted by a comparator responsive to the pneumatic input signals to produce a directional UP or DOWN signal depending on the relative levels of the input signals. The directional signal is applied to the several stages of a chain of reversible binary counters which act to count periodic clock pulses generated by an oscillator, thereby producing a train of higher or lower order numbers, depending on whether the directional signal is UP or DOWN. The total count yielded by the binary chain is converted into an analog pneumatic signal proportional to the magnitude and sense of the error between the input signals, this signal serving to actuate the final control element to correct said error.

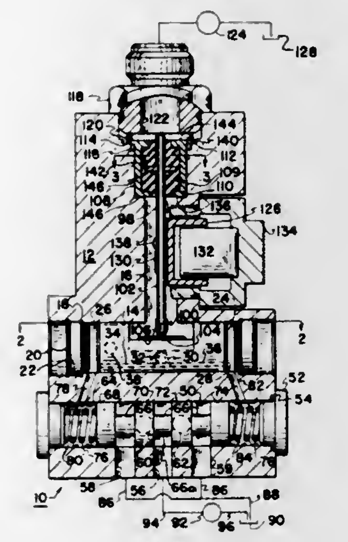


3,528,445
LAMINATED FILTER FOR FLUID AMPLIFIERS
Jeffrey N. Shinn, Scotia, and Bert J. Czwakiel, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Jan. 2, 1969, Ser. No. 788,379
Int. Cl. F15c *1/14, 5/00*
U.S. Cl. 137—81.5 13 Claims



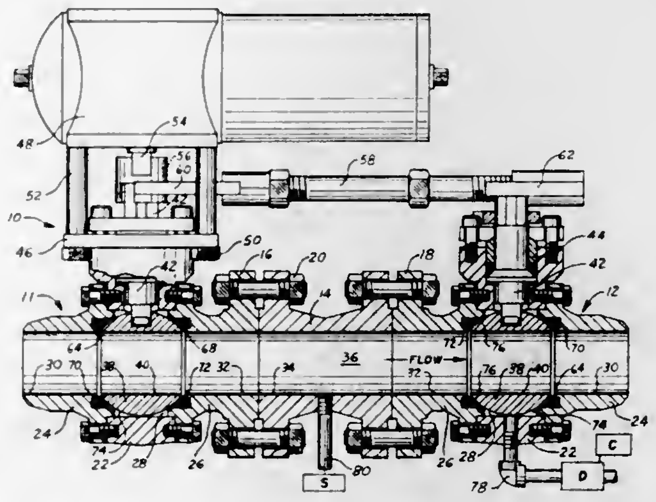
A laminated filter structure is superposed adjacent the cover member of a fluid amplifier device having no moving mechanical parts for providing filtering and flow straightening of the input flows to the amplifier. The filter is a lamina having a plurality of fluid-flow filters formed therethrough and aligned with the input ports in the cover member. A pair of laminae having apertures therethrough aligned with the input ports in the cover member and of diameter greater than such ports may be superposed on both sides of the filter lamina for providing the function of manifolding the fluid flow into and from the filter.

3,528,446
SERVO VALVE WITH RESILIENTLY MOUNTED JET PIPE
Paul E. Horn, Troy, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Feb. 27, 1968, Ser. No. 708,649
Int. Cl. F15c *3/12*
U.S. Cl. 137—83 2 Claims



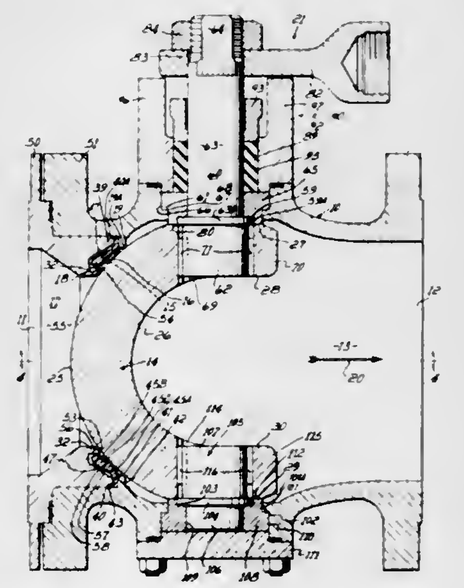
A mounting arrangement for a servo control device of the jet pipe type wherein a tubular jet pipe has a fluid nozzle at one end and having a flange or an annular collar at the other end. The jet pipe is mounted by encasing the end having the flange in resilient means which, in turn, is contained within a cavity of a stationary mounting member.

3,528,447
TANDEM BALL VALVE ASSEMBLY WITH PURGING AND LEAK SENSING MEANS
John P. Kolb, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Feb. 10, 1969, Ser. No. 797,784
Int. Cl. F17d *3/04*
U.S. Cl. 137—240 7 Claims



A simultaneously actuated tandem valve assembly including a pair of valves which are interconnected to form a common flow passage. Each of the valves includes a valve element which is movable between open and closed positions to control the flow of fluid through the valve. Each of the valves is provided with upstream and downstream seat members which engage the associated valve element. The seat members of the upstream valve are more susceptible to wear than the seat members of the downstream valve so that leakage caused by wear or erosion always occurs first in the upstream valve, thereby assuring positvie sealing of the downstream valve when such leakage occurs. Sensing means is provided to detect leakage of fluid past the seats of the upstream valve so that a signal is given immediately upon leakage thereof. The tandem valve assembly is also provided with a purge system which is capable of purging the common flow passage of undesired accumulations of leaked fluid.

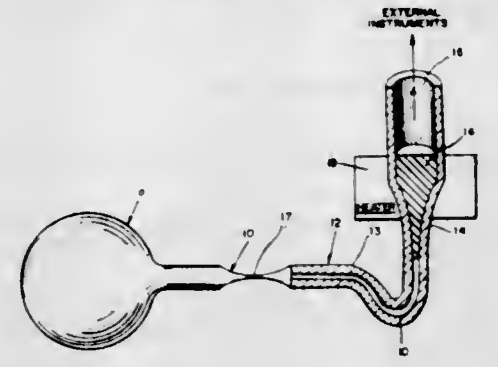
3,528,448
SLURRY VALVE
John B. Urban, Cincinnati, Ohio, assignor to The Lunkenheimer Company, Cincinnati, Ohio, a corporation of Delsware
Filed Oct. 4, 1967, Ser. No. 672,767
Int. Cl. F16k *5/16*
U.S. Cl. 137—242 9 Claims



A valve is disclosed which is adapted to be used in controlling the flow of slurries, that is, fluids containing small insoluble particles which become deposited on exposed valve components and thereby form a scale. The valve includes a ball section mounted in a cavity formed in the valve body which when rotated controls flow through the valve, at least one stationary scraping member formed in the cavity and cooperating with the valve ball surface to effect removal of scale deposited by the slurry when the ball section is rotated to effect valving action, a removable resilient annular valve seat located in the valve inlet port which has its inner margin biased into yieldable contact with the valve ball surface by the slurry in the inlet port, permitting the seat to conform to the ball contour and produce a fluid-tight seal, and a removable valve seat retainer for clamping the valve seat in operative position when the valve is connected in a slurry pipeline.

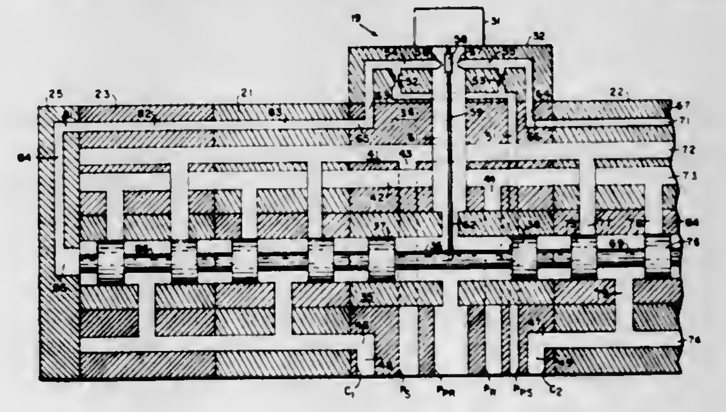
3,528,449
FLUID FLOW CONTROL APPARATUS
Robert S. Witte, Redondo Beach, and Charles E. Wood, Woodland Hills, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Feb. 27, 1968, Ser. No. 708,617
Int. Cl. F16k *9/00*
U.S. Cl. 137—251 14 Claims

A fluid flow apparatus capable of controlling fluid flow in minute quantities. The apparatus provides an exit passage from a gas container through, in series, a Venturi-type pinched tube, a gas storage capillary tube and a valve-plug made of indium or gallium. The pinched tube allows only small quantities of gas to pass therethrough from the high pressure gas container to the capillary tube, to bubble through the indium or gallium while in a molten liquid state, and to be supplied to external equipment.



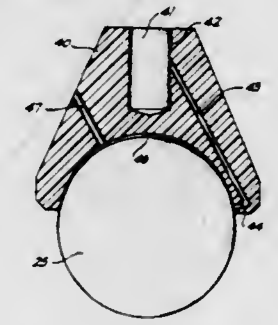
When solidified the indium or gallium provides a seal maintaining gas within the capillary tube storage area.

3,528,450
MODULAR SERVO VALVE
Richard J. Brockway, Amherst, and David G. Eldridge, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Feb. 12, 1969, Ser. No. 798,704
Int. Cl. F16k *11/07*
U.S. Cl. 137—269 18 Claims



The servo control valve includes a number of identical modules connected together to control the flow of fluid under pressure to and from a load actuator. The flow capability of the valve is determined by the number of modules used. A single control mechanism actuates all of the modules in response to an input signal and also includes manifolds by which the valve is connected to the fluid source and to the load actuator.

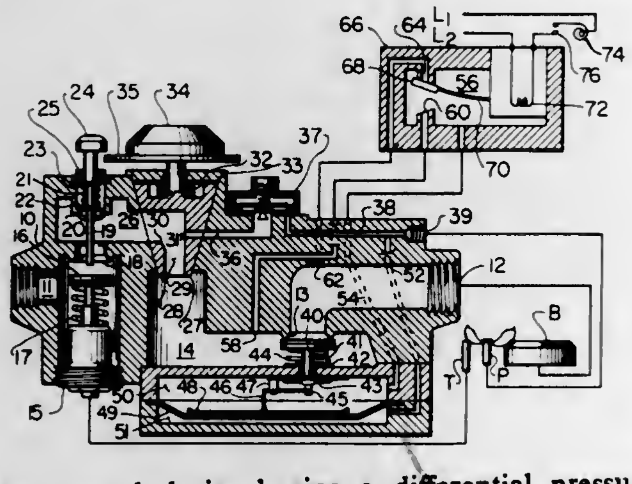
3,528,451
LIQUID LEVEL REGULATING DEVICE
John Y. Hansen, Tustin, Calif. (% Hansen Machine Company, 7551 Park Ave., Garden Grove, Calif. 92641)
Filed Dec. 18, 1967, Ser. No. 691,331
Int. Cl. F16k *31/18*
U.S. Cl. 137—433 9 Claims



A valve assembly for metering a continuous flow of liquid into a reservoir to maintain the liquid level therein substantially constant. The valve comprises a housing which is connected to a supply pipe and which is placed in the reservoir. The housing has an orifice therethrough. A hollow, air-filled ball positioned within the housing senses the level of the liquid and controls the rate of flow through the orifice as a function thereof.

3,528,452
DIAPHRAGM OPERATED FLOW CONTROL DEVICE

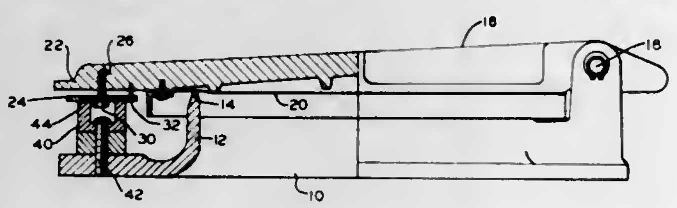
James R. Willson, Fountain Valley, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,035
Int. Cl. F16k *31/12;* **G05d** *7/00*
U.S. Cl. 137—495 **6 Claims**



A flow control device having a differential pressure operated diaphragm modulating a main valve to regulate the pressure of a main flow between selected limits and subjecting one side of the diaphragm to a regulated pilot flow with the other side being subjected to outlet pressure of the main flow by means of bleed passages which include a transfer control valve whereby the other side of the diaphragm is subjected to main inlet pressure to provide an additional force supplementing the normal force which closes the main valve.

3,528,453
MAGNETIC BIAS ADJUSTING MEANS FOR TANK VENT

Evald Dunkelis, Glen Ellyn, Ill., assignor to GPE Controls, Inc., Morton Grove, Ill., a corporation of Illinois
Filed May 23, 1968, Ser. No. 731,452
Int. Cl. F16k *15/00, 31/08*
U.S. Cl. 137—527.8 **6 Claims**

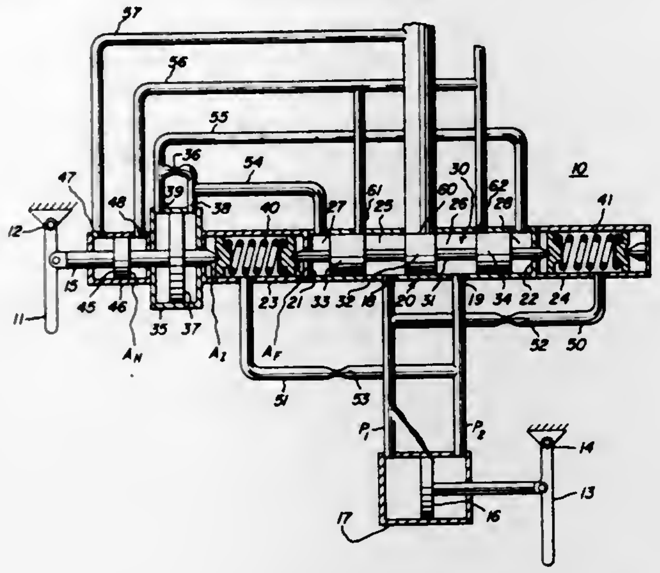


A tank vent fitting of the type having a cover which is held in the closed position by the biasing force of a permanent magnet wherein means are provided for conveniently adjusting the magnetic bias, and thereby the set pressure at which the vent opens.

3,528,454
STABILIZED HYDRO-MECHANICAL PRESSURE CONTROL VALVE

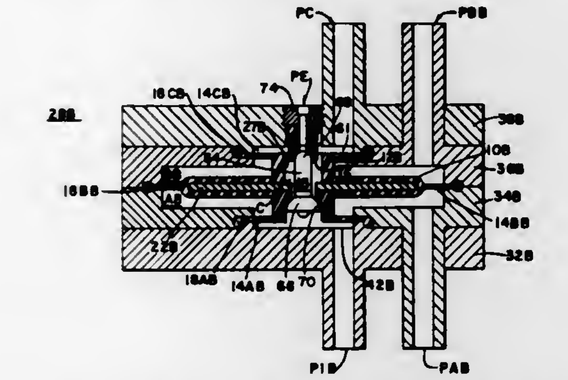
Ernest E. Lewis, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 29, 1968, Ser. No. 779,796
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.69 **10 Claims**

A hydraulic network is provided in a hydro-mechanical pressure control valve including a sleeve and a spool with a plurality of lands thereon to produce close time correspondence between an input shaft and the difference in pressure at output ports thereof. The network includes a cylinder having a pair of outlets between which an orifice is connected and a piston. The piston is mechanically coupled to the input shaft of the valve and the two outlets are hydraulically coupled to chambers formed by the sleeve and lands. Also, the input shaft and the spool shaft are proportional to render the force on the input shaft constant and in addition means are provided for reducing the magnitude of such constant force.



3,528,455
CONDITION RESPONSIVE PARAMETER CONTROL MEANS

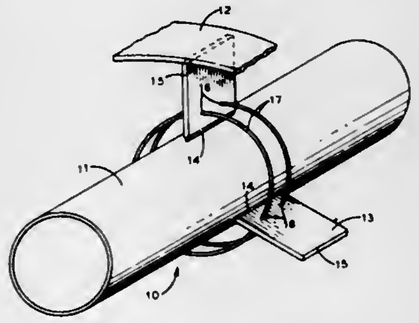
Kenneth G. Kreuter and Klaus P. Mueller, Goshen, Ind., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 16, 1966, Ser. No. 594,851
Int. Cl. F16k *11/00*
U.S. Cl. 137—627.5 **4 Claims**



A unitary, multiple diaphragm structure is provided which includes integral valve means and flow passages, the structure being substantially entirely composed of a flexible resilient material. Additional rigid inserts are integrally molded into the basic structure to provide additional valving and seating arrangements for desired functional adaptability. The diaphragm structure is combined with hollow housing structures comprised of stacked plates or the like for mounting the peripheral portions of the multiple diaphragms of the unitary structure. Selective porting and pressure connections in the housing structures effect a family of differential pressure responsive modules or devices such as relays, comparators, and the like. A simplified temperature to pressure transducer is provided in which a compound bimetal spring selectively retains a spherical valve in an exhaust port to provide a modulated pressure output as a function of temperature changes. The transducer and family of differential pressure responsive modules are combined to provide a plurality of parameter control systems having a wide variety of operating modes. Several of the systems are convertible from one operating mode to another by merely changing the supply pressure magnitudes. The transducer is characterized by the fact that it requires no changeover adjustment to adapt it to the multiple modes of the systems.

3,528,456
COAXIAL TUBULAR MEMBERS SPACED WITH INSULATING SPACER MEANS

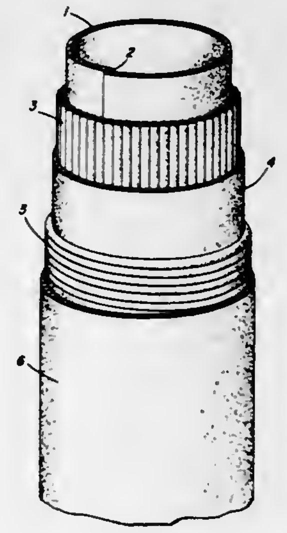
Ernst Scheffler, Langenhagen, Germany, assignor to Kabel- und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany, a corporation of Germany
Filed Jan. 8, 1969, Ser. No. 789,700
Claims priority, application Germany, Jan. 9, 1968, 1,675,323
Int. Cl. F16l *9/18;* **H01b** *9/04*
U.S. Cl. 138—113 **6 Claims**



A separator construction for maintaining a plurality of coaxially related tubular members in spaced relation to each other to provide maximum insulating effect for minimizing the transmission of cold or heat therethrough. The separator construction including a plurality of plate members having opposite edges thereof abutting opposed surface portions of the respective tubular members, and ring means for interconnecting the plate members in circumferentially spaced relation to each other.

3,528,457
HOSE

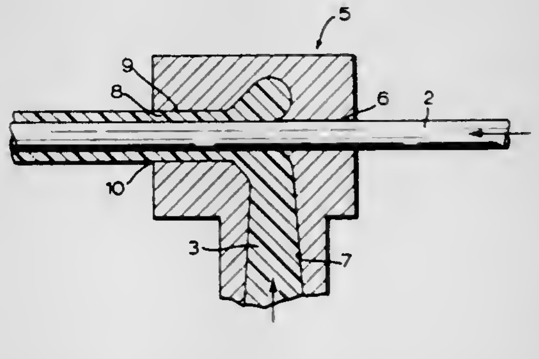
Erwin Herbert Erland Martin, Coventry, and Clive S. Thawley, Hayling Island, England, assignors to The Dunlop Company Limited, London, England, a British company
Filed Aug. 1, 1968, Ser. No. 749,360
Claims priority, application Great Britain, Aug. 11, 1967, 36,901/67
Int. Cl. F16l *11/08*
U.S. Cl. 138—132 **11 Claims**



A hose consisting of an inner layer of an elastomeric composition, a layer of longitudinal fibres adjacent to said inner layer, an intermediate layer of an elastomeric composition adjacent to said layer of longitudinal fibres, at least one layer of transverse fibres adjacent to said intermediate layer, and an outer layer of an elastomeric composition adjacent to said layer of transverse fibres, each layer of an elastomeric composition being based on a thermoplastic poly(vinyl chloride), polyurethane, ethylene/vinyl acetate copolymer or block copolymer of which the following is a specification.

3,528,458
TUBULAR INSULATION FORMED BY AN EXTRUSION PROCESS

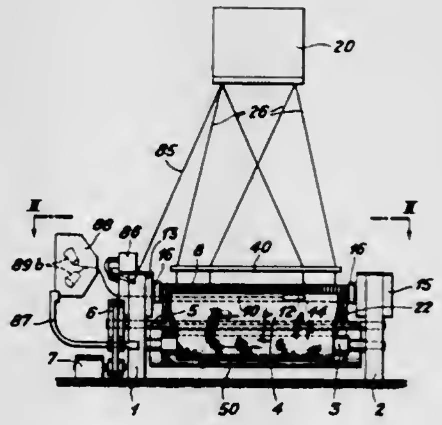
Bruno Lothar Gaeckel, Westmount, Quebec, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a company of Canada
Filed Nov. 13, 1968, Ser. No. 775,245
Int. Cl. F16l *9/14*
U.S. Cl. 138—143 **7 Claims**



A thermally insulated tubing is produced by extruding an insulating material on a metal tube. The material consists of an expanded cellular thermoplastic material uniformly impregnated with asbestos fibers.

3,528,459
LOOM

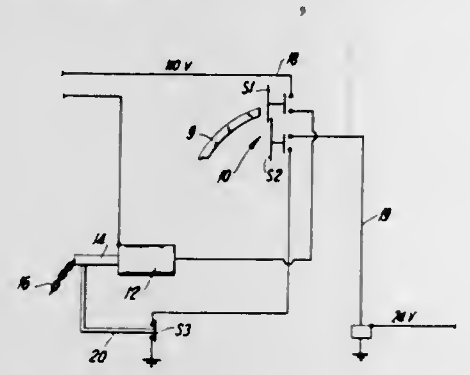
Erwin Pfarrwaller and Gerd Schmitz, Winterthur, Switzerland, assignors to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Apr. 24, 1968, Ser. No. 723,684
Claims priority, application Switzerland, Apr. 27, 1967, 6,043/67
Int. Cl. D03d *47/38*
U.S. Cl. 139—122 **2 Claims**



A loom employing a Jacquard mechanism for shedding and for weft-changing. Each of one or more weft-changing Jacquard cords serves, when pulled, or when released, to rotate a lever against a spring and thereby to store a weft-changing signal in the stress of that spring, which is engageable with a lifting-plate. The plate can be driven up or down, according to the angular position imposed on it by action of the spring when the plate is freed from a detent, in response to a cyclical rocking motion of two lifting-blades moving in opposite phases at the picking rate. The vertical motion of the lifting-plate, up or down from a neutral intermediate position, stores energy in a power spring for subsequent quick actuation of the weft-changing mechanism in one direction or the other when the weft-changing mechanism is released. The motion of the weft-changing mechanism and hence the selection of the weft can be composed of motions produced by plural such power springs due to the action of separate lifting-plates.

3,528,460
DETECTING MEANS FOR WEFT SELECTING MEANS

Earnest H. Spearman, Blacksburg, S.C., assignor to Wendell Mills, Inc., Blacksburg, S.C., a corporation of South Carolina
Filed Feb. 28, 1969, Ser. No. 803,184
Int. Cl. D03d *47/38*
U.S. Cl. 139—336.4 7 Claims

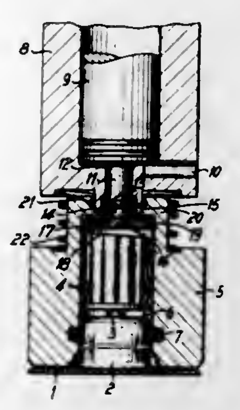


The present invention includes a presentation mechanism employable with a shuttleless loom, wherein various selected wefts are presented to the rapier of the loom. Each weft source is preferably mounted with the lever operably affixed to a solenoid. Upon the closing of a circuit as directed by the dobby mechanism to the solenoid, the position of the lever will be changed so as to present a particular weft thereon to the rapier. Integral to the circuit between the solenoid in its activating switch, is a circuit dependent upon the retraction number of the solenoid. In the event of malfunction due to improper orientation of the solenoid, the secondary circuit will be closed, causing the loom to shut down.

3,528,461
APPARATUS FOR FILLING AEROSOL PACKAGES

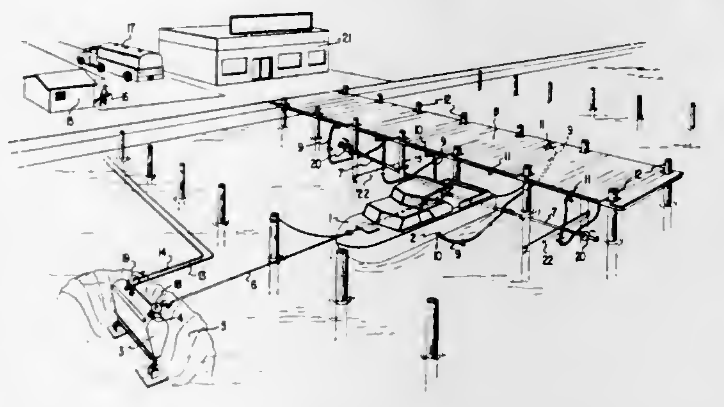
Hans Grothoff, Valbert, Westphalia, Germany, assignor to Carl Gisbert Siebel, Dusseldorf, Germany
Filed Sept. 26, 1968, Ser. No. 763,496
Claims priority, application Germany, Sept. 26, 1967, 1,551,622
Int. Cl. B65b *1/04, 3/04*
U.S. Cl. 141—20 10 Claims

An apparatus for filling aerosol packages includes a filling head provided with a cavity into the open end of which the valve of an aerosol package may be sealingly inserted. A dosing cylinder is adapted to receive a quantity of fluid. A piston is reciprocable in the dosing cylinder from a retracted to an advanced position to thereby raise the pressure of fluid to a predetermined value. Passages connect the interior of the cylinder with that of the cavity so that pressurized fluid may enter the latter and subsequently the aerosol package. A first valve normally closes the passages and opens when the pressure of fluid in the cylinder reaches the predetermined value. A second valve is located upstream of and adjacent to the first valve and closes the passages when the piston reaches its advanced position.



3,528,462
SEWAGE DISPOSAL

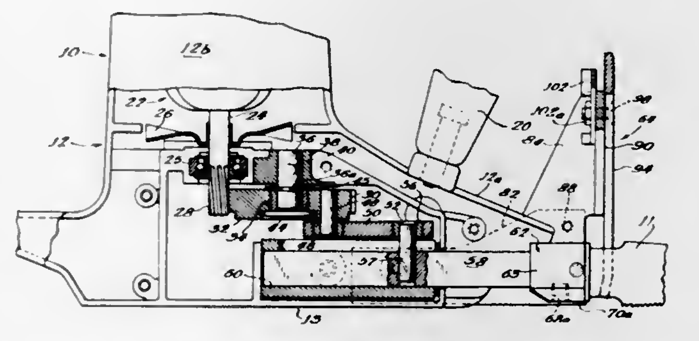
Harold G. Quase, Kensington, Md., assignor to Underwater Storage, Inc., Washington, D.C.
Filed Mar. 4, 1968, Ser. No. 710,084
Int. Cl. E03f *5/00*
U.S. Cl. 141—284 9 Claims



A permanent sewage collection system associated with, e.g., marinas disposes of waste from craft docked thereat. The collection system comprises underwater storage and means for conveying the waste from the craft to the underwater storage.

3,528,463
POWERED SAW

James B. Mejia, Naperville, Ill., assignor to G. W. Murphy Industries Inc., a corporation of Texas
Original application Jan. 11, 1965, Ser. No. 424,560, now Patent No. 3,360,021. Divided and this application Sept. 22, 1967, Ser. No. 669,872
Int. Cl. B27b *11/06*
U.S. Cl. 143—68 3 Claims

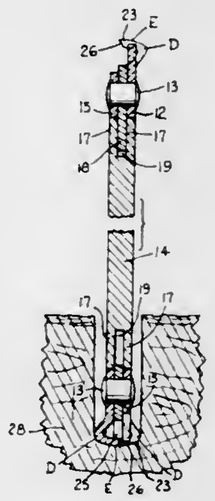


A portable electric hand saw is provided with a housing and a reciprocating drive mechanism for driving a saw blade plunger. Mounted on the end of the plunger is a saw blade connector which is designed with a plurality of differently oriented openings such that when a saw blade is positioned in a selected one of the openings and connected therein, the orientation of the saw blade will be such as to secure maximum usage of the saw for the intended purpose.

3,528,464
CHAIN SAW TOOTH

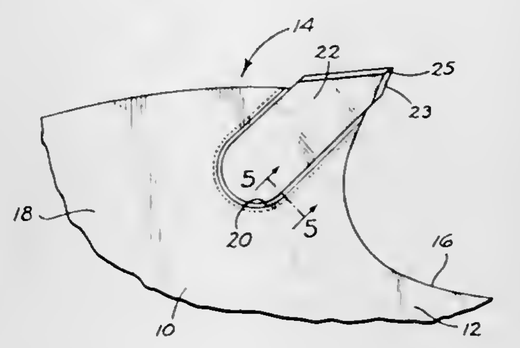
Paul H. Kennemore, P.O. Box 12, Greenwood, S.C. 29646
Filed Feb. 5, 1968, Ser. No. 702,845
Int. Cl. B27b *33/14*
U.S. Cl. 143—135 1 Claim

A saw chain having a plurality of spaced teeth coupled together by means of tie straps and drive links. Each of the teeth having an elongated substantially vertical side plate with an elongated concave intermediate portion integral therewith. An elongated top plate is integral with the intermediate side portion and extends over the longitudinal axis of the chain. The top plate has a front cutting edge and a side cutting edge which extends inwardly toward the rear of the top plate at an angle of about 5° relative to the longitudinal axis, which aids in producing a smooth and clean cut in wood.



3,528,465
SAW WITH CERAMIC CUTTING BODIES

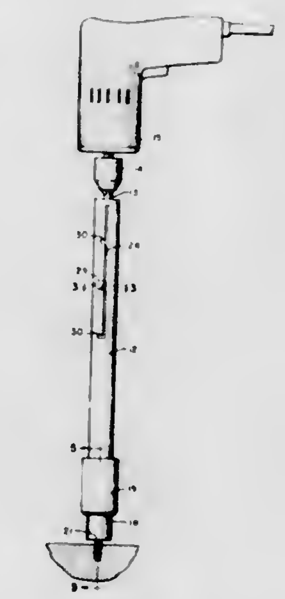
Herbert A. Omley, Rte. 1, Box 627, Dallas, Oreg. 97338
Filed June 1, 1965, Ser. No. 460,365
Int. Cl. B27b *33/08, 33/12*
U.S. Cl. 143—145 2 Claims



A saw including a ceramic body as the cutting element in the saw, such body being bonded to a metallic mounting and the mounting being secured in place on the saw.

3,528,466
SCREW FASTENER AND APPARATUS FOR APPLYING

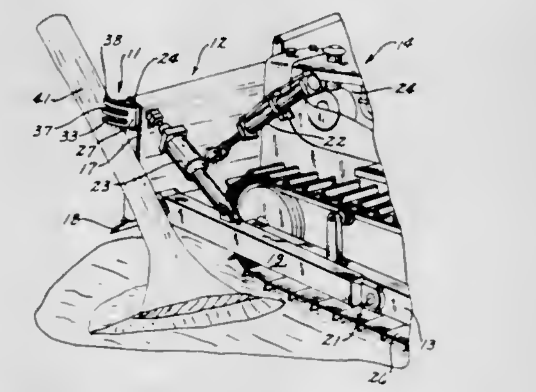
Charles W. Tracy, Tallahassee, Fla., assignor to International Enterprises, Inc., Tallahassee, Fla.
Filed Feb. 2, 1968, Ser. No. 702,639
Int. Cl. B25b *23/06*
U.S. Cl. 144—32 7 Claims



A plurality of independent screw fasteners connected together in a screw stick and apparatus for holding a stick of screws and for driving said screws one at a time.

3,528,467
TREE PUSHING ATTACHMENT FOR A TRACTOR BULLDOZER BLADE

Harry E. Watsabaugh, Humeston, Iowa 50123
Filed Mar. 18, 1968, Ser. No. 713,720
Int. Cl. A01g *23/02*
U.S. Cl. 144—34 3 Claims

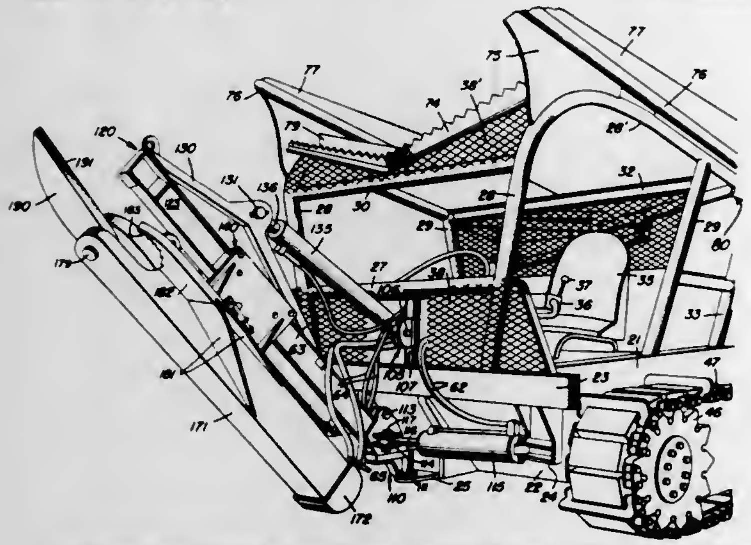


The invention provides a tree pushing attachment adapted to be directly mounted to a bulldozer blade that is pivotally and tiltably carried at the front end of a tractor. The tree pushing attachment comprises a body member having a base portion at one end that is welded to the upper end of an upright plate extended transversely of the blade at one end thereof. The attachment is thus movable with the blade which is pivotally and tiltably connected to the frame unit of the tractor and extends across the front end thereof. The body member is of an arcuate shape longitudinally thereof so that with the base portion secured to the upright plate, the other end thereof provides a tree engaging portion that is positioned outwardly from the end plate and projects forwardly from the blade. The front surface of the tree engaging portion is formed with a series of vertically spaced teeth which engage the tree to be uprooted. The roots to one side of the tree are initially cut by the lower edge of the blade, after which such one side of the tree is engaged by the tree engaging portion of the body member, when the blade is in a raised position, and then uprooted on a forward advance of the tractor in a path parallel to the tree.

3,528,468

TREE-HARVESTING APPARATUS

Joseph E. Bronsky, Summerville, S.C., assignor to Westvaco Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 606,104, Dec. 30, 1966. This application Aug. 28, 1967, Ser. No. 668,282
Int. Cl. A01g *23/02*
U.S. Cl. 144—309 **13 Claims**

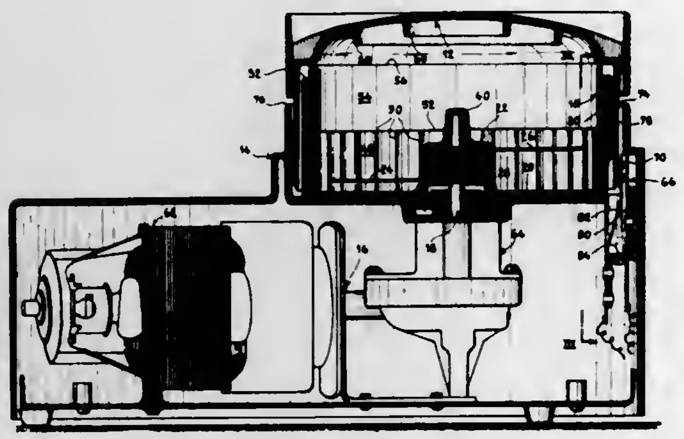


Tree-harvesting apparatus embodying the invention comprises a vehicle having tree-felling means mounted thereon. The tree-felling means may be moved in several directions so as to selectively engage and fell trees. Means and methods also are provided for preventing entanglement of the falling trees with adjacent trees and for catching them upon the vehicle as they are felled. Means also may be provided to bunch, transport, and unload trees which rest on the vehicle.

3,528,469

MINCING MACHINE WITH SAFETY COVER

Jean Mantelet, Paris, France, assignor to Moulinex S.A., Bagnolet, France
Original application May 16, 1966, Ser. No. 550,432. Divided and this application June 16, 1969, Ser. No. 833,440
Int. Cl. B02c *18/12*
U.S. Cl. 146—68 **5 Claims**

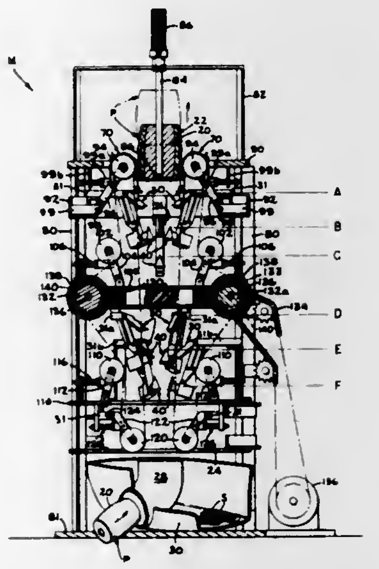


A mincing machine has a bowl containing an upright spindle on which is mounted a hub that carries the blades. A removable cover for the bowl has a lower skirt that fits into an annular recess to close two diametrically opposed switches in series. Springs resist the movement of the cover skirt into this recess with a force greater than the weight of the cover, so that as a safety feature, the operator must press down on the closed cover to actuate the mincer.

3,528,470

STRIP PEELER FOR PINEAPPLES

William de Back, Santa Clara, Calif., assignor to Castle & Cooke, Inc., Honolulu, Hawaii, a corporation of Hawaii
Filed Aug. 9, 1968, Ser. No. 751,445
Int. Cl. A23m *7/00*
U.S. Cl. 146—222 **19 Claims**

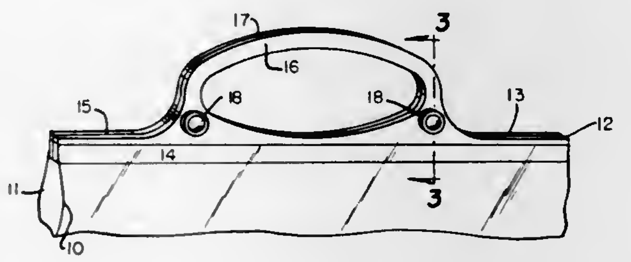


Pineapples are contour peeled in strips by pushing them with chains over equiangular slitters and undercut peelers disposed at axially spaced stations. A screw can be used to augment the feeding action of the pusher chains.

3,528,471

CARRIER BAGS HAVING HANDLES WITH SNAP-FASTENER LOCKING MEANS

Emil Hartmann, Zurich, Switzerland, assignor to CTP Industries Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 23, 1969, Ser. No. 818,728
Claims priority, application Switzerland, Apr. 25, 1968, 6,154/68
Int. Cl. B65d *33/24*
U.S. Cl. 150—3 **4 Claims**

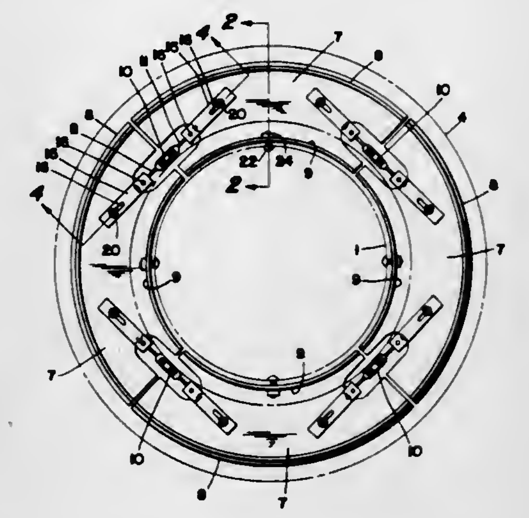


Snap-fastener type locking means for handles of the type affixed to the mouth of a carrier bag. Stud and recess elements are provided on the opposed handle portions. The stud portion extends through the recess on the opposite handle part and is provided with an overhanging portion which is resilient and deformable and capable of being latched behind a protruding part in the recess on the opposite member. As a result, the two members are locked securely together and quite strongly oppose separation in response to forces tending to separate the bag walls, whereas the handle members are quite readily separable when the two hand-grip portions are prized apart.

3,528,472

SAFETY DEVICE FOR AUTOMOBILE WHEELS

Oscar P. Kubach, 1029 Homewood Drive, Lakewood, Ohio 44107
Filed Jan. 10, 1968, Ser. No. 696,785
Int. Cl. B60c *17/04, 27/10*
U.S. Cl. 152—158 **4 Claims**

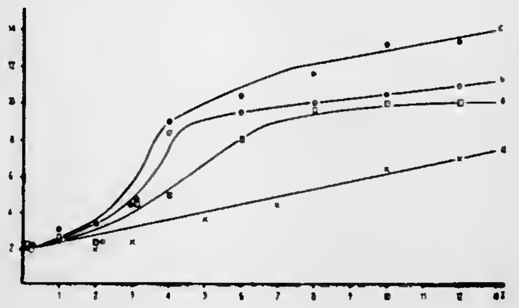


A safety device is provided, in the form of interconnected segments disposed within an automobile tire, and forming, in effect, an auxiliary or emergency wheel, permitting use of the tire upon sudden deflation of the tire, without damage to the tire or injury to the car or its occupants until the tire can be repaired or replaced.

3,528,473

PROCESS OF ADHESION BETWEEN DIFFERENT ELASTOMERS

Luigi Torti, Stefano Marcello, and Guido Bertelli, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of the Republic of Italy
Filed Jan. 25, 1966, Ser. No. 522,872
Claims priority, application Italy, Jan. 29, 1965, 1,899/65
Int. Cl. B29h *8/00;* **B60c** *1/00;* **C08c** *11/00*
U.S. Cl. 152—330 **13 Claims**

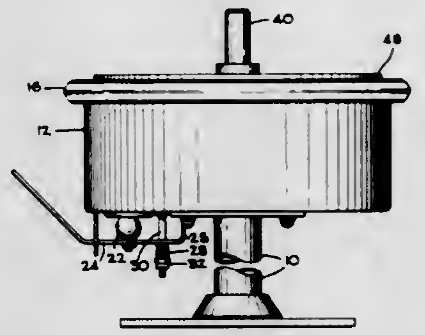


Improved adhesion between layers of relatively incompatible elastomers obtained by covulcanizing at temperatures between about 100° and 230° C., in direct contact with each other, layers of (1) ethylene propylene copolymer or polychloroprene with (2) natural rubber, SBR rubber, or polybutadiene, each layer containing a vulcanizing agent and a reinforcing filler, and layer (1) having incorporated therein an adhesion promoter which has relatively poor compatibility with such layer and which promoter is substantially more compatible with the elastomer in the next adjacent layer. Adhesion promoter is polymeric material, selected from the group consisting of polyethylene glycols having a molecular weight between about 200 and 50,000, and polymeric materials having a molecular weight between about 500 and 20,000 selected from the group consisting of natural rubber which has been depolymerized to the liquid state, liquid polybutadiene, phenol-formaldehyde and phenol-acetylenic resins, polymers of esters of resinic acid with polyhydric alcohols, silicone oils, petroleum resins of the aromatic type, cumarone-indene resins, rubbery butadiene-styrene copolymers and cobalt and zinc resinates.

3,528,474

TUBELESS TIRE INFLATOR

George May, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 19, 1968, Ser. No. 722,725
Int. Cl. B60c *25/06*
U.S. Cl. 157—1.1 **10 Claims**

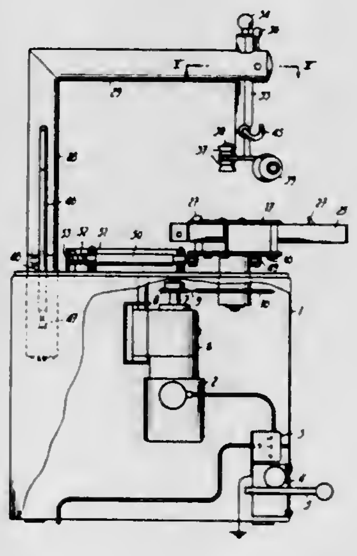


Apparatus for inflating tubeless tires has a cylindrical container with a central upstanding shaft. A platform is slidably received on the shaft above a spring to hold a wheel with a deflated tire on the rim thereof. The weight of the wheel lowers the platform by compression of the spring to engage the lower wall of the tire with the lip of the container and to engage the upper wall of the tire with the rim of the wheel. The tire, container, platform and rim define a closed chamber which is expanded when air is introduced through a valve in the rim to raise the platform and engage the lower wall of the tire with the rim.

3,528,475

APPARATUS FOR FITTING ON AND REMOVING AUTOMOBILE TYRES

Victor Duquesne, 42–44 Quellinstr. Antwerp, Belgium
Filed Nov. 15, 1966, Ser. No. 594,470
Claims priority, application Belgium, Nov. 26, 1965, 672,886; Nov. 3, 1966, 46,186
Int. Cl. B60c *25/10*
U.S. Cl. 157—1.24 **6 Claims**



The present apparatus is for automatically fitting on and removing tyres from all types of automobile wheels by laying a wheel horizontally on a driven table which can rotate and by operating a pedal the wheel is clamped or unclamped thereon. The pedal is then released and a tyre laid in a slanting position on the wheel and means guides and presses the bead of the tyre over the edge of the tyre rim for mounting purposes or a lever having an inverted conical rotary end is thrust between the wheel rim and the wheel of the tyre for removing the tyre from the wheel.

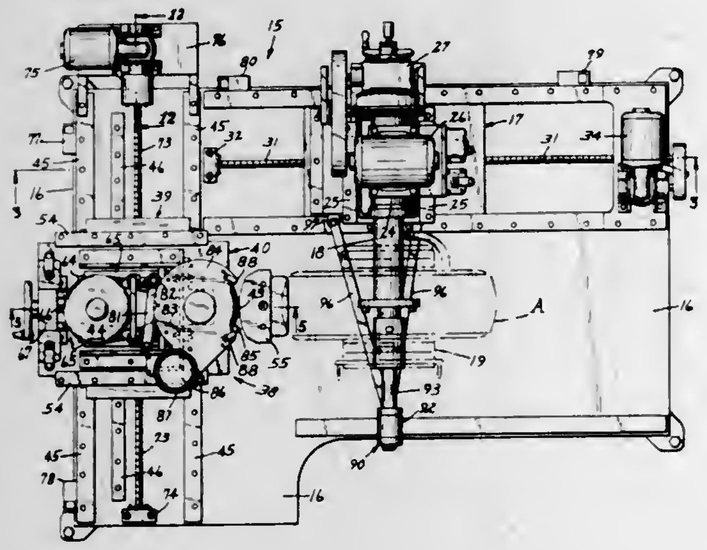
3,528,476
TIRE BUFFING APPARATUS

Raymond P. Hawkinson, Jr., Minneapolis, Minn., assignor to Paul E. Hawkinson Company, Minneapolis, Minn., a corporation of Minnesota

Filed Mar. 8, 1968, Ser. No. 711,638

Int. Cl. B29h *21/08*

U.S. Cl. 157—13 **11 Claims**



An automatic tire truing and buffing machine having a base, and first and second carriages mounted on the base, the first carriage being adapted to mount a tire for rotation and the second carriage being adapted to rotatably mount a buffing wheel for movements in directions parallel with and normal to the axis of rotation of the tire, a cam having a cam surface which corresponds to the cross-sectional contour of the crown of the tire and a cam follower are mounted on the base and second carriage respectively whereby movement of the second carriage in directions parallel with the axis of rotation of the tire translates to movements of the buffing wheel in directions normal to the axis of rotation of the tire. The first carriage is adjustable in directions parallel with and normal to the axis of rotation of the tire, and the second carriage is provided with means for automatically imparting reciprocatory movements of the second carriage in directions parallel with the axis of the tire and for imparting adjustments to the buffing wheel in directions normal to the axis of rotation of the tire.

3,528,477
TWO-WAY DRAW CURTAIN APPARATUS

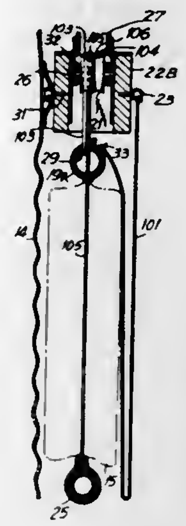
Garnett Abraham, 215 Manor Road,
Staten Island, N.Y. 10314

Filed July 11, 1968, Ser. No. 744,080

Int. Cl. A47h *5/14*

U.S. Cl. 160—84 **9 Claims**

A two-way draw curtain apparatus which consists of a stationary curtain fixed near the top of a window opening and a movable curtain which is adjustable in length and adjustable in height. Both of these adjustments are performed by the same control cords so that the movable curtain body may be opened from the top, or opened from the bottom of the window, and its length adjusted to completely cover or partially cover the window opening. The cross members which support both curtains are also adjustable in width so that the apparatus may be installed in window openings of various sizes.



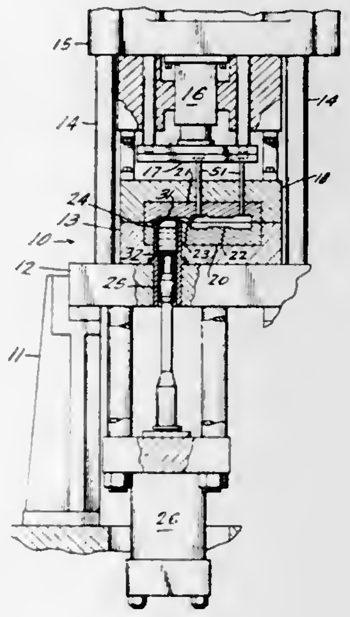
3,528,478
METHOD OF DIE CASTING HIGH MELTING POINT ALLOYS

Byron W. Koch, Bruno Sachs, and William D. Navarro, Toledo, Ohio, assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed July 25, 1968, Ser. No. 747,589

Int. Cl. B22b *17/04*

U.S. Cl. 164—113 **5 Claims**



The invention discloses a method of die casting high temperature alloys such as ferrous alloys. The shot sleeve of a die casting machine is provided with a protective thermal barrier prior to pouring the charge thereinto. The shot plunger is protected by the insertion of a seal, and the active portion of the shot sleeve is made larger in diameter than the effective diameter of the shot plunger so that a residual metal annulus remains in the shot sleeve after injection. The metal annulus, and seal are removed as a part of the biscuit with the casing. A further feature of the invention is the provision of a floating shot sleeve that has clearance for relative movement with respect to the die blocks.

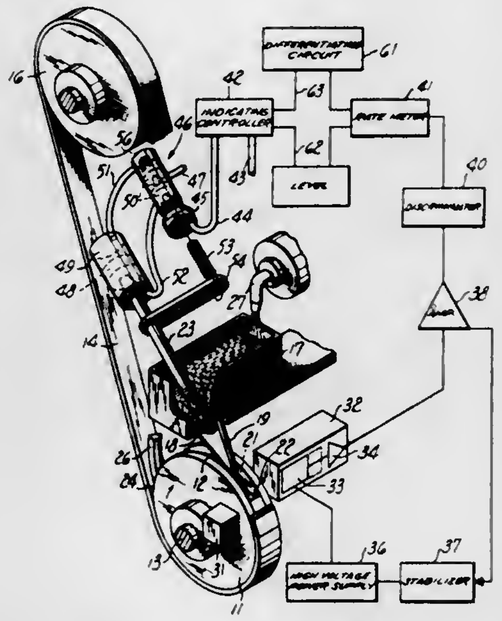
3,528,479
CONTROL SYSTEM FOR REGULATING FLOW OF MOLTEN METAL INTO A CONTINUOUSLY ROTATED CASTING WHEEL

Joseph I. Cole, Staten Island, N.Y., and William C. Martin, Naperville, and Stephen F. Skala, Berwyn, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 7, 1967, Ser. No. 651,871

Int. Cl. B22d *11/10*

U.S. Cl. 164—155 **7 Claims**



A tapered metering pin in a nozzle controls the flow of molten metal from a tundish into a casting groove in a continuously rotated wheel. A gamma radiation source and a detector are positioned at opposite sides of the wheel to monitor both the quantity of metal flowing into the casting groove and the level of metal in the groove. A control system positions the metering pin in response to total radiation detected so as to maintain the flow and the level substantially constant.

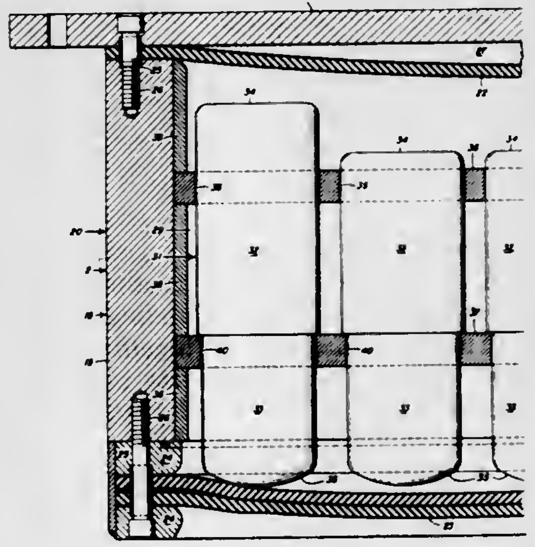
3,528,480
MOLDING MACHINE PRESSURE HEAD

Russell J. Smith, Toledo, and William H. Froman, Luckey, Ohio, assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Nov. 21, 1967, Ser. No. 684,765

Int. Cl. B22c *15/08;* **B30b** *5/02*

U.S. Cl. 164—171 **10 Claims**



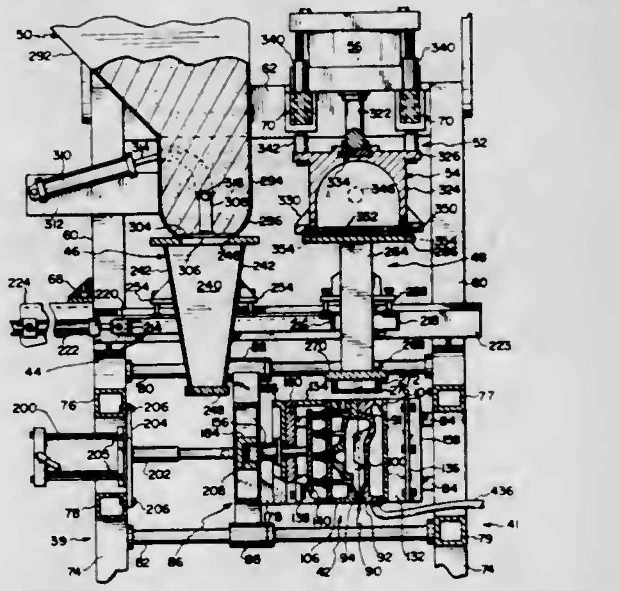
A molding machine pressure bead for compacting molding sand in a flash against a pattern, the head having a lower rubber diaphragm acting alone under fluid pressure applied directly thereto for initially compacting the sand and being backed for final compacting by a multiplicity of individually vertically movable plungers uniformly powered by higher fluid pressure applied thereto through a separately pressurizable upper diaphragm. The plungers slide in apertures therefor in vertically spaced fixed guide plates mounted between the diaphragms, bottom for limiting their downward movement on the lower plate, and are of such number and arrangement as uniformly to compact the sand even of gang molds or single molds having numerous high spots.

3,528,481
CORE MAKING MACHINE WITH HARDENING GAS MANIFOLD

Robert S. Lund, Elmhurst, Ill., assignor to Pettibone Corporation, Chicago, Ill., a corporation of Delaware Continuation-in-part of application Ser. No. 737,162, June 14, 1968. This application Oct. 17, 1968, Ser. No. 768,465

Int. Cl. B22c *13/12, 9/12*

U.S. Cl. 164—183 **10 Claims**



Apparatus for making foundry sand articles such as sand cores includes a mold box having horizontally separable box sections defining a mold cavity therebetween, a blow head mounted in spaced superposed relation to the mold box for vertical reciprocal movement, means for reciprocating the blow head, a sand hopper mounted in spaced relation above the mold box in lateral alignment with the blow head, carriage means mounted for horizontal reciprocal movement between the blow head and the hopper thereabove and the mold box therebelow, a sand magazine mounted on the carriage means for horizontal movement therewith and for vertical reciprocal movement relative thereto, a gas manifold mounted on the carriage means for horizontal movement therewith and for vertical reciprocal movement relative thereto, and means for reciprocating the carriage means to dispose the magazine and the manifold alternately between the blow head and the mold box, and to dispose the magazine adjacent the hopper when the manifold is disposed between the blow head and the mold box, whereby the blow head reciprocating means is operable to move the blow head towards the mold box alternately in engagement with the magazine and the manifold for moving them to positions adjacent the mold box for filling and gassing the mold cavity respectively.

3,528,482
CONTINUOUS CASTING MACHINE

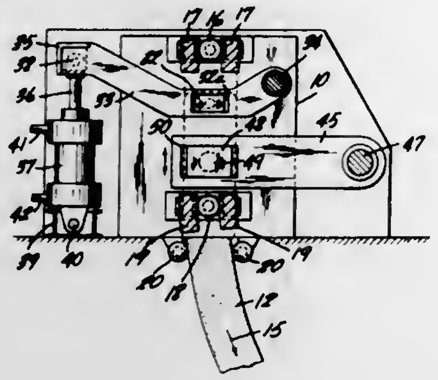
Herbert Fastert, Wyckoff, N.J., assignor to Concast Incorporated, New York, N.Y.

Filed Dec. 20, 1967, Ser. No. 692,090

Int. Cl. B22d *27/08, 11/00*

U.S. Cl. 164—260 **3 Claims**

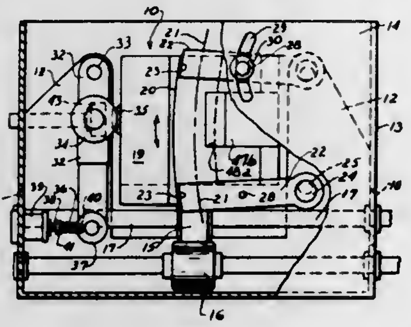
In a continuous-casting machine wherein the strand of cast metal is conducted from the mold along a curved path, an open-ended mold having a straight mold cavity is oscillated for the mold cavity to move in a direction generally tangent to the curved path of the strand, with at least one end portion of the mold moving in a curved path having substantially the same radius and center as the path of the strand.



3,528,483
CONTINUOUS-CASTING MOLD ASSEMBLY

Paul Mallener, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Apr. 29, 1968, Ser. No. 724,722
Claims priority, application Germany, May 11, 1967, 1,558,311
Int. Cl. B22d *27/08*
U.S. Cl. 164—260 **15 Claims**



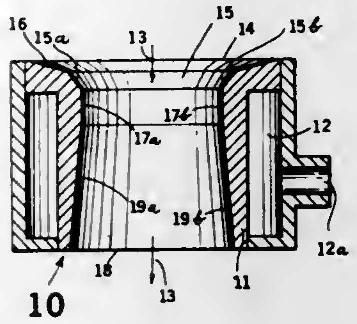
A continuous-casting mold assembly has a mold body with an open-ended mold cavity arcuately through it and an arcuate surface corresponding to and parallel to the arc of the cavity. Means are provided to oscillate the mold body in the general axial direction of the mold cavity. A pair of guide elements are adjustably positioned to engage the arcuate surface at points spaced apart on its arc to define an arcuate path of oscillatory movement of the mold body, and spring means are operatively mounted to resiliently urge the mold body in the direction in which the arcuate surface of the mold body is pressed against the guide elements, the arcuate surface being adapted to slide across surfaces of the guide elements.

3,528,484
CRYSTALLIZERS FOR VACUUM-MELTING INSTALLATIONS, PARTICULARLY ELECTRON-BEAM MELTING FURNACES

Gerhard Scharf, Dresden, and Dieter Rumberg, Freital, Germany, assignors to VEB Edelstahlwerk, Freital, Germany

Filed Sept. 15, 1967, Ser. No. 667,953
Int. Cl. B22d *11/00*
U.S. Cl. 164—273 **8 Claims**

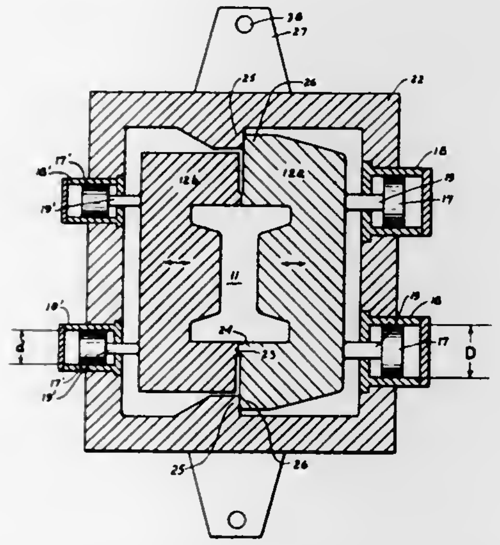
Crystallizers for vacuum melting of various metals and alloys, having a passage channel for the molten metal between the filling and the outlet apertures, wherein the filling aperture is followed by a run-off incline, another inclined wall portion, a substantially parallel section and slightly outwardly tapering walls adjoining the outlet aperture. According to the invention, the inclined wall portion diverges to a smaller degree than the walls of the run-off incline. The divergence is preferably of 45 degrees. An inflow incline may also be disposed between the inclined wall portion and the parallel section of the passage channel. Preferred and experimentally proven proportions, angles and relative lengths are disclosed in accordance with the invention.



3,528,485
CONTINUOUS-CASTING MOLD

Eric T. Vogel, Elmhurst, N.Y., assignor to Concast Incorporated, New York, N.Y.

Filed May 20, 1968, Ser. No. 730,490
Int. Cl. B22d *11/00*
U.S. Cl. 164—273 **4 Claims**

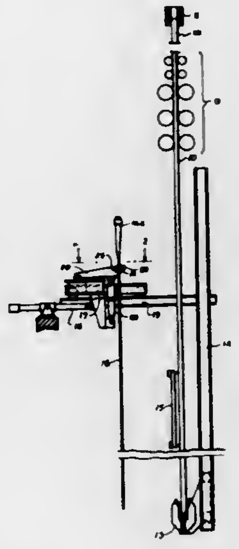


A mold assembly for a continuous-casting mold, which has an open-ended mold cavity therethrough, is in two parts which separate at a plane extending axially through the cavity. The parts are moved together and apart by suitable power means, such as pistons in cylinders operated by fluid pressure. In the closed position of the mold one of the parts is positioned at the plane of separation by pressing it against stops and the other part is pressed against the first part. Greater pressure is applied to press the first part against the stops than is applied to press the other part against the first part, so that the plane of separation is at a fixed position determined by the stops, and sufficient relative pressures are applied to hold the parts firmly together at the plane of separation. At the end of a casting run both parts are adapted to be moved back from the plane of separation to assure complete release of the casting.

3,528,486
DUMMY-BAR HANDLING MECHANISM

Karl-Heinz Golde, Ratingen, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed May 7, 1968, Ser. No. 727,310
Claims priority, application Germany, May 8, 1967, 1,558,308
Int. Cl. B22d *11/08*
U.S. Cl. 164—274 **5 Claims**

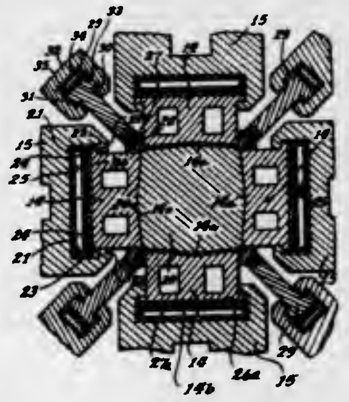


Mechanism for handling a dummy-bar in continuous-casting apparatus wherein reversible withdrawal rolls for moving a dummy-bar, and a continuous casting following the dummy-bar, vertically downward from a mold includes a first carriage movable vertically to support and guide the lower end of a casting, or of a dummy-bar, down, and also to move the dummy-bar up to the withdrawal rolls which are reversibly driven to move the dummy-bar up to the mold preparatory to casting. A horizontally movable second carriage has a projecting tip which is adapted to be received in an aperture in the side of the dummy-bar for supporting the dummy-bar, in vertical alignment, on the carriage. The dummy-bar is moved up and down as necessary for placing it on or lifting off the tip in conjunction with the horizontal movement of the tip by the second carriage; when the dummy-bar is on the tip the second carriage moves it from a storage position, out of vertical alignment with the withdrawal rolls, into an operative position in line to be moved up to the withdrawal rolls by the first carriage.

3,528,487
CONTINUOUS CASTING MACHINE

James N. Wognum, Emil Simich, and Alvin L. Winkler, Chicago, Ill., assignors to Interlake Steel Corporation, Chicago, Ill., a corporation of New York

Filed June 5, 1967, Ser. No. 643,562
Int. Cl. B22d *11/00*
U.S. Cl. 164—280 **8 Claims**

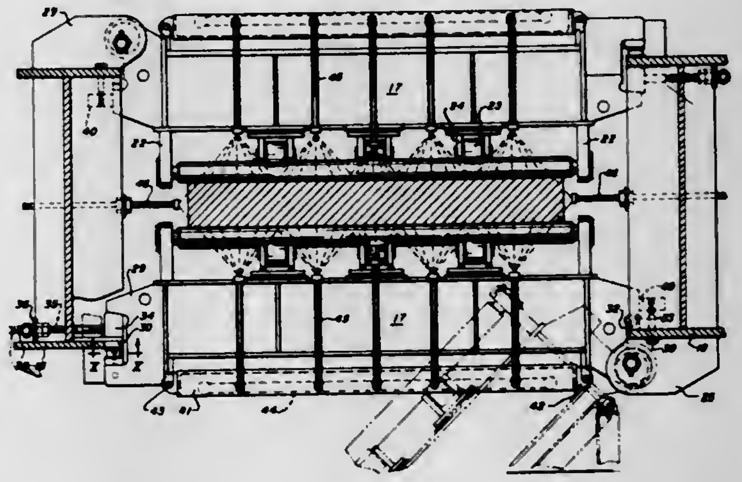


Apparatus for continuous casting of metal having a cavity formed by a plurality of flexible mold sections which minimize the problems of mold warpage by thermal expansion. Resilient backup for the mold sections for controlling mold cavity contour, improved mold section operating means and arrangement therefor is also provided.

3,528,488
HINGED GUIDE-ROLLER BANKS FOR CONFINING CONTINUOUSLY CAST SLABS

Charles H. Bode, Jr., Upper St. Clair Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Feb. 27, 1968, Ser. No. 708,684
Int. Cl. B22d *11/12*
U.S. Cl. 164—282 **6 Claims**



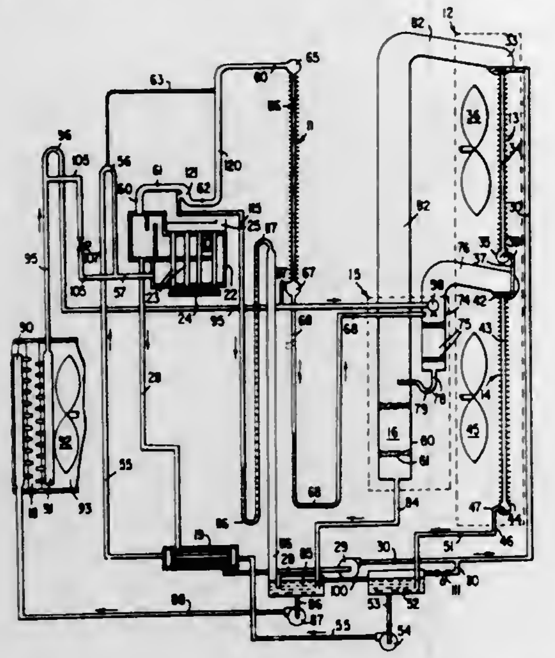
Guide rollers between the mold and pinch rolls of a continuous slab-casting apparatus are journaled on spaced box frames hinged to and extending between a pair of supporting columns. Back-up rollers are mounted on the frames to prevent deflection of the guide rollers. Nozzle frames hinged to the outer faces of the box frames mount manifolds from which cooling-spray nozzles extend between adjacent guide rollers. The hinge pins of the box frames fit eccentrically in cylinders rotatable in suitable bearings which may be adjusted to change the clear space between opposed banks of guide rollers. Manually releasable latch means on the side of the box frames opposite the hinges, normally holds the frames in closed or operative position. The frames when closed abut stops which may be changed to vary the clear space between the opposed banks of guide rollers.

3,528,489
ABSORPTION HEATING AND COOLING SYSTEMS

William W. Bell, Jr., Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Dec. 18, 1968, Ser. No. 784,723
Int. Cl. F25b *29/00*
U.S. Cl. 165—2 **14 Claims**

A heating and cooling system which, in the cooling mode of operation, comprises an absorption refrigeration system including a generator, a condenser, an evaporator, and an absorber. In the heating mode of operation, refrigerant and absorbent solution are mixed to form a heating fluid, which is heated in the generator and circulated through a heat exchanger to provide heat. A liquid filled trap is formed in the refrigerant vapor passage between the generator and the condenser in the heating mode of operation. A generator effluent passage conducts heated liquid from the generator to the heat exchanger and is disposed remotely from the liquid trap so that the liquid in the trap is not in circulation. The liquid in the trap is cooled to provide a lower vapor pressure than the vapor pressure of liquid heated in the generator. The trap also has a condenser side leg having a sufficient vertical elevation to balance any pressure



difference between the generator and the condenser during heating by a column of liquid in the trap.

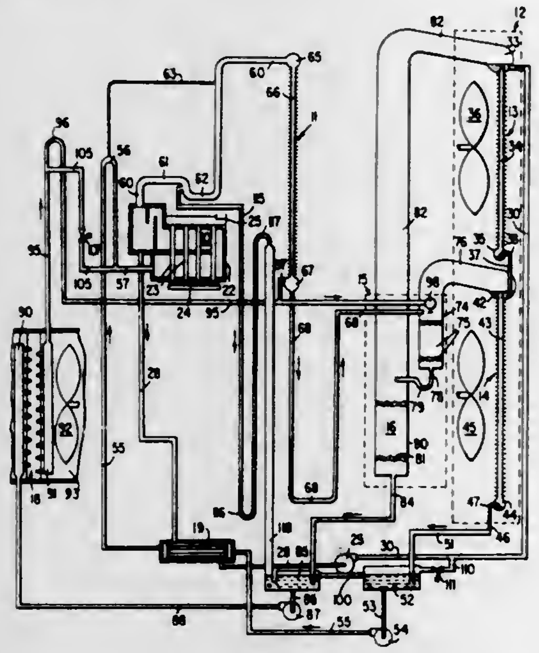
3,528,490

ABSORPTION HEATING AND COOLING SYSTEM

William W. Bell, Jr., Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Dec. 18, 1968, Ser. No. 784,750
Int. Cl. F25b *15/06, 29/00*

U.S. Cl. 165—2 15 Claims



A heating and cooling system which in the cooling mode employs an absorption refrigeration cycle to provide cooling and in the heating mode employs a mixture of absorbent solution and refrigerant which is heated in the generator and circulated to provide heating. The cooling mode employs a two-stage adiabatic evaporator in combination with a counterflow, two-stage air-cooled absorber. The system employs a plurality of loops and traps to automatically switch from heating to cooling and back to heating by raising and lowering the level of fluid at a location in the system associated with the generator. Siphoning of liquid from the generator is prevented by either venting the various loops or by enlarging the diameter of a passage in the loop, and a weir is provided to maintain a minimum level of liquid in the generator in both the heating and cooling modes as well as upon shutdown of the system.

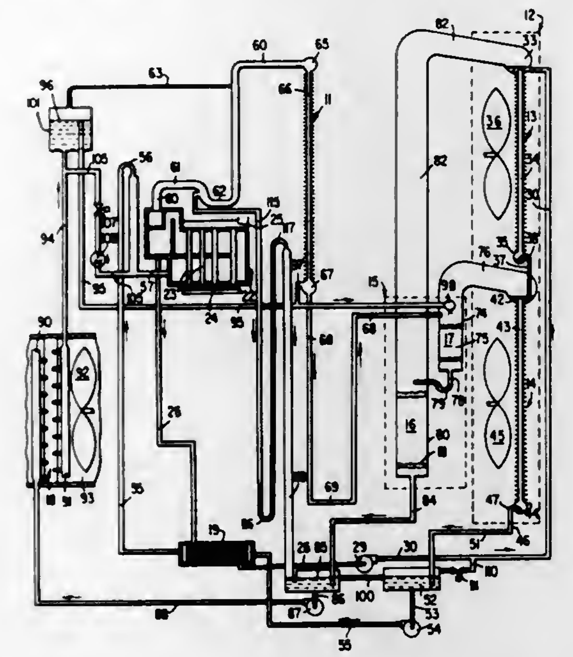
3,528,491

ABSORPTION HEATING AND COOLING SYSTEM

William W. Bell, Jr., Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Dec. 18, 1968, Ser. No. 784,729
Int. Cl. F25b *29/00*

U.S. Cl. 165—62 9 Claims



A heating and cooling system, which in the cooling mode employs an absorption refrigeration cycle to provide cooling and in the heating mode employs a mixture of absorbent solution and refrigerant which is heated in the generator and circulated to a heat exchanger to provide heating. The cooling mode employs a two-stage adiabatic evaporator in combination with a counterflow, two-stage air-cooled absorber. Cooled refrigerant from the evaporator is circulated through a heat exchanger and back to the evaporator for recooling. A cooling passage extends between the heat exchanger and the evaporator, and includes a loop having an elevation above the level of solution desired in the generator during either the heating or cooling modes. An elevated heating passage is connected below the top of the loop to the upstream leg thereof. The other end of the elevated heating passage is connected to the generator and the passage has a mode control valve therein. When the mode control valve is open, refrigerant flows from the heat exchanger to the generator for heating and circulation to the heat exchanger, instead of into the evaporator. A refrigerant reservoir is disposed in the refrigerant passage above the level of the elevated heating passage and arranged so that when the mode control valve is opened, the refrigerant in the reservoir is immediately drained to the generator to raise the liquid level and to dilute the solution therein.

3,528,492

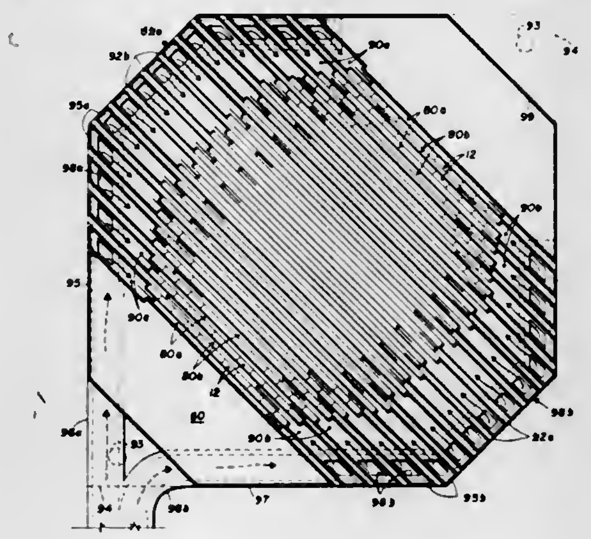
SOLID STATE MODULAR MICROWAVE SYSTEM AND COOLING MEANS THEREFOR

James E. Austin, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 3, 1967, Ser. No. 628,139
Int. Cl. F28f *7/00*

U.S. Cl. 165—80 7 Claims

A solid-state, modular microwave transmitter-receiver assembly made up of a large number of transmit-receive modules each having an antenna. Each of the modules has functional electronic blocks mounted on both sides of a center mounting plate contained within a hermetically sealed package. The module packages generally conform to the center mounting plate and are elongated, with a greater width than thickness. The antenna extends from the front end of the module and connectors extend from the rear end. The connectors are plugged into a rear support structure and are retained in place by a series of retaining plates fastened by long screws to the rear support structure. The retaining plates also form the ground plane for the antenna array. The antennae are arrayed in horizontal rows and vertical columns, and the module packages are arranged in rows extending diagonally of the antenna rows and columns with the edges of the packages in each row abutting. A cooling fluid duct is formed between each adjacent pair of module rows by the walls of the module packages, the retaining plates and the rear support structure. A manifold and header assembly directs cooling fluid in opposite directions through alternate cooling fluid ducts. The antenna assembly of each module provides a hermetically sealed coupling between the antenna and the interior of the package, supports the dipole elements, and provides impedance and balun transforming. The functional electronic blocks are easily secured on the mounting plate by spot welded brackets and are replaceable. The hermetically sealed antenna assembly and coaxial input and output connections are connected to microstrip lines within the module by spot welded straps of solid ribbon or woven metal wire fabric, as are adjacent microstrip lines on adjacent abutting functional electronic blocks. Connections are made between functional electronic blocks on opposite faces of the mounting plate by a special coaxial structure extending through the mounting plate.



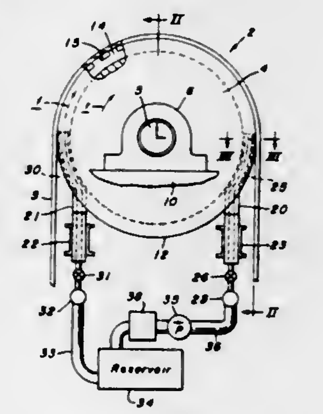
3,528,493

APPARATUS FOR DIRECTING A FLUID UPON A MOVING STRIP

Robert A. Schultz, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Nov. 18, 1968, Ser. No. 776,720
Int. Cl. F28d *11/00*

U.S. Cl. 165—86 4 Claims



An apparatus for directing fluid upon a moving strip. A cylindrical roll has circumferential grooves in its longitudinal surface. The strip is wrapped around part of the roll and covers portions of the grooves. While the strip moves in rolling engagement with the roll, stationary shoes feed fluid through the grooves underneath the strip. The apparatus is useful for any situation where a moving strip is to be brought into contact with a fluid for heating, cooling, chemical treatment, or other reasons. Also, the invention is useful for increasing or decreasing the pressure with which a moving strip is held to a roll.

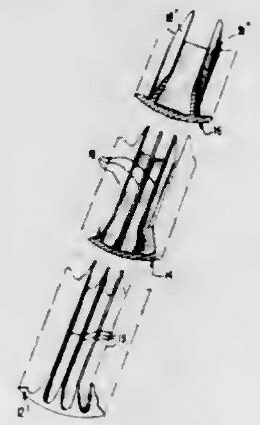
3,528,494

HEAT PIPE FOR LOW THERMAL CONDUCTIVITY WORKING FLUIDS

William J. Levedahl, Baltimore, Md., assignor, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware

Filed Nov. 7, 1966, Ser. No. 592,362
Int. Cl. F28d *15/00*

U.S. Cl. 165—105 21 Claims



A heat pipe designed for improving the capillary transport structure. Parallel fins are arranged axially in the inner wall of the heat pipe to form capillary channels therebetween. The channels have optimum configurations for heat transfer in both the condenser and the evaporator sections.

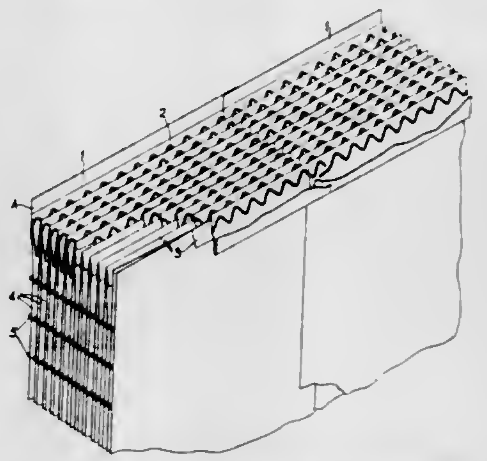
3,528,495

THERMAL INSULATION

Edward Armstrong, Stockton-on-Tees, and Peter J. McCarthy, Pemberton, England, assignors to Darchem Engineering Limited, Stockton-on-Tees, Durham, England, a British company, and The Nuclear Power Group Limited, Knutsford, Cheshire, England

Filed Aug. 25, 1967, Ser. No. 663,442
Int. Cl. F28f *13/00*

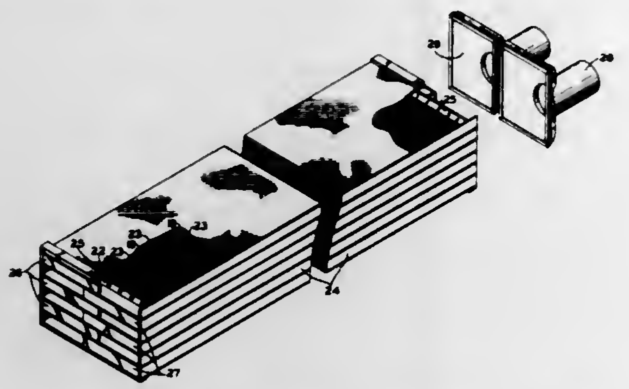
U.S. Cl. 165—135 6 Claims



This invention relates to thermal insulation which may be used for the insulation of nuclear reactor pressure vessels. The invention is particularly concerned with the formation of a seal between adjacent sheets in a pack of insulation comprising metal sheets separated by spacing members, the seal being formed between adjacent sheets in a pack wherein marginal areas of the sheets are located in pairs in associated recesses formed in a sealing member.

3,528,496
PLATE-FIN HEAT EXCHANGER

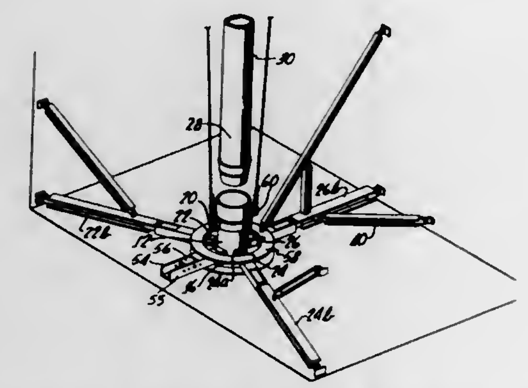
Leslie C. Kun, Williamsville, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 3, 1967, Ser. No. 680,498
Int. Cl. F28b *3/00*
U.S. Cl. 165—166 **13 Claims**



Flat plates of low thermal conductivity metal are spaced in superimposed relation by short flat fins of high thermal conductivity having opposite edges bonded to the plates, the fins being longitudinally positioned in spaced relation to form first and second fluid passageways with adjacent fins spaced at density of 30–80 per inch in the transverse direction and longitudinally separated by gaps between 0.03 and 0.25 inch long, with the second fluid passageway gaps superimposed over the first fluid passageway gaps.

3,528,497
OFFSHORE HOLDING APPARATUS

Kenneth A. Lehman, Houston, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 21, 1968, Ser. No. 730,832
Int. Cl. E21b *7/12*
U.S. Cl. 166—.5 **11 Claims**

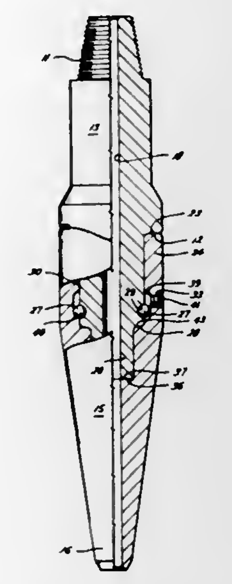


This application discloses an apparatus for holding at a drilling structure, the upper end of a pipe which is lowered from the drilling structure through an opening in a floor thereof, to an underwater well. The holding apparatus comprises a plurality of rollers mounted on fluid operated rams mounted on said floor circumferentially around said opening and arranged to move inwardly to engage the pipe with said roller mounted rams.

3,528,498
ROTARY CAM CASING SWAGE

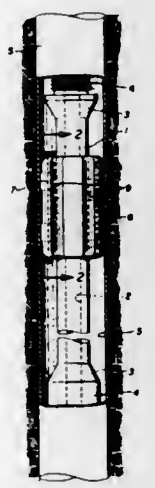
William F. Carothers, Houston, Tex., assignor to Wilson Industries, Inc., Houston, Tex., a corporation of Texas
Filed Apr. 1, 1969, Ser. No. 812,020
Int. Cl. E21b *29/00*
U.S. Cl. 166—55 **11 Claims**

A rotary swage for straightening or reforming well casings set in a borehole comprises an upper hammer portion and a lower anvil portion having a swaging head for striking the casing. The mating surfaces of the hammer and anvil form an inclined planar cam which upon rotation of the hammer causes the hammer to rise and fall striking a blow upon the anvil. The hammer and anvil are joined by means of a series of ball bearings maintained in an internal circular race between the two pieces. Secondary impact surfaces distribute the force of the downward blow of the hammer so that not all of that downward force is concentrated on the cam surface.



3,528,499
PLASTIC FLOATING DRILL PIPE AND SUCKER ROD PROTECTOR

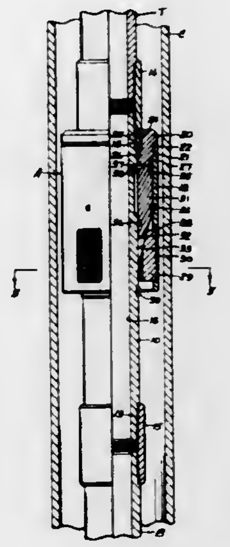
Charles H. Collett, P.O. Box 411,
Menlo Park, Calif. 94025
Filed Mar. 25, 1969, Ser. No. 810,136
Int. Cl. E21b *37/02*
U.S. Cl. 166—175 **6 Claims**



A protector for an oil well bore tube and casing for use in combination with an oil well drill pipe or sucker rod utilizes a novel construction which makes possible taking advantage of the unusual benefits of all plastic material in its construction. This combination further makes possible successful utilization of a floating relationship between the bore tube and the drill pipe or sucker rod. The construction permits rapid installation and replacement of the protector, increases its effectiveness with use, avoids jamming in the tube and on the pipe or rod. and permits elimination of metallic components in the protector and their attendant hazard to the well in case of failure of the protector.

3,528,500
TUBING ANCHOR

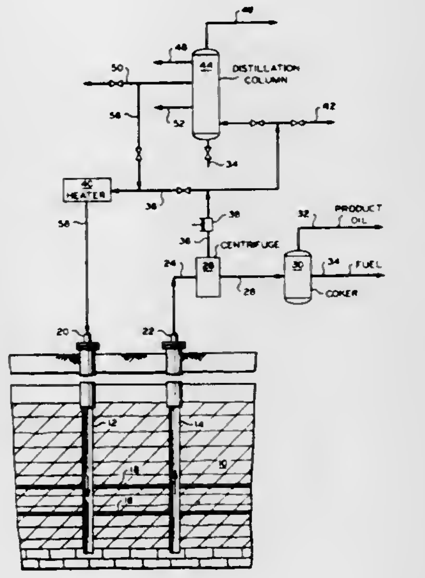
Joe R. Brown, 5649 Tupper Lake, Houston, Tex. 77027
Filed Feb. 24, 1969, Ser. No. 801,358
Int. Cl. E21b *23/04*
U.S. Cl. 166—212 **4 Claims**



An anchor assembly for well tubing strings employing hydrostatic pressure-actuated anchor means and threaded connection means operable by right-hand rotation of the tubing string to release the anchor means.

3,528,501
RECOVERY OF OIL FROM OIL SHALE

Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,474
Int. Cl. E21b *43/24*
U.S. Cl. 166—266 **8 Claims**



Shale oil is produced from oil shale in situ by injecting hot hydrocarbon oil, such as gas oil from crude or from oil shale, or shale oil per se, at a temperature in the range of about 550 to 800° F. thru a fractured section of the shale between wells penetrating said section to heat the shale, cause disintegration thereof, produce shale oil and a resulting suspension of mineral matter from the shale in the resulting oils, and produce the suspension thru one of the wells. Kerogen and bitumen of the shale are dissolved in the hot injected oil, forming a mixed oil from which the solids are separated and coked to produce additional shale oil.

3,528,502
WATERFLOOD PROCESS USING PHOSPHATED HYDROXYAMINES AS SCALE INHIBITORS

Donald C. Oleen, Houston, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Nov. 25, 1968, Ser. No. 778,808
Int. Cl. C09k *3/00;* **E21b** *43/02*
U.S. Cl. 166—275 **10 Claims**

Phosphated hydroxyamines obtained by reacting polyphosphoric acid and/or phosphorous pentoxide with hydroxyamines, e.g., diethanolamine or triethanolamine, with or without neutralization, are introduced into one or more water injection wells and forced through the underground formation to a producing well or wells without being destroyed during such passage.

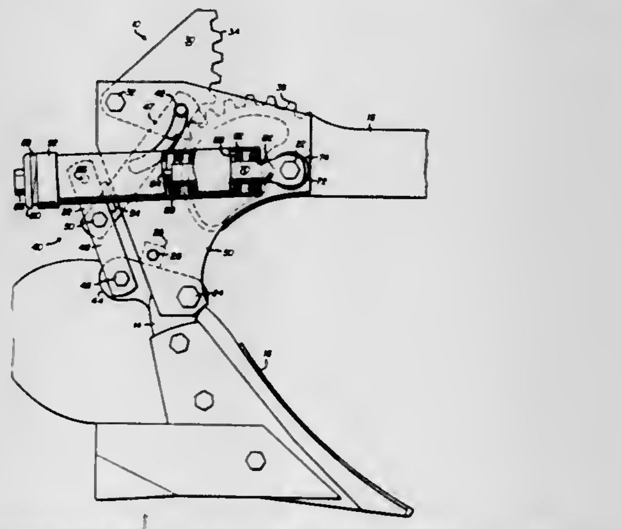
3,528,503
METHOD OF IMPROVING PERMEABILITY OF GEOLOGIC FORMATIONS BY REMOVAL OF ORGANIC MATERIAL THEREFROM

Curtis Wendell Crowe, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 30, 1968, Ser. No. 748,654
Int. Cl. E21b *43/27*
U.S. Cl. 166—300 **7 Claims**

In the treatment of a geologic formation penetrated by a wellbore wherein the porosity of the formation has been impaired by deposition of organic material especially bacterial deposits and more especially in such treatment wherein there is employed a unit flooding production system comprising at least one injection well and at least one production well, the improvement consisting essentially of admixing and injecting an aqueous solution of an oxidizing agent selected from permanganic acid, water-soluble salts thereof, or mixtures of such acid and/or salts, and thereafter injecting an aqueous acid solution preferably followed by a water brine or inert gas flushing fluid. A preferred practice is to inject a substantially inert spacer fluid and/or spacer plug following the injection of the oxidizing agent and prior to the injection of the acid.

3,528,504
TENSIONING MEANS FOR PLOW TRIP

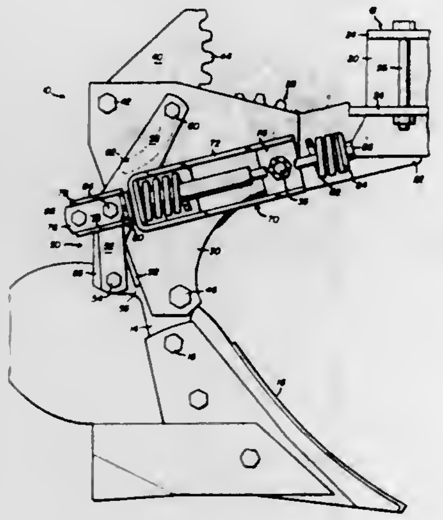
Richard W. Bushmeyer, Rockford, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 24, 1967, Ser. No. 662,941
Int. Cl. A01b *61/04*
U.S. Cl. 172—264 **11 Claims**



An implement having an earth working tool attached to a main beam of the implement through a release and cushioning mechanism. The mechanism includes two sections pivotally interconnected with one section rotatable on the main beam and carrying a motion transmitting means for rotating that section on the main beam. The transmitting means includes a drive member and linkage interconnecting the second section with the drive member and springs coacting with the linkage which resiliently maintain the mechanism in operative position while yielding when excessive force is applied to the implement.

3,528,505
EARTHWORKING TOOL RELEASE MECHANISM

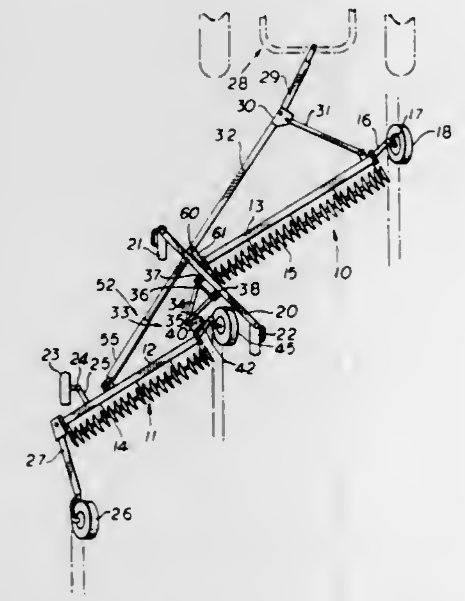
Richard W. Bushmeyer, Rockford, and Thomas O. Marx, South Beloit, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Aug. 24, 1967, Ser. No. 663,066
Int. Cl. A01b *61/04*
U.S. Cl. 172—264 21 Claims



An implement, such as a plow, having a main beam and an earthworking tool releasably connected to the main beam. The release mechanism includes spaced pivots which allow the mechanism to yield to either a clockwise or counterclockwise excessive force exerted on the earthworking tool.

3,528,506
DUPLEX IMPLEMENT

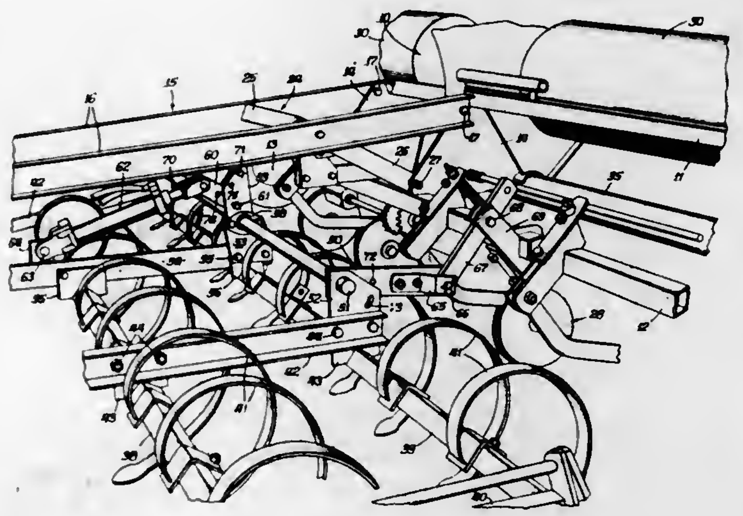
William D. Drummond, Burlington, Ontario, Canada, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,952
Int. Cl. A01b *23/04*
U.S. Cl. 172—314 5 Claims



A duplex disking implement comprises at least two disk plow or like units interconnected in offset relation for relative lateral and vertical movement, the forwardmost unit having a front furrow wheel and a transverse rear stabilizing wheeled truck. The rear unit has a rear furrow wheel and a forward furrow wheel which is located between the wheels of the wheeled truck, the last mentioned furrow wheel being adapted to absorb side draft in operation and to caster when the implement is turned.

3,528,507
FIELD TILLAGE APPARATUS

James Morkoski, Clarendon Hills, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,262
Int. Cl. A01b *63/22*
U.S. Cl. 172—413 1 Claim

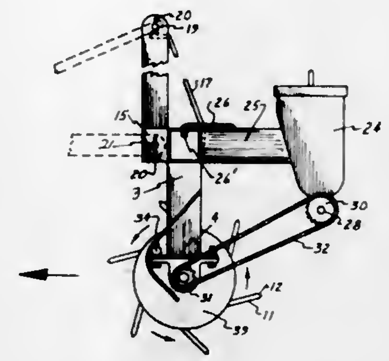


A closely coupled harrow planter combination wherein the harrow is nested below the planter hitch in advance of the planter supporting frame, and is vertically swingable between the planter hitch and the ground. The harrow is self-contained and separable from the planter and is lifted by rocking a shaft mounted on the harrow frame and having an articulated connection to the planter frame, the rocking of the harrow shaft reacting against the planter frame to allow the harrow to lift itself.

3,528,508
SOD DISTURBING AND REPLANTING APPARATUS

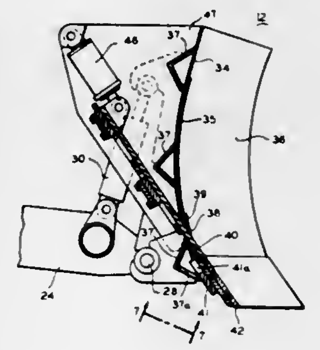
Marion S. Stevenson, Rte. 4, Winnsboro, S.C. 29180
Filed Apr. 8, 1968, Ser. No. 719,354
Int. Cl. A01b *21/04*
U.S. Cl. 172—554 6 Claims

Disclosed herein is a sod disturbing and replanting apparatus having a frame supported for translational movement over existing grass sod by a horizontally disposed cylindrical drum mounted for rotation about a transverse axis. Uniformly mounted and distributed over a continuous outer surface of the drum and projecting radially at an inclination in the direction of drum rotation are a plurality of elongated sod disturbing spikes adapted to penetrate and break up sod subsoil while merely loosening soil at the sod surface, all without appreciably disrupting or tearing existing plant growth. The number and spacing of the individual spikes is such that the weight of the apparatus exceeds the sod's resistance to spike penetration only by an amount sufficient to cause the outer drum surface to bear relatively lightly upon the sod surface between adjacent places of spike penetration. Mounted on the frame of the apparatus and adapted to be driven by the rotatable drum is a dispensing mechanism arranged to discharge replanting ingredients, such as grass seeds, uniformly onto the freshly disturbed sod. Provisions are also made for propelling the apparatus over the sodded surface and for varying the weight thereof where different sod hardnesses are encountered.



3,528,509
BULLDOZER BLADE WITH EXTENDIBLE CUTTING EDGE

Joseph R. Den Bleyker, Benton Harbor, Mich., assignor to Clark Equipment Company, a corporation of Delaware
Filed Sept. 11, 1968, Ser. No. 759,182
Int. Cl. E02f *3/76;* **A01b** *65/00*
U.S. Cl. 172—802 1 Claim

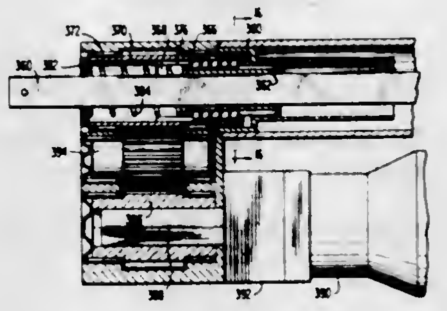


A bulldozer blade with an extendible and retractable cutting edge in which a slide extends through an opening in the moldboard. A movable blade portion is connected to the slide, and means are provided to move the slide in and out to either lower the movable blade portion below the remainder of the cutting edge of the bulldozer blade or raise it so that it corresponds with the remainder of the cutting edge.

3,528,510
POWER TOOL

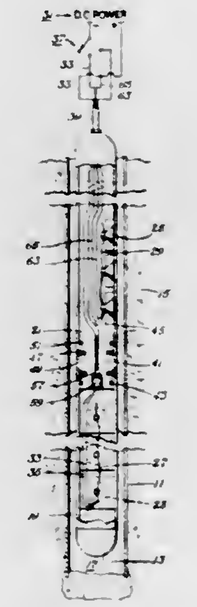
Douglas H. Peterson, New York, N.Y., assignor to Mohawk Designers, Inc., Utica, N.Y., a corporation of New York
Original application Nov. 16, 1967, Ser. No. 683,717. Divided and this application May 28, 1969, Ser. No. 828,501
Int. Cl. B23q *5/06;* **F16d** *3/06*
U.S. Cl. 173—148 19 Claims

The power tool includes a spindle mounted for rotation and axial sliding movement within a tool housing. The spindle is frictionally slidable within a sleeve which in turn is ball splined within an opening formed in a drive gear. A fluid actuated motor is coupled to rotate the gear. The spindle frictionally slides relative to the sleeve for torque loads below a predetermined torque load with the sleeve and spindle being jointly axially displaceable on the ball spline for torque loads greater than the predetermined torque load.



3,528,511
APPARATUS FOR SEALING CHAMBERS IN A PERFORATING TOOL

Billy Joe Boop, Corpus Christi, and George B. Hale, Jr., Odessa, Tex., assignors to The Western Company of North America, Inc., Fort Worth, Tex.
Filed Jan. 23, 1969, Ser. No. 793,357
Int. Cl. E21b *43/11*
U.S. Cl. 175—4.55 13 Claims



This specification discloses apparatus for isolating a chamber in a perforating tool having a plurality of chambers and conductor means that connects an explosive charge in one of the chambers to a firing means, characterized by:

(a) providing a sealing partition means between the chamber with the explosive charge and an adjacent chamber and having, connecting the chambers, a passageway through which the conductor means pass;
(b) providing a seat in the passageway;
(c) inserting a sealing projectile adjacent the seat and between the seat and the explosive charge; and
(d) detonating the explosive charge to drive the sealing projectile into the seat.

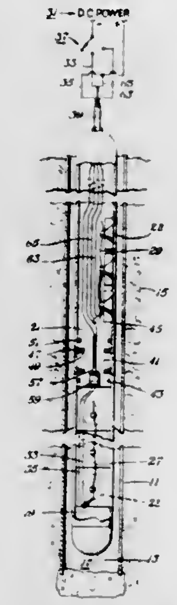
This specification also discloses a specific construction of apparatus in which retaining means is provided behind the projectile and in which a preferred projectile comprises:

(a) a cone-shaped guide portion no larger in diameter than the seat in the partition means;
(b) a frustum base portion larger in diameter than the seat to prevent the projectile from passing completely through the seat; and

(c) a plurality of successively larger cylindrical portions connecting the cone-shaped guide portion with the frustum base portion.

3,528,512
SEALING OFF A FIRING CHAMBER IN A PERFORATING TOOL

Billy Joe Boop, Corpus Christi, Tex., assignor to The Western Company of North America, Inc., Fort Worth, Tex.
Filed Jan. 23, 1969, Ser. No. 793,391
Int. Cl. E21b *43/16*
U.S. Cl. 175—4.55 1 Claim



This specification discloses method and apparatus for isolating a chamber in a perforating tool having a plurality of chambers and conductor means that connects an explosive charge in one of the chambers to a firing means, characterized by:

(a) providing a sealing partition means between the chamber with the explosive charge and an adjacent chamber and having, connecting the chambers, a passageway through which the conductor means pass;
(b) providing a seat in the passageway;
(c) inserting a sealing projectile adjacent the seat and between the seat and the explosive charge; and
(d) detonating the explosive charge to drive the sealing projectile into the seat.

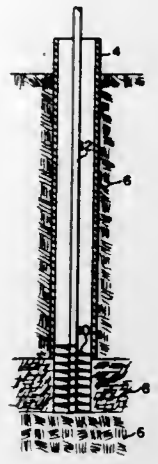
This specification also discloses a specific construction of apparatus in which retaining means is provided behind the projectile and in which a preferred projectile comprises:

(a) a cone-shaped guide portion no larger in diameter than the seat in the partition means;
(b) a frustum portion larger in diameter than the seat to prevent the projectile from passing completely through the seat; and
(c) a plurality of successively larger cylindrical portions connecting the cone-shaped guide portion with the frustum base portion.

3,528,513
WELL MINING METHOD

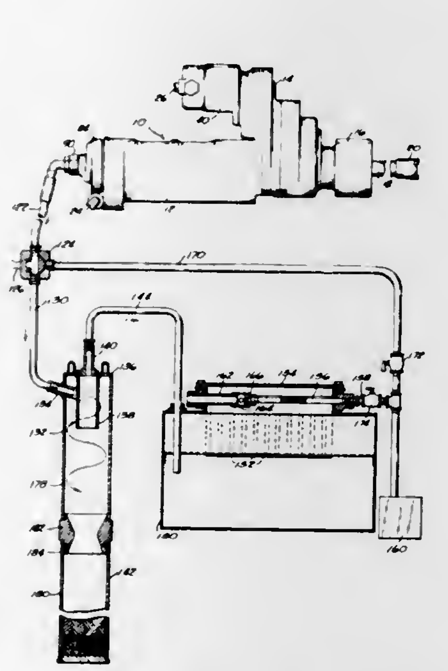
John R. Jacobucci, Norwalk, Conn., and William Z. Wenneborg, Washington, N.C., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1967, Ser. No. 659,617
Int. Cl. E21b *11/02*
U.S. Cl. 175—20 3 Claims

A well for use in the well mining of granular ore, wherein the well casing must be in pressure-tight relation to the earth formation, is sunk by driving an open-end casing into the ground until one of more hard strata are reached, drilling the core within the casing and continuing drilling through such hard strata to form a drill-hole therethrough, driving the casing through the drilled hole, and continuing to drive the casing through the earth formation until it reaches the granular ore.



3,528,514
ROCK DRILLING APPARATUS

Robert L. Sandvig, Sidney, Ohio, assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Oct. 23, 1968, Ser. No. 770,040
Int. Cl. E21b *7/00*
U.S. Cl. 175—49 9 Claims

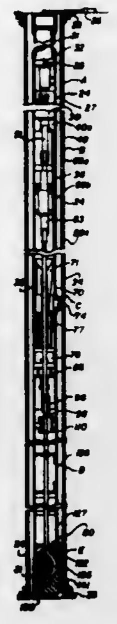


Rock drilling apparatus, particularly of the drifter drill type, embodying means for the removal of cuttings from the area of the bit and the collection of mineralogically accurate samples of rock from the section being drilled while also providing for optional reverse flow for flushing.

3,528,515
ROTARY PERFORATING TOOL AND SYSTEM FOR WELL PERFORATION

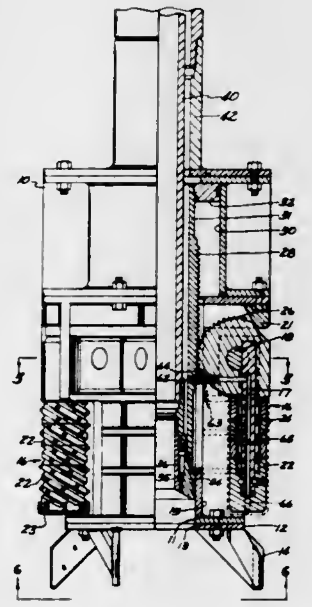
Marion A. Garrison, Denver, Colo., assignor to Empire Oil Tool Company, Denver, Colo., a corporation of Colorado
Filed Oct. 2, 1968, Ser. No. 764,544
Int. Cl. E21b *7/04, 49/06*
U.S. Cl. 175—78 10 Claims

Rotary perforating tool and system for wells having electrically powered drilling assembly lowered with elongated tube into well by flexible cable having insulated electrical conductors, tube holds said assembly against independent rotation, expanding means extending through openings in tube for securing and releasing tube at selected locations in well, pump means supplying fluid to the expanding means for directing said actions and lubricating a drill bit, a flexible shaft connecting drill bit with the upper drill assembly, guide means for the flexible shaft, means for applying controlled pressure against bit while it is rotated, and means for maintaining said tube in a fixed position in well until bit is withdrawn from perforation.



3,528,516
EXPANSIBLE UNDERREAMER FOR DRILLING LARGE DIAMETER EARTH BORES

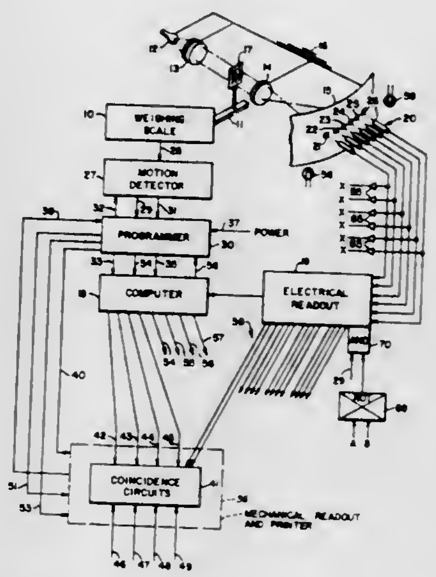
Cicero C. Brown, % Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024
Filed Aug. 21, 1968, Ser. No. 754,404
Int. Cl. E21b *9/26*
U.S. Cl. 175—267 9 Claims



A rotary drilling tool comprising expansible underreamer elements designed especially for enlarging a large diameter shaft at a selected and great depth in the earth to provide a subterranean room or section of greatly enlarged diameter. The tool includes means at the surface for actuating the underreamer elements and for providing an indication of the extent of radial expansion of the latter as a measure of the diameter of the enlarged section.

3,528,517
ELECTRONIC WEIGHER WITH COMPONENT FAILURE INTERLOCK

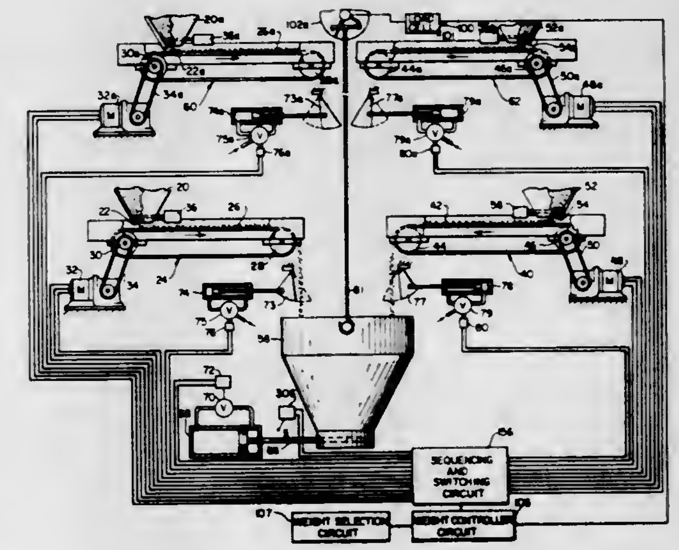
Orval J. Martin, Toledo, Ohio, assignor to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 11, 1968, Ser. No. 759,156
Int. Cl. G01g *19/413, 23/36, 23/42*
U.S. Cl. 177—4 5 Claims



A weighing scale comprising photosensitive means, including a plurality of photosensitive devices each of which may fail either in an electrically open or shorted condition, for making weight readings. Readout means in circuit with the photosensitive means function to indicate the weight of loads upon the scale. Interlock means prevent weight indication if one or more of the photosensitive devices fails in said open or shorted condition.

3,528,518
AUTOMATIC BATCH WEIGHER

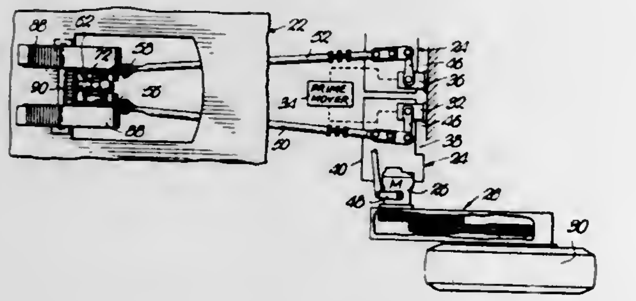
Gerald C. Mayer, Wayne, N.J., assignor to Howe Richardson Scale Company, Clifton, N.J., a corporation of Delaware
Filed Aug. 3, 1967, Ser. No. 658,229
Int. Cl. G01g *19/22*
U.S. Cl. 177—70 16 Claims



The batch weighing system disclosed herein for successively weighing out preselected ingredients in a batch formula has a modularized weight controller circuit in which preset voltages control the weights of ingredients or materials making up the batch and in which a skeleton network is selectively built up by using logic card modules to provide selected combinations of the following functions: automatic, compensated cutoff of each ingredient delivered to the scale hopper, delivery of each ingredient to the scale hopper at a full flow feed rate and a dribble feed rate, overweight and underweight checking of each delivered ingredient, partial batch control for delivering only a selected percentage of each ingredient to reduce the total weight of the batch while retaining the proper proportions of the ingredients in a given formula, an automatic tare to facilitate the use of non-accumulative weight selection devices, and a maximum batch size control to provide an indication if the scale capacity is exceeded.

3,528,519
SPEED, STEERING AND DIRECTION CONTROL FOR VEHICLES

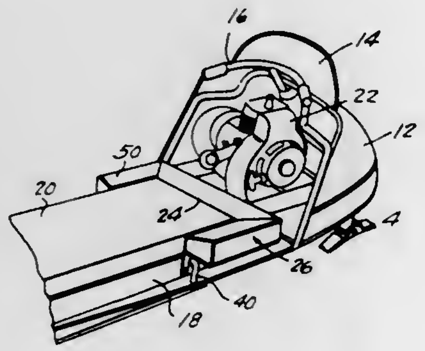
Cecil L. Case, Newton, Kans., assignor to Hesston Corporation, Inc., Hesston, Kans., a corporation of Kansas
Original application Mar. 23, 1967, Ser. No. 625,378, now Patent No. 3,431,993, dated Mar. 11, 1969. Divided and this application Jan. 17, 1969, Ser. No. 810,429
Int. Cl. B62d *11/04*
U.S. Cl. 180—6.48 **2 Claims**



A vehicle control which includes an operating lever interconnected through linkage with a pair of hydraulic fluid regulating devices and mounted for pivotal movement about one axis to operate both devices in the same direction for speed and reversing control, and about a second axis to operate the devices simultaneously in opposite directions for steering the vehicle.

3,528,520
SNOWMOBILE SAFETY PAD

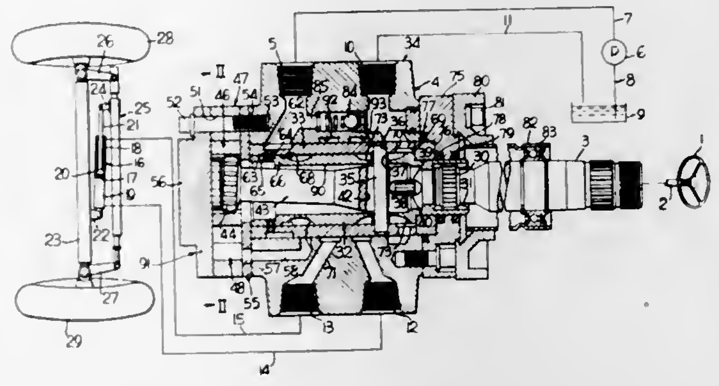
John W. Aaron, 720 Main St., Evanston, Wyo. 82930
Filed Nov. 1, 1968, Ser. No. 772,700
Int. Cl. B62d *55/00*
U.S. Cl. 180—9.24 **7 Claims**



A device for use with a snowmobile comprising a safety pad including angle iron means for securing to the sides of a snowmobile with resilient pad means secured thereto to form a barrier or upstanding member around the front portion of a snowmobile. The barrier or pad means may be made in one piece or more than one piece and may be provided with lug means for detachably connecting it to the frame of the snowmobile.

3,528,521
HYDRAULIC STEERING SYSTEM

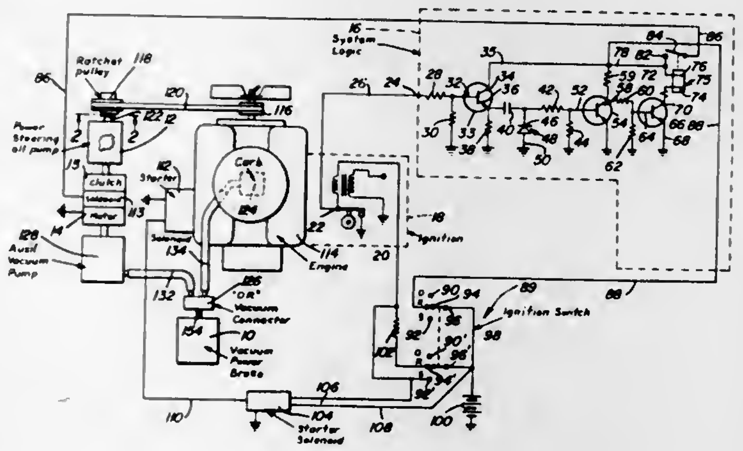
Henry P. Ellis, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 13, 1968, Ser. No. 736,845
Int. Cl. B62d *5/06*
U.S. Cl. 180—79.2 **10 Claims**



A hydraulic steering system providing balanced steering by using a single rod end piston, cylinder and metering control valve operating the steering linkage whereby the rate of steering of the steerable wheel is directly proportional to the steering wheel rotation.

3,528,522
FULL TIME VEHICLE POWER ASSIST CONTROL SYSTEM

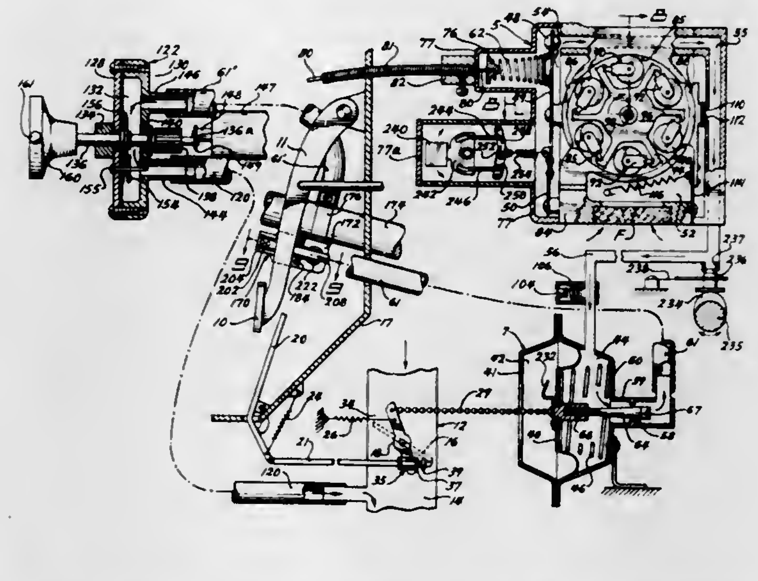
George J. Turke, Jr., 12000 Moss Ranch Road, Miami, Fla. 33156
Filed Sept. 3, 1968, Ser. No. 757,064
Int. Cl. B60r *21/00*
U.S. Cl. 180—103 **11 Claims**



An electronic logic system connected to the electrical ignition network of a vehicle senses engine stall to operate a standby motor driving an oil pump and a vacuum pump for power assist operation of steering and brake mechanisms. During normal engine operation, the logic system is inactive and doesn't interfere with engine operation of the oil pump for power steering and engine manifold operation of the vacuum power operated brake mechanism.

3,528,523
AUTOMOTIVE SPEED CONTROL SYSTEM

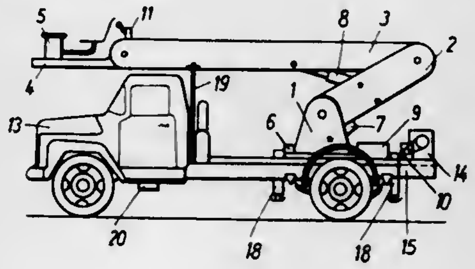
Robert H. Thorner, 8750–F W. Chicago Blvd., Detroit, Mich. 48204
Original application Feb. 8, 1965, Ser. No. 430,910, now Patent No. 3,343,423, dated Sept. 26, 1967. Divided and this application Sept. 15, 1967, Ser. No. 668,121
Int. Cl. B60k *31/00*
U.S. Cl. 180—105 **10 Claims**



The main disclosure herein comprises an automatic speed control including mechanism providing a selective mode of operation which enables the driver when he chooses to resume a previously set regulated speed subsequent to slowing or stopping the vehicle. This selective control mechanism enables "automatic" reactivation of the speed-control device in response to a change in accelerator movement and is accomplished by advancement of the accelerator slightly beyond normal driving to initiate automatic acceleration to the regulated speed. A particular form of the invention for this mode of operation includes fluid restriction mechanism acting on the speed-setting spring of the governor mechanism to delay the change in the force of the spring, thereby to restrict the rate of automatic acceleration to safe values. Another result obtainable with this delay mechanism when desired is to enable reverse or negative speed-droop with stability, which can provide a subconscious surprise to reduce the tendency for "highway hypnosis."

3,528,524
HYDRAULIC FILMING OR TELEVISION CAMERA CRANE

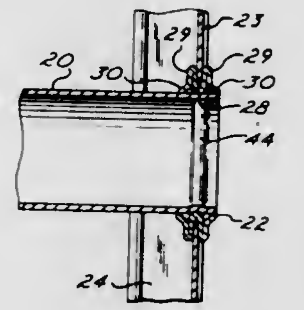
Adrian Birbanescu, Str. Nicolae-Iorga 32, Bucharest, Rumania, and Tiberiu Rusu, Raion Racari bd. RSR 54, Buftea, Rumania
Filed Nov. 22, 1965, Ser. No. 509,062
Claims priority, application Rumania, Nov. 27, 1964, 48,842
Int. Cl. B66f *11/04*
U.S. Cl. 182—63 **4 Claims**



A camera crane adapted to support movie or television cameras which is mounted on its own chassis. The camera crane is operatively connected to hydraulic cylinder actuating means mounted on the same chassis. A pumping unit is adapted to pump hydraulic fluid into the hydraulic cylinder actuating means via flexible hose means being in communication on the one hand, with the pumping unit, and, on the other hand, with the hydraulic cylinder actuating means. The pumping unit being mounted on a separate support structure so that vibrations from the pumping unit during its operation are not transmitted to the camera crane.

3,528,525
LADDER CONSTRUCTIONS

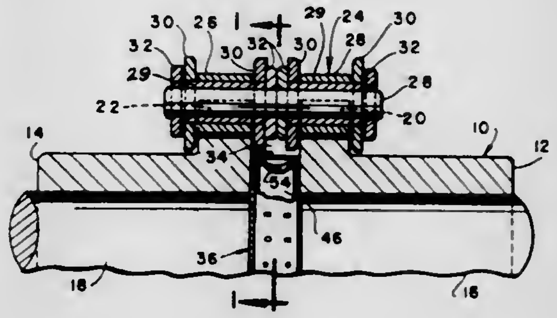
Harold R. Lindesmith, 21 York St., Greenville, Pa. 16125; Richard P. Sulecki, R.D. 1, Transfer, Pa. 15085; and Charles R. Tuck, R.D. 3, Greenville, Pa. 16125
Filed Oct. 19, 1967, Ser. No. 681,045
Int. Cl. E06c *7/08*
U.S. Cl. 182—228 **5 Claims**



There is disclosed herein a rung-to-rail ladder joint construction and method therefor comprising providing the end portion of rung with a loosely fitting sleeve, projecting the sleeve and end portion through a pierced side rail, and collapsing the sleeve in an axial direction to cause the sleeve to fold outwardly to form annular nodes or flanges on either side of the rail.

3,528,526
LUBRICANT CAPSULE FOR CHAIN COUPLINGS

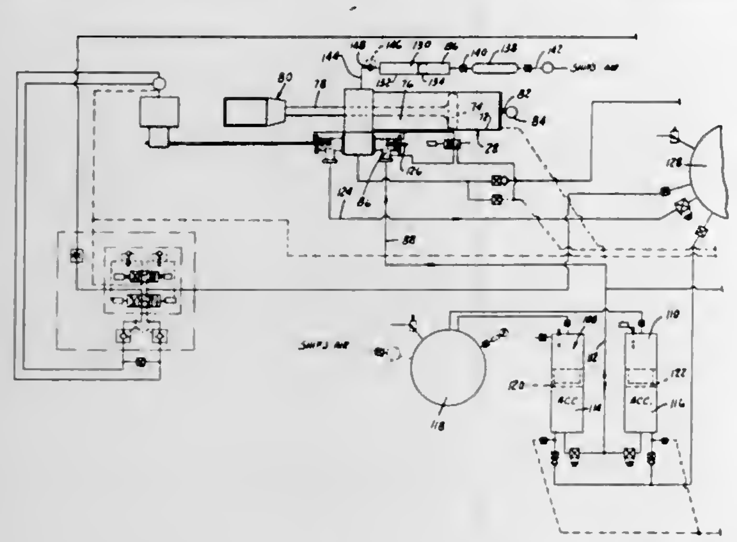
Baird E. Resener, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 698,025
Int. Cl. F01m *9/00;* **F16h** *57/04;* **F16d** *3/70*
U.S. Cl. 184—15 **7 Claims**



A centrifugal lubricator for a coupling apparatus is frictionally nestled in the opening defined by spaced, opposed members secured to independent shafts and interconnected by coupling means. The lubricator comprises a capsule having apertures in a periphery edge for dispatching lubricant from the capsule's cavity to the coupling means.

3,528,527
CONTROL VALVE ASSEMBLY FOR A DECK ELEVATOR ENGINE HAVING WAVE ACTION COMPENSATION

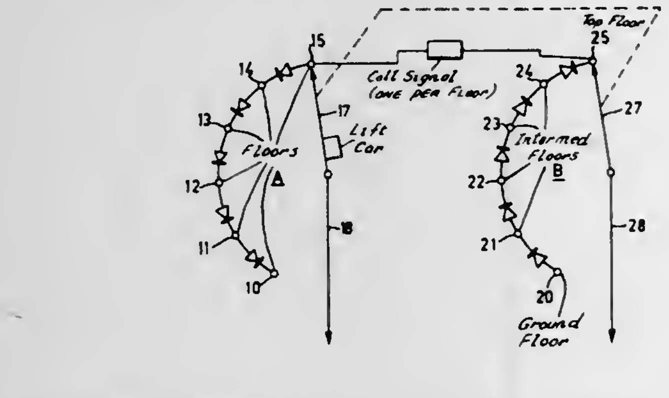
Charles E. Gregory, Anchorville, Mich., assignor to Jered Industries, Inc., Birmingham, Mich., a corporation of Michigan
Filed Feb. 5, 1968, Ser. No. 702,887
Int. Cl. B66b *11/04*
U.S. Cl. 187—26 8 Claims



This specification describes a control valve assembly for controlling changes in pressure in a hydrostatic engine for operating a ship's deck edge elevator. The engine includes a pressure movable piston which is connected through a cable and sheave assembly to a vertically movable elevator platform, and pressure is exhausted from the cylinder as the elevator is lowered under its own weight. The valve assembly modifies pressure variations in the working cylinder of the engine as the elevator is subjected to impact forces caused by wave action.

3,528,528
LIFT SELECTOR EMPLOYING WIPER ARMS SERIALLY ENGAGING A BANK OF DIODE INTERCONNECTED CONTACTS

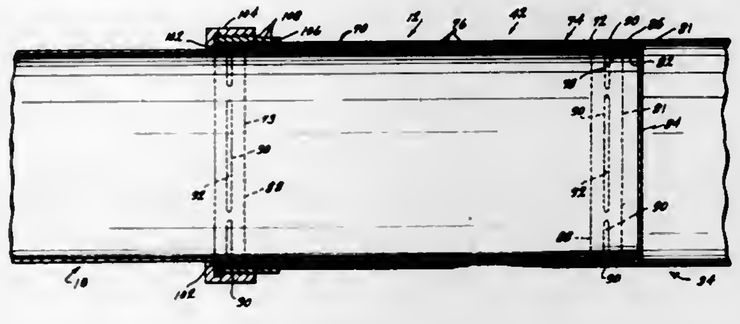
Nigel Victor Carruthers, Billingshurst, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 20, 1967, Ser. No. 624,532
Claims priority, application Great Britain, Mar. 28, 1966, 13,552/66
Int. Cl. B66b *1/06*
U.S. Cl. 187—29 2 Claims



An elevator floor selector unit having wiper arms representing the movement of the elevator for the up and down direction respectively and a bank of contacts for each arm, each contact representing a floor. Each bank of contacts is interconnected by means of diodes, the diodes in the up bank being connected in a direction opposite to those in the down bank. The elevator selection is pulse operable, and a wiper arm may be provided on each bank to indicate the presence of further calls in the direction of travel.

3,528,529
ENERGY-ABSORBING, TELESCOPING TUBULAR MEMBERS HAVING TORQUE TRANSMITTING CAPABILITY

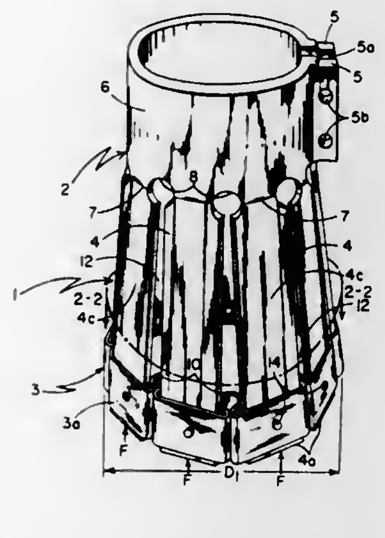
Bernard Mazelsky, West Covina, Calif., assignor to Ara, Inc., a corporation of California
Continuation-in-part of application Ser. No. 558,317, June 17, 1966. This application Jan. 22, 1968, Ser. No. 699,532
The portion of the term of the patent subsequent to Feb. 20, 1985, has been disclaimed
Int. Cl. F16f *7/12*
U.S. Cl. 188—1 5 Claims



A first tubular member is telescopically engaged by a second tubular member having cycling and energy absorbing means operatively associated therewith for absorbing energy by deformation and reverse deformation in response to mechanical energy transmitted thereto by one of said members upon axial movement of at least one of said members with respect to the other. Keying means connect the members together in such a manner that they will transmit torque while remaining free to telescope with respect to each other.

3,528,530
BRAKING DEVICE

Harry C. Franck, Dover, and Hans A. Hug, Weston, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 3, 1968, Ser. No. 718,633
Int. Cl. F16d *63/00*
U.S. Cl. 188—1 11 Claims

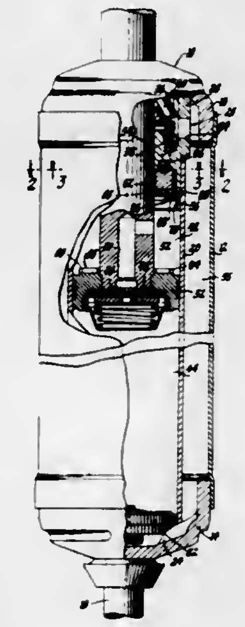


A braking device adapted to be attached to a projectile-like package which is to be air-dropped or otherwise launched and operable to deploy upon striking the ground whereby the penetration into the earth of the package is limited. A braking device in accordance with a first embodiment of the invention comprises a plurality of inclined finger-like projections having weakened upper ends formed integrally with a collar employed to attach the braking device to a package, and a circumferential expansible pleated hoop encircling the lower ends of the projections. Upon striking the ground, the projections bend outwardly and the hoop is expanded to its maximum circumferential length, thereby increasing the effective diameter of the braking device and providing effective braking action.

A braking device in accordance with an alternative embodiment of the invention for providing an increased amount of braking action is also disclosed.

3,528,531
ADJUSTABLE ORIFICE SHOCK ABSORBER

Robert J. Schweller and Alan J. Watson, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 777,697
Int. Cl. F16f *9/34*
U.S. Cl. 188—88 3 Claims

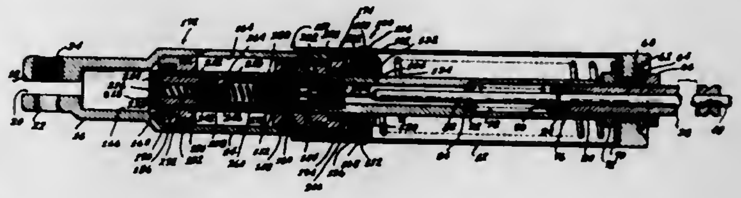


In preferred form, a direct acting hydraulic shock absorber having an externally adjusted, variable orifice fluid bypass from a rebound chamber to a reservoir chamber to regulate fluid flow. The bypass includes a variably sized semi-circular segment defined by a groove in a piston rod guide and an adjacent rotatable orifice ring. A fluid passageway extends from the reservoir chamber through the piston rod guide to one end of the circular groove. A port in the orifice ring communicates the rebound chamber with the groove. When the shock absorber piston rod is in its extreme rebound position and turned, there is an indexed relative rotation between the orifice ring and the piston rod guide which moves the port along the grooved variable depth channel to change the degree of fluid restriction from the rebound chamber to the reservoir chamber to vary rebound dampening characteristics.

3,528,532
HYDRAULIC LOCKING DEVICE

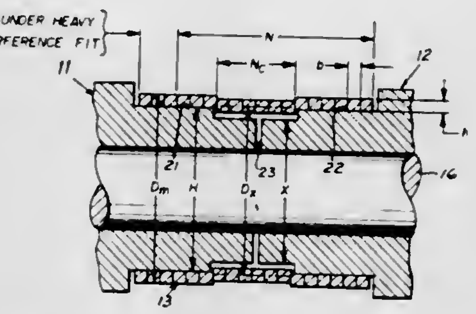
Eugene D. Moskow, 13916 Cordary Ave., Hawthorne, Calif. 90250
Filed Aug. 21, 1968, Ser. No. 754,385
Int. Cl. F16f *9/342*
U.S. Cl. 188—96 6 Claims

The invention is a hydraulic locking device in the form of a locking cylinder having a piston in it with hydraulic chambers on opposite sides of the piston. Communication is provided for between the hydraulic chambers through a locking valve which is manually operable so that the cylinder can be unlocked and locked in various desired positions. The locking valve has a check side and a relief side. A variable volume compensation chamber is provided normally in communication with one of the hydraulic chambers and with the relief or downstream side of the locking valve. The compensation chamber provides for variation in pressure or volume due to temperature and the like. The other hydraulic chamber can be relieved into the compensation chamber by way of the locking valve which opens when there is relief of pressure in one hydraulic chamber producing a differential in pressure between the chambers. The locking valve is within a hollow piston rod or cylinder which is within the locking cylinder, the compensation chamber also being within the piston rod on the downstream side of the locking valve.



3,528,533
CHATTERLESS SPRING CLUTCH MECHANISM

Columbus R. Sacchini, Willowick, Ohio, assignor to The Marquette Metal Products Co., a corporation of Ohio
Filed Apr. 14, 1969, Ser. No. 815,767
Int. Cl. F16d *13/08, 49/02*
U.S. Cl. 192—41 3 Claims

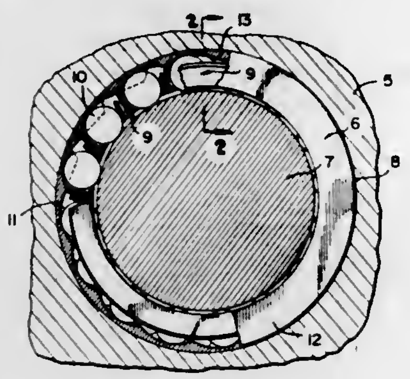


The spring clutch mechanism comprises input and output drum members and a spring overlying the drums and overrunning the output drum member in one condition of operation. The input and output drum members have reduced diameter portions adjacent the crossover gap to provide stepped cross-over surfaces. The reduced diameter portions are fabricated in accordance with specific formulae so that the reduced portions are small enough in diameter to prevent chatter (unintentional rapid engagement and disengagement of the spring with the output member when in an overrunning operative condition) but large enough in diameter to prevent distortion of the spring.

3,528,534
OVERRUNNING CLUTCH OUTER MEMBER

Carl F. Benson, Torrington, and John H. Cowles, Forestville, Conn., assignors to The Torrington Company, Torrington, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 176,681, Mar. 1, 1962. This application Mar. 26, 1965, Ser. No. 442,970
Int. Cl. F16d *15/00*
U.S. Cl. 192—45 9 Claims

A one way roller clutch including an annular sleeve formed of thin sheet metal and having an outer cylindrical surface for frictional centering engagement within a machine element bore. The interior of the sleeve is formed with a plurality of circumferentially spaced and axially extending cam surfaces for engagement with clutch rollers.

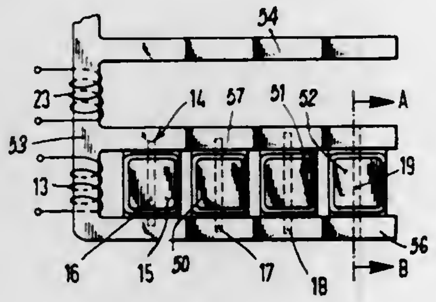


3,528,535

LOCKING MEANS FOR KEYBOARD TRANSMITTING SUCCESSIVE CONTROL COMMANDS

Camillo Bodenstein and Karl Schmid-Zeller, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Jan. 23, 1968, Ser. No. 699,935
Claims priority, application Germany, Mar. 7, 1967, S 108,683
Int. Cl. B41j *5/22*
U.S. Cl. 197—107 **4 Claims**



A system for locking keys or rendering them difficult to press when one or more selected keys have already been depressed in a keyboard for transmiting successive control commands such as control pulses of the type employed as for example in teleprinters, input equipment for computers and for control key punch machines or other apparatus such as typewriters is described.

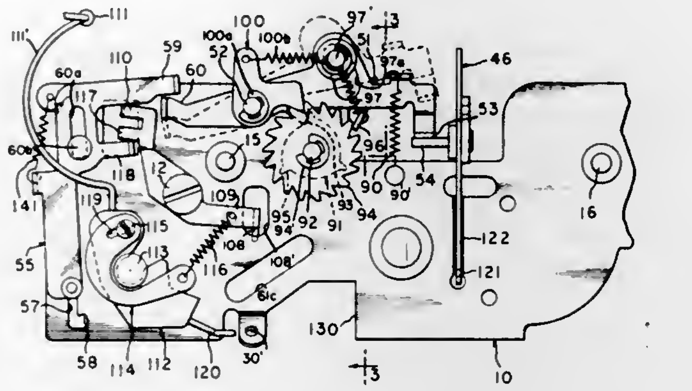
3,528,536

RIBBON FEED MECHANISM FOR A SINGLE PASS RIBBON

Allison H. Caudill, Willie Goff, Jr., and Leon E. Palmer, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Mar. 15, 1967, Ser. No. 623,438
Int. Cl. B41j *33/14*
U.S. Cl. 197—151 **10 Claims**

A ribbon feed mechanism for feeding a single pass ribbon in two different manners and applying two different tensions on the ribbon depending on the feed mode. When a total release ribbon is employed whereby no overstriking is desired, means advance the ribbon both longitudinally and transversely relative to a printing position during each print cycle. When the ribbon is a solvent coated plastic transfer matrix whereby overstriking is desired, control means is moved to a position to prevent actuation of the advancing means. The control means is progressively moved from its preventing position to a nonpreventing position by a cam during a selected number of print cycles. When the selected number of print cycles has occured, the control means is moved to its nonpreventing position in which the advancing means may be actuated. During each of the print cycles in which the control means prevents actuation of the advancing means, means incrementally move the ribbon transversely nonconstant amounts with the total sum of the nonconstant amounts during the selected number of print cycles being less than the transverse movement of the ribbon by the advancing means. The mechanism also includes means to vary the tension acting on the ribbon to maintain it taut at the printing position with a greater tension being maintained on the ribbon when a total release ribbon is used.

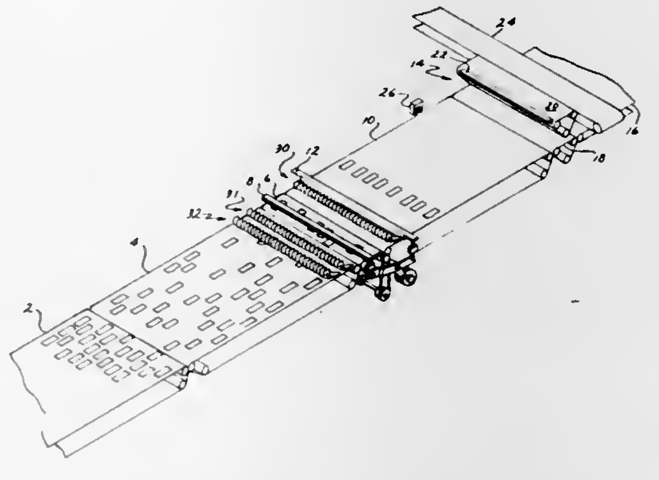


3,528,537

CONVEYOR BELT ALIGNMENT APPARATUS FOR CANDY BARS AND THE LIKE

Richard H. Schultz, Longmeadow, and Richard H. Provost, Shrewsbury, Mass., assignors to Package Machinery Company, East Longmeadow, Mass., a corporation of Massachusetts

Filed Sept. 11, 1968, Ser. No. 758,975
Int. Cl. B65g *47/26*
U.S. Cl. 198—34 **6 Claims**



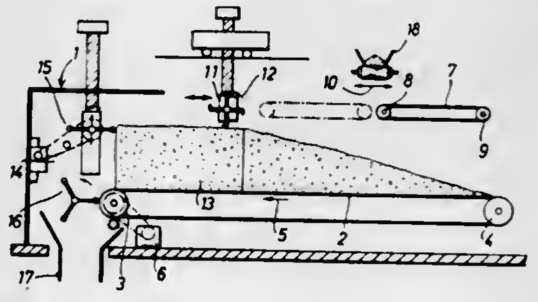
For a delivery belt conveyor system receiving candy bars and like articles for cross-wise transfer at a series of wrapping machine infeed stations, apparatus for aligning such articles in transverse rows under conditions where the articles are received in a random spaced relation transversely and longitudinally of the conveyor belt and comprising: continuously driven and longitudinally spaced first and second conveyor belt sections; an intermittently driven connecting belt therebetween; means to temporarily hold groups of articles on the connecting belt while the latter is at rest; gate means on the second belt section to align as a transverse row the articles of each group released by the holding means; and mechanism actuating the connecting belt, holding means, and gate aligning means in timed cycles of operation.

3,528,538

DEVICE FOR PROVIDING A CONSTANT SUPPLY OF MATERIAL FOR PROCESSING

Karl Wilhelm Quester, Cologne-Lindenthal, Germany, assignor to Wilh. Quester, Cologne-Sulz, Germany, a firm

Filed Feb. 28, 1968, Ser. No. 708,976
Claims priority, application Germany, Mar. 1, 1967, Q 395
Int. Cl. B65g *47/18*
U.S. Cl. 198—57 **10 Claims**



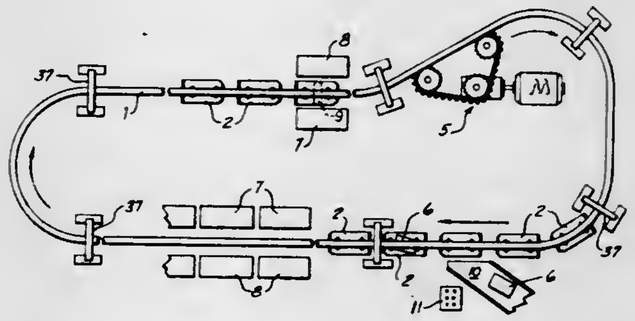
This device provides a constant supply of material such as leaf or cut tobacco for processing. The device includes a box having a movable floor belt which carries the material along the length of the box and provides a constant supply to a subsequent processing apparatus or treatment station.

3,528,539

OVERHEAD CONVEYOR APPARATUS

Richard L. Speaker, Hartford, Ted J. Harenda, Muskego, and Carl A. Bergmann, Brookfield, Wis., assignors, by mesne assignments, to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 25, 1968, Ser. No. 724,025
Int. Cl. B65g *17/20, 47/34*
U.S. Cl. 198—155 **16 Claims**



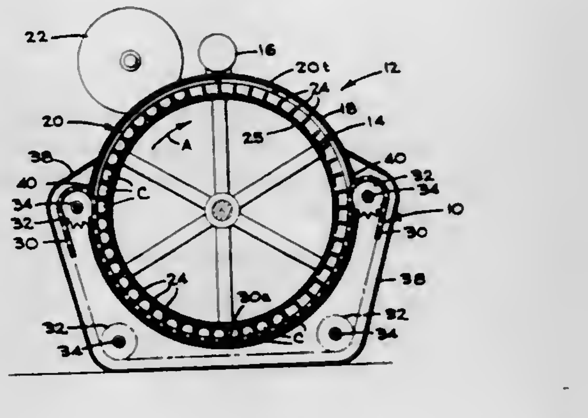
The disclosure relates to an overhead monorail conveyor means having a series of double tilt trays, each supported by a rectangular tubular planar frame interconnected to a trolley. A leading attachment includes a spherical ball bearing support interconnected by a swivel to the forward portion of the frame and a trailing means includes a spherical bearing unit interconnected by a shackle unit to the trailing end of the frame.

3,528,540

CONTAINER HANDLING APPARATUS

James L. Reimers, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Aug. 22, 1968, Ser. No. 754,631
Int. Cl. A23l *3/00;* **B65g** *29/00*
U.S. Cl. 198—211 **10 Claims**



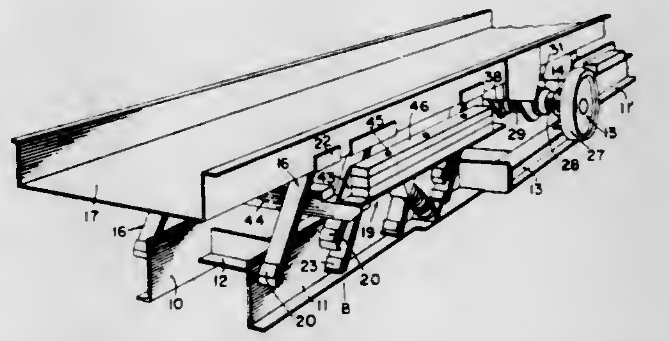
A reel and spiral cooker having a reel supporting mechanism disposed intermediate the ends thereof to prevent excessive deflection of the reel at its longitudinal midpoint and to permit use of reels more than twice as long as reels supported only at their ends.

3,528,541

BALANCED OSCILLATING CONVEYOR

Paul E. Barton and William E. Prowant, Durand,, Mich., assignors to Simplicity Engineering Company, Durand, Mich., a corporation of Michigan

Filed Mar. 18, 1968, Ser. No. 713,819
Int. Cl. B65g *27/00*
U.S. Cl. 198—220 **13 Claims**



A vibrating conveyor wherein a longitudinally extending pan is mounted on a base and oscillated in a generally linear path inclined relative to the general plane of the pan to forward material on the pan, a balancing weight assembly is supported for oscillation in a parallel path, and a transverse drive shaft having a pair of 180° out-of-phase, equally eccentric portions connected, respectively, to the pan and weight assembly oscillate them synchronously in opposite directions so that harmful vibration is not transmitted to the base.

3,528,542

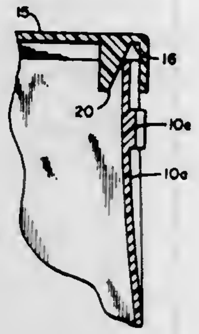
BATTERY CONTAINERS

James H. Miller, Minneapolis, Minn., assignor to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware

Filed Nov. 29, 1968, Ser. No. 779,681

Int. Cl. H01n *1/02*

U.S. Cl. 206—2 **7 Claims**



A plastic battery container having precurved end wall sections for engaging lead-ins on a plastic battery cover so as to guide the edges of the container into matching grooves in the cover.

3,528,543

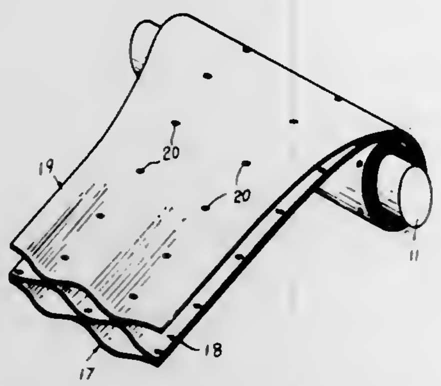
CORRUGATED ROLL-UP STRUCTURE

Eli I. Robinsky, 301 Jedburgh Road, Toronto, Ontario, Canada

Filed Aug. 27, 1968, Ser. No. 755,700

Int. Cl. B65d *85/66;* **F04h** *12/18*

U.S. Cl. 206—59 **1 Claim**



A structural member or beam which can be rolled up for transportation or storage. It is a sheet of resilient material preformed with longitudinal corrugations to provide longitudinal rigidity. The sheet may be preformed to coil into a tubular form when unwound and flatten out when wound-up. Or alternatively, without the preforming to coil into the tubular form when unwound, several of said corrugated sheets may be secured together with the corrugations staggered laterally with respective troughs and crest fastened together forming longitudinal voids. Such a structure can be wound up into a roll and when unwound provides a rigid deck.

3,528,544

METHOD FOR INSPECTING LIQUIDS FOR DETECTION OF FOREIGN SOLID MATTERS

Teiichi Noguchi and Kimishige Onozato, Saitama Prefecture, Ikuji Inowaki, Gumma Prefecture, and Toshio Takahashi, Saitama Prefecture, Japan, assignors to Eisai Kabushiki Kaisha, Tokyo, Japan

Filed Sept. 19, 1968, Ser. No. 760,901

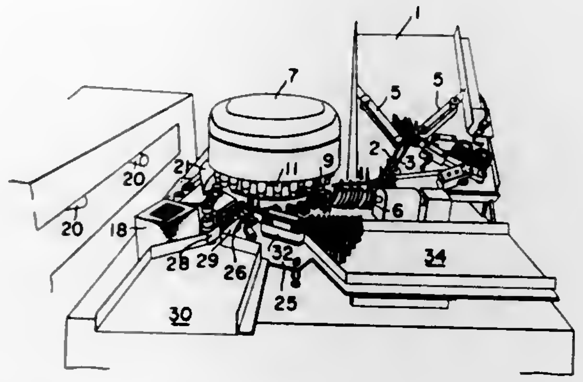
Claims priority, application Japan, Oct. 2, 1967, 42/63,037; Aug. 3, 1968, 43/54,637

Int. Cl. B07c *3/14*

U.S. Cl. 209—73 **4 Claims**

This invention provides an automatic method for inspecting a liquid filled in transparent vessels such as ampoules for medical treatment and sorting the vessels depending upon the contents of foreign solid matters which may present therein as impurity, and an apparatus therefor. The invention involves three essential points:

The first of which is to concentrate in a columnar form of foreign solid matters, if any, at the axial center of the vessels by combined mechanical rotations in normal and then reverse directions; the second is to inspect the foreign solid matters by optical and electrical means; and the third is to sort the vessels into conforming and non-conforming ones according to the number and/or sizes of the foreign solid matters as detected.



3,528,545

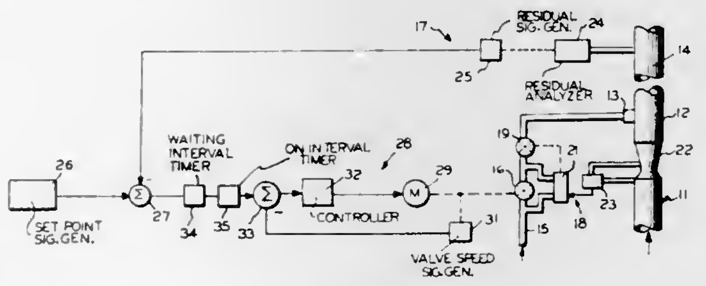
CHLORINE RESIDUAL CONTROLLING SYSTEM

Wilbur H. Frazel, Riverside, Quentin C. Turtle, Cranston, and Thomas Yip, Providence, R.I., assignors to General Signal Corporation, a corporation of New York

Filed Aug. 23, 1968, Ser. No. 754,852

Int. Cl. B01d *43/00*

U.S. Cl. 210—96 **8 Claims**



An all-electric system for controlling chlorine residual in a water treatment plant. The system is characterized in that it affords sampled-data, proportional speed floating control action. The system may also afford feedforward action that rapidly changes chlorine feed rate as required to compensate for changes in the flow rate of the stream to be treated.

3,528,546

WATER SENSITIVE FLOW MONITOR

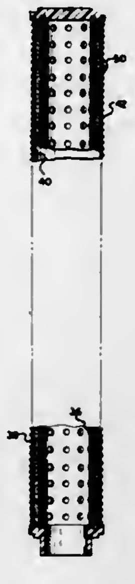
Robert W. McPherson, Danville, Calif., assignor to Velcon Filters Inc., San Jose, Calif., a corporation of California

Filed Sept. 11, 1968, Ser. No. 759,071

Int. Cl. B01d *39/06*

U.S. Cl. 210—96 **5 Claims**

A water sensitive filter and flow monitor for sensing the presence of free water in a transient flow of fluid comprising an inlet for the fluid to be monitored, an outlet for the the monitored fluid, and a mass of water swellable granular material; for example bentonite, disposed between the inlet and outlet through which the fluid is caused to pass. Upon the presence of a predetermined concentration of water in the fluid being tested, the water swellable granular material will swell to completely block the flow of any fluid therethrough.



3,528,547

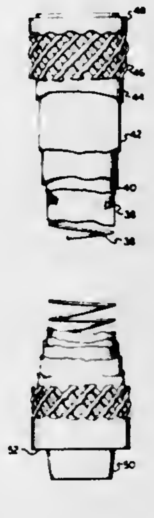
WATER SENSITIVE FLOW MONITOR

Roger E. Adams, San Jose, and Samuel J. Lyda, Fremont, Calif., assignors to Velcon Filters Inc., San Jose, Calif., a corporation of California

Filed Jan. 14, 1969, Ser. No. 791,077

Int. Cl. B01d *29/00*

U.S. Cl. 210—96 **9 Claims**



A filter and flow monitor for sensing the presence of free water in a transient flow of fluid comprising an inlet for the fluid to be monitored, an outlet for the monitored fluid, and a mass of water swellable granular algin material disposed between the inlet and outlet through which the fluid is caused to pass. Upon the presence of a predetermined concentration of water in the fluid being tested, the water swellable granular material will swell to completely block the flow of any fluid therethrough.

3,528,548

ELECTRICAL CIRCUIT FOR TEMPERATURE CONTROL OF SWIMMING POOL WATER

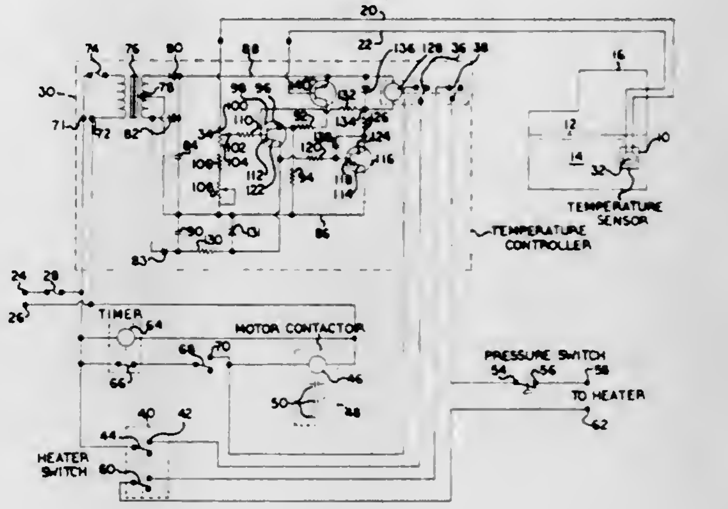
Lyle D. Sheckler, Toledo, Ohio, assignor to K & L Electronics, Inc., Toledo, Ohio, a corporation of Ohio

Filed Apr. 26, 1967, Ser. No. 633,902

Int. Cl. E04h *3/20*

U.S. Cl. 210—103 **1 Claim**

An electrical circuit which provides a sequence of operation initially sensing swimming pool water temperature below a predetermined minimum to energize an associated filtration pump; sensing the force of the water being pumped through the filter to assure safe and non-damaging operation of an associated water heater; energizing the heating action of the water heater; de-energizing the water heater if there is insufficient water flowing through the filter to assure safe and non-damaging operation of the water heater; and finally, de-energizing the water heater and the filtration pump when the water in the swimming pool has reached the desired temperature.



3,528,549

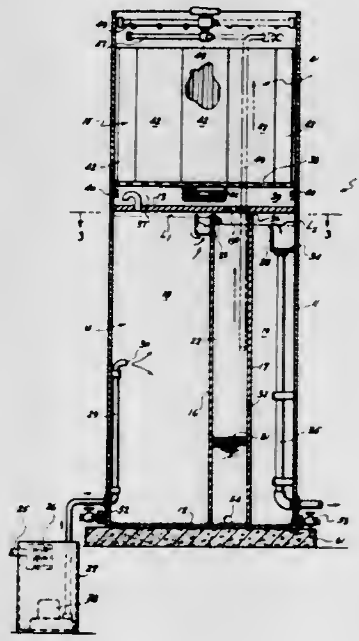
APPARATUS FOR THE TREATMENT OF WASTE WATER

Kenneth B. Ray, Greenwich, Conn., assignor to Waste Water Treatment Corp., New York, N.Y., a corporation of New York

Filed June 5, 1968, Ser. No. 734,712

Int. Cl. B01d *23/20*

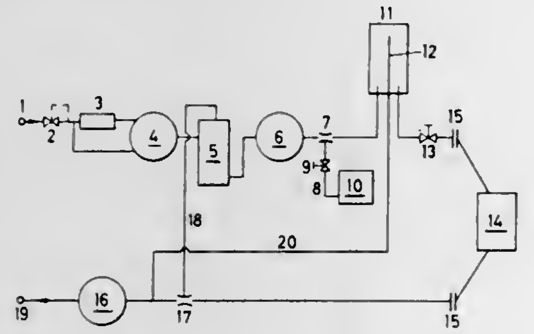
U.S. Cl. 210—151 **11 Claims**



In an apparatus for the treatment of waste water, a vertically elongated tower structure has a lower section for settling solids from the waste water and a superimposed upper section for biochemical treatment of the water, the lower section is divided by vertical partitions into a series of chambers for holding bodies of water extending nearly to the top of that lower section, the waste water to be treated is introduced into the first of the chambers and the treated water is discharged from near the top of the last of the chambers, the upper section contains a trickling filter medium, water is withdrawn from an intermediate chamber of the series and distributed over the top of the filter medium for gravity flow downwardly on the latter, air is admitted to the lower end of the upper section for passage upwardly therethrough in contact with the flow of water on the filter medium, and the water flowing off the filter medium is collected and delivered into an intermediate chamber of the series.

3,528,550
DIALYSIS WATER SYSTEM

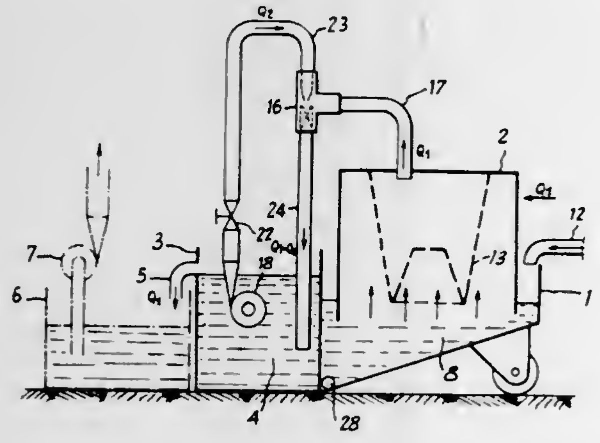
Christian Cappelen, Jr., Oslo, Norway, assignor to A/S Nycotron, Oslo, Norway
Filed June 27, 1968, Ser. No. 740,541
Claims priority, application Norway, July 4, 1967, 168,933
Int. Cl. B01d *13/00, 31/00*
U.S. Cl. 210—180 **2 Claims**



Apparatus for use with a dialysis-type artificial kidney machine utilizes the vacuum generated by passing the used dialysis liquid from the artificial kidney machine through a venturi which vacuum is applied to a degassing device through which fresh dialysis liquid passes before being fed into the artificial kidney machine whereby any entrained gas contained in the fresh dialysis liquid is removed.

3,528,551
FILTERING INSTALLATION, MORE PARTICULARLY FOR CUTTING TOOL COOLING LIQUIDS

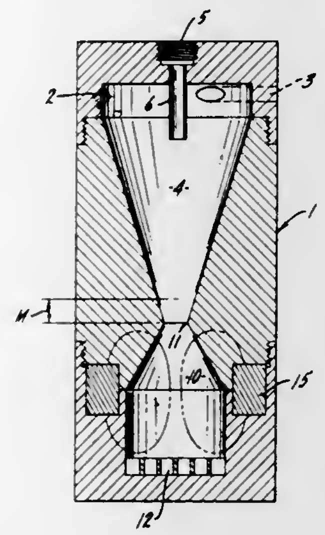
Jean Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, France, a French company
Filed May 14, 1968, Ser. No. 729,042
Claims priority, application France, May 30, 1967, 108,411
Int. Cl. B01d *35/26*
U.S. Cl. 210—196 **4 Claims**



The installation comprises a first tank where the liquid to be filtered is poured and in which is suspended a bell supporting the filtering element and whose upper part is connected to a sucking device, such as a water jet injector for example, using a pump which works in closed circuit with a second tank into which the sucking device pours the filtered liquid which it has taken from the top of the bell.

3,528,552
HYDROCYCLONIC SEPARATOR

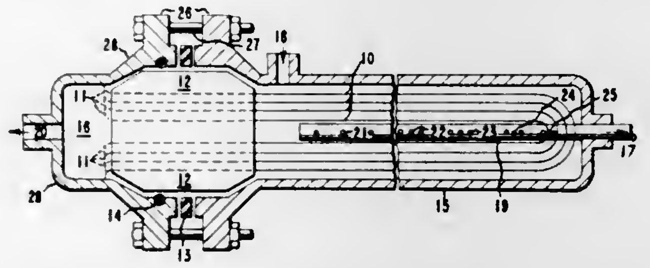
Albert E. Martin, Silver Spring, Md., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed July 24, 1969, Ser. No. 844,498
Int. Cl. B03c *1/30;* **B04c** *9/00*
U.S. Cl. 210—223 **1 Claim**



A hydrocyclonic separator having an electromagnetic field adjacent the separation zone for assured separation of deleterious particles.

3,528,553
PERMEATION SEPARATION DEVICE FOR SEPARATING FLUIDS

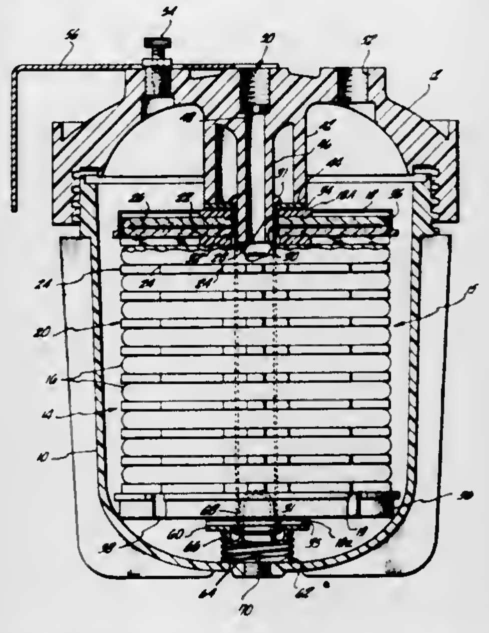
Vincent P. Caracciolo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,005
Int. Cl. B01d *13/00*
U.S. Cl. 210—321 **10 Claims**



A permeation separation apparatus which comprises an elongated jacket containing therein a plurality of long, thin, hollow, selectively permeable fibers which extend substantially the length of said jacket and which form a U-shaped loop at one end of said jacket so that both ends of each fiber extend through the opposite end of the jacket into a receiving chamber. The fibers form a bundle which substantially fills the interior of the jacket. A perforated tube extends through at least one end of said jacket and is positioned within the fiber bundle along the approximate center axis of the bundle for substantially the length of the bundle. The perforations of the tube are spaced around its circumference and along the length of the portion of the tube within the bundle. The jacket and the chamber each contain fluid conduit means.

3,528,554
MULTIPLE ELEMENT, COMPRESSIBLE FILTER ASSEMBLY

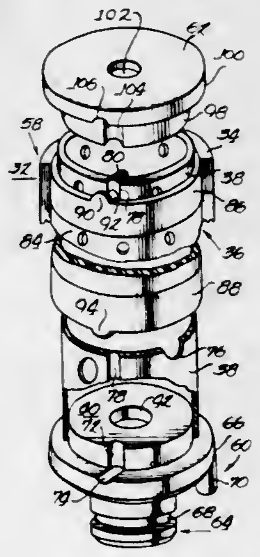
Hubert S. Ogden, Hollywood, and Stanley D. Ogden, Glendale, Calif., assignors to Ogden Filter Co., Inc., Los Angeles, Calif., a corporation of California
Filed May 22, 1968, Ser. No. 731,173
Int. Cl. B01d *29/34*
U.S. Cl. 210—343 **3 Claims**



A container is provided for holding a replaceable filter cartridge of the type which includes a plurality of annular filter pads surrounding a perforated open ended sleeve and stacked between a pair of annular compression plates. The container is formed by a top cover plate which includes an annular surface for engaging one of the cartridge compression plates. A closure plate is fastened by means of a spring to force the closure plate against the bottom compression plate of the cartridge to compress the filter pads and prevent the leakage of unfiltered liquid into the cartridge sleeve. The cover plate defines a recess within the annular surface to accommodate the portion of the sleeve which extends beyond the compressed filter pads.

3,528,555
UNROLLABLE FILTER ELEMENT WITH THROW-AWAY CARTRIDGE

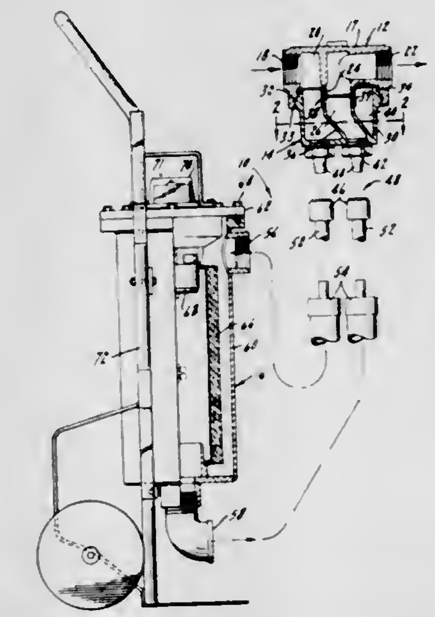
James F. Zievers, La Grange, Joseph J. Passalaqua, Libertyville, and Elmer J. Kulousek, Berwyn, Ill., assignors to Industrial Filter and Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed Dec. 11, 1968, Ser. No. 782,945
Int. Cl. B01d *33/00*
U.S. Cl. 210—387 **10 Claims**



A perforated central tube in the filter element core has two aligning fingers, each extending radially inward from a different end of the tube and has a longitudinally extending aligning groove along its outer surface between the two aligning fingers. The aligning fingers on the ends of the perforated central tube fit into grooves in the plug portions of the top and bottom lock-up plates. The cartridge spool for holding the filter paper includes a perforated middle portion and top and bottom end sealing tubes with each of the top and bottom sealing tubes including a laterally extending tab that fits into one of the grooves in the peripheral flanges of the top and bottom lock-up plates and radially inwardly extending aligning fingers that fit into the longitudinally extending groove in the central tube.

3,528,556
HYDRAULIC CLEANOUT SYSTEM

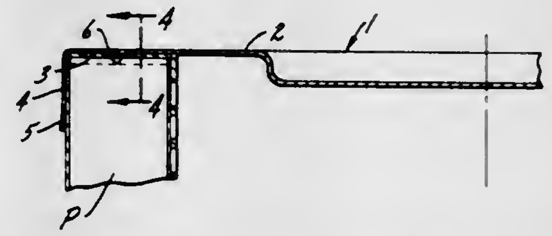
Michael A. Kosmak, Elk Grove Village, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 7, 1969, Ser. No. 814,122
Int. Cl. B01d *25/14*
U.S. Cl. 210—443 **2 Claims**



A hydraulic cleanout system for attachment to a line type filter to purify the fluid within a hydraulic circuit. The cleanout system utilizes the power furnished by the machinery to which it is attached and includes a unique adapter assembly for attachment to the head of a filter housing. Dirty fluid is transported from the fluid inlet of the housing through the adapter assembly to a large hydraulic filter where the fluid is cleaned and returned to the outlet of the housing.

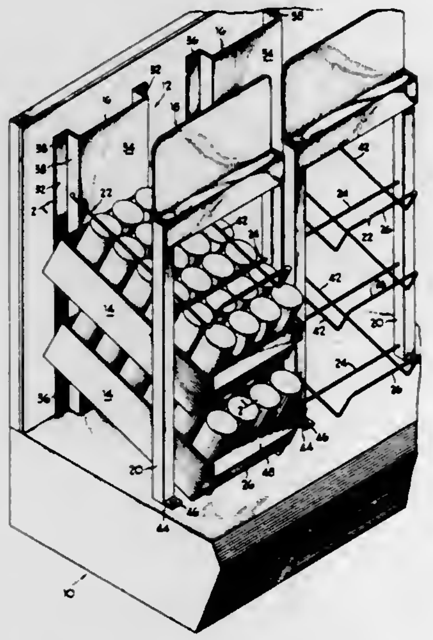
3,528,557
FILTER CONSTRUCTION

Robert N. Luchetta, Bensenville, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 762,727, Sept. 26, 1968. This application Oct. 14, 1969, Ser. No. 866,440
Int. Cl. B01d *27/06*
U.S. Cl. 210—493 **3 Claims**



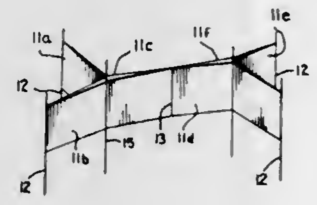
An end cover for a pleated paper filter element, the end cover having a lead-in conformation and a ridge in its base to provide line contact with the end surface of the paper element and preclude the separation of sealant from the cover.

3,528,558
DISPLAY RACK
Paul V. Williams, 12345 S. Throop,
Calumet Park, Ill. 60643
Filed July 26, 1968, Ser. No. 747,873
Int. Cl. A47f *7/00, 3/14*
U.S. Cl. 211—49 **3 Claims**



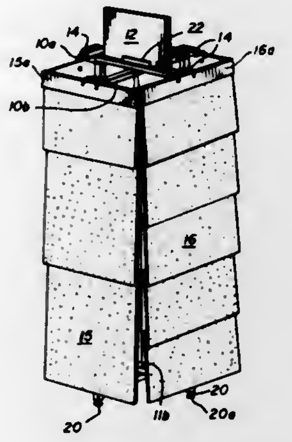
A display rack which is generally adapted for the storage and display of can goods in a manner affording gravity feed of the cans toward the easily accessible front portion of each shelf. In addition to the inclined supporting shelf structure, there is provided divider means for insertion between the aligned rows of cans in the carton, so as to prevent interference by adjoining cans of gravity movement of succeeding cans in any row toward the front of the rack when the leading can is removed. There is also provided a base plate, which may be used in the placement of the cans on the shelf in an exposed condition without requiring the removal of the cans from the carton, and such base plate also provides a smooth surface for facilitating gravity feed of the cans toward the front of the display shelf.

3,528,559
DISPLAY DEVICE
Melvin M. Miller, 3302 Stoney Crest Road,
Bloomington, Ind. 47401
Filed Dec. 4, 1967, Ser. No. 687,627
Int. Cl. A47f *5/10*
U.S. Cl. 211—178 **1 Claim**



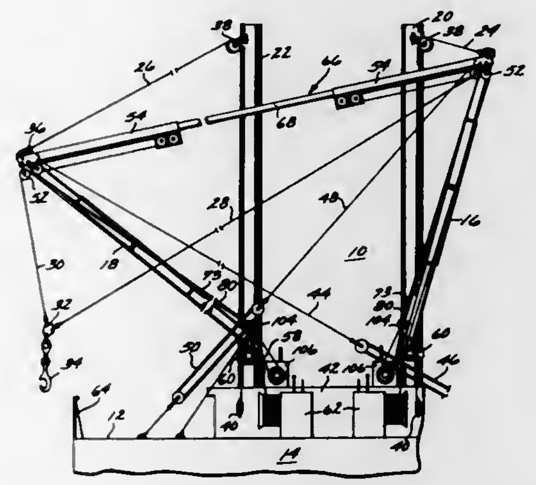
A plurality of resilient foldable panels supported by channel members to provide a free-standing labyrinth-like display.

3,528,560
SAMPLE DISPLAY FIXTURE
Raymond C. Price, Rte. 3, Box 392,
Golden, Colo. 80401
Filed Sept. 3, 1968, Ser. No. 757,032
Int. Cl. A47f *5/10*
U.S. Cl. 211—178 **3 Claims**



Sample display fixture having two rectangular frame sections of similar size and shape pivotally secured at top and bottom to provide shipping position in flat superposed relation and movable to substantially perpendicular relation establishing display position. Adjustable base members provide stable support of assembly and display load in upright position. Selective support locations permit display of sample binders of various sizes and shapes.

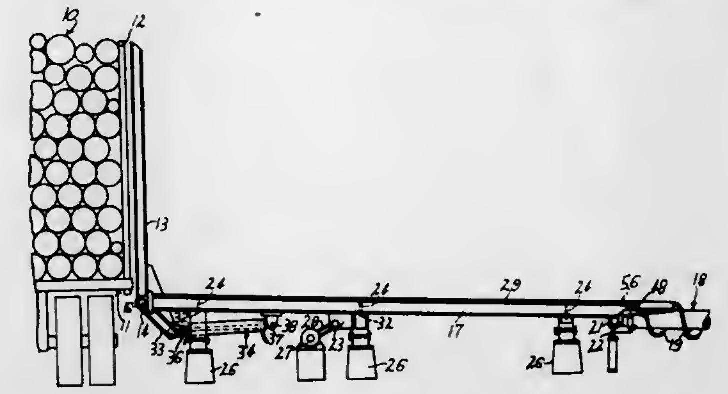
3,528,561
APPARATUS FOR BURTONING CARGO
Bernard L. Tibbetts, 11392 Reagan St.,
Los Alamitos, Calif. 90720
Filed May 16, 1968, Ser. No. 729,710
Int. Cl. B66c *23/52*
U.S. Cl. 212—3 **4 Claims**



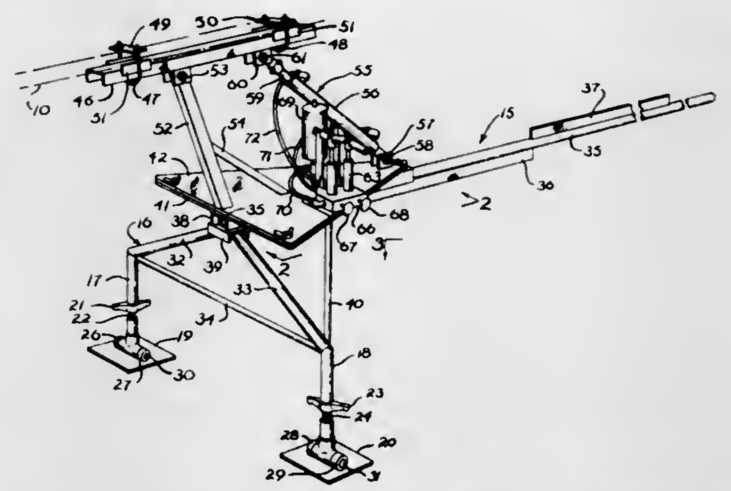
In apparatus for burtoning cargo, an elongated coupler disposed between the outer ends of the booms for maintaining them in spaced relation to thereby eliminate the offshore guy and increase the cargo handling capacity of the apparatus.

3,528,562
LOG UNLOADING AND FEED APPARATUS
Marvin C. Dobbs, Fayette, Ala., assignor, by mesne assignments, of one-half to Alco Machine Shops, Incorporated, a corporation of Alabama
Filed Apr. 14, 1969, Ser. No. 815,629
Int. Cl. B65g *67/24*
U.S. Cl. 214—1 **10 Claims**

Elongated transfer members pivotally mounted at lower ends alongside pile of logs and movable from upstanding, log restraining position to outer, log receiving position. Log support members extend between transfer members and receiving conveyor with means imparting movement to logs toward conveyor. Actuating member adjacent conveyor engages log moving thereon to restrain movement of next log onto conveyor until first log disengages actuating member.



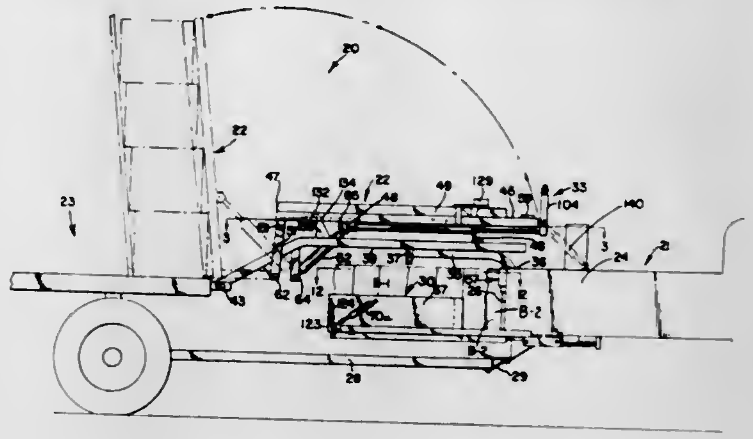
3,528,563
LIFTER AND SUPPORT APPARATUS FOR PILING AND THE LIKE
George C. Alley, Oakland, Calif., and Mark Valory, 3812 Happy Valley Road, Lafayette, Calif. 94549; said Alley assignor to said Valory
Filed Nov. 21, 1968, Ser. No. 777,583
Int. Cl. B66f *11/00*
U.S. Cl. 214—3 **14 Claims**



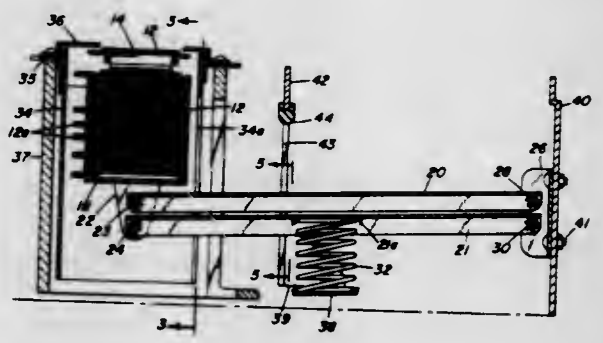
Lifter and support apparatus for placing or positioning a piling and for supporting the same as it is driven into the ground by a piledriver. The apparatus is especially useful along ground surfaces that are sloped, such as hillsides, and it includes leg structure adapted to provide a stable support for the apparatus along such surface. Guide structure adapted to have a piling secured thereto is supported by the leg structure through connector means enabling the guide structure and any piling secured thereto to be displaced into a predetermined orientation, ordinarily vertical, irrespective of the disposition of the ground surface. Power mechanism operative between the leg and guide structures permits such adjustable displacement of the guide structure and piling.

3,528,564
BALE WAGON
Raymond C. Fischer, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,284
Int. Cl. B65g *57/22, 57/32*
U.S. Cl. 214—6 **6 Claims**

A bale wagon adapted for use in combination with a baler and having three platforms cooperatively arranged for (1) receiving bales discharged from the baler (2) accumulating and rearranging the bales to form a horizontal layer, and (3) accumulating a series of layers to form a load of bales. The bale wagon includes a bale pusher assembly which may be selectively actuated to form a layer having bales arranged in an interlock relation with bales of an adjacent layer.



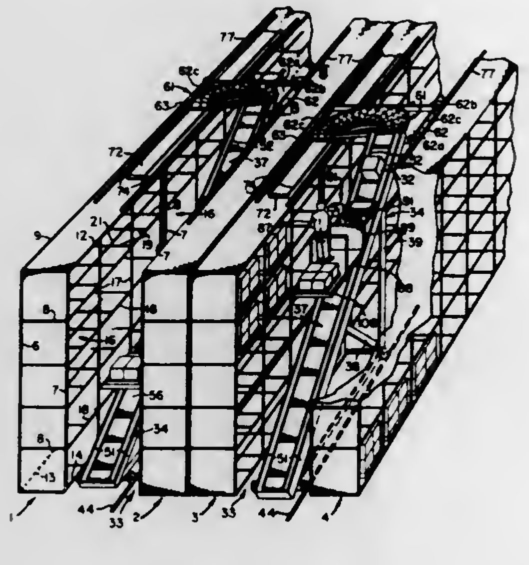
3,528,565
PRINTING PLATE STACKER
Emilio M. Binzoni, 4120 E. Solano Drive,
Phoenix, Ariz. 85018
Continuation-in-part of application Ser. No. 668,092, Sept. 15, 1967. This application Dec. 23, 1968, Ser. No. 786,349
Int. Cl. B65g *57/11*
U.S. Cl. 214—6 **3 Claims**



The stacker apparatus includes a tray for supporting successively received plates in stacked relation. A pair of elongated parallel arms, pivotally connected at their one ends to the tray and at their other ends to a support, maintain the tray horizontally oriented during generally vertical movement within a housing. A spring positioned beneath the arms beyond the housing permits automatic, incremental downward movement of the tray as each plate is stacked thereon. The housing is apertured to accommodate entry of the plates in succession, extension of the arms therein, and withdrawal of plate stacks, and also includes means for guiding incoming plates onto the stack.

3,528,566
WAREHOUSE ARTICLE TRANSPORT VEHICLE WITH HORIZONTAL AND INCLINED CONVEYORS
Stanley M. Weir, Palo Alto, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 4, 1968, Ser. No. 757,299
Int. Cl. B65g *1/00*
U.S. Cl. 214—16.4 **9 Claims**

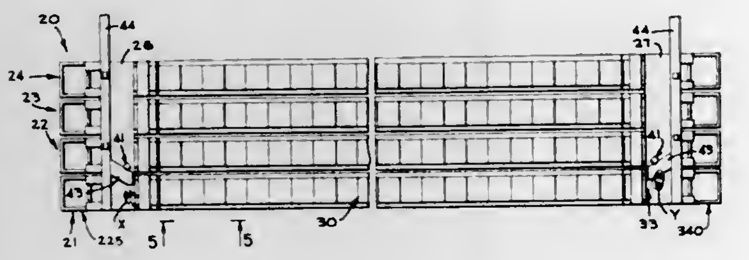
A storage rack and article transport system is provided in which a modular storage rack is arranged with bins opening on a passageway or aisle, the bins being arranged to receive palletized loads of containers. Pallets may be deposited in the bins either from the aisle side of the bin or from the rear side thereof. A mobile carriage moves along the aisle in front of the rack, and is provided with an inclined elevator to receive containers taken from the bins by a workman standing at a work station which is also mounted on the carriage. The work station is adapted to move relative to the racks in both a vertical and horizontal direction. Containers placed on the inclined elevator by the workman standing at the work station are carried upwardly and deposited on a main conveyor or transport system which carries the containers away from the storage area. The work station supported on the mobile carriage includes a pallet platform having parallel assemblies of rollers thereon to support a pallet. The pallet platform may be used to deliver pallets loaded with containers to specific bins, or it may be used as a means of temporarily storing empty pallets removed from bins.



3,528,567

APPARATUS FOR PROCESSING ARTICLES IN A WAREHOUSE

Mathew G. Boissvain, Los Altos Hills, and Robert J. Traube, San Mateo, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Jan. 12, 1968, Ser. No. 697,381, now Patent No. 3,379,321. Divided and this application Jan. 2, 1969, Ser. No. 810,421
Int. Cl. B65g *1/00*
U.S. Cl. 214—16.4 **7 Claims**

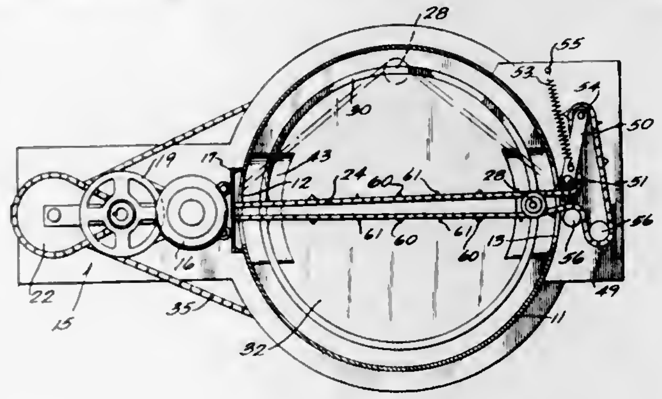


Articles to be picked for filling orders from retail outlets are stored in the warehouse on pallets, and each pallet is disposed on a tray. Each pallet contains articles of one particular category, such as a particular size and brand of soap, and the trays are disposed on an endless carrier in a predetermined order. The endless carrier is moved in a generally vertical plane so that each pallet of articles is presented to the order-filler in the predetermined order. Apparatus is provided for replenishing pallets that have been emptied while keeping them in the desired order. A tape that has labels arranged in a sequence indicating the category and the number of articles to be picked, is prepared in advance by one who knows the sequence of the trays in the endless carrier and the number of items to be picked of each category and can therefore prepare the tape so that the trays may be processed in said predetermined order. Accordingly, following the method of the present invention, the order-picker is able to receive his instructions from the tape, index the necessary tray to the order-picking station and pick the desired number of articles therefrom.

3,528,568

SILO UNLOADING DEVICE

Harvey D. Romberg, Rte. 1, Winneconne, Wis. 54986
Filed Jan. 19, 1967, Ser. No. 611,218
Int. Cl. B65g *65/42*
U.S. Cl. 214—17 **1 Claim**

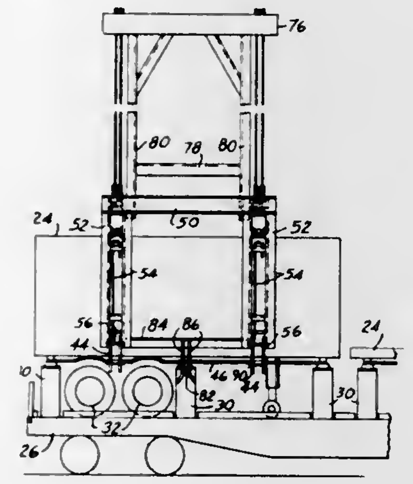


A bin unloader for removing the contents of a bin through an opening adjacent the lower extremity thereof. The unloader including an operable cutting piece which extends through one wall of the bin to and through the opposite wall thereof. The cutting piece when operable providing for cutting and conveying of the contents of the bin for removal therefrom.

3,528,569

UNIT LOAD HOLD-DOWN AND RELEASING LIFT

Leonard D. Barry, 19300 Pennington Drive, Detroit, Mich. 48221
Continuation-in-part of application Ser. No. 591,369, Oct. 14, 1966. This application May 22, 1967, Ser. No. 640,131
Int. Cl. B65g *67/02*
U.S. Cl. 214—38 **7 Claims**

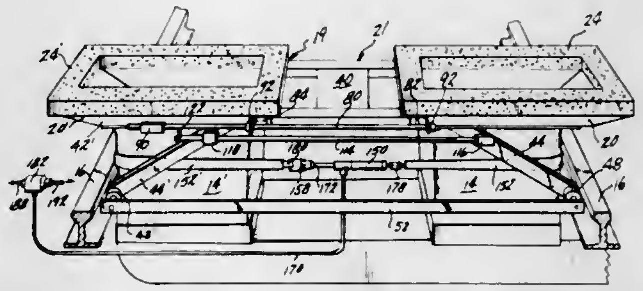


This invention adapts railway flat cars or other vehicles to secure a semitrailer on pedestals or a cargo container either on or between the pedestals. Automatic locking latches on the pedestals secure the trailer when set down thereon. A lifting device releases latches and lifts the load from the pedestals. The pedestals support the trailer bed at height above the bed of the car for trailer wheels to be relieved of carrying weight of trailer. The latches can be opened and a crank shaft turned to lower the pedestals and move them to the side to set the trailer on the bed of the car for endwise (circus-type) loading and unloading of trailers and for setting cargo containers or other loads on locking devices between the pedestals.

3,528,570

APPARATUS FOR UNLOADING BULK MATERIAL

Hugh H. Pase, Cheshire, Conn., assignor to Pase Progressive Industries, Inc., Meriden, Conn., a corporation of Connecticut
Filed July 18, 1968, Ser. No. 745,770
Int. Cl. B65g *67/24*
U.S. Cl. 214—44 **12 Claims**

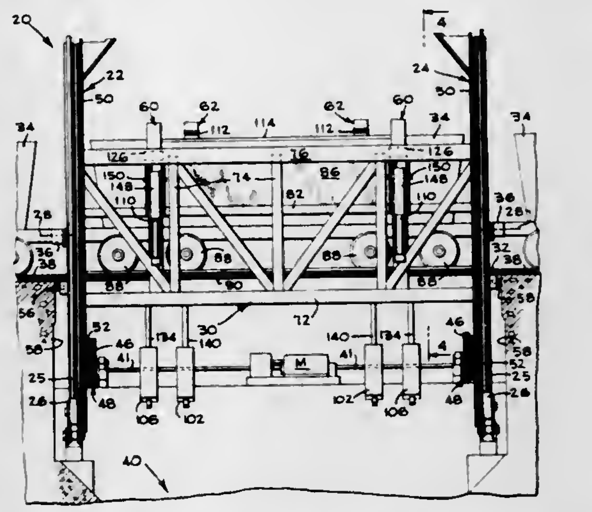


A device for mechanically connecting hopper car unloading boots to the discharge outlets on the car for unloading bulk material from the car, in which a coupling member is lifted by means of a power cylinder from a lowered position between the rails of the track into engagement with the outlet and having means for shifting it transversely of the track into alignment with the outlet after it is lifted above the track.

3,528,571

CLAMPING MECHANISM FOR ROTARY CAR DUMPER

David B. Reid, Toronto, Ontario, and George W. Jarrett, Brampton, Ontario, Canada, assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 13, 1969, Ser. No. 806,924
Int. Cl. B65g *67/54*
U.S. Cl. 214—55 **8 Claims**

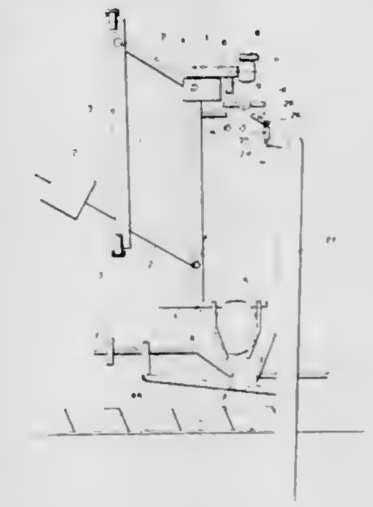


The clamps which support an inverted railcar in the rotatable cradle of a rotary car dumper are each gravity-actuated with dual counterweights attached to the cradle. As the cradle and car are rotated from an upright position, one counterweight moves a clamp over the side of the car, and then the other counterweight for the same clamp draws the clamp downward onto the upper edge of the car. Sensing switches prevent inversion of the car unless each clamp is closed to a position over the car sides and the toggle linkages connecting the counterweights to the clamps are in the over center position preventing release of the clamps while the car is inverted. Sensing switches also indicate by warning light or alarm if the clamps have not withdrawn from the car permitting its removal.

3,528,572

DEVICE FOR SUCCESSIVELY DISCHARGING CONTAINERS MOVING BEHIND EACH OTHER

Jacob H. Mosterd, Stationsweg 117, Barneveld, Netherlands
Filed May 20, 1968, Ser. No. 730,282
Claims priority, application Netherlands, May 19, 1967, 6707011
Int. Cl. B65g *47/38*
U.S. Cl. 214—60 **9 Claims**

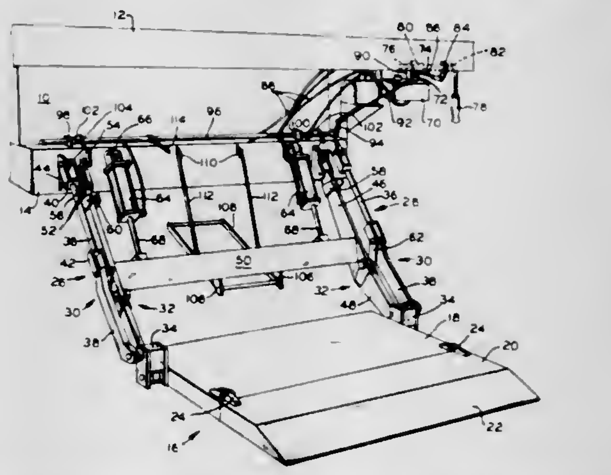


A device for discharging objects in a row from containers moving along a line one after the other, said containers being provided with discharge members that cooperate with discharge abutments positioned in or out of the path of the discharge members. The positioning of said abutments being effected by control members which are each carried by a container and which make predetermined movement when a container discharges, due to which movement the control member sets the abutments in the path of the discharge members.

3,528,573

VEHICLE CARGO ELEVATOR AND STORING ARRANGEMENT THEREFOR

David L. Denner, Toledo, Ohio, assignor to Overhead Door Corporation, Dallas, Tex., a corporation of Indiana
Filed Sept. 16, 1968, Ser. No. 759,909
Int. Cl. B60p *1/44*
U.S. Cl. 214—77 **9 Claims**



This disclosure pertains to what is commonly referred to as vehicle lift gates or vehicle cargo elevators. More particularly, the disclosure pertains to a platform adapted to be mounted either to the rear or the side of a vehicle (such as a truck) by two sets of parallel arm linkage systems. The parallel arm linkage systems pivot through a vertical arc upon actuation of power cylinders to move the platform or elevator from the ground engaging position to a position adjacent the cargo bed. To permit storage of the elevator and its linkage systems during traveling, the device may be conveniently and compactly folded beneath the side or the rear of the vehicle.

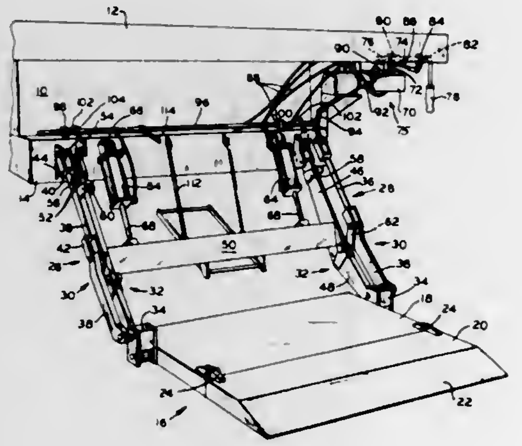
3,528,574
VEHICLE CARGO ELEVATOR AND STORING ARRANGEMENT THEREFOR

David L. Denner, Toledo, and Donald E. Stoll, Richfield Township, Lucas County, Ohio, assignors to Overhead Door Corporation, Toledo, Ohio, a corporation of Indiana

Continuation-in-part of application Ser. No. 759,909, Sept. 16, 1968. This application Jan. 31, 1969, Ser. No. 795,418

Int. Cl. B60p *1/48*

U.S. Cl. 214—77 **6 Claims**



A lift device having a platform adapted to be mounted to a vehicle, such as a truck, by two sets of parallel linkages which are operated by power cylinders and which can be folded to move the platform into a storage position beneath the vehicle cargo bed. Control means automatically stops the downward movement of the folded device at a predetermined distance from its storage position so that it can be unfolded at a convenient height without interference by the ground or by the vehicle.

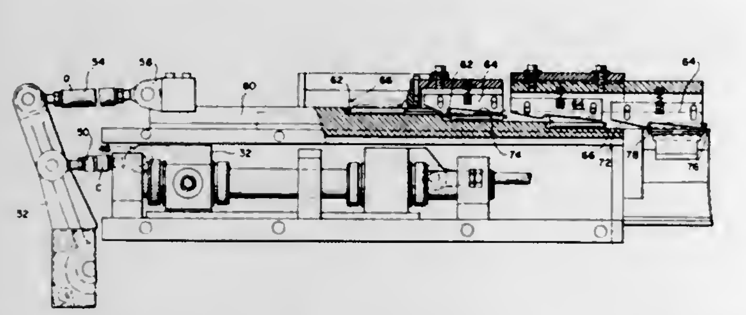
3,528,575
FEED AND TRANSFER SYSTEMS

Stuart H. McCaughey, 1301 Red Fox Court, Baltimore, Md. 21204

Filed Mar. 18, 1968, Ser. No. 713,830

Int. Cl. B65g *59/06*

U.S. Cl. 214—8.5 **8 Claims**



High speed transfer feed systems are disclosed herein. Feeds have reciprocating multiple-stepped single blank feeding plates with cooperating blank holders. Recessed transfer bars with spring loaded gripping fingers reciprocate differentially with respect to cammed lifting bars which are slidably connected to the transfer bars. The lifting bars lift the transfer bars into contact with blanks before the transfer bars are moved forwardly and lower the transfer bars out of contacts with the blanks after the transfer bars are moved forward to a maximum position and before the transfer bars are returned to their rearward positions. The feed, the transfer bars and the lifting bars are interrelated with cams and lever to coordinate their movement.

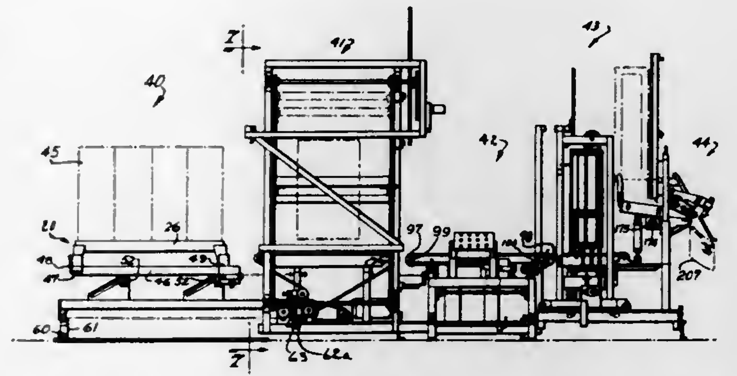
3,528,576
FEEDING MECHANISM

Kenneth R. Runyan, Mount Carmel, and Elmer G. Taylor, Jr., Norwood, Ohio, assignors to Tech-Art, Inc., Milford, Ohio, a corporation of Ohio

Filed June 30, 1967, Ser. No. 650,354

Int. Cl. B65b *21/02;* **B65g** *65/34;* **B65h** *31/34*

U.S. Cl. 214—310 **17 Claims**



The feeder mechanism is adapted to receive stacks of folded cartons or carton blanks which have been delivered to the feeder on a skid. The feeder removes the individual stacks from the skid and subsequently deliver each stack to a dispensing mechanism, individually, for feeding said flat folded cartons or carton blanks individual from each stack for further operation thereof. Each skid upon being relieved of its load is arranged one on top of the other for subsequent removal as a group by a lift truck or the like.

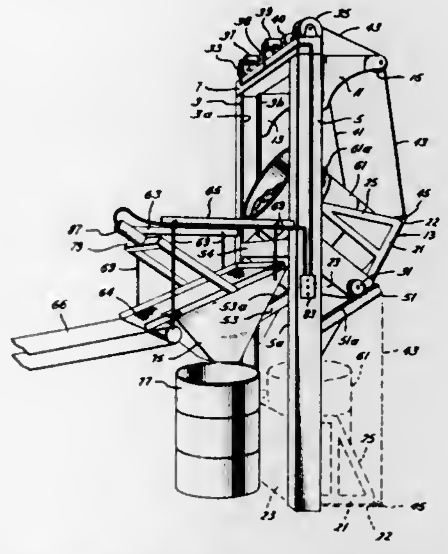
3,528,577
LIFT AND DUMP DEVICE

Irving B. Rose, 4135 Mischire St., Houston, Tex. 77025

Filed Aug. 13, 1968, Ser. No. 752,373

Int. Cl. B65b *69/00*

U.S. Cl. 214—313 **8 Claims**



A lift and dump device for raising and lowering material containers between a loading elevation and a dumping elevation and including means for automatically tilting the container to a dumping angle as it attains the dumping elevation.

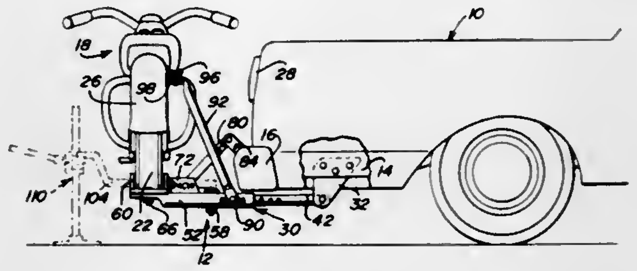
3,528,578
MOTORCYCLE RACK

Simon Ray Schoenberger, 5121 Swartz Road, Kansas City, Kans. 66106

Filed Apr. 25, 1968, Ser. No. 730,675

Int. Cl. B60r *9/10*

U.S. Cl. 214—450 **14 Claims**



A carrier rack, secured to the frame and bumper of a vehicle, on which a motorcycle is supported in a carrying position of the rack. The rack when released from the bumper connection rests on the ground to facilitate loading and unloading of the motorcycle and is elevated to the carrying position by a bumper jack.

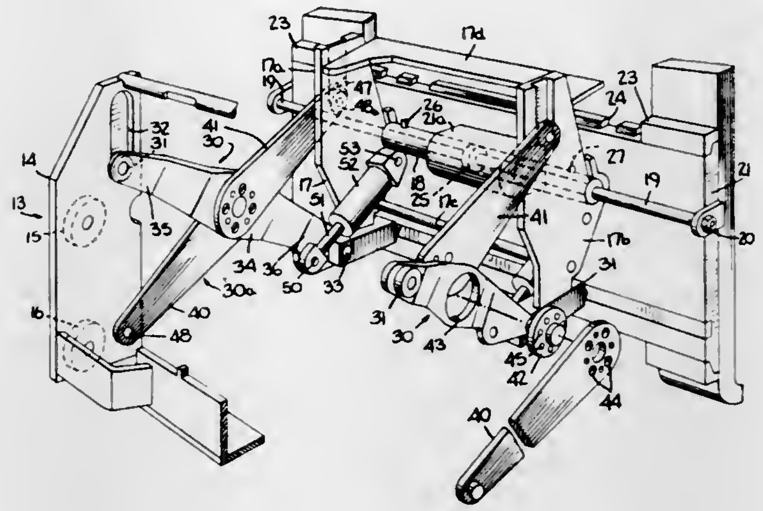
3,528,579
SIDE SHIFT MECHANISM FOR AN INDUSTRIAL TRUCK

Bronislaus I. Ulinski, Jenkintown, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Original application Aug. 17, 1965, Ser. No. 480,355, now Patent No. 3,414,150, dated Dec. 3, 1968. Divided and this application Oct. 5, 1967, Ser. No. 688,286

Int. Cl. B65g *47/00*

U.S. Cl. 214—730 **6 Claims**



A lift truck is equipped with two pairs of scissors links that support a load carrier for extending and retracting movement, each particular pair of links being formed from relatively thin metal plate, with one of its links formed in two parts. The two parts are arranged at opposed sides of the second scissors link of the particular pair, and are assembled to one another through a bearing member that is mounted to rotate in an opening of the second link. The scissors links will contribute a relatively large throw while each link is rather short, and will permit the truck operator better visibility. The load carrier supported by the scissors links has a hydraulic ram that will side shift load engaging forks, while also supporting the forks for both side shifting and vertical tilting movements.

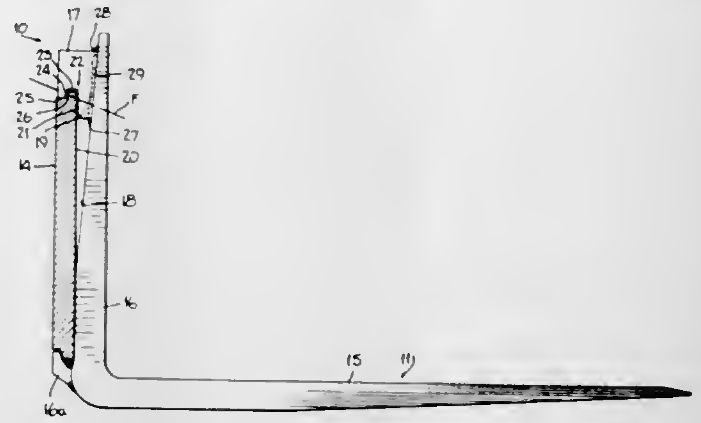
3,528,580
LIFT TRUCK CARRIAGE AND FORK THEREFOR

Oswald S. Carliss, Rydal, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Dec. 8, 1967, Ser. No. 689,015

Int. Cl. B65g *47/00*

U.S. Cl. 214—750 **1 Claim**



A load fork is mounted on the load support plate of a lift truck utilizing a hanger block that has a lower portion extending in position between the forward surface of the plate and a rear surface on the upper portion of the fork. Welds extend around the periphery of the block including its lower portion to secure the block to the fork. The rear surface of the lower block portion extends upwardly and forms the forward surface of an internal hanger notch that is considerably above the bottom line of the block, and that engages the upper edge of the support plate. A principal line of load force will pass through the rear surface of the notch and above the bottom weld. The upper portion of the fork is tapered to place its forward surface in vertical position while supported through the hanger block, and reducing the weight of the fork.

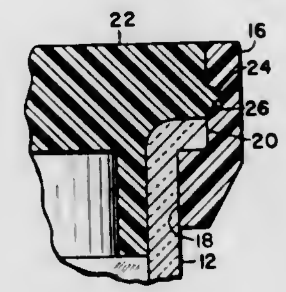
3,528,581
CONTAINER WITH SAFETY CAP

Richard Lange, Jr., Harriman, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Apr. 29, 1968, Ser. No. 724,956

Int. Cl. B65d *55/02, 45/16;* **A61j** *1/00*

U.S. Cl. 215—9 **4 Claims**

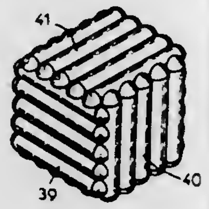


A container for such things as medicine, the container being in the form of a receptacle having a closure member over its mouth, the closure member having an outwardly projecting flange. A collar surrounds the closure member and has a circumferential groove in its inner surface into which the flange on the closure member projects in snap-fit relationship. The receptacle has an outwardly projecting flange in the vicinity of its mouth located between the closure member and an inwardly projecting portion on the collar. The container is openable by movement of the collar in the direction of the main body of the receptacle.

3,528,582

FLUID-TIGHT METAL TANK

Georges Alfred Rigollot, 66 Avenue Henri Martin, Paris XVI°, France
Filed Aug. 29, 1968, Ser. No. 756,257
Claims priority, application France, Aug. 31, 1967, 119,653; Aug. 2, 1968, 161,829
Int. Cl. F21j
U.S. Cl. 220—3 **8 Claims**

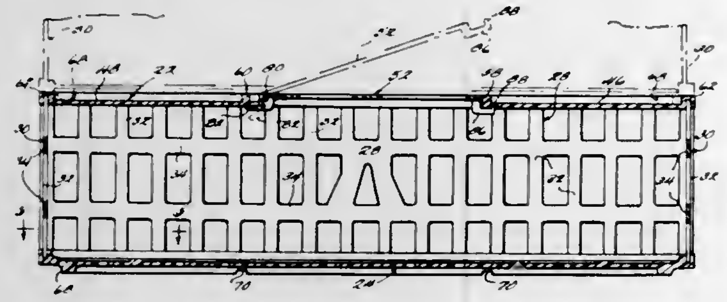


Fluid-tight metal tank for fluid under pressure, of the type including a lobate outer shell and a reinforcing framework made of plates welded to the junction edges of said lobes, wherein said plates appertain to at least two orthogonal groups of parallel plates and define a rectangular alveolate parallelepipedon block with edges which are either parallel to the lines of intersection of said plates or perpendicular to said plates, and said outer shell is formed by cylindric lobes welded on the faces of said block, the generatrices of said lobes being directed parallel to at least two orthogonal edges of said block.

3,528,583

COLLAPSIBLE POULTRY COOP

K Zack Taylor, Decatur, Ga., assignor to Uniplastic Corporation, Atlanta, Ga., a corporation of Georgia
Filed June 11, 1968, Ser. No. 736,143
Int. Cl. B65d ***7/00***
U.S. Cl. 220—4 **14 Claims**

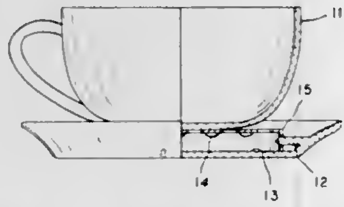


The present invention relates to a collapsible crate construction, for use as a poultry coup, and designed with novel snap-locking structure to facilitate assembly of the side walls to the top and bottom. The parts of the crate may be made of a plastic composition, and the crate is designed to facilitate nesting or stacking of like crates.

3,528,584

NO-DRIP SAUCER

Louis G. Piccirilli, 24 Broadway, Jersey City, N.J. 07306
Filed July 3, 1968, Ser. No. 742,351
Int. Cl. B65d ***21/02;*** **A47g** ***19/00***
U.S. Cl. 220—23.83 **3 Claims**

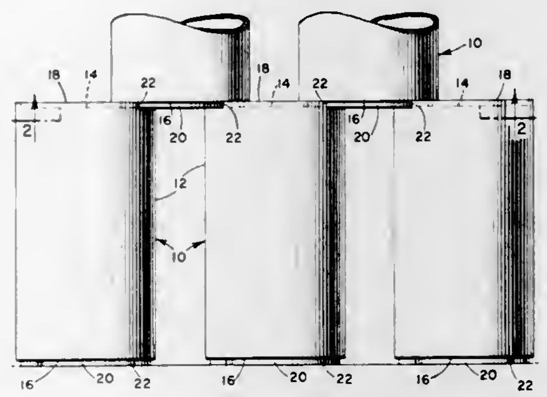


The invention is a saucer and a perforated support member locked into the wall of the saucer above the saucer well. Liquid spilled on the support member will drain through the perforations into the saucer well where it will accumulate and remain separated from the lower surface of a cup placed on the support member.

3,528,585

CONTAINER CONSTRUCTION

Stan F. Kalmar, 1307 S. 2nd St., Plainfield, N.J. 07063
Filed May 29, 1969, Ser. No. 829,027
Int. Cl. B65d ***21/02***
U.S. Cl. 220—97 **5 Claims**

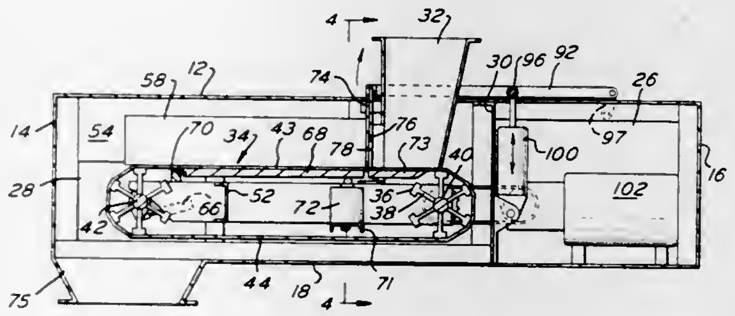


An improved container construction designed to enhance and rigidify both stacking of the containers in vertical columns, and placement of the containers in display arrangements, for example, in pyramid formations. The bottom bead of the container is radially offset, relative to the axis of the container, from the top bead of the container, thereby to provide stable nesting of superimposed containers. The offset bottom bead of each container is provided with four notches, spaced approximately 90° apart, with adjacent notches being adapted to receive the top bead of a container positioned below and axially offset from such container, thereby permitting pyramiding of the containers in a locked arrangement.

3,528,586

GRAVIMETRIC FEEDER

Donald E. Stein, Millville, and Kenneth W. Bullivant, Pitman, N.J., and Robert H. Beckett, Dresher, Pa., assignors to Kane Air Scale Company, Glassboro, N.J., a corporation of New Jersey
Filed Dec. 21, 1967, Ser. No. 692,470
Int. Cl. B67d ***5/08***
U.S. Cl. 222—55 **9 Claims**

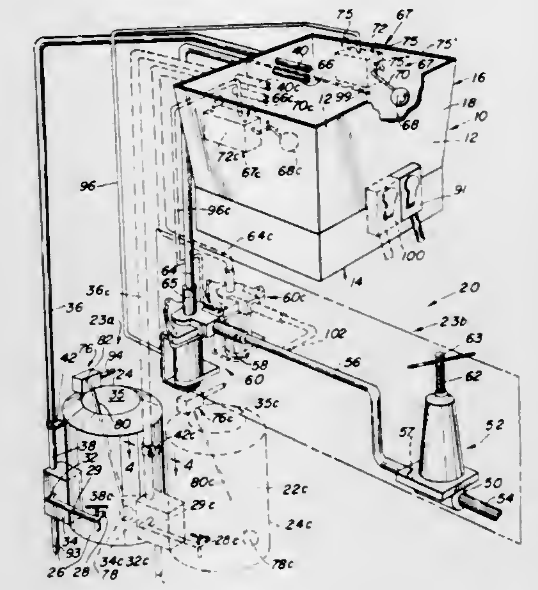


A gravimetric constant feed belt feeder is provided for continuously feeding and weighing dry granular material. A belt is supported by a weighing table in the form of a plate which is pivoted at one end and supported at its other end by a pneumatic weight transmitter. The transmitter generates a signal indicative of load changes. The signal is used to control a gate valve which controls discharge from an inlet hopper to the belt.

3,528,587

AUTOMATIC LIQUID FEED DEVICE

Leonard G. Popinski, Chicago, Ill., assignor to The Nedlog Company, Chicago, Ill., a corporation of Illinois
Filed June 25, 1968, Ser. No. 739,806
Int. Cl. B67d ***5/56***
U.S. Cl. 222—56 **8 Claims**

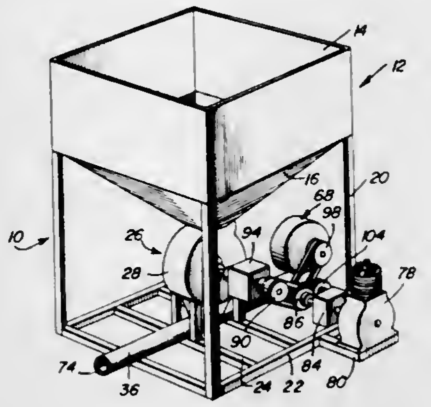


An automatic device for simultaneously feeding a predetermined amount of one liquid and a predetermined amount of another liquid into a beverage dispenser machine to provide a beverage comprising a mixture of said liquids.

3,528,588

FISH FEEDER WITH MEASURING DISPENSER

Emanuel M. Moore, 111½ E. 4th Ave., Pine Bluff, Ark. 71601
Filed June 12, 1968, Ser. No. 736,444
Int. Cl. G01f ***11/10***
U.S. Cl. 222—193 **5 Claims**



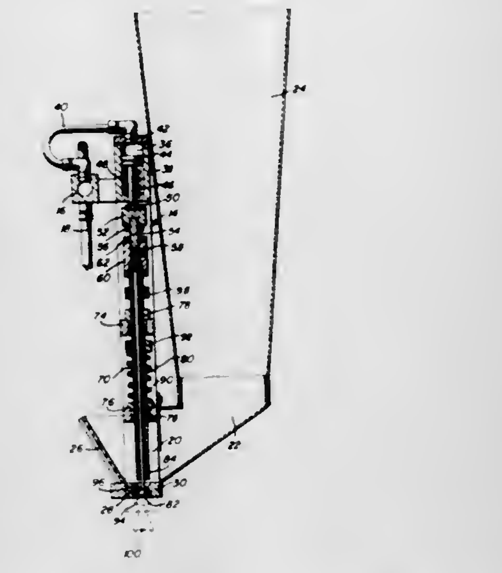
A fish feeder having a hopper and a measuring dispenser structure associated with the bottom thereof and a blower structure for discharging air through a discharge pipe into which the feed is dispensed for discharge into a fish pond or the like.

3,528,589

MATERIAL FEEDER CONSTRUCTION WITH RECIPROCATING VALVE ASSEMBLY

Jose J. de Moya, Linden, and Miguel G. Moreira, Parlin, N.J. (both of 210 Marion Ave., Linden, N.J. 07036)
Filed July 25, 1968, Ser. No. 747,621
Int. Cl. G01f ***11/00***
U.S. Cl. 222—275 **11 Claims**

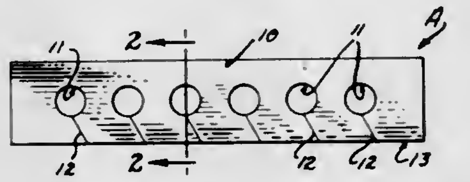
A pneumatically controlled feeder head for packaging machines of the type utilized in packaging granulated, semi-granulated or powdered products in paper packages or flexible pouches. The feeder head includes multiple adjustable valve assemblies gravity fed from a common hopper and simultaneously pneumatically controlled through a manifold arrangement. Each of the valve assemblies is adjustable so as to control the volume of material dispensed at each cycle.



3,528,590

HANGER SPACING DEVICE

Richard N. Nathanson, 1501 Yale Drive, Hollywood, Fla. 33021
Filed Feb. 24, 1969, Ser. No. 801,491
Int. Cl. A41j ***51/08***
U.S. Cl. 223—85 **3 Claims**

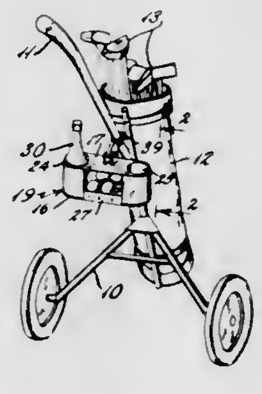


A spacing device for clothing hangers and the like and having a plurality of longitudinally spaced apertures for maintaining hangers in a spaced apart relation, ingress and egress slits being provided for insertion and removal of a hanger neck from each aperture.

3,528,591

GOLF CART RECEPTACLE

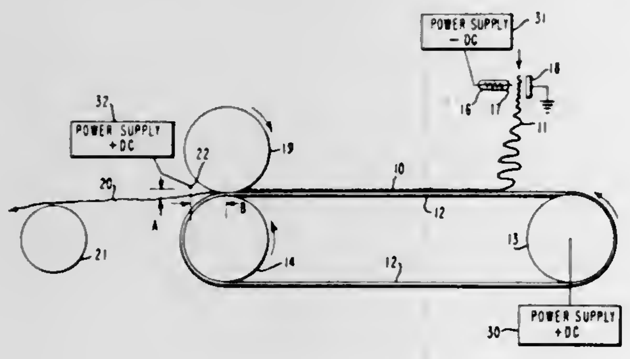
Carl L. Von Herbulis, 505 Myrtle Ave., Sanford, Fla. 32771
Filed Sept. 10, 1968, Ser. No. 758,867
Int. Cl. B60r ***11/00***
U.S. Cl. 224—42.46 **3 Claims**



A golf cart receptacle having an upwardly open compartment at each end and a central or intermediate compartment with an open front and a bottom inclined rearwardly and downwardly, and swivel means for attaching the receptacle to a support so that it will swing in substantially vertical position at all times and the end compartments being adapted to hold objects in upright position and the intermediate compartment being adapted to hold golf tees, golf balls, score cards, pencils, cigarettes, matches and other objects for ready accessibility.

3,528,592
PROCESS OF HANDLING A CHARGED WEB

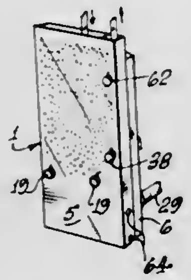
Harry J. White, Portland, Oreg., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,633
Int. Cl. B65h *17/24*
U.S. Cl. 226—5 **5 Claims**

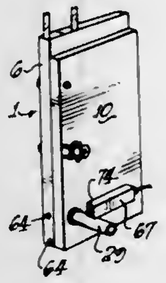


In separating a charged web of insulating material from an oppositely charged moving belt conveyor, lightning discharge between the conveyor and web occurs, resulting in burn holes in the web. This is prevented by locating a corona discharge device (e.g. wire) transversely of and above the web near the point of separation and applying to the device a potential of the same polarity as but 5 to 50 kilovolts greater than the belt potential.

3,528,593
ENDLESS LOOP TAPE BIN

Kirk R. Armstrong, San Clemente, and Edward Mikolyszyk, Los Angeles, Calif., assignors to Capital Records, Inc., Hollywood, Calif., a corporation of California
Filed Feb. 26, 1968, Ser. No. 708,260
Int. Cl. G11b *15/58*
U.S. Cl. 226—97 **10 Claims**

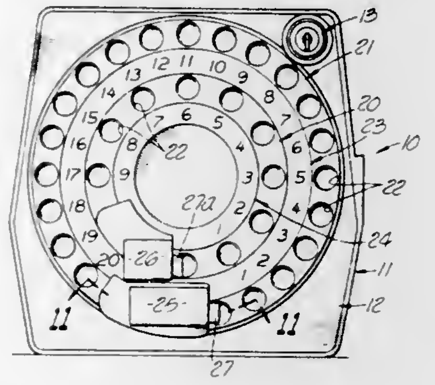




A storage bin for an elongated recording medium, e.g., magnetic tape, said bin having an entrance port through which the medium is received and an exit port through which the medium is removed in the order of introduction to the bin and characterized by the fact that elastic dynamic fluid pressure is at least part of the means by which the mass of the medium is supported above the bottom surface of the bin whereby the medium may be withdrawn from the bottom of a mass and conducted to the exit port with a minimum of frictional resistance to such movement.

3,528,594
STRIP DISPENSING APPARATUS

James H. Walker, Los Angeles, Calif., assignor to Akra Stamp Machine Co., Inc., South El Monte, Calif., a corporation of California
Filed Mar. 20, 1968, Ser. No. 715,484
Int. Cl. B65h *17/22*
U.S. Cl. 226—110 **24 Claims**



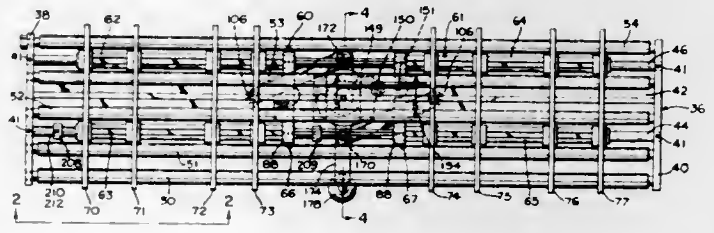
A machine for dispensing selected whole increments of strip material by manipulation of operator-controlled selector means. The machine employs several locks and positioning means including means for preventing retrograde movement of the selector means, lock means in the path of the operator's finger while approaching the end of a dispensing operation to arrest dispensing as the last whole increment of the strip is dispensed, and lock means responsive to a pulling force applied to the dispensed end of the strip to prevent dispensing additional strip material.

The overall design utilizes a minimum number of components formed in major part from molded thermoplastic material. The machine is readily adapted to dispense one or a plurality of strips from supply rolls arranged in axial alignment parallel to the front of the machine.

Lock means for the machine proper is operable between three different positions serving separate locking functions and a second or tamper-proof lock is accessible only from the interior of the normally locked machine and holds the machine anchored to fixed support means to safeguard against the pilferage and theft of the machine.

3,528,595
STRIP GUIDE FOR BUILDING PNEUMATIC TIRES

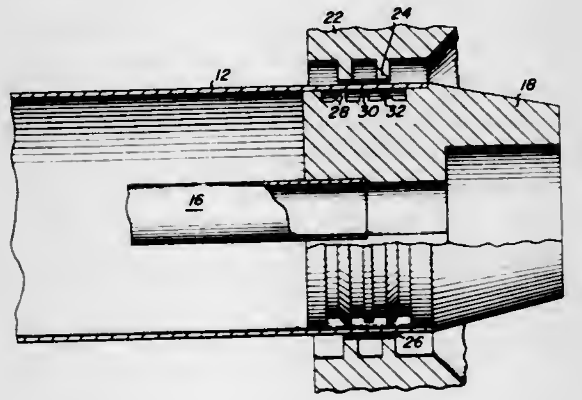
William McNenney, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 25, 1968, Ser. No. 778,432
Int. Cl. B65h *23/28*
U.S. Cl. 226—199 **10 Claims**



An apparatus for guiding strips of material onto a rotating tire carcass. A plurality of parallel strip guides are adjustably mounted on a pair of slides so as to be movable toward and away from each other in a line parallel to the axis of the tire carcass. The pair of slides are also movable as a unit in the same direction as the guides.

3,528,596
APPARATUS FOR PULSE FORMING

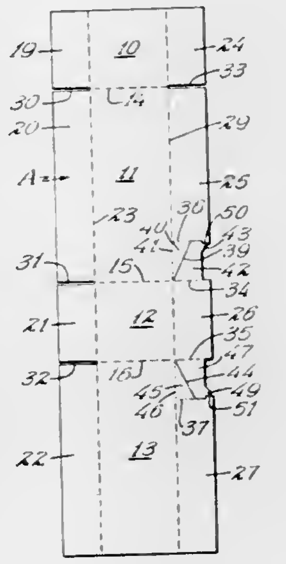
Melvin J. Carlson, Havre de Grace, Md., assignor to the United States of America as represented by the Secretary of the Army
Original application Sept. 30, 1966, Ser. No. 584,064, now Patent No. 3,417,456, dated Dec. 24, 1968. Divided and this application July 24, 1968, Ser. No. 760,377
Int. Cl. B23k *21/00*
U.S. Cl. 228—3 **1 Claim**



Apparatus for sudden impulse joining of a tubular workpiece to a cylindrical workpiece comprising three integral rings, a circular field shaper having an axial hole, and a pair of rings of rectangular cross section formed in the axial hole.

3,528,597
DISPENSING CONTAINER

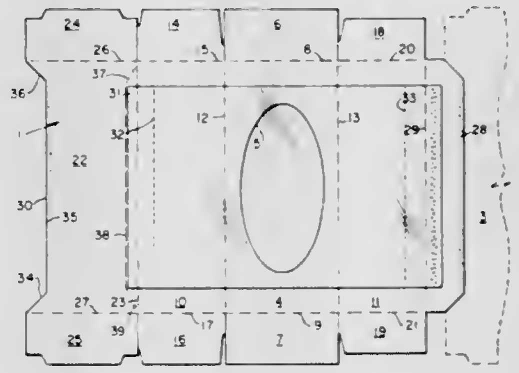
Harold G. Zastrow, Minneapolis, Minn., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed June 16, 1969, Ser. No. 833,356
Int. Cl. B65d *5/72*
U.S. Cl. 229—17 **9 Claims**



A dispenser container includes a rectangular body, including a top panel, first side wall panel, bottom panel and second side wall panel connected in tubular relation. Rear closure flaps are provided to provide a rear closure. A top panel closure flap and side wall closure flaps form a partial front closure. The closure flap hinged to the front of the bottom wall is provided with side wings cut from the lower portions of the front side wall closure flaps to fold inwardly of the side wall panels and form, with the bottom wall closure flap, a hinged dispensing trough.

3,528,598
CONTAINER WITH OVERWRAP

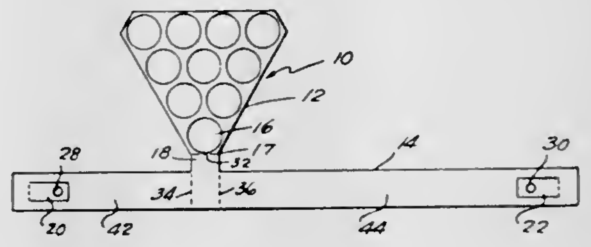
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed May 29, 1969, Ser. No. 828,966
Int. Cl. B65d *5/02*
U.S. Cl. 229—38 **3 Claims**



A container having an overwrap and constituting bottom, top and side walls foldably joined to form a tubular structure and having end closure panels is constructed by utilizing a special glue flap construction together with a cooperating cutaway portion of the bottom wall of the container adjacent to which the glue flap is secured to the bottom wall. In order to render the overwrap readily removable, weakened severance lines are formed in the overwrap and are disposed substantially out of coincidence with and upwardly of the side edges of the bottom wall of the carton along the side walls so that when the overwrap is removed by tearing along the severance lines the remaining end portions which are secured to the carton bottom wall are readily grasped and torn away.

3,528,599
CONTAINER PACKAGE AND BLANK FOR SAME

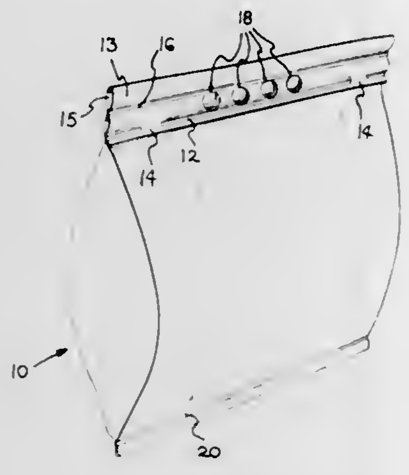
Ramon A. Alvarez, 40 NW. 68th Ave.,
Miami, Fla. 33126
Filed Feb. 7, 1969, Ser. No. 797,613
Int. Cl. B65d *5/02, 71/00, 75/02*
U.S. Cl. 229—40 **4 Claims**



A container package and blank for use in packaging a plurality of containers placed therein, said blank comprising a base portion having means for positively locating and positioning said containers in a predetermined pattern, an elongated band portion laterally affixed to said base along an intermediate position of said band to provide means for snugly securing said containers by enveloping the outer periphery. Carrying means are further provided in said band portion for easy transport.

3,528,600
PLASTIC BAG

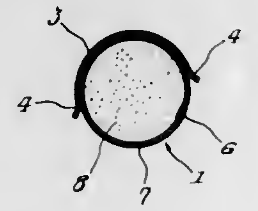
Reid E. White, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 14, 1968, Ser. No. 775,826
Int. Cl. B65d *31/14, 33/06*
U.S. Cl. 229—54 **3 Claims**



A plastic bag having an integral, strengthened gripping portion and fluid exhaust means featuring a discontinuous seal through which fluids can be exhausted from the bag.

3,528,601
TEARING TAPE MEANS FOR TUBULAR FILM PACKAGE

Mikio Ito and Shohei Hoshino, Suzuka-shi, Japan, assignors to Asahi Dow Limited, Chiyoda-ku, Tokyo, Japan
Filed July 1, 1968, Ser. No. 741,357
Claims priority, application Japan, July 7, 1967, 42/58,299
Int. Cl. B05d *33/00*
U.S. Cl. 229—66 **3 Claims**

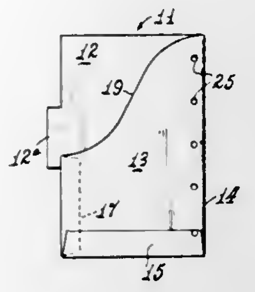


A tearing tape is welded to the film casing of a tubular package of meat, sausage or other paste-like or semi-fluid material adjacent to one end thereof and extends crosswise of the package in a plane normal to its longitudinal axis. By pulling off the tape, the package can conveniently be opened at the end enabling smooth delivery of its content through the end opening. Any rushing out of the content previously unavoidable at the instant when the package is opened can be effectively avoided.

3,528,602
POCKET SHEET FOR LOOSE-LEAF BINDERS

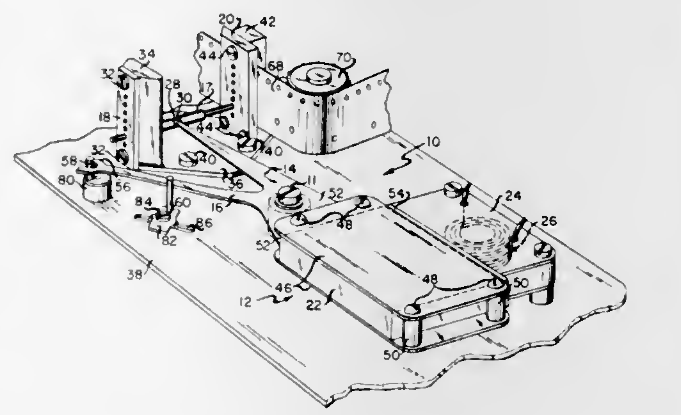
John R. Ritchie, Milwaukee, Wis., assignor to Controlled Brands Food Institute, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 30, 1967, Ser. No. 687,054
Int. Cl. B65d *27/06*
U.S. Cl. 229—68 **4 Claims**

A pocket sheet having mounting perforations on a reinforced edge and the access opening for the pocket is inclined at an angle downwardly from one end toward the free edge thereof. The pocket is formed in a manner to present maximum capacity. The invention also pertains to the method of making such a pocket sheet.



3,528,603
MASS RESONANT TRANSDUCER

Eugene A. Levin, Oakland, Calif., assignor to SCM Corporation, a corporation of New York
Filed Feb. 26, 1968, Ser. No. 708,222
Int. Cl. G06k *1/05*
U.S. Cl. 234—109 **10 Claims**

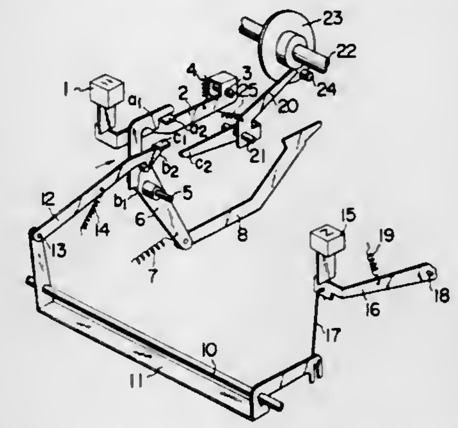


A mass resonant device for driving a mechanical member such as a recorder element, particularly a code tape punch or a printer hammer, is disclosed. In the example given, a permanent magnet substantially comprising the mass is attracted toward and held by a fixed pole piece. A spring urges the mass away from the pole piece, and a punch is connected to the mass. Accordingly, when an electromagnet positioned and wound for opposing the flux of the permanent magnet is energized, the mass is released from the fixed pole piece and the spring accelerates the mass to a position where the attached punch effects a perforating operation.

3,528,604
DEVICE FOR CARRYING OUT CHANGING-OVER BETWEEN ADD AND NOT-ADD IN MOTOR-OPERATED CALCULATORS

Takashi Murakami, Mishima-shi, Shizuoka-ken, Japan, assignor to Tokyo Denki Kabushiki Kaisha (also known as Tokyo Electric Co., Ltd.), Tokyo-to, Japan, a joint-stock company of Japan
Filed June 7, 1968, Ser. No. 735,466
Int. Cl. G06c *21/00*
U.S. Cl. 235—60.26 **4 Claims**

A device for carrying out change-over between Add and Not-Add in motor-operated calculators, which comprises a main lever, a lever connected to a multiplication-and-division key and engageable with said main lever, a lock lever operatively engaged with said main lever, an interlinking means which operates so that when said lock lever is operated by the main lever, a lever operatively associated with a Not-Add key is operated, and means which is engaged with said lock lever when this lock lever is in operated position thereby to release the engagement between said lock lever and main lever. The interlinking means comprises a torque frame lever one end of which is jointed with said lock lever, and a link which interconnects the other end of said frame lever with said lever associated with the Not-Add key.

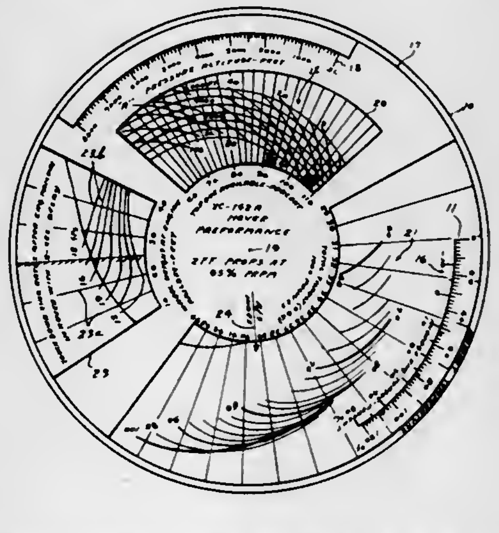


ERRATUM

For Class 235—71 see:
Patent No. 3,529,135

3,528,605
HOVER PERFORMANCE COMPUTER

Robin K. Ransone, Lancaster, Calif. 93534
Filed Mar. 25, 1968, Ser. No. 715,833
Int. Cl. G06c *3/00, 27/00*
U.S. Cl. 235—78 **9 Claims**

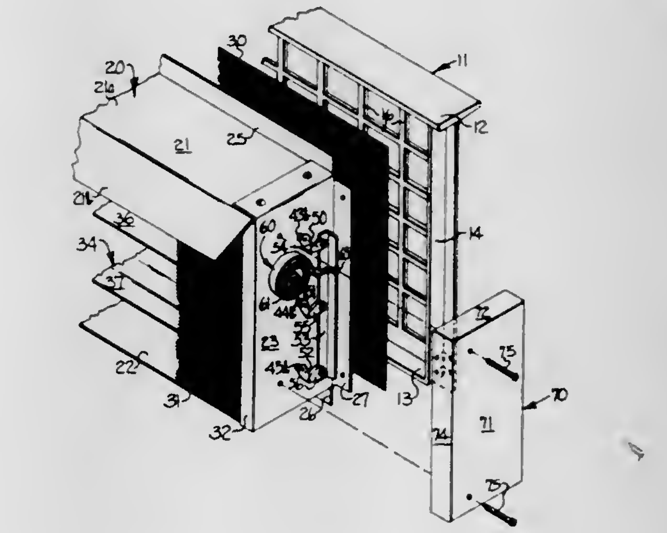


A transparent overlay disc element of a V–STOL aircraft flight computer is inscribed with pressure altitude, engine torque, thrust and touchdown sink rate scales and is concentrically arranged for adjustment in rotation to various positions relative to a white base disc element inscribed with a pressure altitude-temperature grid, and temperature, ground effect, and thrust/weight ratio scales for determining performance data regarding hovering characteristics of V–STOL type aircraft.

3,528,606
TEMPERATURE RESPONSIVE FOUNDATION VENTILATOR

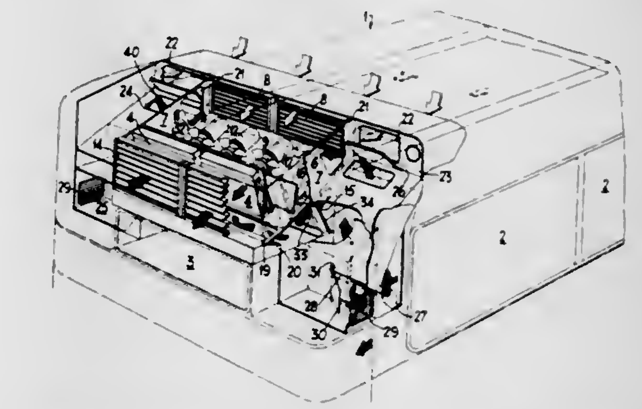
Alvin E. Witten, 310 E. Long St., Gastonia, N.C. 28052
Filed July 29, 1968, Ser. No. 748,357
Int. Cl. F24f *7/00*
U.S. Cl. 236—48 **10 Claims**

A foundation ventilator including shutter means movable between open and closed positions to selectively permit and preclude the passage of ventilating air through the ventilator, temperature responsive means for moving the shutter means between its open and closed positions in response to predetermined changes in temperature, a housing enclosing the shutter means in such a manner that foreign matter is substantially prevented from entering into the housing and preventing proper operation of the shutter means, and enclosure means substantially completely enclosing the temperature responsive means to protect the same from damage and to prevent malfunction due to the entry of foreign matter. Also, a temperature responsive foundation ventilator includes over-center spring means connected to the shutter means to respectively bias the shutter means to fully closed and fully opened positions and which cooperates with a temperature responsive member to substantially instantaneously move the shutter means between fully closed and fully open positions.



3,528,607
ENGINE COOLING AND PASSENGER COMPARTMENT HEATING APPARATUS FOR MOTOR VEHICLES

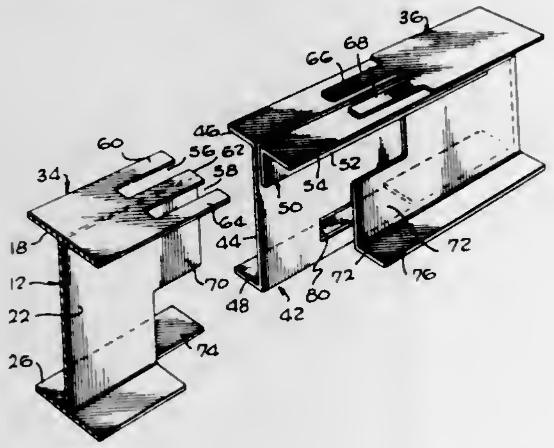
Anthony G. Plackett, Aston, England, assignor to Smiths Industries Limited, London, England, a British company
Filed Jan. 29, 1968, Ser. No. 701,492
Claims priority, application Great Britain, Jan. 30, 1967, 4,501/67
Int. Cl. G05d *23/02*
U.S. Cl. 237—2 **12 Claims**



Combined engine cooling and passenger compartment heating apparatus for a road vehicle in which electrically driven fans blow air through a heat exchanger in the engine coolant circuit and the air required to heat the passenger compartment is passed to a mixing compartment from which air can flow to the passenger compartment, the remainder of the heated air being exhausted to the vehicle exterior. Unheated air is also blown into the mixing compartment and the proportions of unheated and heated air entering the mixing compartment is controlled to reduce short term temperature fluctuations of the air entering the passenger compartment from the mixing compartment.

3,528,608
EXPANSION JOINT

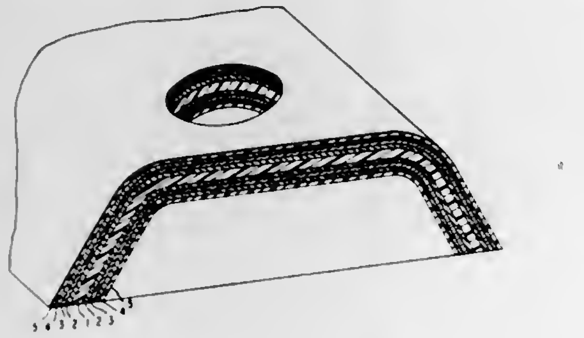
Stanley A. Dashew, Santa Monica, and Lester G. Janzow, Los Angeles, Calif., assignors to The Dashaveyor Company, Venice, Calif., a corporation of California
Filed Sept. 9, 1968, Ser. No. 758,321
Int. Cl. E01b *11/02*
U.S. Cl. 238—151 **6 Claims**



Expansion joint apparatus for use in vehicle supporting main tracks which are of I-beam cross section, and for use in auxiliary tracks that carry control signals and power. The expansion joints comprise cut-away portions and corresponding fingers or extending portions on connecting sections of track which enable them to fit into each other. The cut-away and finger portions generally lie on opposite sides of the center line of the path taken by wheels or other vehicle elements that contact the track.

3,528,609
MOLDED BODY FOR MAKING INSULATED CONNECTIONS IN RAILS

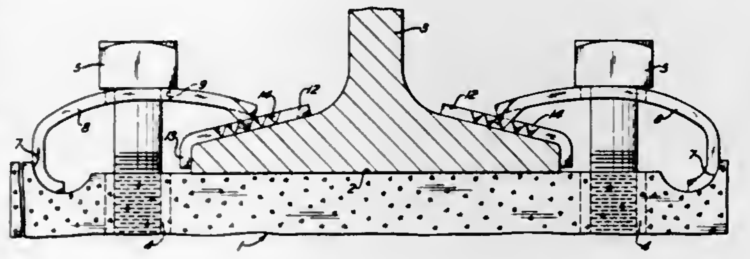
Rötger Mitgau, Essen-Kupferdreh, Germany, assignor to The Goldschmidt, A.G., Essen, Germany, a corporation of Germany
Filed Sept. 30, 1966, Ser. No. 583,385
Claims priority, application Germany, Oct. 19, 1965, G 44,975
Int. Cl. E01b *11/00*
U.S. Cl. 238—152 **8 Claims**



This invention relates to a molded body for making an insulated connection between a fish plate and a rail which comprises a pressure-resisting insulating layer having on each side thereof a heat-hardenable cement which is adhesive to metal.

3,528,610
ADJUSTABLE RAIL FASTENER FOR CONCRETE TIES

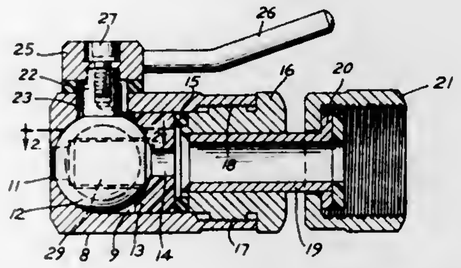
Frederick William Holstein, Verona, Pa., assignor to Woodings-Verona Tool Works, Verona, Pa., a corporation of Pennsylvania
Filed Dec. 11, 1968, Ser. No. 782,876
Int. Cl. E01b *9/00, 9/66*
U.S. Cl. 238—346 **5 Claims**



A gage plate has an inclined flat body for resting on a rail base flange disposed on a concrete tie provided with a bolt anchored in the tie. The plate has a downturned outer end for pressing against the edge of the flange. A spring clip, provided with a central opening for receiving the bolt, has an inner end engaging the top of the gage plate body and has an outer end to seat upon the tie so that when the bolt is tightened the gage plate will be held against the tie. The top of the gage plate body is provided with notches spaced lengthwise of it for selectively receiving the inner end of the clip to hold the gage plate different distances from the outer end of the clip.

3,528,611
SPRAY HEAD WITH CLEANING MEANS

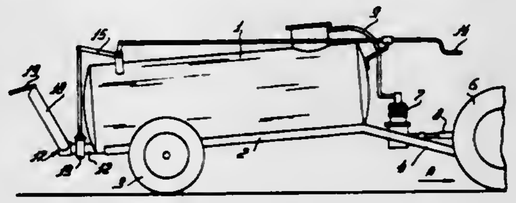
Harold Smorthit Watson, Rainhill, near Liverpool, England, assignor to Delavan Manufacturing Company, an Iowa corporation
Filed Feb. 28, 1968, Ser. No. 708,930
Claims priority, application Great Britain, Jan. 10, 1968, 1,528/68
Int. Cl. B05b *15/02*
U.S. Cl. 239—119 **4 Claims**



A spray head adapted to enable rapid and easy cleaning and/or removal of the spray tip without disassembly of the head. A tubular body includes a chamber having a rotatable housing therein having a passage which carries the spray tip. The body includes a bore for carrying the fluid to be sprayed to the housing, an opening axially aligned with the bore for the exit of spray and a pair of openings in axial alignment for inserting and removing the spray tip from the housing. The housing includes a stem which extends through an aperture in the body and which carries a handle for rotating the housing. The housing may be rotated to a first position for spraying, a second positiond for inserting or removing the spray tip, and a third position wherein the spray tip may be cleaned by reverse flow of the fluid.

3,528,612
TRANSPORTABLE DEVICES FOR SPREADING THICK-LIQUID SUBSTANCES DURING TRAVEL OF THE DEVICES

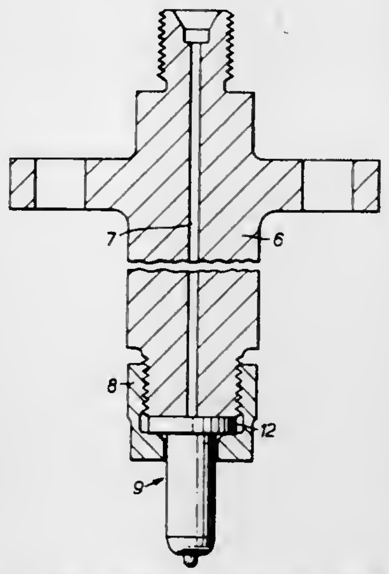
Ary van der Lely, 10 Weverskade, Maasland, Netherlands
Filed Oct. 16, 1967, Ser. No. 675,396
Claims priority, application Netherlands, Nov. 5, 1966, 6615654
Int. Cl. B05b *9/04*
U.S. Cl. 239—172 **8 Claims**



A transportable spreader for spreading thick liquids having a container on a movable frame. At least one outlet nozzle or tube extends from adjacent the bottom of the container to a level of at least equal to the half-height of said container. The liquids are forced from the container through the tube. A spreading surface is located at the mouth of the tube to distribute the liquids in a fan-like fashion at an angle to the tube.

3,528,613
FUEL INJECTOR FOR INTERNAL COMBUSTION ENGINES

Martin J. Berlyn, Leeds, England, assignor to Hallwood & Ackroyd Limited, Leeds, England, a British company
Filed Jan. 15, 1968, Ser. No. 697,687
Int. Cl. B05b *1/32*
U.S. Cl. 239—453 **10 Claims**

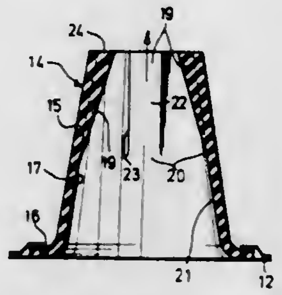


A fuel injector for internal combustion engines comprising a nozzle holder formed for mounting in the engine cylinder head and provided with a fuel supply duct, and an assembly of a differential valve, valve guide, loading spring and nozzle tip formed as a replaceable unit and clamped to the holder.

3,528,614
FLUID ADMIXING APPARATUS

Winfried Hönmann, Stuttgart-Feuerbach, Germany, assignor to LTG Lufttechnische Gesellschaft mit beschrankter Haftung, Stuttgart, Germany
Filed Apr. 30, 1968, Ser. No. 725,339
Claims priority, application Germany, May 13, 1967, L 44,705; Mar. 21, 1968, 1,778,031
Int. Cl. B05b *1/02*
U.S. Cl. 239—602 **18 Claims**

A fluid admixing apparatus comprises a housing which defines an interior mixing chamber. The housing has an inlet and an outlet. A nozzle communicates with the mixing chamber so that a primary stream of gaseous fluid can be introduced into and passed through the mixing chamber to thereby aspirate a secondary stream of gaseous fluid through the inlet for admixture with the primary stream and for passage of the admixed streams through



the outlet. The nozzle is provided with at least one projection extending axially of the nozzle and extending radially thereacross and into the primary stream of gaseous fluid passing therethrough in such a manner as to effect a shortening of the vortex paths during admixture of the streams in the mixing chamber.

3,528,615
METHOD OF REDUCING PARTICLE SIZE OF CRYSTALLINE ZEOLITES

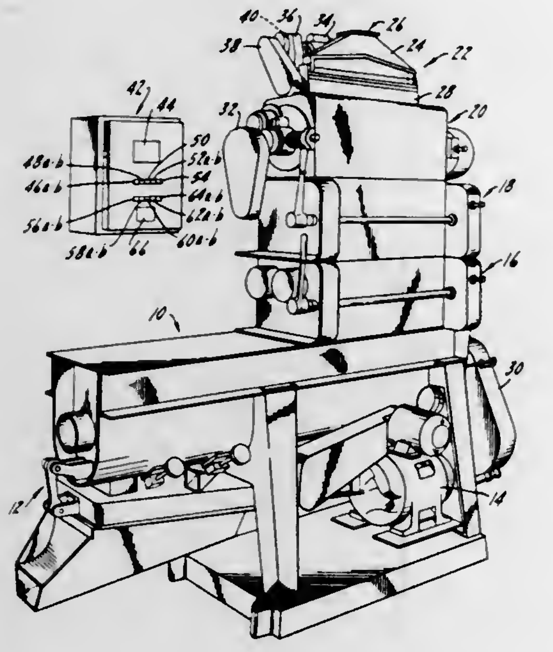
George T. Kokotailo, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 16, 1967, Ser. No. 646,724
Int. Cl. B02c *19/00, 19/18*
U.S. Cl. 241—1 **10 Claims**

Method of reducing the particle size of a crystalline zeolite while substantially maintaining its crystallinity involving heating the zeolite to an elevated temperature below that temperature at which loss of crystallinity occurs and thereafter quenching the heated zeolite in a liquid medium. The resulting thermal shock to the zeolite results in a reduction of particle size. The heating-quenching cycle may be repeated, as desired, to further reduce particle size.

3,528,616
GRANULIZER POWER FEEDER WITH AUTOMATIC LOAD CONTROL

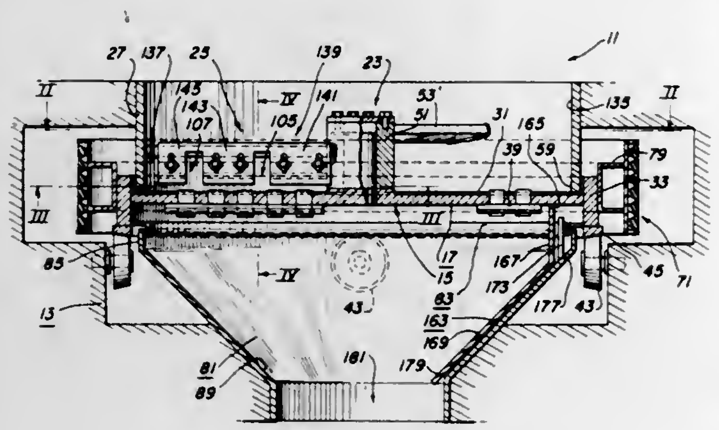
Otto C. Krolopp, Villa Park, and Robert K. Kelly, Lombard, Ill., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 11, 1967, Ser. No. 629,979
Int. Cl. B02c *4/02, 23/02, 4/42*
U.S. Cl. 241—34 **8 Claims**

An automatic load control for a granulizer assembly having a transformer monitoring the current drawn by a grinding roll motor and a load control meter having a low and high current responsive switch adapted to respond to a predetermined low and high current, as monitored by the transformer, and energize either one of two relays which are adapted to cause a transmission motor to be driven in a direction to either increase or decrease the speed output of a variable speed transmission; the variable speed transmission is mechanically interposed between a power feeder motor and a power feeder feed rotor to thereby regulate the speed of the feed rotor and, therefore, the delivery rate of the material to be ground so that the granulizer assembly automatically operates at peak efficiency.



3,528,617
ROTARY COMMINUTOR WITH CROWDER FEEDER

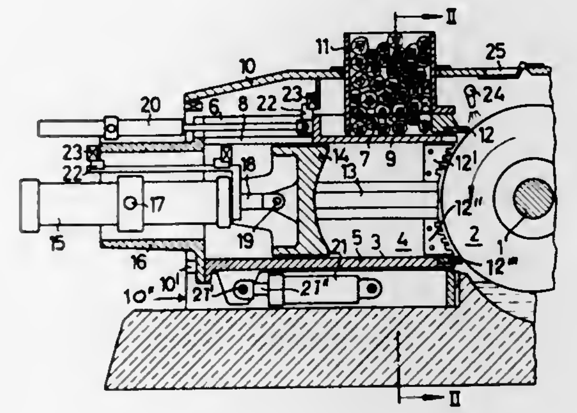
Ellis Franklin Trevathan, Gleason, Tenn. 38229
Filed Feb. 9, 1968, Ser. No. 704,469
Int. Cl. B02c *18/22, 23/00*
U.S. Cl. 241—92 **10 Claims**



A machine especially useful for comminuting chunks of mined clay stock and thus for preparing the clay stock for storage or for further processing. The machine includes a large-diametered knife-carrying cutter rotor mounted on a vertical axis. The running rotor being adapted to receive a charge of clay stock on the top side thereof and to cut and pass the clay stock through and below the rotor. The machine especially includes feed structure for uniformly feeding the clay stock through the machine including structure for breaking the clay material into smaller parts before it is acted on by the rotor knives and includes structure for uniformly feeding the clay material against the knife edges and through the rotor body. The feed structure of the machine also includes doffing structure arranged underneath the rotor for removing unwanted buildup of clay material from parts of the machine arranged underneath the rotor.

3,528,618
TWO-PRESS WOOD GRINDER

Klaus Ullner, Braunschweig, Germany, assignor to Miag Muhlenbau und Industrie G.m.b.H., Braunschweig, Germany, a corporation of Germany
Filed Apr. 29, 1968, Ser. No. 724,694
Claims priority, application Germany, May 19, 1967, M 58,878
Int. Cl. B02c *7/00*
U.S. Cl. 241—282 **1 Claim**



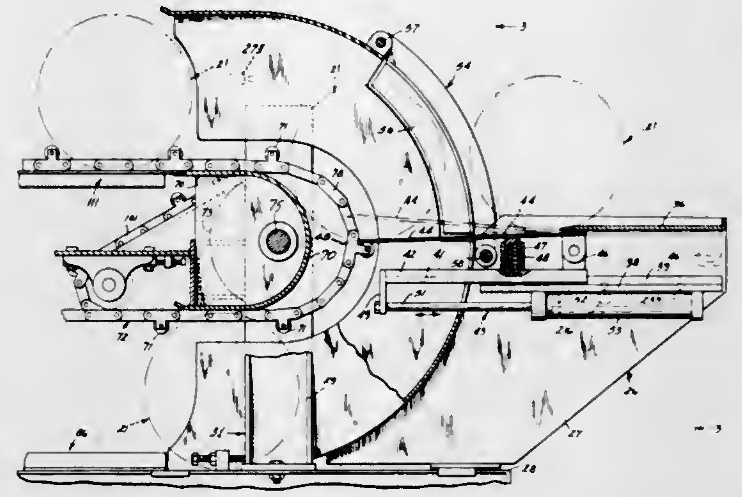
A wood grinder in which the wood pieces to be ground are introduced through an opening in the upper walls of a horizontal cylinder which terminates with one of its ends at the circumference of a grindstone rotating about a horizontal axis. The cylinder contains a piston which is reciprocable by a double acting hydraulic press pivotally supported in an outwardly projecting tubular extension at the outer end of said cylinder. The piston rod of said hydraulic press is pivotally connected with a press piston slidable in guides provided in said horizontal cylinder so that the wood pieces may be pressed by said press piston against the rotating grindstone. The opening in the upper wall of said horizontal cylinder is adapted to be closed by a hydraulically operated gate valve. The cylinder is slidably mounted in guides arranged in the grinder housing so that the cylinder as a unit may be moved toward and away from said grindstone.

3,528,619
APPARATUS FOR HANDLING A PLURALITY OF CYLINDRICAL ARTICLES, SUCH AS REELS OF WIRE

Helmut E. Durr, Chatham, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 31, 1968, Ser. No. 749,039
Int. Cl. B65h *54/00*
U.S. Cl. 242—25 **22 Claims**

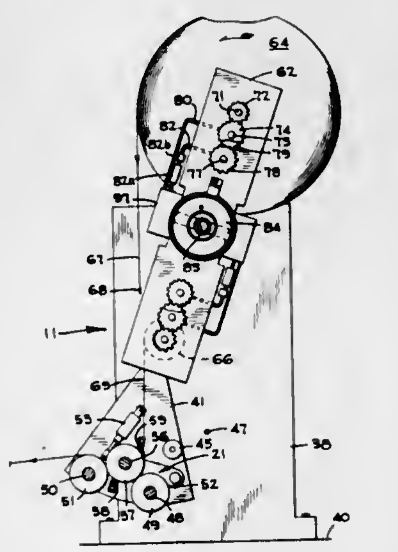
Reels of wire are loaded onto a lower guideway of a supply payoff stand and are then moved by a conveyer chain engaging one flange of the reels to an upper guideway into registration with payout positions whereat each of the reels is moved transversely of and off the upper guideway and supported between a pair of opposed cones for payoff. After the wire has been payed off, the conveyer again advances reels of wire into the payoff positions

and moves the empty reels to the lower guideway for removal therefrom. Additional reels of wire are then loaded onto the lower guideway for the next cycle while the wire on the reels on the upper guideway is payed off.



3,528,620
UNWIND STAND WEB TENSION CONTROL SYSTEM

Howard E. Roscoe, Green Bay, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 17, 1968, Ser. No. 760,329
Int. Cl. B65h *19/16*
U.S. Cl. 242—58.4 **7 Claims**

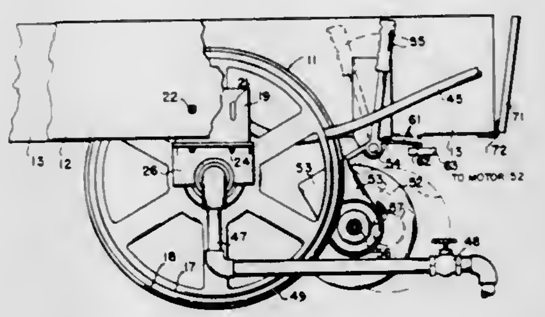


Dual brakes operating together vary the braking torque applied to an unwinding mill roll of web material that is fed to a printing press and means are provided for releasing one of the brakes as the web unwinds to extend the useful range of brake control. Stoppage of the printing process to change rolls is obviated by forming a continuous web with flying splices between the webs of full mill rolls and expiring mill rolls. To facilitate such splicing and reduce inertia stress in the web, a nest of splicing rolls are adjustably mounted for location in the optimum web splicing position.

3,528,621
HOSE REEL

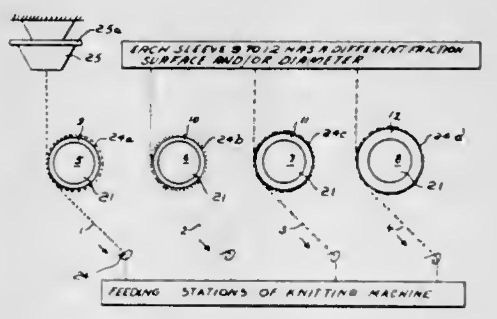
Harry V. Lyle, 16163 W. 13th Ave., Golden, Colo. 80401
Filed Nov. 5, 1968, Ser. No. 773,553
Int. Cl. B65h *75/40*
U.S. Cl. 242—86 **6 Claims**

A mechanism for retrieving garden hoses and the like by winding the hose on a horizontally disposed drum or reel that has hose retaining end flanges in which a powered retrieving mechanism includes a drive element for selective frictional engagement with one drum flange of said reel to rotate the reel and to retrieve an extended hose. A motor for rotating the drive element is pivotally mounted for retention in an at-rest balanced position with the drive element out of contact with said drum flange but the drive element is selectively moveable to an engaged position. A resilient switch component moves with the motor to engage a switch to initiate hose retrieving operations when the drive element is moved toward engagement with the reel flange. Mounting components adjustably provide for convenient and accurate installation in building structures.



3,528,622
TRANSPORTING ARRANGEMENT FOR DIFFERENT YARNS

Richard Schmidt, Stuttgart-Vaihingen, Germany, assignor to Franz Morat G.m.b.H., Stuttgart-Vaihingen, Germany
Filed Sept. 11, 1968, Ser. No. 758,951
Claims priority, application Germany, Sept. 13, 1967, 1,635,867
Int. Cl. B65h *51/04*
U.S. Cl. 242—47.01 **10 Claims**

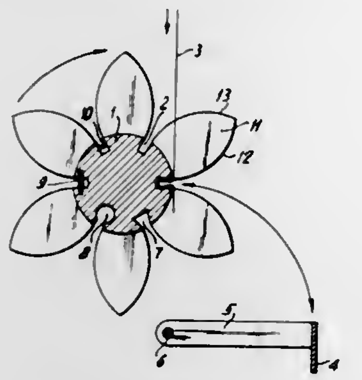

25a
25
EACH SLEEVE 9 TO 12 HAS A DIFFERENT FRICTION SURFACE AND/OR DIAMETER
9
10
11
12
21
FEEDING STATIONS OF KNITTING MACHINE

Yarns having different frictional properties, for example worsted yarn, textured yarn and smooth synthetic yarn are transported by fractional engagement with high-speed rollers toward a feeding station of a knitting machine. The transporting surfaces of the rollers have frictional coefficients, or different diameters, selected so that tension fluctuations at the feeding station are compensated and the different yarns are fed with the same tension to the feeding station of a knitting machine.

3,528,623
DEVICE FOR ATTACHING THE END OF A STRIP OF FLEXIBLE MATERIAL TO BE COILED TO A TAKE-UP ROLL

Gerardus F. Peeters, Schipluiden, Netherlands, assignor to N.V. v/h P.J. Kipp & Zonen, Delft, Netherlands
Filed May 14, 1968, Ser. No. 729,075
Claims priority, application Netherlands, May 26, 1967, 6707394
Int. Cl. B65h *75/28*
U.S. Cl. 242—74 **11 Claims**

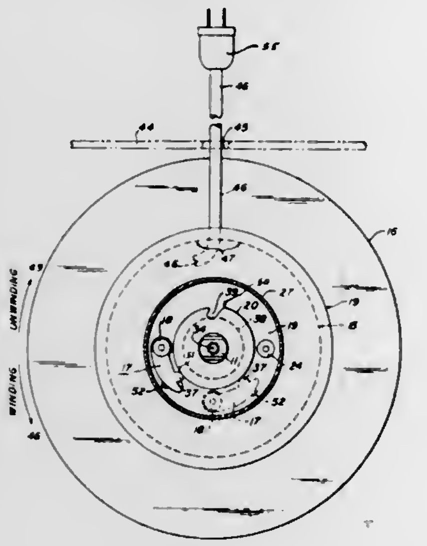
A strip of flexible material is secured to a take-up roll by a pivotally mounted lever with a ruler at its end which inserts the material into a slot in the roll. After inserting the material the ruler is removed from the slot and the



shape of the slot and the characteristic form of the material, as inserted, secures the material to the hub for subsequent winding.

3,528,624
CORD-REELS

Bernard J. Tamarin, Philadelphia, Pa., assignor to The Vacuum Cleaner Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 20, 1968, Ser. No. 738,518
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.7 **16 Claims**

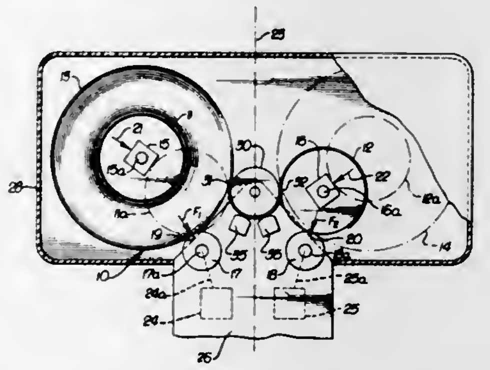


A spring-wound cord-reel including a revolvably mounted cord-storage sheave, a cord having its inner end anchored to the hub of the sheave, a stationarily mounted notched disc in operative juxtaposition to the sheave, a pawl pivotally mounted to the sheave in operative juxtaposition to the disc, means creating a permanent magnetic field along the edge of the disc, attracting the pawl and tending to swing it into latching engagement with the disc, whereby the pawl will latchingly engage the disc at a slow rotary speed of the sheave and will be de-activated by the centrifugal force thereon at a higher rotary speed of the sheave, and the notch and pawl being so complementarily shaped that the pawl can hookingly engage in the notch of the disc against rotation of the sheave in its cord-winding direction and will be cammingly disengaged from the notch if the sheave is rotated in its unwinding direction.

A spring-wound cord-reel mounted in a housing having a cord-passage opening and having pawl-and-ratchet type sheave latching and unlatching means, in which the cord-attaching point on the hub of the reel-sheave and the cord-passage opening of the housing and the pawl-pivot carried by the sheave are angularly spaced in relation to each other and in which the notch in the ratchet-disc is angularly disposed in relation to the pawl when the cord is fully pulled out and taut to the hub in a generally radial direction in respect to the hub and extending through said opening, so that the non-releasable latching of the sheave in such fully pulled out and taut condition of the cord is prevented.

3,528,625
TAPE TRANSPORT ASSEMBLY WITH DRIVEN TAPE ROLL MEANS

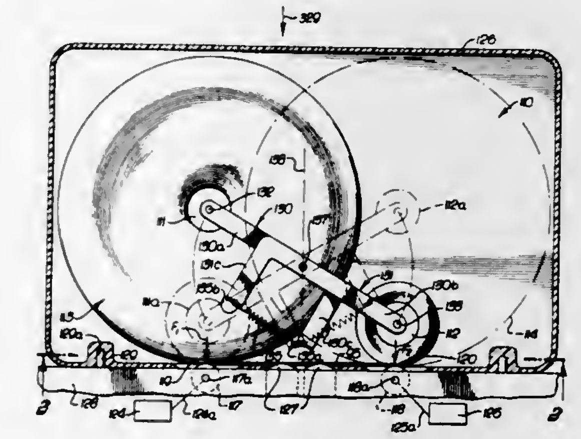
Frank C. Bumb, Jr., 8424 E. Longden Ave., San Gabriel, Calif. 91775
Filed Nov. 5, 1968, Ser. No. 773,381
Int. Cl. G03b *1/04;* **G11b** *15/32*
U.S. Cl. 242—192 **15 Claims**



The disclosure concerns a tape transport system wherein both the supply and take-up rolls of tape are separately peripherally driven by separate rotors having differential surface velocities.

3,528,626
TAPE TRANSPORT APPARATUS WITH DRIVEN TAPE ROLL MEANS

Frank C. Bumb, Jr., 8424 E. Longden Ave., San Gabriel, Calif. 91775
Filed Nov. 13, 1968, Ser. No. 788,110
Int. Cl. G03b *1/04;* **G11b** *15/32*
U.S. Cl. 242—192 **22 Claims**

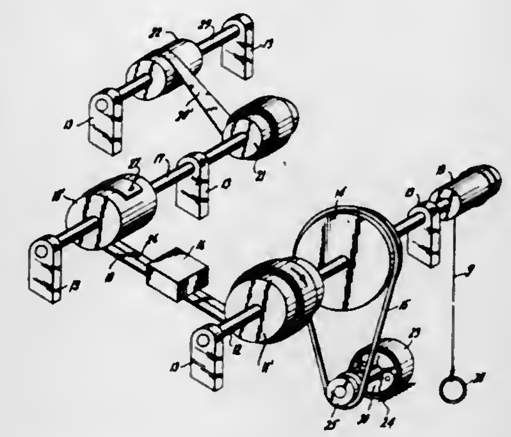


The disclosure concerns unusually advantageous tape roll mounting and driving means in a tape transport system wherein both the supply and takeup rolls of tape are separately peripherally driven by separate rotors having differential surface velocities.

3,528,627
MINIATURE TAPE PHONOGRAPH DRIVE SYSTEM

Norman E. Sindlinger, Medford Lakes, N.J., assignor to Ideal Toy Corporation, New York, N.Y., a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,360
Int. Cl. G11b *15/32, 15/43*
U.S. Cl. 242—201 **3 Claims**

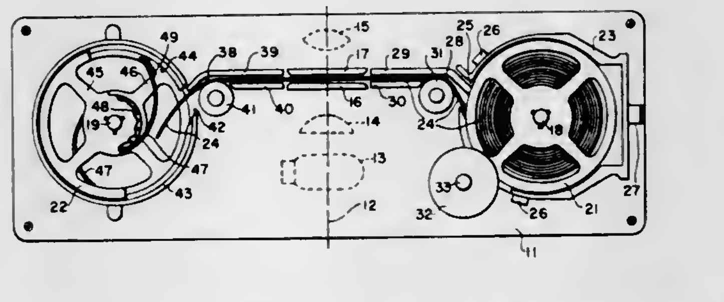
A miniature tape audio device for use in toy dolls and the like. The tape is transferred from a supply drum to a take-up drum during each play. Because a constant tape speed is required for proper sound reproduction, the prior art designs have incorporated relatively large diameter drums and/or short tapes to decrease tape speed variations which would otherwise occur as a result of tape buildup effects. In the invention, small diameter drums are used but linear tape speed variations are still prevented. As in prior art designs a spring motor is operatively coupled to the takeup drum for rotating it



during the play. In the invention, however, the spring torque has a negative gradient, that is, the torque decreases as the spring is initially wound. Since the spring torque increases during playback this has the effect of speeding up the tape to counteract the decreasing speed as a result of tape buildup effects. The overall tape speed is constant, yet a small size design is possible, and improvements in overall message quality are obtained.

3,528,628
REEL SPINDLE DRIVE MEANS FOR FILM READER OR THE LIKE

Elmer O. Wangerin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 20, 1968, Ser. No. 730,450
Int. Cl. B11b *15/32;* **G03b** *1/04*
U.S. Cl. 242—201 **7 Claims**

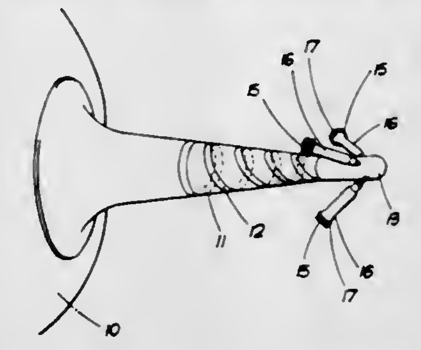


A reel spindle drive system for use in a film reader or the like in which film is threaded automatically between a supply reel and a takeup reel and is thereafter selectively wound onto the takeup reel or rewound onto the supply reel, comprises a reversible rotating drive member connected to the spindles of both reels through respective novel gear and clutch units including torque responsive means incorporated therein which automatically adjust the units to perform different functions during the respective threading, winding and rewinding operations.

3,528,629
STATIC DISCHARGERS FOR AIRCRAFT

Charles Edward Cooper, Shannon, Cookham Dean, Berkshire, England
Filed Dec. 4, 1967, Ser. No. 687,682
Claims priority, application Great Britain, Dec. 7, 1966, 54,733/66
Int. Cl. B64d *45/02*
U.S. Cl. 244—1 **8 Claims**

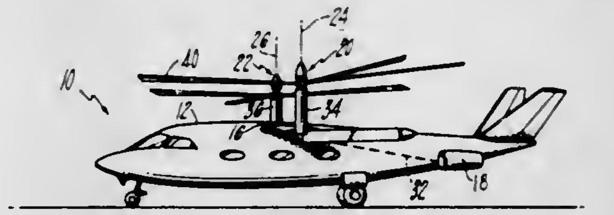
In an aircraft, a static discharger is mounted on the nose or a forwardly facing surface, e.g. the leading edge of a vertical tail surface, the discharger consisting of a rigid insulating support with an electrically resistive path



connecting the aircraft structure to discharger points located forwardly of the aircraft structure.

3,528,630
PITCH AND FOLD MECHANISM FOR A TILTABLE ROTOR USABLE IN AN AIRCRAFT CAPABLE OF HELICOPTER AND PROPELLER MODES OF OPERATION

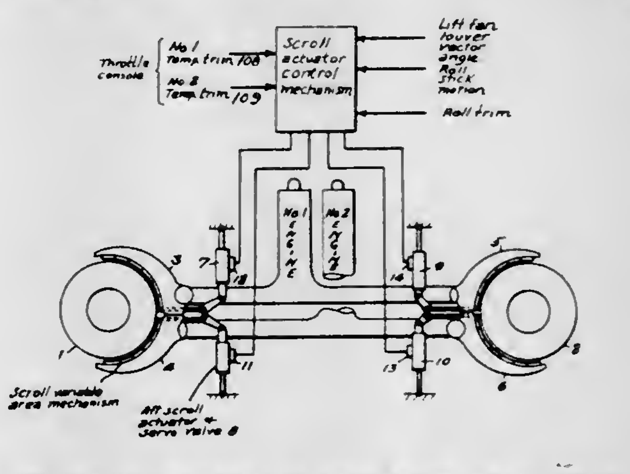
Donald L. Ferris, Newtown, and George J. Howard, Jr., Fairfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 20, 1968, Ser. No. 714,591
Int. Cl. B64c *27/22;* **B65c** *27/52*
U.S. Cl. 244—7 **33 Claims**



A tiltable rotor supported from an aircraft actuatable between a vertical position for helicopter mode of operation and a horizontal position for propeller mode or fixed wing cruise mode of operation and including provisions for tilting the pod and for folding the blades and with further provisions for varying the pitch of the blades both during normal flight operation and during the folding operation so that the blades may feather and fold and so that the pod may be tilted without introducing inadvertent blade pitch changes.

3,528,631
LIFT FAN SCROLL AREA CONTROL

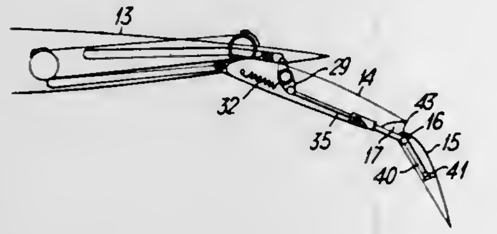
Eugene F. Beeler, Cincinnati, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Nov. 7, 1968, Ser. No. 774,150
Int. Cl. B63c *29/00*
U.S. Cl. 244—23 **7 Claims**


Throttle console
No 1 Temp trim 108
No 2 Temp trim 109
Scroll actuator control mechanism
Lift fan louver vector angle
Roll stick motion
Roll trim
No 1 ENGINE
No 2 ENGINE
Scroll variable area mechanism
Aft scroll actuator & Servo valve 8

A lift fan is provided in each wing of a VTOL type of aircraft. In some designs one or more additional fans are provided, in the tail section of the fuselage, or at other points. Control apparatus is provided to vary the scroll nozzle areas at each fan. By closing or opening the rear fan scroll nozzle areas (or the front fan scroll nozzle areas), pitch control forces may be varied to tilt the plane forward or backward. By opening the scroll nozzle areas at one fan, while closing the other, the degree of lift of one fan versus the other can be varied to aid in tilting the plane left or right. Other functions are possible.

3,528,632
HIGH LIFT FLAPS FOR AIRCRAFT

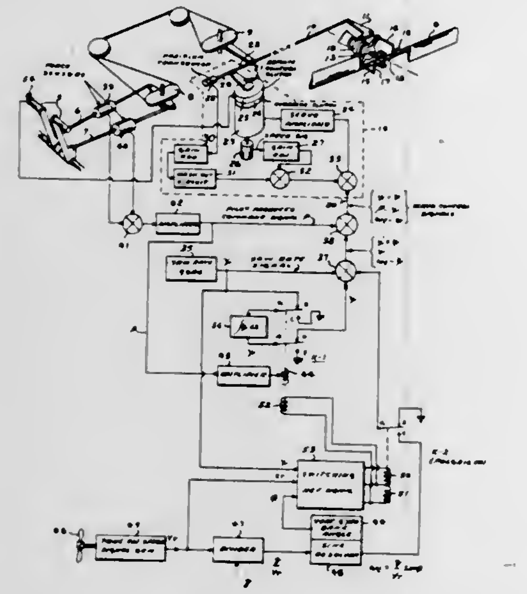
Ian Chichester Miles, Harpenden, and Peter Martin Herbert Putman, Welwyn Garden City, England, assignors to Hawker Siddeley Aviation Limited, Kingston-upon-Thames, Surrey, England, a British company
Filed May 14, 1968, Ser. No. 729,097
Claims priority, application Great Britain, May 16, 1967, 22,778/67
Int. Cl. B64c *9/20*
U.S. Cl. 244—42 **7 Claims**



A high lift flap assembly is provided for an aircraft in which a main flap is carried by rollers running in guide channels and is extended by endless chains. The flap has a rear edge tab which is extended by endwise movement of a rod; simultaneous turning of the rod causes a cranked end thereon to deflect the tab with respect to the flap.

3,528,633
SYSTEM FOR CONTROLLING AND STABILIZING AN AIRCRAFT IN YAW

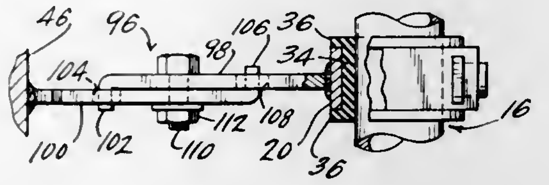
Siegfried Knemeyer, P.O. Box 123, Yellow Springs, Ohio 45387
Filed Nov. 14, 1967, Ser. No. 683,436
Int. Cl. B64c *13/18*
U.S. Cl. 244—77 **2 Claims**



A pilot assist yaw control system which, in the presence of a pilot produced force on the manual yaw control, applies a control signal to a yaw servo proportional to the difference between the force and the yaw rate to produce a yaw rate proportional to the force; and which, in the absence of a pilot force on the manual yaw control, applies a control signal to the yaw servo proportional to the sum of the yaw rate and the time integral of the yaw rate for stabilizing the aircraft in the yaw direction it had when the pilot force was removed. In addition, turn coordination is provided by applying to the yaw servo a control signal proportional to a yaw rate computed as a function of true airspeed and bank angle whenever, as determined by a switching logic receiving true airspeed, bank angle, and yaw rate as inputs, the true airspeed exceeds a preset low cruise speed; or, if the airspeed lies between low cruise and a preset lower airspeed, whenever the pilot introduces through the manual roll and yaw controls both a bank angle and a yaw rate in the direction of the desired turn in excess of preset small values.

3,528,634
PIPE HANGER

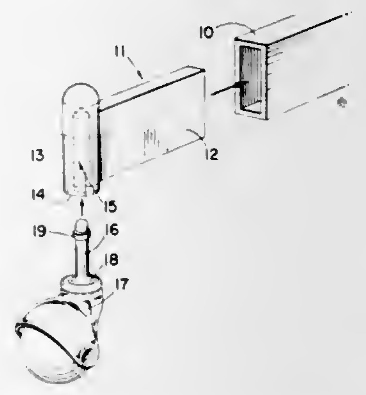
John C. Jenkins, Lorain, Ohio, assignor, by mesne assignments, to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 680,911, Nov. 6, 1967. This application June 18, 1968, Ser. No. 737,929
Int. Cl. F16l *3/10*
U.S. Cl. 248—70 **5 Claims**



A pipe hanger for supporting pipes in ships is designed to withstand substantial shock without deformation. The hanger comprises two elongate members which are welded at common ends to a supporting surface, with clamping members engaging the pipe located at the opposite ends of the elongate members. The elongate members are preferably adjustable in length to position the pipe as desired, and can be adjusted even after the pipe is installed. Several types of adjustments are disclosed.

3,528,635
LEG CONSTRUCTION FOR CHAIRS AND THE LIKE

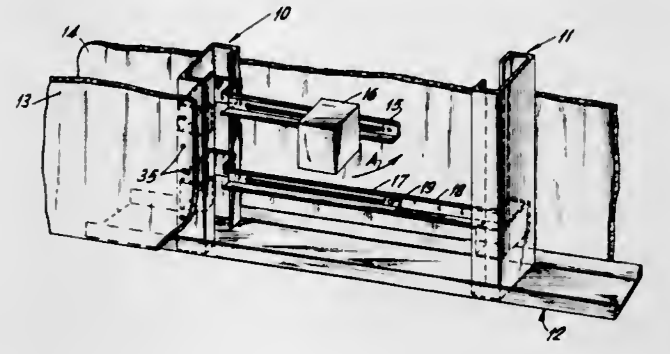
Bernard David Nightingale, Willowdale, Ontario, Canada, assignor to Nightingale Industries Limited
Filed July 29, 1968, Ser. No. 748,244
Int. Cl. F16m *11/20*
U.S. Cl. 248—188.9 **1 Claim**



This specification discloses a foot support device for use in association with furniture of hollow tubular metal construction provided with supporting feet which may be either rotatable casters, or alternatively other devices such as vertically adjustable friction members and the like, the foot support member comprising essentially a solid plastic plug member shaped to fit tightly within the hollow tubular frame of the article of furniture at the end of each of the legs of such furniture, and a foot receiving recess formed within the plastic plug.

3,528,636
SUPPORT BRACKET FOR ELECTRICAL FIXTURES

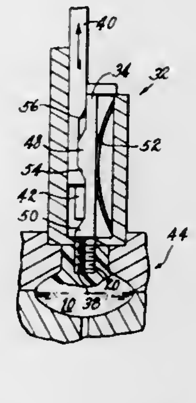
George Schmidt, 936 E. 34th St.,
Brooklyn, N.Y. 11232
Continuation-in-part of application Ser. No. 647,362, June 20, 1967. This application Mar. 7, 1969, Ser. No. 808,717
Int. Cl. E04b *1/00*
U.S. Cl. 248—205 **10 Claims**



A metal bracket adapted to engage the inside surface of a sheet metal channel shaped wall stud including a horizontally extending arm member adapted to support an electrical fixture and a U-shaped base portion of a configuration so as to fit tightly within the channel shaped wall stud.

3,528,637
CORE SET FOR MOLDING A PARTIAL THREAD

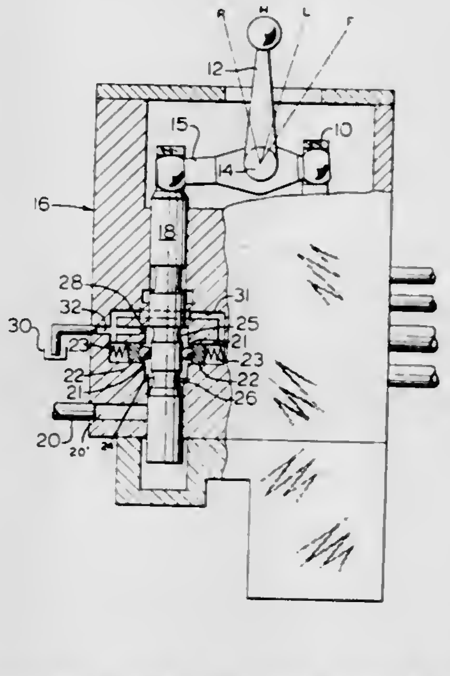
William A. Bedford, Jr., Sarasota, Fla., assignor, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California
Original application Aug. 24, 1965, Ser. No. 482,050, now Patent No. 3,361,174, dated Jan. 2, 1968. Divided and this application Aug. 22, 1967, Ser. No. 662,555
Int. Cl. B29d *1/00*
U.S. Cl. 249—59 **4 Claims**



The disclosure relates to a core set for molding an aperture having a threaded portion and an unthreaded portion in an article into which aperture a threaded fastener is insertable.

3,528,638
DETENT FOR VALVES WITH AUTOMATIC RELEASE MEANS

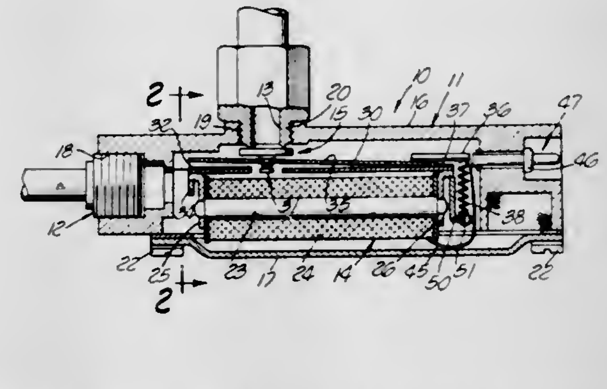
Lloyd D. Finley, Lockport, and Kenneth R. Lohbauer, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 23, 1968, Ser. No. 731,378
Int. Cl. F16k *31/44*
U.S. Cl. 251—73 **3 Claims**



A mechanism for use on or with a valve which includes detent means for holding the valve in a certain operative position and fluid pressure actuated means to release the valve in response to the positioning of a part that is controlled by the valve.

3,528,639
MAGNETIC VALVE WITH LOST MOTION CONNECTION

Richard D. Grayson, Arcadia, Calif., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 617,786, Feb. 20, 1967. This application Jan. 2, 1968, Ser. No. 694,902
Int. Cl. F16k *31/06*
U.S. Cl. 251—75 **5 Claims**



A magnetic valve in which a valve member is connected through a lost motion connection to an armature which is controlled by magnetic actuating means. Means is provided for recapturing lost motion between the armature and valve member after the latter is unseated from its valve seat so that total armature movement is utilized to produce an equal valve movement. An improved electromagnetic actuating assembly is disclosed which is operable by very low electric signals, such as from a thermocouple type pilot generator.

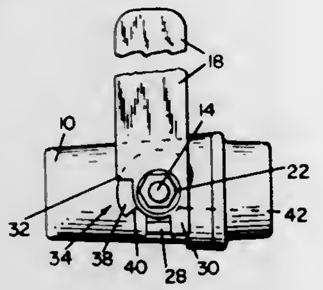
3,528,640
VALVE HAVING AN INDICATOR FOR A DESIRED THROTTLED POSITION OF THE VALVE

Anthony D. Smith, Westboro, Mass., assignor to Smith Valve Corporation, Worcester, Mass., a corporation of Massachusetts

Filed May 15, 1968, Ser. No. 729,156

Int. Cl. F16k *51/00, 5/06*

U.S. Cl. 251—285 8 Claims



A valve having a stem, a handle for moving the stem, and a stop plate in the form of a disc underlying the handle and being independently rotatable with respect to said handle and said stem, and means for tightening the handle to the stop plate so that the handle and stop plate thereafter move together.

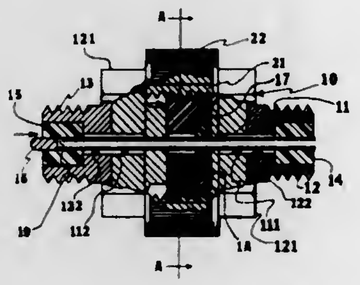
3,528,641
TUBULAR VALVE

Rano Joseph Harris, Sr., 1945 Carolyn Sue Drive, and Rano Joseph Harris, Jr., 9880 Riveroaks St., both of Baton Rouge, La. 70815

Filed Apr. 15, 1968, Ser. No. 721,338

Int. Cl. F16k *31/00*

U.S. Cl. 251—340 10 Claims



A valve for containing and releasing fluids held under high pressures, e.g. as in a bomb. The valve body is of tubular shape and contains a tubular stem, provided with a side opening, slidably mounted within the valve body. The tubular stem is also provided with guide means, and the forward end thereof is mounted tightly within a lubricated tubular packing, preferably a self-lubricated packing, located at the forward end of the valve body. The side opening of the tubular stem, which is in wiping contact with the packing, can be projected or retracted through the packing to open or close the valve. The tubular stem via engagement through a slot opening in the valve body to the guide means, is responsive to rotary knob means located upon and threadedly engaged to the exterior of the valve body.

3,528,642
TOOL FOR DEPRESSING SPRING SURROUNDING TERMINAL OF CONDENSER

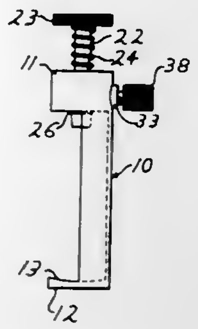
Daniel R. Moody, 1564 Pearson Ave. 35211, and Cyril U. Smith, 200 E. Edgewood Drive 35209, both of Birmingham, Ala.

Filed June 26, 1968, Ser. No. 740,148

Int. Cl. B60p *1/48*

U.S. Cl. 254—10.5 9 Claims

Tool for depressing compression spring surrounding terminal of electrical condenser embodying a housing having lower transverse member engaging condenser and upper transverse member carrying movable actuating member extending toward terminal. Recess in lower end of actuating member receives terminal while lower portion thereof engages and depresses spring below opening in terminal. Releasable means holds actuating member at selected positions and concave surfaces facilitate insertion and retaining condenser in place.



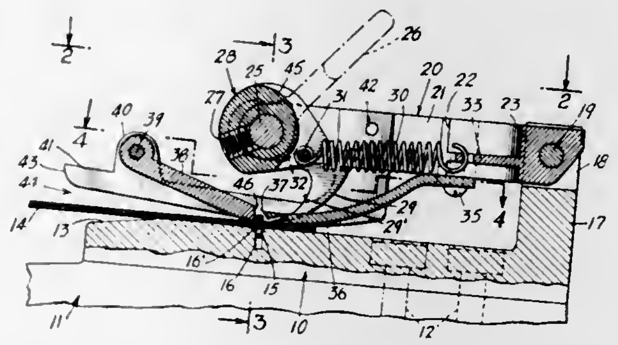
3,528,643
STAPLE LOCATING AND REMOVING DEVICE

Whitney K. Munson, 28 Pinckney Road, Red Bank, N.J. 07701, and John N. Ricci, Red Bank, N.J.; said Ricci assignor to said Munson

Continuation-in-part of application Ser. No. 766,809, Oct. 11, 1968. This application Apr. 7, 1969, Ser. No. 813,860

Int. Cl. B25c *11/00*

U.S. Cl. 254—28 19 Claims



A staple removing device for mounting on suitable supports, wherein the device incorporates a remover station in which is normally located the prongs of a remover element, as well as a yieldable stop finger, and backup stop member definitely locating a staple to be removed in alinement with a staple slot at said station. The device further includes staple guide plates for guidance of the staple to be removed into the device at said station and a manual actuator for operating the remover element in the withdrawal of a staple from worksheets to which the staple had been attached.

3,528,644
FISH TAPE REEL WITH STAGGERED TAPE ENGAGING LIPS

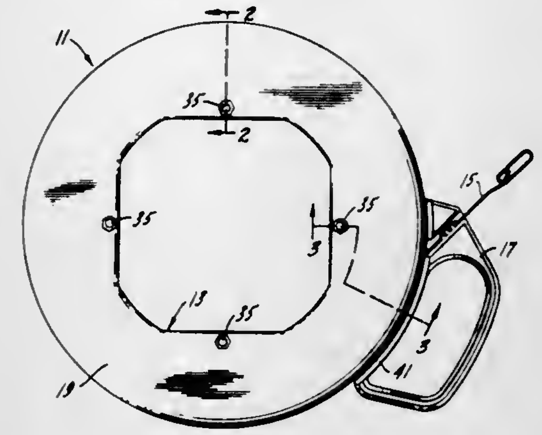
William J. Scott, Sycamore, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware

Filed Dec. 12, 1968, Ser. No. 783,389

Int. Cl. B65h *75/36*

U.S. Cl. 254—134.3 9 Claims

An electrician's finish tape reel assembly including a reel, a fish tape and a fish tape winder. The reel is made of annular sections which are fastened to each other adjacent their inner walls. The outer lips of the reel sections, and the intermediate lips, if provided, are offset radially to one another. If desired, the outer and intermediate lips may overlap one another.



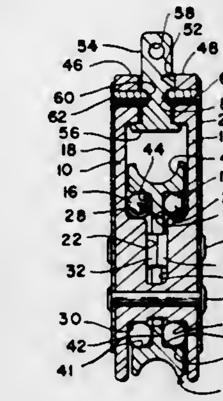
3,528,645
BEARING BLOCK

Peter O. Harken, 131 Emily St., Waukesha, Wis. 53186

Filed Apr. 18, 1968, Ser. No. 722,438

Int. Cl. B66d *1/36*

U.S. Cl. 254—192 2 Claims



A bearing block includes a sheave rotatably mounted on a shaft between side plates and has two sets of ball bearings separated by a central web depending from the sheave. The bearings contact the side plates, thereby preventing friction between the sheave and side plates. The block may include a cam and ratchet assembly permitting rotation of the sheave in one direction only.

3,528,646
PNEUMATIC VIBRATOR

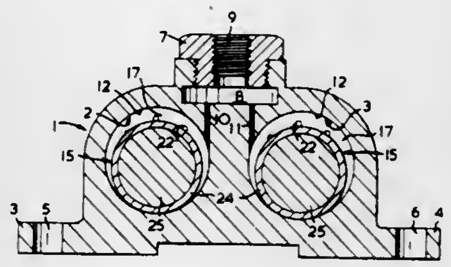
Fulton J. Best, 96 Kipling Ave. N., Islington, Ontario, Canada

Filed June 26, 1968, Ser. No. 740,347

Claims priority, application Canada, July 14, 1967, 995,459

Int. Cl. B01f *15/00*

U.S. Cl. 259—1 9 Claims



A vibrator comprising a housing with a closed cylindrical chamber therein and a roller located in the chamber. The roller has a smaller diameter than the chamber and rolls around the cylindrical wall thereof under the influence of air entering the chamber through a suitable inlet. Air outlet means are provided, said means comprising a series of apertures in said chamber which are so spaced as to be successively uncovered by the roller during its travel.

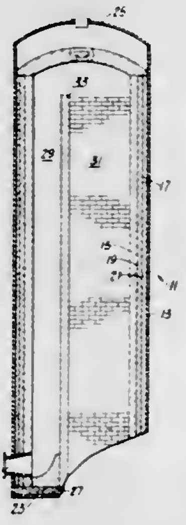
3,528,647
INSULATING STRUCTURE FOR USE BETWEEN THE STEEL SHELL AND THE INTERNAL REFRACTORY LINING IN A METALLURGICAL FURNACE

Jack Hyde, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Dec. 13, 1968, Ser. No. 783,471

Int. Cl. F23m *5/00;* **F27d** *1/00*

U.S. Cl. 263—19 9 Claims



A novel insulating structure for use between the steel shell and the internal refractory lining of a metallurgical furnace comprises an insulating means for engagement with the refractory lining to resist the transfer of heat to the steel shell and a stress absorbing means for engagement with the steel shell for resisting the formation and the transfer of stresses due to the thermal expansion of the refractory lining.

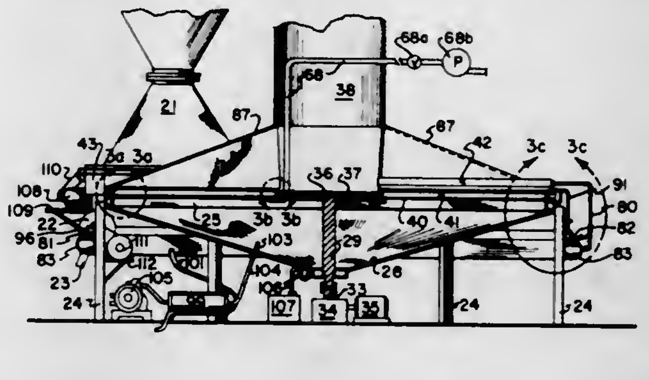
3,528,648
METHOD AND APPARATUS FOR HEAT TREATING WITH THERMAL REACTOR INCLUDING IMPERMEABLE MEMBRANE TO EMIT RADIANT ENERGY

Elmer E. Strand, Salt Lake City, Utah, assignor to Synthol Corporation, Salt Lake City, Utah, a corporation of Nevada

Filed Feb. 8, 1968, Ser. No. 704,067

Int. Cl. F28b *21/02;* **C21b** *1/08;* **F23m** *9/00*

U.S. Cl. 263—50 16 Claims

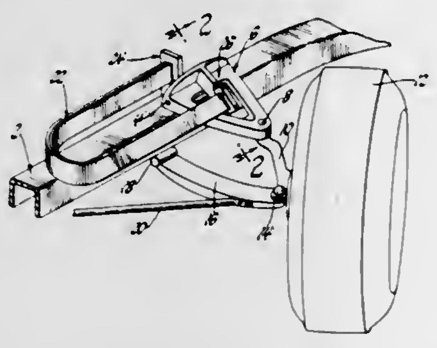


A continuous-feed type reactor having a reaction chamber with a perforate support screen onto which ore or other suitable material to be thermally treated is fed.

The screen is rotated beneath an impermeable membrane that transmits and radiates heat from surface combustion heaters, but that will not pass combustion gases. Products released from the heat treated material are removed separately from the residue, which is continuously discharged through an air lock that blocks entrance of air to the reaction chamber. For those reactions where air or a reducing agent is desired, it can be supplied in controlled amounts to the reaction chamber.

3,528,649
TORSION SPRING ATTACHMENT MEANS

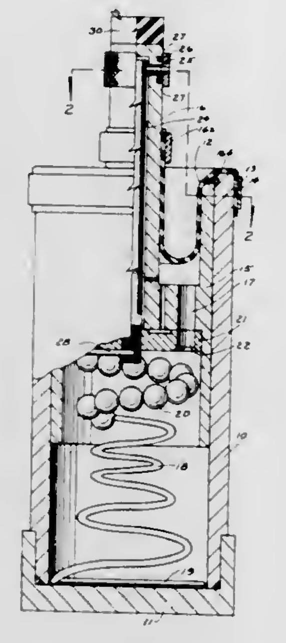
Oliver J. Jacob, St. Clair Shores, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,120
Int. Cl. B60g *11/18;* **F16f** *1/16*
U.S. Cl. 267—57 6 Claims



A blade type torsion spring disposed in a complementary socket with a groove of semi-circular cross section formed therein containing a split pin formed with a compound curvature groove engaging surface and a flat spring engaging surface enabling the portion of the blade within the socket to deform helically upon torsional deflection of the portion of the spring external to the socket.

3,528,650
FORCE ARRESTER

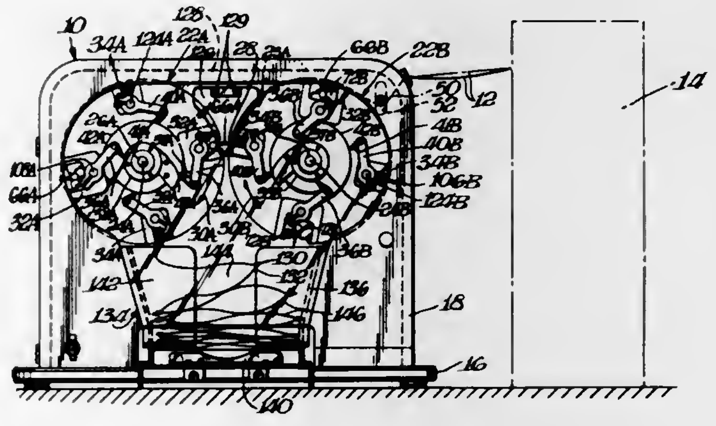
Edward H. Eastin, 254 Reitman Court, Rochester, Mich. 48063
Filed Oct. 6, 1967, Ser. No. 673,377
Int. Cl. F16f *3/07*
U.S. Cl. 267—64 13 Claims



The force arrester disclosed herein comprises a cylinder which has a piston reciprocally mounted therein and a piston shaft fixed to the piston extending through one flexible end of the cylinder. A carrier having a plurality of closure members is interposed between the other end of said cylinder and said piston. The closure members on the carrier are adapted to progressively engage axial openings in the piston to variably restrict the flow of fluid through the axial passages when the piston shaft is engaged by a force to move the piston in one direction.

3,528,651
TAPE-FOLDING DEVICE

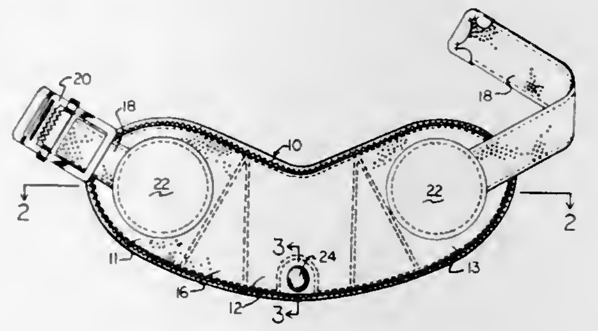
Paul A. Eriksen, 5 Cleveland Ave., McDaniel Heights, Wilmington, Del. 19803
Filed Sept. 11, 1967, Ser. No. 666,724
Int. Cl. B65h *45/16*
U.S. Cl. 270—73 14 Claims



Tape is led into the nip between a pair of counter rotating wheels moving downwardly toward each other. In the nip it is tucked into successive jaws on alternate wheels by opposed tongues. The jaws and tongues are programmed to tuck the tape within the jaws which close at the nip. The jaws open just before they reach the bottom of the wheel and just after the next fold of tape is tucked into the following jaw on the opposite wheel. This folds the tape in zigzag fashion in a column below and between the bottom centers of the wheels. The jaw and tongue action is programmed by cams and followers. The tongues are slightly swivelled to prevent binding within the jaws. The front ends of the jaws have abutting projections to avoid pressing the vertices of the folds. This prevents the tape from being broken at the creased corners. The wheel drive is controlled by a slack detector, which may conveniently be provided by a brake upon an electric motor which is capable of stalling without damage.

3,528,652
CONTOURED ANKLE WEIGHT

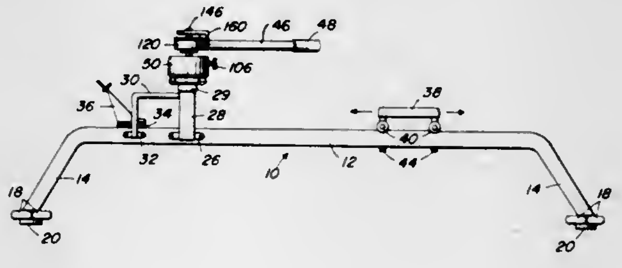
Elmer L. Tarbox, P.O. Box 5426, Lubbock, Tex. 79410
Filed Jan. 5, 1968, Ser. No. 695,918
Int. Cl. A63b *23/04*
U.S. Cl. 272—57 1 Claim



Weighted bands are shaped arcuately so that they may be strapped around the ankle buckled at the back and rest upon the top of the foot. They are secured to the foot, to prevent flopping, by a hook in the bottom of the band. The strap is buckled at the back of the ankle. The hook is at the front of the ankle whereby the hook may be engaged by a shoe lace.

3,528,653
ROWING MACHINE AND BRAKE UNIT THEREFOR

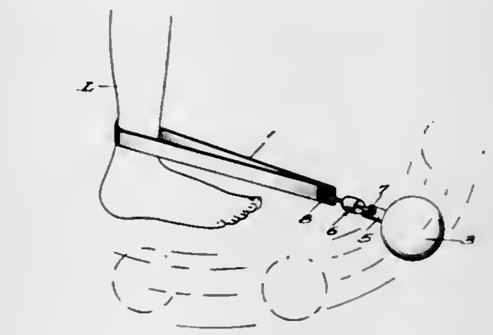
Emil C. Stuckenschneider and Donald J. Ross, Cedar Rapids, Iowa, assignors to Nissen Corporation, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 13, 1967, Ser. No. 675,193
Int. Cl. A63b *69/06*
U.S. Cl. 272—72 5 Claims



An exerciser of the rowing type. One of the chief features is the fabrication of a non-hydraulic brake assembly for each oar as a self-contained unit separate from other mechanism which causes the brake assemblies to offer resistance only in one direction of oar movement. The latter mechanisms are also formed as self-contained units which are readily added to the brake units. In the preferred form of the invention each self-contained brake unit is of the caliper-disc type. To one end of the brake disc shaft is fitted one of the separate, self-contained unidirectional mechanisms to which in turn is attached one of the oars. Each of the latter mechanisms is preferably in the form of a silent, one-way frictional clutch which locks the oar to the brake disc shaft when the oar is pulled but releases it when the oar is pushed. The brake unit, because it is a separate self-contained unit, is readily adaptable to other forms of exercise equipment employing frictional apparatus.

3,528,654
WEIGHTED WHIRLING LOOP

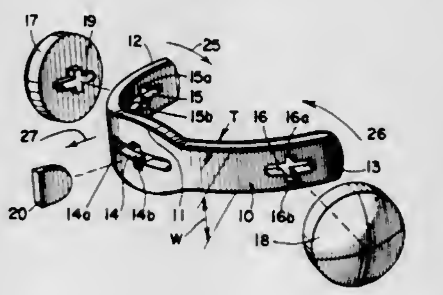
Jack Q. Larson, 838 4th St. SE., and John S. Mikovec, 108 S. Kentucky, both of Mason City, Iowa 50401
Filed Aug. 22, 1967, Ser. No. 662,385
Int. Cl. A63b *5/22;* **A63h** *5/00*
U.S. Cl. 272—74 10 Claims



An amusement device having a loop adapted to encircle the arm or leg of a child or other person and to suspend a ball as a weight on the outer end thereof which swings about the arm or leg. The loop is formed of a strip bent back upon itself and preferably connected by a band with the ball having a swivel to prevent entanglement as the device is rotated around the arm or leg of the person. A flutter tab may be connected with the band, having one or more fingers thereon free for vibrating movement to effect noise during the swinging movement, thus increasing the amusement effect.

3,528,655
FACIAL MUSCLE AND SKIN CONDITIONING DEVICE

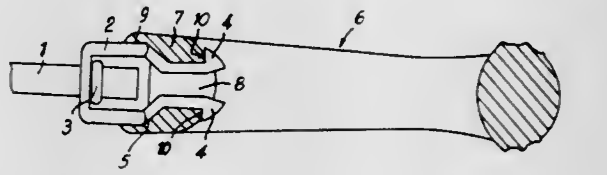
Max J. Ruderian, Santa Monica, Calif., assignor to American Physical Fitness Research Institute, Inc., a corporation of California
Filed May 29, 1968, Ser. No. 733,122
Int. Cl. A63b *23/00*
U.S. Cl. 272—82 4 Claims



A resilient strip curved into an arched shaped configuration is received in a person's mouth with the forward portion of the strip engaging under the lips and the rearwardly diverging portions of the arch shape engaging opposite inner cheek surfaces. Contraction of the cheek muscles to bring the inner surfaces of the cheek closer together urges the diverging ends of the arch closer together and thus exerts a forward protruding pressure on the central portion of the member to stretch the lips thereby effecting exercising of the facial muscles and associated skin. The resiliency of the member tends to return it to its original shape. Suitable openings are provided for breathing purposes as well as enabling the insertion of auxiliary members to vary the dimensions of the device to accommodate different mouth configurations.

3,528,656
ELASTIC TYPE EXERCISING DEVICE

Karl-Theodor Haanen, 6a Altenberger Weg, Solingen, Germany
Filed May 3, 1968, Ser. No. 726,491
Claims priority, application Germany, Sept. 14, 1967, Sch 41,307
Int. Cl. A63b *21/02*
U.S. Cl. 272—82 4 Claims

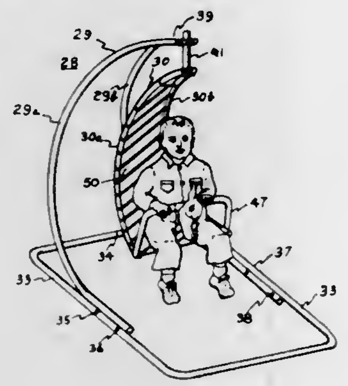


An exercising apparatus which comprises a pair of handles and a plurality of elastic ropes extending between and connected to said handles by means of U-shaped fastening elements. Each fastening element consists of a web portion, two deflectable stepped shanks projecting from the web portion, and hook-shaped catch members integrally formed with the free ends of the shanks. Each handle has a plurality of apertures for the reception therein of the fastening elements such that the catch members of the latter bear against the side of the handles remote from the ropes, whereas the web portion of each fastening element bears against the side of the handle which faces the ropes.

3,528,657

SUSPENSION SEAT TOY AND JUVENILE REST FURNITURE

Michael R. Krupsky, East Orange, N.J., assignor to Richard Quelch, Berkeley Heights, Roswell W. Bonnell, Bloomfield, and Saul Berry, Clifton, N.J.
Filed Sept. 21, 1967, Ser. No. 669,453
Int. Cl. A63g *9/00*
U.S. Cl. 272—85 **10 Claims**

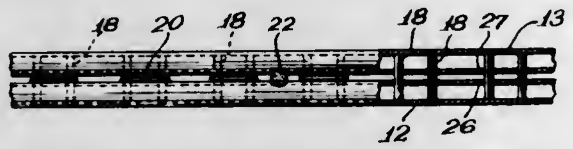


A collapsible suspension seat toy with the seat suspended for rotation and oscillation from a pivotal point at the top ends of two arcuate members removably anchored at their bottom ends to opposite sides of a frame to rest on the floor and having an area whose contour is beyond the trace of a gravity line from the oscillating seat in any position, to assure stability for the toy in all positions of the seat.

3,528,658

RACKET AND METHOD OF MAKING SAME

Maynard H. Cheris and Aloise A. Bigos, Chicago, Ill., assignors, by mesne assignments, to Charger Corporation, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 685,011, Nov. 22, 1967. This application Mar. 6, 1968, Ser. No. 710,795
Int. Cl. A63b *59/00*
U.S. Cl. 273—73 **15 Claims**



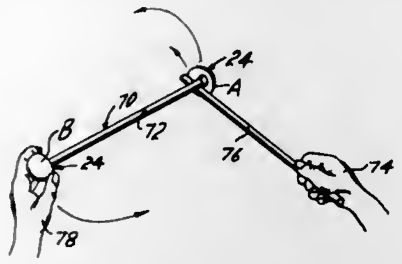
A racket for tennis and the like game comprising a pair of like metal tubes looped intermediate the ends to form a head and secured to a handle adjacent the ends, with string support pin means retained between the spaced metal tubes to provide support for the string adapted to be tensioned thereon and to rigidify the racket head. Selected pin means are welded to the tubes to secure the tubes to one another. The ends of the selected pin means are chamfered to provide a more desirable weld between the pin means and the tubes. A cross-brace is provided in the throat area to further rigidify the frame. Bushings may be provided on the string support pin means to permit more uniform tensioning of the string in the racket.

3,528,659

AERIAL PROJECTILE TOY

Junior H. Benham, Kirkland, Wash.
(10045 NE. 17th, Bellevue, Wash. 98004)
Filed Oct. 14, 1966, Ser. No. 586,894
Int. Cl. A63b *65/00*
U.S. Cl. 273—96 **4 Claims**

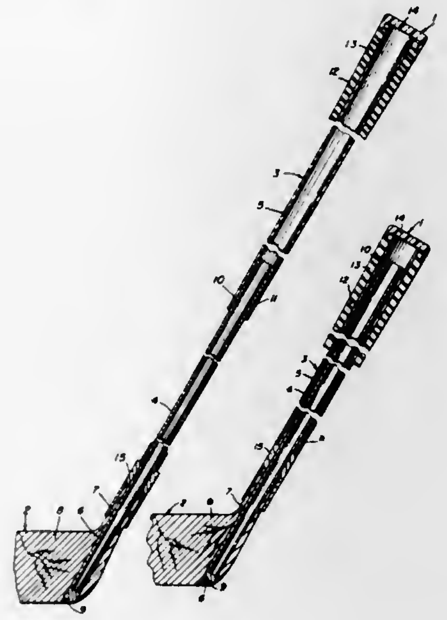
An aerial projectile propelled by a rod that has a shaft and inwardly directed flexible cups on each end. The propelling rod contacts these cups and imparts a twirling action to the projectile after it is initially started rotating by hand. In a modification the shaft of the projectile has a chamber near a translucent end cup and an incandescent lamp in the chamber. A battery in the chamber comes in contact with the lamp when the projectile is rotated and light is thus transmitted through the translucent end cup.



3,528,660

COLLAPSIBLE GOLF SHAFT

Nick C. Kategian, Glenview, Ill., assignor to Brandell Products Corporation, Rosemont, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 668,271, Aug. 7, 1967, which is a continuation of application Ser. No. 322,851, Nov. 12, 1963. This application Nov. 29, 1968, Ser. No. 780,151
Int. Cl. A63b *53/12*
U.S. Cl. 273—80 **9 Claims**



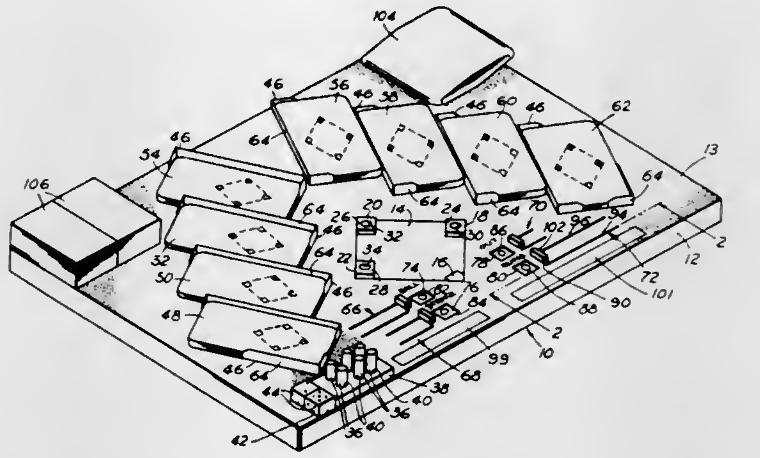
A golf club having an axially collapsible shaft comprising a plurality of telescoping tubular sections, which, in fully extended position, are securely frictionally held against rotation relative to each other. The sections are releasably held in collapsed position by a bayonet slot connection or by a frictional fit between the inside of the outer section and the outside of a ferrule fixed on the neck portion of the club head.

3,528,661

BASEBALL GAME

Stanley A. Warner, 63 Harvard Place, Buffalo, N.Y. 14209
Filed Aug. 9, 1968, Ser. No. 751,510
Int. Cl. A63f *7/06, 7/08*
U.S. Cl. 273—93 **11 Claims**

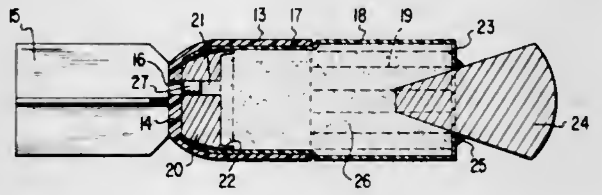
An amusement game in the form of a tabletop baseball game having a board with a baseball diamond displayed thereon. The bases are provided with apertured blocks for receiving player pieces representing runners on base. A plurality of decks of cards are provided in trays, each deck having numerous cards. The rear face of each card of the various decks indicates a particular base situation and the front face indicates a baseball play with the attendant results imprinted thereon. Dice are rolled to indicate "strikes," "balls," "foul balls" and whether a card may be selected from one of the decks, the deck from which the card is withdrawn dependent on the position of a runner or runners on base. Slide means having indicia thereon displayed through windows on the board record the play-by-play status of the game as it progresses.



3,528,662

MATERIAL DISPENSING PROJECTILE

John M. Merchant, 1st Ave. E. at RR St., Mobridge, S. Dak. 57601, and Lloyd Engle, Orient, S. Dak. 57467
Filed Aug. 28, 1967, Ser. No. 663,885
Int. Cl. A01k *11/00;* **A63b** *65/02*
U.S. Cl. 273—106.5 **4 Claims**



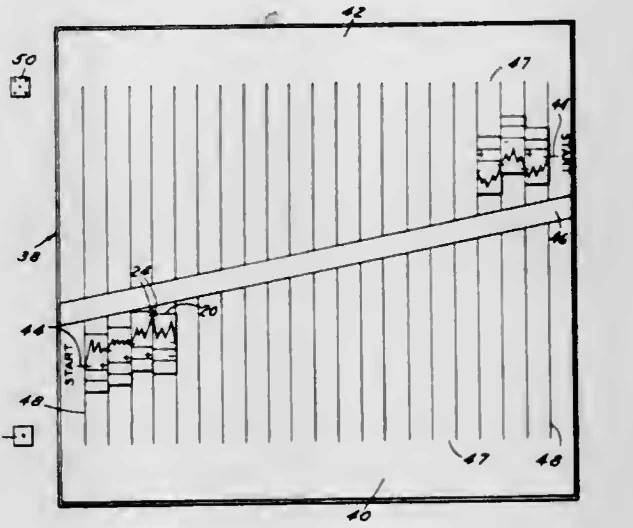
A projectile for dispensing liquid or powder material on a target upon impact and including a frangible cartridge having a weakened portion adapted to form a dispensing opening upon rupture of the cartridge. A weighted inertia plug behind the contents moves forward at impact in piston fashion facilitating ejection of the contents. The front portion of the cartridge is open. In one embodiment a wedge shaped plug closes the opening so that upon impact the plug wedges the cartridge open. In a second embodiment a frangible cap closes the opening, which cap is broken on impact.

3,528,663

MARKET GAME

Thaddeus B. Curtz and John E. Murray, Ann Arbor, Mich., assignors to KMS Industries, Inc., Ann Arbor, Mich., a corporation of Delaware
Filed Aug. 22, 1967, Ser. No. 662,352
Int. Cl. A63f *3/00*
U.S. Cl. 273—135 **9 Claims**

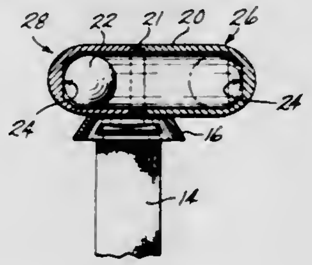
A stock market game utilizing a board for two players, the board having indicia for the sequential placement of a plurality of plaques each carrying a segment of a graph of time-price fluctuations of a stock. The plaques are placed sequentially on the board to develop a continuous price graph which may rise to a certain definitive line on the board or project down to a second definitive line or sudden-death area on the board. The selection of the plaques by the players is controlled by a die and the plaques contain indicia in addition to the graph segment which indicates rising or falling, and groups of numbers, some designated "+," some designated "–," and some designated "Same." Thus, the throw of the die determines what group of plaques can be used for the selection of the next plaque to be played.



3,528,664

GOLFER'S STROKE TIMING AID

George Gunn, Jr., Seattle, Wash., assignor to Golf Pauz, Inc., Seattle, Wash., a corporation of Washington
Filed Jan. 16, 1969, Ser. No. 791,628
Int. Cl. A63b *69/36*
U.S. Cl. 273—183 **4 Claims**



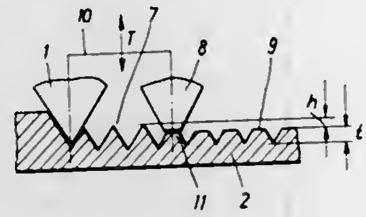
The invention relates to a golfer's stroke timing aid and follow through indicating device to be worn on a golfer's wrist. A preferably metallic, tubular member has a longitudinally extending passageway in which a metallic ball may be mounted to travel. The tubular member is mounted to one side of the longitudinal center thereof by a cup-shaped mounting means and with the open end of the cup-shaped mounting means directed toward the wrist of the golfer. The impact of the ball in contacting an end portion of the tubular member may be sensed by sound and feel by the golfer. Also, by the off-center mounting, the angular position of the tubular member is responsive to "cocking" of the wrist of a golfer.

3,528,665

METHOD AND APPARATUS FOR CUTTING A GROOVE IN THE SURFACE OF AN ORIGINAL RECORDING DISC

Horst Redlich, Berlin, Germany, assignor to Teldec, Telefunken-Decca Schallplatten G.m.b.H., Hamburg, Germany
Filed Dec. 19, 1967, Ser. No. 691,874
Claims priority, application Germany, Dec. 22, 1966, R 44,880
Int. Cl. G11b; B23p *13/04*
U.S. Cl. 274—46 **7 Claims**

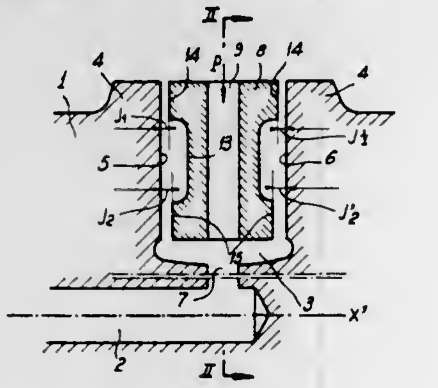
A method for cutting a constant pitch spiral groove into the surface of a recording disc so as to eliminate variations in the groove dimensions as a result of irregularities in the surface of the disc, by cutting such groove, with the aid of a stylus having a triangular cross section,



to a sufficient depth such that none of the original surface of the disc remains between adjacent turns of the spiral groove.

3,528,666
LATERAL PRESSURE-FLUID INFEED FOR A ROTATING SHAFT

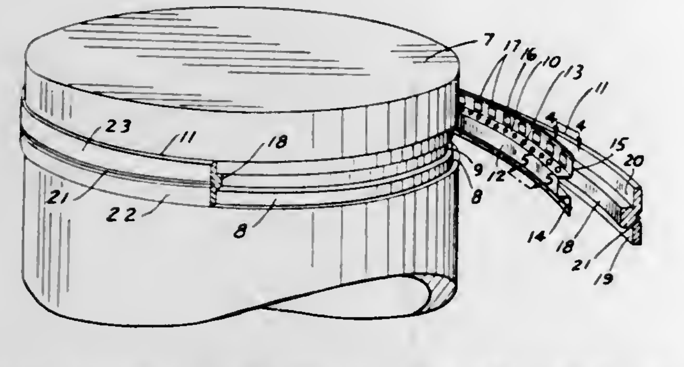
Joseph C. M. Prampart, Nantes, Loire (Atlantique), France, assignor to Societe Financiere et Industrielle des Ateliers et Chantiers de Bretagne, Nantes, Loire (Atlantique), France, a French company
Filed May 8, 1967, Ser. No. 636,834
Claims priority, application France, July 21, 1966, 70,334
Int. Cl. F16j *15/16*
U.S. Cl. 277—27 **9 Claims**



Lateral pressure-fluid infeed means for a hollow rotating object such as a shaft, by means of a non-rotating annular sealing member which encircles the shaft and provides a connection to an appropriate pressure fluid source, characterised in that the annular sealing member comprises a ring bounding low-leak gaps on either side of the orifice through which fluid is introduced into the shaft, the ring being adapted to be centered automatically opposite such orifice by the pressures produced between the adjacent surfaces of the ring and shaft.

3,528,667
PISTON RING

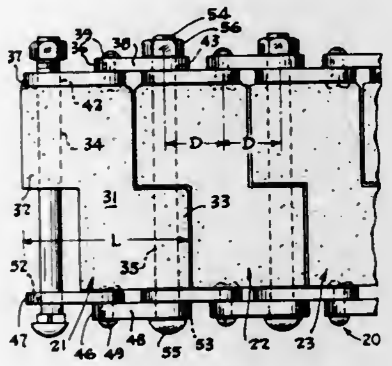
Edward P. Spaven, 6548 Reuter, Dearborn, Mich. 48126
Filed June 11, 1968, Ser. No. 736,175
Int. Cl. F16j *9/06;* **F02f** *5/00*
U.S. Cl. 277—139 **2 Claims**



This application discloses an improved piston ring, which comprises the combination of a "Teflon" element and a metal backing ring or expander. The invention resides in the combination and arrangement of parts and in the functional aspects of the device.

3,528,668
MODULAR INTER-WALL SEAL UNIT

Bruce G. Barton, Livonia, Mich., assignor to Thunderline Corporation, Inkster, Mich., a corporation of Michigan
Filed Aug. 14, 1967, Ser. No. 660,486
Int. Cl. F16j *9/16, 15/02*
U.S. Cl. 277—199 **11 Claims**



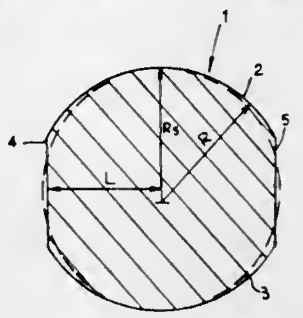
A modular seal assembly, formed from a plurality of interconnected modular sealed units, seals the space between a pipe or other conduit and the encompassing surface of an opening in a vault or other wall through which the conduit projects. Each of the modular seal units includes a resilient elastomer seal block interfitting at its ends with the seal blocks of adjacent units in the annular assembly. There are two pressure rings, one on each face of the annular seal block assembly; each pressure ring comprises a series of pressure plate members individually associated with the seal blocks and linked at opposite ends to the pressure plates of adjacent modular units. The complete assembly is held together by bolts that interconnect both the pressure plates and the seal blocks, projecting through appropriate apertures in the blocks. The assembly is expanded to fit a variety of different size conduits by adding additional modular units. In one embodiment, the pressure plate members associated with each block are themselves of articulated construction to permit greater curvature of the modular unit. A number of different configurations suitable for the elastomer seal blocks are shown, including V-shaped, parallelogram, Z-shaped, and U-shaped configurations. In the simplest embodiment disclosed, there are just two elastomer blocks and two sets of semicircular pressure plates, but a greater number of units in an individual seal assembly are preferred for greater flexibility in relation to variations in conduit size.

3,528,669
SEALING RING, MORE PARTICULARLY FOR MACHINE PARTS

Carlo F. Tondato, Turin, Italy, assignor to Firgat S.n.c., Turin, Italy
Filed July 25, 1966, Ser. No. 567,658
Claims priority, application Italy, July 31, 1965, 17,938/65
Int. Cl. B65d *53/02;* **F16j** *15/10*
U.S. Cl. 277—237 **3 Claims**

A sealing ring having two smooth unblemished arcuate faces interconnected by two spaced parallel flat sections

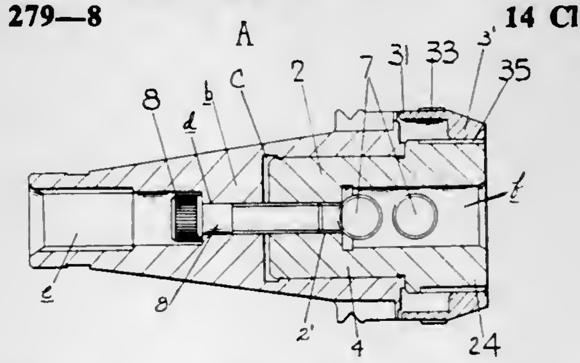
substantially perpendicular to the ring axis. The ring being molded of resilient material, such as polyurethane, to



provide the two unblemished arcuate sections that do not require machining to remove any burs or flashings.

3,528,670
MACHINE TOOL CHUCK

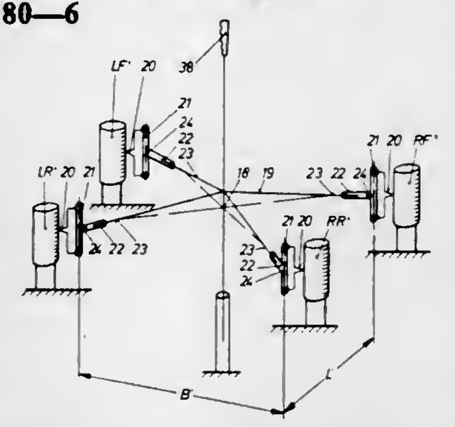
Dennis Harry Wale, Woodhouse Eaves, England, assignor to Marwin Anstey Limited, Rothley, Leicestershire, England
Filed May 6, 1968, Ser. No. 726,678
Claims priority, application Great Britain, Dec. 9, 1967, 56,102/67
Int. Cl. B23b *31/36*
U.S. Cl. 279—8 **14 Claims**



A machine tool chuck comprising a chuck body for engagement to the spindle of the machine tool, and a tool-engaging member mountable within said chuck body; there being means for easily adjusting said tool-engaging member in relative axial position within said chuck body for appropriate disposition of the related tool, and with components designated to achieve centering of the received tool.

3,528,671
HYDRAULIC APPARATUS FOR VARYING THE GROUND CLEARANCE OF LAND VEHICLES NOT SUPPORTED ON RAILS

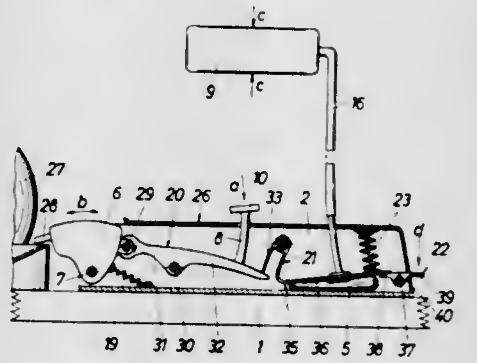
Helmut Hausenblas, Kassel, and Dieter Bachmann, Elgershausen, Kassel, Germany, assignors to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Filed Sept. 29, 1967, Ser. No. 671,834
Claims priority, application Germany, Oct. 4, 1966, R 44,275
Int. Cl. B60g *23/00*
U.S. Cl. 280—6 **3 Claims**



This invention relates to a hydraulic apparatus for varying the ground clearance of a non-railway type land vehicle having four adjustable supporting means, which comprises a theoretical value transmitter means, a height regulator, and a second regulator means which determines, according to amount and sign, the difference of the summation values of the loads on the supporting means, being taken in diagonals connecting the supporting means, and compensates the difference to the theoretical value of zero by controlling hydraulic fluid supplied to the supporting means.

3,528,672
SAFETY SKI BINDING

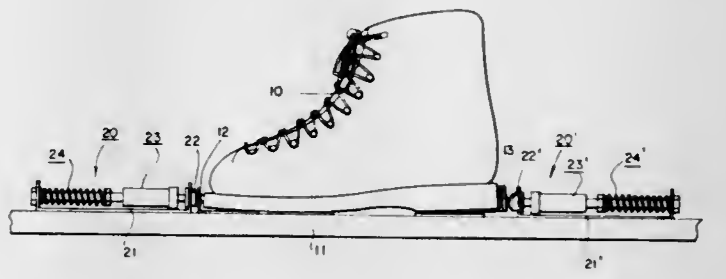
Heinrich Wunder, Rothschwalge, near Dachau, Germany
Filed June 5, 1968, Ser. No. 734,643
Claims priority, application Germany, June 15, 1967, W 44,180; Nov. 20, 1967, W 45,189
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 **15 Claims**



A safety ski binding is released by human actuation and comprises means which are remotely controlled by the skier and serve to open the gripping member which cooperates with the sole of the boot.

3,528,673
VARIABLY RELEASABLE SKI BINDINGS

Richard L. Myerson, 14 Oak Hill St., Newton Centre, Mass. 02159
Filed Aug. 8, 1966, Ser. No. 571,090
Int. Cl. A63c *9/08*
U.S. Cl. 280—11.35 **12 Claims**

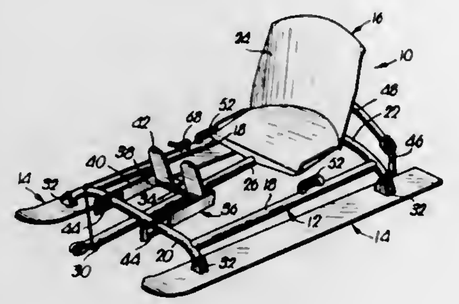


This invention relates to ski bindings, and more particularly to ski bindings which are variably releasable in accordance with the loading conditions that are encountered. The bindings include two compressible members, one of which is compressed by a releasing thrust after the compression of the other compressible member is initiated.

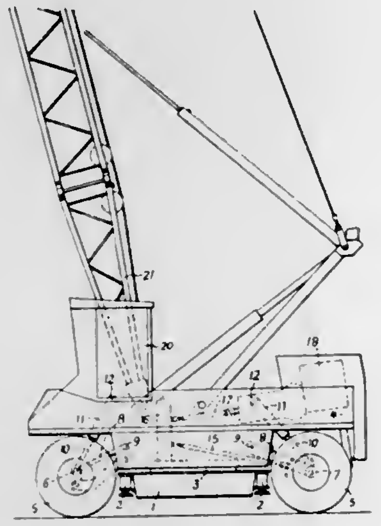
3,528,674
SKI SLED

Karl H. Schwarz, Fairway, Kans., assignor to Puritan-Bennett Corporation, a corporation of Delaware
Filed Apr. 19, 1968, Ser. No. 722,624
Int. Cl. B62b *13/08*
U.S. Cl. 280—21 **9 Claims**

A sled having a rigid frame supported by a pair of elongated skis each pivotally coupled to the frame for swinging relative thereto about respective spaced-apart, parallel, fore and aft axes. A seat is provided with a rigid, forwardly projecting, tubular sleeve journalled on a shaft to permit swinging of the seat about an intermediate axis lying in a plane parallel with said fore and aft axes. A pair of cranks, each pivotally connecting said frame and a crossarm rigidly carried by the sleeve, permit manual rotation of said sleeve in either direction about the intermediate axis. Parallel linkage pivotally interconnecting the skis and the seat swing the skis about their respective fore and aft axes for steering the vehicle responsive to the rotation of the sleeve produced by manual swinging of said cranks about said crossarm.



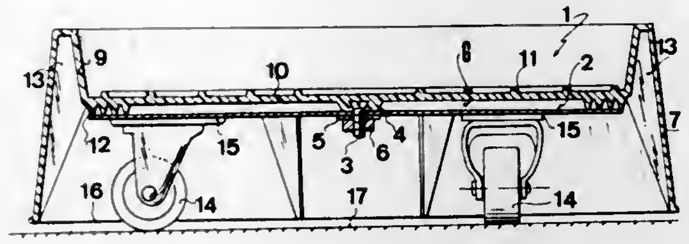
3,528,675
LOAD LIFTING
David J. B. Brown, Stroud, England, assignor to Winget Limited, Rochester, Kent, England
Continuation of application Ser. No. 623,345, Mar. 15, 1967. This application Mar. 19, 1969, Ser. No. 808,705
Claims priority, application Great Britain, Mar. 17, 1966, 11,675/66
Int. Cl. B62d *21/18*
U.S. Cl. 280—43.23 3 Claims



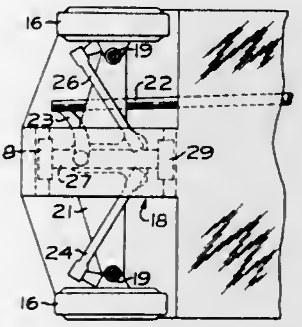
A vehicle for load lifting comprising a chassis and wheels carried by axles which are mounted for relative movement to the chassis so that the latter may be lowered to rest on a surface on which the vehicle is to operate.

3,528,676
MOVABLE CONTAINER FOR FLOWERPOTS
Giancarlo Marcandalli, % Dr. Ing. Misitano A.G., Via Padova 217, Milan 20127, Italy
Filed Apr. 1, 1969, Ser. No. 811,840
Claims priority, application Italy, Apr. 9, 1968, 8,571/68
Int. Cl. B62b *1/26*
U.S. Cl. 280—79.2 4 Claims

The flowerpot container consists of a lower first component disc-shaped made of metal and combined with a number of castors, a upper second component presenting a bottom surface, an inner first mantel projecting upwards from said bottom, an outside mantel depending towards the floor from the upper mentioned mantel so as to conceal said castors, an axial projection formed from the bottom surface of said upper component, said bottom surface presenting upper ribs adjacent to the flowerpot and peripheral lower ribs abutting against said first component, clamping means to connect said two components against the elastic reaction of said ribs against the adjacent surface of said first component.

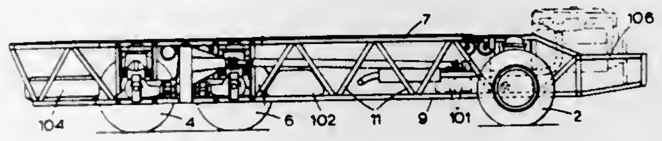


3,528,677
SUSPENSION ASSEMBLY FOR INDUSTRIAL TRUCKS
Dafydd W. Evans, Cleveland Heights, and Richard A. Wagner, Euclid, Ohio, assignors to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 13, 1969, Ser. No. 790,763
Int. Cl. B60g *11/02*
U.S. Cl. 280—95 7 Claims



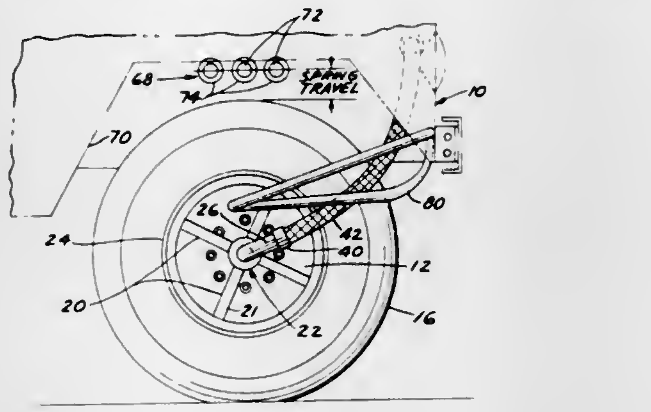
In an industrial truck having a dirigible wheel axle at one end, a suspension assembly comprising a leaf spring secured at its center to the axle and arranged normally thereto, means secured to the frame and interacting with respective ends of the left spring to limit longitudinal and lateral motion of the spring and a resilient pad respectively supporting the frame upon each end of the leaf spring while permitting oscillation of the axle about a longitudinal axis.

3,528,678
CHASSIS FOR COMMERCIAL VEHICLES
Alexander Eric Moulton, Bradford-on-Avon, England, assignor to Moulton Developments Limited, Bradford-on-Avon, Wiltshire, England, a British company
Filed June 24, 1968, Ser. No. 739,365
Claims priority, application Great Britain, June 22, 1967, 28,929/67
Int. Cl. B62d *21/00*
U.S. Cl. 280—106 3 Claims



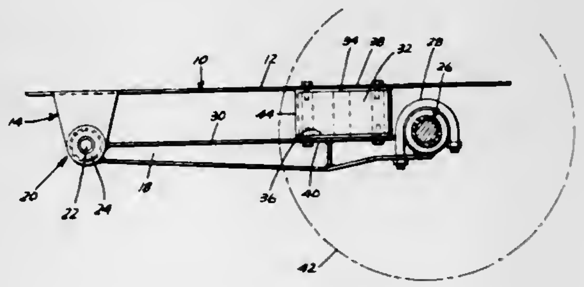
A chassis for commercial vehicles wherein each of the wheels is independently suspended with a frame structure between the front and rear wheels allowing smooth riding and good road holding qualities in both laden and unladen conditions.

3,528,679
SUSPENSION DEVICE
Lawrence A. Gant, 20348 Anita Ave., Harper Woods, Mich. 48236
Filed Mar. 5, 1968, Ser. No. 710,456
Int. Cl. B60g *25/00, 9/00*
U.S. Cl. 280—124 1 Claim



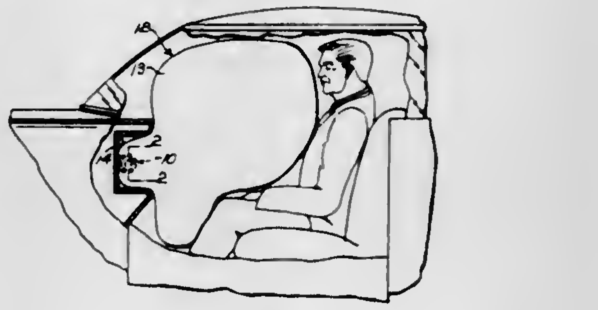
A suspension device to improve vehicle mobility comprising means disposed above a vehicle tire to limit and cushion its extreme vertical displacement by contact therewith. Interruption of the vertical movement compresses the tire thereby cushioning and dampening its passage.

3,528,680
SUSPENSION FOR VEHICLES
John M. Nelson, Rte. 2, Ottawa, Ohio 45875
Filed Oct. 20, 1967, Ser. No. 676,752
Int. Cl. B60g *11/32*
U.S. Cl. 280—124 16 Claims



This invention includes a unique suspension arrangement which employs a body of resilient deformable and compressible microcellular material interposed in load-bearing relation between the vehicle frame and axle structure, this body having upper and lower surfaces which are respectively bonded or otherwise secured to the frame and the axle structure. The material of the body is a blown urethane elastomer having a multiplicity of micro-miniature compressible cells which render the body resiliently compressible, the body having length and thickness dimensions which support a predetermined load that partially but not fully compresses the cells, thereby providing the cells with the capability of further compression for supporting resiliently a load in addition to the predetermined load. The body serves the dual purpose of providing both spring and rebound functions. By reason of the compressibility, road shocks are cushioned. By reason of the secure attachment of the body to the opposite portions of the vehicle, the body serves as the resilient connection which limits axle rebound. By means of the body itself serving the dual function as a spring and rebound element, structure normally used to provide rebound action can be eliminated from the suspension system.

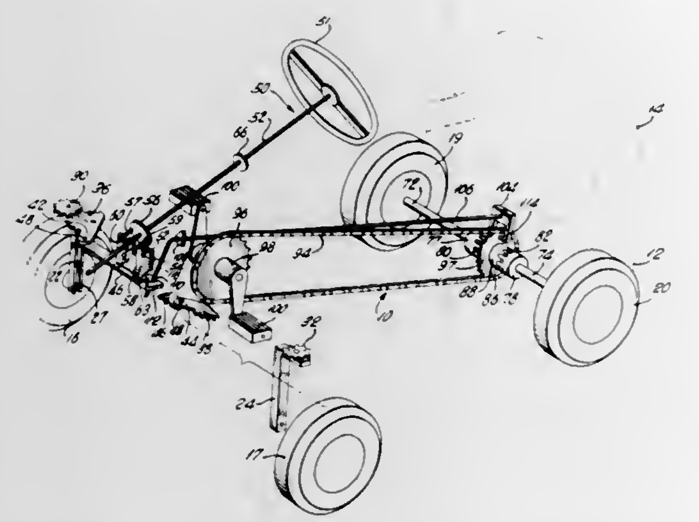
3,528,681
EXPLOSIVE RUPTURING OF FLUID CONTAINER
George A. Ekstrom, Southfield, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 31, 1967, Ser. No. 664,822
Int. Cl. B60r *21/00*
U.S. Cl. 280—150 4 Claims



A fluid pressure container maintains or stores fluid under pressure for operating a safety device, such as a flexible restraint confinement or bag. The fluid container is opened upon detonation of explosive material and the escaping fluid inflates the confinement. The explosive material is associated with the container so that the forces produced by the explosion cooperate with the fluid pressure acting interiorly of the container to produce an opening in the container. According to one embodiment of the invention the explosive force is provided by a unidirectional linear-shaped explosive strip arranged on a surface of the fluid pressure container. When the linear-shaped strip is detonated, the force of the explosion is directed to the container and opens the container to release the fluid. In another embodiment, a multidirectional strip of explosive is posioned relative to the fluid pressure container and a backup member is provided in overlying relationship to the strip. The backup member contains the force generated by the explosion which is directed other than toward the container. In still another embodiment, a flexible explosive strip is arranged in a semicircle about the container. When detonated, the charge opens a generally semicircular-shaped tab in the container and the fluid pressure inside the container bends the tab outwardly to permit the fluid to escape. According to a further embodiment of the invention, the explosive strip is arranged in the form of a loop on a plate which is positioned on the container. When detonated, the explosive opens a generally semicircular-shaped tab in the container and the fluid bends the tab out and the fluid is released through the opening formed by the bent tab.

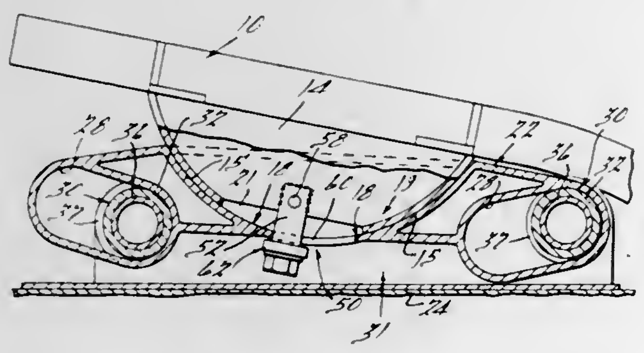
3,528,682
STEERING DEVICE FOR VEHICLES
Raymond J. Lohr, Richard N. Carver, and Charles M. Kienholz, Erie, Pa., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed May 14, 1968, Ser. No. 729,082
Int. Cl. B62d *7/14*
U.S. Cl. 280—211 9 Claims

A steering device for vehicles including a driving member slidably and rotatably mounted on the inner ends of a pair of spaced, axially aligned axles, each carrying at least one driving wheel at its outer end, said driving member being displaced in response to the movement of the steering means, into and out of engagement with both, one or the other of a pair of driven members. Each of the driven members are fixedly secured to one of the axles and adapted to be rotated when engaged by the driving member, so that only the driving wheel on the outside of a sharp turn is driven during such turn while both driving wheels are driven when such vehicle is proceeding along a substantially straight line. The device also includes a steering wheel linkage having a pair of first gear means each adapted to rotate at least one steering wheel and support therefor about a substantially vertical axis, a central link, a pair of pivot arms each hangedly secured at one end to one end of the link and a pair of second gear means each fixedly secured to the other end of one of said pivot arms and operatively engaging one of said first gear means. The link is displaced in response to the movement of the steering means whereby the steering wheel on the inside of the turn is rotated about said vertical axis over a greater angle than the other of said steering wheels.



3,528,683
TRACTOR-TRAILER FIFTH WHEEL COUPLING

Robert N. Janeway, 8120 E. Jefferson Ave.,
Detroit, Mich. 48214
Filed June 7, 1968, Ser. No. 735,429
Int. Cl. B62d *53/08*
U.S. Cl. 280—438 **9 Claims**

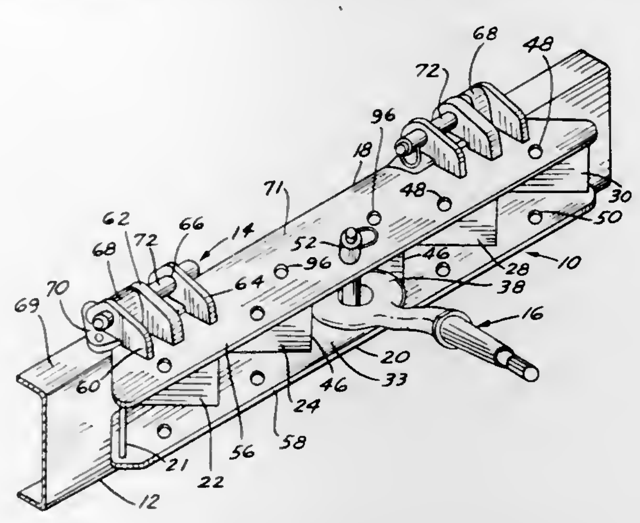


A tractor-trailer fifth wheel coupling which has a first, generally friction free pivot connection of limited angular travel effective about an elevated horizontal pivot axis, and which coupling has a second, low level pivot connection incorporating high friction to ensure normal oscillation about the elevated pivot, but accommodating extreme angularity conditions between tractor and trailer.

3,528,684
TRAILER HITCH ASSEMBLY

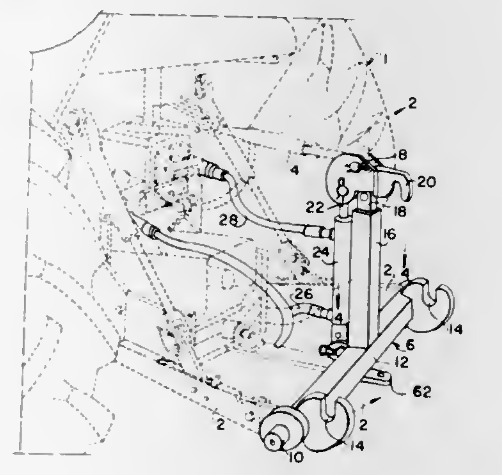
Edwin A. Cowgill, Anchorville, Mich., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 14, 1969, Ser. No. 799,306
Int. Cl. B60d *3/00*
U.S. Cl. 280—456 **10 Claims**

A trailer hitch adapted for mounting at the front or rear of a prime mover such as a truck, tractor, fork-lift truck or like drive vehicle. The hitch has a plurality of horizontally spaced pockets for connecting a trailer having a cooperatively engageable lunette type coupler that will self-align itself with the hitch allowing the drive vehicle to push as well as pull the trailer unit. The lunette may be moved into alternate ones of the pockets to provide off-center positioning of the lunette for increased maneuverability of the trailer.



3,528,685
QUICK HITCH ATTACHMENT FOR TRACTORS

Robert L. Eastman, P.O. Box 127, Randlett, Okla. 73562
Filed Oct. 28, 1968, Ser. No. 771,110
Int. Cl. B60d *1/10*
U.S. Cl. 280—479 **8 Claims**

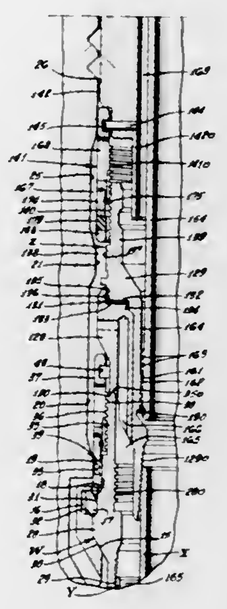


A hitch for a tractor having a three-point power lift, which hitch has hooks which may be quickly detached from an implement or trailer by mechanical action on a fluid cylinder, and the hooks of which hitch may be quickly attached to an implement or trailer by spring action so as to enable an implement to be raised and lowered with a three-point hitch in the same manner as if secured thereto by pins or bolts, and which implement or trailer may be readily detached therefrom and attached thereto without manual effort.

3,528,686
ROTATABLE CASING HANGER APPARATUS

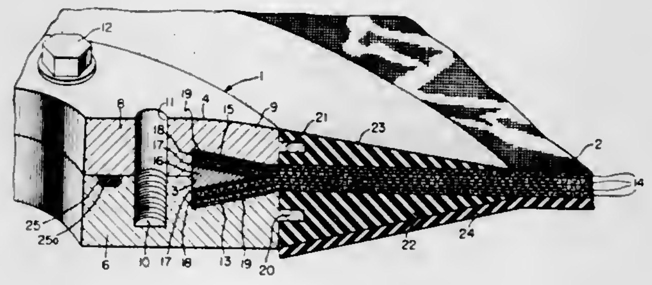
Bobby H. Nelson, Houston, Tex., assignor to Vetco Offshore Industries, Inc., Ventura, Calif., a corporation of California
Filed June 24, 1968, Ser. No. 739,341
Int. Cl. E21b *19/10*
U.S. Cl. 285—18 **20 Claims**

Well bore casing hanger apparatus in which an outer hanger body supports a plurality of inner hanger bodies, one of said inner hanger bodies comprising relatively rotatable body sections enabling rotation of the casing supported thereby, and in which the packing structure is shifted into a sealed position to close an annular flow passage between adjacent hanger bodies. Such casing hanger apparatus connected to a tubular running-in string having a releasable connection with the rotatable hanger body section for effecting rotation of the casing, the releasable connection comprising a threaded connection, and lock means for preventing relative rotation of the threaded parts unless separation of the running tool from the hanger assembly is desired, or a fluid pressure operated latch mechanism and a clutch.



3,528,687
FITTING FOR A FLEXIBLE WALLED CONTAINER

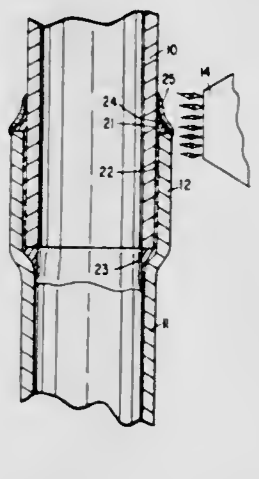
Theodore A. Underwood, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 13, 1968, Ser. No. 759,579
Int. Cl. F16l *5/00*
U.S. Cl. 285—200 **15 Claims**



A fitting attached to an aperture in a flexible walled container such as a crash resistant self-sealing fuel tank or the like which requires a high-strength leak-proof joint between the container wall and the fitting to prevent pull-out of the fitting when the tank is subjected to high impact loads. A wedge-shape ring is positioned between layers of the tank wall to provide a thickened rim portion around an aperture in the tank wall to which the fitting is attached. The fitting is comprised of a pair of opposed rings which are fastened together in face-to-face relationship on each side of the rim to retain the fitting in the aperture. The cross-sectional contour of the two rings is such that when fastened together, they define a radially outwardly extending channel having a tapered contour which is complementary in cross section to the cross-sectional contour of the rim to which the fitting is attached. In some instances, the two rings of the fitting may contain mating threaded portions to permit the rings to be screwed together. The rings may also be fastened together by bolts or other means. Various types of attachments may be fastened to the fitting depending upon the particular purpose for which the aperture is used.

3,528,688
BRAZED JOINTS

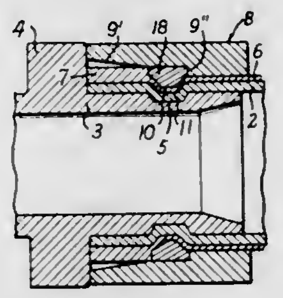
Randolph N. Stenerson, Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Original application Aug. 30, 1966, Ser. No. 576,047, now Patent No. 3,465,422, dated Sept. 9, 1969. Divided and this application June 14, 1968, Ser. No. 737,222
The portion of the term of the patent subsequent to Aug. 31, 1984, has been disclaimed
Int. Cl. F16l *13/02*
U.S. Cl. 285—286 **5 Claims**



A brazed metal joint and method of making the same. An inorganic fused glass matrix containing an unsintered brazing alloy powder is placed adjacent the members to be formed. The brazing preform is heated to release the brazing alloy to the joint members and to form a protective glass coating about the joint members which prevents splattering and oxidation.

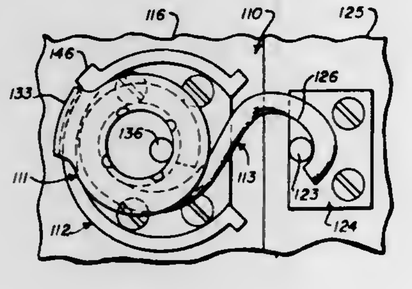
3,528,689
TUBE JOINT

Homer D. Roe, 8 Chapin Place,
Huntington, N.Y. 11743
Filed Dec. 22, 1967, Ser. No. 692,772
Int. Cl. F16l *13/14*
U.S. Cl. 285—382.2 **2 Claims**



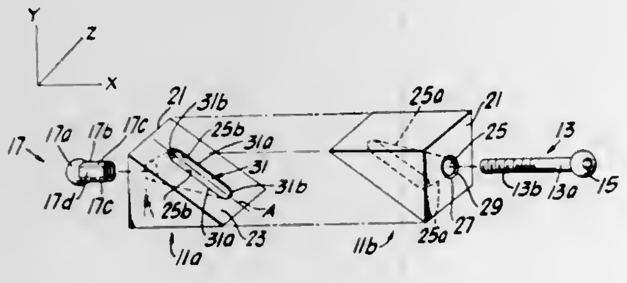
A connection for use with conduit tubing has a rigid tubular coupling formed with an annular peripheral groove and adapted in use to be positioned with the grooved portion telescoped into the open end of a tube and includes an inner sleeve comprising a malleable portion secured coaxially on the tube and coupling so as to provide an annular radially inwardly directed interlock with an annular indentation in the tube, which indentation in turn interlocks with the coupling groove, and a rigid outer sleeve is mounted coaxially on the inner sleeve to retain said interengaged parts in permanent interlocked relation.

3,528,690
FASTENER
Alfred C. Langer, Pleasant Rise 2,
Brookfield, Conn. 06804
Continuation-in-part of application Ser. No. 677,201, Oct. 23, 1967. This application Aug. 6, 1969, Ser. No. 847,956
Int. Cl. F16b *5/00*
U.S. Cl. 287—20.927 7 Claims



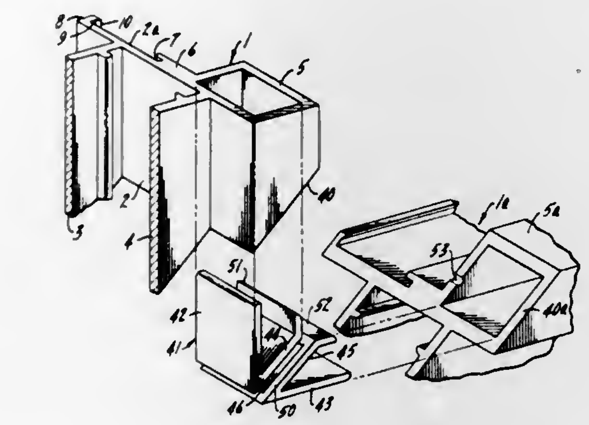
A fastener formed of a base plate and an actuator which are adapted to be affixed together, with a spring latch disposed between them. The actuator has an eccentric integrally formed with it for operating the spring latch, to lockingly engage the latter with an anchor rod. Thumb-wings are provided on the actuator to permit it to be operated by hand, without the need of additional tools of any kind. Key slots are also provided, and can be used if desired, to operate it. The fastener can be affixed flat against any flat surface.

3,528,691
KEYWAY LOCK
Thomas G. Matich, Jr., McKeesport, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 27, 1969, Ser. No. 828,229
Int. Cl. F16d *1/06*
U.S. Cl. 287—52.05 1 Claim



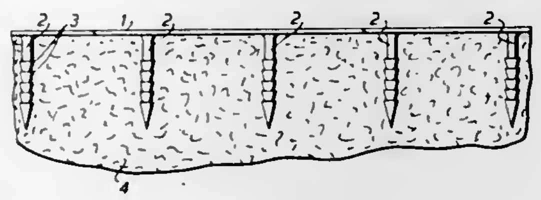
A key comprises two cooperating members and a fastener passing through an aperture in each member for urging the members to slide obliquely in respect of each other. Each member has an end surface, three side surfaces, and a sliding surface that is oblique to the end surface and one side surface. An aperture passes through each member and begins at the end surface as a circular opening and terminates at the sliding surface at an opening having semicircular ends and parallel sides. The circular openings on the end surfaces are countersunk to form a spherical contour. The fastener comprises a spherical head, engaging a countersunk surface of one member, a threaded shank connected to the spherical head, and a spherical nut engaging the shank and engaging a countersunk surface of another member.

3,528,692
WINDOW FRAME ASSEMBLY
Roger J. De Vries, Kalamazoo, Mich., assignor to North American Aluminum Corporation, Kalamazoo, Mich., a corporation of Delaware
Filed Oct. 28, 1968, Ser. No. 770,972
Int. Cl. E06b *3/60;* **F16b** *7/00*
U.S. Cl. 287—189.36 2 Claims



A window frame assembly including a glazing bead effective to resist maximum wind pressures and capable of ease in installation and including a key member joining the frame elements receptive of the bead.

3,528,693
BACKING STRIP FOR ATTACHING UPHOLSTERY TO ARTICLES SUCH AS CHAIRS MADE OF EXPANDED POLYSTYRENE FOAM OR LIKE MATERIAL
Arthur Stanley Pearson, Sherwood, and David Julian Ford, Stapleford, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Feb. 14, 1969, Ser. No. 799,169
Claims priority, application Great Britain, Feb. 20, 1968, 8,189/68
Int. Cl. F16b *1/00, 5/00, 15/06*
U.S. Cl. 287—189.36 3 Claims

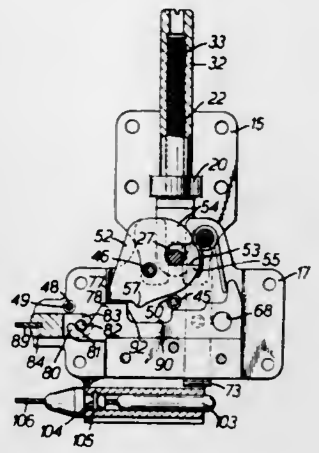


A backing strip for attachment to articles made of expanded polystyrene foam is formed as a one-piece moulding of synthetic plastics including a base and a plurality of integral studs which are forced into the expanded foam, the base of the strip serving as means for attaching upholstery.

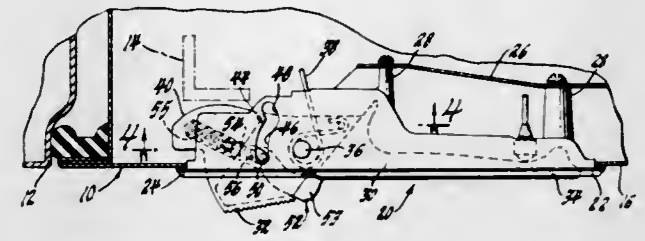
3,528,694
RELEASABLE FASTENERS AND RELEASE UNITS INCORPORATING SUCH FASTENERS
Frank Bernard Harley, Egham, England, assignor of one-half to Harley Patents (International) Limited, London, England, a company of Great Britain
Filed Apr. 11, 1968, Ser. No. 720,544
Claims priority, application Great Britain, Apr. 20, 1967, 18,223/67
Int. Cl. E05c *3/06, 3/04*
U.S. Cl. 292—216 7 Claims

A releasable fastener is disclosed, specifically for use for connecting two halves of an inflatable dinghy, the fastener having a retaining catch movement of which is

governed by a locking piece. The locking piece in turn is actuated by a cable which can be readily disconnected from the locking piece once the fastener is actuated opened to allow opening of the dinghy.



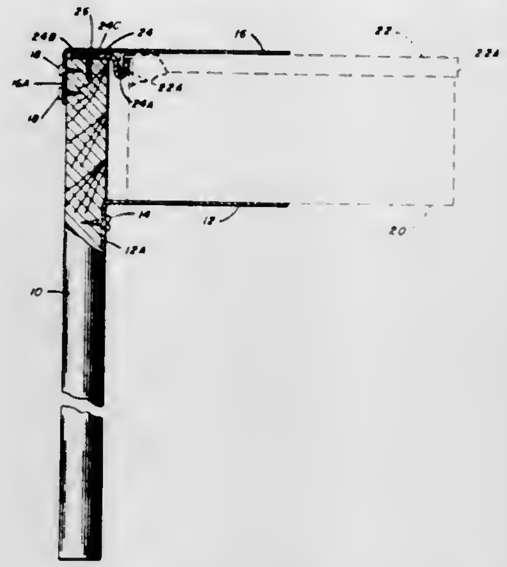
3,528,695
FLUSH TYPE DOOR HANDLE FOR VEHICLE BODIES
Theodore F. Peters, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 777,725
Int. Cl. E05b *3/00*
U.S. Cl. 292—336.3 4 Claims



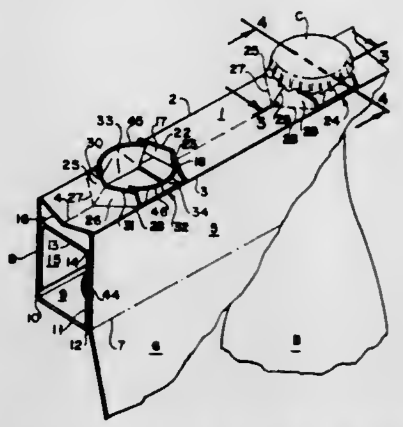
A flush type outside operating vehicle body door handle pivotable on an escutcheon on the door between a flush inoperative position and an extended operative position operating the door latch is further provided with a thumb operated handle latching member responsive to thumb pressure when the handle is swung to its operative extended position to selectively hold the handle in such position thereby facilitating the application of door closing forces through the handle member and specifically to accomplish the keyless locking function in the door latch.

3,528,696
BOX HOOK
Roland E. May, 4749 S. Lawton, Tulsa, Okla. 74107
Filed Sept. 19, 1968, Ser. No. 760,833
Int. Cl. A47f *13/06*
U.S. Cl. 294—22 3 Claims

This invention relates to a box hook device. More particularly, the invention relates to a device for handling boxes of the type having a lid with a downwardly extending lip and for moving such boxes from or into a storage area above normal reach. The device includes an elongated vertical pole, a lower support arm and an upper support arm extending from the pole spaced from each other slightly more than the height of the boxes to be handled, and a hook member rotatably supported to the top of the pole below the upper support arm, the hook member having a U-shaped portion adaptable to engage the lip of the boxes to be handled whereby after the lip of the box is engaged the box may be moved into and out of storage position and the pole rotated to position the support arms above and below the box so that it can be raised or lowered as desired.



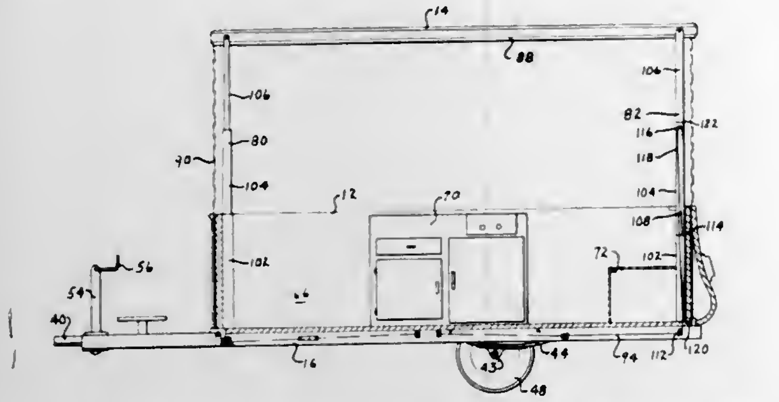
3,528,697
CARRIER FOR FLANGED ARTICLES
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Oct. 31, 1968, Ser. No. 772,128
Int. Cl. B65d *71/00;* **B66c** *1/42*
U.S. Cl. 294—87.2 12 Claims



A carrier for gripping an article having a flange comprises a tubular structure having top, intermediate, bottom and side walls. At least one pair of opposed tab structures is struck from the top and intermediate walls to define article receiving apertures, a third aperture being formed in the bottom wall in aligned relationship with the apertures in the top and intermediate walls. The tab structures struck from the intermediate wall cooperate with the tab structures struck from the top wall to form article gripping and supporting means for engaging the article underneath its flange, the flange constituting the cap of a bottle or the chime of a can or the like.

3,528,698
TRAVEL TRAILER
Lester D. Miller, Ligonier, Ind., assignor to Bangor Punta Operations, Inc., New York, N.Y., a corporation of New York
Filed June 17, 1968, Ser. No. 737,778
Int. Cl. B60p *3/34*
U.S. Cl. 296—27 7 Claims

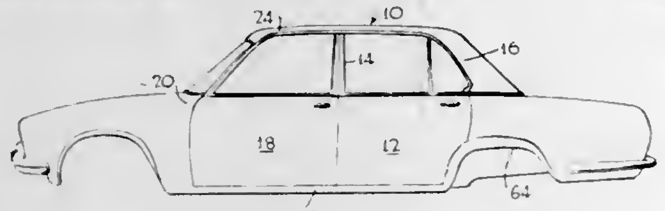
A mechanism for raising and lowering the top of a travel trailer in which telescopic posts are mounted at the corners of the body and are operated by a screw-type mechanism having a pair of carriages thereon operable in opposite directions when the screw is rotated, and including cables connecting two of the posts to one carriage and



cables connecting the other two posts to the other carriage. The screw mechanism is mounted transversely across the trailer and can be operated from either side thereof.

3,528,699
VEHICLE BODY SIDE SILL TO REAR SILL TRANSITION STRUCTURE

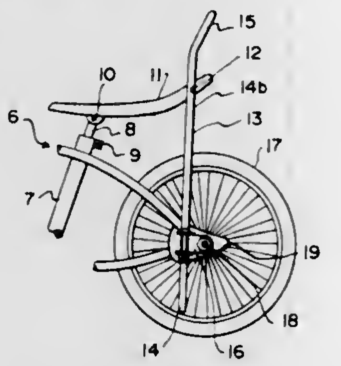
Henry W. Wessells III, Paoli, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 11, 1968, Ser. No. 783,084
Int. Cl. B62d *27/02*
U.S. Cl. 296—28 **9 Claims**



A unitized automobile body having a plurality of formed and connected panels providing a continuous and strong transition between the side sill and the rear sill structure.

3,528,700
ADJUSTABLE CLAMP AND SPRING ARRANGEMENT FOR SEAT SUPPORT

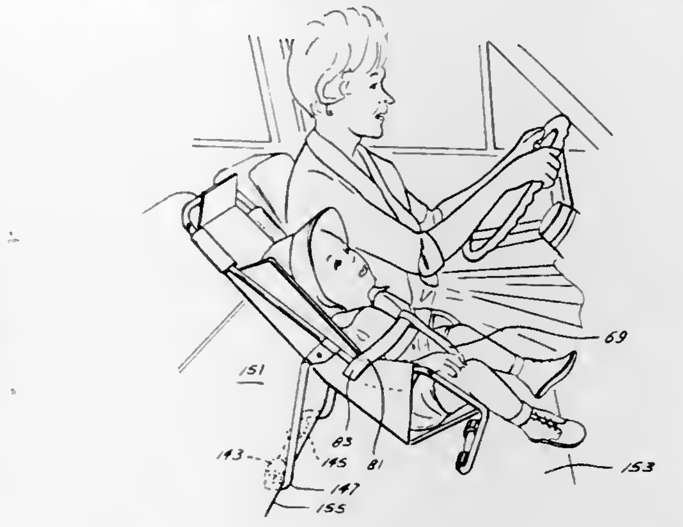
Albert Kamin, 3450 Lake Shore Drive, Chicago, Ill., and Carl P. Janu, 1205 S. Kemman, La Grange Park, Ill. 60525
Filed Mar. 27, 1968, Ser. No. 716,467
Int. Cl. B62j *1/02*
U.S. Cl. 297—211 **12 Claims**



This invention relates to bicycle accessories and consists of a pair of brackets mounted on the rear wheel axle for receiving the seat rear support bars. The brackets permit adjustment of the height of the seat to a plurality of positions. In addition, springs may be arranged around the seat support bars to provide a shock absorption effect to the seat while permitting the seat support bars to freely guide on the brackets against the springs.

3,528,701
BABY CARRIER

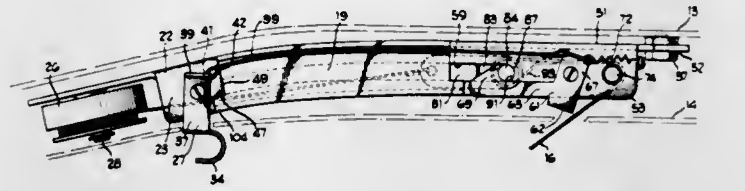
Clayton Austin Laughlin, Minneapolis, Tex., assignor to Pyramid International, Inc., a corporation of Ohio
Continuation of application Ser. No. 641,802, May 29, 1967. This application Aug. 28, 1969, Ser. No. 857,618
Int. Cl. A47d *1/10*
U.S. Cl. 297—253 **16 Claims**



A baby carrier comprises a generally rectangular frame made of steel tubing to which is connected a shell including hingedly connected back, seat, side, and top sections. The shell includes inner and outer sheets of vinyl plastic with padding therebetween. The back and seat sections and portions of the side sections also include stiffening panels adjacent and behind the padding. The back section includes a flexible pocket of sheet vinyl plastic into which is inserted a rigid panel or hardboard. The front edges of the side sections are secured to the frame by loops through which passes the tubing of the frame. The front edge of the seat section is connected to the frame by a bar extending transversely of the frame through the front edge of the seat section into holes in the frame. The sides of the rectangular frame are shaped to accommodate a deeper shell portion adjacent the seat section, with arm rests at the juncture of the deeper portion with the shallower upper portion of the shell. The frame is further shaped so that the bottom portion thereof forms a front support for the carrier when it is rested on horizontal surface. An adjustable prop or back support for the carrier includes a tubular steel member of generally U shape having metal straps at its ends encircling and sliding axially along the sides of the upper portion of the rectangular frame of the baby carrier. These straps are connected to the ends of the U-shaped prop by locking pivot means such that when the U-shaped member lies parallel to the back of the carrier with the bight of the U-shaped member at the bottom of the carrier the straps can be easily slid along the tubular frame to any desired position but when the prop is moved out to a position transverse to the back of the carrier the straps can slide only with difficulty and cant into frictional locking engagement with the frame when the carrier is loaded so as to tend to turn the prop so that the bight would be against the top of the carrier. The bight portion of the prop is provided with tubular feet and the sides of the prop are angled so that when the carrier is disposed on a car seat the bight portion can be slipped between the back and seat cushions of the auto, the tubular feet locking the prop to the car seat. The carrier is provided with belt and crotch straps secured to the frame and transverse bar. A padded tubular steel restraining wicket, is releasably engaged with the frame by pins snapping into holes in the frame. A feeding tray is releasably connected to the frame by bars entering holes in the frame and extending axially therein. A removable sun shade is similarly connected to the frame by bars entering holes higher up on the frame and extending axially therein.

3,528,702
LINEAR RETRACTOR

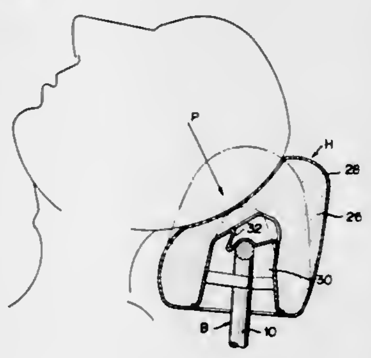
Raymond J. Boedigheimer, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 4, 1968, Ser. No. 765,225
Int. Cl. A62b *35/02;* **B65h** *75/48*
U.S. Cl. 297—388 **7 Claims**



A belt storage apparatus for retracting a diagonal over the shoulder type safety belt, has a thin elongated configuration for overhead mounting between the roof and head liner of a vehicle and includes remotely operated latching means for removing retracting tension from the body of the user when in service.

3,528,703
HEADREST FOR VEHICLE SEATS

Seizho Ohta, Toyota-shi, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-shi, Japan, a corporation of Japan
Filed June 7, 1968, Ser. No. 735,430
Claims priority, application Japan, July 11, 1967, 42/44,627
Int. Cl. A47c *7/36, 7/42*
U.S. Cl. 297—391 **10 Claims**

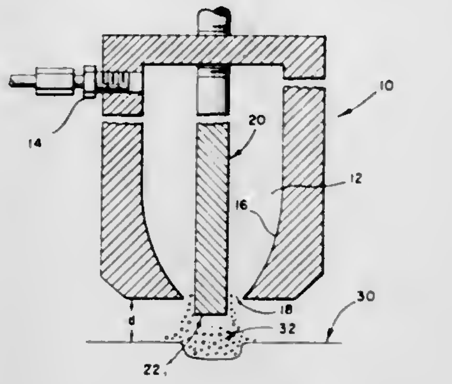


A head rest for the seat of a vehicle which employs a member contoured and arranged within the headrest to cause the headrest to absorb excessive energy of impact. The member, which is covered by and supports the usual padding, is substantially arch-shaped, and is deformed upon being subjected to an excessive load. The headrest is connected to the vehicle seat by the substantially arch-shaped member, and the connecting means extends into the space or area between the sides of the member.

3,528,704
PROCESS FOR DRILLING BY A CAVITATING FLUID JET

Virgil E. Johnson, Jr., Gaithersburg, Md., assignor to Hydronautics, Inc., Laurel, Md., a corporation of Maryland
Filed July 17, 1968, Ser. No. 745,611
Int. Cl. E21b *7/18*
U.S. Cl. 299—14 **9 Claims**

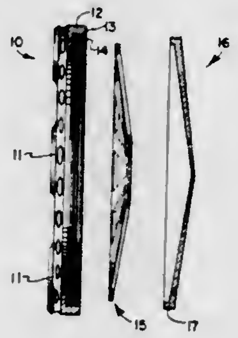
A method for advantageously utilizing the normally destructive forces of cavitation to provide an erosion effect for accomplishing drilling, boring, and like functions of solids which comprises forming a fluid jet by directing the fluid through a restricted orifice at speeds sufficient to generate vapor-filled bubbles in the jet and



impinging the jet against the solid at a distance from the orifice where the vapor bubbles collapse.

3,528,705
AUTOMOBILE HUB CAP

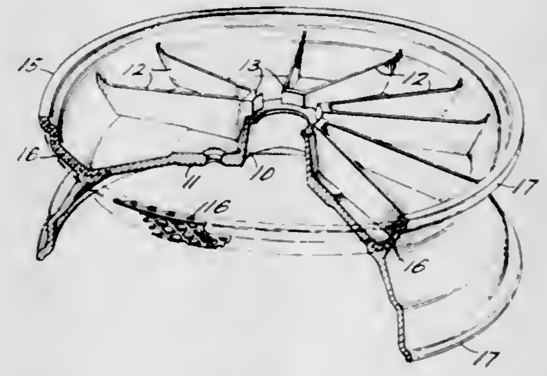
Artell F. Oldroyd, 724 E. 2nd St., Apt. 2, Salt Lake City, Utah 48103
Filed Mar. 14, 1968, Ser. No. 713,182
Int. Cl. B60b *7/04;* **B60r** *13/00*
U.S. Cl. 301—37 **6 Claims**



A hub cap, for use on the wheels of automobiles, that is made up of an attachment member, a replaceable, decorative member, and a transparent retaining member.

3,528,706
DIE CAST ALUMINUM VEHICLE WHEEL

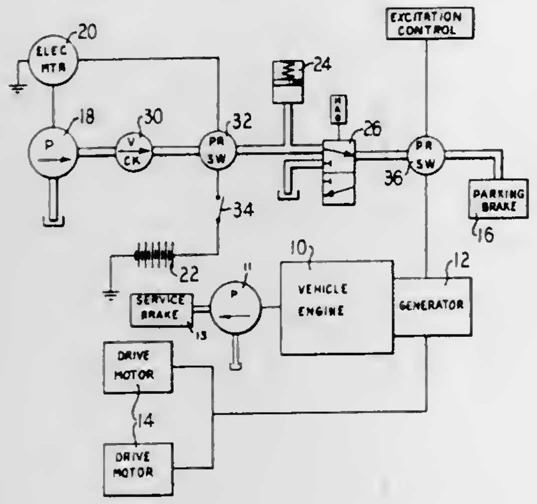
Alfred F. Bauer, Toledo, Ohio, assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed July 25, 1968, Ser. No. 747,588
Int. Cl. B60b *3/06, 3/02*
U.S. Cl. 301—65 **5 Claims**



A die cast vehicle wheel made of aluminum or other light metal alloy having reinforcement in the area most subject to impact damage.

3,528,707
PARKING AND EMERGENCY BRAKE SYSTEM

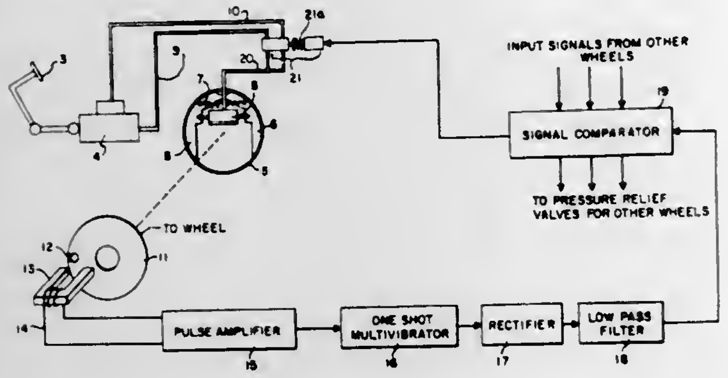
Robert Casey, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 25, 1968, Ser. No. 762,567
Int. Cl. B60t *13/66, 7/12*
U.S. Cl. 303—10 **4 Claims**



A parking brake system particularly designed for heavy vehicles which have service brakes applied by pressure generated by the engine of the vehicle and released by spring pressure, and parking brakes applied by springs and released by hydraulic pressure. The pressure for releasing the parking brakes is from a separate source and enables safe towing or coasting of the vehicle when the engine generated pressure has failed.

3,528,708
SYSTEM FOR MINIMIZING SKIDDING

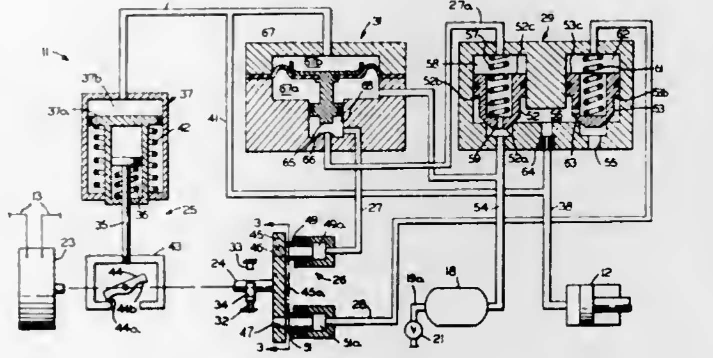
Robert L. Ballard, Meadowbrook, Pa., assignor to Hurst-Campbell, Inc., Warminster, Pa., a corporation of Pennsylvania
Filed June 13, 1968, Ser. No. 736,860
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 **8 Claims**



A plurality of electromagnetic sensing devices are respectively associated with the wheels of a vehicle. Each device produces a signal corresponding to the speed of rotation of its associated wheel. The signals from the wheels are individually compared with the signal derived from the fastest turning wheel to produce respective error signals which are applied to respective pressure release valves in the hydraulic brake lines for the slower turning wheels. Each error signal causes the intermittent release of the pressure on the brake to which it is applied for a constant time interval but at a frequency which varies in response to the magnitude of the error signal.

3,528,709
ELECTRIC CURRENT-TO-PNEUMATIC PRESSURE TRANSDUCER

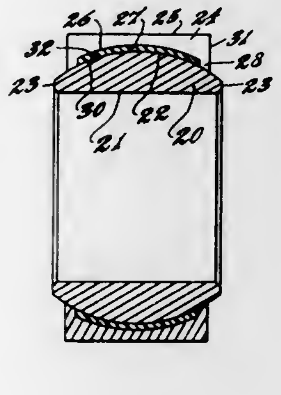
Thomas H. Engle, Cape Vincent, N.Y., assignor to General Signal Corporation, a corporation of New York
Filed Sept. 23, 1968, Ser. No. 761,656
Int. Cl. B60t *13/68*
U.S. Cl. 303—20 **30 Claims**



Electric current-to-pneumatic pressure transducers suited for use in braking systems for railway cars. Each transducer is characterized by opposed electric and pneumatic torque motors which respond, respectively, to the control current and the outlet pressure and act upon a comparator shaft which positions a pair of pressure balanced pilot valves. These valves, acting through piloted motors, actuate main supply and exhaust valves that control air flow from a reservoir to the brake cylinder and from the latter to the atmosphere. All versions of the transducer effect a full brake application when the flow of electric current is interrupted, and some also are failsafe with respect to malfunctions in the reservoir-charging circuit. Other embodiments prevent release of the brakes until the reservoir has been charged to a safe level. Several schemes are proposed for reducing the amount of air consumed by the pilot circuit.

3,528,710
SELF-ALIGNING PLASTIC LINED BEARING

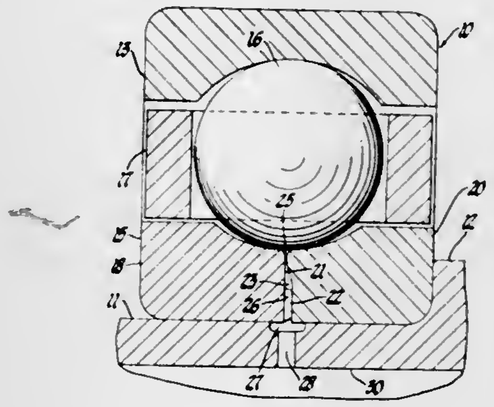
Franz J. Roesner, Trenton, and Robert C. Bogdan, Titusville, N.J., and Peter S. Breene, Philadelphia, Pa., assignors to Roller Bearing Company of America, West Trenton, N.J., a corporation of New Jersey
Filed Mar. 28, 1968, Ser. No. 716,910
Int. Cl. B21d *53/10;* **F16c** *33/24*
U.S. Cl. 308—72 **6 Claims**



A self-aligning bearing having a pocket in an outer race provided with shoulders at the ends, the outer race having at least one circumferential break, a plastic lining in the pocket and an inner ball engaging the plastic lining. The bearing is assembled by deflecting the outer race radially outwardly.

3,528,711
BEARING LUBRICATION

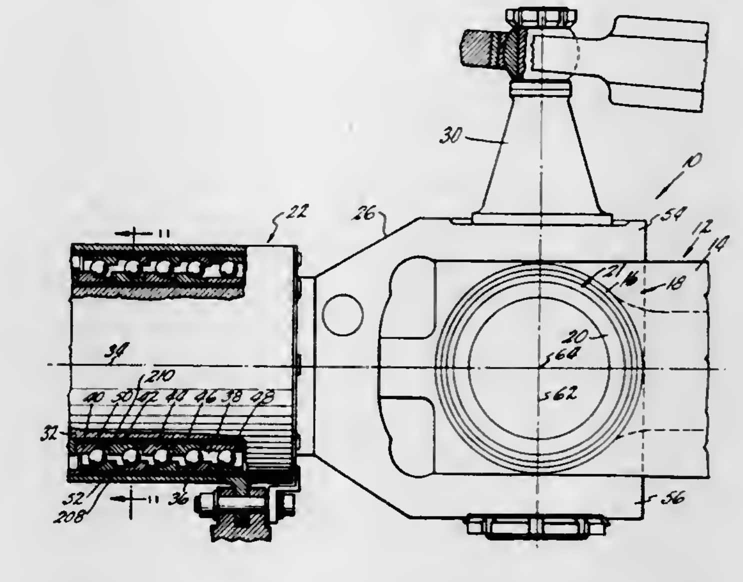
Robert P. Atkinson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1968, Ser. No. 757,068
Int. Cl. F16c *1/24*
U.S. Cl. 308—187 **14 Claims**



A rolling contact bearing has an inner race which defines a continuous slit orifice around the race through which oil is introduced to lubricate the bearing. In a ball bearing this orifice is in the radial plane of the centers of the balls. In a roller bearing, there are two such orifices, one at each end of the inner race next to the flanges of the race. The orifice is fed from a pocket containing oil under pressure due to centrifugal force which is supplied from within the inner race. A similar structure provides lubrication between a race and a spacer which rides on it.

3,528,712
BEARING MEANS FOR ABATING FRETTING DAMAGE

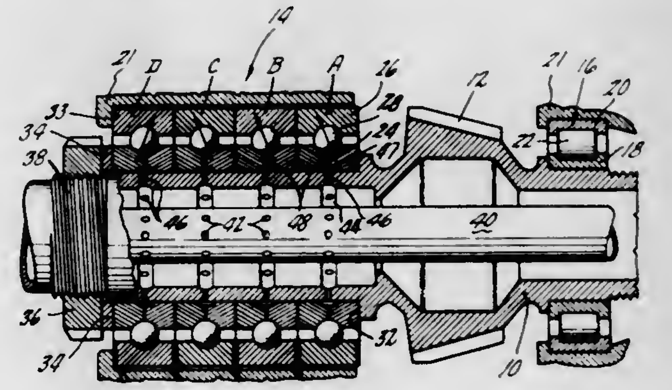
Luigi Vacca, Milford, and Robert Zincone, Stamford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 31, 1967, Ser. No. 657,409
Int. Cl. F16c *27/00*
U.S. Cl. 308—26 **8 Claims**



Mating structural parts which would otherwise be damaged by fretting action therebetween are joined and supported with respect to one another by a segmented, sacrificial bushing or bearing which is supported from one of the parts by a resilient bonding compound and which engages the other part in mating relation so that all loads and vibrations transmitted between the structural parts are transmitted through this resiliently mounted sacrificial bushing and so that the sole metal-to-metal interface is between the sacrificial bearing and the part with which it mates.

3,528,713
FUSIBLE SHIM FOR PRELOADED BEARING

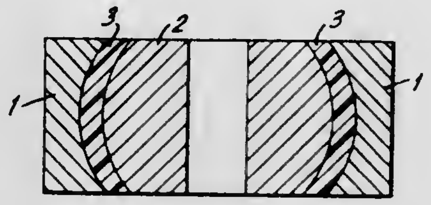
Carl Hess Keller, Jr., Southport, and Arthur Burton Jones, Jr., Newington, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 13, 1969, Ser. No. 790,621
Int. Cl. F16c *13/00*
U.S. Cl. 308—189 **9 Claims**

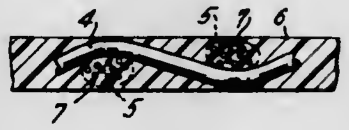


An antifriction bearing, which is capable of being preloaded comprises two or more separate bearing units each including an inner ring mounted on a shaft, an outer ring installed in a housing and a clamping device which will provide retention of the bearing assembly and internal load or looseness in the separate bearings. A shim of a predetermined melting point is positioned between the clamping member and an adjacent bearing race which melts upon lubrication failure and reduces the internal load on the bearing.

3,528,714
BEARING AND METHOD BEARING CONSTRUCTION

Albert R. McCloskey, Fairfield, Conn., assignor to The Helm Universal Corporation, Fairfield, Conn., a corporation of Delaware
Application Feb. 23, 1967, Ser. No. 617,952, now Patent No. 3,471,207, which is a continuation-in-part of application Ser. No. 566,799, July 21, 1966. Divided and this application Jan. 30, 1969, Ser. No. 810,070
Int. Cl. F16c *33/00*
U.S. Cl. 308—238 **4 Claims**



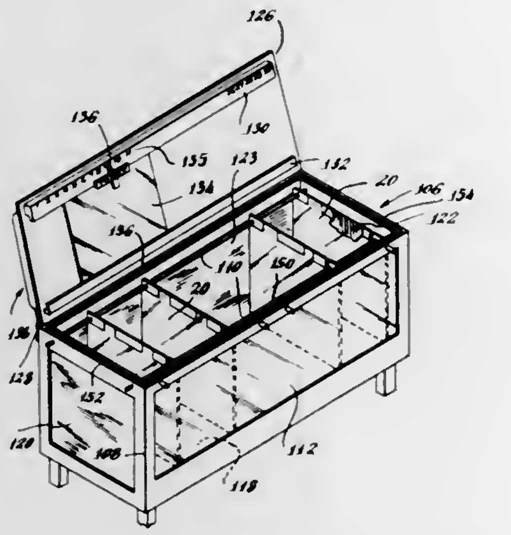


A bearing advantageously includes a self-lubricating liner comprising a mixture of adhesive resin and powdered or flocked polytetrafluoroethylene particles, or a woven polytetrafluoroethylene fabric embedded in such resin. The liner is cured under conditions of high pressure and high temperature.

3,528,715

DISPLAY STRUCTURE AND MEANS FOR A MANAGEMENT COMMUNICATION DECISION MAKING PROCESS

Paul Gilmore Williams, Jr., Westport, Conn., assignor to Williams Inlan Corporation, Westport, Conn.
Filed Aug. 8, 1968, Ser. No. 751,278
Int. Cl. A47f *5/08;* **A47b** *88/2*
U.S. Cl. 312—184 12 Claims



A system and apparatus wherein all active subject categories and information related thereto are constantly, visually displayed before a manager. The apparatus comprises transparent suspension file folders and colored inserts therefor; a display board to which the file folders may be moved and vertically displayed by suspending them on pins or between pairs of guide rails; multiple drawer side-by-side filing cabinets having suspension rails for suspending the file folders, the filing drawers being open fronted whereby the file folders are visible in the filing cabinet and having color-coded rails for indicating the subject matter of files suspended adjacent thereto; and a similar single row open front filing cabinet wherein the most active files may be vertically suspended and related to planning diagrams drawn on a front transparent window. The hinged top of this "console" is provided with rails for vertically displaying a plurality of files, a horizontal dateline and a date pointer. The single row filing "console" is provided with internal illumination means.

The file folders are formed of polyvinyl chloride sheet or the like on which information may be written with semipermanent or washable markers. They are closed at the top to form a sleeve and material is entered into them by sliding it sideways.

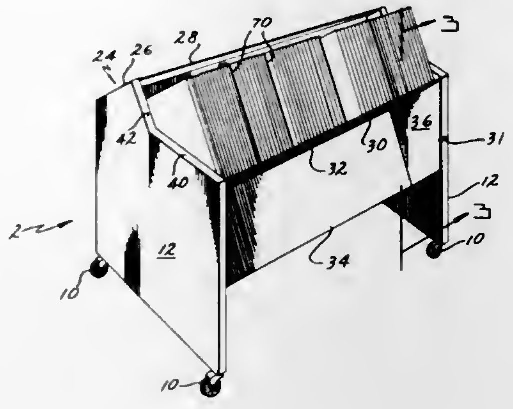
The display board is provided with a white surface of vinyl material or the like on which information may be written or drawn with semipermanent or washable markers. The vinyl is adhered to a magnetically permeable sheet whereby photographs, notes, file cards and the like may be held thereto by flexible strip magnetic material. The display board is also provided with at least one horizontal dateline.

3,528,716

POSTING TRAY CABINET FOR DATA PROCESSING RECORD CARDS AND THE LIKE

Samuel P. Lapertosa, Mount Prospect, Ill., assignor to National Bank Book Company, Inc., Holyoke, Mass., a corporation of Nevada
Filed Oct. 9, 1968, Ser. No. 766,172
Int. Cl. A47f *63/00*
U.S. Cl. 312—183 8 Claims

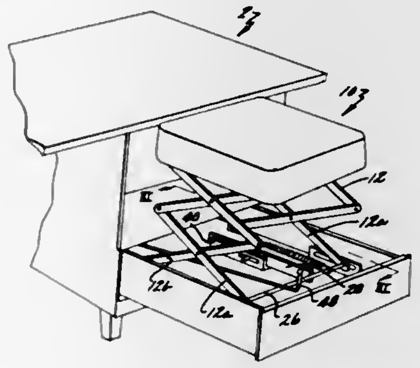
A cabinet tray construction for storing and posting data processing machine ledger cards and the like of various dimensions, in which a forwardly and upwardly angled tray bin faces the front side of the cabinet and a tray floor unit is removably seated therein on which the cards are to be stacked, said floor unit being removable and having means for adjustably fixing the elevation of the tray floor surface to accommodate a particular machine card size for the desired elevation of the upper edges of such cards relative to the top of the bin and convenience in handling the cards for posting and similar operations.



3,528,717

FOOTREST SUPPORT

Joseph E. Kinnebrew, 7040 Weller Drive NW., Rockford, Mich. 49341
Filed June 14, 1968, Ser. No. 737,155
Int. Cl. A47b *83/00;* **A47c** *9/12*
U.S. Cl. 312—237 12 Claims



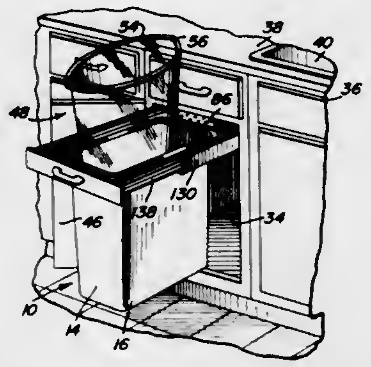
This disclosure relates to a combination desk and footrest support in which the footrest support has a collapsible supporting means which fits within a desk drawer so that the drawer can be closed with the footrest inside and which support permits the footrest to be raised to a suitable height when the drawer is open. Biasing means are provided to bias the footrest support upwardly when it is positioned within the drawer and latch means are provided for holding the footrest within the drawer when the support is collapsed.

3,528,718

GARBAGE CAN AND SUPPORT

Harold J. Johnson, 1963 Cole Drive, East Meadow, N.Y. 11554, and Manfred H. Braun, 250 Jackson Ave., Mineola, N.Y. 11501
Filed Dec. 1, 1967, Ser. No. 687,367
Int. Cl. A47b *46/00*
U.S. Cl. 312—330 9 Claims

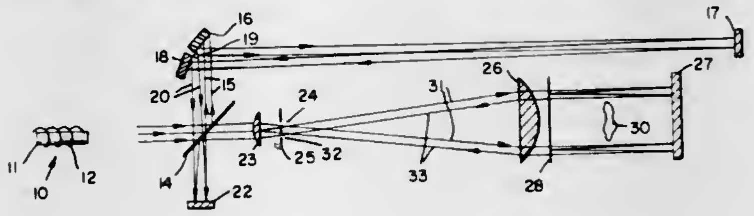
A garbage can or container incorporating a removable flexible liner detachably connected with the upper end thereof and a slidable support therefor adapted to be mounted within a cabinet or in underlying relation to a supporting structure to provide movement of the garbage can from a concealed position to an exposed position. The supporting structure includes a sealing assembly which effectively seals the garbage can when in its concealed or stored position.



3,528,719

MULTIPASS HOLOGRAPHIC INTERFEROMETER

Robert E. Brooks, Redondo Beach, Calif., assignor to TRW Inc., Redondo Beach., Calif., a corporation of Ohio
Filed Jan. 26, 1968, Ser. No. 700,929
Int. Cl. G02b *27/00*
U.S. Cl. 350—3.5 10 Claims

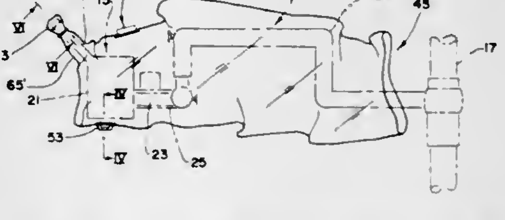


A holographic interferometer is disclosed which permits to measure small phase differences by causing the subject beam of the interferometer to be reflected repeatedly through the subject. The phase sensitivity is directly dependent on the number of passes which the subject beam makes through the subject. Special means are disclosed for limiting the number of reflections of the subject beam between two mirrors, one of which is partially reflecting. This may be done, for example, by utilizing quasi-monochromatic light having coherence for a predetermined length. Alternatively, the light source, which may be a laser, develops a pulse of predetermined duration. The effective length of the light pulse may be limited by an optical shutter, or finally the subject beam may be slightly tilted so that it initially passes a first aperture in an aperture plate and emerges from a spaced second aperture or alternatively from the first aperture after a predetermined number of reflections.

3,528,720

OPERATING MICROSCOPE ENVELOPE MEANS

Harry T. Treace, Germantown, Tenn., assignor to Richards Manufacturing Company, Inc., Memphis, Tenn., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,684
Int. Cl. G02b; B65d *85/00*
U.S. Cl. 350—61 8 Claims

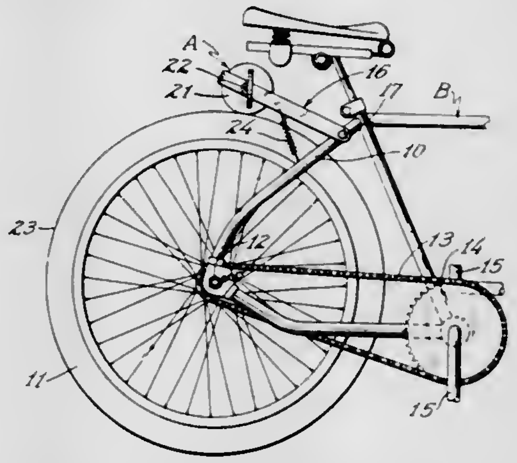


A thin clear sheet plastic envelope enclosure adapted to be removably fitted over a cantilever supported operating microscope for maintaining a sterile surgical field. The envelope structure includes circular downwardly flanged ring means adapted to snugly fit concentrically on the objective lens frame of the microscope and includes socklike cover means adapted to fit over the eyepiece projections of the microscope and with each socklike cover means having tear-away scoreline means permitting the upper cap end portions of the socklike cover means to be severed, thereby uncovering the eyepieces for use. A preferred embodiment of the microscope envelope structure includes oppositely projecting sleeve structures adapted to be used for covering one observer arm or both observer arms of a microscope apparatus when such observer arms are used in a surgical operation.

3,528,721

BICYCLE SAFETY SIGNAL

Fred J. La Londe, 619–A State St., Santa Barbara, Calif. 93101
Filed May 6, 1968, Ser. No. 726,886
Int. Cl. G02b *5/12*
U.S. Cl. 350—99 7 Claims

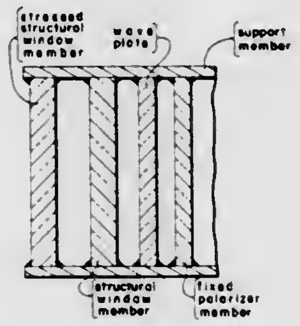


This invention comprises a reflector device for bicycles designed to indicate the presence of the bicycle to a following or approaching vehicle. The device comprises a roller engaging a wheel of the vehicle supported on a shaft parallel to the wheel axis. A pair of reflector elements are supported by the shaft to rotate in unison therewith. Each reflector element momentarily reflects light from the headlights of an approaching vehicle. The reflector elements are arranged to provide an alternate flash of reflected light.

3,528,722

HIGH ORDER WAVE PLATE CORRECTION OF SUNLIGHT POLARISCOPE EFFECT IN WINDOWS

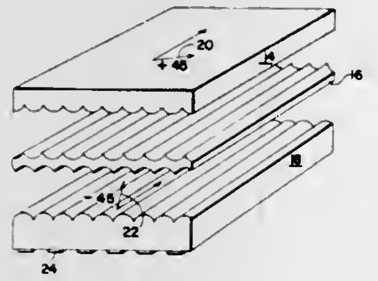
Albert S. Makas, Medford, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 697,113, Jan. 11, 1968. This application Oct. 30, 1968, Ser. No. 771,970
Int. Cl. G01b *27/28*
U.S. Cl. 350—157 18 Claims



When light-polarizing material is used inboard of stressed window members which are exposed to sunlight, the resultant polariscopic effect produces undesirable color patterns and striations. These may be relieved by incorporating a high order wave plate outboard of said light-polarizing material.

3,528,723
LIGHT POLARIZING DEVICE

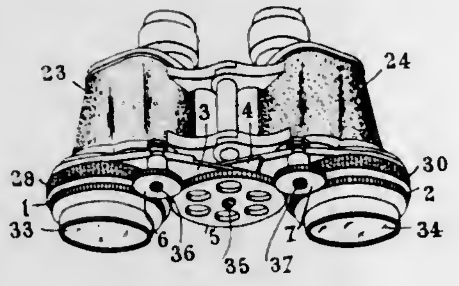
Howard G. Rogers, Weston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,411
Int. Cl. G02b *5/30*
U.S. Cl. 350—157 10 Claims



This disclosure relates generally to light polarizing devices and systems of high efficiency which transmit a very large portion of incident light and in particular to such devices which are simple in structure and thus adapted to production methods of manufacture on an economical basis.

3,528,724
BINOCULAR OBSERVATION AND SIGHTING INSTRUMENTS

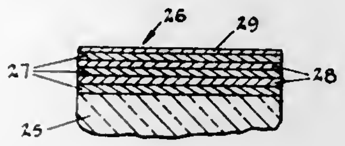
Henri Bertin, Arcueil, France, assignor to Etat Francais (French State), Arcueil, Seine, France
Filed June 25, 1964, Ser. No. 379,439
Int. Cl. G02b *5/30*
U.S. Cl. 350—159 7 Claims



1. A binocular observation and sighting instrument comprising two adjustable binocular bodies, two optical paths with a polarizer interposed in each optical path, two supports rotatably movable about the optical axis of said paths respectively, each of said movable supports having mounted thereon a polarizer, toothed wheels rotatably solid with said supports of said polarizers respectively, and a gearing providing a 1:1 transmission ratio, both in magnitude and sign, for coupling to each other said toothed wheels solid with said supports of said polarizers, and for controlling the rotation of said polarizers while maintaining the polarization planes of said polarizers in a strictly parallel relationship irrespective of the polarizer adjustment and of the relative spacing of the two optical axes of the instrument with a view to increase the luminance contrast between the observed object and the background.

3,528,725
COLOR TEMPERATURE CORRECTION LIGHT TRANSMITTING FILTER

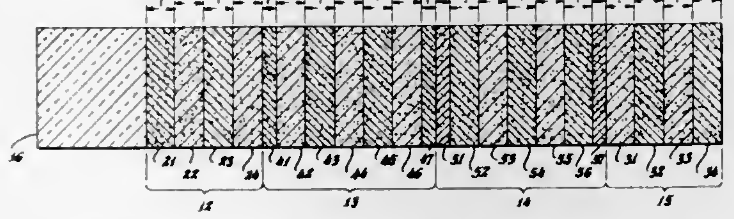
Dwight W. Barkley, New Kensington, Pa., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Aug. 30, 1967, Ser. No. 664,350
Int. Cl. G02b *5/28*
U.S. Cl. 350—166 8 Claims



A color correction light transmitting filter for modifying the illumination from an artificial light source to render it more compatible to daylight, the filter including a transparent substrate to which is applied a multi-layer coating consisting of alternate layers of high and low index materials.

3,528,726
NARROW BAND INTERFERENCE LIGHT FILTER

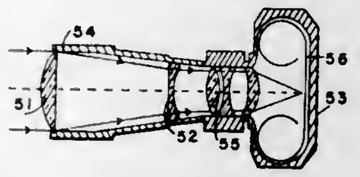
Robert R. Austin, Wilton, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Continuation-in-part of application Ser. No. 829,328, June 2, 1969. This application July 10, 1969, Ser. No. 843,912
Int. Cl. G02b *5/28*
U.S. Cl. 350—166 6 Claims



An interference type light filter made up of four sections arranged in a stack on one end of a substrate. The first and fourth sections in the stack are identical reflectors and are either single metallic coatings with a dielectric overcoating or all dielectric systems. The second and third sections in the stack are multilayer dielectric systems. The filter provides a single narrow transmission passband over a relatively large spectral region.

3,528,727
METHOD AND APPARATUS FOR FOCUSING A BEAM OF LIGHT WITH A CONTROLLED VORTEX FLOW OF FLUID

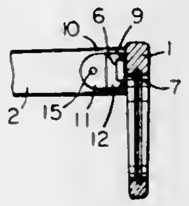
Robert B. Halliday, Chenango Forks, N.Y., assignor to Singer - General Precision, Inc., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 544,864
Int. Cl. G02b *3/14*
U.S. Cl. 350—180 9 Claims



A novel method and apparatus for focusing light beams by creating in a transparent gas a density gradient, and thereby a refractive index gradient, symmetrical about an axis along which the beam is directed. Means for creating the density gradient include vortex flow of the gas within a hollow tube, thereby making possible the use of a single gas or homogeneous gas mixture. Further refinements include means for selectively changing the refractive index gradient, and thereby the focusing power of the lens, means for creating a number of axially spaced areas of refractive index gradients, and means for selectively changing the longitudinal position of the area of refractive index gradient relative to the length of the tube within which it is contained.

3,528,728
COVER OF A HINGE FOR SPECTACLES

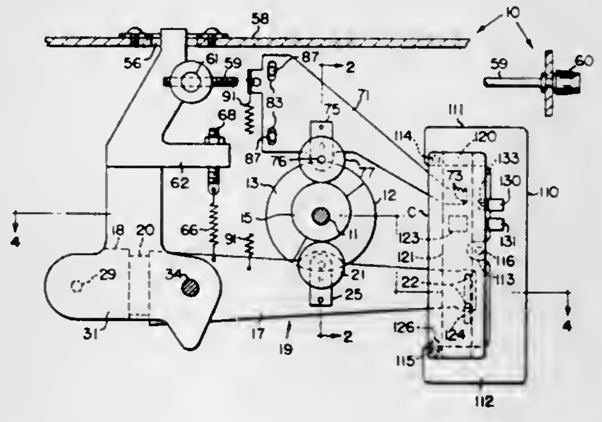
Yoji Miyamoto, 20 4-chome, Nishiyamahondori, Yaoshi, Japan
Filed June 21, 1968, Ser. No. 739,092
Claims priority, application Japan, June 26, 1967, 42/54,794
Int. Cl. E05d *11/00;* **G02c** *5/00*
U.S. Cl. 351—141 1 Claim



A hinge cover for spectacles comprised of a base plate and a semi-cylindrical portion, a part of the semi-cylindrical portion being cut so as to just receive the hinge when the cover is fixed but not to disturb its function.

3,528,729
FILM FEED MECHANISM FOR MOTION PICTURE PROJECTOR

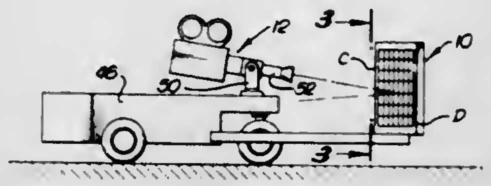
Howard Charles Deck, Rush, N.Y., assignor to Graflex, Inc., Rochester, N.Y., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 627,696
Int. Cl. G03b *23/02*
U.S. Cl. 352—72 12 Claims



For projecting two different sizes of film, the projector has two separate film-advancing claws. Each claw is operated in known fashion, first to engage the film, then to advance the film a frame, then to withdraw the claw and return it to starting position ready to begin a new cycle. A single cam actuates the two claws. The claws are operatively connected to the cam at diametrally opposite sides thereof, respectively. Cartridges containing different sized film, when inserted in the projector, trip, respectively, different switches. Each switch moves one of the claws from an inoperative to an operative position so that it can advance the film contained in the inserted cartridge.

3,528,730
MULTI-IMAGE SYSTEM

Spencer David Saxon, 5334 Woodman Ave., Van Nuys, Calif. 91401
Filed Oct. 2, 1967, Ser. No. 672,363
Int. Cl. G03b *15/00*
U.S. Cl. 352—85 9 Claims



The multi-image system comprises a mirror array **10** and a camera **12** preferably mounted on a common support. The mirror array includes a plurality of identical mirror modules **16** indivdually mounted on a frame **14** for adjustment about horizontal and vertical axes whereby each camera module can direct to the camera lens a similar image of the subject A. The camera pans and tilts about axes passing through the operative center of its lens. The camera preferably incorporates a zoom lens to achieve unusual reiterative effects.

3,528,731
MOVIE TITLER, CLAP-BOARD STYLE

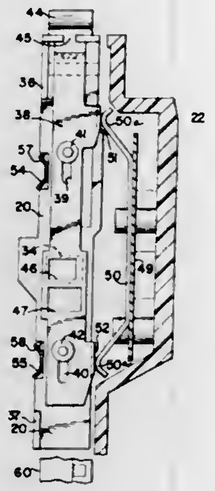
Joseph W. Bird, 11 Briarcliff Lane, Paxton, Mass. 01612
Filed Aug. 28, 1967, Ser. No. 663,879
Int. Cl. G03b *21/32*
U.S. Cl. 352—90 4 Claims

A movie titler of the type having two hinged parts that can be clapped together to indicate the beginning of a scene. The hinge between the parts is constructed as two parallel spaced flanges between which the parts are mounted to provide good action by providing a pivot point for the clapper portion spaced away from the fixed portion.

3,528,732
GATE CONSTRUCTION FOR A MOVING PICTURE PROJECTOR

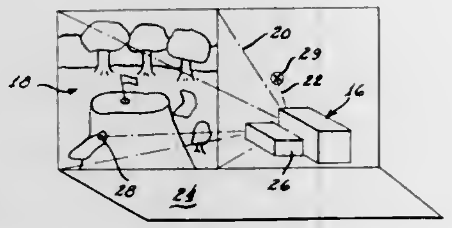
Alex J. Procop, Northridge, Calif., assignor, by mesne assignments, to GAF Corporation, a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,245
Int. Cl. G03b *1/48*
U.S. Cl. 352—224 2 Claims

A masking plate is slidably mounted at the projection gate, this masking plate having a Super 8 aperture and a standard 8 aperture for being alternately aligned with the optical axis. Movement of the masking plate actuates guides which engage edges of the film for shifting either the standard 8 film or the Super 8 film laterally for proper alignment of respective apertures therein with the film drive claw.



3,528,733
VISUAL DISPLAY SYSTEM

Goodrich B. Pratt, Grand Haven, and Jack A. Russell, Spring Lake, Mich., assignors to Brunswick Corporation, a corporation of Delaware
Filed Aug. 22, 1966, Ser. No. 574,218
Int. Cl. G03b ***23/04***
U.S. Cl. 353—25 40 Claims

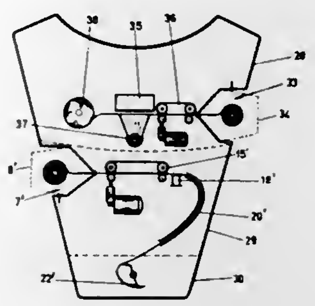


A visual display system including a screen and a projector for displaying a selected one of any of a plurality of frames on the screen. The projector includes a first system for positioning a selected frame at a projection station within the projector and which operates through coarse and fine positioning modes. A second system operates to accurately position a selected frame within the projection station. Thereafter, a third system senses the position of the projected image and operates to cause the same to be accurately located at a predetermined position on the screen. The projector also includes a film tensioning mechanism which precludes distortion of the projected image without the need of a film gate. The exemplary embodiment is particularly suited for use in indoor golf games.

3,528,734
PORTABLE AUDIO-VISUAL REPRODUCTION APPARATUS

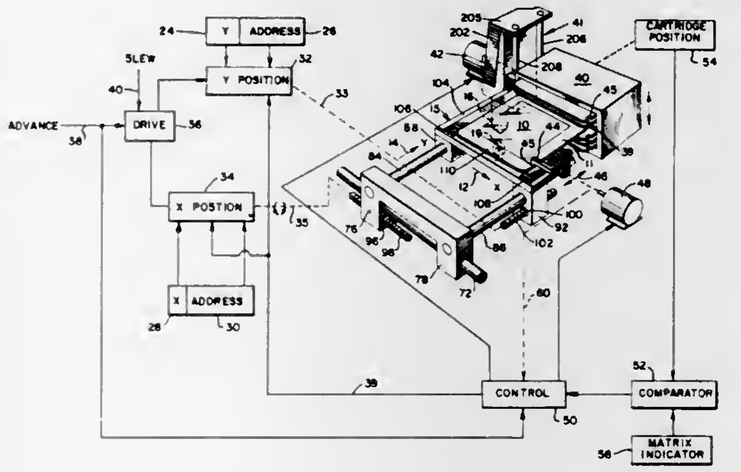
Jean Bruel, Bateaux Mouches, Port de la Conference, Paris, France, and Guy Marchand, 32 Rue Pasteur, 91 Ste. Genevieve des Bois, France
Filed Feb. 21, 1967, Ser. No. 617,518
Claims priority, application France, Feb. 24, 1966, 50,971; Feb. 13, 1967, 94,702, 94,703, 94,704
Int. Cl. G03b ***31/00***
U.S. Cl. 353—15 13 Claims

An audio-visual playback apparatus is small, portable, and has separate casings for the audio and visual portions. The audio portion plays a tape which has sound recording on one side and a printed text on the other side. The sound record is read by a read head and the printed text is optically transmitted for viewing from outside the casing. The visual portion steps a microfilm past an optical projection system for simultaneous viewing but may be separated from the audio portion. The portable device may be suspended from the neck of a user and the sound of the audio portion conducted to an earpiece while the text of the audio portion may be optically transmitted by fiber optics to eyeglasses of the user.



3,528,735
MICROIMAGE VIEWER INCLUDING AUTOMATIC MATRIX SELECTION

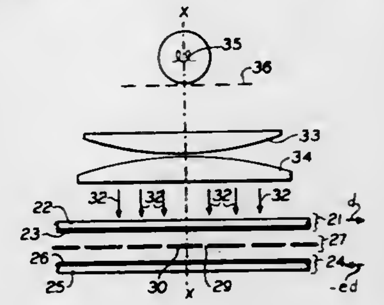
Thomas P. Bluitt, Blue Point, Christian A. Alfsen, East Northport, and Arvi Koivu, Roosevelt, N.Y., assignors, by mesne assignments, to Microform Data Systems, Inc., a corporation of Delaware
Filed May 1, 1968, Ser. No. 725,845
Int. Cl. G03b ***23/08***
U.S. Cl. 353—27 10 Claims



A microimage viewer for use with a matrix of microimages comprises a cartridge adapted to hold a plurality of said matrices in a vertically stacked relationship, an elevator assembly for vertically moving said cartridge so as to position a preselected matrix for movement between a viewing table and cartridge, and a selector assembly for moving a preselected matrix between the cartridge and table. When it is desired to replace a first matrix on a table with a selected matrix, the selector assembly moves the first matrix from the table into its proper storage position within the cartridge. The elevator assembly then causes the cartridge to move vertically so as to position the selected matrix adjacent the table, at which point the selector assembly is actuated to move the selected matrix from the cartridge on to the table. A special switch assembly, a portion of which is movable with the cartridge, is used in combination with a matrix selector switch, which is manually settable, so as to control the automatic selection process.

3,528,736
CONVERSION PRINTING METHOD FOR RELIEF PHOTOGRAPHS

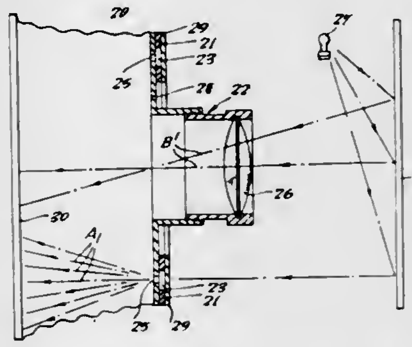
Harry S. Jones, Monmouth Beach, N.J., assignor to Chrom-Tronics, Inc., New York, N.Y., a corporation of New York
Filed June 27, 1967, Ser. No. 649,307
Int. Cl. G03b ***27/44***
U.S. Cl. 355—22 12 Claims



Apparatus for converting abnormal relief photographs into true three-dimensional reproductions of the photographed subject by means of effecting controlled degrees of relative displacement between the film bearing the abnormal image. An exposed photosensitive film and scanning means is disposed intermediate a remote source of illumination and the unexposed photosensitive film.

3,528,737
LIGHT DIFFUSING RING FOR DIRECT EXPOSURE OF PHOTOSENSITIVE MATERIAL

James R. Denner, Shepton Mallet, Somerset, England, assignor to W. H. Howson Limited, Seacroft, Leeds, England, a company of England
Original application Mar. 7, 1967, Ser. No. 621,264. Divided and this application Jan. 2, 1969, Ser. No. 788,390
Claims priority, application Great Britain, Mar. 9, 1966, 10,327/66
Int. Cl. G03b ***27/64***
U.S. Cl. 355—67 3 Claims

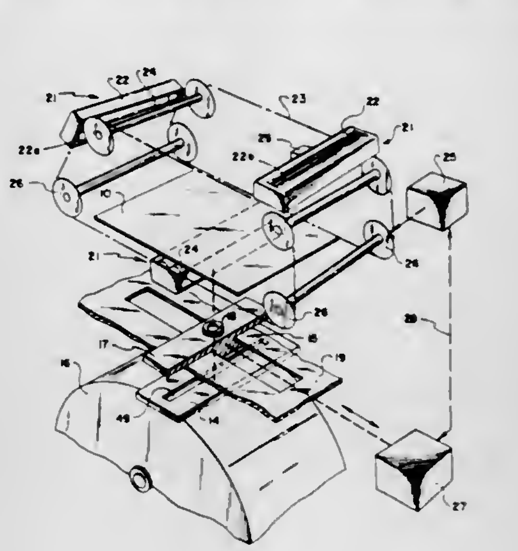


A camera has means for permitting the simultaneous giving of flash and main exposures from a single light source (namely, the object being photographed). Part of the light from the object passes through the leans to be focussed in the usual way onto photographic material in the camera; part passes through a translucent ring around the lens, into the camera, and is diffused over the photographic material. Means are provided for adjusting the ratio between the amount of focussed and of unfocussed light falling on the photographic material.

3,528,738
METHOD AND APPARATUS FOR SCAN LIGHTING IN PHOTOCOPY PROJECTION EQUIPMENT

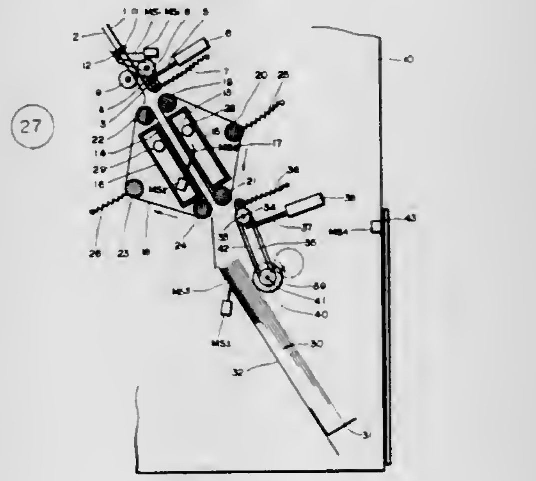
Howard T. Hodges, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 7, 1967, Ser. No. 688,737
Int. Cl. G03b ***27/54***
U.S. Cl. 355—70 1 Claim

A plurality of light sources traverse an original to be copied. They are arranged to follow an endless path which brings a second light source into position to traverse the original as a first light source is finishing. The first source is then recycled eliminating the need for reciprocating a single light source for each cycle of operation.



3,528,739
COPYING MACHINE

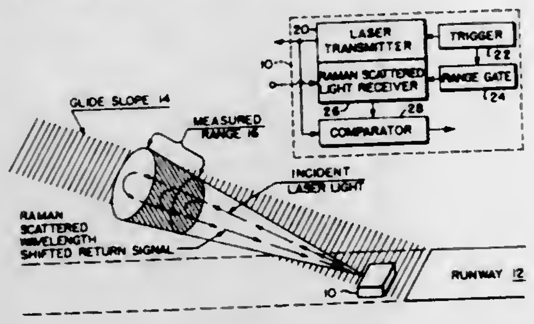
Koji Noda, Sakai, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed May 16, 1968, Ser. No. 729,593
Claims priority, application Japan, May 20, 1967, 42/32,018; May 23, 1967, 42/32,688
Int. Cl. G03b ***27/12***
U.S. Cl. 355—109 7 Claims



A copying machine has a first feeding device which moves sheets from a stack of copying paper one at a time upwardly and at an angle and a second feeding device having a pair of suction box and endless belt assemblies. If more than one sheet of copying paper is fed between the assemblies, one is transported by one assembly to a discharge device, and the remaining sheets are returned by the other assembly to the stack. A rotatably-mounted drum defines a copying zone and receives a sheet from the discharge device upon application of a proper signal. A position regulator equalizes the distances traversed by the sides of the original. Finally, a regulator compensates for the time delay between the application of the signal to the copying paper feeding device and actual start of the movement of the copying paper.

3,528,740
SINGLE-ENDED TRANSMISSOMETER UTILIZING A PULSED LASER FOR DETERMINING VISUAL RANGE

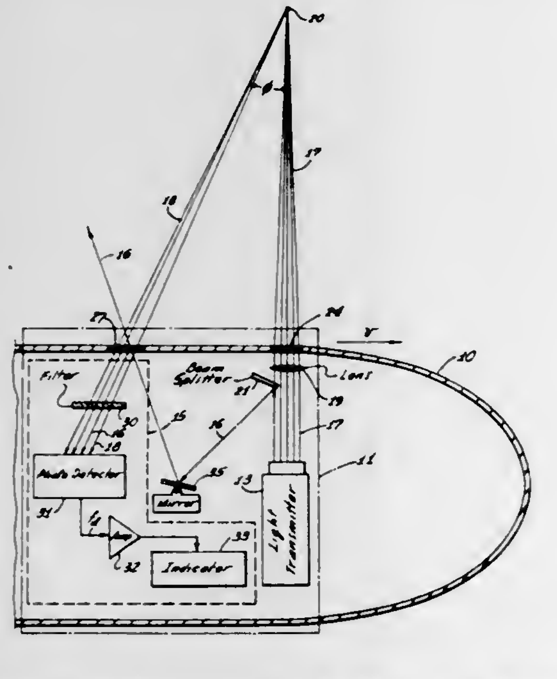
Edward T. Gerry, Boston, and Donald A. Leonard, Stoneham, Mass., assignors to Avco Corporation, Everett, Mass., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,697
Int. Cl. G01c *3/08*
U.S. Cl. 356—5 **6 Claims**



The apparatus disclosed includes a transmitter for transmitting a pulsed laser beam along a path, the visual range of which is to be determined. A receiver, located at the site of the transmitter, is tuned to the Raman scattered radiation. The Raman scattering is at a different frequency from the transmitted energy and, being essentially proportional only to the nitrogen or oxygen content in the air, is a determinable, constant factor for a given range. Therefore the received Raman signal is equal to a known constant Raman scattering less any absorbed energy. Since the energy absorption is due to elements in the atmosphere, such as moisture, dust, and smoke, the greater the absorption, the lower the visibility. The described equipment utilizes a range gate on the receiver for receiving Raman scattering only over a preselected range along the path being measuerd. Thus, by measuring the ratio of the transmitted energy to the received energy, a direct measurement of atmospheric absorption over the specified range results.

3,528,741
APPARATUS FOR MEASURING VELOCITY BY THE DETECTION OF SCATTERED LIGHT

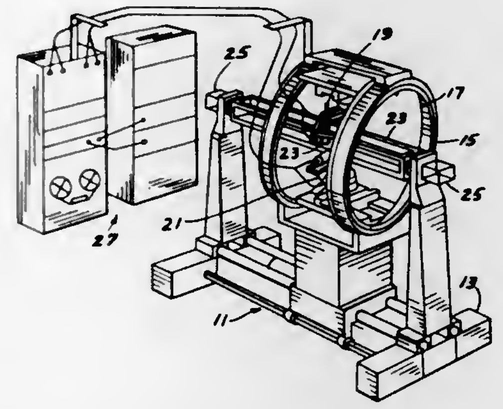
Lee B. Benson, Edwin Nathaniel Kaufman, Arnold David Nudell, and Robert Emmett Scott, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed June 26, 1964, Ser. No. 378,203
Int. Cl. G01p *3/26;* **G01s** *9/62*
U.S. Cl. 356—28 **16 Claims**



Apparatus for measuring the velocity of a vehicle by scattering monochromatic light from particles of the fluid through which the vehicle is moving and computing the Doppler frequency shift in the received scattered light.

3,528,742
OPTICAL ANEMOMETER

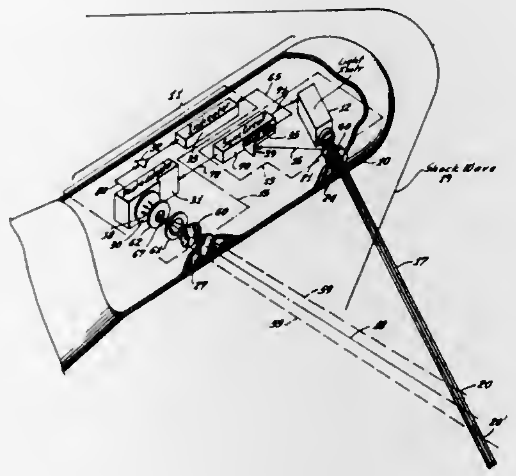
Herbert H. Dobbs, 28490 Mound Road, Apt. 27–B, Warren, Mich. 48092
Continuation of application Ser. No. 520,841, Jan. 13, 1966. This application July 23, 1969, Ser. No. 847,794
Int. Cl. G01n *21/00*
U.S. Cl. 356—103 **1 Claim**



Method and apparatus of measuring concentration of particulate matter at a point in a moving fluid and, secondarily velocity components of the particles.

3,528,743
LASER DENSITOMETER

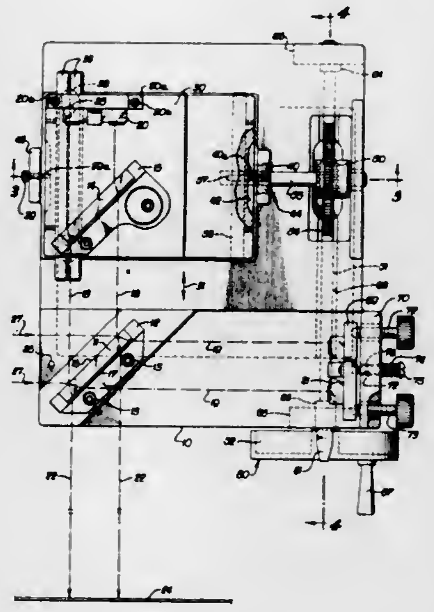
Robert Emmett Scott, Zurich, Switzerland, and Edwin Nathaniel Kaufman, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif.
Filed June 29, 1964, Ser. No. 378,625
Int. Cl. G01n *21/00*
U.S. Cl. 356—104 **1 Claim**



An apparatus for measuring the density of a medium surrounding a moving vehicle, independent of vehicle orientation or altitude, by detecting the magnitude of light scattered by particles of the medium intercepted by a light beam transmitted from the vehicle. A light-frequency transmitter generates and projects a coherent light signal of a known magnitude that is scattered by the molecules of the medium through which the vehicle is moving. The light scattered by the molecules of the medium is detected by an apparatus within the vehicle at a magnitude off-set from the known magnitude by an amount directly proportional to the density of the surrounding medium. An indicator is provided to establish a reading indicative of the density of the medium surrounding the vehicle.

3,528,744
INSTRUCTION INTERFEROMETER

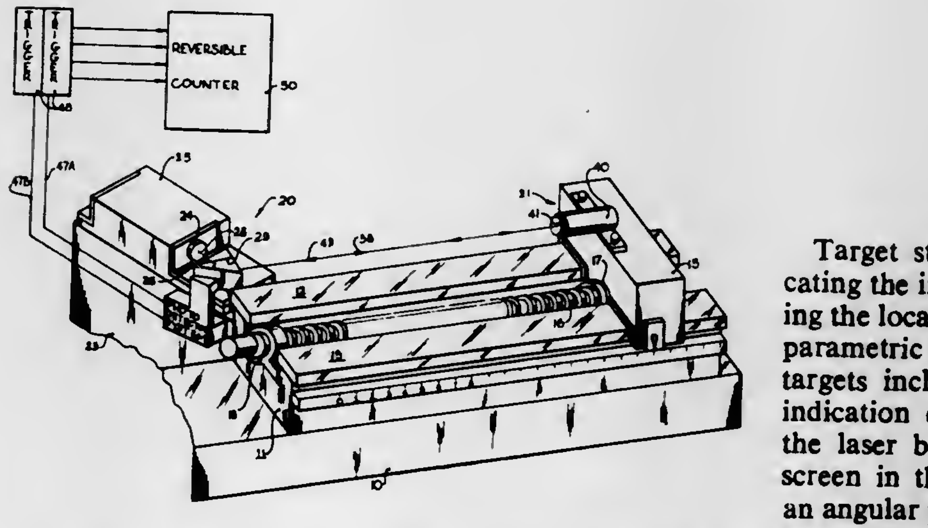
William A. Ware, South Pasadena, Calif., assignor, by mesne assignments, to Rusco Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,455
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **6 Claims**



The disclosure concerns improvements in construction of interferometers adapted for instructional or educational use. These include advantageous integration of all components, enabling ready adjustment and ease of assembly and operation.

3,528,745
APPARATUS FOR INCREASING THE FREQUENCY RESPONSE AND STABILITY OF A LIGHT DETECTION SYSTEM

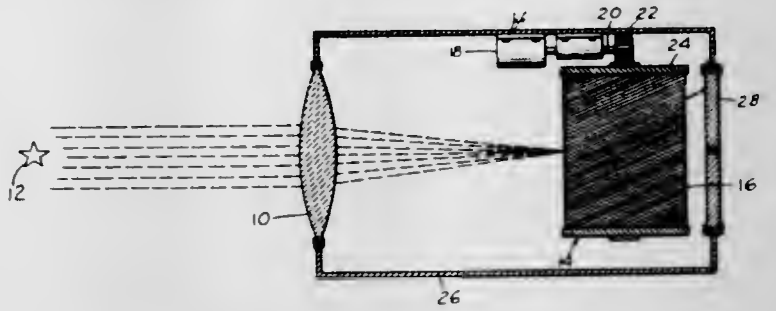
Edward E. Kirkham, Brookfield, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Dec. 13, 1967, Ser. No. 690,130
Int. Cl. G01b *9/02;* **G01j** *1/32*
U.S. Cl. 356—106 **1 Claim**



A method of increasing the frequency response and stability of a light detection system responsive to a pulsating light input signal. Upon variations in the intensity of the light input signal a photodetector actuated thereby provides a voltage command signal and a feedback signal operative to modify the total input light to the photodetector.

3,528,746
OPTICAL MODULATOR

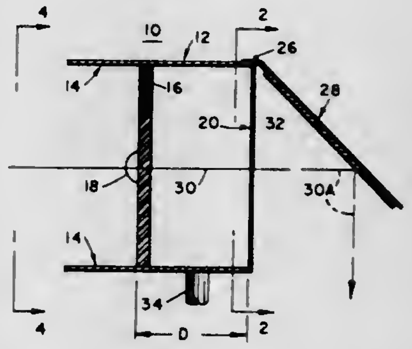
David C. Grant, Jr., Simsbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,954
Int. Cl. G01b *11/26;* **G01c** *1/00;* **G01j** *1/20*
U.S. Cl. 356—152 **12 Claims**



1. An optical modulator comprising:
a bundle of substantially parallel light conducting fibers, said fibers forming a plate presenting a substantially flat surface to light impinging thereon, said fibers being uniformly angled with respect to the surface of said plate;
means for focusing an image at the front surface of said plate; and
means for rotating said plate whereby an image focused at a point in the plane of the front surface of said plate will transcribe a circle on the back surface thereof.

3,528,747
TARGET DEVICES FOR VISUAL LOCATION OF AND ALIGNMENT WITH LASER BEAMS AND THE LIKE

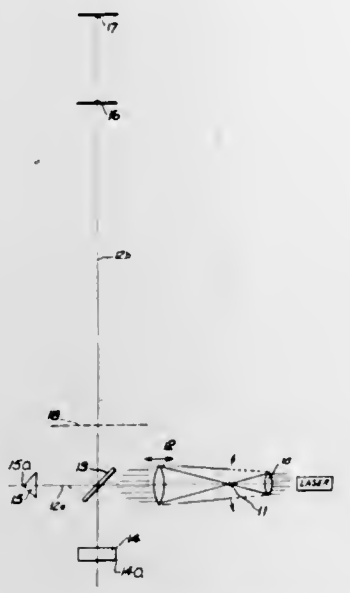
Robert R. Walsh, Wilmington, Del., assignor to Technidyne, Inc., Wilmington, Del., a corporation of Delaware
Filed Apr. 19, 1968, Ser. No. 722,655
Int. Cl. G01b *11/27;* **G01c** *15/00*
U.S. Cl. 356—154 **11 Claims**



Target structures are provided for detecting and indicating the impingement thereon of a laser beam and effecting the location of remote points in space of predetermined parametric relationship to an established laser beam. These targets include screen and projection systems for visual indication of a targeted beam condition at points along the laser beam, such systems including a light shield, a screen in the shield for initially receiving the beam and an angular projection mirror behind the screen for visually transmitting the position of the beam on the screen to a remote point from the target. A central lens on the screen is provided such that substantially exact alignment of a target and an associated mounting device can be effected relative to the laser beam. The mounting device is calibrated for the location of points remote from the established laser beam and in particular, points which are plumb with respect thereto.

3,528,748
ALIGNMENT OF ADJUSTABLE PARTS OF A STRUCTURE

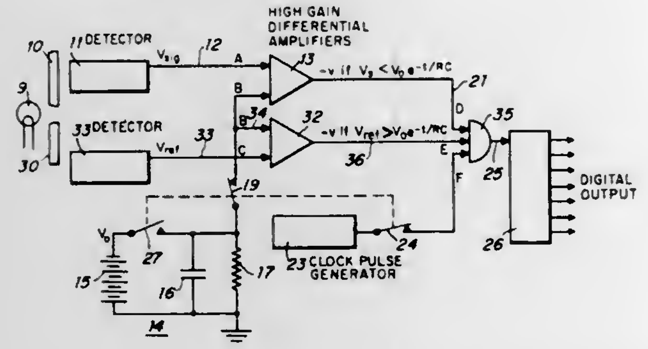
James Morriss Burch and John William Charles Gates, Teddington, England, assignors to National Research Development Corporation, London, England, a British body corporate
Filed June 14, 1966, Ser. No. 557,563
Claims priority, application Great Britain, June 15, 1965, 25,270/65
Int. Cl. G01b *11/26*
U.S. Cl. 356—138 **4 Claims**



The invention is concerned with optical apparatus for use in an alignment system and with a method of aligning adjustable parts in respect to a reference axis, and proposes the use of a single mode laser source of coherent light, and a double image optical system so arranged that a beam entering the system from the source will give rise to two beams emerging from the system symmetrically disposed with respect to a geometrical datum which may be an axis or a plane defined by the system and with a separation which will depend on the orientation of the entering beam, which is to be adjustable so that the two emerging beams may be superposed on one another.

3,528,749
APPARATUS FOR MEASURING OPTICAL DENSITY

John Kent Bowker, Marblehead, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Dec. 9, 1966, Ser. No. 600,582
Int. Cl. G01n *21/06, 21/22;* **G01j** *1/10*
U.S. Cl. 356—202 **4 Claims**



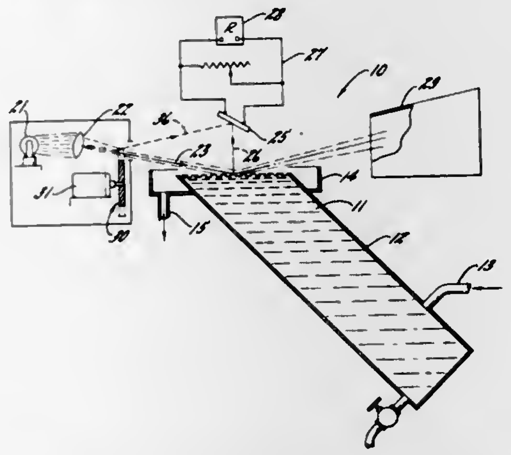
In accordance with an embodiment of the invention, electrical signals from an optical to electrical transducer are compared to the discharge voltage of an RC circuit. When these two signals are equal, an AND gate is disabled which blocks the transmission of clock pulses to a digital counter. The counter output is a digital representation of the optical density of the material being measured. The AND gate is enabled from the time the condenser circuit starts to discharge, from a voltage representing a density of zero, until the two signals are equal. The time interval during which the gate is enabled is proportional to density.

In another embodiment, an optical reference signal is compared to the capacitive discharge. When these two quantities are equal, the AND gate is enabled and the gate is disabled thereafter as disclosed above.

Thus, changes in the radiation source which cause apparent changes in the measured density, are compensated for by change in the time period that the gate is enabled, allowing for a change in the number of stepping pulses which are transmitted to the counter.

3,528,750
RADIATION SENSITIVE DUAL BEAM TURBIDIMETER

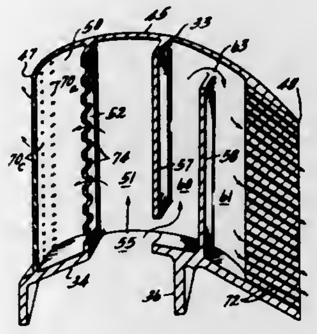
Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, a corporation of Delaware
Filed Jan. 28, 1969, Ser. No. 794,730
Int. Cl. G01n *21/26*
U.S. Cl. 356—208 **3 Claims**



A turbidimeter in which light is alternately directed to the sample and directly to the photocell which is reading the turbidity-affected light output from the sample. Two photocell reading levels are thus obtained, one resulting from light falling directly on the photocell and the other responsive to the amount of turbidity. The difference in these reading levels is a measure of turbidity that is independent of variations in light output.

3,528,751
COOLED VANE STRUCTURE FOR HIGH TEMPERATURE TURBINE

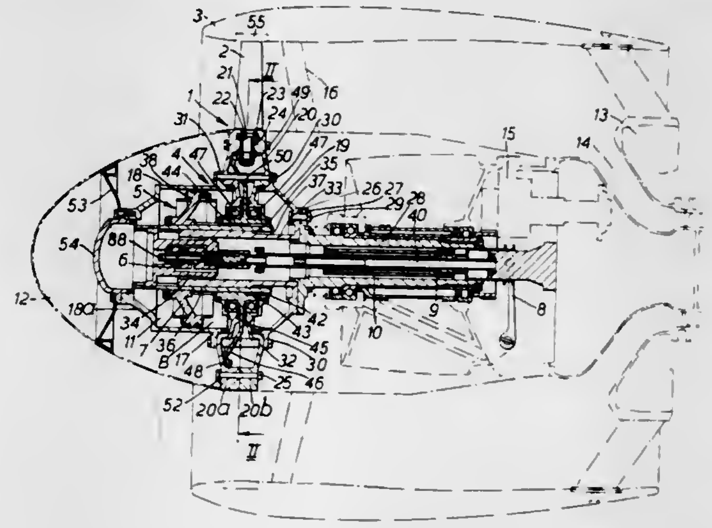
Armando J. Quinones and David R. Davis, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Feb. 26, 1966, Ser. No. 533,118
Int. Cl. F01d *25/12*
U.S. Cl. 415—115 **10 Claims**



1. In an axial flow turbomachine, a vane comprising:
a radially extending vane body having exterior wall surfaces including convex and concave side wall surfaces interconnecting axially spaced upstream leading and downstream trailing edges,
interior wall surfaces forming plenum means within said vane body adjacent said leading edge,
inlet means for admitting heat transfer fluid to said plenum means,
throttling means within said plenum means for accelerating the heat transfer fluid and for directing the high velocity heat transfer fluid against the interior wall surfaces of said plenum means in the leading edge region of said vane body to generate high convection heat transfer coefficients at the leading edge,
and outlet means comprising a multiplicity of passages in the leading edge region of said vane body interconnecting said plenum means and the exterior wall surfaces,
said passages being disposed along axes forming acute angles with the exterior wall surfaces such that heat transfer fluid discharged from said plenum means through said passages forms a relatively thin layer of heat transfer fluid on the exterior wall surfaces in the leading edge region of said vane body.

3,528,752
GAS TURBINE ENGINES

Stuart Duncan Davies and John Alfred Chilman, Painswick, England, assignors to Dowty Rotol Limited, Gloucester, England
Filed Apr. 12, 1967, Ser. No. 630,253
Claims priority, application Great Britain, Apr. 12, 1966, 16,008/66; May 25, 1966, 23,428/66; Sept. 12, 1966, 40,543/66
Int. Cl. F01d *7/00*
U.S. Cl. 415—130 **11 Claims**

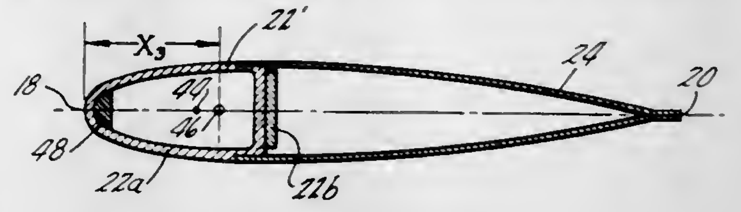


A gas turbine of the ducted-fan by-pass type includes a fan having a flow-varying blading and rotatable in a duct, the fan being mounted ahead of the engine compressor and having its blading effectively adjustable under the control of a servo system housed, at least in part, within a hub structure of the fan. The hub structure, blading and servo system is arranged to rotate as an assembly coaxially with the engine turbine by which it is driven. In preferred constructions the blading is of variable pitch, with a hydraulic servo system including a pitch-change motor and follow-up servo valve.

3,528,753
HELICOPTER BLADE WITH NON-HOMOGENEOUS STRUCTURAL SPAR

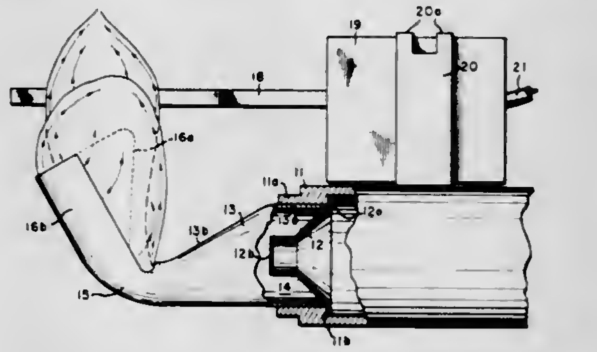
Walter J. Dutton, Newtown, and Walter Gerstenberger, Milford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 14, 1968, Ser. No. 737,127
Int. Cl. B64c *27/46*
U.S. Cl. 416—226 **24 Claims**

A helicopter blade, including a non-homogeneous structural spar forming the forward portion thereof and a non-structural fairing assembly forming the trailing edge structure thereof and with the non-homogeneous spar including a forward portion and an after portion of selected shape, position and physical properties so that the spar centroid, center of gravity, flexural axis and torsional axis, and the blade aerodynamic center and center of gravity are each selectively positionable and preferably coincident.



3,528,754
PILOT BURNER

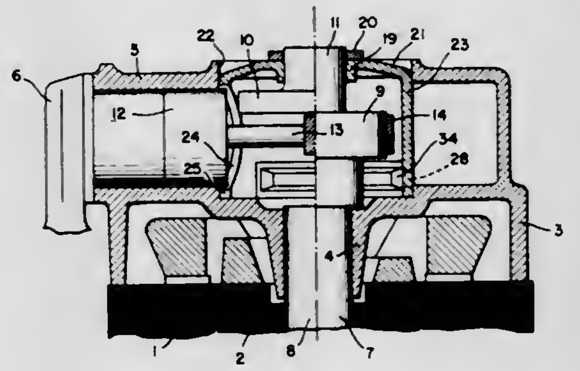
Jerry T. Alger, Los Alamitos, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 16, 1968, Ser. No. 784,140
Int. Cl. F23n *5/00*
U.S. Cl. 431—78 **6 Claims**



A target-type of pilot burner having a burner head with side channels to provide retaining flames, which perform the dual function of main flame retention and assisting in flame grounding, for a flame sensing electrode mounted on the burner so as to be heated by a flame from the burner. When a flame is present, electric current can flow through the flame or its products of combustion between the electrode and the burner head, to perform a control function in well-known control systems.

3,528,755
MOTOR COMPRESSOR, PARTICULARLY FOR SMALL REFRIGERATING MACHINES

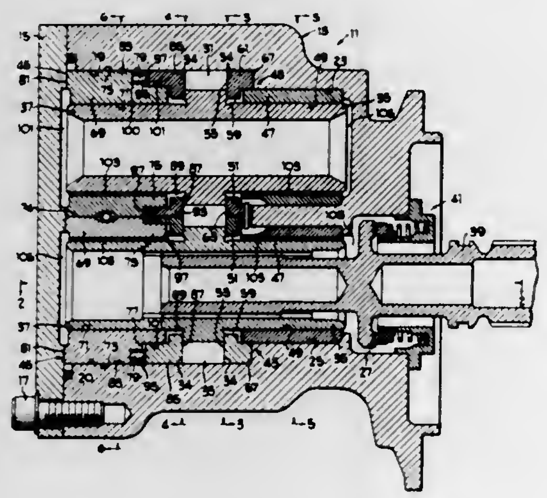
Knud Vagn Valbjørn and Heinz Mahncke, Nordborg, and Steinar Skog, Sonderborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a corporation of Denmark
Filed July 10, 1968, Ser. No. 743,726
Int. Cl. F04b *35/04, 39/00*
U.S. Cl. 417—312 **9 Claims**



The invention relates to a motor-compressor assembly of the type in which a single unitary casing serves as a support for the electric motor, has a piston chamber formed therein and has a main bearing for the crankshaft. The casing has a central cavity in which a cup-shaped member is disposed in surrounding relation to the crank portion of the crankshaft. The cup-shaped member provides an auxiliary bearing for the crankshaft and partial wall means for sound reduction chambers which may be formed in the casing.

3,528,756
PRESSURE LOADED PUMP

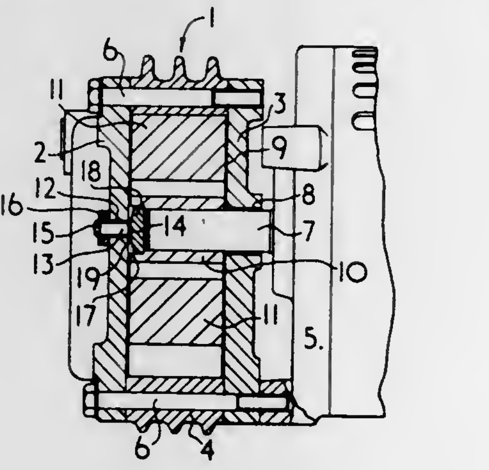
Francis E. Norlin, Chesterland, and Michael A. Keresman, Jr., Seven Hills, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 4, 1968, Ser. No. 780,954
Int. Cl. F04c *1/08, 5/00, 15/00*
U.S. Cl. 418—73 **7 Claims**



A pressure loaded gear pump having separately formed journal bearings and pressure loaded pumping seals including a hybrid arrangement for lubrication of the journal bearing bores. The pump includes means for providing both hydrodynamic and hydrostatic lubrication of the pumping gear journal bearings.

3,528,757
ROTARY MACHINES

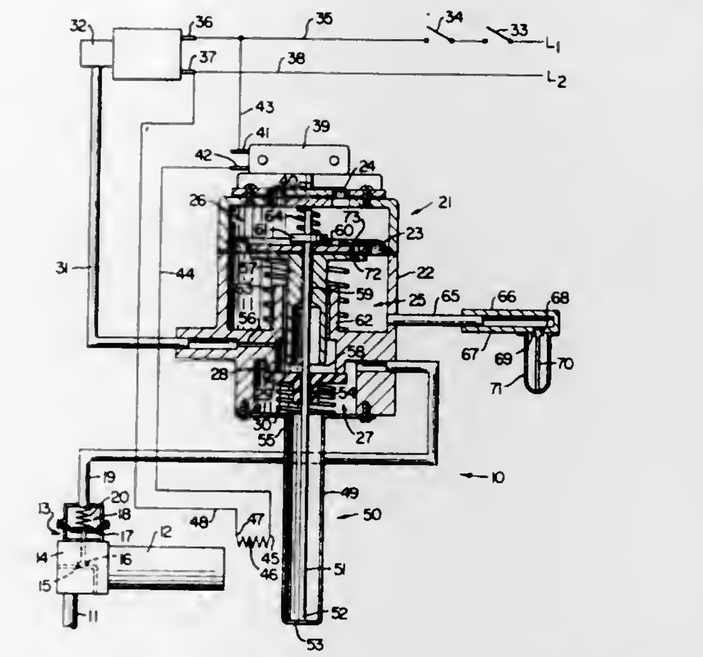
Peter G. Ware, Rugby, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed June 28, 1968, Ser. No. 741,052
Claims priority, application Great Britain, July 8, 1967, 31,537/67
Int. Cl. F04c *1/00, 3/00, 17/00*
U.S. Cl. 418—107 **9 Claims**



A rotary machine comprising a rotor member supported within a chamber, an adjustment screw on the chamber being engageable with an abutment on the rotor member for adjustment of the axial position of the rotor member.

3,528,758
PNEUMATIC BURNER CONTROL SYSTEM

Charles H. Perkins, Richmond, Va., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,162
Int. Cl. F23n *5/02*
U.S. Cl. 431—67 **30 Claims**



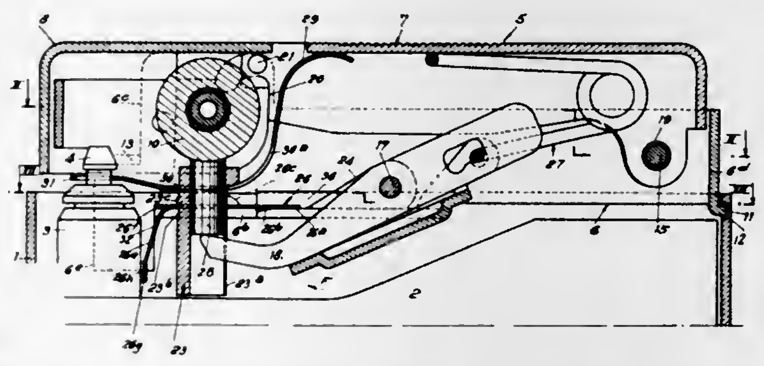
This disclosure relates to a pneumatic control system for a fuel burner means having a pneumatically operated actuator for interconnecting a fuel source to the burner means to be ignited by an electrical ignition means when a pneumatic source is interconnected to the actuator by a pneumatically operated valve means, the valve means having a pneumatically operated time delay means interconected thereto for closing the valve means if the burner means is not ignited after a predetermined time period has lapsed of which the start of the time period is initiated by the pneumatic source being interconnected to said valve means to operate the same.

ERRATUM

For Class 431—78 see:
Patent No. 3,528,754

3,528,759
GAS LIGHTER ASSEMBLY

Stanley H. Newman, % Schwartz & Frohlich, 19 E. 70th St., New York, N.Y. 10021
Filed July 19, 1968, Ser. No. 746,147
Claims priority, application France, July 28, 1967, 116,113
Int. Cl. F23q *2/08*
U.S. Cl. 431—129 **11 Claims**

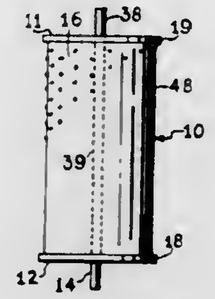


The present invention involves a cigarette lighter of the gas type wherein a construction is provided which permits the flint holder to be accurately positioned by means of a spring member which has a constricted opening in it to accept and hold in place the flint holder so that it is properly positioned with respect to the sparkwheel and also providing a fulcrum for a valve lifter, all being accomplished without the necessity of soldering or welding the flint holder in place and providing a separate member for the flint holder fulcrum.

3,528,760
METHOD AND DEVICE FOR THE TREATMENT OF PAPER-BACKED PHOTOGRAPHIC SHEET MATERIALS

Werner W. Buechner, 4407 Gladding Court, Midland, Mich. 48640
Application Oct. 8, 1964, Ser. No. 402,545, which is a division of application Ser. No. 342,459, Feb. 4, 1964. Divided and this application Dec. 26, 1967, Ser. No. 693,256
The portion of the term of the patent subsequent to Nov. 18, 1985, has been disclaimed
Int. Cl. G03d *3/08*
U.S. Cl. 95—93 **10 Claims**

Paper-backed photographic sheet materials are wet treated on a rotating, horizontally oriented drum, whereby the sheet is held stationary in form of a partial cylinder on said drum with at least one reactive layer disposed toward the drum, and the treating liquid is moved to and by the reactive layer of said stationary sheet and an apparatus, in which a surface modified drum is



mounted rotatably, around its horizontal cylinder axis, for the reception of a stationary, partially cylindrical paper-backed photographic sheet, held thereon by holding means, for wet treatment of at least one reactive layer contained on the concave side of said sheet.

CHEMICAL

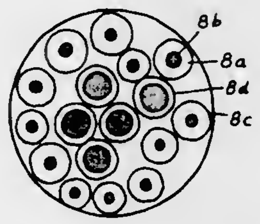
3,528,761
CONTINUOUS DYEING AND PRINTING PROCESS AND DYE COMPOSITIONS SUITABLE THEREFOR

Rudolf Keller and Jakob Bindler, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Filed Apr. 27, 1967, Ser. No. 634,095
Claims priority, application Switzerland, May 6, 1966, 6,668/66
Int. Cl. D06p *1/10*
U.S. Cl. 8—42 **18 Claims**

An improved process for the padding or printing of organic fibre material, especially natural or synthetic polyamide fibre materials, at temperatures below the drawing temperature of the dye used, with unthickened or thickened aqueous dye liquor or printing ink, which liquor or ink contains as carrier a mixture of a fatty acid amide in which the nitrogen atom contains one or two hydroxy-lower alkyl groups per molecule, and an anionic aromatic sulphonated dispersing agent having a higher aliphatic hydrocarbon substituent in the aromatic nucleus pre-mixed dye compositions, dye liquors and printing inks containing the aforesaid carrier.

3,528,762
PROCESS FOR ABRASION RESISTANT CELLULOSE PRODUCTS

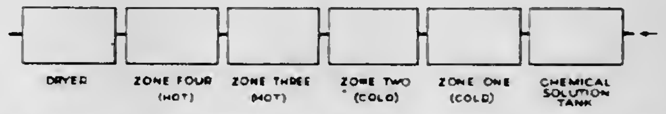
Alfred E. Lauchenauer, Horn Thurgau, Switzerland, assignor to Raduner & Co. A.G., Horn, Switzerland, a corporation of Switzerland
Filed May 3, 1966, Ser. No. 554,926
Claims priority, application Switzerland, May 10, 1965, 7,718/65; Austria, Jan. 21, 1966, A 577/66
Int. Cl. D06m *1/00, 13/12*
U.S. Cl. 8—116 **7 Claims**



Cellulosic fibers, impregnated with a finishing agent capable of cross-linking cellulosic hydroxyl groups and a catalyst for the cross-linking reaction, and containing not more than about 30%, by weight, of moisture, are subjected to an atmosphere of a gaseous agent which interferes with cross-linking under such conditions as to interfere with cross-linking essentially at the surface periphery of the cellulosic fibers. The fibers are then subjected to conditions causing cross-linking of the cellulosic hydroxyl groups by the finishing agent so that the degree of cross-linking is greater in the core of the fibers than at the surface periphery.

3,528,763
PRODUCING STRETCH FABRIC THROUGH USE OF CHEMICAL MODIFIERS AND A PLURALITY OF TENSION ZONES

Leslie A. Runton, Middle Haddam, Conn., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 387,101
Int. Cl. D06m *1/10, 3/06;* **D06c** *3/00*
U.S. Cl. 8—125 **7 Claims**



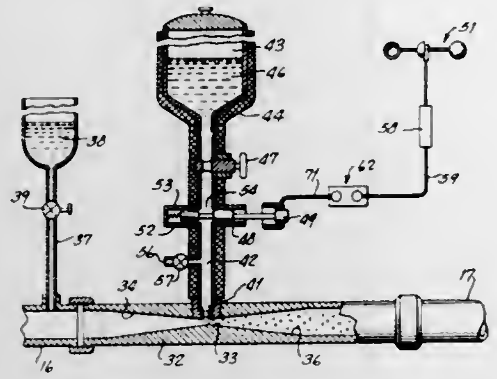
A fabric is treated with a shrinking agent and led through a series of zones under successively increasing warp tension to produce stretch characteristics in the fill direction thereof.

3,528,764
METHOD AND APPARATUS FOR RETARDING EVAPORATION FROM WATER SURFACES

Castle O. Reiser, Tempe, Ariz., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Nov. 28, 1967, Ser. No. 686,057
Int. Cl. B01j *1/18*
U.S. Cl. 21—60.5 **6 Claims**

A method of applying a substantially monomolecular film of oleaginous material, such as a straight chain fatty alcohol, onto the surface of a body of water so as to reduce water evaporation losses by forming an emulsion of the oleaginous material in water and then applying the resulting formed emulsion to the water surface.

The emulsion containing the oleaginous material dispersed in water is formed by aspirating liquid oleaginous material into a moving stream of water to disperse the oleaginous material therein. The resulting formed emulsion at a suitable concentration of the oleaginous material therein, generally below about 0.15% by weight, is then distrbuted and sprayed from along about the shoreline onto the surface of the water to form a monomolecular surface film thereon.



3,528,765

LITHIUM NIOBATE CRYSTALS HAVING ELEVATED PHASE MATCHING TEMPERATURES AND METHOD THEREFOR

Homer Fay, Wilbur J. Alford, and Howard M. Dess, Indianapolis, Ind., assignors to Union Carbide Corporation, a corporation of New York

Filed June 8, 1967, Ser. No. 644,537

Int. Cl. C01g *33/00;* **B01j** *17/18*

U.S. Cl. 23—51 **5 Claims**

This disclosure relates to an improved lithium niobate crystal having an elevated phase matching temperature. The crystal is especially suited for harmonic generation of visible coherent radiation from fundamental radiation of 1.06μ wavelength. By reason of its higher phase matching temperature, the crystal can be used as a harmonic generator at temperatures where a radiation caused optical damage does not effect the operation. A method for producing lithium niobate crystals having desired phase matching temperatures is also provided. An apparatus for more efficiently producing visible coherent radiation is also provided.

3,528,766

PROCESS FOR MAKING SODA ASH SUBSTANTIALLY FREE FROM ORGANICS

Joseph S. Coglaiti, Jr., and John N. Dallman, Green River, Wyo., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 18, 1966, Ser. No. 543,048

Int. Cl. C01d *7/00;* **B01d** *15/06*

U.S. Cl. 23—63 **6 Claims**

A process for the removal of soluble organic impurities from trona in the manufacture of dense soda ash which comprises contacting an aqueous solution of sodium carbonate with activated carbon to absorb and remove soluble inorganic impurities from said aqueous solution, subsequently contacting said activated carbon with water at a temperature substantially above the temperature employed in the absorption step to reactivate said active carbon, and thereafter, recovering dense soda ash as the product of the process.

3,528,767

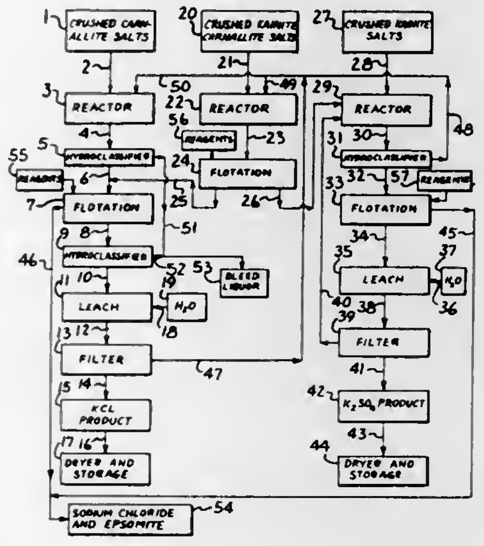
PRODUCTION OF POTASSIUM CHLORIDE, POTASSIUM SULFATE AND SODIUM SULFATE FROM BRINES AND THE LIKE CONTAINING POTASSIUM, CHLORIDE AND SULFATE

Donald E. Garrett, 505 W. 9th St.,
Claremont, Calif. 91711

Filed Mar. 16, 1966, Ser. No. 534,804

Int. Cl. C01d *3/06*

U.S. Cl. 23—89 **13 Claims**



Process for producing any one or more of potassium chloride, potassium sulfate, and sodium sulfate from raw salts obtained from brines containing potassium, chloride and sulfate, such as Great Salt Lake brine, comprising initially removing the major content of sodium chloride from said brine by evaporation and crystallization, then further evaporating the remaining brine to crystallize therefrom a raw salt mixture containing at least 20%, by weight, of carnallite and kainite, plus other salts including sodium chloride and epsomite or other magnesium sulfate hydrates, and then treating said raw salt mixture to recover or produce therefrom at least one of potassium chloride, potassium sulfate, and sodium sulfate, the potassium chloride, where recovered, being recovered from the carnallite, the potassium sulfate, where recovered, being recovered from the kainite or produced from the carnallite, and the sodium sulfate, where recovered, being produced from a salt mixture comprising the sodium chloride, and the epsomite or other magnesium sulfate hydrate.

3,528,768

CATION EXCHANGING CRYSTALLINE ALUMINOSILICATES

Stanley Tucker, deceased, late of Willingboro, N.J., by Elliot J. Cherry, executor, Philadelphia, Pa., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Apr. 26, 1968, Ser. No. 724,686

Int. Cl. C01b *33/28*

U.S. Cl. 23—111 **19 Claims**

The present invention is concerned with a novel method for preparaing cation-exchanged crystalline aluminosilicates, suitable for use as hydrocarbon conversion catalysts, which comprises contacting a crystalline aluminosilicate starting material with an anhydrous organic solvent solution of the desired cation, said solvent being selected from the group consisting of dimethylsulfoxide and alkyl cyanides (nitriles) and recovering the resulting product by washing and drying.

3,528,769

METHOD OF TREATING SECONDARY KAOLIN

Sanford C. Lyons, Bennington, Vt., assignor to Georgia Kaolin Company, Elizabeth, N.J., a corporation of New Jersey

Continuation-in-part of applications Ser. No. 764,395, Sept. 30, 1958, and Ser. No. 527,151, Feb. 14, 1966. This application Nov. 15, 1966, Ser. No. 594,426

The portion of the term of the patent subsequent to Sept. 15, 1976, has been disclaimed

Int. Cl. C01b *33/26;* **C04b** *33/04*

U.S. Cl. 23—110 **6 Claims**

This invention relates to the discovery of a commercially practicable method of treating Georgia kaolin to obtain a product equalling in measured whiteness imported English clays which have long since been considered by industries, such as the paper-making industry, as establishing a generally accepted standard for superior whiteness, this method comprising essentially: (1) the fractionation of washed kaolin with the recovery of the coarse fraction containing relatively few particles less than 2 microns (equivalent spherical diameter), limit of such fines being a critical 20%, (2) the delamination of a major portion of the coarse particles in said coarse fraction by the removal of at least one surface lamina therefrom to form a substantial number new plate-like fine particles and to expose thereby a substantial number of new surfaces, (3) the fractionation of the delaminated mass with the recovery of a fines fraction containing at least 80% fines, and (4) the recirculation of the coarse fraction from the second fractionation for repeated subjection to the delaminating treatment.

3,528,770

PREPARATION OF ZINC OXIDE OF HIGH PHOTOSENSITIVITY

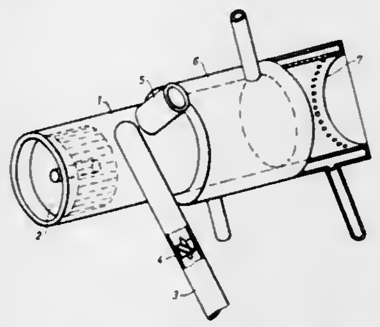
Roland Weisbeck, Cologne-Poll, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Apr. 21, 1967, Ser. No. 632,778

Claims priority, application Germany, Apr. 28, 1966, A 52,296

Int. Cl. C01g *9/02*

U.S. Cl. 23—148 **8 Claims**



Zinc oxide of more uniformly high quality for photoconductive use is produced by burning zinc-containing vapors in an elongated axially symmetrical combustion chamber into which the vapors are introduced axially adjacent one end and oxygen-containing gas is introduced tangentially along the wall of the chamber to help keep the zinc oxide from engaging the chamber wall and in addition causing the stream of oxygen-containing gas to spin around its direction of travel as it is tangentially introduced. In place of or in addition to such spinning supplemental streams of oxygen-containing gas can be introduced radially into the chamber adjacent its discharge end and around its entire circumference, the supplemental streams totalling about 5 to 30% of the quantity introduced tangentially. More than one tangential stream of oxidizing gas can be introduced and spinning can be made adjustable. The chamber can have its length L so related to its diameter D that L/D^2 is between 1/10 cm.$^{-1}$ and 1 cm.$^{-1}$, preferably between 3/10 and 7/10 cm.$^{-1}$.

3,528,771

PHOSPHORIC ACID CLARIFICATION

George B. Shearon and Gerald J. Rubin, Lakeland, and Richard E. Bird, Auburndale, Fla., assignors to International Minerals & Chemical Corporation, a corporation of New York

Filed Oct. 10, 1967, Ser. No. 674,172

Int. Cl. C01b *25/18, 25/22*

U.S. Cl. 23—165 **9 Claims**

Phosphoric acid produced in accordance with the wet process and containing suspended solid impurities is subjected, while at a concentration of 35 to 45% P_2O_5, to a gravity settling operation for a period of time sufficient to separate it into a substantially solid-free liquid first fraction and a second fraction in which the solid impurities are concentrated. The substantially solid-free liquid first fraction may be used as such or concentrated further. The solid impurity-containing second fraction from the settling operation is then separated, such as by filtration, centrifugation, or the like, into a substantially solid-free liquid third fraction and a fourth fraction in which the solids are concentrated. The solid-containing fourth fraction is recycled to the attack or filtration portion of the wet process, while the liquid third fraction is combined with either the dilute acid product from the wet process or the liquid first fraction from the gravity settling operation.

3,528,772

PROCESS FOR PREPARATION OF ORTHOPHOSPHOROUS ACID

David D. Whyte, Wyoming, and Phillip F. Pflaumer, Colerain Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 26, 1967, Ser. No. 678,280

Int. Cl. C01b *25/20*

U.S. Cl. 23—165 **12 Claims**

A process for preparing orthophosphorous acid which comprises the steps of (1) preparing a dispersion of phosphorus in a substantially anhydrous organic medium containing an aliphatic carboxylic acid having up to about 6 carbon atoms; (2) introducing an oxidizing gas into said dispersion whereby the phosphorus is oxidized in situ to an anhydride of trivalent phophorus which reacts immediately with said aliphatic carboxylic acid to form a phosphite intermediate reaction product (3) hydrolyzing said phosphite intermediate reaction product to form orthophosphorus acid by adding at least 6 moles of water per mole of phosphorus, said hydrolysis step commencing prior to any substantial rearrangement of said phosphite intermediate reaction product to a product containing carbon-to-phosphorus bonds. In determining the maximum point in time, theta (as time in minutes), by which the hydrolysis step must commence, the following equation should be applied in the manner described below:

$$\text{Time in minutes} \leqq 380 - \left[\left(\frac{\text{moles of phosphorus}}{\text{moles of aliphatic carboxylic acid}} \right) \times (3{,}770+20.6T) \right]$$

3,528,773

METHOD OF PREPARING TITANIUM DIOXIDE PIGMENT

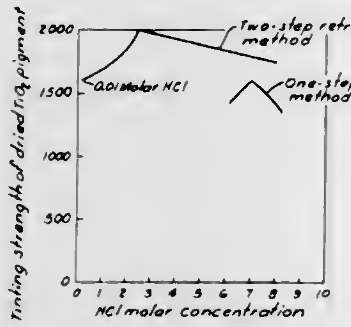
Joseph P. Surls, Walnut Creek, and James E. Magner and Ben F. West, Antioch, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 28, 1967, Ser. No. 694,787

Int. Cl. C01g *23/04*

U.S. Cl. 23—202 **14 Claims**

A method for preparing pigment-grade TiO_2 which comprises forming a titanium dioxide product by contacting a TiO_2 seed solution having a low chloride/titanium gram-atom per liter ratio and a low multivalent anion concentration with a master solution having a high chloride/titanium gram-atom per liter concentration, at a temperature of from about 85°–150° C. for at least about 15 minutes to precipitate TiO_2 particles. These particles are then subjected to a retreatment process whereby they are contacted with an aqueous acidic retreatment solution at a temperature of about 175° to 300° C. for at least about 15 minutes to produce TiO_2 pigments which, without further treatment, usually have a tinting strength of at least about 1500.



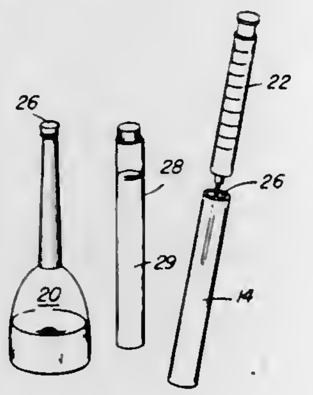
3,528,774
FORMATION OF HIGH MODULUS, HIGH STRENGTH GRAPHITE YARNS

Herbert M. Ezekiel and Raymond G. Spain, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Mar. 14, 1967, Ser. No. 623,520
Int. Cl. C01b *31/07*
U.S. Cl. 23—209.1 **2 Claims**

A method for forming high tensile strength, high elastic modulus graphite strands, particularly from polynuclear aromatic polymeric precursory materials comprising one or more of the steps of pretreating the precursor as by preoxidation, carbonizing as by the subjection thereof to temperature of up to 1500 degrees centigrade, graphitizing by exposure to still higher temperatures of from 1800 degrees to 3200 degrees centigrade, and/or orienting the crystalline graphite structure by some means during graphitization.

3,528,775
METHOD AND APPARATUS FOR TESTING PETROLEUM PRODUCTS FOR WATER CONTENT

John P. O'Hara, Staten Island, and Robert K. Siegfriedt, Merrick, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
Filed Jan. 25, 1967, Ser. No. 611,738
Int. Cl. G01n *31/16, 33/18*
U.S. Cl. 23—230 **1 Claim**



Transformer oil is analyzed for moisture content by extracting with anhydrous methanol and visually titrating the methanol extract with Karl Fischer reagent. The extraction and titration are carried out in a septum-stoppered bottle using syringes to transfer the oil sample and reagents.

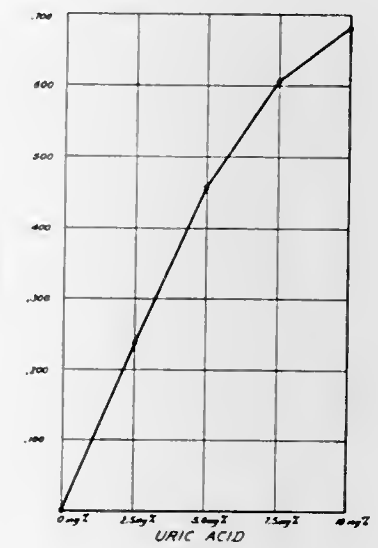
3,528,776
METHOD FOR DETERMINATION OF COPPER-CHROME-ARSENIC PRESERVATIVES IN TREATED WOOD

Monie S. Hudson, P.O. Box 2451, Spartanburg, S.C. 29301
No Drawing. Filed Apr. 30, 1968, Ser. No. 725,535
Int. Cl. G01n *21/24, 33/46*
U.S. Cl. 23—230 **3 Claims**

Content of copper-chrome-arsenic preservative in treated wood is determined by dissolving the chromium from the wood using a predetermined amount of a solution of hypochlorous acid or sodium hypochlorite. By measuring the color intensity of the resulting solution, the amount of preservative in the wood is ascertained.

3,528,777
PROCESS AND COMPOSITIONS FOR DETERMINATION OF URIC ACID IN BLOOD SERUM

John J. Moran, Houston, Tex., assignor to Hycel, Inc., Houston, Tex., a corporation of Texas
Filed Sept. 27, 1968, Ser. No. 763,135
Int. Cl. G01n *33/16, 31/22, 21/24*
U.S. Cl. 23—230 **14 Claims**



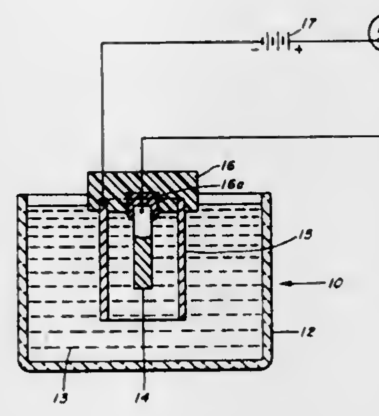
A process of detecting uric acid in blood serum containing protein by mixing a sodium carbonate solution and an alkyl sulfate surfactant with a dilute solution of the blood serum, adding thereto a phosphotungstic acid solution and a dilute solution of hydrazine dihydrochloride, determining the optical absorbance of the resulting products, and then comparing that optical absorbance with the optical absorbance of samples of uric acid standard containing known quantities of uric acid which have been treated in the same manner; and the compositions used in such process.

3,528,778
METHOD FOR THE DETERMINATION OF ACID CONCENTRATIONS

James Patrick McKaveney and Charles John Byrnes, Pittsburgh, Pa., assignors, by mesne assignments, to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Continuation-in-part of application Ser. No. 649,211, June 27, 1967. This application June 27, 1968, Ser. No. 742,967
Int. Cl. B01k *3/00;* **G01n** *31/00*
U.S. Cl. 23—230 **11 Claims**

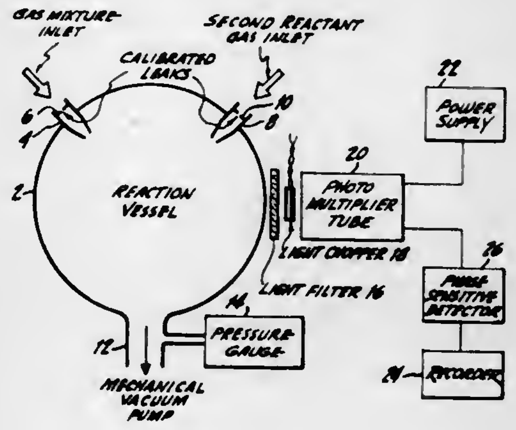
Method and apparatus for determining the concentration of acid present in acidic aqueous solutions, such as industrial pickling baths and other metal-treating baths. The invention is performed by mixing a known

quantity of an acidic aqueous solution, the concentration of which is to be determined with a fluoride in ionic form permitting the release of the fluoride ion in the mixture. The fluoride is introduced in at least a stoichiometric amount with respect to the acid so that there are sufficient fluoride ions available for reaction with the available hydrogen ions of the acid to form hydrofluoric acid. This mixture is placed in an electrolytic cell having a first electrode, which comprises the anode, of a semiconducting material, such as n-type silicon material. A second electrode, which is the cathode is additionally provided and is constructed of a conducting material substantially resistant to chemical attack by the mixture, such as stainless steel, platinum or titanium. An electrical potential is impressed between the electrodes, which results in the production of a limiting electrical current between the electrodes. The magnitude of electrical current has been found to be substantially, linearly proportional to the magnitude of the acid concentration in the acidic aqueous solution.



3,528,779
CHEMILUMINESCENT METHOD OF DETECTING OZONE

Arthur Fontijn, Princeton, N.J., assignor to AeroChem Research Laboratories, Inc., a corporation of Maryland
Filed June 27, 1968, Ser. No. 740,758
Int. Cl. G01n *21/22*
U.S. Cl. 23—232 **4 Claims**



A continuous flow method of measuring the concentration of ozone in a mixture of gases, such as the atmosphere, comprising introducing into a reaction chamber being maintained at a reduced pressure, a quantity of the gas mixture at a constant flow rate, and a quantity of nitric oxide, also at a constant flow rate, thereby producing chemiluminescence proportional in intensity to the ozone concentration, detecting the luminescence with a photomultiplier tube, and measuring the electrical signal produced.

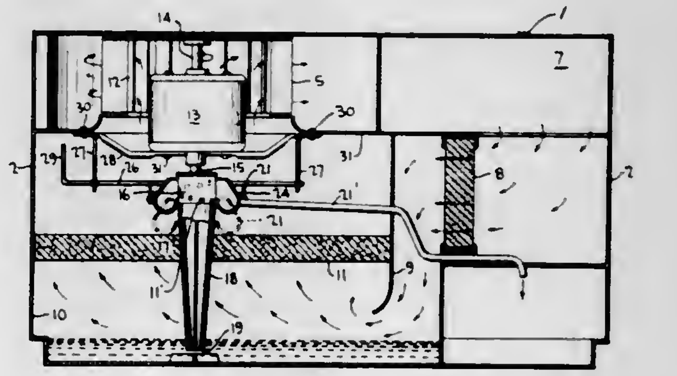
3,528,780
VISUAL AMMONIA DETECTOR

James L. Radawski, Belmont Shores, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Apr. 5, 1968, Ser. No. 719,223
Int. Cl. G01n *31/22*
U.S. Cl. 23—253 **1 Claim**

A composition for visually detection the leakage of ammonia fumes which comprises polyvinyl alcohol, water and a suitable indicator with or without the addition of silica gel and glycerine. Suitable indicators include phenolphthalein and an equal mixture of cresol red and thymol blue. The composition is a hygroscopic, water soluble emulsion which can be applied to any surface in the same manner as paint by spraying, brushing or dipping. In order to be operative, the detector does not require water beyond atmospheric or chemically bound moisture and is regenerative to its original color even after exposure to ammonia fumes. Upon application to a suitable surface, the composition assumes a yellow color in an ammonia free atmosphere, but changes color to red with a phenolphthalein indicator and to blue with a cresol red-thymol blue indicator upon exposure to ammonia fumes.

3,528,781
AIR POLLUTANT REMOVAL APPARATUS HAVING HORIZONTAL BED FOR AIR-LIQUID CONTACT

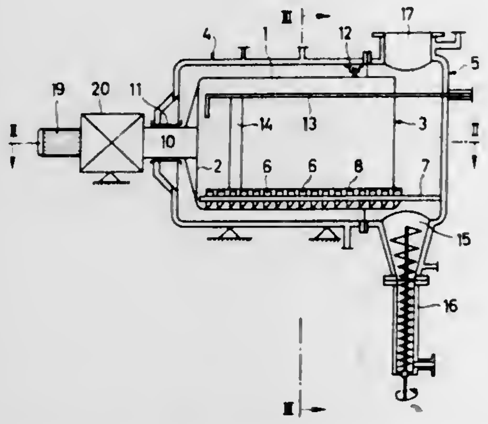
Stanley Gelfman, 4455 Douglas Ave., New York, N.Y. 10471, and Amos Turk, 7 Tarrywile Lake Drive, Danbury, Conn. 06810
Filed Jan. 26, 1968, Ser. No. 700,974
Int. Cl. B01d *47/02*
U.S. Cl. 23—284 **9 Claims**



The apparatus consists of a gas-liquid contact chamber including a horizontal positioned contact bed characterized by sodium carbonate impregnated alumina granules for the removal of air pollutants, a reservoir positioned below the said bed for containing a liquid to be used for contacting said absorbent to enhance its performance for removal of air pollutants, a rotatable, tapered pump whose lower end extends into the contacting liquid, said pump having a spray head above said bed, which spray head consists of a vertically perforated end section, the gas-liquid contacting chamber having an opening for introducting air across said bed, an electric motor for driving said pump positioned above said spray head, and including a centrifugal blower means thereabove and driven thereby for exhausting purified air passed through said bed and liquid into a discharge outlet attached to said contacting chamber.

3,528,782
POLYCONDENSATION REACTOR

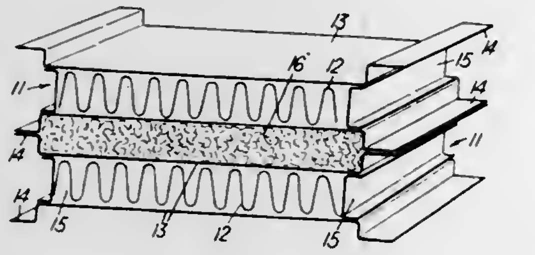
Karl-Heinz Riggert, Oberstedten, Taunus, and Ernst-Guenter Kunze, Frankfurt am Main, Germany, assignors to Vickers-Zimmer Aktiengesellschaft, Planung und Bau von Industrieanlagen
Filed May 10, 1968, Ser. No. 728,111
Claims priority, application Germany, May 19, 1967, V 33,663
Int. Cl. B01j *1/00*
U.S. Cl. 23—286 **13 Claims**



An apparatus for the polycondensation reaction for making linear high-polymers having a rotatable cylindrical reactor which contains a plurality of stationary and substantially parallel partitions in the form of chordal segments of a helix to give a plowshare type action when said reactor is rotated.

3,528,783
MULTILAYER CATALYTIC REACTOR

Geoffrey Gordon Haselden, Leeds, England, assignor to Marston Excelsior Limited, Wolverhampton, England, a British company
Filed June 14, 1965, Ser. No. 463,630
Claims priority, application Great Britain, June 16, 1964, 24,925/64
Int. Cl. B01j *9/04*
U.S. Cl. 23—288 **11 Claims**



This invention provides a chemical reactor or like process vessel of multilayer or sandwich construction, built-up in a stack from a pile of individual plates which are secured together but spaced from one another by means of bent marginal flanges on the plates. The plates are maintained parallel and are of substantially equal area whereby the spaces between them provide separated chambers of generally equal extent in area each of which is bounded above and below by generally parallel walls provided by the surfaces of the adjacent plates. Some chambers in the stack contain catalyst, adsorbent or like solid process material, held under compression by the plates, and other chambers constitute channels for flow of heat transfer medium, each catalyst chamber being sandwiched between two heat transfer chambers.

Appropriate header connections are made to the various chambers. In the preferred embodiments, the catalyst or other solid process material is prepared in the form of similarly shaped elements that can be set all with the same orientation in the catalyst chambers thereby to give advantageous flow and heat transfer characteristics.

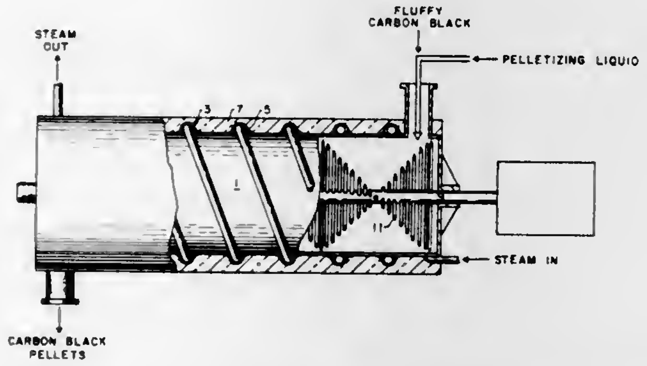
3,528,784
METHOD FOR PRELIMINARY BENEFICIATION OF CALCAREOUS OXIDIZED COPPER ORES BY FLOTATION OF A HIGH ACID-CONSUMING FRACTION CONTAINING LOW COPPER VALUES FROM A LOW ACID-CONSUMING FRACTION CONTAINING HIGHER COPPER VALUES

George E. Green, Tucson, Ariz., assignor to Banner Mining Company, Tucson, Ariz., a corporation of Arizona
No Drawing. Filed Mar. 21, 1968, Ser. No. 714,775
Int. Cl. B01d *11/02;* **B03d** *1/00, 1/08*
U.S. Cl. 23—312 **12 Claims**

The high acid-consuming fraction of a finely divided calcareous oxidized copper ore is separated by flotation from the low acid-consuming fraction, and the major part of the copper minerals is caused to report in the low acid-consuming fraction. The copper values can then be removed from the tails by leaching with a dilute acid.

3,528,785
CARBON BLACK PELLETIZATION INCLUDING HEATED BOUNDARY WALL

George W. Dingus, Pampa, Tex., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware
Filed Feb. 3, 1969, Ser. No. 796,146
Int. Cl. C09c *1/58*
U.S. Cl. 23—314 **1 Claim**



The invention provides a process and apparatus for producing pellets of carbon black and other finely divided materials by agitation in the wetted state without deposition of cake on the interior wall of the pelletizer. This result is accomplished by external heating of the pelletizer shell during agitation.

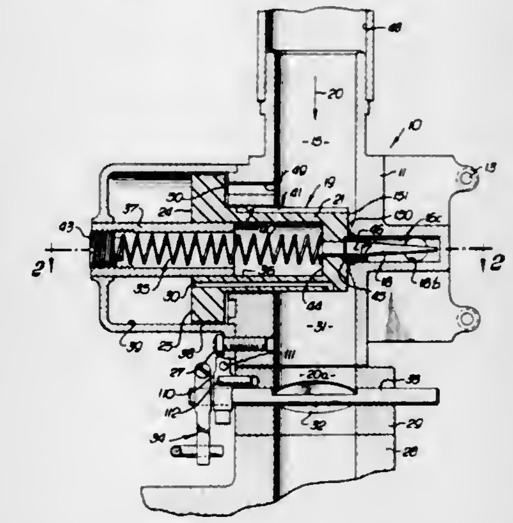
3,528,786
PRODUCTION OF SODIUM SILICOFLUORIDE FROM WET PROCESS PHOSPHORIC ACID

William A. Satterwhite and Jack M. Carter, Lakeland, Fla., assignors to United States Steel Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 546,877, May 2, 1966. This application Sept. 5, 1969, Ser. No. 855,730
Int. Cl. B01d *9/00;* **G01b** *33/10*
U.S. Cl. 23—302 **9 Claims**

Purified crystals of sodium silicofluoride are prepared by dissolving precipitated sodium silicofluoride resulting from the introduction of sodium ions into wet process orthophosphoric acid in hot water containing less than 1% by weight of impurities at a temperature of at least 89° C. and then forming sodium silicofluoride crystals by slowly cooling the hot solution to form large crystals of purified sodium silicofluoride. The impurities remain in the water solution and can be easily separated by filtration.

3,528,787
FUEL CARBURETION APPARATUS

John E. Hallberg, Rosemead, Calif., assignor to Macbee Engineering Corporation, South El Monte, Calif., a corporation of California
Filed Mar. 21, 1967, Ser. No. 624,826
Int. Cl. B01f *3/02;* **F02m** *9/02, 19/00*
U.S. Cl. 48—184 **18 Claims**



LPG carburetion apparatus provides for safe relief of pressure build-up, eliminates auxiliary air bleeds, and does not turn the air flow direction through the carburetor. A plunger movably transversely in the air intake passage controls air flow in that passage as well as the clearance between a needle valve and an orifice which passes gaseous LPG to that passage; as gaseous fuel pressure drops in a regulated pressure passage upstream of the orifice, a regulator valve admits more fuel to that passage, the regulator valve being heated by heat transfer from circulating liquid, inadvertent freezing of which cannot crack the body structure. Provision is made for fuel shut off in response to plunger closure, and for mechanically induced displacement of the plunger, if needed on start-up. The device also eliminates diesel engine smoking.

3,528,788
ETCHED METAL COATED DIAMOND GRAINS IN GRINDING WHEELS

Michael Seal, Leonardo, N.J., assignor to Engelhard Industries, Inc., Newark, N.J., a corporation of Delaware
No Drawing. Filed July 3, 1967, Ser. No. 650,580
Int. Cl. B24b *1/00*
U.S. Cl. 51—295 **3 Claims**

The present invention deals with a grinding material for use in resin bonded diamond wheels and composed of diamond grit material coated with metal having an etched surface and embedded in a resin bond material.

3,528,789
LUBRICATING COMPOSITION APPLIED TO BORON NITRIDE GRINDING WHEELS

Wilfred F. Mathewson, Jr., Franklin, Mich., and Robert S. Owens, Latham, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed May 15, 1968, Ser. No. 729,395
Int. Cl. B24b *29/00*
U.S. Cl. 51—295 **3 Claims**

Greatly improved grinding is accomplished by effecting relative motion between the workpiece and a cubic crystal boron nitride grain abrasive tool in contact with the workpiece while simultaneously supplying to the working surface of the abrasive tool a solid dry lubricant from the group consisting of hexagonal boron nitride, lubricants having the general lamellar crystal structure of cadmium iodide, molybdenum disulfide, and mixtures thereof. In the preferred embodiment the solid dry lubricant is supplied by contacting the working surface of the abrasive tool with a rod or other shaped body containing the solid dry lubricant such that the lubricant is rubbed onto the abrasive tool as the grinding proceeds. The preferred composition for the shaped lubricant body is a mixture of molybdenum disulfide, an active diluent such as sulphur, an adhesive material to provide better transfer of the lubricant to the working surface of the abrasive tool, and a resin binder.

3,528,790
RESIN BONDED ALUMINUM OXIDE ABRASIVE PRODUCTS HAVING IMPROVED STRENGTH

John Hay, Shrewsbury, and Harold J. Kenneway, Brookfield, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
No Drawing. Filed Feb. 20, 1968, Ser. No. 706,794
Int. Cl. C08g *51/12;* **B24b** *1/00*
U.S. Cl. 51—298 **6 Claims**

Improved bonding of aluminum oxide grain with phenolic resins by:

(a) Mixing aluminum oxide abrasive grains with an aqueous solution of nickel nitrate having a concentration which contains up to about 2% nickel by weight of the aluminum oxide;

(b) Drying the mixture with agitation whereby the abrasive is coated with the nickel nitrate;

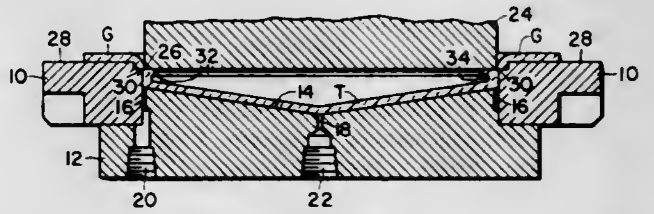
(c) Firing the treated abrasive at about 1200° C. for about 24 hours to form nickel oxide by decomposition of the nitrate and a diffused nickel alumina spinel coating on the abrasive grains;

(d) Partially reducing the spinel coating under a hydrogen atmosphere for about 3 hours at about 1000° C.

Alternatively, the fused alumina grain may be directly treated in hydrogen without precoating with nickel salt.

3,528,791
METHOD OF MANUFACTURING NONPOROUS VITREOUS BUILDING TILE

James W. Giffen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Original application Nov. 22, 1967, Ser. No. 685,044. Divided and this application June 10, 1969, Ser. No. 843,886
Int. Cl. C03b *23/02*
U.S. Cl. 65—67 **5 Claims**



Nonporous vitreous wall cladding tile having an integral peripheral undercut attachment flange is produced by first vacuum-forming the tile to a desired shape from molten or plastic sheet of vitreous material, and then, while the vitreous material is still in a molten or plastic state, trimming the article from the sheet to form an inwardly-extending peripheral flange providing a locking undercut recess of reverse angle.

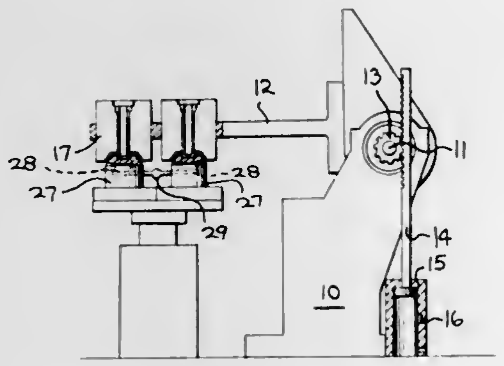
3,528,792
METHOD OF SPIN CASTING GLASS CASING

Robert Wilson, Dallas, Tex., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Filed May 6, 1968, Ser. No. 727,042
Int. Cl. C03b *19/04*
U.S. Cl. 65—71 **3 Claims**

A method of spin casting tubular glass pipe wherein sufficient molten metal is spun in a cylindrical, centrifugal mold to form a wall or layer of the molten metal on the sides of the mold. The molten metal is denser than the glass, has a melting point below the temperature at which the glass is removed from the mold, has a boiling point above the temperature at which the glass is cast, and is sufficiently unreactive with the glass to not change the properties of the glass. After the molten metal layer has been formed, flowable glass is spin cast in the spinning mold while the layer of molten metal is on the sides of the mold. Preferably, tin is the metal used.

3,528,793
SINGLE STAGE FORMING OF GLASS CONTAINER IN NECK RING ARM MOLD

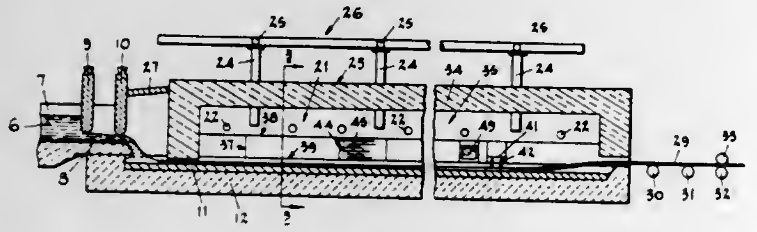
Roy A. Fike, Pevely, Mo., and William C. Fotoples, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 22, 1966, Ser. No. 596,245
Int. Cl. C03b *9/14, 9/00*
U.S. Cl. 65—77 10 Claims



A complete, finished, container is formed at a single station on the well-known I.S. Bottle Forming Machine by using a unitary mold carried by the invert arm, which mold compares to the neck and parison molds of the conventional machine. A gob of glass is loaded through the open, upper end of the split mold and the gob or charge is "settle-blown" around a neck pin and then, with a baffle replacing the "settle blow" head, the charge is counterblown into a finished bottle. The entire mold is inverted and opened, releasing the finished container.

3,528,794
GAS IMPERVIOUS MEMBRANE SEAL FOR FLOAT GLASS PLENUM CHAMBERS

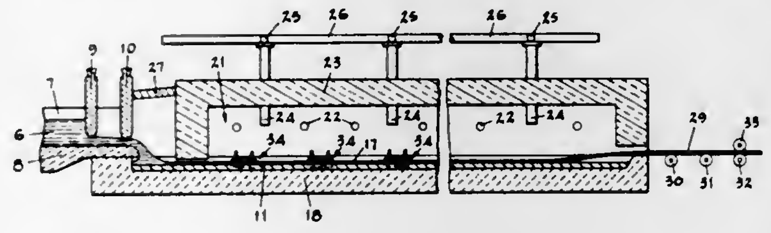
Eldwin C. Montgomery, Modesto, Calif., assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 30, 1967, Ser. No. 678,966
Int. Cl. C03b *18/02*
U.S. Cl. 65—168 4 Claims



A side wall, having closure members creating a space adjacent a flange extending outwardly from the wall, forms part of a plenum chamber for confining the float atmosphere above the metal bath in a float glass forming apparatus. Structure for preventing leakage of air into the float atmosphere involves the use of a substantially gas impervious heat resisting membrane such as metal foil wrapped around the flange and covering the opening.

3,528,795
MOLTEN METAL CONTAINING EDGE LOCATORS FOR FLOAT GLASS RIBBONS

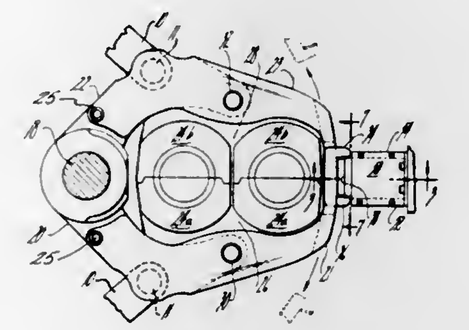
Francis L. Swillinger, Perrysburg, Ohio, assignor to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio
Filed July 12, 1967, Ser. No. 652,919
Int. Cl. C03b *18/02*
U.S. Cl. 65—182 6 Claims



A locating, guiding retaining device, for the edge of a glass ribbon moving over a bath of molten metal in a float glass forming apparatus is in the form of a carbon boat that floats in the molten bath and is anchored by a water cooled pipe extending into the boat and partially immersed in a body of bath metal carried thereby. The flow of cooling water through the pipe establishes heat transfer between the pipe, the body of both metal in the boat, and the boat in order to create convection currents in the bath of molten metal for urging the glass ribbon toward the boat.

3,528,796
MOLD LOCKING MECHANISM FOR GLASSWARE FORMING MACHINE

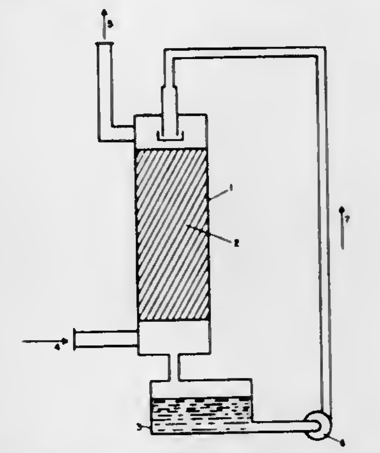
Albert J. Trahan, Vernon, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Nov. 24, 1967, Ser. No. 685,443
Int. Cl. C03b *9/00*
U.S. Cl. 65—357 10 Claims



A pair of mold holder arms are pivotally mounted on a common hinge pin and are movable toward and away from one another in unison through a pair of toggle links connected to the arms. The arms carry inserts which in turn carry the mold sections. An extension of each arm has a free end portion with a projecting lug which overlaps the lug on the other arm extension to provide a wedge opening therebetween. A wedge member is movable toward the hinge pin and between the lugs to urge the lugs apart and hence force the mold sections together. A reciprocable air motor has an extensible part which carries a roller, and the roller rides in an inclined slot in the wedge member so that the wedge can be moved in the plane defined by the mold holder arm movement in response to movement of the extendable motor part in a direction perpendicular to this plane.

3,528,797
CHEMICAL SUPPRESSION OF NITROGEN OXIDES

Andrew B. Funk and James C. Moore, Memphis, Tenn., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Nov. 8, 1967, Ser. No. 681,313
Int. Cl. C05b *11/06*
U.S. Cl. 71—39 6 Claims

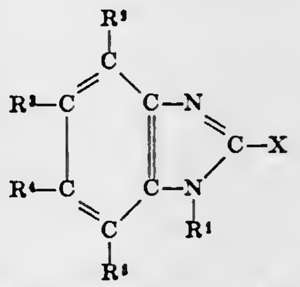


Suppression of evolution of nitrogen oxides resulting from the acidulation of phosphate rock with nitric acid is accomplished by use of urea either in a scrubbing system or by direct addition of urea to the acidulation mixture.

3,528,798
2-PERFLUOROALKYL BENZIMIDAZOLE-PHENOXYALIPHATIC ACID COMBINATIONS AS HERBICIDES

Rudolf Koloman Pfeiffer, Cambridge, England, assignor to Fisons Pest Control Limited, Harston, Cambridgeshire, England
No Drawing. Filed Mar. 25, 1966, Ser. No. 537,296
Claims priority, application Great Britain, Mar. 30, 1965, 13,329/65; Nov. 30, 1965, 50,872/65
Int. Cl. A01n *9/22*
U.S. Cl. 71—92 11 Claims

An improved herbidical composition is provided which is effective in providing plant growth regulation as well as weed-killing. The composition comprises the admixture of at least one substituted benzimidazole of the formula

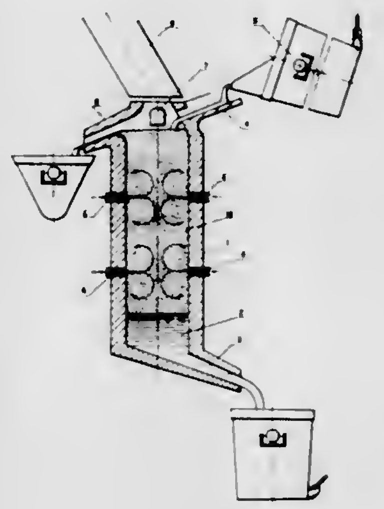


wherein the variable substituents are as defined in the specification together with at least one phenoxyaliphatic acid. Functional derivatives of the components of the composition may also be employed.

3,528,799
PROCESS FOR CONTINUOUSLY REFINING CAST IRON INTO STEEL

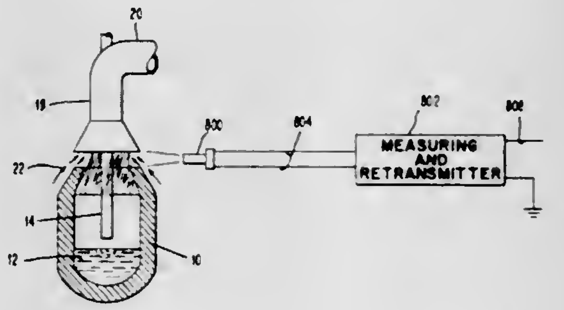
Aldo Ramacciotti, Rome, Italy, assignor to Centro Sperimentale Metallurgico Societa Per Azioni, Rome Italy, an Italian corporation
Continuation-in-part of application Ser. No. 713,623, Mar. 18, 1968. This application Mar. 19, 1969, Ser. No. 808,611
Claims priority, application Italy, Mar. 18, 1967, 789,191
Int. Cl. C21c *7/02, 7/04*
U.S. Cl. 75—52 5 Claims

Cast iron is transformed into steel by pouring liquid cast iron on to a flux in a vertical shaft reactor so that the cast iron descends in drops scattered through the flux. Oxygen which agitates the flux-metal emulsion is introduced through the walls of the reactor by means of nozzles with substantially horizontal axes. The slag and gaseous material rise as a thick foam in the vertical shaft in a flow which is countercurrent to the flow of the descending metal. Chemical reactions among the metal, the flux and the gaseous material, which result in the refinement of the cast iron take place during the countercurrent flow of materials; the flux and gaseous materials discharge from the upper part of the reactor and the refined cast iron decants from the emulsion and is withdrawn from the tapping hole provided in the reactor.



3,528,800
OPTIMIZED BLOWING CONTROL FOR BASIC OXYGEN FURNACES

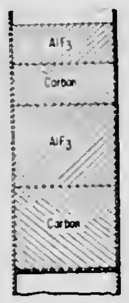
Bernard Blum, Kenmore, N.Y., and John W. Schwartzenberg, Maple Glen, Pa., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 479,867, Aug. 16, 1965. This application Feb. 14, 1966, Ser. No. 534,617
Int. Cl. C21c *7/00*
U.S. Cl. 75—60 12 Claims

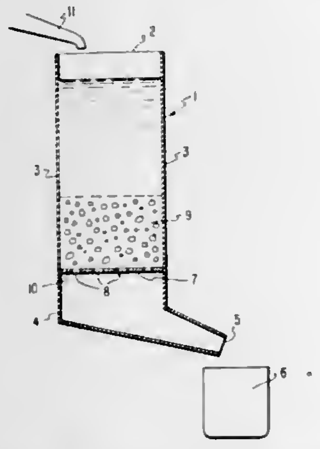


A system for controlling the operation of a basic oxygen furnace in response to measurements of the carbon loss through the exhaust gases and the oxygen flow rate to the lance. The carbon content of the bath as determined from the carbon loss rate and the measured oxygen flow rate as well as the calculated bath temperature provide a basis for controlling the furnace. Oxygen flow is maintained constant until silicon is removed and is then increased at a steady maximum rate. Simultaneously, the lance is brought down as slag build-up occurs. Oxygen flow is modified by positive feedback signal responsive to carbon loss rate and is limited when carbon loss rate changes rapidly. Also, lance height is modified in response to rate of change of oxygen flow. The oxygen is then shut off and the lance raised when the carbon content of the bath, as determined from carbon loss rate divided by oxygen flow, is at a desired value and the temperature of the bath is also at a desired value.

3,528,801
METHOD OF TREATING ALUMINOUS METAL WITH CARBON AND ALUMINUM FLUORIDE

Linton D. Bylund, Chesterfield County, and Vernon G. Kneeskern, Henrico County, Va., Frederick L. Wuetig, Hot Springs, Ark., and Frederick M. Berg, Florence, Ala., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 24, 1966, Ser. No. 574,613
Int. Cl. C22b *9/10, 21/06*
U.S. Cl. 75—68 **8 Claims**





A method of treating liquid aluminous metal with a mixture of carbon and aluminum fluoride in solid condition.

3,528,802
DEOXIDATION PROCESS

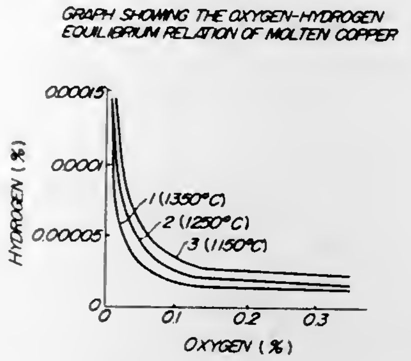
Abe P. Morris, deceased, late of Phoenix, Ariz., by Mildred Morris and the First National Bank of Arizona, co-executors, Phoenix, Ariz., and Lyle E. Mulholland, Hayden, Ariz., assignors to Kennecott Copper Corporation, a corporation of New York
Filed Oct. 5, 1966, Ser. No. 584,617
Int. Cl. C22b *9/08, 15/00*
U.S. Cl. 75—76 **4 Claims**

This application relates to a process for refining oxygen-bearing molten copper in a furnace that is equipped with tuyeres, to reduce its oxygen content, that comprises providing heat to a liquid hydrocarbon material that is gaseous under standard conditions of temperature and pressure, and that predominantly is a material that is selected from the group consisting of propane, butane and mixtures thereof to form a pressurized vapor, and injecting said vapor into the molten copper, beneath its surface, through the tuyeres utilizing the pressure of said vapor created in forming said vapor from the liquid hydrocarbon material for said injecting and apparatus to accomplish the same.

3,528,803
METHOD FOR MANUFACTURING OXYGEN-FREE COPPER BY CASTING

Hiroshi Ichikawa and Rokuro Kawanishi, Tsuchiura-shi, Japan, assignors to Hitachi Cable, Ltd., Tokyo, Japan, a corporation of Japan
Filed Nov. 15, 1967, Ser. No. 683,285
Claims priority, application Japan, Dec. 28, 1966, 42/447
Int. Cl. C22b *15/14*
U.S. Cl. 75—76 **15 Claims**

A method of manufacturing oxygen-free copper, which method comprises the steps of adding a very small amount of dehydrogenating agent to a molten electrolytic copper to react said dehydrogenating agent with hydrogen contained in said copper and then subjecting said dehydrogenating agent to a reaction with the oxygen contained in the resultant molten copper and thereafter contacting dehydrogenating agent with a reducing gas to effect deoxydation of the molten copper.



3,528,804
COPPER SEPARATION PROCESS

Ernst L. Th. M. Spitzer and Johannes Radder, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 22, 1967, Ser. No. 692,700
Claims priority, application Great Britain, Jan. 2, 1967, 102/67
Int. Cl. C22b *15/00;* **C07f** *1/08*
U.S. Cl. 75—117 **7 Claims**

Selective extraction of copper values from acidic aqueous solutions containing halide ions employs organic sulfide as the extracting agent.

3,528,805
UNIDIRECTIONAL GRAINED FERROUS ALLOY CONTAINING ALUMINUM

John Harrison, Sheffield, England, assignor to Swift Levick & Sons Limited
No Drawing. Continuation-in-part of application Ser. No. 339,320, Jan. 22, 1964. This application Apr. 17, 1967, Ser. No. 631,134
Int. Cl. C33c *39/02*
U.S. Cl. 75—124 **5 Claims**

An anisotropic columnar crystal magnet consisting essentially of:

	Percent
Al	6.5–8
Ni	13–17.5
Co	27–40
Cu	2–5
Ti	3.5–6
Nb (Cb)	0–3
Si	Up to 1
S	0.125–1

Fe and impurities balance.

has magnetic properties of at least: $B_{rem.}$ 9800 gauss; H_c 1200 oersteds; and $(BH)_{max.}$ 6.0×10^6 gauss-oersteds.

3,528,806
METHOD FOR PRODUCING BINARY ALUMINIUM-NIOBIUM ALLOYS

Giorgio Beghi, Gavirate, and Giovanni Piatti, Varese, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium
No Drawing. Filed July 10, 1967, Ser. No. 652,038
Claims priority, application Italy, July 25, 1966, 17,089/66
Int. Cl. C22c *1/02, 21/00*
U.S. Cl. 75—138 **4 Claims**

A process for obtaining binary aluminum-niobium alloys having improved dimensional stability under high heat conditions, rendering them useful for especially critical applications. The process involves producing such an alloy including an aluminum matrix containing a dispersion of aluminum-niobium particles in certain specified quantity relationships by melting the constituents of the alloy at a temperature above 1800° C. and then casting the molten material under conditions of high speed cooling upon a body of high heat conductivity such as a thick copper body and thereafter compacting the alloys so obtained at a temperature of at least 580° C. In cases where a liquid is present the temperature is restricted to not more than 750° C.

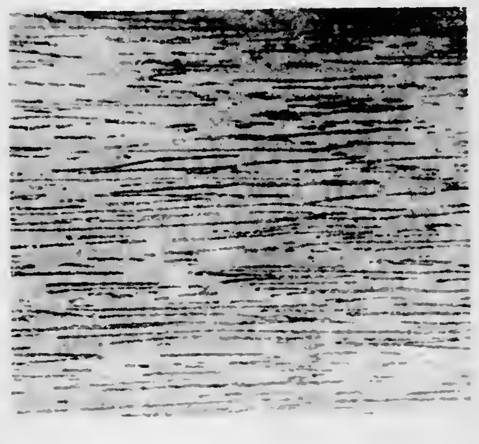
3,528,807
COPPER BRAZING ALLOY

Frank M. Gault, 148 High Tor Drive, Watchung, N.J. 07060
No Drawing. Filed Apr. 9, 1968, Ser. No. 719,998
Int. Cl. C22c *9/02, 9/08*
U.S. Cl. 75—156 **4 Claims**

A copper brazing alloy consisting of 3 to 12% phosphorous, 0.05 to 36% lead, 0.05 to 15% tin, 0.05 to 15% antimony, and the balance copper.

3,528,808
MONOCARBIDE REINFORCED EUTECTIC ALLOYS AND ARTICLES

Franklin D. Lemkey and Earl R. Thompson, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,607
Int. Cl. C22c *19/00*
U.S. Cl. 75—170 **8 Claims**



Alloys of cobalt, nickel or chromium with a monocarbide from the group of monocarbides of titanium, zirconium, hafnium, vanadium, niobium, and tantalum in the form of a pseudo-binary eutectic are described, particularly as unidirectionally solidified.

3,528,809
HOLLOW ARTICLE PRODUCTION

Joseph Redmond Farnand and Ira Edwin Puddington, Ottawa, Ontario, Canada, assignors to Canadian Patents and Developments Limited, Ottawa, Ontario, Canada, a corporation of Canada
No Drawing. Filed Apr. 7, 1966, Ser. No. 540,807
Claims priority, application Canada, Apr. 15, 1965, 928,412
Int. Cl. C22b
U.S. Cl. 75—222 **12 Claims**

Preparation of hollow articles especially very small spheres from particulate metals, metal compounds which are easily reduced to metal or sinterable and silica by forming a shaped core of a material transformable directly into gas, coating this core with the discrete particles, if necessary with a binder, initiating transformation of the core into gas, slowly removing the core material through the particulate coating in gaseous form at low internal pressures, and consolidating the coating to strengthen the hollow article.

3,528,810
PROCESS FOR THE PRODUCTION OF DIRECT POSITIVE IMAGES BY THE SILVER SALT DIFFUSION PROCESS

Edith Weyde, Anita von Konig, and Harald von Rintelen, Leverkusen, and Siegfried Wagner, Witzhelden, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 545,257, Apr. 26, 1966. This application Dec. 13, 1966, Ser. No. 601,318
Claims priority, application Germany, May 8, 1965, A 49,159
Int. Cl. G03c *5/54, 1/02*
U.S. Cl. 96—29 **8 Claims**

The invention relates to an improvement of the silver salt diffusion process by the use of light-sensitive silver salts which can be processed with neutral or acid developer solutions and in the case of certain transfer materials can even be developed with water.

3,528,811
PHOTOGRAPHIC EMULSIONS CONTAINING A PYRIMIDINEDIONE AND A DESENSITIZING NUCLEUS LINKED BY A DIMETHINE OR A DOUBLE BOND

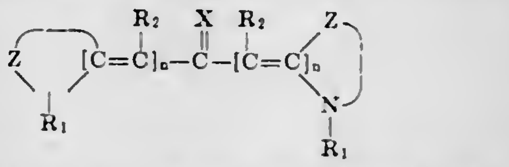
Frank G. Webster and Donald W. Heseltine, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 17, 1967, Ser. No. 639,024
Int. Cl. G03c *1/08, 1/36*
U.S. Cl. 96—64 **28 Claims**

Cyanine dyes which contain a complex fused pyrimidinedione nucleus linked by a double bond or a dimethine linkage to a desensitizing nucleus, and light sensitive silver halide emulsions containing such dyes.

3,528,812
SENSITIZATION OF LIGHT-SENSITIVE POLYMERS

Justus Danhäuser and Hans Öhlschläger, Cologne-Stammheim, Willibald Pelz, Opladen, and Oskar Riester, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Jan. 31, 1967, Ser. No. 612,831
Claims priority, application Germany, Feb. 18, 1966, A 51,615
Int. Cl. G03c *1/68*
U.S. Cl. 96—115 **7 Claims**

Sensitizers for photo-resist resins have the structure

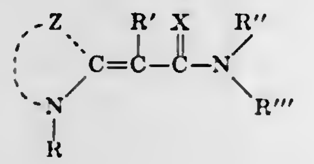


wherein Z represents the ring members required for completing a 5- or 6-membered heterocyclic ring, which ring may have fused thereto a benzene or naphthalene ring. Preferred heterocyclic ring systems are, for example, indole, benzoindole, dihydroindole, thiazole, benzthiazole, naphthothiazole, selenazole, benzoselenazole or naphthoselenazole; R_1 is an alkyl group having preferably up to 5 carbon atoms; R_2 represents a hydrogen atom or an alkyl with preferably up to 3 carbon atoms, such as methyl or ethyl; X is an oxygen or sulfur atom and $n=1$ or 2, preferably 1.

3,528,813
SENSITIZATION OF LIGHT-SENSITIVE POLYMERS

Oskar Riester, Leverkusen, and Justus Danhäuser and Hans Öhlschläger, Cologne-Stammheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 16, 1967, Ser. No. 616,465
Claims priority, application Germany, Mar. 8, 1966, A 51,771
Int. Cl. G03c *1/68*
U.S. Cl. 96—115 **7 Claims**

Sensitizers for photo-resist resins have the structure:

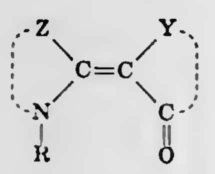


wherein Z represents the ring members required for completing a 5- or 6-membered heterocyclic ring, which heterocyclic rings may have fused thereto a benzene or naphthalene ring. Particularly suitable rings are those, for example of the indole, benzoindole, dihydroindole, thiazole, benzothiazole, naphthothiazole, selenazole, benzoselenazole, naphthoselenazole, oxazole, benzoxazole, naphthoxazole, thiodiazole or benzimidazole series; R represents alkyl having preferably up to 5 carbons atoms, or aryl preferably phenyl, or aralkyl preferably benzyl or phenylethyl, or a carboxyalkyl, sulfoalkyl, alkylsulfamide, alkylsulfate or alkylphosphoric acid group; R′ represents hydrogen or alkyl having preferably up to 3 carbon atoms such as methyl or ethyl, or aryl preferably phenyl, or aralkyl preferably benzyl or phenylethyl; R″ or R‴ represents hydrogen, alkyl having preferably up to 6 carbons atoms, cycloalkyl, aryl preferably phenyl, or aralkyl preferably benzyl or phenylethyl, or R″ and R‴ together represent the ring members necessary for completing a nitrogen-containing heterocyclic, preferably 5- or 6-membered ring, e.g. a morpholine, pyrrolidine or piperidine ring; and X represents selenium or sulfur.

3,528,814
SENSITIZATION OF LIGHT-SENSITIVE POLYMERS

Oskar Riester, Leverkusen, Justus Danhäuser and Hans Öhlschläger, Cologne-Stammheim, Eckart Seelig, Leverkusen, and Willibald Pelz, Opladen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 14, 1967, Ser. No. 630,837
Claims priority, application Germany, Apr. 29, 1966, A 52,306
Int. Cl. G03c *1/52, 1/68*
U.S. Cl. 96—115 **6 Claims**

Polymers that cross link on exposure to light require less exposure when mixed with a compound having the formula:



wherein:

Z=the ring members necessary for completing a thiazole, benzothiazole, naphthothiazole, selenazole, benzoselenazole or naphthoselenazole ring;
Y=the ring members necessary for completing a thiobarbituric acid ring;
R=alkyl having preferably up to 5 carbon atoms, an olefinically unsaturated aliphatic radical having up to 5 carbon atoms such as allyl, aryl preferably phenyl, or aralkyl preferably benzyl or phenylethyl, or alkyl having preferably up to 5 carbon atoms and substituted with at least one of the following substituents: carboxyl, sulfo, sulfonamide, sulfate or phosphoric acid;

and the rings may be further substituted.

3,528,815
METHOD FOR PROCESSING CEREAL GRAIN

Peter I. Trotter, Palo Alto, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 4, 1967, Ser. No. 636,087
Int. Cl. A23k *1/00*
U.S. Cl. 99—2 **3 Claims**

Whole raw milo at normal moisture content is prepared for animal feed by steaming the grain in a continuous cooker at 40 p.s.i.g. or higher, cooling the grain in the range of from 143 degrees F. to 90 degrees F. with the latter temperature preferred, adding water to the whole grain before steaming to bring the moisture content of the cooled grain at the rolls to about 17 percent to 22 percent by weight, and rolling the grain to provide low density flakes.

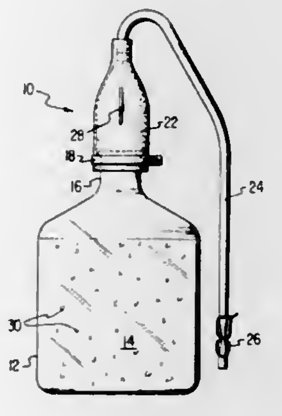
3,528,816
FISH BAIT WITH A FISH-HOOK

Shoichi Nagae, 7 Yokohama-cho, Matsue, Japan
Filed June 12, 1967, Ser. No. 645,171
Claims priority, application Japan, June 20, 1966, 41/39,997, 41/58,208
Int. Cl. A01k *85/00*
U.S. Cl. 99—3 **1 Claim**

This invention discloses a fish bait put on a fish-hook and desiccated so that it can be preserved for a long period of time and also restored to near the living state, and a process for preparing the same.

3,528,817
METHOD AND APPARATUS FOR MAKING FERMENTABLE BEVERAGES

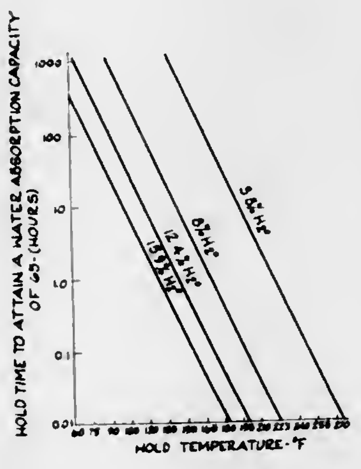
Harold F. Barrett, Bowie, and Donald J. Schneider, Forestville, Md., Marion C. Strickland, Vienna, Va., and James H. Childers, Oxon Hill, Md., assignors to Harold F. Barrett and Anthony Fusco, both of Bowie, Md.
Filed Dec. 22, 1967, Ser. No. 692,827
Int. Cl. C12g *1/00*
U.S. Cl. 99—35 **7 Claims**



Fermented alcoholic beverages are prepared by a process and apparatus that involves accelerating the fermentation rate by containing the gases evolved during fermentation in a resilient bladder of stretchable material in open communication with the fermenting mixture.

3,528,818
WATER ABSORPTIVE PROTEIN

Leon Tumerman, Deerfield, and Jules H. Guth, Mount Prospect, Ill., and Robert A. Hollis, Highland Park, N.J., assignors to Kraftco Corporation, New York, N.Y., a corporation of Delaware
Filed May 18, 1967, Ser. No. 639,563
Int. Cl. A23c *9/00*
U.S. Cl. 99—56 **4 Claims**



A method of treating protein to increase the water absorptive capacity thereof. In a preferred method for treating protein in skim milk powder having from 3.5 to 16 weight percent of moisture, the skim milk powder is heat treated at temperatures of from 125° F. to 270° F. for time periods of from 60 to 0.6 minutes respectively. The water absorptive capacity of the protein may be further enhanced by thereafter extracting soluble solids from the heat treated protein by aqueous extraction.

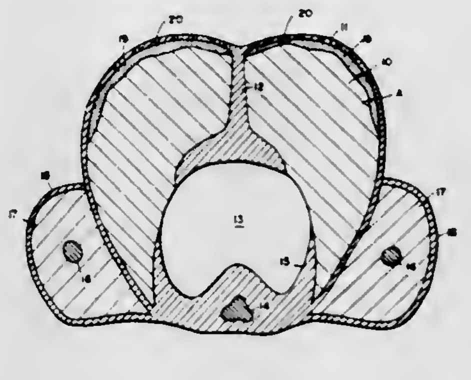
3,528,819
ELIMINATING UNDESIRABLE TASTE FROM COFFEE AND TEA EXTRACTS AND PRODUCTS

Robert M. Hamilton, La Grange Park, and Robert E. Heady, Park Forest, Ill., assignors to CPC International Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 16, 1967, Ser. No. 616,471
Int. Cl. A23f *1/08, 3/00*
U.S. Cl. 99—71 **3 Claims**

Extracted beverage products such as coffee and tea are treated to reduce or eliminate objectionable taste factors arising from the extraction process such as by overbrewing or overlong steeping. The objectionable taste factors are counteracted by treating the beverage product with a small but effective amount of a cyclodextrin and the like.

3,528,820
PROCESS OF PREPARING A SELF-BASTING POULTRY PRODUCT

Donald V. Schwall, Glen Ellyn, and Alan B. Rogers, Palos Park, Ill., and Dennis Corbin, Evansville, Ind., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 685,074, Nov. 22, 1967, which is a continuation-in-part of application Ser. No. 573,305, Aug. 18, 1966, which in turn is a continuation-in-part of application Ser. No. 492,319, Oct. 1, 1965. This application June 28, 1968, Ser. No. 740,874
The portion of the term of the patent subsequent to Jan. 30, 1985, has been disclaimed
Int. Cl. A22c *21/00*
U.S. Cl. 99—107 **1 Claim**



A self-basting dressed poultry carcass, which during cooking bastes the skin over the breast muscle portion of the carcass, contains within the breast enlarged reservoirs of added edible fat and flow passages lead from the reservoirs to the inner and outer surfaces of the breast skin whereby during the cooking process basting fat is supplied to the skin. Improved basting is achieved by injecting polyphosphate together with the edible fat into the poultry carcass.

3,528,821
CONTINUOUS CHEESE-MAKING PROCESS

Pierre Stenne, Vitry-le-Francois, France, assignor to Paracurd S.A., Geneva, Switzerland
Continuation-in-part of applications Ser. No. 549,669, May 12, 1966, and Ser. No. 833,831, Mar. 28, 1969, which are the continuation of application Ser. No. 439,829, Mar. 15, 1965. This application June 27, 1969, Ser. No. 837,089
Claims priority, application France, May 12, 1965, 1,458,172
Int. Cl. A23c *19/02*
U.S. Cl. 99—116 **17 Claims**

A process for making cheese from milk which comprises the steps of concentrating whole milk, inoculating said milk with a lactic ferment, adding rennet to said concentrated inoculated milk while maintaining said milk too cold to coagulate, heating said milk by dilution with hot water after a time delay of at least several minutes, to a temperature which produces rapid coagulation but is insufficient to substantially inactivate the lactic ferment, removing the whey, and forming the remainder into cheese in a conventional manner.

3,528,822
COLORING PROCESS CHEESE

Benjamin Borenstein, Teaneck, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 1, 1968, Ser. No. 702,169
Int. Cl. A23c *19/12;* **A23l** *1/27*
U.S. Cl. 99—117 **6 Claims**

A composition containing canthaxanthin is disclosed and the use of such composition in coloring process cheese is described.

3,528,823
FLUID SHORTENING

Jack L. Rossen, Englewood, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Filed Aug. 4, 1966, Ser. No. 570,157
Int. Cl. A23d *5/00*
U.S. Cl. 99—118 **22 Claims**

A fluid shortening for use in baking comprising 0.1% to 4% of an ester of polyglycerol, 1% to 10% of normally solid triglyceride, 2% to 15% of an ester of propylene glycol, and the balance being essentially edible normally liquid triglyceride. The polyglycerol ester and the normally solid triglyceride are crystals of fat primarily in the beta phase suspended in the liquid triglyceride-propylene glycol ester solution.

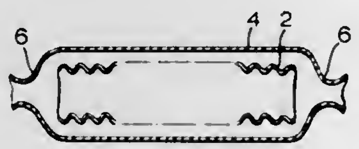
3,528,824
METHOD FOR PACKAGING RELISH

Robert G. Walker, Glenview, Ill., assignor to Kraftco Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 14, 1968, Ser. No. 752,494
Int. Cl. B65b *25/00*
U.S. Cl. 99—171 **6 Claims**

A process is provided for packaging a sweet pickle relish mix into portion-controlled containers. The pickle particles in a sweet pickle relish mix are caused to collapse by osmotic pressure and heating. A thickening agent is provided to suspend the collapsed pickle particles and provide a uniform mix during filling of the mix into portion-controlled containers. After packaging, the thickening agent undergoes hydrolysis and viscosity of the mix is reduced while at the same time the collapsed pickle particles revert to their original size and shape.

3,528,825
SHRINK WRAPPED SHIRRED CASINGS

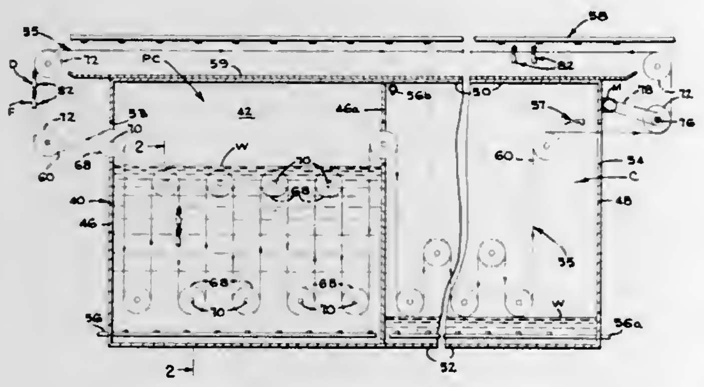
Frederick James Doughty, Lindsay, Ontario, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a company of Canada
Filed Dec. 4, 1967, Ser. No. 687,789
Int. Cl. A22c *13/00;* **B65b** *31/00*
U.S. Cl. 99—176 **3 Claims**



A wrapped shirred casing comprising an outer covering of non-shirred casing shrunk snugly about a shirred casing to reduce longitudinal expansion of the shirred casing; the non-shirred casing having a tear-away strip for easy removal.

3,528,826
PROCESSING PRODUCTS IN FLEXIBLE CONTAINERS

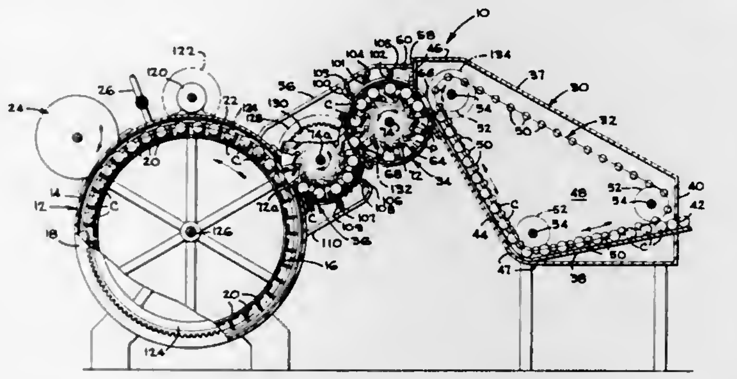
Donald C. Wilson, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 31, 1968, Ser. No. 772,321
Int. Cl. A23l *3/02*
U.S. Cl. 99—185 **29 Claims**



A method and apparatus for purging air from and collapsing the headspace of a filled flexible container which forms semi-rigid wrinkles in its walls when the headspace is collapsed. A first method includes providing a one-way valve in the container and then repeatedly lowering and raising the container in hot liquid to progressively collapse and pump gas out of the container. A second method includes alternately lowering the containers into a plurality of hot and cold waterbaths whereby a steam-air mixture forms and a portion thereof escapes during immersion in hot water, and the steam remaining in the container condenses during submergence in cold water thus progressively collapsing the wrinkled container.

3,528,827
MICRO-PREHEATING OF CONTAINERS

Richard B. Leslie, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 785,216
Int. Cl. A23l *3/06*
U.S. Cl. 99—214 **11 Claims**



Method and apparatus for preventing paneling or buckling of containers that are rapidly entering a cooker maintained at high temperature and pressure by progressively but rapidly raising the pressure within the containers by subjecting the containers to gradually increasing temperatures and pressures before the containers enter the cooker causing aqueous vapors to form within the containers at a pressure approaching that of the pressure within the cooker. The apparatus includes a plurality of interconnected rotary pressure valves having individually sealed container accommodating pockets within which steam of progressively increasing temperature and pressure is directed.

3,528,828
GLASS, CERAMICS, AND METHOD

William Earl Smith, Sylvania Township, Lucas County, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed May 28, 1964, Ser. No. 371,089
Int. Cl. C04b *35/00, 35/16, 35/46*
U.S. Cl. 106—39 **4 Claims**

Thermally crystallizable glasses with

$$Na_2O \cdot Al_2O_3 \cdot SiO_2 \cdot TiO_2$$

system are used to prepare high expansion nepheline glass-ceramic bodies.

3,528,829
LOW EXPANSION GLASS COMPOSITIONS

Nils Tryggve E. A. Baak, Ridgefield, Conn., and Charles F. Rapp, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation-in-part of applications Ser. No. 465,381, June 21, 1965, and Ser. No. 552,992, May 25, 1966. This application Sept. 28, 1966, Ser. No. 582,540
Int. Cl. C03c *3/04, 3/30*
U.S. Cl. 106—52 **32 Claims**

Low thermal expansion glasses of the Cu_2O-Al_2O_3-SiO_2 system are disclosed, wherein the sum of the SiO_2 plus Al_2O_3 is preferably at least about 70 mole percent and the sum of the Cu_2O plus Al_2O_3 is at least about 5 mole percent. The glasses will further include minor proportions of other oxides such as, for example, an oxide of Ta, W, Hf, V, Mo, Nb, La, Ce, Pr, Nd, Ge, Th, Be, Ca, Zr, Pb, or mixtures thereof; the glasses may further include TiO_2, B_2O_3, Fe_2O_3, CoO, NiO or mixtures thereof. These glasses may be used in the sealing art or to form astronomical mirrors.

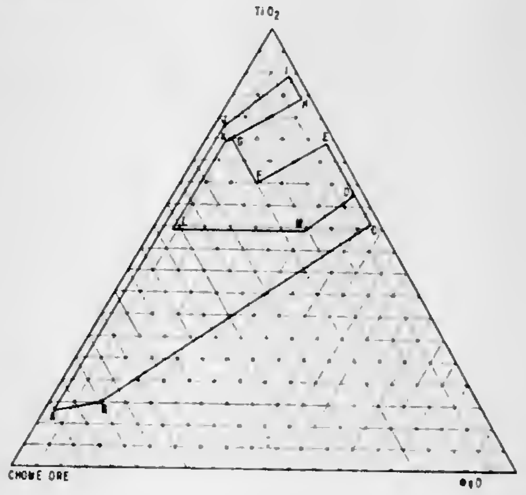
3,528,830
REFRACTORY COMPOSITION

Ben Davies, Pittsburgh, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
No Drawing. Filed Mar. 5, 1968, Ser. No. 710,671
Int. Cl. C04b *35/42; 35/48*
U.S. Cl. 106—57 **5 Claims**

Burned refractory compositions consisting essentially of 5 to 20%, by weight, zircon, 20 to 50% chrome ore, and 30 to 75% dead burned magnesite.

3,528,831
THERMAL SHOCK RESISTANT CERAMIC MATERIALS

Irwin M. Lachman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Sept. 15, 1967, Ser. No. 668,026
Int. Cl. C04b *35/42*
U.S. Cl. 106—59 **2 Claims**



Ceramic bodies composed of a plurality of phases having markedly different coefficients of thermal expansion. The ceramic bodies are characterized by grain boundary and intracrystalline cracking. The ceramics have compositions which fall within the area and along the boundary defined by FIG. A, B, C, D, E, F, G, H, I, J, on the accompanying ternary compositional diagram of the chrome ore-TiO_2-MgO system. Compositions within the area of FIG. D, E, F, G, K, L, M are preferred. Articles are made by molding, pressing or otherwise forming raw material powders to the desired shape and then sintering the materials in an oxidizing atmosphere. Preferred products are liners for exhaust manifolds to facilitate complete combustion of exhaust gases from internal combustion engines or the like thereby reducing air pollution.

3,528,832
ADDITIVES FOR MORTAR AND CONCRETE

Bernt Sture Jörgen Ericsson and Ulf Palm, Ornskoldsvik, Sweden, assignors to Mo och Domsjo Aktiebolag, Ornskoldsvik, Sweden, a corporation of Sweden
No Drawing. Filed Nov. 25, 1966, Ser. No. 596,771
Claims priority, application Sweden, Dec. 1, 1965, 15,580/65
Int. Cl. C04b *13/24*
U.S. Cl. 106—93 **17 Claims**

A set-retardant composition is provided for retarding the setting of inorganic binders with water, comprising a water-soluble nonionic cellulose ether and a water-soluble salt of gluconic acid. An inorganic binder composition is also provided having an inorganic filler and the above set-retardant composition, together with a process for the slow controlled setting of an inorganic binder with water employing such a set-retardant composition.

3,528,833
CAST CELLULOSE ACETATE FILM HAVING HIGH SLIP

Henry T. Taskier, Englewood, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,329
Int. Cl. C08b *27/22;* **C08h** *11/00*
U.S. Cl. 106—171 **10 Claims**

Cast cellulose acetate film characterized by a high slip surface is made by including a small amount of a partial ester of sorbitan and a higher fatty acid such as sorbitan monostearate or sorbitan mono-oleate as an internal slip agent in the plasticized diacetate dope from which the film is cast. As a further option a small amount of a free higher fatty acid may be included to facilitate stripping the freshly cast film from the substrate on which it has been formed.

3,528,834
PRODUCTION OF ZIRCONIUM-BASED CERAMIC PIGMENTS CONTAINING IRON

Joseph Gascon, Thann, France, assignor to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, France, a French body corporate
Filed July 19, 1967, Ser. No. 654,527
Int. Cl. C09c *1/00, 1/22*
U.S. Cl. 106—299 **8 Claims**

Pink ceramic pigments based on zirconium and containing at least 7% by weight of iron can be made by calcining at 700–950° C. a mixture containing a basic zirconium sulphate, enough ferrous sulphate to produce the iron content required, sodium silicozirconate and silica, and subsequently removing sodium sulphate from the product by washing.

3,528,835
PREPARATION OF COLORED CERAMIC PIGMENTS BASED ON SYNTHETIC ZIRCON

Joseph Gascon, Thann, Haut-Rhin, France, assignor to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, France, a corporation of France
No Drawing. Continuation-in-part of applications Ser. No. 524,996, Dec. 23, 1965, and Ser. No. 654,527, July 19, 1967. This application June 9, 1969, Ser. No. 831,781
Claims priority, application France, Dec. 28, 1964, 64; Great Britain, July 22, 1966, 33,101/66; June 10, 1968, 27,540/68
Int. Cl. C09c *1/00*
U.S. Cl. 106—299 **29 Claims**

Synthetic zircon pigments for ceramics are prepared at reduced costs and with improved colorations by heating above 700° C., as in the range 800–900° C., an approximately equimolar mixture of sodium silicozirconate and zirconium sulfate in the presence of silica and of coloring and mineralizing agents, and washing and grinding the product. Sodium sulfate present in excess improves the mineralization. The mixture is calcined in the presence of a non-oxidizing or reducing atmosphere or of gaseous chlorine generated in situ. Its zircon-forming materials are prepared advantageously by reacting powdered sodium silicozirconate frit with an approximately equimolar amount of concentrated sulfuric acid; or by mixing together approximately equimolar quantities of such frit, a basic zirconium sulfate and free silica. Excellent blue pigments are produced when the mixture contains, based on weight contents of ZrO_2+SiO_2, 1.5 to 2.5% of a vanadium compound, e.g., ammonium metavanadate, and pink pigments when it contains 10 to 15% of an iron compound, e.g., $FeSO_4 \cdot 7H_2O$, in the presence of a fluoride and of ammonium chloride or zirconium oxychloride for thermal reactions that yield chlorine via NaCl and SO_3.

3,528,836
PIGMENT OR FILLER AND MATERIALS AND PROCEDURES FOR MAKING THE SAME

William L. Craig, Westport, Conn., assignor to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 447,116
Int. Cl. C09g *23/04;* **C09c** *1/02, 1/36*
U.S. Cl. 106—300 **13 Claims**

The present application discloses a complex composition consisting essentially of TiO_2, SiO_2 and CaO made by precipitation from an acid solution of titanyl sulfate containing calcium and silicate ions dissolved therein, by mixing such solution with an alkaline solution under conditions of high shear.

The application also discloses a complex composition consisting essentially of TiO_2, SiO_2, CaO and $BaSO_4$ made by precipitation from an acid solution of titanyl sulfate containing calcium and silicate ions dissolved therein, by mixing such solution with an alkaline solution containing barium ion dissolved therein, under conditions of high shear.

The application also discloses the method of producing a TiO_2 pigment of increased rutile content by the sulfuric acid process, which comprises introducing into the high shear zone adjacent a rapidly rotating impeller an aqueous acid solution of titanyl sulfate, introducing into said zone an aqueous alkaline solution of an alkali metal in an amount sufficient substantially at least to neutralize said titanyl sulfate solution and precipitate H_2TiO_3, withdrawing from said zone effluent containing said precipitated H_2TiO_3, removing said H_2TiO_3 from its mother liquor, and drying and calcining to TiO_2.

3,528,837
TiO_2 PIGMENTS

Gerard Martin Sheehan, Lynchburg, Va., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed May 8, 1967, Ser. No. 636,628
Int. Cl. C09c *1/36, 3/00*
U.S. Cl. 106—300 **5 Claims**

This invention relates to providing titanium dioxide pigments of improved photochemical resistance, which are made by calcining or combusting a titanium material in the presence of aluminum oxide and then treating the resulting calcined or combusted material with a mixture of hydrous oxides of aluminum, silicon and zinc. The resulting pigment possesses improved resistance to discoloration and chalking upon exposure to ultraviolet light and is particularly useful as a pigmenting material for coating compositions and for opacifying resinous materials including laminates which are conventionally used in wall coverings, counter tops and cabinet facings

3,528,838
COMPOSITE PIGMENT AND PREPARATION THEREOF

Lothar H. Brixner, West Chester, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed July 24, 1967, Ser. No. 655,565
Int. Cl. C09c *1/36*
U.S. Cl. 106—300 **3 Claims**

A composite TiO_2-$CaCO_3$ pigment formed by precipating $CaCO_3$ from a water soluble salt in an aqueous slurry of pigmentary TiO_2.

3,528,839
BLACK PIGMENTS WITH SPINEL STRUCTURE

Horst Weber, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 14, 1967, Ser. No. 622,935
Claims priority, application Germany, Mar. 23, 1966, F 48,734
Int. Cl. C09c *1/22, 1/34*
U.S. Cl. 106—304 **7 Claims**

Black pigments containing copper, chromium and iron oxide with spinel structure having the following composition in atomic weight ratios of

$$Cu/(Cr+Fe)=0.25\text{–}0.5$$
$$Fe/Cr=0\text{–}0.5$$

and a mean particle size of below 0.5μ and a process for their production, wherein a mixture containing copper, chromium, iron and boron having a composition with the following atomic weight ratios

$$Cu/(Cr+Fe)=0.25\text{–}0.5$$
$$Fe/Cr=0\text{–}0.5$$
$$B/(Cu+Cr+Fe)=0.001\text{–}0.1$$
$$Na/B=0.1\text{–}1$$

said elements being in the form of their oxides or compounds forming oxides under the process conditions, is calcined to a temperature of from 1000 to 1200° C. for at least half an hour, thereby forming said black pigments with spinel structure and dis-agglomerating, i.e. grinding, washing and drying the calcined mixture for finishing.

3,528,840
SULFONATED CARBON BLACK

Peter Aboytes, Borger, Tex., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed Nov. 15, 1967, Ser. No. 683,312
Int. Cl. C09c *1/56*
U.S. Cl. 106—307 **2 Claims**

A carbon black having the sulfur containing residual group of thermally decomposed ammonium sulfate or ammonium sulfite bonded thereto producing a sulfonated carbon black and a method of producing sulfonated carbon black by spraying an ammonium sulfate or ammonium sulfite aqueous solution onto wet pellets of carbon black or onto loose black in a pin mixer pelletizer followed by drying at a temperature sufficient to decompose the ammonium compound and drive off the ammonia gas.

3,528,841
METHOD FOR REDUCING TACKINESS OF POLYMER PELLETS

Charles R. Donaldson, Tuscola, Ill., and James S. Yang, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Nov. 15, 1967, Ser. No. 683,151
Int. Cl. B44d *1/094;* **B32b** *5/16*
U.S. Cl. 117—16 **5 Claims**

The use of microfine polyolefin powder as parting agents for polymer pellets.

3,528,842
COPPER COMPOUND-CONTAINING ALGICIDAL SURFACING AND PROCESS

Arnis Skadulis, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed July 22, 1966, Ser. No. 567,051
Int. Cl. B32b *11/02;* **C09d** *5/14*
U.S. Cl. 117—27 **13 Claims**

An algicidal-fungicidal roofing granule comprising base inorganic granules coated with a moisture permeable insoluble pigmented, fired inorganic composition and a quantity of a substantially water-insoluble inorganic copper compound having slight solubility in water under acidic conditions. The copper compound is sufficient to maintain a condition toxic to the growth of algae and fungus on a surface coated with these granules for a period of years.

3,528,843
METHOD OF PREPARING A CAULKED AND RESIN COATED SUBSTRATE

Frederick C. Leitert and Edmund Schalin, Mentor, Ohio, and Michael E. Kucsma, Baton Rouge, La., assignors to Diamond Shamrock Corporation, a corporation of Delaware
No Drawing. Filed Sept. 28, 1967, Ser. No. 671,212
Int. Cl. B32b *15/08;* **B44d** *1/14*
U.S. Cl. 117—45 **4 Claims**

Coatings such as of polyvinyl fluoride can be conveniently applied and fused on surfaces capable of sustaining a high temperature bake, such as a metal surface. However, quite often such surfaces contain crevices around joints or spot welds or other surface irregularities which require that the polyvinyl fluoride, for example, bridge over an indentation or fold in the surface. Desirably such an imperfection is filled prior to application of the polyvinyl fluoride coating or the like. Such a filling can be a caulk composition comprising fluid epoxy resin plus fluid polymercaptan resin, and an accelerator, which composition is cured to a tack free condition prior to application and coalescence of the topcoating.

3,528,844
RADIATION-CURABLE-VINYL RESIN PAINTS AND COATED ARTICLE

William J. Burlant, Detroit, Mich., and Clement R. Taylor, Boise, Idaho, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 479,612, Aug. 13, 1965. This application Mar. 21, 1969, Ser. No. 809,380
Int. Cl. C08f *1/24, 3/42*
U.S. Cl. 117—93.31 **15 Claims**

An article of manufacture having a coating of paint adhered to an external surface thereof is prepared by applying to a substrate a liquid coating of film-forming solution of vinyl monomers and a unique copolymer of vinyl monomers and then crosslinking the vinyl monomers with this copolymer by ionizing radiation, said copolymer being an alpha-beta olefinically unsaturated polymer wherein the concentration of alpha-beta olefinic unsaturation units is limited to the range of about 0.5 to about 5, preferably about 0.5 to about 3 per 1,000 units molecular weight.

3,528,845
PYROLYZATION PROCESS FOR FORMING SILVER FILMS

Harold E. Donley, Monroeville, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
No Drawing. Filed Dec. 12, 1966, Ser. No. 600,794
Int. Cl. B29d *11/00;* **C03c** *17/00*
U.S. Cl. 117—124 **10 Claims**

This invention relates to a method of depositing silver films on substrates. In particular, this invention relates to a pyrolytic method of depositing silver films from a liquid coating composition containing an organic silver compound. More specifically, this invention relates to a novel process and coating solution for forming transparent silver oxide films on a hot refractory substrate by contacting said substrate with a coating solution comprising: (1) a solvent, (2) an amine, and (3) an organic silver compound derived from an organic acid, said silver compound being frequently designated in the art as a silver soap, the utilization of an amine in such coating processes and compositions being heretofore unknown.

3,528,846
BACK-COATED CERAMIC ACOUSTICAL PRODUCT AND METHOD OF MANUFACTURE

Frank Celmer and Ernest B. Waters, Jr., Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
No Drawing. Filed May 22, 1967, Ser. No. 640,420
Int. Cl. C04b *43/02*
U.S. Cl. 117—123 **4 Claims**

A back coating of particles of kaolin clay dispersed in a water slurry is applied to an unfired porous mineral wool-clay board and the coated board is fired to provide a porous ceramic acoustical board product having a barrier coat which effectively cuts down sound transmission.

3,528,847
STAIN-COLORING OF GLASS-CERAMIC MATERIALS

Peter Grego and Robert G. Howell, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 762,364, Sept. 16, 1968, which is a continuation-in-part of application Ser. No. 693,717, Dec. 27, 1967. This application Nov. 14, 1969, Ser. No. 877,054
Int. Cl. C03c *21/00*
U.S. Cl. 117—124 **7 Claims**

This invention relates to the stain-coloring of glass-ceramic materials by an ion exchange process wherein silver, copper, gold, mercury and/or thallium ions are exchanged for lithium, sodium, and/or potassium ions and the colors produced are dependent upon the thermal history of the glass-ceramic, the ion exchange firing schedule, the composition of the staining paste, and the refiring schedule, if any.

3,528,848
POLYURETHANE COATED RUBBER

Hans Zoebelein, Monheim, Rhineland, Germany, assignor to Henkel & Cie, G.m.b.H., Holthausen, Germany, a corporation of Germany
No Drawing. Filed Aug. 17, 1967, Ser. No. 661,195
Claims priority, application Germany, Sept. 14, 1966, H 60,528
Int. Cl. B32b *27/08, 27/40*
U.S. Cl. 117—138.8 **4 Claims**

A rubber article containing a hydroxylated butadiene polymer having a cured polyurethane lacquer coating is disclosed.

3,528,849
METHOD FOR IMPARTING OIL AND WATER REPELLENCY TO TEXTILE MATERIALS

William J. Vullo, Tonawanda, and George M. Wagner, Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed May 22, 1967, Ser. No. 640,401
Int. Cl. D06m *15/00, 15/16*
U.S. Cl. 117—139.5 **10 Claims**

A process for treating textile materials to impart durable water repellency and durable oil repellency thereto which comprises treating the textile materials with a polyisocyanate or urethanepolyisocyanate and a fluorochemical resin and, thereafter, curing the treated material with water. The isocyanates which may be used include those of the polymethylene polyphenyl type, as well as those of the type formed by reacting a polyhydroxy compound containing 3 to 6 OH groups with a diisocyanate, and may also contain from about 0.05% to 3% by weight of tertiary nitrogen. Additionally, the isocyanate products formed by reacting any of the above isocyanates with a diol may also be used. Various fluorochemical resins, as are known in the art for imparting oil and water repellency to fabrics may be used, such as the fluoroalkyl esters of acrylic and methacrylic acid. The fluorochemical resin is applied either simultaneously with or subsequent to the application of the isocyanate material.

3,528,850
ENHANCING THE REPELLENCY OF FIBROUS MATERIALS WITH BIS-(FLUOROALKOXY) ALKYL SILANES

Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Application Apr. 17, 1968, Ser. No. 736,882, now Patent No. 3,484,470, dated Dec. 16, 1969, which is a division of application Ser. No. 623,527, Mar. 16, 1967, now Patent No. 3,420,793. Divided and this application Dec. 4, 1968, Ser. No. 823,197
Int. Cl. D06m *15/30*
U.S. Cl. 117—161 **4 Claims**

The adduct of hexafluoroacetone and an alkali metal fluoride, e.g., $(CF_3)_2CF—OZ$, is reacted with a 1,4-dihalo-2-butene to replace the halo groups with perfluoroisopropoxy groups. A silane containing H bonded to Si—for example, $HSiCl_3$—is then added across the double bond of the intermediate, producing bis-(perfluoroisopropoxy) alkyl silane derivatives which are useful, in both monomeric and polymeric form, for imparting a high degree of water- and oil-repellency to fibrous substrates, e.g., fabrics made from natural or synthetic fibers.

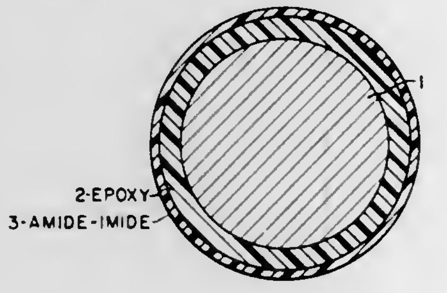
3,528,851
METHOD OF MAKING A PIEZOELECTRIC RESONATOR

Donald J. Koneval, Warrensville Heights, and Daniel R. Curran, Cleveland Heights, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Original application Apr. 19, 1965, Ser. No. 448,923, now Patent No. 3,363,119. Divided and this application Sept. 28, 1967, Ser. No. 684,084
Int. Cl. H01v *7/00*
U.S. Cl. 117—212 **7 Claims**

A piezoelectric resonator comprising a thin wafer of piezoelectric material is formed by providing on at least one major surface thereof a recess or cavity in which the electrode is positioned. The depth dimensions of the recesses are sized to provide a desired over-all thickness of the electroded region relative to the non-electroded region to achieve a desired mass loading of the electroded region without varying the electrode thickness.

3,528,852
DUAL-COATED ELECTRICAL CONDUCTOR

Emil H. Olson, North Muskegon, and Rudolph P. Arndt and Ronald H. Filius, Muskegon, Mich., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Filed Oct. 27, 1965, Ser. No. 505,359
Int. Cl. B44d *1/16;* **H01b** *7/02*
U.S. Cl. 117—218 **3 Claims**



Magnet wire or magnet strip is insulated with dual coatings of epoxy and of amide-imide resin.

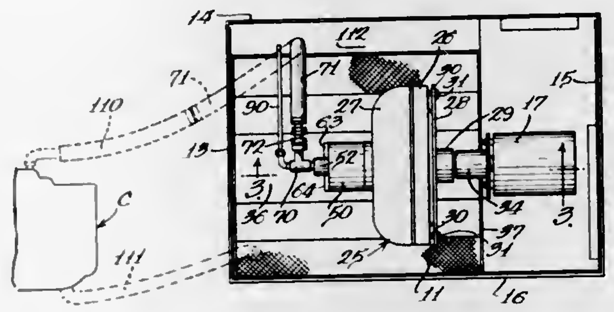
3,528,853
METHOD OF PRODUCING A DRIED STARCH PRODUCT

Charles H. Pelton, Clinton, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 12, 1968, Ser. No. 721,054
Int. Cl. C08b *25/02;* **C13l** *1/08*
U.S. Cl. 127—71 **6 Claims**

Wet common starch containing small amounts of gelatinized starch is extruded into nonfriable forms. These nonfriable forms may be dried without substantial dusting of the dried starch occurring.

3,528,854
TORQUE CONVERTER CLEANING PROCESS AND APPARATUS

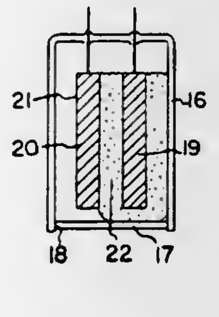
Robert C. Rutherford, Owatonna, Minn., assignor to Owatonna Tool Company, a corporation of Minnesota
Filed Sept. 15, 1967, Ser. No. 668,023
Int. Cl. B08b *9/08, 9/18*
U.S. Cl. 134—23 **11 Claims**



A torque converter cleaning apparatus and method having structure for continuously rotating a torque converter while simultaneously flowing cleaning fluid through the torque converter to have the cleaning fluid lifted and passed through the torque converter due to the rotation thereof, with the introduction of intermittent air pulses into the system to provide high fluid turbulence and effective scrubbing action resulting from limiting the head of the cleaning fluid in the torque converter and the apparatus also being capable of cleaning the oil cooler.

3,528,855
HERMETICALLY SEALED BATTERY AND METHOD OF MAKING

Jiro Kosuga, 2–890 Narimune Suginami-ku, Tokyo, Japan
Filed July 18, 1967, Ser. No. 654,203
Claims priority, application Japan, July 21, 1966, 41/47,355
Int. Cl. H01m *35/00, 35/18*
U.S. Cl. 136—6 **9 Claims**

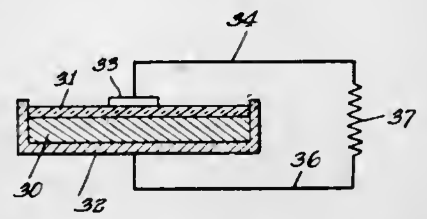


A hermetically sealed secondary storage battery where the negative and positive electrode plates are fully charged or substantially fully charged during the final stage of the charging operation and in which excess electro-chemical

capacity is not required in the negative electrode plate. A hydrogen dispersing or absorbing means is provided in the battery casing so that hydrogen generated within the battery can be dispersed to the exterior of the casing or absorbed and fixed within the hydrogen absorbing means. A method of manufacturing a hermetically sealed battery is also disclosed.

3,528,856
THERMOELECTRIC DEVICE AND METHOD OF MANUFACTURE

Stanford R. Ovshinsky, Bloomfield Hills, Mich., assignor to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 198,308, May 28, 1962, which is a continuation-in-part of application Ser. No. 145,136, Oct. 16, 1961. This application Aug. 29, 1966, Ser. No. 575,895
Int. Cl. H01m *29/00*
U.S. Cl. 136—83 **13 Claims**



A high temperature voltage and current generating device includes an open ended container, a layer of lithium metal in the container, and a layer of a composition in the container in intimate contact with the layer of lithium metal and including as an essential ingredient at least one lithium compound. The device is heated to an elevated temperature for generating substantial D.C. voltage and current in the electrical circuit.

3,528,857
ELECTROCHEMICAL DEVICE COMPRISING AN ELECTRODE CONTAINING NICKEL-COBALT SPINEL

Harry C. Lieb, Rockville Centre, and Harry G. Oswin, Chauncey, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
No Drawing. Continuation-in-part of applications Ser. No. 165,212, Jan. 9, 1962, and Ser. No. 481,156, Aug. 13, 1965. This application Sept. 2, 1966, Ser. No. 576,818
Int. Cl. H01m *13/00, 27/00*
U.S. Cl. 136—86 **3 Claims**

An electrochemical device is described comprising an electrode containing a nickel-cobalt spinel having the formula $NiCo_2O_4$.

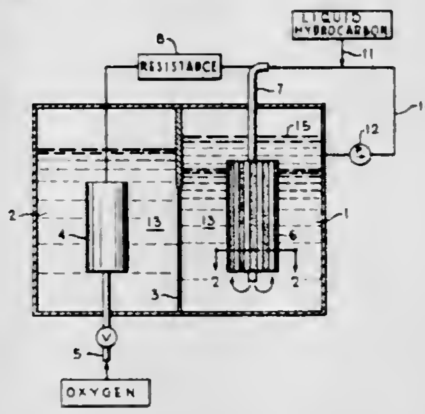
3,528,858
SULFONATED ARYL-SUBSTITUTED POLYPHENYLENE ETHER ION EXCHANGE MEMBRANES

Russell B. Hodgdon, Jr., South Hamilton, Mass., and Allan S. Hay, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 628,411, Apr. 7, 1967. This application Dec. 4, 1968, Ser. No. 785,010
Int. Cl. C08g *23/20*
U.S. Cl. 136—86 **10 Claims**

Our invention relates to a polyphenylene ether having sulfonated appending aryl groups directly attached to backbone phenyl groups. The sulfonated ether may be employed for purposes of ion exchange, and when the ether exhibits an intrinsic viscosity prior to sulfonation of at least 0.3 dl./g. it may be used in ion exchange structures, such as ion exchange membranes. Sulfonation of the appending aryl groups is achieved by blocking the backbone substitution positions with halogen or nitro groups. The resulting sulfonated polyphenylene ether differs from previously known sulfonated polyphenylene ethers in that it is resistant to desulfonation when utilized at higher than ambient temperatures. This renders the material ideally suited for use in fuel cells.

3,528,859
ELECTRODE STRUCTURE FOR WICKING TYPE FUEL CELL

George T. Miller, Lewiston, N.Y., and Arabinda N. Dey, Needham, Mass., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Oct. 5, 1967, Ser. No. 673,105
Int. Cl. H01m *27/04*
U.S. Cl. 136—86 **4 Claims**



Fuel cells equipped with electrodes which operate with liquid fuels substantially insoluble in the electrolyte via a wicking action to contact the fuel, electrolyte and catalyst disposed on the electrode are provided. The selective adsorption or wetting of the electrode surface is effected through the preferential wetting by a liquid fuel of a hydrophobic porous substance placed upon an electrically conductive base or support. This preferential wetting action produces a wicking effect in or on the electrode which results in the continuous wetting of active sites. Fuel cells operating with these electrodes are more efficient than fuel cells operating with conventional porous electrodes.

3,528,860
SURFACE COATING COMPOSITIONS AND THEIR USE

Max Kronstein, New York, N.Y., assignor to Oakite Products, Inc., Berkeley Heights, N.J., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 362,931, Apr. 27, 1964. This application Oct. 4, 1967, Ser. No. 672,714
Int. Cl. C23f *7/08*
U.S. Cl. 148—6.15 **31 Claims**

A film forming wash-primer composition containing (1) finely divided discrete particles of molybdenum trioxide or polyvalent metal molybdate (2) an aqueous dispersion of a stably water-dispersible film-forming resin capable of undergoing cross-linking and (3) a water soluble acidic phosphate-ion-providing compound; which forms a corrosion resistant coating on clean metal to which a finish coating may be applied.

3,528,861
METHOD FOR COATING THE SUPERALLOYS

Richard C. Elam, Rockville, Conn., John A. Petrusha, Westland, Mich., and Frank P. Talboom, Jr., Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
No Drawing. Filed May 23, 1968, Ser. No. 731,649
Int. Cl. B21c *23/22;* **C22f** *1/10*
U.S. Cl. 148—11.5 **7 Claims**

A method of coating the superalloys, particularly with an iron/chromium/aluminum/yttrium alloy, including cold-working and subsequent heat treatment of the coating to minimize the size of the intergranular precipitate and thereby prolong the useful life of the superalloy.

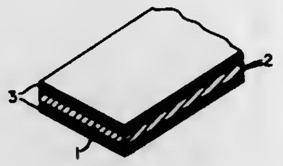
3,528,862
DRAWING RUTHENIUM AND ALLOYS THEREOF TO WIRE

Michael William Jones, Southall, Brian Taylor, London, and Michael David Taylor, Stanmore, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 19, 1968, Ser. No. 738,126
Claims priority, application Great Britain, July 10, 1967, 31,676/67
Int. Cl. C22f *1/14*
U.S. Cl. 148—11.5 **6 Claims**

Improved results in drawing ruthenium or ruthenium alloy wire are obtained with new process involving special control of die temperature. The ruthenium is preheated to a temperature of about 1000° C. to about 1300° C. in a non-oxidizing atmosphere and subsequently drawn through a wire drawing die at a temperature of 900° C. to 1050° C.

3,528,863
GLASS-COATED ELECTRICAL STEEL SHEET

Karl Foster and Joseph Seidel, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 556,337, June 9, 1966. This application Sept. 2, 1966, Ser. No. 576,963
Int. Cl. C04b *35/00*
U.S. Cl. 148—31.55 **9 Claims**



An oriented silicon steel product and method for producing the same is described in which improved magnetostriction and strain sensitivity are obtained by means of bonding a thin glass layer to the surface of the steel.

3,528,864
HIGH IMPULSE EXPLOSIVES CONTAINING TUNGSTEN

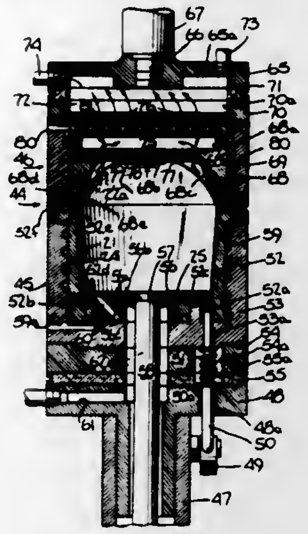
Clarence E. Weinland, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed Sept. 21, 1965, Ser. No. 489,471
Int. Cl. C06b *15/02*
U.S. Cl. 149—92 **3 Claims**

An explosive composition which has improved impulsive effect for each unit volume for use where a minimum volume of explosive is needed for a given level of effectiveness. It consists essentially of a high explosive loaded with tungsten. The tungsten improves the effectiveness of the explosive due to the physical effect of its massivencss in increasing the transfer of momentum and impulse from the explosive to the surrounding bodies.

3,528,865
METHOD OF DEEP-STRETCHING PLASTIC SHEET MATERIAL TO RECEPTACLE SHAPE

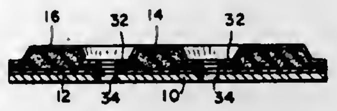
Stephen W. Amberg, St. James, N.Y., and Ralph G. Amberg, Monticello, Ind., assignors, by mesne assignments, to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Original application Dec. 4, 1964, Ser. No. 415,930, now Patent No. 3,445,892, dated May 27, 1969. Divided and this application May 29, 1968, Ser. No. 740,392
Int. Cl. B29c *17/04, 27/16*
U.S. Cl. 156—214 **18 Claims**

Method of forming an unseamed plastic film liner for a receptacle such as a deep draft receptacle, by partially prestretching the film area in direction generally perpendicular to its plane, and then fully stretching the film in opposite direction into conforming relation with the interior of the receptacle, using heat and fluid pressure. Laminate of lower softening temperature plastic material on liner commensurately bonds liner to receptacle. Upper and lower cavity die socket apparatus for controlling shape of liner material and application of heat and fluid pressure to liner material during said forming. Receptacle having "skip seal" joint at bottom plug, and unseamed plastic film interior liner bonded thereto by other plastic material, and using said method.



3,528,866
METHOD OF MAKING LAMINATED PADDED ARTICLE

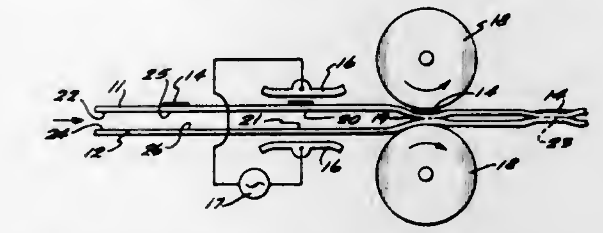
Loren D. Stevens, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Filed Jan. 9, 1967, Ser. No. 608,028
Int. Cl. B32b *5/18;* **C09j** *5/00*
U.S. Cl. 156—220 **4 Claims**



A laminated padded article and method of making it in which there is a rigid panel having a first flexible sheet bonded thereto. A foam elastomer pad is interposed between said first sheet and a second flexible sheet with portions of said pad being compressed and said first and second sheets being fused together through said compressed pad portions.

3,528,867
METHOD FOR SELECTIVE HEAT SEALING OR JOINING OF MATERIALS

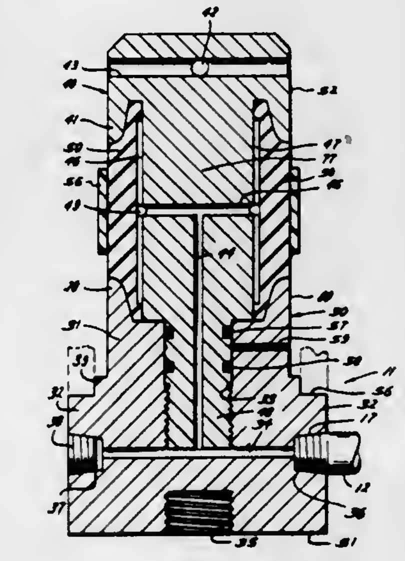
Alfred F. Leatherman, Columbus, Ohio, and William C. Heller, Jr., 3521 N. Shepard Ave., Milwaukee, Wis. 53211; said Leatherman assignor to said Heller
Filed Aug. 15, 1966, Ser. No. 572,580
Int. Cl. B29c *19/02*
U.S. Cl. 156—272 **8 Claims**



A method for selective heat sealing materials at predetermined interfacial surface areas comprises the steps of positioning the material surfaces in opposing abuttable relation, applying a susceptor material to a nonopposing surface of the material in registration with the predetermined interfacial areas, and inducing heat in the susceptor material to seal the opposing surfaces at the interfacial areas.

3,528,868
METHOD FOR COATING THE STANDOFF AREA OF A THREADED COUPLING

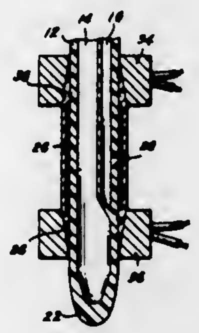
Barnard P. Goodman, Houston, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 13, 1967, Ser. No. 615,545
Int. Cl. B32b *31/04*
U.S. Cl. 156—294 **11 Claims**



A method for bonding a thin plastic ring to the threaded interior surface of a pipe coupling comprises applying an adhesive to the exterior surface of the ring, placing the ring over an expandable rubber sleeve, centering the coupling over the ring, and expanding the rubber sleeve to bond the ring to the coupling.

3,528,869
MANUFACTURE OF PLASTIC CATHETER

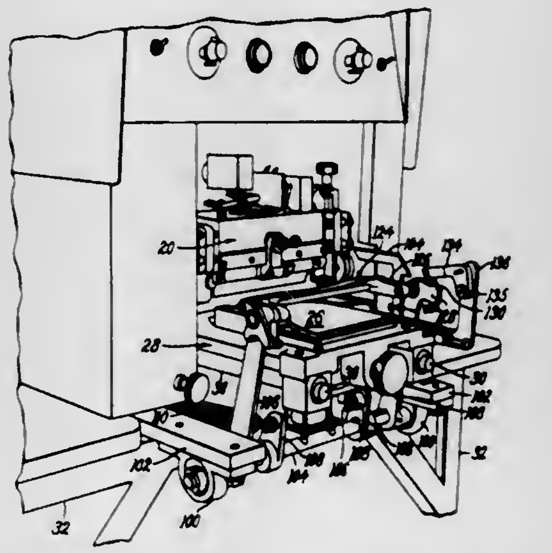
Paul Dereniuk, Woonsocket, R.I., assignor, by mesne assignments, to Davol Inc., Providence, R.I., a corporation of Delaware
Filed Feb. 28, 1968, Ser. No. 709,051
Int. Cl. B29c *27/24*
U.S. Cl. 156—294 **10 Claims**



The method of making a plastic catheter, the significant aspect of which is a novel and improved method for securing the inflatable plastic balloon or sac to the catheter shaft, said method comprising use of heated molds that surround opposite ends of the balloon after the latter has been slid over the catheter shaft, the method further comprising the introduction of pressure into the catheter to cause the catheter to expand into pressurized contact with the molds to cause the ends of the balloon to fuse to the catheter shaft.

3,528,870
MACHINE FOR APPLYING THERMOPLASTIC MATERIAL

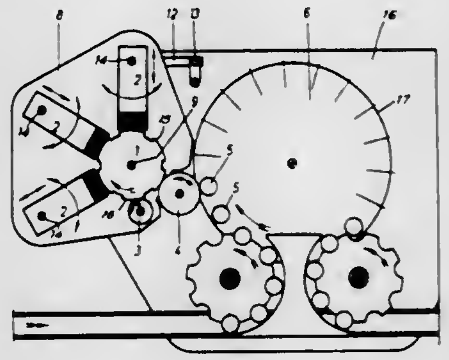
Hans C. Paulsen, Lexington, Mass., assignor to USM Corporation, a corporation of New Jersey
Filed Nov. 10, 1966, Ser. No. 593,492
Int. Cl. A43d *25/00*
U.S. Cl. 156—295 **1 Claim**



A machine for applying molten thermoplastic to a selected area of one side of the vamp portion of a shoe upper, and for progressively applying pressure to a portion of a lining which is laid against the molten thermoplastic material as the material is being applied to the vamp portion. The adhesive acts as a stiffener for the shoe upper.

3,528,871
LABELING MACHINE WITH THREE OF MORE SIMULTANEOUSLY OSCILLATING LABEL MAGAZINES

Karl Alan Münch, Neutraubling, Germany, assignor to Hermann Kronseder, Neutraubling, Germany
Filed Jan. 26, 1968, Ser. No. 700,779
Claims priority, application Germany, Feb. 10, 1967, K 61,381
Int. Cl. B65c *9/14;* **B65h** *3/44*
U.S. Cl. 156—571 **4 Claims**

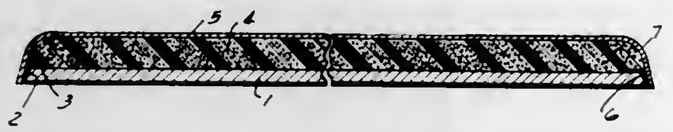


A bottle labeler employing three or more oscillating label magazines which simultaneously oscillate in the same direction as a rotating labeling drum to simultaneously feed labels to the drum. The drum transfers the labels to a label applying turret which applies the labels to spaced bottles in a rotating turret or bottle transporter.

3,528,872

HEAT SEALED ARTICLE WITH BACKING

Carl W. Scholl and Milo L. Raffaelli, Sr., Chicago, Ill., assignors to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Jan. 4, 1967, Ser. No. 607,246
Int. Cl. B32b *1/04;* **B29c** *19/04*
U.S. Cl. 161—44 2 Claims

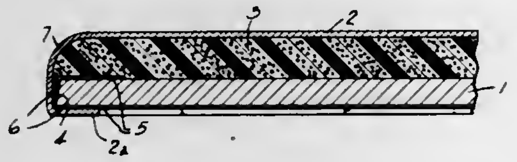


An article having a thermoplastic cover secured to a backing member by electronic heat sealing, there being cushioning means between the cover and backing member in most instances, and the backing member being of fiberboard impregnated with latex or equivalent material to render the same elastomeric, leather in some instances, or any other suitable substance depending upon the intended use of the article.

3,528,873

HEAT SEALED PANEL-LIKE ARTICLE

Carl W. Scholl and Milo L. Raffaelli, Sr., Chicago, Ill., assignors to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York
Filed Jan. 4, 1967, Ser. No. 607,249
Int. Cl. B32b *1/04*
U.S. Cl. 161—44 2 Claims

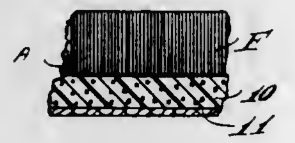


This invention or discovery relates to a panel-like article embodying a relatively soft thermoplastic cover electronically heat sealed to a more rigid yet flexible backing member treated with a suitable thermoplastic film to insure a proper heat seal, there being cushioning means between the cover and the backing member, if so desired. The article may be made in various sizes and contours and may be used for numerous purposes. When the article is completed a goodly portion of one face of the backing remains exposed for securement of the article to a surface desired to be covered, by means of adhesive or in any other satisfactory manner.

3,528,874

HEAT-INSULATING FABRIC AND METHOD OF PREPARING IT

Francis T. Spencer, Biddeford, Maine, assignor to West Point-Pepperell, Inc., West Point, Ga., a corporation of Georgia
Continuation-in-part of application Ser. No. 494,691, Oct. 11, 1965. This application Jan. 13, 1969, Ser. No. 824,326
Int. Cl. B44c *1/08*
U.S. Cl. 161—63 20 Claims

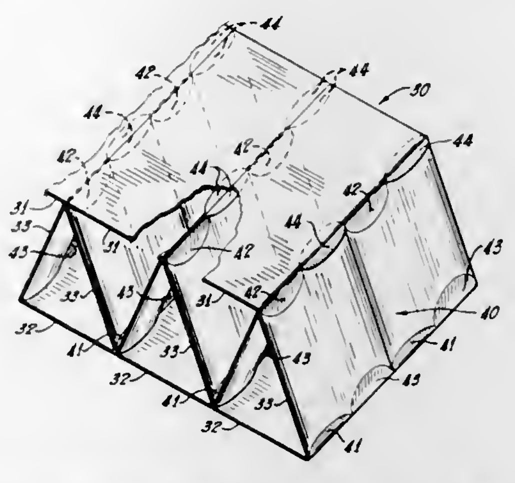


Lamellar material acceptable for use as a bed blanket and comprising a reinforcing ply of textile fabric having from 75% to 97% voids and to one face, at least, of which there is bonded commercial, closed-cell, polyurethane foam sheeting of a thickness of the order of $\frac{3}{32}$ of an inch, the major portion, at least, of the exposed face of any such foam ply being concealed by a level layer of adherent flock fibers, and a method of making such material.

3,528,875

SELF-ALIGNING SANDWICH-TYPE STRUCTURAL PANELS

Donald MacDonald, San Jose, and Roy J. Brown, Los Gatos, Calif., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Continuation of application Ser. No. 403,199, Oct. 12, 1964. This application Mar. 25, 1968, Ser. No. 715,931
Int. Cl. B32b *3/28;* **E04b** *2/32;* **E04c** *2/32*
U.S. Cl. 161—132 5 Claims

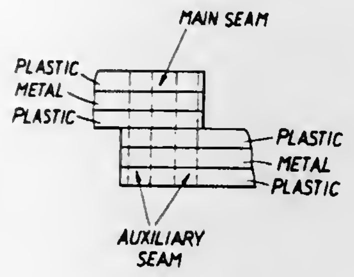


Sandwich type panels which have two opposed facing members separated and supported by webs diagonally inclined between the facing members, the webs being corrugated throughout their length and/or having planar spacing and supporting surfaces to cause the product to be self-aligning and self-supporting when folded.

3,528,876

METHOD OF JOINING PLASTIC MATERIAL TO FORM MAIN AND SECONDARY ADJACENT SEAMS

Manfred von Clavé-Bouhaben, Berlin-Charlottenberg, and Hans Roemgens, Moenchengladbach, Germany; said Roemgens assignor to said von Clavé-Bouhaben and Rheinische Blattmetall Aktiengesellschaft, Grevenbroich (Lower Rhine), Germany
Filed Feb. 9, 1966, Ser. No. 526,151
Claims priority, application Germany, Feb. 12, 1965, R 39,892
Int. Cl. B29d *23/10;* **B32b** *3/20*
U.S. Cl. 161—139 18 Claims

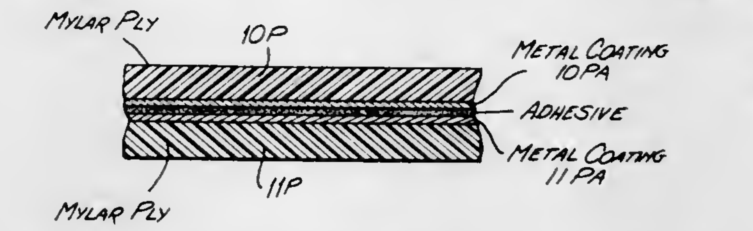


A method of joining portions of fusible plastic material to one another. The portions are overlapped to a predetermined width. Heat is directly applied to a zone of the overlapped region which is narrower than the overlapped region to weld the portions together in this zone and form a main seam. Heat transfer from the main seam to the material adjoining the main seam results in placing this material into fusible state. This material adjacent the main seam but constituting part of the overlapping is maintained in contact so as to form a discrete secondary seam adjacent to the main seam.

3,528,877

LAMINATED PLASTIC METALLIZED YARN AND METHOD FOR FORMING AND DYEING THE SAME

Walter G. Scharf, 243 Palmer Court, Ridgewood, N.J. 07450
Filed June 22, 1967, Ser. No. 648,002
Int. Cl. D02g *3/00*
U.S. Cl. 161—175 2 Claims



A metallized yarn fabricated by metallizing two webs of transparent synthetic plastic film, the film being laminated together by an adhesive layer which is bonded to the metallized faces to form a combined web which is then slit to yarn size. The yarn may be subjected to a swelling agent to render the plastic of the yarn receptive to dyeing agents which may be employed in subsequent treatments to produce color combinations with the metallic coating.

3,528,878

RUBBER-FABRIC BONDED STRUCTURE AND METHOD OF MAKING SAME

Hyman R. Lubowitz, Redondo Beach, and Eugene A. Burns, Palos Verdes Peninsula, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
No Drawing. Filed Aug. 26, 1966, Ser. No. 575,252
Int. Cl. B32b *27/26, 31/26;* **C08g** *33/10*
U.S. Cl. 161—188 9 Claims

A chain extended polydiene having a peroxide free radical initiator dispersed therethrough bonds rubber to fabric upon being cured to a hard, strong resin. The polydiene may be selected from 1,2-polydiene or 3,4-polyisoprene.

3,528,879

PROCESS FOR MAKING PAPER AND AIR-PERVIOUS CARDBOARD OR BOARD-LIKE STRUCTURES PREDOMINANTLY OF POLYTETRAFLUOROETHYLENE

Yutaka Kometani, Hyogo-ken, Shun Koizumi, Osaka, and Kazuo Kubota and Takeaki Nakazima, Osaka-fu, Japan, assignors to Daikin Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan
No Drawing. Filed Oct. 12, 1964, Ser. No. 403,367
Claims priority, application Japan, Oct. 14, 1963, 38/54,483; Nov. 13, 1963, 38/60,627; June 11, 1964, 39/32,995; June 17, 1964, 39/33,932
Int. Cl. D21f *11/00;* **D21h** *5/12*
U.S. Cl. 162—157 5 Claims

A process for producing paperlike or boardlike air-pervious sheets and such air-pervious sheets so produced which process comprises dispersing a polytetrafluoroethylene fibrous powder having an average fiber length of 100 to 5000 microns, an average shape factor of not less than 10, and an anisotropic expansion factor of 1.30 to 7.00 in a liquid whose surface tension at 30° C. is below 40 dynes per centimeter with subsequent formation of a web from such dispersion and sintering thereof. The dispersion may also contain a thermoplastic resin powder such as selected from the group consisting of polytetrafluoroethylene particles and tetrafluoroethylene-perfluoroolefin copolymer particles.

3,528,880

PRODUCTION OF BIS(1,2:5,6-O-ISOPROPYLIDENE-3 - O - THIOCARBONYL - α - D - GLUCOFURANOSE) DISULFIDE AND PAPER CONTAINING SAME

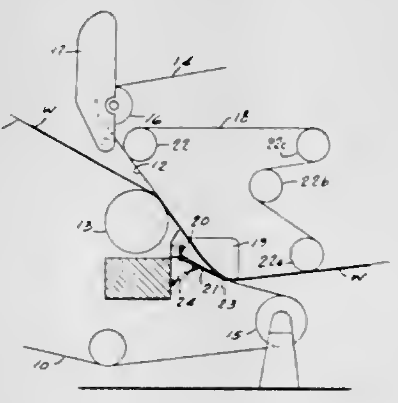
William M. Doane, Morton, and Baruch S. Shasha, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 8, 1967, Ser. No. 659,233
Int. Cl. C08b *19/00;* **C13k** *9/00;* **D21b** *3/20*
U.S. Cl. 162—175 2 Claims

Quantitative yields of bis(1,2:5,6-di-O-isopropylidene-3-O-thiocarbonyl - α - D-glucofuranose) disulfide are obtained in only 1 hour from 1,2:5,6-di-O-isopropylidene-α-D-glucofuranose by reacting a DMSO solution of the latter with sodium hydroxide and carbon disulfide, cooling the resulting solution to 5° C., adding sufficient acetic acid to neutralize excess alkali, oxidatively crosslinking the resulting xanthate to the disulfide with aqueous iodine, and extracting the desired disulfide derivative with ether.

3,528,881

FELT PICKUP ARRANGEMENT FOR PAPER SHEET FORMED ON A PAPERMAKING MACHINE WIRE

Louis M. Stuebe, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Mar. 7, 1966, Ser. No. 532,440
Int. Cl. D21f *2/00*
U.S. Cl. 162—306 5 Claims



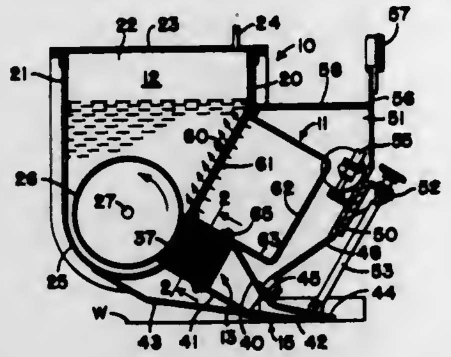
Pick-up arrangement for Fourdrinier type papermaking machine in which a pick-up slipper maintains the pick-up felt in contact with the take-off run of the wire. The pick-up slipper has a sharp angle of divergence from the wire, which increases the expansion rate of the felt and the velocity of the flow of water back into the felt to wash the sheet into the felt by the expansion of the felt as the felt leaves the wire. A weir is provided beneath the take-off run of the Fourdrinier wire and has a blade contacting the wire under the slipper and transferring moisture from the weir to the wire onto the sheet and effects a uniform flow of water to the backside of the wire adjacent the incoming side of the back flow zone of the felt.

3,528,882

REINFORCED HEADBOX FOR PAPER MACHINE

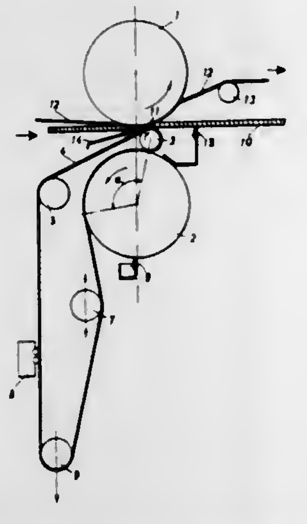
Willard C. Notbohm, Watertown, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 384,640, July 23, 1964. This application June 14, 1967, Ser. No. 646,043
The portion of the term of the patent subsequent to June 27, 1986, has been disclaimed
Int. Cl. D21f *1/02*
U.S. Cl. 162—342 5 Claims

A paper machine headbox assembly especially adapted for use as a secondary headbox incorporates a multiple tube assembly unit which connects the stock supply chamber with the slice assembly and which serves also as the main structural element for reinforcing the headbox assembly and supporting the slice lip assembly with respect to the forming wire of the paper machine. A stock supply header is built into the headbox so that it also functions as a structural element as well as a header.



3,528,883
DEVICE AT PRESSES FOR DEWATERING PAPER AND PULP WEBS

Börje Arvid Lundin, Halmstad, Sweden, assignor to Nordiska Maskinfilt Aktiebolaget, Halmstad, Sweden, a corporation of Sweden
Filed May 22, 1967, Ser. No. 640,091
Claims priority, application Sweden, June 6, 1966, 7,722/66
Int. Cl. D21f *3/08*
U.S. Cl. 162—358 **8 Claims**

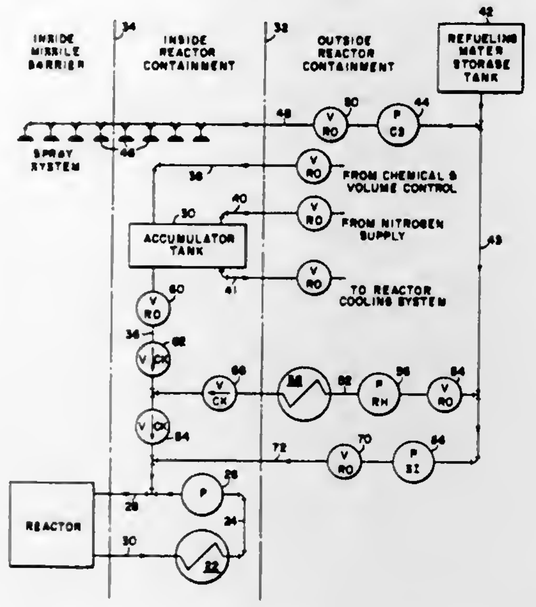


The present invention relates to a press for dewatering a humid or a wet fibre web, this press being of the kind having an upper presser roller and a lower driving roller and between them a smaller presser roller and the purpose of the invention is to provide a more even pressure which has been achieved by letting an endless, porous (open) wire of cloth which is difficult to compress, run over the small presser roller and through the press nip between the upper presser roller and the smaller presser roller and under tension about the smaller presser roller, the latter then serving as a pulley for said wire or cloth.

3,528,884
SAFETY COOLING SYSTEM FOR A NUCLEAR REACTOR

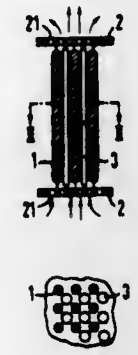
Alan R. Collier, Pittsburgh, and Robert J. Creagan, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1967, Ser. No. 676,987
Int. Cl. G21c *9/02*
U.S. Cl. 176—37 **4 Claims**

An augmented emergency cooling system to eliminate the possibility of fuel clad melting in the core of a nuclear reactor is disclosed wherein a supply of water under pressure which may contain a neutron poison is automatically injected into the pressure vessel in the event of a loss-of-coolant accident. Check valves which are normally held in their closed position by the higher normal pressure in the nuclear reactor pressure vessel are opened reflexively to allow ingress of cooling fluid when a loss-of-coolant accident lowers the pressure in the fuel containing vessel. The coolant flow thereby produced maintains a safe temperature distribution until the standby water pumping systems can reach a fully operational condition.


INSIDE MISSILE BARRIER
INSIDE REACTOR CONTAINMENT
OUTSIDE REACTOR CONTAINMENT
REFUELING WATER STORAGE TANK
SPRAY SYSTEM
FROM CHEMICAL & VOLUME CONTROL
FROM NITROGEN SUPPLY
TO REACTOR COOLING SYSTEM
ACCUMULATOR TANK
REACTOR

3,528,885
FUEL ELEMENT FOR NUCLEAR REACTORS

Hermann Kumpf, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Continuation of application Ser. No. 550,812, May 17, 1966. This application Dec. 11, 1967, Ser. No. 689,729
Claims priority, application Germany, May 19, 1965, S 97,170
Int. Cl. G21c *3/32*
U.S. Cl. 176—78 **9 Claims**



Nuclear fuel element for water-cooled reactors having a supercritical pressure zone includes a plurality of fuel rods located spaced from and substantially parallel to one another, a plurality of tubular inserts located intermediate the fuel rods and formed, on a side thereof facing toward the fuel rods, with flow-guiding and vortex-producing means for a fluid coolant traversing the fuel element. The flow-guiding means serve simultaneously for spacing the fuel rods relative to each other, and the inserts are of such construction that the coolant on the side of the inserts facing away from the fuel rods is of average lower temperature than the coolant on the side of the inserts facing toward the fuel rods. Also provided are means for distributing the coolant which are located at only one end of the fuel element and are formed with means for supplying the coolant to the fuel element and for discharging the coolant therefrom.

3,528,886
PROCESS FOR HALOGENATING STEROIDS

Saul L. Niedleman, Lawrence Township, and Seymour D. Levine, North Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,157
Int. Cl. C07c *167/00*
U.S. Cl. 195—51 **4 Claims**

The disclosure relates to a microbiological process for preparing bromohydrin steroids from those that are unsaturated in the 9(11)-position. The holo steroids formed are useful as anabolic agents if of the androstane series and progestational agents if of the pregnane series.

3,528,887
SYNTHESIS OF L-ASPARAGINASE

Robert S. Robison, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 1, 1968, Ser. No. 702,172
Int. Cl. C12d *13/10*
U.S. Cl. 195—66 **4 Claims**

This invention relates to a new and improved process for preparing the enzyme L-asparaginase. In accordance with the process of this invention, L-asparaginase is obtained in increased yields from cells of *Escherichia coli* grown in a fermentation medium containing glycerol.

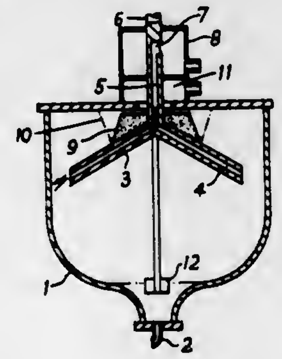
3,528,888
REAGENT AND METHOD FOR ASSAYING ALPHA-HYDROXYBUTYRATE DEHYDROGENASE

Alfred Deutsch, Los Angeles, Calif., assignor to Calbiochem, Los Angeles, Calif., a corporation of California
No Drawing. Application June 30, 1966, Ser. No. 561,757, which is a continuation-in-part of application Ser. No. 320,004, Oct. 30, 1963. Divided and this application June 11, 1968, Ser. No. 735,993
Int. Cl. G01n *31/14*
U.S. Cl. 195—103.5 **3 Claims**

Substantially anhydrous, solid assay materials for the determination, inter alia, of Reagent for Assaying Alpha-Hydroxybutyrate Dehydrogenase, are rendered storage stable by the presence of certain polyhydric compounds preferably mannitol, sorbitol, lactose or polyvinyl alcohol.

3,528,889
CONTINUOUS FERMENTATION APPARATUS

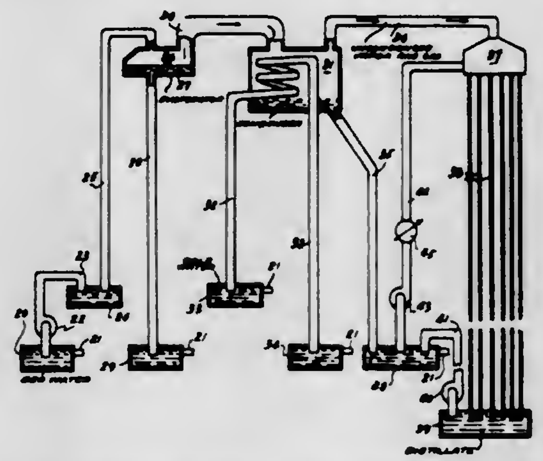
Antony David Portno, Salfords, near Redhill, England, assignor to Brewing Patents Limited, London, England, a British company
Filed Mar. 31, 1967, Ser. No. 627,363
Claims priority, application Great Britain, Apr. 15, 1966, 16,745/66
Int. Cl. C12b *1/26;* **C12c** *11/04*
U.S. Cl. 195—135 **1 Claim**



In a continuous fermentation process the fermentation vessel is provided with a rotor having a liquid outflow passage arranged on its axis so that fermented liquor may be displaced through such passage and the amount of micro-organism carried out in such liquor may be reduced by the centrifugal action of the rotor. The fermented liquor may reach the axial outflow passage through a series of upwardly inclined passages leading from the periphery of the rotor.

3,528,890
DISTILLATION OF SALINE WATER TO RECOVER FRESH WATER

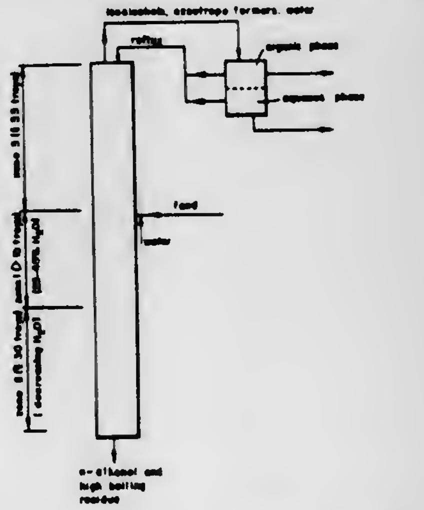
Melvin Henry Brown, Leechburg, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 10, 1966, Ser. No. 571,514
Int. Cl. B01d *1/28;* **C02b** *1/06*
U.S. Cl. 203—4 **3 Claims**



Method of purifying water, such as sea water, by low temperature evaporation thereof under conditions of reduced pressure to produce a gaseous mixture of water vapor and non-condensible gas and, subsequent to substantial condensation of the water vapor, encapsulation of the remaining uncondensed water vapor and the non-condensible gases in a downwardly flowing vertical column of encapsulating liquid.

3,528,891
PURIFICATION OF N-ALKANOLS HAVING FOUR TO FIVE CARBON ATOMS

Konrad Rauch and Walter Schmeidmeir, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed Oct. 9, 1967, Ser. No. 673,936
Claims priority, application Germany, Oct. 11, 1966, 1,283,216
Int. Cl. B01d *3/36;* **C07c** *27/30*
U.C. Cl. 203—96 **5 Claims**



An improved process for the recovery of pure n-alkanols having four to five carbon atoms from hydrogenated oxo reaction mixtures with the separation of substances forming azeotropes by distillation in the presence of water and with simultaneous dehydration to a water content of less than 0.02% by weight in only one column, in which a zone of more than ten theoretical trays having a definite water content is maintained below the feed point, the water content in the said zone being from 25 to 45% by weight, and another zone of at least thirty theoretical trays is maintained above the point of withdrawal of dehydrated n-alkanols and beneath the said first zone, the water content in said second zone decreasing downwardly, and the isoalkanols together with the substances forming azeotropes being separated above the point where the starting mixture is fed in.

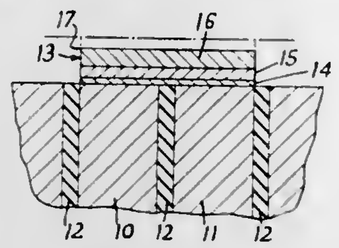
3,528,892
PLATING METHOD

Joseph J. Mazur, 10119 Elkwood St., Sun Valley, Calif. 91352
No Drawing. Filed Apr. 8, 1968, Ser. No. 719,679
Int. Cl. B41c *3/08;* **C23b** *5/48*
U.S. Cl. 204—15 **5 Claims**

A process for preparing an improved metal coating finish selected from an alloy having from 55 to 100% tin and from 0 to 45% lead, which process comprises plating the alloy onto a metal substrate and subsequently fusing the alloy by immersion into a hot oil bath which has been treated with a small amount of an oxidizing agent.

3,528,893
VACUUM DEPOSITING AND ELECTRODEPOSITING METHOD OF FORMING A THERMOELECTRIC MODULE

Ian Robert Arthur Christie, Twickenham, and Derek Frank Case, Sunbury, England, assignors to United Kingdom Atomic Energy Authority, London, England, a British authority
Filed Nov. 17, 1967, Ser. No. 684,029
Claims priority, application Great Britain, Nov. 22, 1966, 52,187/66
Int. Cl. C23b *5/50, 5/64*
U.S. Cl. 204—38 **2 Claims**



Contact strap formation for interconnecting the ends of pairs of thermoelectric members in an encapsulated thermoelectric power generator or refrigerator module which comprises three or more metal layers deposited one upon the other, the first lying adjacent the ends of the thermoelectric members being of a metal, such as gold, having the properties of good adherence and low contact resistance to and non-poisoning of the thermoelectric member materials, the second being of a metal, such as nickel, having the property of acting as a barrier against diffusion of the metal of the third, outwardly disposed, layer into the thermoelectric members and the third being of a metal, such as copper, which has high electrical conductivity. A fourth layer of a non-tarnishing metal may be deposited on the third layer.

3,528,894
METHOD OF ELECTRODEPOSITING CORROSION RESISTANT COATING

William B. Stoddard, Jr., Matawan, and Warren H. McMullen, East Brunswick, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 25, 1966, Ser. No. 574,923
Int. Cl. C23b *5/08, 5/46, 5/50*
U.S. Cl. 204—40 **13 Claims**

In accordance with certain of its aspects, this invention relates to novel products and to a process for preparing a nickel surface characterized by its ability to receive a chromium plate possessing a high degree of corrosion resistance which comprises electrodepositing onto a basis metal first nickel plate having a low tensile stress of less than about 2100 kg./cm.^{2}; and electrodepositing into said first nickel plate an outer nickel plate having a high tensile stress of at least about 8400 kg./cm.^{2} and a thickness of about 0.1–0.5 micron.

3,528,895
PLATING LOW STRESS BRIGHT RHODIUM

Atkin Yervant Simonian, Fort Lee, N.J., assignor to Sel-Rex Corporation, Nutley, N.J., a corporation of New Jersey
No Drawing. Filed July 10, 1967, Ser. No. 651,998
Int. Cl. C23b *5/24, 5/32*
U.S. Cl. 204—44 **3 Claims**

An aqueous acid electrolyte for the deposition of bright low stress rhodium containing rhodium and copper ions in synergistic combination with sulfamic acid.

3,528,896
PROCESS FOR ELECTROCHEMICALLY CLEANING AND BRIGHTENING COPPER ALLOY AND BRASS STRIP

Charles Davidoff, Manhasset, N.Y., Albert E. Howe, Columbus, Ohio, and Sheldon W. Dean, Hamden, Conn., assignors to Olin Corporation, a corporation of Virginia
No Drawing. Filed Apr. 17, 1968, Ser. No. 721,936
Int. Cl. C23b *1/00*
U.S. Cl. 204—141 **15 Claims**

A process for cleaning cooper alloy strip is provided comprising soaking the strip in an electrolyte solution of polyphosphate and organic hydroxycarboxylic acid, and making the strip the anode in an electrochemical cell, the electrolyte in said cell being a solution of polyphosphate and organic hydroxycarboxylic acid.

3,528,897
PHOTOLYSIS OF TETRAZOLES AND TETRAZOLIDES

Peter Scheiner, Princeton, N.J., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 7, 1967, Ser. No. 688,690
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 **21 Claims**

A tetrazole is subjected to specified electromagnetic radiation to photolyze the same to nitrogen gas and a reactive 1,3-dipolar intermediate, and the intermediate is converted into a ring compound. A tetrazole can be converted to a tetrazolide and the latter can then be subjected to the radiation.

3,528,898
PROCESS FOR THE PREPARATION OF MACROCYCLIC COMPOUNDS BY PHOTOLYTIC DECOMPOSITION OF CYCLIC KETONE PEROXIDES

Paul R. Story, Athens, Ga., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed Jan. 15, 1968, Ser. No. 697,593
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 **7 Claims**

Macrocyclic compounds are produced when cyclic ketone di- and triperoxides are decomposed by irradiation with ultraviolet light or by heating to a temperature above 100° C.

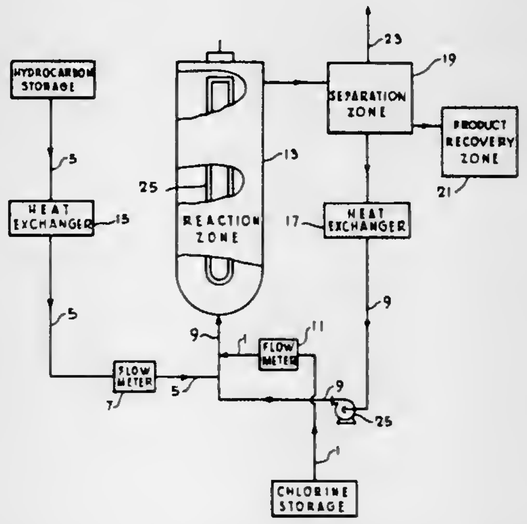
3,528,899
METHOD OF BROMINATING THE SIDE CHAIN OF AN ALKYL BENZENE

Emil Plander, 54 ul. 28 Pluku, Jindrich Zahalka, 2545/78 Na Chodovci, and Viktor Formacek, 24 Vratislavova, all of Prague, Czechoslovakia
No Drawing. Filed Feb. 7, 1966, Ser. No. 525,309
Claims priority, application Czechoslovakia, Feb. 9, 1965, 865/65
Int. Cl. B01j *1/10*
U.S. Cl. 204—163 **16 Claims**

Side chain bromination of an alkyl benzene is carried out by subjecting a reaction mixture which consists essentially of an alkyl benzene and free bromine to ionizing radiation having an energy of between 0.001 and 20 mev. at a dose rate of between 0.5–100,000 rad./sec.

3,528,900
PHOTOCHLORINATION PROCESS

David S. Rosenberg and Fred T. Olotka, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed May 31, 1966, Ser. No. 554,184
Int. Cl. B01j *1/10*
U.S. Cl. 204—163 **8 Claims**



A continuous process for photochemical chlorination of saturated aliphatic and alicyclic hydrocarbons of 3 to 5 carbon atoms per molecule comprises maintaining liquid polychlorohydrocarbon in a circulating stream in communication with an external two stage reaction zone containing a main body of liquid polychlorohydrocarbon, adding liquid hydrocarbon into the externally circulating stream of liquid polychlorohydrocarbon, adding gaseous chlorine to the mixture of liquid hydrocarbon and liquid polychlorohydrocarbon, and irradiating the mixture, whereby chlorination is effected, after which the desired polychlorohydrocarbon is withdrawn as a liquid and is recovered from the externally circulating stream leaving the reaction zone.

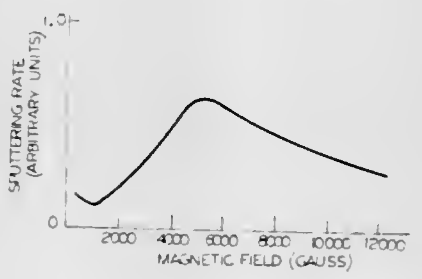
3,528,901
TREATMENT OF EFFLUENTS BY THE REVERSE OSMOSIS PROCESS

John F. Wallace, Didcot, and John G. Ransom, Abingdon, England, assignors to Pressed Steel Fisher Limited, Cowley, Oxford, England, a corporation of Great Britain
Filed Mar. 19, 1968, Ser. No. 714,243
Claims priority, application Great Britain, Mar. 22, 1967, 13,432/67
Int. Cl. B01d *13/00, 35/00;* **C23b** *13/00*
U.S. Cl. 204—181 **2 Claims**

A painting plant in which articles are coated with a water-borne paint and then water rinsed, the rinse water being conveyed back to the coating tank, the contents of which are conveyed under pressure to a reverse osmosis unit to separate water and low concentrate solutions of pigments and resins, the high concentrate solution of resins and pigments being conveyed to a filter bank, the output from which is passed back to the reverse osmosis unit or under pressure to a second reverse osmosis unit to separate still further relatively high and low concentration of pigments and resins, the circulation of the effluent continuing until separation is substantially complete.

3,528,902
METHOD OF PRODUCING THIN FILMS BY SPUTTERING

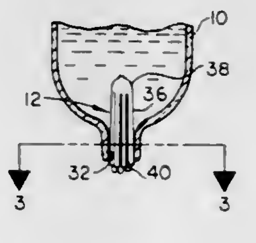
Kiyotaka Wasa, Osaka-shi, and Shigeru Hayakawa, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Oct. 3, 1967, Ser. No. 672,516
Claims priority, application Japan, Oct. 4, 1966, 41/65,864, 41/65,865, 41/65,866
Int. Cl. C23c *15/00*
U.S. Cl. 204—192 **6 Claims**



An improved method of producing thin films by a cathodic sputtering process in a sputtering apparatus, capable of efficiently making homogeneous, thin films, said sputtering apparatus is of a coaxial cylinder type and comprises a pair of cylindrical electrodes, an outer cylindrical electrode, and an inner cylindrical electrode surrounded at least partially by said outer cylindrical electrode. One of said pair of cylindrical electrodes is a cathode provided with a smooth surface layer of material to be deposited. The other of said pair of cylindrical electrodes is an anode adapted to have substrates secured to it. Said sputtering apparatus further comprises voltage supplying means for forming a discharge between said pair of cylindrical electrodes, and means for creating a transverse magnetic field, the magnetic flux density of which is higher than 1,000 gauss.

3,528,903
LIQUID JUNCTION STRUCTURE

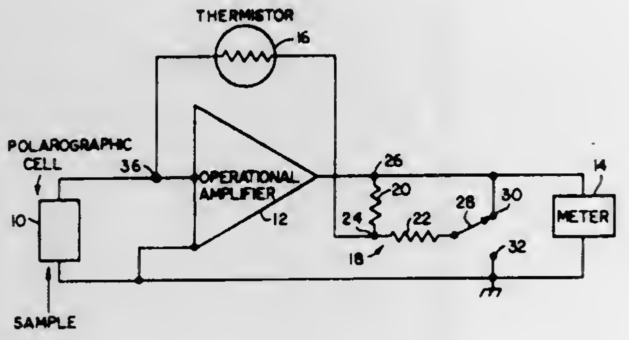
John T. Taylor, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Jan. 24, 1968, Ser. No. 700,082
Int. Cl. G01n *27/30, 27/40*
U.S. Cl. 204—195 **4 Claims**



The disclosure describes a liquid junction structure for a reference electrode or the like having a plug composed of a plurality of filaments joined at one end by fusion, cement or hardened glass depending upon the plug material.

3,528,904
RANGE SCALE CIRCUIT INCLUDING TEMPERATURE COMPENSATION ELEMENT

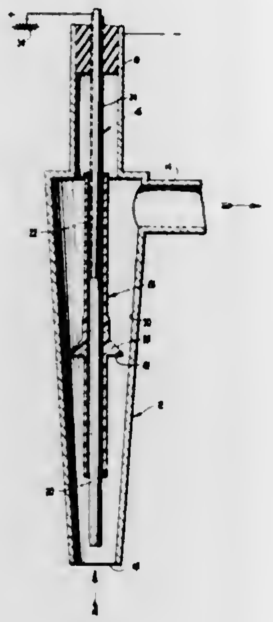
Arnie L. Cliffgard, Fountain Valley, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Apr. 12, 1968, Ser. No. 721,030
Int. Cl. G01n *27/46*
U.S. Cl. 204—195 **3 Claims**



A range scale circuit for a portable gas analyzer system including an element for temperature compensation is disclosed. The system comprises a sensing polarographic cell connected to an operational amplifier which is connected to an indicating meter. The feedback loop of the operational amplifier comprises a temperature compensating element followed by a range selector circuit which includes two resistors arranged such that regardless of the position of the range selection switch, the impedance to which the temperature compensation is connected remains the same.

3,528,905
ELECTROLYTIC STERILIZATION

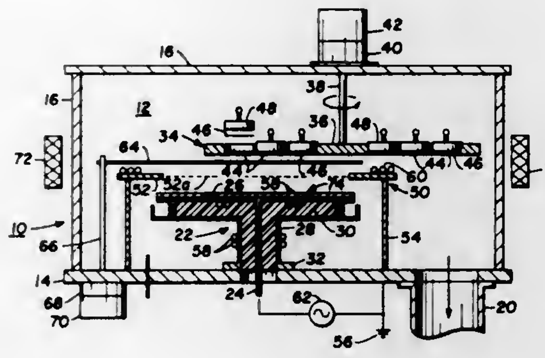
George Miller, Bogata, Colombia, assignor to Ethel C. Fornes, Springville, N.Y.
Filed Mar. 22, 1968, Ser. No. 715,230
Int. Cl. B01k *3/00, 3/04*
U.S. Cl. 204—272 **8 Claims**



The concentration of metallic ions electrolytically introduced into water for sterilization thereof is maintained substantially constant by automatically exposing more or less of the metallic electrode in response to the flow rate of water passing the electrode.

3,528,906
RF SPUTTERING METHOD AND SYSTEM

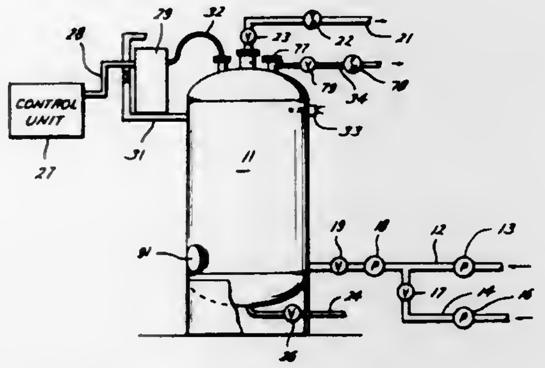
John H. Cash, Jr., Richardson, and James A. Cunningham, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 5, 1967, Ser. No. 643,613
Int. Cl. C23c *15/00*
U.S. Cl. 204—298 **10 Claims**



A method and system for RF sputtering thin conducting and thin insulating films on a semiconductor substrate using a first electrode for supporting a source material and an apertured second electrode. The RF voltage is applied across the first and second electrodes. The substrate is supported by a third electrode and exposed to atoms sputtered from the source which pass through the apertured second electrode. The third electrode may be at the same potential as the second electrode, or at a different potential to carry out bias sputtering. The system includes multiple pairs of first and second electrodes for multiple film deposition without breaking vacuum and a rotating third electrode which moves the substrates past the apertures in the second electrodes during sputtering to eliminate shadowing and to further enhance cooling. A shutter is provided to prevent crosscontamination of the idle sources and the film being deposited on the substrate.

3,528,907
ELECTRIC TREATMENT OF CONDUCTIVE DISPERSIONS

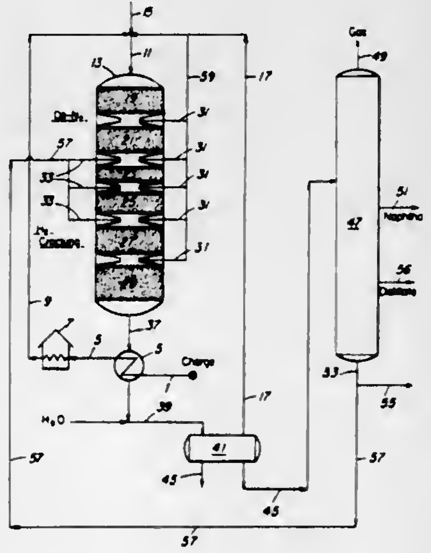
Frederick D. Watson and Joseph D. Winslow, Jr., Houston, Tex., assignors to Petrolite Corporation, St. Louis, Mo., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 717,133
Int. Cl. B03c *5/02;* **C10g** *33/02*
U.S. Cl. 204—302 **9 Claims**



A process and apparatus for electrically resolving a dispersion carrying water-soluble impurities and having an electrical conductivity greater than about 1×10^{-8} mhos/centimeter. The dispersion is formed with immiscible external and internal liquid phases. These phases are formed of a liquid organic material and a more conductive aqueous material, respectively. The dispersion is subjected to an electric field from a non-direct current voltage which produces a voltage gradient not in excess of about 1000 volts per each inch the field traverses the dispersion. The dispersion flows continuously from the electric field into a settling zone in which substantially uniform flow conditions exist. The treated organic material produced by the electric field is separated from the aqueous material and impurities. About 5 to 35 volume percent of water may be admixed with the dispersion prior to treatment in the electric field.

3,528,908
CATALYTIC HYDROCRACKING PROCESS EMPLOYING ASCENDING REACTION TEMPERATURES

Vernon O. Bowles, Katonah, N.Y., and Joe E. Penick, Rolling Hills, Calif., assignors to Mobil Oil Corporation, a corporation of New York
Filed Nov. 17, 1967, Ser. No. 684,065
Int. Cl. C10g *23/00, 13/02*
U.S. Cl. 208—89 **6 Claims**



Gasoline boiling range hydrocarbons are produced by passing a relatively high boiling petroleum hydrocarbon feed containing nitrogen and sulfur impurities sequentially in contact with a first hydrogenation catalyst and then one or more hydrocracking catalysts arranged in series in one or more reactors wherein each reactor contains a plurality of catalyst beds. In the plurality of catalyst beds the hydrocarbon reactant material in the presence of hydrogen is initially contacted with a catalyst which operates efficiently at relatively low temperatures to convert combined nitrogen to ammonia and thereafter the hydrocarbon feed contacts a catalyst or catalysts which operate(s) more efficiently at relatively higher temperatures and demonstrate(s) a greater tolerance to nitrogen. The exothermic heat released from the reactions is employed to advantage to maintain a desired ascending temperature through the plurality of catalyst beds in the direction of reactant flow.

3,528,909
CONVERSION OF METALS-CONTAINING HYDROCARBON OILS

Robert J. White, Pinole, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Sept. 25, 1967, Ser. No. 670,443
Int. Cl. C01g *17/00*
U.S. Cl. 208—90 **2 Claims**

A process for the conversion of a metals-containing hydrocarbon oil by contacting with hydrogen fluoride to convert the metals to metal fluorides. The metal fluorides and the bulk of the unconverted hydrogen fluoride are separated from the oil. The oil is then defluorinated by contacting it with hydrogen in the presence of a catalyst comprising 5–30 weight percent of at least one group VI metal on a predominantly alumina support. The defluorinated oil is then hydrocracked with a silica containing hydrocracking catalyst.

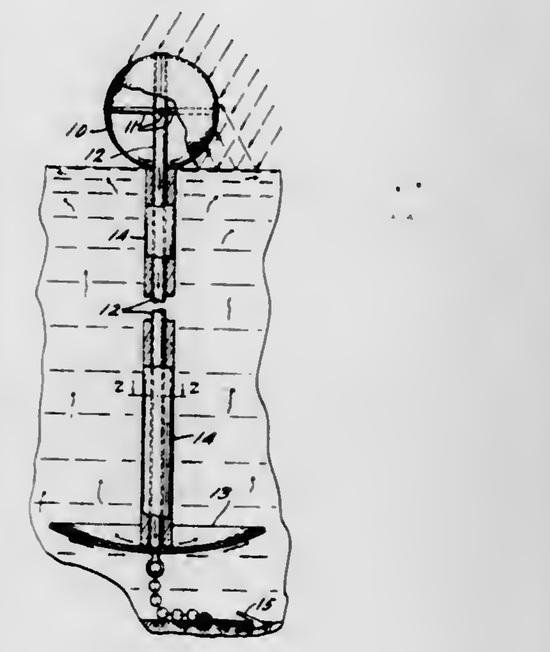
3,528,910
HYDROTREATING PROCESS UTILIZING ALKYL DISULFIDE FOR IN SITU CATALYST ACTIVATION

Stanley C. Haney, Maurice K. Rausch, and Joseph M. Divijak, Jr., Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 26, 1967, Ser. No. 648,943
Int. Cl. C10g *13/06, 23/02*
U.S. Cl. 208—216 **4 Claims**

A process for activating and initiating reaction on a nickel-molybdenum hydrotreating catalyst, which provides superior aromatic saturation and nitrogen and sulfur removal, is provided by the steps of treating the catalyst with hydrogen at low pressure while heating to about 350° F., pressurizing to about 300–2500 p.s.i.g. and sulfiding with a hydrocarbon stock containing about 1 to 5% disulfide sulfur with a hydrogen flow rate of about 1000–2500 s.c.f./b., at a temperature of about 675°–700° F., taking care that the temperature does not exceed 750° F. at any point in the reactor. Processing is then initiated with a substantial excess of hydrogen for the first 24 to 72 hours.

3,528,911
METHOD AND APPARATUS FOR PURIFYING WATER

Urban E. Bowes, 550 E. Front St., Perrysburg, Ohio 43551; Margery W. Bowes, executrix of said Urban E. Bowes, deceased
Filed May 13, 1968, Ser. No. 728,651
Int. Cl. C02b *1/02*
U.S. Cl. 210—1 **5 Claims**



A system to promote purification of water by causing vertical circulation currents to occur which expose water from a lower, colder layer to the action of sun and air.

Circulation is brought about by absorbing solar heat in a buoyant body, transferring the absorbed heat to a conductive stem and dissipating the heat into the lower, colder layer of water.

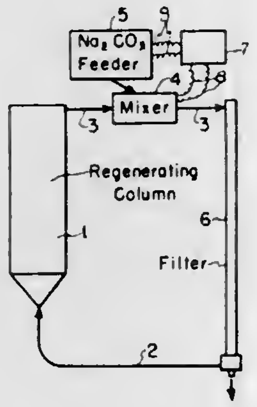
3,528,912
REGENERATION OF ION EXCHANGERS

Karel Popper, Danville, Wayne M. Camirand, Albany, and Frank P. Boyle, Lafayette, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Nov. 5, 1969, Ser. No. 874,166

Int. Cl. B01d *15/06*

U.S. Cl. 210—34 **5 Claims**



The conventional method for regenerating spent cation exchange material yields an effluent which presents a disposal problem because of its content of sodium and chloride ions. Novel methods are herein described for obviating this disposal problem. By these methods the effluent is reclaimed or regenerated so that it can be recycled for treating further quantities of spent cation exchange material.

3,528,913
REMOVING NITRIC ACID FROM AQUEOUS SOLUTIONS

Walter Appelt, Ludwigshafen, Hans-Martin Weitz, Frankenthal, and Leopold Golser, Ludwigshafen, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Oct. 22, 1968, Ser. No. 769,743

Claims priority, application Germany, Oct. 24, 1967, 1,667,397

Int. Cl. C02c *5/02*

U.S. Cl. 210—59 **5 Claims**

To remove nitric acid from aqueous solutions the latter are treated with carbon monoxide at elevated temperature and superatomspheric pressure.

3,528,914
DRILLING FLUID AND METHOD FOR INCREASING DRILLING RATE

Henry C. H. Darley, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 305,542, Aug. 29, 1963. This application Dec. 14, 1966, Ser. No. 601,555

The portion of the term of the patent subsequent to Mar. 21, 1983, has been disclaimed

Int. Cl. C10m *1/06*

U.S. Cl. 252—8.5 **2 Claims**

An oil-in water emulsion drilling fluid wherein the oil phase is a liquid petroleum oil and contains dispersed therein an oil dispersible colloid such as an asphalt and the continuous aqueous phase is substantially free of colloids. The drilling fluids may contain a water soluble cationic emulsifier or colloid deposition inducing agent, a water soluble nonionic emulsifier or deposition retarding agent or mixtures thereof and an oil soluble emulsifier such as a polyamine salt of a fatty acid.

3,528,915
TITANIFEROUS BIOTITE LUBRICANT

Warren L. Taylor, Littleton, Colo., assignor to Titan Products Company, Englewood, Colo., a corporation of Colorado

No Drawing. Filed Feb. 28, 1969, Ser. No. 803,414

Int. Cl. C10m *5/02*

U.S. Cl. 252—28 **1 Claim**

Titaniferous biotite ore is ground and classified to remove coarser particles containing materials deleterious to lubricating composition use, the remaining fines providing a useful, novel additive in the manufacture of lubricating compositions.

3,528,916
PROCESS FOR PREPARING OVERBASED BARIUM SALTS OF HYDROCARBON-PHOSPHORUS SULFIDE REACTION PRODUCTS

Larry G. Snyder, Port Arthur, and Ralph P. Chesluk, Nederland, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 23, 1968, Ser. No. 699,779

Int. Cl. C10m *1/10, 1/48*

U.S. Cl. 252—32.7 **4 Claims**

A process for preparing a lubricating oil concentrate of an overbased barium salt of a hydrolyzed hydrocarbon-phosphorus sulfide reaction product useful as a detergent dispersant additive comprising the steps of (1) contacting a hydrocarbon with phosphorus sulfide, (2) forming a mineral oil concentrate of the resultant reaction product, (3) hydrolyzing said concentrate of the resultant reaction product with steam until a neutralization number (ASTM D974) of between 60 and 65 is obtained, (4) drying the hydrolyzed concentrate, (5) contacting said dried concentrate with anhydrous methanol to form an extract phase and raffinate phase, (6) contacting said raffinate phase with a basic barium inorganic compound and carbon dioxide in the presence of anhydrous methanol, (7) contacting the resultant mixture with steam, (8) contacting the hydrolyzed reaction mixture with carbon dioxide and (9) filtering the resultant dried mixture to form a clarified lubricating oil concentrate of the overbased barium salt of a hydrolyzed hydrocarbon-phosphorus acid reaction product.

3,528,917
SULFURIZED CALCIUM ALKYLPHENOLATE LUBRICANT COMPOSITIONS

James G. Dadura and Doris Kivelevich, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1967, Ser. No. 640,362

Int. Cl. C10m *1/42*

U.S. Cl. 252—42.7 **9 Claims**

The disclosure relates to a lubricating oil composition and method of preparation containing sulfurized normal calcium alkylphenolate detergent-dispersant having superior resistance to oxidative decomposition. The sulfurized normal calcium alkylphenolate additive ingredient is prepared by the sequential or simultaneous reaction of alkylphenol with a calcium alkoxyalkoxide and sulfur in the presence of a hydrocarbon lubricating oil, said reaction most desirably followed by a deodorizing treatment of the resultant product utilizing carbon dioxide.

3,528,918
PIEZOELECTRIC CERAMIC COMPOSITIONS

Masamitsu Nishida and Hiromu Ouchi, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan

Filed Sept. 12, 1968, Ser. No. 759,281

Claims priority, application Japan, Sept. 26, 1967, 42/62,504

Int. Cl. C04b *35/46, 35/48*

U.S. Cl. 252—62.9 **4 Claims**

Ceramic materials within particular ranges of the ternary system $Pb(Sn_{1/3}Nb_{2/3})O_3$-$PbTiO_3$-$PbZrO_3$ in solid solution form exhibit high dielectric constant along with high planar coupling coefficient, and are useful in electromechanical transducers. The ceramic materials are those within the area A, B, C, D and E and the area F, G, H, I, J and K of FIG. 2.

3,528,919
ELECTRONIC CERAMIC COMPOSITIONS

Vern M. McNamara and Ian F. Wright, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a Canadian corporation

Filed Mar. 28, 1966, Ser. No. 538,006

Claims priority, application Canada, Apr. 1, 1965, 927,069

Int. Cl. C04b *35/26, 35/46*

U.S. Cl. 252—62.63 **15 Claims**

In preparing mixed metal oxides in a particular ratio the process which comprises continuously atomizing a selected blended acidic aqueous solution of said metals onto the surface of a relatively large volume of a dilute ammoniacal solution, thereby simultaneously coprecipitating precursors of said mixed metal oxides from said acidic solution the amount of said metals in said solution being balanced to provide such selected ratio in the mixed metal oxides thereby forming an intimate substantially homogeneous mixture of the precursors of such mixed metal oxide in the same selected ratio as in said mixed metal oxide and thereafter converting said precursor mixture of said precursor mixture of said mixed metal oxide. Examples of mixed metal oxides are lead zirconate-titanate, and ferrites of lead, barium, and strontium.

3,528,920
HYDRAULIC BRAKE FLUIDS

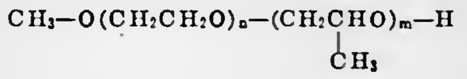
Jiro Niizeki, Takada-shi, Katsujiro Shimogai, Niigata-ken, and Minoru Furukawa, Arai-shi, Japan, assignors to Nippon Soda Kabushiki Kaisha, Tokyo, Japan

No Drawing. Continuation-in-part of application Ser. No. 638,557, May 15, 1967. This application Oct. 15, 1968, Ser. No. 767,803

Int. Cl. C09k *3/00;* **C07c** *43/00*

U.S. Cl. 252—73 **2 Claims**

A hydraulic brake fluid consisting essentially of a poly(oxyethylene-oxy-1,2-propylene) glycol monomethyl ether having an average molecular weight of from about 160 to about 230 and the formula.



$$CH_3{-}O(CH_2CH_2O)_n{-}(CH_2\underset{\displaystyle CH_3}{\underset{|}{C}}HO)_m{-}H$$

wherein *n* averages from 1 to 3.7, *m* averages from 0.3 to 3 and the average total of *n* and *m* is from 3.1 to 3.9 and the oxyethylene groups constitute from 65 to 90% by weight of the total weight of oxyalkylene groups present.

3,528,921
BLEACHING PACKETS

Frederick William Gray, Summit, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No 563,675, July 8, 1966. This application Apr. 21, 1967, Ser. No. 632,535

Int. Cl. C11d *7/56*

U.S. Cl. 252—99 **20 Claims**

A bleaching packet in which a dry bleach composition containing a hypochlorite generating agent and inorganic builder salt is enclosed in a film of polyvinyl alcohol impregnated with a water-soluble salt of a strong base and a weak acid. Also, a packet in which a water-soluble, polyvinyl alcohol film encloses a dry bleach composition which contains a mixture of dichloroisocyanurate, carbonate, tripolyphosphate and sulfate salts, said salts being either sodium or potassium and being suitably selected to achieve a weight ratio of potassium to sodium of at least 1:1 in the composition.

3,528,922
NOVEL SURFACTANT COMBINATION IN A SOLVENT DEGREASING SELF-EMULSIFYING CLEANING COMPOSITION

Robert E. Wagner, Jr., Havre de Grace, Md., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed July 27, 1967, Ser. No. 656,998

Int. Cl. C11d *7/50, 9/24, 9/30*

U.S. Cl. 252—118 **5 Claims**

An organic solvent cleaner in which a specific combination of ethanolamine soaps are an effective substitute for the previously employed surfactant (aromatic amine sulfonate) which was objectionable because of its nonbiodegradable nature. Within relatively narrow ranges of inclusion the ethanolamine soaps provide an equally effective cleaning composition for removing lithium, sodium and calcium base greases, tars, asphalt and preservative type compounds.

3,528,923
LIME SOAP DISPERSANT

James G. Atherton, Hoffman Estates, Harold C. Nemeth, Chicago, and Eugene J. Miller, Jr., Wheaton, Ill., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Oct. 5, 1967, Ser. No. 673,010

Int. Cl. C11d *1/22, 1/28, 9/32*

U.S. Cl. 252—121 **4 Claims**

Sulfonated phenylstearic acids as lime soap dispersants in soap compositions. Processes for preparing such compositions and processes for using such dispersants with soap in water.

3,528,924
PLASTIC CASE DESOILING PROCESS

Jaakko I. Tae, Sherman Oaks, and Archibald K. Beard, Rolling Hills, Calif., assignors to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,242

Int. Cl. C11d *7/06*

U.S. Cl. 252—156 **16 Claims**

A composition and method effective for removal of obdurate soil from surfaces of plastic articles such as tote boxes, agricultural lugs and soda cases, e.g. molded or formed of high density polyethylene or polypropylene are provided comprising contacting the surface with a mixture in an alkaline aqueous carrier of a composition consisting essentially of a permanganate compound such as potassium permanganate compond and a small but effective amount, e.g. 0.001% by weight of a highly or perfluorinated surfactant soluble in the carrier, such as a perfluorinated fatty carboxylic or sulfonic acid, e.g. nonadecafluorodecanoic acid or an alkali or alkaline earth metal salt or amide thereof.

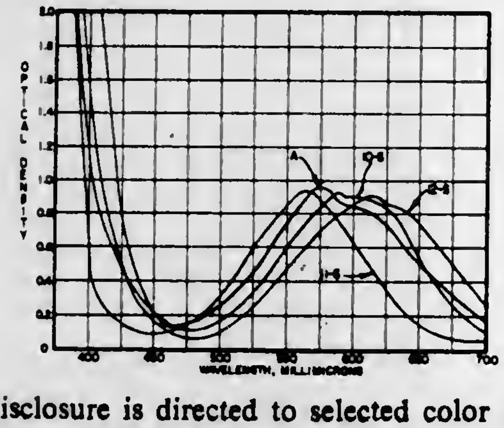
3,528,925
ENCAPSULATED SYNTHETIC LIQUID DETERGENT AND PROCESS FOR PREPARING THE SAME

Jacques Chapuis, R.R. 2, Hemmingford,
Quebec, Canada
No Drawing. Filed Dec. 1, 1966, Ser. No. 598,223
Claims priority, application Canada, Nov. 12, 1966,
975,413/66
Int. Cl. C11d *1/12*
U.S. Cl. 252—161 **12 Claims**

Synthetic liquid detergents containing less than 1% water and as little as 0.15% water are encapsulated in gelatin. The detergent composition for encapsulation is obtained by azeotropic distillation of an anionic surface active agent in a solvent followed by addition of a nonionic surface active agent, heating until a homogeneous solution is obtained and a further azeotropic distillation. The solvent is then removed and the composition encapsulated.

3,528,926
MIXED PHOTOCHROMIC COMPOUND COMPOSITION

John J. Van Voorhis, Henry S. Pesa, and Carol A. Stowe Van Voorhis, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Oct. 27, 1966, Ser. No. 589,996
Int. Cl. G02b *5/24;* **G02f** *1/36*
U.S. Cl. 252—300 **7 Claims**



This disclosure is directed to selected color reversible, liquid, solution mixtures containing thermoplastic polymers and certain selected substituted photochromic indolino benzospiropyran compounds which have an improved combination of properties, including thermal fade rate, sensitivity to ultraviolet light, fatigue resistance and absorption bandwidth, which combination enables these liquid solution mixtures to provide effective protection against high energy radiation, e.g., by protecting the eye against flash brightness and retinal burn.

3,528,927
LASERABLE GLASS MATERIAL

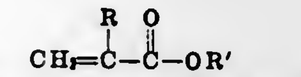
Robert E. Graf, Southbridge, Mass., and Robert W. Young, Woodstock, Conn., assignors to American Optical Corporation, a corporation of Delaware
Filed Nov. 10, 1964, Ser. No. 410,126
Int. Cl. C09k *1/54;* **C03c** *3/28, 3/10*
U.S. Cl. 252—301.6 **8 Claims**

In laserable materials having an active ingredient in a glassy host material of silicate glass, increased fluorescent lifetimes are attained by the substitution of lighter sodium ions by heavier monovalent alkali ions and heavier divalent metal ions such as barium, lead and cadmium. However, fabrication is made more difficult by high viscosity of the molten glass. The viscosity may be reduced while still attaining increased fluorescent lifetime by using a combination of the heavier potassium alkali ion with ions of sodium or lithium and mixtures of the two.

3,528,928
PROCESS OF BREAKING OIL-IN-WATER EMULSIONS

Brian M. Rushton, Edina, Minn., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware
No Drawing. Original application Mar. 25, 1965, Ser. No. 442,793. Divided and this application Jan. 13, 1969, Ser. No. 790,877
Int. Cl. B01d *17/04;* **C08g** *20/26;* **C23f** *11/14*
U.S. Cl. 252—341 **6 Claims**

Process for breaking oil-in-water emulsions wherein the emulsions are treated with amino-amido polymers characterized by being a reaction product of at least a polyamide and an acrylate-type compound having the formula



$$CH_2{=}\overset{\overset{\displaystyle R}{|}}{C}{-}\overset{\overset{\displaystyle O}{\|}}{C}{-}OR'$$

where R is hydrogen or methyl and R′ is methyl, ethyl, propyl, isopropyl, butyl, sec-butyl, tert-butyl, aryl or hexyl, or a cross-linked reaction product.

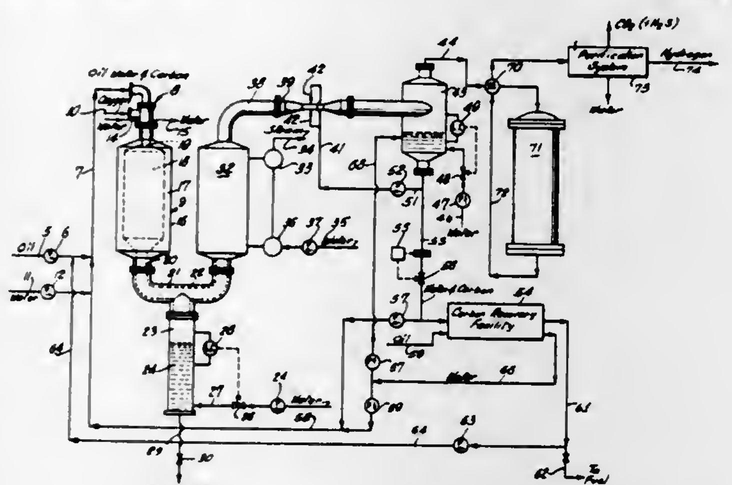
3,528,929
DEFOAMING, DEAERATING, AND DRAINAGE AID COMPOSITIONS

Stanley J. Buckman, John D. Buckman, and John D. Pera, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee
No Drawing. Filed May 24, 1967, Ser. No. 640,853
Int. Cl. B01d *19/04*
U.S. Cl. 252—358 **10 Claims**

Compositions containing finely divided silica, oil, and an alkoxysilicon chloride are useful as defoamers, chemical deaerators, and drainage aids.

3,528,930
PRODUCTION OF SYNTHESIS GAS

Warren G. Schlinger, Pasadena, and William L. Slater and Roger M. Dille, La Habra, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 510,038, Nov. 26, 1965, which is a continuation-in-part of application Ser. No. 285,868, June 6, 1963. This application May 29, 1968, Ser. No. 732,908
Int. Cl. C01b *2/14*
U.S. Cl. 252—373 **5 Claims**



An improved process for generation of synthesis gas, i.e. carbon monoxide and hydrogen, by non-catalytic partial oxidation with oxygen in which oil is mixed with water and the mixture supplied, in liquid phase directly into a reaction zone in which reaction takes place with oxygen at an autogenous temperature above about 1800° F.

3,528,931
INDICATOR COMPOSITION OF TETRAETHYL AMMONIUM BROMIDE PERCHLORIC ACID AND CRYSTAL VIOLET

James L. Dunn, Jr., and James C. Renfro, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 28, 1967, Ser. No. 694,040
Int. Cl. C09k *3/00;* **G01n** *31/22*
U.S. Cl. 252—408 **4 Claims**

This invention relates to an indicator composition comprising tetraethyl ammonium bromide, perchloric acid and crystal violet useful to detect, by color indication, the concentration of acid-acceptor type inhibitors in chlorinated solvents.

3,528,932
IRON-ARSENIC OXIDE CATALYSTS

Derk Th. A. Huibers, Berkeley Heights, and John J. Waller, Jersey City, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 9, 1966, Ser. No. 548,396
Int. Cl. B01j *11/82;* **C07b** *3/00;* **C07c** *121/02*
U.S. Cl. 252—472 **10 Claims**

Iron-arsenic catalyst compositions, suitable for ammoniation and ammoxidation reactions, as well as conversions of aldehydes to nitriles, and other reactions. The catalysts are prepared by adding an aqueous arsenate salt solution to an aqueous ferric salt solution, adjusting the pH value of the resulting solution to between 0.5 and 6, evaporating and calcining the product. The quantities of the arsenate and ferric salts are so chosen as to produce a catalyst having an atomic ratio of iron to arsenic of 1.1:1 to 10:1. Reactions using the catalyst are also disclosed.

3,528,933
LATENT CURING EPOXY RESIN SYSTEMS

Calvin K. Johnson, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed May 10, 1966, Ser. No. 548,843
Int. Cl. C08g *22/44, 30/02*
U.S. Cl. 260—2 **1 Claim**

A curable resin composition comprises a flowable, curable resin and a latent curing agent distributed throughout the resin within a solid, stable organic crystalline inclusion compound unreactive in the crystalline form with the resin. The inclusion compound is a crystalline host material and contains within the crystalline structure a guest material which will cure the resin when released from the crystalline structure by heat or other means.

3,528,934
PROCESS FOR THE PREPARATION OF MODIFIED GLYCIDYL ISOCYANURATE RESINS

Erwin Weinrich, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany
No Drawing. Filed Nov. 16, 1967, Ser. No. 683,460
Claims priority, application Germany, Nov. 30, 1966,
H 61,145
Int. Cl. C07d *1/22;* **C08g** *30/00*
U.S. Cl. 260—18 **8 Claims**

This invention relates to a process of preparation of soft, hardenable epoxide resins based on triglycidyl isocyanurate which, when hardened, retain the desired high temperature stability with a greater flexibility than hardened triglycidyl isocyanurate resins, as well as the soft, hardenable epoxide resins produced. This process is characterized by reacting a crystalline triglycidyl isocyanurate having an epoxide oxygen content of at least 14% with an epoxidized organic mono or dicarboxylic acid free of other epoxide reacting substituents, said epoxidized carboxylic acid being present in a ratio to provide from 1 to 10 carboxyl groups for each 30 epoxide groups of said crystalline triglycidyl isocyanurate in the mixture, and recovering a soft, hardenable epoxide resin.

3,528,935
PACKAGE STABLE, LOW VISCOSITY, HIGH SOLIDS, THERMOSETTING COATING COMPOSITIONS WITH LATENT CURING CATALYST

Donald L. Marion, Homewood, Robert H. Hall, Park Forest, and William C. Rusnack, Harvey, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 30, 1967, Ser. No. 686,849
Int. Cl. C08g *30/12, 45/04*
U.S. Cl. 260—23 **26 Claims**

Low viscosity, high solids, thermosetting coating compositions are obtained by incorporating in an inert solvent, an alkanol half-ester, preferably isooctyl half-ester, of a low molecular weight styrene-maleic anhydride copolymer, a low molecular weight epoxy resin, such as a glycidyl ether of bisphenol-A, the ratio of epoxide equivalents to anhydride equivalents in the coating composition being about 2:1 to 1:1.25 g. and a zinc organic acid salt, such as zinc octoate, in a small amount, effective as a latent curing catalyst, such as about .05 to 1% zinc metal by weight of the total non-volatile resins. The package stability of the coating composition at ambient temperature is a number of months, often greater than six months. These coatings have excellent adherence to metal.

3,528,936
STABILIZED COMPOSITIONS OF INTERPOLYMERS OF BUTADIENE POLYMERS AND POLYUNSATURATED POLYESTERS

Eric G. Kent and Hector Lazzarotto, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic
No Drawing. Filed Nov. 21, 1966, Ser. No. 595,571
Claims priority, application Canada, Dec. 17, 1965,
947,993
Int. Cl. A63b *37/00;* **C08c** *11/00*
U.S. Cl. 260—23.7 **7 Claims**

A cross-linked elastic material having improved stability to ageing is prepared by interpolymerizing a polymer of butadiene and 10–100 parts by weight per 100 parts of polymer of a polyester having at least two independently polymerizable ethylenically unsaturated groups in the presence of a small amount of an oil soluble polar additive. Representative example of such additive is zinc stearate.

The cross-linked material is suitable for use in molded goods such as golf balls.

3,528,937
AQUEOUS SOLUTIONS OF POLYAMIDE ACIDS

Reginald John William Reynolds, Kegworth, and John David Seddon, Bowdon, near Altrincham, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Continuation-in-part of application Ser. No. 500,992, Oct. 22, 1965. This application Feb. 15, 1968, Ser. No. 705,847
Claims priority, application Great Britain, Nov. 11, 1964,
45,957/64; Apr. 5, 1965, 14,327/65
Int. Cl. C08g *51/24, 20/24*
U.S. Cl. 260—29.2 **8 Claims**

An aqueous solution of a salt of a polyamide acid with a salt-forming organic base of dissociation constant (pKa) of 5 or higher, present in at least the stoichiometric amount requred to neutralise all the free carboxylic acid groups in the polyamide acid, especially a polyamide acid derived from a tetracarboxylic acid dianhydride and a diprimary amine which can be cyclised to the corresponding polyimide, may be used to form films and fibres and coated and impregnated articles.

3,528,938

WATER DILUTABLE LACQUERS OF COPOLYMERS CONTAINING HYDROXYL AND CARBOXYL GROUPS

Franz Scheckenbach, Hilden, Rhineland, and Hans Zoebelein, Monheim, Rhineland, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,819
Claims priority, application Germany, Apr. 6, 1966, H 59,037
Int. Cl. C08f *27/14, 15/40*
U.S. Cl. 260—29.6 7 Claims

Water-dilutable lacquer solutions formed by partial hydrolysis of copolymers of acrylic acid esters and polymerizable monomers containing hydroxyl groups and preparation thereof.

3,528,939

WATER DISPERSIBLE HALF ESTERS OF STYRENE-MALEIC ANHYDRIDE COPOLYMERS WITH N-HYDROXY ALKYL AMIDES OF UNSATURATED FAT ACIDS

Richard J. Pratt, Flossmoor, Roger H. Jansma, Harvey, and Robert J. Conboy, Rockford, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 22, 1968, Ser. No. 699,299
Int. Cl. C08f *27/12*
U.S. Cl. 260—29.6 13 Claims

Partial esters of low molecular weight polymers of an alpha, beta-ethylenically unsaturated dicarboxylic acid and a vinyl benzene hydrocarbon, preferably styrene-maleic anhydride polymers, and an alkanolamide of an ethylenically-unsaturated, long chain, drying fatty acid, such as the ethanolamide of soya drying fatty acid, are obtained with unesterified salt-forming carboxyl groups. These partial esters of about 25 to 100% half-ester, and preferably about 75 or even 90 up to 100% half-ester, are water dispersible and air-drying. Coating compositions are obtained by dispersing these air drying, partial esters in water containing ammonium hydroxide and, at least with the higher esterified products, an organic co-solvent, such as ethylene glycol monobutyl ether. A water-dispersible metal drier can be added and a pigment, such as titanium dioxide, may be added if desired. Coatings are obtained which have excellent air-drying ability to hard, tough films which are unaffected by xylene, and show essentially no deterioration in water or alkali.

3,528,940

SILICONE PRESSURE-SENSITIVE ADHESIVE OF IMPROVED STRENGTH

Frank J. Modic, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 15, 1966, Ser. No. 601,878
Int. Cl. C08g *47/04, 47/06;* **C08k** *1/08*
U.S. Cl. 260—37 6 Claims

A pressure-sensitive adhesive composition comprising the siloxane product of intercondensation of, by weight, 100 parts of a silanol chain-stopped polydiorganosiloxane gum, from about 15–200 parts of a benzene-soluble resinous copolymer of $R_3SiO_{0.5}$ units and SiO_2 units and from about 2–10 parts of a finely divided silica.

3,528,941

SILOXANE CURED WITH AN ALKOXYCYCLOPOLYSILOXANE

Robert A. Murphy, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 26, 1967, Ser. No. 693,152
Int. Cl. C08g *31/14, 51/04*
U.S. Cl. 260—37 10 Claims

One package, room temperature vulcanizing compositions are provided comprising a mixture of a silanol-terminated polydiorganosiloxane, and an alkoxycyclopolysiloxane curing agent which can have chemically combined aminoxy radicals attached to silicon. The curable compositions also can contain certain Group IV*a* metal complexes as curing promoters. The curable compositions have been found to provide for elastomers exhibiting improved elongation (percent) and superior adhesion to concrete when allowed to cure in contact thereto under atmospheric conditions.

3,528,942

METHOD OF CROSS-LINKING AMORPHOUS POLYMERS AND COPOLYMERS OF α-OLEFINS AND THE RESULTANT PRODUCTS

Friedrich Wollrab and Maurice Gerkens, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a corporation of Belgium

No Drawing. Filed Apr. 7, 1967, Ser. No. 629,074
Claims priority, application Belgium, Apr. 14, 1966, 26,736, Patent 679,482
Int. Cl. C08f *45/04, 15/04*
U.S. Cl. 260—41 22 Claims

Amorphous polymers and copolymers of α-olefins are cross-linked by being heated with a compound which forms free radicals at the heating temperature and dibenzalacetone or a substitution derivative thereof.

3,528,943

ADHESIVE COMPOSITIONS AND METHOD FOR BONDING ELASTOMERS

Gerald Goldberg, Parkersburg, and Richard W. Czerwinski and Herschel G. Thomas, Jr., Washington, W. Va., assignors, by mesne assignments, to Lord Corporation, Erie, Pa., a corporation of Pennsylvania

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,257
Int. Cl. C08f *45/08, 27/06;* **C08j** *3/14*
U.S. Cl. 260—41 4 Claims

A composition for bonding elastomeric materials to a variety of substrates comprised of a halogenated ethylene-propylene copolymer and from 15–35 percent by weight sulfur, said sulfur based on the total solids content of said composition and a method of bonding α-olefin hydrocarbon copolymers to substrates such as leather, textiles, rubbers, metals and the like.

3,528,944

ALKOXYMETHYLATION OF A POLYALKYLENE OR POLYARYLALKYLENE UREA OR POLYMERS THEREOF

Faber B. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 29, 1966, Ser. No. 575,907
Int. Cl. C08g *9/10*
U.S. Cl. 260—70 10 Claims

Polyalkylene and/or arylalkylene urea polymers are partially alkoxymethylated to form adhesives and other useful products by treating the polymers with, say, an alcoholic paraformaldehyde mixture or its equivalent, the polymer being dissolved in, say, formic acid.

3,528,945

ACETYLACETONATES AS POLYCONDENSATION CATALYSTS IN THE DIRECT ESTERIFICATION METHOD OF PREPARING POLYESTERS

Mary J. Stewart, Riddlewood, Media, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,264
Int. Cl. C08g *17/015*
U.S. Cl. 260—75 4 Claims

Process of preparing polyethylene terephthalate resin comprising carrying out a direct esterification reaction between terephthalic acid and ethylene glycol in the presence of a first stage buffer to form a polyester prepolymer and then polycondensing the resulting prepolymer in the presence of a catalyst selected from the group consisting of aluminum acetylacetonate and lead acetylacetonate.

3,528,946

ACETYLACETONATES AS POLYCONDENSATION CATALYSTS IN TRANSESTERIFICATION METHOD OF PREPARING POLYESTERS

Mary J. Stewart, Riddlewood, Media, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,265
Int. Cl. C08g *17/015*
U.S. Cl. 260—75 7 Claims

A process of preparing polyethylene terephthalate resin comprising carrying out a transesterification reaction between ethylene glycol and dimethyl terephthalate in the presence of a conventional transesterification catalyst to form a polyester prepolymer and then polycondensing the resulting prepolymer in the presence of a catalytic amount of an acetylacetonate selected from the group consisting of aluminum acetylacetonate, lead acetylacetonate, cerium acetylacetonate, thorium acetylacetonate, chromium acetylacetonate, copper acetylacetonate, and vanadium acetylacetonate.

3,528,947

DYEABLE POLYESTERS CONTAINING UNITS OF AN ALKALI METAL SALTS OF AN AROMATIC SULFONIC ACID OR ESTER THEREOF

Gerald Ray Lappin, Charles J. Kibler, John C. Gilmer, and Glenn C. Jones, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 3, 1968, Ser. No. 695,349
Int. Cl. C08g *17/06, 17/08*
U.S. Cl. 260—75 14 Claims

Linear, high molecular weight polyesters, such as poly (ethylene terephthalate) and poly(1,4-cyclohexylenedimethylene terephthalate), are rendered dyeable with basic dyes by incorporating in the polymer chain of said polyesters the residue of a new organic compound which is an alkali metal salt of either an aromatic sulfonic acid or an ester thereof.

3,528,948

THERMOPLASTIC POLYURETHANES

Franz Gottfried Reuter, Hannover, Germany, assignor to Elastomer, A.G., Chur, Switzerland, a corporation of Switzerland

Continuation-in-part of application Ser. No. 703,786, Feb. 5, 1968, which is a continuation of application Ser. No. 377,535, June 24, 1964. This application Sept. 11, 1968, Ser. No. 759,145
Claims priority, application Germany, June 25, 1963, 1,301,910
Int. Cl. C08g *22/06, 53/00*
U.S. Cl. 260—75 5 Claims

A method is provided for making a storage stable thermoplastic polyurethane which after thermoplastic processing has improved low temperature flexibility wherein a polyester or poly (alkylene ether) glycol, a chain extender and an organic diisocyanate are mixed and reacted at a temperature of about 110°–170° C. to form a thermoplastic polyurethane containing from about 5 to about 40 percent by weight hexamethylene groups.

3,528,949

POLYMERS FROM UREAS AND DIHALIDES

Thomas F. Rutledge, Blue Rock Manor, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 7, 1968, Ser. No. 727,352
Int. Cl. C08g *22/02*
U.S. Cl. 260—77.5 9 Claims

Novel polyureas are prepared by reacting a urea with a benzylic or allylic dihalide in the presence of from 0.25 to 3 mols of water per mol of urea. It has been found that the amount of water present during the reaction of ureas with benzylic or allylic dihalides has a substantial effect on the nature of the resulting polyurea. The polyureas of this invention are thermosetting polymers which are useful for the preparation of molded articles.

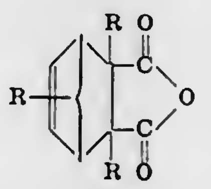
3,528,950

POLYIMIDE POLYMERS

Hyman R. Lubowitz, Redondo Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

No Drawing. Filed July 3, 1967, Ser. No. 650,625
Int. Cl. C08g *20/00, 20/32*
U.S. Cl. 260—78.4 12 Claims

This invention relates to rapid-curing, stable polyimides. The polyimides are prepared by heating polyimide prepolymers having specific terminal or end-capping chemical groups which result from coreacting specific monoanhydrides with mixtures of dianhydrides and diamines. These chemical groups are stable at room and moderately elevated temperatures but become reactive at temperatures of about 200° to 350° C. thereby forming macromolecules. The specific end-capping anhydrides are compounds having the structural formula



where R represents hydrogen or a lower alkyl.

3,528,951

COPOLYMERIZATION OF ACRYLONITRILE

David Harry Kohn and Samuel Hanan Ronel, Haifa, Israel, assignors to Technion Research and Development Foundation Limited, Technion City, Haifa, Israel

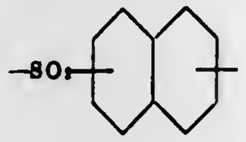
No Drawing. Filed Mar. 26, 1968, Ser. No. 715,996
Claims priority, application Israel, Mar. 28, 1967, 27,702
Int. Cl. C08f *15/22, 45/60*
U.S. Cl. 260—78.5 6 Claims

Novel copolymers of acrylonitrile with certain derivatives of arylidene nitriles are produced which possess a far greater degree of color stability, malleability and solubility than the acrylonitrile polymers known heretofore.

3,528,952
POLYSULPHONES PREPARED FROM SULFUR DIOXIDE AND CIS,TRANS-CYCLODECA-1,5-DIENE

Pierre Lafont, Ste.-Foy-les-Lyon, and Gilbert Vivant, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Dec. 12, 1966, Ser. No. 600,766
Claims priority, application France, Dec. 20, 1965, 43,012
Int. Cl. C08f *13/06*
U.S. Cl. 260—79.3 **1 Claim**

1. A solid linear polymer consisting of units of the formula:



3,528,953
TRIALKYL TIN FLUORIDES AS CATALYST ADDITIVES IN BUTADIENE POLYMERIZATION

Morford C. Throckmorton, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 10, 1967, Ser. No. 674,113
The portion of the term of the patent subsequent to Apr. 15, 1986, has been disclaimed
Int. Cl. C08f *1/56*
U.S. Cl. 260—82.1 **7 Claims**

A method and a catalyst system for the solution polymerization of butadiene and/or butadiene in mixture with other diolefins to form polymers containing a high content of cis 1,4 addition is described. The solution polymerization is carried out under conventional polymerization conditions. The catalyst employed is a mixture of (1) organometallic compounds of metals of Groups I, II and III; (2) at least one compound selected from the class consisting of organonickel and organocobalt compounds and (3) a trialkyltin fluoride.

3,528,954
PROCESS FOR HOMOPOLYMERIZATION OF TETRAFLUOROETHYLENE AND COPOLYMERIZATION OF SAME WITH FLUORO CO-MONOMERS IN THE SOLVENT 1,1,2 - TRICHLORO - 1,2,2 - TRIFLUOROETHANE

Dana Peter Carlson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 30, 1967, Ser. No. 679,162
Int. Cl. C08f *15/06*
U.S. Cl. 260—87.5 **8 Claims**

High molecular weight, tough and stable copolymers of tetrafluoroethylene can be polymerized in non-perfluorinated hydrogen and chlorine containing fluorocarbon solvents by a process that requires that the reaction be carried out at from about 30° C. to about 85° C. in the presence of a low temperature initiator such as bis-(perfluoropropionyl) peroxide. The homopolymer of tetrafluoroethylene can also be prepared in this solvent initiator system.

3,528,955
POLYTETRAFLUOROETHYLENE MOLDING POWDER AND PROCESS OF PREPARING THE SAME

Edward H. Lippman, Morrisville, Pa., assignor, by mesne assignments, to Liquid Nitrogen Processing Corporation, Malvern, Pa., a corporation of Pennsylvania
No Drawing. Filed May 16, 1967, Ser. No. 638,727
Int. Cl. C08f *3/24, 47/02*
U.S. Cl. 260—92.1 **4 Claims**

A fibrous non-porous polytetrafluoroethylene (PTFE) molding powder exhibiting an anisotropic expansion factor not greater than 1.13 is prepared by milling granular PTFE at a temperature of at least 200° F. in a circular horizontal air mill having a grinding chamber in the shape of a horizontal toroid, the chamber having tangential jet orifices spaced equidistantly around the periphery of the chamber and wiper jet orifices spaced equidistantly between said tangential jet orifices.

3,528,956
PROCESS FOR THE POLYMERIZATION OF UNSATURATED MONOMERS USING 4-SUBSTITUTED DICYCLOHEXYL PEROXYDICARBONATES AS INITIATORS

Hans G. Gerritsen, Deventer, Hendrik Hansma, Schalkhaar, and Hans Jaspers, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & van der Land N.V., Brink, Deventer, Netherlands, a corporation of the Netherlands
No Drawing. Original application Feb. 17, 1967, Ser. No. 616,775. Divided and this application Apr. 1, 1969, Ser. No. 833,229
Claims priority, application Great Britain, Feb. 28, 1966, 8,714/66
Int. Cl. C08f *1/30, 1/60*
U.S. Cl. 260—92.8 **5 Claims**

The present invention relates to 4-substituted dicyclohexylperoxyldicarbonates capable of use, for example, in the polymerization of polymerizable unsaturated monomers; the invention also relates to a process for preparing the 4-substituted dicyclohexylperoxydicarbonates and to polymerizable compositions consisting essentially of a polymerizable monomer and a 4-substituted dicyclohexylperoxydicarbonate. The 4-substituent is a cyclohexyl radical or an alkyl radical or a cyclohexylalkyl radical, said alkyl or cyclohexylalkyl radical having up to 10 carbon atoms.

3,528,957
METHOD OF PRODUCING POLYBUTADIENE

Morford C. Throckmorton, and William M. Saltman, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed July 10, 1967, Ser. No. 651,991
Int. Cl. C08d *3/06*
U.S. Cl. 260—94.3 **10 Claims**

A method and a catalyst system for the solution polymerization of butadiene or butadiene in mixture with other diolefins to form polymers containing a high content of cis-1,4 addition is described. The solution polymerization is carried out under conventional polymerization conditions. The catalyst employed is a mixture of (1) organometallic compounds of metals of Groups I, II and III; (2) at least one compound selected from the class consisting of organonickel and organocobalt compounds, and (3) at least one boron trifluoride complex prepared by complexing boron trifluoride with a member of the class consisting of monohydric alcohols, phenols, water and mineral acids containing oxygen.

3,528,958
MODIFIED OLEFIN POLYMERS OF IMPROVED PROPERTIES

George S. Achorn, Pittsburgh, Pa., assignor to Sinclair-Koppers Company, a partnership of Delaware
No Drawing. Filed Mar. 16, 1967, Ser. No. 623,547
Int. Cl. C08f *27/08*
U.S. Cl. 260—94.9 **4 Claims**

The stiffness and color of alpha-olefin polymers prepared using a Ziegler-type coordination catalyst system are improved by incorporating urea and thiourea at the terminal ends of the polymer chains at the conclusion of polymerization.

3,528,959
MODIFIED TALL OIL EMULSIFIERS

Paul D. Patrick, Jr., and Brantley D. Thomas, Jr., Charleston, S.C., assignors to Westvaco Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1967, Ser. No. 693,124
Int. Cl. C09f *1/04*
U.S. Cl. 260—97.5 **9 Claims**

Treated tall oil products for use as emulsifiers in the manufacture of synthetic rubber wherein tall oil is first disproportionated, preferably with iodine, to contain less than two percent abietic type acids and less than two percent linoleic acid and the disproportionated tall oil is then contacted with a boron trifluoride catalyst at elevated temperatures. The thus treated tall oil is steam sparged and thereafter subjected to a separation process to remove high and low boiling components. The tall oil product may then be converted to a soap to give a rubber emulsifier possessing reduced oxygen sensitivity, outstanding polymerization rates, color, color stability and capable of making a synthetic rubber with excellent physicals properties.

3,528,960
N-CARBOXYAROYL INSULINS

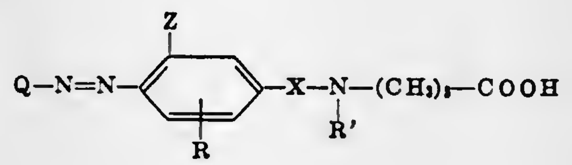
Wilhelm L. Haas, Frankfurt am Main-Schwanheim, Germany, assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
No Drawing. Substituted for application Ser. No. 516,143, Dec. 23, 1965. This application Oct. 7, 1968, Ser. No. 765,638
Int. Cl. A61k *17/02;* **C07c** *103/52;* **C07g** *7/00*
U.S. Cl. 260—112.7 **4 Claims**

Carboxyaroyl insulins, having about one to about three carboxyaroyl groups per insulin molecule, possessing high intrinsic activity, fast onset of activity, and long duration of activity.

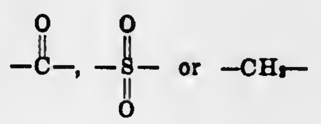
3,528,961
MONOAZO DYES FROM E-CAPROLACTAM

Roy Miles, Amherst, and Norman L. Anderson, Hamburg, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 16, 1966, Ser. No. 572,675
Int. Cl. C09b *62/00, 62/44, 62/82*
U.S. Cl. 260—162 **8 Claims**

Monoazo dyestuffs and metal complexes thereof derived from E-caprolactam are provided which have a special affinity for polyamide fibers, wool, silk and acrylics resulting in bright dyeings with excellent levelness and lightfastness properties. The dyestuffs are represented by the formula



wherein Q is a coupling component; Z is hydrogen or hydroxyl; X is



$$-\overset{\overset{\textstyle O}{\|}}{C}-,\ -\overset{\overset{\textstyle O}{\|}}{\underset{\underset{\textstyle O}{\|}}{S}}-\ \text{or}\ -CH_2-$$

R is hydrogen, lower alkyl, lower alkoxy, chloro, bromo, sulfonamido or nitro and when Z is hydrogen, R′ is hydrogen, lower alkyl, phenyl lower alkyl, or benzoyl and when Z is hydroxyl, R′ is hydrogen.

3,528,962
PROCESS FOR THE PRODUCTION OF AZODICARBONAMIDE

Hermann Wolz, Karl-Heinz Blöcher, and Adolf Friedrich, Leverkusen, Germany, and Dattatraya Vinayak Kashelikar, Thana, India, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 18, 1967, Ser. No. 654,049
Claims priority, application Germany, July 29, 1966, F 49,828
Int. Cl. C07c *107/00;* **C07b** *3/00*
U.S. Cl. 260—192 **5 Claims**

A non-catalytic process for oxidizing a hydrazodicarbonamide in aqueous suspension with gaseous chlorine diluted with an inert gas to obtain azodicarbonamides.

3,528,963
PROCESS FOR PREPARING CELLULOSE SULFATE SALTS

Albert R. Reid, Hockessin, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 24, 1969, Ser. No. 809,965
Int. Cl. C08b *5/14*
U.S. Cl. 260—215 **7 Claims**

A process for preparing alkali metal salts of cellulose sulfate in solution with an N,N-dialkylamide·SO_3 complex, thereafter precipitating the sulfated product by adding a non-solvent, and conducting the neutralization and purification steps with the material in particulate form. The process is an improvement over prior art processes wherein neutralization and purification are conducted in solution.

3,528,964
PROCESS FOR THE CHEMICAL MODIFICATION OF CELLULOSIC POLYMERS AND PRODUCTS PRODUCED THEREBY

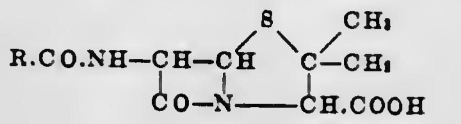
Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co. Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 23, 1964, Ser. No. 384,780
Int. Cl. C08b *11/00, 11/14, 3/92*
U.S. Cl. 260—231 **24 Claims**

Active hydrogen containing polymers such as cellulosic polymers are reacted with sulfonamide compounds to improve the properties of said polymers.

3,528,965
PENICILLIN ESTER PROCESS AND PRODUCTS

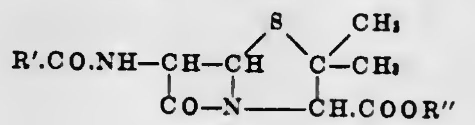
Martin Cole, Betchworth, Frank Peter Doyle, Leatherhead, and Maurice John Soulal, Hinchley Wood, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company
No Drawing. Filed Feb. 9, 1968, Ser. No. 704,242
Int. Cl. C07d *99/14, 99/16*
U.S. Cl. 260—239.1 **7 Claims**

There is provided a process for preparing a penicillin of the Formula I:



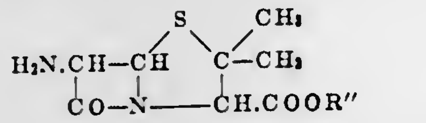
(I)

and non-toxic salts thereof, wherein R.CO— is an organic acyl radical, which process comprises subjecting a penicillin ester of the Formula II:



(II)

wherein R' is an organic radical, and R'' is an organic ester group that can be removed chemically or enzymatically under mild conditions without destruction of the penicillin nucleus, either to the action of a deacylase enzyme or to the action of reagents that form a 6-iminoether and treating this ether with a hydroxylic reagent, to give a 6-aminopenicillanic acid ester of the Formula III:



(III)

wherein R'' is as defined above and then coupling this ester with an acid of the Formula IV:

$$R.COOH \qquad (IV)$$

wherein R is as defined above, and finally removing the ester group R'' chemically or enzymatically, and if desired, converting the penicillin to a non-toxic salt.

3,528,966

2-AND/OR-4-HALOGENATED 17-OXYGENATED 3-AMINOESTRA-1,3,5(10)-TRIENES

James R. Deason, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 7, 1969, Ser. No. 789,615

Int. Cl. C07c *169/08; 173/00*

U.S. Cl. 260—239.55 **10 Claims**

Preparation of the captioned compounds—for example, DL - 2,4 - dibromo-3-dimethylaminoestra-1,3,5(10)-trien-17β-ol—and their valuable biological properties—specifically, anti-inflammatory activity—are disclosed.

3,528,967

N^1-ACETYL-N^1-(CYCLOPROPYL-4-PYRIMIDINYL)-SULPHANILAMIDES

Markus Zimmermann, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,901

Claims priority, application Switzerland, Apr. 13, 1966, 5,350/66

Int. Cl. A61k *27/00;* **C07d** *51/44*

U.S. Cl. 260—239.75 **3 Claims**

N^1 - acetyl - N^1 - (4 - pyrimidinyl) - sulphanilamides substituted by a cyclopropyl group in 2-, 5- or 6-position, which are antibacterial agents against gram-positive bacteria such as staphylococci, streptococci, pneumonococci and against gram-negative bacteria such as salmonella, escherichia and klebsiella strains; pharmaceutical compositions containing the aforesaid pyrimidines as antibacterial ingredients, and a method of treating diseases caused by such bacteria, by administration of such pyrimidines or pharmaceutical compositions containing them.

3,528,968

HETEROCYCLIC SUBSTITUTED IMIDAZOLINE HYDRAZONES

William J. Houlihan and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Filed Nov. 24, 1967, Ser. No. 685,330

Int. Cl. C07d *49/34*

U.S. Cl. 260—240 **6 Claims**

This disclosure pertains to hydrazones containing a heterocyclic moiety, e.g., 2-acetylthiophene-2-imidazlin-2-yl hydrazone. These compounds are useful as hypotensives.

3,528,969

BENZYLIDENE HYDRAZONES

William J. Houlihan and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,818

Int. Cl. C07d *51/76*

U.S. Cl. 260—240 **2 Claims**

This disclosure pertains to dichlorobenzylidene hydrazones substituted with a pyridazinyl group, e.g., 2,6-dichlorobenzaldehyde - 2 -(3-chloro - 4-diallylaminopyridazine-6-yl)-hydrazone. These compounds are useful as hypotensives.

3,528,970

AMINOMETHYL DERIVATIVES OF 9-CYCLOPROPYLMETHYLIDENE XANTHENES AND THIOXANTHENES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,508

Int. Cl. C07d *7/42, 65/16*

U.S. Cl. 260—240 **9 Claims**

Aminomethyl derivatives of 9-cyclopropylmethylidene xanthenes and thioxanthenes wherein the amino group may be primary, secondary or tertiary, including heterocyclic amines, and the xanthene or thioxanthene nucleus may be substituted by chlorine, trifluoromethyl, methoxy or methylmercapto have tranquilizing and antidepressant activity. The compounds are generally prepared from 9-(2-carboxycyclopropylmethylidene)-xanthenes or thioxanthenes via formation of corresponding carboxamido derivatives followed by reduction.

3,528,971

CYCLOALKYL NITROFURYL NITRONES

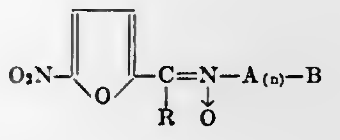
Ronald E. Bambury and Hyun Koo Kim, Ashland, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 5, 1968, Ser. No. 742,525

Int. Cl. C07d *5/30*

U.S. Cl. 260—240 **9 Claims**

Novel compounds of the formula



wherein: n is 0 or 1; A is (lower) alkylene; R is hydrogen or (lower) alkyl; and B is (a) cycloalkyl of 4 to 8 ring carbon atoms, (b) (lower) alkylcycloalkyl wherein the cycloalkyl has 4 to 8 ring carbon atoms, (c) (lower) hydroxyalkylcycloalkyl wherein the cycloalkyl has 4 to 8 ring carbon atoms, or (d) hydroxycycloalkyl of 4 to 8 ring carbon atoms in the cycloalkyl group. The compounds of this invention have antibacterial, antifungal, and antiprotozoan activity.

3,528,972

QUATERNARY ANTHRAQUINONE MORPHOLINO AND PIPERIDINO SALTS

Gregoire Kalopissis, Paris, Andrée Bugaut, Boulogne-sur-Seine, and Jacques Bertrand, Tremblay-les-Glonesses, France, assignors to Societe anonyme dite: L'Oreal, Paris, France

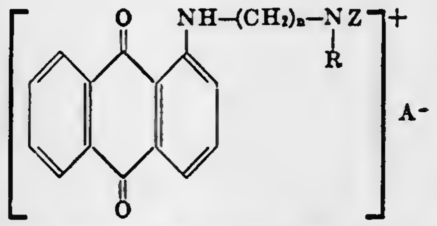
No Drawing. Application Oct. 23, 1967, Ser. No. 677,068, now Patent No. 3,422,895, dated May 6, 1969, which is a division of application Ser. No. 639,915, May 19, 1967, now Patent No. 3,467,483, dated Sept. 9, 1969, which in turn is a continuation of application Ser. No. 319,635, Oct. 24, 1963. Divided and this application Sept. 20, 1968, Ser. No. 761,297

Claims priority, application France, Oct. 29, 1962, 913,810; Jan. 8, 1963, 920,795; Apr. 2, 1963, 930,212; June 20, 1963, 938,822

Int. Cl. C07d *87/46*

U.S. Cl. 260—247.1 **7 Claims**

Hair dye compound which is color stable having the formula



in which n is an integer between 2 and 6 inclusive, R is a lower alkyl, NZ is selected from the group consisting of morpholino and piperidino, and A^- is an anion selected from the group consisting of halogen, methylsulphate and sulphate.

3,528,973

1,3-THIAZINES

Klaus Thewalt and Gustav Renckhoff, Witten (Ruhr), Germany, assignors to Dynamit Nobel AG, Troisdorf, Germany

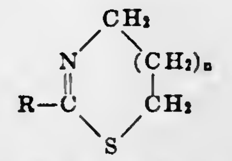
No Drawing. Filed May 9, 1968, Ser. No. 728,075

Claims priority, application Germany, May 9, 1967, D 53,039

Int. Cl. C07d *93/06, 93/38*

U.S. Cl. 260—243 **7 Claims**

1,3-N-S-heterocyclic compounds having the general formula:



wherein n is 1 or 2 and R is an alkyl group of 2 to 12 carbon atoms, and a process for preparing them by reacting hydroxyalkylamides of the general formula,

$$RCONH—CH_2—(CH_2)_n—CH_2OH$$

with phosphorus pentasulfide. The subject compounds exhibit bactericidal and fungicidal activity.

3,528,974

DIHYDRO-1,3-BENZOXAZINE-2,4-DIONE

Kurt Engel, Basel, Switzerland, assignor to Robapharm A.G., Basel, Switzerland, a Swiss company

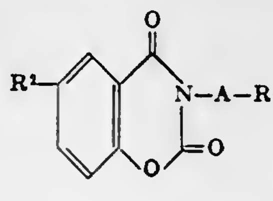
No Drawing. Filed Jan. 24, 1966, Ser. No. 522,390

Claims priority, application Switzerland, Jan. 25, 1965, 997/65

Int. Cl. C07d *87/08*

U.S. Cl. 260—244 **1 Claim**

The present disclosure provides for a compound encompassed by the formula:



and salts thereof with pharmaceutically acceptable acids, in which R^2 represents a member selected from the group consisting of H, halogen, carb(lower)alkoxy amino, carb(lower)alkenoxy amino, R^5 represents a member selected from the group consisting of di(lower)alkyl amino, morpholinyl, pyridyl, lower alkyl pyridyl, quinolinyl, and A is selected from linear and branched lower alkylene, and in which A is not ethylene when R^5 is pyridyl. The disclosure also provides for a method of preparing such compounds by reacting the corresponding halobenzoxazine derivative with an amine in a solvent such as alcohol or dimethyl-formamide.

3,528,975

3,9 - BIS(SUBSTITUTED AMINO) - 2,4,8,10 - TETRAOXA - 3,9 - DIPHOSPHASPIRO[5.5]UNDECANE-3,9-DIOXIDES AND DISULFIDES

Philip M. Pivawer and Rudi F. W. Ratz, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed July 20, 1967, Ser. No. 654,698

Int. Cl. C07d *87/42*

U.S. Cl. 260—246 **17 Claims**

A series of bifunctional ureas and carbamates containing a spirane system have been provided by the reaction of 3,9 - bis(isothiocyanato)-2,4,8,10 - tetraoxa - 3,9-diphosphaspiro[5.5]undecane - 3,9 - dioxide; 3,9 - diisocyanato - 2,4,8,10 - tetraoxa - 3,9 - diphosphaspiro[5.5]undecane-3,9-dioxide and their corresponding -3,9-disulfides with ammonia and selected alcohols and amines. These new compounds are useful as anti-oxidants for synthetic resins. They are also valuable agricultural chemicals and motor fuel additives.

3,528,976

PROCESS FOR THE PREPARATION OF SUBSTITUTED OXAZOLIDONES

Manfred Budnowski, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

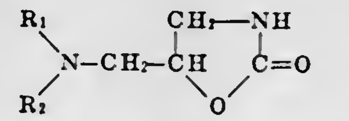
No Drawing. Filed July 19, 1966, Ser. No. 566,214

Claims priority, application Germany, June 24, 1966, H 59,753

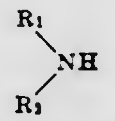
Int. Cl. C07d *85/28, 87/40*

U.S. Cl. 260—247.2 **14 Claims**

The present invention relates to novel oxazolidones-(2) substituted in the 5 position of the formula



wherein R_1 and R_2 represent organic groups and together represent a bridging organic linkage, as well as the process of preparing them, which comprises reacting triglycidyl isocyanurate with compounds of the formula



wherein R_1 and R_2 have the above-assigned meanings.

3,528,977

SUBSTITUTED t-AMINOPHENYLALANINES

Richard A. Schnettler, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,547

Int. Cl. C07d *87/36*

U.S. Cl. 260—247.2 **5 Claims**

The compounds are substituted t-aminophenylalanines useful as antihypertensive agents and chelating agents for heavy metal ions. A compound disclosed is diethyl α-morpholino-α-(3,4-dibenzyloxybenzyl)malonate.

3,528,978
N-[(HALOALKYL)THIO]-1,2-PYRIDAZINE-CARBOXIMIDES

Malcolm W. Moon, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Apr. 14, 1967, Ser. No. 632,147
Int. Cl. C07d *51/04*
U.S. Cl. 260—250 **6 Claims**

Certain new N-[(haloalkyl)thio] - 1,2 - pyridazinedicarboximides are active against fungi, bacteria, algae and protozoa. The pyridazine ring may be tetrahydro or 3,6-dihydro. The invention contemplates alkyl substituents of from 1 to 4 carbon atoms in the 3 and 6 positions of the pyridazing ring. The haloalkyl group may be methyl or ethyl with chlorine, bromine, or fluorine substitution. The apple scab fungus, *Venturia inaequalis,* and the bean rust fungus. *Uromyces phaseoli* have been controlled.

3,528,979
PHTHALAZINE-BROMINE COMPLEXES AND METHOD OF PREPARING SAME

Arthur Hirsch, Montreal, Quebec, Canada, and Demetrius G. Orphanos, Waltham, Mass., assignors to Canadian Technical Tape Ltd., Montreal, Quebec, Canada
No Drawing. Filed May 8, 1967, Ser. No. 638,189
Int. Cl. C07d *51/06*
U.S. Cl. 260—250 **10 Claims**

A new composition is shown having the generalized formula $R.(Br_3)_n$ where R is a phthalazine and *n* is at least 1 and no more than 2. Some of the phthalazines which can be utilized in connection with the composition are phthalazine itself, 1-phenylphthalazine, 1,4-dibromophthalazine, or 1,4-dichlorophthalazine. The compositions are useful as insecticides and as intermediates for bromination.

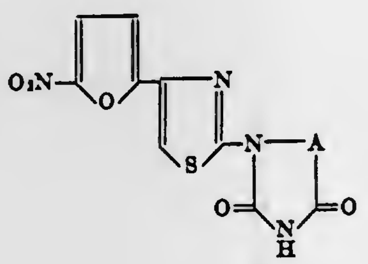
A method is also shown of producing the bromine complexes of this invention which involve the method steps of reacting at least molar amounts of the phthalazine and of bromine dissolved in a suitable solvent until the bromine complex is precipitated. The preferred solvent utilized is carbon tetrachloride.

A method of bromination is also shown which comprises the addition of the bromine complexes of this invention to the material to be brominated.

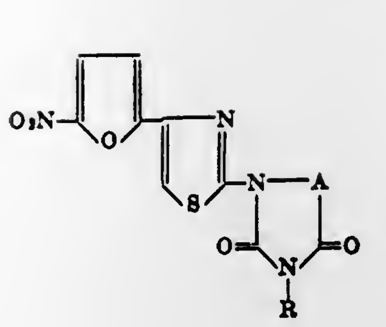
3,528,980
THIAZOLYL HYDANTOIN AND HYDROURACIL COMPOUNDS

Peter John Islip, Hampton, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Mar. 6, 1968, Ser. No. 710,748
Claims priority, application Great Britain, Mar. 23, 1967, 13,879/67
Int. Cl. C07d *91/34*
U.S. Cl. 260—250.5 **6 Claims**

4-(5-nitro-2-furyl)thiazolyl hydantoins and hydrouracils (I and II):


(I)

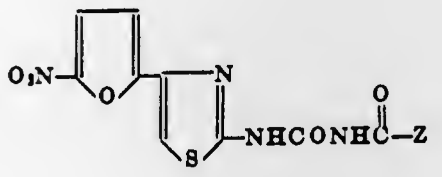
and


(II)

are provided; where A is alkylene and R is alkyl, allyl, propargyl, $—CH_2COOH$ (or alkyl ester or salt), or

$$—CH_2CONH_2$$

(or N-alkyl or N,N-dialkyl derivative). The compounds having Formula I are prepared by cyclizing a haloacyl urea compound of Formula III:


(III)

where Z is α- or β-haloalkyl. The compounds of Formula II are provided by reacting the compounds of Formula I with a compound of formula R—X where X is an acid-forming atom or group. The compounds (I and II) are pharmacological agents having antibacterial and trichomonoacidal activity.

3,528,981
PERIMIDINE DERIVATIVES

Theodore S. Sulkowski, Narberth, and Myles A. Wille, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 466,824, June 24, 1965. This application May 2, 1967, Ser. No. 635,386
Int. Cl. C07d *51/48*
U.S. Cl. 260—256.4 **16 Claims**

The compounds of the class of 10H-pyrrolo[1,2-a] perimidin-10-ones and 12H - isoindolo[2,1 - a]perimidin-12-ones and their derivatives useful as anti-inflammatory, central nervous system depressant and anti-Parkinson agents.

3,528,982
N-DIALKYLAMINOALKYL-3,4-DIHYDRO-2(1H)-QUINAZOLINONES

John W. Cusic and William E. Coyne, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 557,371, June 14, 1966. This application May 10, 1968, Ser. No. 728,330
Claims priority, application Great Britain, June 13, 1967, 27,226/67
Int. Cl. C07d *51/48*
U.S. Cl. 260—256.4 **12 Claims**

3,4-dihydro-2(1H)-quinazolinones having an aminoalkyl substituent at the 1- or 3-position are described herein. These compounds possess anti-inflammatory, analgesic, hypotensive, anti-ulcer, anti-bacterial, anti-protozoal, anti-fungal, and anti-algal activity. The compounds are prepared by the reaction of an aminoalkyl halide with a 3,4-dihydro-2(1H)-quinazolinone which is unsubstituted at the 1- or 3-position.

3,528,983
PIPERAZINIUM BIS(ACETYLSALICYLATE)

Edward Henderson, 10 Columbus Circle, Room 1470, New York, N.Y. 10019
No Drawing. Filed May 4, 1967, Ser. No. 636,025
Int. Cl. C07d *51/64*
U.S. Cl. 260—268 **1 Claim**

Piperazinium bis(acetylsalicylate), useful as an analgesic and anti-pyretic, and the method of making it by admixture of ether solutions of acetylsalicylic acid and piperazine.

3,528,984
1,2-DIARYL BUTANE DERIVATIVES

John F. Cavalla, Isleworth, Roy Simpson, Maidenhead, and Alan C. White, Windsor, England, assignors, by mesne assignments, to John Wyeth & Brother Limited, Maidenhead, England, a British company
No Drawing. Filed May 19, 1967, Ser. No. 639,661
Int. Cl. C07d *29/32*
U.S. Cl. 260—293 **4 Claims**

Certain 1,2-diarylbutanes bearing a heterocyclic radical containing a tertiary nitrogen atom at position 4 and substituted at position 2 by cyano, carboxamido, carboxy, alkanoyl, or hydroxyalkyl, exhibit interesting anti-inflammatory and CNS activity. These compounds are accordingly useful as analgesics, anti-convulsants, and anti-inflammatories. Suitable aryls are phenyl, methoxyphenyl, and hydroxyphenyl; suitable radicals containing tertiary nitrogen atoms include 4-pyridyl and 4-(1′-methyl)-piperidyl. Also suitable are the methiodides of these bases.

3,528,985
BENZOYLETHYL QUATERNARY AMMONIUM COMPOUNDS AS ANTHELMINTIC AGENTS

Alfred Margot, Basel, and Jean-Jacques Gallay, Birsfelden, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Original application Jan. 20, 1966, Ser. No. 521,831, now Patent No. 3,453,313, dated July 1, 1969. Divided and this application Nov. 1, 1968, Ser. No. 798,519
Claims priority, application Switzerland, Jan. 29, 1965, 1,280/65, 1,281/65
Int. Cl. C07d *29/28, 27/04, 87/140*
U.S. Cl. 260—293.4 **2 Claims**

Quaternary benzoylethyl ammonium compounds, including new compounds which have amino groups in the para-position of the phenyl ring, are useful as anthelmintic agents.

3,528,986
DISODIUM 4,4′-DISULPHOXYDIPHENYL-(2-PYRIDYL)-METHANE

Gianfranco Pala, Milan, Italy, assignor to Istituto de Angeli S.p.A., Milan, Italy, an Italian corporation
No Drawing. Filed Aug. 22, 1966, Ser. No. 573,873
Int. Cl. C07d *31/48*
U.S. Cl. 260—294.8 **1 Claim**

The compound, disodium 4,4′-disulphoxydiphenyl-(2-pyridyl)-methane, useful as a laxative for humans.

3,528,987
N-(SUBSTITUTED PYRIDYL)RINOLAMIDES AND -LINOLENAMIDES

Alex Meisels, Basel, and Emilio Schott, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 474,167, July 22, 1965. This application Oct. 30, 1968, Ser. No. 771,973
Claims priority, application Switzerland, July 31, 1964, 10,068/64; July 2, 1965, 9,322/65
Int. Cl. C07d *31/44*
U.S. Cl. 260—294.8 **14 Claims**

The compounds are of the class of unsaturated fatty acid pyridyl amides which possess antiviral and tumor growth inhibiting properties. Illustrative examples of such compounds are N-(5-methyl-2-pyridyl)-linolamide and N-(5-methyl-2-pyridyl)-linolenamide.

3,528,988
METHOD FOR MAKING SYM-TRIS(4-PYRIDYL) CYCLOHEXANES AND ALKYL SUBSTITUTED SYM-TRIS (4-PYRIDYL) CYCLOHEXANES

Heinz, Uelzmann, Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio
No Drawing. Continuation-in-part of applications Ser. No. 507,556, Nov. 12, 1965, and Ser. No. 571,687, Aug. 11, 1966. This application Oct. 12, 1967, Ser. No. 674,760
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **10 Claims**

4-vinyl pyridines are trimerized in the presence of an alkali metal organic imide in a solvent, for example the reaction product of sodium and ethylenimine in the presence of excess ethylenimine, to form 1,3,5-tris(4-pyridyl) cyclohexanes which can be reacted with alkyl benzene sulfonic acids to make oil soluble wetting agents useful in making water-in-oil emulsions. The 1,3,5-tris(4-pyridyl) cyclohexanes can also be hydrogenated to form 1,3,5-tris(4 - piperidyl) cyclohexanes. Both types of cyclohexanes find utility as accelerators for sulfur curable millable rubbers and resins, for example, natural rubber. The 1,3,5-tris(4-piperidyl) cyclohexanes can be used to cure epoxides, or anhydride containing polymeric materials (for instance, the copolymer of maleic anhydride and styrene); they will also crosslink or chain extend isocyanate terminated polyurethane prepolymers, or polyisocyanates, and can be used in the one-shot processes of making polyurethanes by mixing with the polyol, H_2O, etc. The 1,3,5-tris(4-piperidyl)cyclohexanes can be reacted with epoxides and/or episulfides to make ethers and/or thioethers and polyether and/or thioether polyols and/or polythiols which can be reacted with isocyanates or polyisocyanates to make polyurethanes and polythiourethanes.

3,528,989
3-AMINOALKYL DERIVATIVES OF 2,1-BENZISOTHIAZOLINE

Joseph A. Skorcz, Milwaukee, and John T. Suh and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 571,967, Aug. 12, 1966. This application Nov. 14, 1967, Ser. No. 682,974
Int. Cl. C07d *91/44*
U.S. Cl. 260—304 **7 Claims**

The compounds are 3-aminoalkyl derivatives of 2,1-benzisothiazoline-2,2-dioxides which are useful in the preparation of wood preservatives, moth proofing agents, pickling inhibitors and as pharmaceutical agents, particularly antihypertensive agents and central nervous system stimulants. Compounds disclosed include 1,3-dimethyl-3-(3′-dimethylaminopropyl) - 2,1 - benzisothiazoline-2,2-dioxide, 1,3 - dimethyl-3-(N,N-diacetyl-3′-aminopropyl)-2,1-benzisothiazoline-2,2-dioxide and 1,3-dimethyl-3-(3′ - morpholinopropyl) - 2,1 - benzisothiazoline-2,2-dioxide.

3,528,990

1-AMINOALKYL DERIVATIVES OF 2,1-BENZISOTHIAZOLINE

Joseph A. Skorcz, Milwaukee, and John T. Suh and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 571,978, Aug. 12, 1966. This application Nov. 14, 1967, Ser. No. 682,977

Int. Cl. C07d *91/44*

U.S. Cl. 260—304 9 Claims

The compounds are 1-aminoalkyl derivatives of 2,1-benzisothiazoline-2,2-dioxides which are useful in the preparation of wood preservatives, moth proofing agents, pickling inhibitors and as pharmaceutical agents, particularly central nervous system stimulants and antihypertensive agents. Among the compounds disclosed are 1-(2-dimethylaminoethyl) - 2,1 - benzisothiazoline-2,2-dioxide and 1 - (3 - dimethylaminopropyl)-3-phenyl - 2,1-benzisothiazoline-2,2-dioxide.

3,528,991

1H- AND 2H-BENZOTRIAZOLYL-LOWER-ALKYL-AMIDOXIMES, -AMIDINES, AND -GUANIDINES

Malcolm R. Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 519,458, Jan. 10, 1966, which is a continuation-in-part of application Ser. No. 345,846, Feb. 19, 1964. This application Apr. 19, 1967, Ser. No. 631,860

Int. Cl. C07d *55/04*

U.S. Cl. 260—308 6 Claims

1H- and 2H - benzotriazolyl - lower-alkyl-amidoximes, amidines, and guanidines are disclosed. These compounds are useful as hypotensive agents, tranquilizers, C.N.S. stimulants, anti-inflammatory agents and sedatives.

3,528,992

NAPHTHOXATHIOLES

Weldon M. Padgett II, 2728 Russell St., Berkeley, Calif. 94705, and Julius Hyman, 311 Pala Ave., Piedmont, Calif. 94611

No Drawing. Filed Oct. 28, 1965, Ser. No. 505,473

Int. Cl. C07d *89/06*

U.S. Cl. 260—327 5 Claims

New chemical compounds having an unsubstituted oxathiole ring fused to a naphthalene nucleus, e.g. naphth[1,2-d][1,3]oxathiole and naphth[2,1-d]-1,3-oxathiole.

3,528,993

METHOD OF PREPARATION OF DITHIOLIUM SALTS

George A. Reynolds, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,929

Int. Cl. C07d *71/00;* **C03g** *5/00*

U.S. Cl. 260—327 10 Claims

A process for forming 3-substituted derivatives of 1,2-dithiolium salts useful in electrophotography which process involves the reaction of a 3-chloro-1,2-dithiolium salt with an oxygen-containing reactant such as hydroxyaryl and alkoxyaryl compounds or tertiary-aminoaryl compounds containing a hydroxy radical. The oxygen-containing reactant is meta-disubstituted when the reactant is hydroxy- or alkoxy-substituted benzene.

3,528,994

AMIDES OF β-(3-THIANAPHTHENYL) ETHYLAMINES

John T. Suh, Mequon, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 5, 1967, Ser. No. 636,274

Int. Cl. C07d *63/18*

U.S. Cl. 260—330.5 5 Claims

The compounds are amides of β-(3-thianaphthenyl)-ethylamines which are useful as antipsychotic, antihypertensive and analgetic agents. The amides are preferably prepared by reacting a β-(3-thianaphthenyl)ethylamine with an acyl chloride. A species disclosed is N-(3,4 - dimethoxyphenylacetyl)-β-(3-thianaphthenyl)ethylamine.

3,528,995

SUBSTITUTED PERHALOCOUMALINS AND DERIVATIVES THEREOF

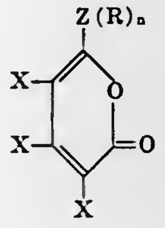
Victor Mark, Ransomville, and Leon Zengierski, North Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Oct. 12, 1966, Ser. No. 586,056

Int. Cl. C07d *7/16*

U.S. Cl. 260—343.5 8 Claims

Perhalocoumalins of the structure



are described

wherein X is a halogen selected from the group consisting of chlorine and bromine,

$(R)_nZ$ is a substituent in which the following relationship exists;

If *n* is—	Z may be—
0	Iodine.
1	Oxygen, sulfur.
2	Nitrogen.
3	Carbon.

and wherein R is selected from the group consisting of (a) hydrogen; (b) alkyl groups of 1 to 18 carbon atoms, provided that when Z is oxygen the alkyl groups from which R may be selected contain from 6 to 18 carbon atoms; (c) substituted alkyl groups of 1 to 18 carbon atoms wherein the substituents are selected from the group consisting of chlorine or bromine; (d) alicyclic groups containing from 5 to 18 carbon atoms; (e) aromatic and aralkyl groups containing from 6 to 18 carbon atoms.

These compounds are prepared by reacting the perhalogenated precursor with a compound of the formula $(R)_nZH$ in the presence of a base which is less nucleophilic than the reactant $(R)_nZH$.

The compounds are useful as pesticides, bacteriacides, fungicides or miticides.

3,528,996

STABILIZED TETRAHYDROPHTHALIC ANHYDRIDE

Bernard Taub, Williamsville, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 26, 1968, Ser. No. 724,604

Int. Cl. C07c *61/24*

U.S. Cl. 260—346.3 7 Claims

Liquid isomeric mixtures of cyclohexene-1,2-dicarboxylic anhydride (tetrahydrophthalic anhydride), useful as curing agents for epoxy resins, may be stabilized and made resistant to deposition of solids by the addition of a small amount of a di-lower alkyl acetamide, especially dimethylacetamide.

3,528,997

PROCESS FOR TREATING RESIDUAL LIQUORS FROM THE MANUFACTURE OF PHTHALIC ANHYDRIDE AND THE RECOVERY OF CITRACONIC AND MALEIC ANHYDRIDES AND ACIDS THEREFROM

Paul Juston and Pierre Guillermard, Chauny, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed June 12, 1967, Ser. No. 645,496

Claims priority, application France June 13, 1966, 65,208

Int. Cl. C07c *57/02, 57/14*

U.S. Cl. 260—346.8 3 Claims

The process for treatment of residual liquors from the preparation of phthalic anhydride by vapor phase oxidation of ortho-xylene comprising subjecting the liquor to a dehydration and anhydrization step in the presence of an organic solvent having a boiling point below 140° C. to effect removal of water and conversion of citraconic acid to a soluble phase in the organic solvent whereby the solvent phase can be removed for elimination of the solvent to deposit citraconic anhydride and which includes the pretreatment of the liquor for removal of maleic acid by the process of concentrating the liquor and cooling to crystallize maleic acid or by isomeric conversion of the maleic acid to fumaric acid which separates out, or by reaction of the maleic acid with a soda lye to form a separable acid metal maleate and in which maleic acid present in the residue remaining after removal of the citraconic anhydride is recovered by solution of the maleic acid in the residue in water for removal from the remainder.

3,528,998

AMINO EPOXY PHOSPHONATES

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 24, 1966, Ser. No. 560,101

Int. Cl. C07f *9/40*

U.S. Cl. 260—348 8 Claims

Amino epoxy phosphonates, such as 1-amino-2,3-epoxypropylphosphonates and N-substituted derivatives thereof, including polyphosphonates and silyl phosphonates, can be homopolymerized, or reacted with active-hydrogen-containing polymers, such as cellulose, and the silyl derivatives can be reacted with glass. These compounds thus have utility as flame-retardant and cross-linking agents for cellulose, as finishes for glass surfaces, and as coupling agents for glass fiber-thermosetting plastic laminates.

3,528,999

SUBSTITUTED METHYLENE STEROIDS AND THEIR PREPARATION

Peter Bladon, Lenzie, Glasgow, Scotland, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed July 24, 1968, Ser. No. 747,089

Claims priority, application Great Britain, July 28, 1967, 34,739/67

Int. Cl. C07c *169/32, 169/34*

U.S. Cl. 260—397.3 2 Claims

The present invention relates to novel 16,17-(substituted methylene)-20-oxygenated steroids of the pregnane series having valuable biological activities, and to processes for the preparation thereof.

3,529,000

C-21 HYDROXYLATION PRODUCTS OF STEROIDS

Brian Gadsby, Maidenhead, England, and George Greenspan, Narberth, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 29, 1968, Ser. No. 701,086

Int. Cl. C07c *169/32, 169/34*

U.S. Cl. 260—397.45 4 Claims

The invention is directed to *dl*-13β-alkyl-21-hydroxy-18-19-dinorpregn-4-ene-3,20-diones which have either a hydrogen, oxo, α-hydroxy or β-hydroxy group in the 11-position. The compounds are useful as intermediates in the production of 18-homo-19-norcortisone and 18-homo-19-norhydrocortisone, which are useful as anti-inflammatory compounds.

3,529,001

PROCESS FOR DECOLORIZING N,N-DISUBSTITUTED AMIDES

Robert R. Mod, Frank C. Magne, and Evald L. Skau, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed July 10, 1968, Ser. No. 743,612

Int. Cl. C09f *7/02*

U.S. Cl. 260—404 2 Claims

Certain N,N-disubstituted amide plasticizers are rendered substantially color-free by aeration followed by an activated alumina treatment.

3,529,002

PRODUCTION OF GLYCOL MONOESTERS OF CARBOXYLIC ACIDS

Harry Distler, Ludwigshafen (Rhine), and Kurt Schneider, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,185

Claims priority, application Germany, Oct. 23, 1965, B 84,235

Int. Cl. C07c *67/00*

U.S. Cl. 260—410.6 6 Claims

Process for the production of glycol monoesters of carboxylic acids wherein carboxylic acids are reacted with 1,2-epoxides at a temperature of from 25° to 200° C. in the presence of 0.1 to 20% by weight of a sulfoxide. Glycol monoesters of carboxylic acids are produced by the process in high yields and without contamination by polymers of 1,2-epoxides.

3,529,003

FLUORINE CONTAINING SILICONES

Douglas A. Rausch and William C. Behnke, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 17, 1967, Ser. No. 653,615

Int. Cl. C07f *7/02*

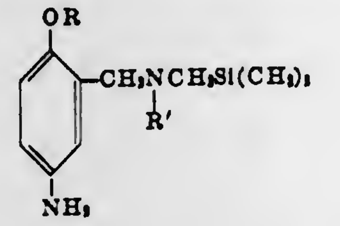
U.S. Cl. 260—448.2 5 Claims

The invention is novel fluorine containing silicones and a method of their preparation.

3,529,004
TRIMETHYLSILYLMETHYL DERIVATIVES OF SUBSTITUTED BENZYLAMINES

William E. Weesner, Kettering, and John L. Schaar, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,400
Int. Cl. C07f *7/10*
U.S. Cl. 260—448.2 **2 Claims**

The organosilicon compounds represented by the formula



where R and R′ are selected from the group consisting of methyl, ethyl and propyl; and their hydrochlorides. The novel compounds are useful as herbicides and corrosion inhibitors.

3,529,005
SILICON-CONTAINING STEROIDS

Sandor Barcza, West Orange, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware
No Drawing. Filed May 13, 1968, Ser. No. 728,802
Int. Cl. C07d *103/02*
U.S. Cl. 260—448.2 **9 Claims**

The compounds are steroids having the 6-carbon atom replaced by a silicon atom and are useful as estrogenic agents. The compounds may be prepared by a multistep process employing as starting materials an m-(lower) alkoxyphenyl halide, a di(lower)alkyldihalosilane, an allyl halide, a vinyl-organo-metallic reagent and a 2-(lower)alkyl-cyclopentane-1,3-dione.

3,529,006
N-METHYLOLSILYLETHERS OF CARBOXYLIC ACID AMIDES

Ferdinand Senge, Krefeld, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 11, 1967, Ser. No. 652,413
Claims priority, application Germany, July 26, 1966, F 49,786
Int. Cl. C07d *31/44;* **C07f** *7/10, 7/18*
U.S. Cl. 260—448.8 **6 Claims**

N-methylolsilylethers formed by reacting N-methylol compounds with hexalkyldisilazanes in a molar ratio of about 1:1 to 1:8 at temperatures of 20–130° C. and their utility in modifying polymeric products.

3,529,007
NEW ORGANOSILICON COMPOUNDS, THEIR PREPARATION AND THEIR USE

Pierre Brison, Oullins, Rhone, and Marcel Lefort, Caluire, Rhone, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,548
Claims priority, application France, Sept. 8, 1966, 75,740
Int. Cl. C07f *7/18*
U.S. Cl. 260—448.8 **6 Claims**

Organosilicon compounds containing a β-hydroxyalkyl group and useful inter alia as lubricants or coating are prepared by reacting a silicon compound containing a silicon-hydrogen bond with a vinyloxysilane in the presence of an initiator and then hydrolysing or alcoholysing the products obtained, which are new compounds themselves useful as impregnating agents.

3,529,008
TETRASILICIC ESTERS AND THEIR USE FOR TEXTILE TREATMENT

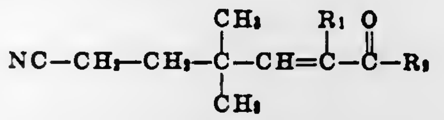
Hans Brandeis and Wilhelm Ruemens, Limburgerhof, Pfalz, and Johann Stanger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Sept. 7, 1967, Ser. No. 665,970
Claims priority, application Germany, Sept. 15, 1966, 1,594,911
Int. Cl. C07f *7/04*
U.S. Cl. 260—448.8 **2 Claims**

A new tetrasilicic ester of at least one unsaturated long-chain fatty alcohol or mixture of fatty alcohols which has an iodine number of at least 40, and a method of treating textiles in which the textiles are impregnated with the new tetrasilicic ester, preferably in the form of an aqueous emulsion, and if necessary then dried.

3,529,009
UNSATURATED NITRILES CONTAINING CARBONYL GROUPS AND PREPARATION THEREOF

Helmut aus der Fünten, Mondorf, and Hermann Richtzenhain, Cologne-Sulz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, a corporation of Germany
No Drawing. Filed Apr. 28, 1967, Ser. No. 637,315
Claims priority, application Germany, Apr. 30, 1966, D 50,009
Int. Cl. C07c *121/30, 121/48, 121/70*
U.S. Cl. 260—464 **14 Claims**

Process of preparing unsaturated carbonyl group containing nitriles of the formula:



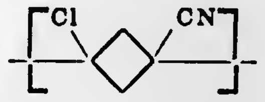
$$NC-CH_2-CH_2-\underset{CH_3}{\overset{CH_3}{C}}-CH=\overset{R_1}{C}-\overset{O}{\overset{\|}{C}}-R_2$$

wherein R_1 and R_2 are each hydrogen, alkyl, cycloalkyl or aryl and can be conjoined to form a ring by reacting α,α-dimethyl-γ-cyanobutyraldehyde with an aldehyde or ketone containing methyl or methylene groups in the presence of a basic condensing agent. The nitriles thus produced are useful compounds and can, for example, be employed as a stabilizer for nitric ester.

3,529,010
3-CHLOROBICYCLO[1.1.0]BUTANE-CARBONITRILES

Saul C. Cherkofsky, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 25, 1968, Ser. No. 700,372
Int. Cl. C07c *121/46*
U.S. Cl. 260—464 **4 Claims**

3-chlorobicyclo[1.1.0]butanecarbonitriles, useful monomers for producing polymers having the recurring unit



which can be fabricated into self-supporting films, fibers and shaped objects, are prepared by the reaction of a basic material on a 3,3-dichlorocyclobutanecarbonitrile produced by the reaction of chlorinating agents upon a 3-ketocyclobutanecarbonitrile.

3,529,011
ADIPONITRILE PROCESS

John Wilkinson Badham, Balwyn, Victoria, Australia, assignor to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a corporation of Australia
Filed Dec. 12, 1966, Ser. No. 600,913
Claims priority, application Australia, Dec. 15, 1965, 67,937/65
Int. Cl. C07c *121/20, 121/26*
U.S. Cl. 260—465.8 **10 Claims**

In the reductive dimerization of an α,β-mono-olefinically unsaturated nitrile or ester, especially acrylonitrile, by reacting it, in a medium capable of providing reactive hydrogen, with an alkali metal or alkaline earth metal amalgam in the presence of at least one additive promoting the hydrodimerization reaction, the reaction rate is increased and the formation of by-products reduced by maintaining the amalgam phase in turbulent motion characterized by an energy dissipation wave number greater than 100 $cm.^{-1}$. Preferably the turbulence is induced by passing the phase containing the monomer upwardly through a layer of amalgam so that the turbulence of the amalgam phase is characterized by an energy dissipation wave number greater than 400 $cm.^{-1}$ and that of the phase containing the monomer by an energy dissipation wave number greater than 80 cm. $^{-1}$. More especially the amalgam and the phase containing the monomer are maintained in intimate mixture in a "fluidized bed" in which the lowest limit of fluidization of the amalgam phase is characterized by a bulk density of the intimately mixed phases *5%* lower than that of the amalgam.

3,529,012
METHYL α-ETHYL-α-PHENYL-MALONAMIDATES

Bernard Loev, Broomall, and Edward Macko, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
No Drawing. Original application Feb. 11, 1966, Ser. No. 526,712, now Patent No. 3,462,535, dated Aug. 19, 1969. Divided and this application Apr. 21, 1969, Ser. No. 818,075
Int. Cl. C07c *103/24*
U.S. Cl. 260—471 **2 Claims**

Sedative-tranquilizer compositions comprising a pharmaceutical carrier and a malonamidic acid ester, a method of producing sedative-tranquilizing activity by administering these compositions and new methyl α-ethyl-α-phenylmalonamidates having sedative-tranquilizing activity. The malonamidates are prepared from an α-phenylmalonic acid diester or a phenylacetonitrile.

3,529,013
METHOD FOR CONTROLLING SUBLIMATION DURING THE PREPARATION OF POLYESTERS

Peter Howard Jackson, Alfred, Maine, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Mar. 2, 1967, Ser. No. 619,926
Int. Cl. C07c *69/82*
U.S. Cl. 260—475 **9 Claims**

In a process for the manufacture of a polyester in which dimethyl terephthalate is reacted with one or more glycols in the presence of an ester interchange catalyst, incorporation in the reaction mixture of a small amount of a volatile inert organic compound in which dimethyl terephthalate is soluble serves to prevent sublimation of the dimethyl terephthalate. Plugging of condensers and other processing equipment, and consequent build-up of pressure in the reaction vessel and reduction in reaction rate, resulting from such sublimation is effectively avoided. Volatile inert organic compounds which are useful for this purpose include hydrocarbons, chlorinated hydrocarbons and ethers.

3,529,014
PROCESS FOR PREPARING ENOL ACETATES FROM KETONES

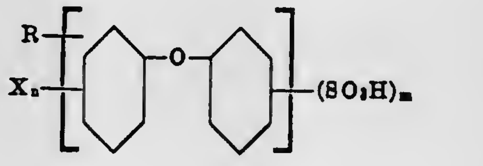
Walter A. Gay, Cheshire, and Desmond Sheehan, Hamden, and Anthony F. Vellturo, Cheshire, Conn., assignors to The Techni-Chem Company, Wallingford, Conn., a corporation of Connecticut
No Drawing. Filed Jan. 30, 1968, Ser. No. 701,535
Int. Cl. C07c *69/14*
U.S. Cl. 260—488 **11 Claims**

Enol acetates are produced by reacting ketones, particularly cyclic ketones, such as cyclohexanone, cyclooctanone and cyclododecanone, with acetic anhydride and a catalyst and ketene in substantially equi-molecular amounts based on the ketone. The acetic anhydride is preferably in excess, and the reaction is carried out at elevated temperatures, such as 100° to 150° C. The reaction goes to completion.

3,529,015
ALKYLHALODIPHENYL OXIDE SULFONATES

Alfred F. Steinhauer and Joseph C. Valenta, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Application Sept. 28, 1959, Ser. No. 842,583, which is a continuation-in-part of applications Ser. No. 735,669, and Ser. No. 735,681, both of May 16, 1958, Ser. No. 744,008, June 23, 1958, and Ser. No. 816,061, May 27, 1959. Divided and this application June 20, 1963, Ser. No. 289,391
Int. Cl. C07c *143/40*
U.S. Cl. 260—512 **18 Claims**

The invention is directed to compounds having the generic formula



wherein R represents an alkyl radical containing 12 to 22 carbon atoms; X represents a halogen of atomic number 17 to 53, i.e., chlorine, bromine or iodine; and, *m* and *n* are integers from 1 to 2; and, salts thereof.

3,529,016
N-(2-ALKYL)-SULFOACETAMIDES

Arno Cahn, Pearl River, N.Y., and Mark D. Konort, Haworth, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 536,646, Mar. 23, 1966, which is a continuation-in-part of application Ser. No. 306,996, Sept. 6, 1963. This application Feb. 2, 1968, Ser. No. 702,557
Int. Cl. C07c *143/14*
U.S. Cl. 260—513 **4 Claims**

This application discloses as novel compounds the N-(2-alkyl)-sulfoacetamides of the formula

$$R—CH(CH_3)—NH—CO—CH_2—SO_3M$$

where M is a water-solubilizing cation and R is a C_9–C_{12} alphatic hydrocarbon group. The sulfoacetamides exhibit unusual value as dishwashing detergents and are unexpertedly soluble making possible the preparation of homogeneous, liquid concentrates. A method of synthesis is also disclosed in which a long chain alpha olefin is reacted with chloroacetonitrile. The resulting 2-alkyl chloroacetamide is converted to a sulfonate.

3,529,017

ALKALINE HYDROLYSIS OF POLYIMIDES

Emmette F. Izard, Kenmore, and William B. Lindsey, Williamsville, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 518,976

Int. Cl. C07c *51/00, 51/06, 85/00*

U.S. Cl. 260—515 **10 Claims**

A process for recovery of valuable monomers from scrap polyimide polymeric materials is provided which comprises, briefly, (1) dissolving the polyimide in an aqueous hydroxide solution, (2) heating the aqueous solution at a temperature between about 100° C. and about 200° C., (3) cooling said aqueous solution and precipitating and separating therefrom one of said monomeric materials, (4) adding a mineral acid to said solution for precipitating another monomeric material, and (5) recovering said other monomeric material from said solution.

3,529,018

PROCESS FOR CONTINUOUSLY AND SIMULTANEOUSLY DRYING AND LIBERATING ORGANIC ACIDS FROM THEIR METAL SALTS

Craig R. Andersson, Chester, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Feb. 24, 1966, Ser. No. 529,812

Int. Cl. C07c *63/38*

U.S. Cl. 260—515 **1 Claim**

A method for obtaining dry naphthalene 2,6-dicarboxylic acid from aqueous solution of its alkali or alkaline earth metal salts which comprises spraying said aqueous solution of the carboxylic acid salt and simultaneously contacting the sprayed salt with a flow of hot acidic gas.

3,529,019

ALKYLARYLOXY ALANINES

John T. Suh, Mequon, and Joseph A. Skorcz, Milwaukee, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 23, 1968, Ser. No. 723,605

Int. Cl. C07c *101/72*

U.S. Cl. 260—519 **6 Claims**

The compounds are 2-alkyl-3-aryloxyalanines useful as chelating agents for heavy metal ions and as pharmaceutical agents such as central nervous system stimulants. Compounds disclosed are 2-methyl-3-(2-methoxyphenoxy)-alanine and 2-methyl-3-(2-methoxy-4-chlorophenoxy)-alanine.

3,529,020

OXIDATION PROCESSES EMPLOYING ALUMINOSILICATE CATALYSTS AND AN INITIATOR

Phillip S. Landis, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,132

Int. Cl. C07c *15/10, 51/18, 63/02*

U.S. Cl. 260—524 **20 Claims**

An oxidizable organic material is oxidized with free oxygen in the presence of (1) a heavy metal crystalline aluminosilicate having uniform pores sufficiently large to permit entry of at least a portion of said material, and (2) an oxidation initiator which is preferably present in said pores.

3,529,021

TEREPHTHALIC ACID PURIFICATION PROCESS

Arnold F. Stancell, New Brunswick, N.J., and Andrew J. Foglia, Brooklyn, N.Y., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,000

Int. Cl. C07c *51/42*

U.S. Cl. 260—525 **7 Claims**

The purification of impure or crude terephthalic acid tc reduce its content of such impurities as para-carboxybenzaldehyde is accomplished by non-catalytic treatment at elevated temperatures (e.g., at 600–750° F.) of the crude acid in the vapor state by admixture with an oxygen-rich gas which preferably contains steam as well as over 50 mole percent of oxygen; then the terephthalic acid is condensed from the vapor mixture as a purified solid product by cooling.

3,529,022

PROCESS FOR RESOLUTION OF OPTICAL ISOMERS OF RACEMIC AMMONIUM PANTOATE BY PREFERENTIAL CRYSTALLIZATION

Hiromasa Nakamoto, Takaoka, Hideo Takeda, Oyabe, and Kazuyoshi Inada, Imizu-gun, Japan, assignors to Fuji Chemical Industries, Ltd., Toyama-ken, Japan

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,217

Claims priority, application Japan, May 10, 1966, 41/29,087

Int. Cl. C07d *5/06*

U.S. Cl. 260—535 **10 Claims**

A process is provided for obtaining optical isomers of racemic ammonium pantoate, which can be readily converted to the corresponding optically active pantolactones, by resolution through the utilization of preferential crystallization of a solution of ammonium pantoate, using a solvent selected from the group consisting of lower aliphatic alcohols, alkoxy-substituted ethanols, mixtures thereof and mixture thereof with water. Heretofore, it was not known that preferential crystallization could be utilized to obtain the aforementioned optical isomers.

3,529,023

α-HYDROXYMETHYLALKYLIDINE AMINES

Richard Leshin, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 443,168, Mar. 26, 1965. This application July 29, 1968, Ser. No. 748,219

Int. Cl. C07c *119/00*

U.S. Cl. 260—566 **2 Claims**

Compositions resulting from the reaction of an alpha (hydroxymethyl) substituted aldehyde resulting from the reaction of a higher aldehyde containing at least one replaceable hydrogen with at least one mole equivalent of formaldehyde and not more moles than the number of replaceable alpha hydrogens per mole of the higher aldehyde and a primary amine including alkyl, cycloalkyl, and aralkyl amines and particularly the Schiff bases and to the reaction product of pentaerythrose and certain amines including cyclohexyl amine; ter-butyl amine; ter, teroctyl amine; and to a process for making these compositions. These Schiff base compositions are useful as methylene donors in forming a resin in situ in rubber, used to reinforce the rubber.

3,529,024

METHOD OF PREPARING 3-METHYLMERCAPTOPROPIONALDEHYDE

Takehiko Ichikawa, Kawasaki-shi, and Tetsuya Kato, Fujisawa-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Feb. 23, 1968, Ser. No. 707,475

Claims priority, application Japan, Mar. 17, 1967, 42/16,691

Int. Cl. C07c *45/00*

U.S. Cl. 260—601 **3 Claims**

3-methylmercaptopropionaldehyde is formed in good yields by hydrolysis of the product obtained by the reaction between methylchloromethylsulfide and vinyl chloride in the presence of strong, concentrated or fuming sulfuric acid, or chlorosulfonic acid. When the reaction product is decomposed by means of an alcohol, the corresponding acetal is obtained. 3-methylmercaptopropionaldehyde and its acetals are convenient intermediates in the synthesis of methionine.

3,529,025

METHOD FOR PRODUCING BIS(POLYCHLOROETHYL) SULFIDES AND POLYCHLOROVINYL SULFIDES

Paul C. Aichenegg, Prairie Village, Kans., and Carl D. Emerson, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Application June 21, 1965, Ser. No. 465,785, now Patent No. 3,428,687, dated Feb. 18, 1969, which is a division of application Ser. No. 340,504, Jan. 27, 1964. Divided and this application Jan. 29, 1968, Ser. No. 734,178

Int. Cl. C07c *149/16;* **A01n** *9/12*

U.S. Cl. 260—609 **5 Claims**

Bis trichloroethyl sulfides, dichlorovinyl trichloroethyl sulfides, bis(di and tri chlorovinyl) sulfoxides and mixed polyhaloethyl polyhalovinyl sulfoxides are disclosed. There is also described making dichlorovinyl trichloroethyl sulfide by dehydrochlorinating bis(trichloroethyl) sulfide with a tertiary amine and a process of making pure bis(polychloroethyl) sulfide or pure bis(polychlorovinyl) sulfide by reducing the corresponding sulfoxide preferably using $TiCl_3$ as the reducing agent. The compounds are useful as fungicides and nematocides.

3,529,026

APPARATUS AND PROCESS FOR THE PRODUCTION OF VINYL FLUORIDE

Alfred Blumcke and Peter Fischer, Rheinfelden, and Walter Krings, Aachen, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

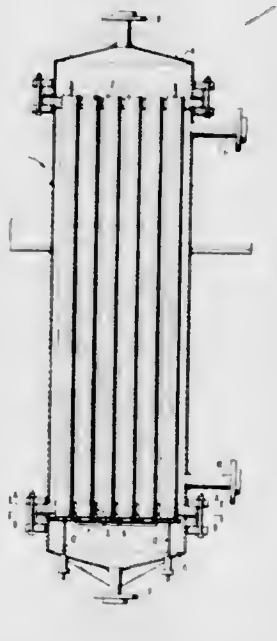
Filed Dec. 23, 1966, Ser. No. 604,461

Claims priority, application Germany, Dec. 22, 1965, D 48,982

Int. Cl. B01j *9/04;* **C07c** *17/04, 21/18*

U.S. Cl. 260—653.4 **21 Claims**

The present disclosure relates to an apparatus and process for producing vinyl fluoride from the catalytic reaction of acetylene and hydrogen fluoride. The catalyst deterioration, normally encountered in this reaction is prevented by using a reactor having the inner surfaces thereof, which come into contact with the reaction mixture, made of or lined with a synthetic polymer that is resistant to hydrogen fluoride. A continuous operation can be obtained by connecting the reactors in series and starting up a fresh reactor when acetylene is detected in the latter reactor in the chain. Meanwhile, the spent reactor can be removed from the chain, cleaned, and recharged and later added to the chain for further use therein.



3,529,027

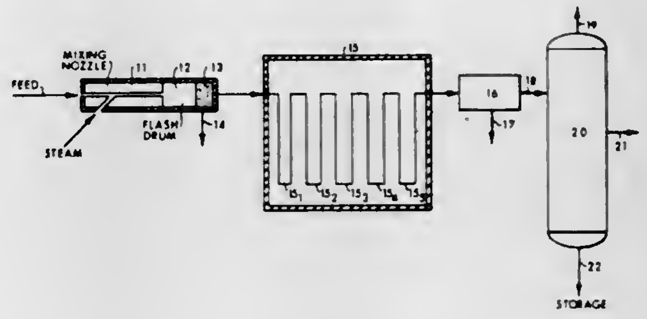
PROCESS FOR PREPARATION OF ALICYCLIC CONJUGATED DIENES FROM HYDROCARBON DIMER MIXTURES

Harold W. Helmke, Jr., and Robert H. Waghorne, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Dec. 4, 1967, Ser. No. 687,673

Int. Cl. C07c *3/14, 3/26;* **C09g** *9/14*

U.S. Cl. 260—666 **10 Claims**



This invention relates to a new and improved process for the separation of monomers, particularly for the separation of alicyclic conjugated dienes and aliphatic conjugated dienes from admixture with each other, and from admixture with hydrocarbon mixtures generally. Typically, the boiling point differential between the compounds in such admixtures is incerased by dimerization of the alicyclic conjugated dienes so that separation by distillation is feasible. The dimerized alicyclic conjugated dienes are then dedimerized by vapor cracking to yield the monomer in its desired state of purity. In the basic process, an alicyclic conjugated diene, e.g., cyclopentadiene or a substituted cyclopentadiene, such as methylcyclopentadiene, is thus separated from admixture with lower molecular weight aliphatic conjugated dienes, e.g., isoprene, and other impurities by first treating the admixture in liquid phase at temperatures sufficient to dimerize the alicyclic conjugated diene. The lower molecular weight hydrocarbons are thence separated from the now higher molecular weight hydrocarbons by simple distillation. The present improvement relates to contacting and vaporizing such dimer-containing concentrates with steam, at short contact times, in a low surface area flash zone, while filtering or drawing off polymer and tar impurities prior to vapor phase cracking the dimer to recover the original alicyclic conjugated diene monomer. By removing the tar in advance of vapor cracking, troublesome fouling problems are eliminated.

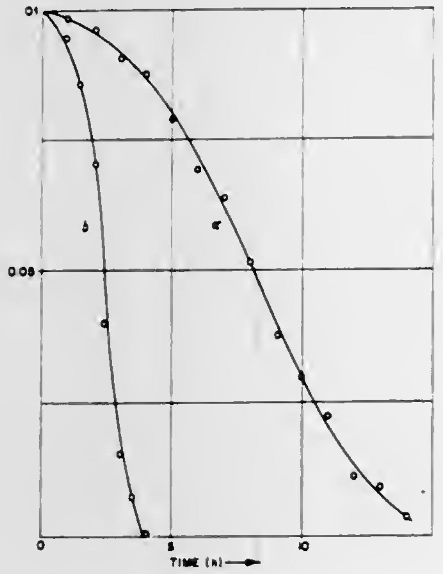
3,529,028
PROCESS FOR THE CYCLOTRIMERIZATION OF BUTADIENE FOR OBTAINING CYCLODODECATRIENE-(1,5,9)

Hans Baltz and Wilhelm Pritzkow, Leuna, and Harald Schmidt, Merseburg, Germany, assignors to VEB Leuna Werke Walter Ulbricht, Leuna, Germany

Filed Mar. 11, 1968, Ser. No. 711,997

Int. Cl. C07c *5/00*

U.S. Cl. 260—666 **5 Claims**



Process for the cyclotrimerization of butadiene for obtaining cyclododecatriene-(1,5,9) in the presence of catalysts containing zero valent nickel, wherein a co-catalyst is used in the reaction mixture, said co-catalyst consisting of an organic sulfoxide in an amount ranging from about 0.1 to about 7.5 mols per mol of the zero valent nickel compound.

3,529,029
HYDROGENATION OF AROMATIC HYDROCARBONS

Ernest L. Pollitzer, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 723,886, Apr. 24, 1968. This application Apr. 7, 1969, Ser. No. 814,174

Int. Cl. C07c *5/10*

U.S. Cl. 260—667 **5 Claims**

Aromatic hydrocarbons are hydrogenated to the corresponding cycloparaffins with negligible yield loss to gaseous waste material. Hydrogen and aromatic hydrocarbons (benzene) are contacted with a catalytic composite containing a Group VIII noble metal component, an alkalinous metal component and a Group VII–B metal component having an atomic number greater than 25, to produce cycloparaffinic hydrocarbons (cyclohexane).

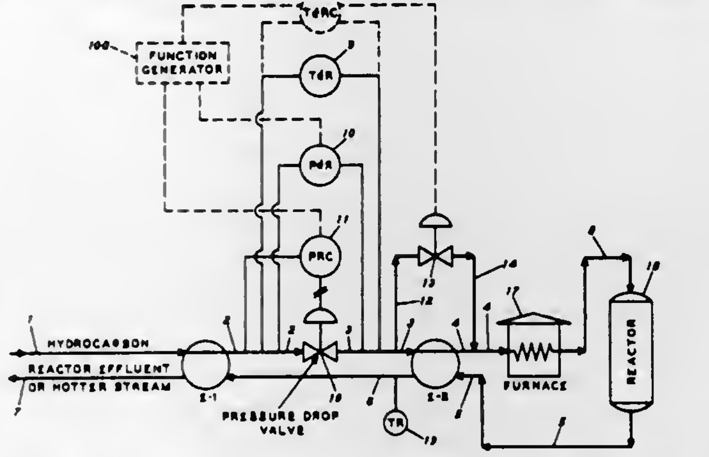
3,529,030
VAPORIZING AND SUPERHEATING THE LIQUID FEED IN AN ISOMERIZATION PROCESS

Thomas G. Chin, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,620

Int. Cl. C07c *15/08, 5/22;* **B01d** *3/06*

U.S. Cl. 260—668 **5 Claims**



A process for completely vaporizing and superheating hydrocarbons without going through the dry point in a heater, which comprises passing liquid hydrocarbons through a first heater wherein sufficient heat is transferred to the liquid hydrocarbons so that, after the hydrocarbons are next passed through a presure-drop valve, the liquid completely vaporizes to a vapor; then passing the vapor through a second heater to obtain a superheated vapor. Pressure drop across the pressure-drop valve may be automatically controlled by a pressure recorder controller. The pressure recorder controller is used in conjunction with a temperature differential recorder and a presure differential recorder to avoid danger of passing through the dry point in either heater.

3,529,031
RECYCLE OF AZEOTROPES IN TOLUENE DISPROPORTIONATION PROCESS

Seiya Otani, Takao Iwamura, Shotaro Hayashi, and Daisuke Ogawa, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Apr. 10, 1969, Ser. No. 815,193

Claims priority, application Japan, Apr. 15, 1968, 43/24,736

Int. Cl. C07c *3/58, 7/00;* **B01d** *3/34*

U.S. Cl. 260—672 **6 Claims**

In the preparation of benzene and xylene by subjecting toluene to the disproportionation reaction at elevated temperature and pressure in hydrogen atmosphere, an improvement comprising the steps of cooling the reaction product to separate gaseous component from liquid component, feeding the liquid component to a stabilizer to rectify the same, and recycling a portion of condensed liquid of low boiling point fraction collected near the top of the stabilizer, to the disproportionation step.

3,529,032
CRACKING OF OLEFINS

Kenneth J. Frech, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 476,186, July 30, 1965, which is a continuation-in-part of application Ser. No. 253,289, Jan. 23, 1963, which in turn is a continuation-in-part of application Ser. No. 802,633, Mar. 30, 1959. This application Nov. 9, 1966, Ser. No. 592,999

Int. Cl. C07c *3/30*

U.S. Cl. 260—680 **14 Claims**

A promoted pyrolysis process is disclosed which comprises providing a mixture of an olefin having in its molecule a carbon-to-carbon single bond which is in a position beta to the double bond and at least 0.5 and not more than 50 mole percent of bromine or a bromine containing compound, subjecting the mixture to temperatures ranging from about 500° C. to 900° C. for very short periods of time to cleave the carbon-carbon single bond in a position beta to the double bond of said olefin.

3,529,033
CATALYTIC CONVERSION

Vincent J. Frilette, Delaware Township, Camden County, N.J., and Paul B. Weisz, Media, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 754,915, Aug. 14, 1958. This application May 20, 1963, Ser. No. 281,760

The portion of the term of the patent subsequent to July 7, 1981, has been disclaimed

Int. Cl. C07c *1/24*

U.S. Cl. 260—682 **3 Claims**

Dehydrating alcohols to olefins using certain crystalline aluminosilcate molecular sieve catalysts.

3,529,034
ONE-PART LONG-SHELF-LIFE EPOXY-BASED COMPOSITIONS

Gaylord L. Groff, North St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Feb. 11, 1969, Ser. No. 798,452

Int. Cl. C08g *45/14, 47/10*

U.S. Cl. 260—824 **10 Claims**

One-part compositions that have a long shelf-life and are curable to a tough, flexible product having good properties as high-temperature electrical insulation are prepared from certain epoxy-terminated polyesters and aromatic or cyclic polyfunctional carboxylic acids having at least three functional carboxyl groups.

3,529,035
HIGH STRENGTH SILICONE ELASTOMERS

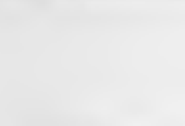
Harry F. Lamoreaux, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 1, 1968, Ser. No. 725,930

Int. Cl. C08g *47/04, 47/06*

U.S. Cl. 260—825 **11 Claims**

Silicone elastomers having tensile strengths in excess of 3,000 p.s.i. are composed of $R_2'SiO$ units, SiO_2 units, and



$$-O-\left[\begin{array}{c}R\\|\\SiO\\|\\R\end{array}\right]_n-$$

blocks, where *n* has a value of at least 1,000. Elastomers within the scope of the present disclosure are made by reacting an acetoxy derivative of a resin containing $R_2'SiO$ units and SiO_2 units with a high molecular weight silanol-stopped polydiorganosiloxane gum. The high strength elastomer produced is an excellent coating material for shatter-proof light bulbs.

3,529,036
LIQUID BUTADIENE POLYMER HAVING TERMINAL ALLYLIC HALIDE GROUPS AND A LIQUID EPOXY RESIN

Douglas C. Edwards, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, a body corporate

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,777

Claims priority, application Canada, Mar. 12, 1966, 954,555

Int. Cl. C08g *41/04*

U.S. Cl. 260—836 **7 Claims**

A novel composition suitable for use in sealants is prepared by vulcanizing a mixture of a liquid butadiene polymer having allylic halide groups and a liquid epoxy resin with an amine, preferably an aliphatic amine containing at least four nitrogen atoms.

3,529,037
POLYALLOMERS AND PROCESS FOR PREPARING SAME

Hugh John Hagemeyer, Jr., and Marvin Becton Edwards, both of P.O. Box 2068, Longview, Tex. 75603

No Drawing. Continuation-in-part of application Ser. No. 230,702, Nov. 15, 1962. This application Oct. 25, 1966, Ser. No. 589,217

Int. Cl. C08f *15/04*

U.S. Cl. 260—878 **20 Claims**

Crystalline block copolymer of propylene and at least one other α-monoolefin selected from the group of ethylene and α-monoolefinic hydrocarbons of 4 to 10 carbon atoms are disclosed. These copolymers have an inherent viscosity in Tetralin at 145° C. of from about 0.4 to about 2.68, a density of at least 0.85, a brittle point below about 0° C. and contain at least 90 percent by weight of polymerized propylene

3,529,038
DYEABLE PROPYLENE/STYRENE COPOLYMERS AND MIXTURES WITH ISOTACTIC POLYOLEFINS

Henri Chabert and Albert Perez, Lyon, and Gerard Selbold, Boulogne Billancourt, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed July 7, 1967, Ser. No. 651,697

Claims priority, application France, July 11, 1966, 68,989

Int. Cl. C08f *7/04*

U.S. Cl. 260—897 **3 Claims**

Highly crystalline propylene-styrene copolymers, and their mixtures with compatible polymers, in which the aromatic nuclei are substituted by methyl radicals attached to quaternary ammonium groups, have improved dyeability.

3,529,039
ACRYLONITRILE GRAFT POLYMERS

Heinrich Rinkler and Gunther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 13, 1968, Ser. No. 705,003

Claims priority, application Germany, Feb. 17, 1967, F 51,559

Int. Cl. C08f *29/56*

U.S. Cl. 260—898 **9 Claims**

This invention relates to acrylonitrile graft polymers comprising (a) acrylonitrile and optionally a further copolymerizable monomer in polymerized form and (b) a graft substrate consisting of a polyalkylene glycol sulfoalkyl ether. Furthermore this invention relates to process for preparing said acrylonitrile graft polymers having a high affinity to basic dyes and an outstanding thermal stability by polymerizing acrylonitrile—optionally together with a further copolymerizable monomer—in the presence of a polyalkylene glycol sulfoalkyl ether as a graft substrate, said polymerizing being effected in an aqueous medium in the presence of a radical forming catalyst.

3,529,040
ACRYLONITRILE GRAFT COPOLYMERS

Heinrich Rinkler and Gunther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 15, 1968, Ser. No. 721,179

Claims priority, application Germany, Apr. 24, 1967, F 52,225

Int. Cl. C08f *29/56*

U.S. Cl. 260—898 **5 Claims**

This invention relates to acrylonitrile graft polymers comprised of acrylonitrile, optionally another olefinic unsaturated copolymerizable monomer and a mono-β-alkenyloxy-polyalkylene glycol-sulfoalkyl ether as graft substrate. Furthermore this invention relates to a process for the production of readily dyeable acrylonitrile graft polymers by graft polymerizing acrylonitrile-optionally together with another copolymerizable monomer—in the presence of a mono-β-alkenyloxy-polyalkylene—glycol sulfoalkyl ether and a radical forming catalyst. Graft polymerization may be effected in an aqueous medium or in an organic solvent for polyacrylonitrile.

3,529,041

S,S-DIALKYL-2 (OR 1) ALKYLTHIO VINYL PHOSPHONATES

Erik K. Regel, Mission, Kans., and Marion F. Botts, Independence, Mo., assignors to Chemagro Corporation, Kansas City, Mo., a corporation of New York

No Drawing. Original application Nov. 23, 1966, Ser. No. 596,412, now Patent No. 3,416,912, dated Dec. 17, 1968. Divided and this application Feb. 14, 1968, Ser. No. 723,969

Int. Cl. A01n *9/36;* **C07f** *9/40*

U.S. Cl. 260—948 **10 Claims**

S,S-dialkyl - 2 - (alkylthio) vinyl phosphonodithioates and S,S-dialkyl-1-(alkylthio) vinyl phosphonodithioates as well as the sulfinyl analogues have been found to have selective pre-emergent herbicide activity and post-emergent herbicide activity. The S,S-diaryl and haloaryl analogues show this activity to a lesser extent. The most active compound tested was S,S-dipropyl-2-(ethylthio) vinyl phosphonodithioate. The procedure for preparing the 2-alkylthio compounds is to dehydrate an alkylthioalkanol over potassium hydroxide to form an alkylvinyl sulfide, react this with phosphorus pentachloride, treat the product with sulfur dioxide and then esterify with a mercaptan in the presence of a tertiary amine.

The 1-alkylthio compounds are prepared by chlorinating an alkyl phosphonyl dichloride to form dichloroalkyl phosphonyl dichloride isomers, esterifying the mixture with alkyl mercaptan in the presence of excess tertiary amine whereby the 1,2-dichloro derivatives are simultaneously dehydrohalogenated to form the S,S-dialkyl-1-chlorovinyl phosphonodithioate which is treated with sodium mercaptide to give the desired product.

The S,S-dialkyl 1 (or 2) - (alkylsulfinyl) vinyl phosphonodithioate can be prepared by oxidizing the corresponding alkylthio compounds of the invention, e.g. with hydrogen peroxide or chloroperbenzoic acid.

3,529,042

METHOD FOR MANUFACTURING CAST SOLID POLYURETHANE PROPELLANTS

Ralph C. Lippert, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 22, 1959, Ser. No. 848,161

Int. Cl. C06b *21/00*

U.S. Cl. 264—3 **17 Claims**

1. In a method of preparing a castable propellant composition comprising a solid inorganic oxidizing salt dispersed in a liquid curable polyurethane suitable for use as the binder component in said propellant composition, the improvement comprising heating said polyurethane while said salt is being dispersed therein under vacuum to a temperature a few degrees above the curing temperature at which said composition is to be subsequently cured and for a short period of time sufficient to decompose gas forming impurities in said polyurethane but insufficient to obtain appreciable cure of said polyurethane.

3,529,043

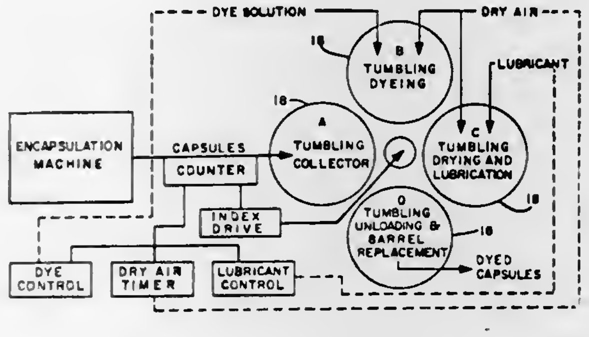
METHOD OF SURFACE DYEING OF CAPSULES

Arthur Sinclair Taylor, Spring Valley, Lloyd Frank Hansen, Campbell Hall, Ernest Chu Yen, Orangeburg, and James G. Vincent, Jr., West Nyack, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation-in-part of application Ser. No. 287,828, June 14, 1963. This application June 5, 1968, Ser. No. 734,613

Int. Cl. B29c *23/00;* **A23p** *1/00*

U.S. Cl. 264—15 **4 Claims**



Soft gelatin capsules, for medical usage, are dyed on the surface only by casting a liquid gelatin strip which seals on cutting out, forming, filling and cutting out the capsules therefrom; then placing the filled capsules in a rotating barrel, and while tumbling, adding a volatile dye solution which is absorbed on and dyes the surface of the capsules. Air is blown over the tumbling capsules to remove volatile solvents therefrom. The dyed capsules may have a lubricant or wax or other surface treatment to polish and improve their appearance.

3,529,044

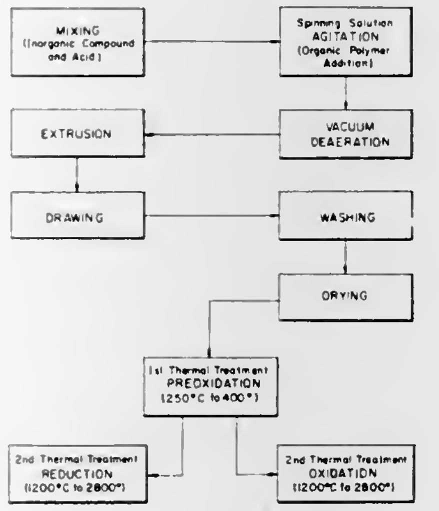
PRODUCTION OF INORGANIC FIBROUS MATERIALS

Joseph G. Santangelo, Morristown, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1968, Ser. No. 708,749

Int. Cl. C01b *31/30;* **C04b** *35/46, 35/56*

U.S. Cl. 264—29 **4 Claims**



An inorganic compound together with a fiber forming organic polymer is dissolved in a suitable acidic solvent to form a spinning solution, the spinning solution is extruded to form a precursor fiber in which the organic polymer serves as a carrier for the inorganic compound, and the resulting precursor fiber is converted by thermal treatment to an inorganic fibrous material which is derived from the inorganic compound.

3,529,045

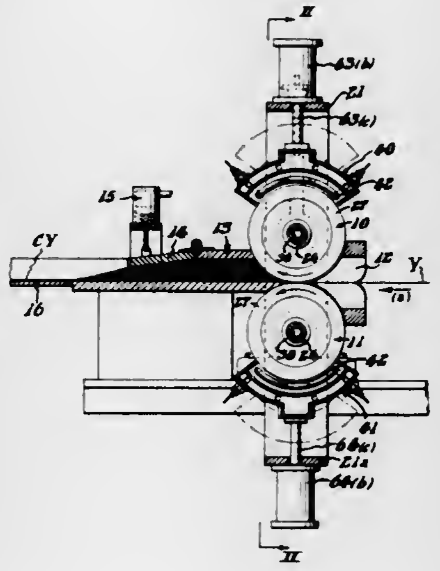
METHOD FOR CONTROLLING ROLL DIAMETER

Nathan Rosenstein, West Hartford, Conn., assignor to Spunize Company of America, Inc., a corporation of Connecticut

Filed May 4, 1965, Ser. No. 453,128

Int. Cl. B29b *1/08*

U.S. Cl. 264—40 **3 Claims**



Means are provided for controlling the diameter of rolls, particularly when the rolls are disposed in pairs defining a nip therebetween, during rotation. Undesirable roll diameter variations are controlled by desirably maintaining the temperature gradient between an internal portion of the roll and the roll surface, and by adding or subtracting heat from the roll surface, as desired.

3,529,046

UTILIZING LITHIUM OXIDE AND PRECURSORS AS SINTERING AID FOR HOT PRESSING BERYLLIUM OXIDE

Rudolph Hendricks, Jr., Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed June 20, 1968, Ser. No. 738,418

Int. Cl. C04b *35/08*

U.S. Cl. 264—66 **4 Claims**

High-purity, theoretically dense beryllium oxide products are produced at reduced temperatures and pressures by utilizing a fugitive-type sintering aid and beryllium oxide powder. A mixture of beryllium oxide powder and about 0.5 weight percent lithium oxide, added either as lithium oxide or a precursor of lithium oxide is hot-pressed at a temperature of about 950° C. and a pressure of 1500–2000 p.s.i. to form theoretically dense products. The product may be subsequently heat-treated at about 1000°–1400° C. for removing virtually all the lithium oxide remaining in the product to provide a product of high purity.

3,529,047

METHOD FOR CONTINUOUS MANUFACTURE OF CORRUGATED PLASTIC PIPES

Tsunemi Yoshida, Tokyo, Koichi Ishikawa and Masatoshi Ando, Yokohama, Yoshihiko Ueno, Kawagoe, and Kunio Arisawa, Yokohama, Japan, assignors to The Furukawa Electric Company Limited, Tokyo, Japan

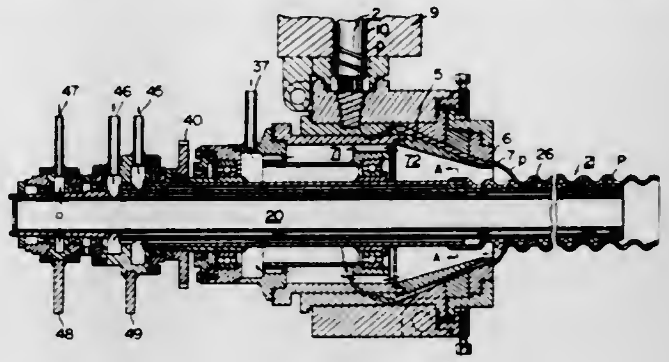
Filed Mar. 20, 1967, Ser. No. 624,584

Claims priority, application Japan, Mar. 26, 1966, 41/18,601; June 16, 1966, 41/38,541

Int. Cl. B29c *17/04, 17/07;* **B29d** *23/03*

U.S. Cl. 264—89 **4 Claims**

A method for continuous manufacture of helically corrugated plastic pipe from extruded tubing utilizing differential pressure. Thermoplastic material is extruded in a molten state in the form of a tube and the tube is passed over a cylindrical body having a helically corrugated surface. A vacuum is applied between the surface of the cylindrical body and the inside surface of the tube adjacent to the point of extrusion to conform the tube to the surface of the cylindrical body. A vacuum is also drawn inside the formed pipe at the distal end of the cylindrical body. The cylindrical body is rotated to advance the extruded tube formed thereabout and a cooling fluid is circulated through the cylindrical body to cool the tube as it is formed against the body.



3,529,048

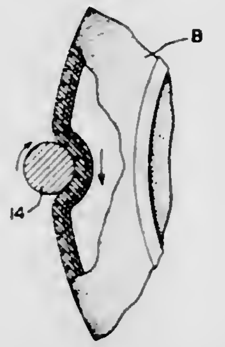
METHOD FOR PROCESSING OF PNEUMATIC TIRES

Frederick J. Kovac, Akron, and Grover W. Rye and Paul E. Helms, Jr., Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 1, 1968, Ser. No. 749,362

Int. Cl. B29h *5/02*

U.S. Cl. 264—94 **17 Claims**



A processing method for conditioning pneumatic tires wherein each tire is conditioned for its final intended use after being removed from the vulcanizing mold and before cooling to ambient temperature by applying a load, such as a radial load, to the tire tread while the tire is inflated and at the same time relatively moving the load and tire, such as by rotating the tire, to cause deflection along successive circumferential tire increments.

3,529,049

METHOD OF MAKING A MICROPOROUS SHEET MATERIAL HAVING AN AIR-PERMEABLE COATING

Jerrold J. Abell, Manchester, and Bruce G. Kosa, Willington, Conn., assignors to Rogers Corporation, Rogers, Conn., a corporation of Massachusetts

No Drawing. Filed Oct. 25, 1966, Ser. No. 589,230

Int. Cl. B29c *13/00;* **B32b** *31/04*

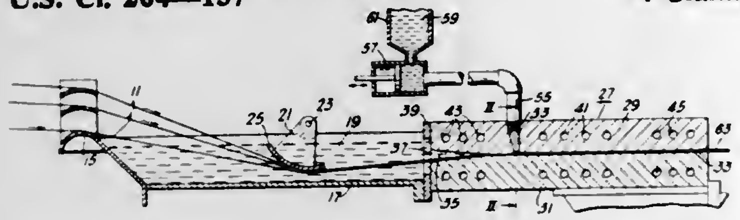
U.S. Cl. 264—112 **7 Claims**

A method of forming a microporous sheet of resin having an air-permeable coating is presented. The coating is initially an air impermeable film, and the coating is rendered air permeable during the process of being fused to the microporous sheet of resin.

3,529,050

METHOD AND APPARATUS FOR PRODUCING A RESIN RICH SURFACE

Arthur L. Smith, Severna Park, Md., assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 6, 1967, Ser. No. 614,215
Int. Cl. B29g *5/00, 2/00*
U.S. Cl. 264—137 **4 Claims**



There is disclosed herein a forming device or die having a passage through which resin impregnated filament reinforcements are drawn continually to shape and form an article of manufacture. A portion of the die is heated to accelerate curing of the resin that coats the filaments. Additional resin is introduced into the forming passage at a location just before the resin impregnated filaments pass through the heated portion, and the article emerging from the die has at least one resin rich surface.

3,529,051

OBTAINING FILAMENTS FROM POLYAMIDE ACID SALTS

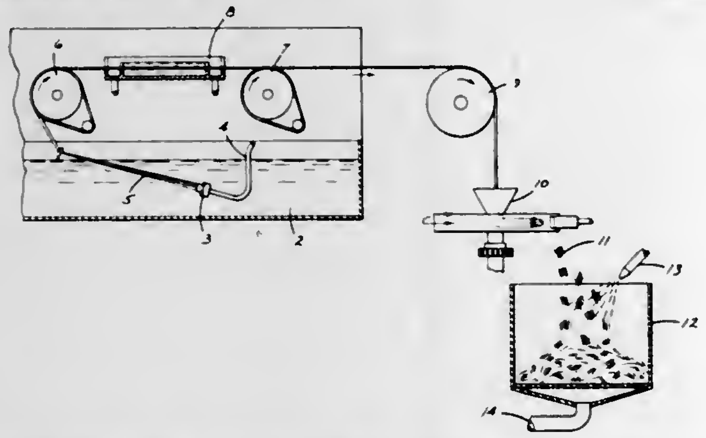
Alan Buckley and John David Seddon, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 18, 1967, Ser. No. 661,537
Claims priority, application Great Britain, Sept. 6, 1966, 39,805/66
Int. Cl. D01f *7/00*
U.S. Cl. 264—184 **7 Claims**

A method for producing filaments of polyamide acids or salts thereof suitable for conversion to polyimide filaments which is characterised by a filament spinning stage comprising spinning an aqueous solution of an ammonia or organic base salt of a polyamic acid into an aqueous or water miscible coagulant bath which chemically interacts with the ammonia or organic base salt to regenerate the polyamide acid or otherwise convert the salt into an insoluble form and withdrawing from the coagulant bath a coherent filament.

3,529,052

METHOD OF MANUFACTURING RAYON FIBER

Rufus T. Carney, Wayne, and Charles J. Geyer, Jr., Berwyn, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 261,086, Feb. 26, 1963. This application Aug. 29, 1967, Ser. No. 667,038
Int. Cl. D01f *3/28*
U.S. Cl. 264—195 **4 Claims**



Viscose rayon fibers formed from viscose including certain amino viscose additives contain zinc dithiocarbamate compounds which seriously interfere with carding. Cardability is improved by subjecting the staple fibers in a relaxed state to a treatment with a dilute acid solution to dissolve and remove the carbamate compound.

3,529,053

METHOD OF FORMING DENSE SMOOTH SURFACED FURFURYL ALCOHOL RESIN COMPOSITIONS

Joe B. Smith, San Rafael, and Robert Merrill Farrand, Pacifica, Calif., assignors, by mesne assignments, to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
No Drawing. Filed Aug. 11, 1966, Ser. No. 571,709
Int. Cl. B29c *25/00, 1/04*
U.S. Cl. 264—236 **6 Claims**

1. A process for molding furfuryl alcohol resin into a dense, chemically and thermally resistant, object comprising the steps of:

(a) forming a molding composition by mixing 20 to 30 percent, by weight of said composition, of a furfuryl alcohol resin having a viscosity between about 150 to about 350 centipoises at 25° C. with 70 to 80 percent by weight of inert acid-resistant filler and with 0.2 to 1.2 percent by weight of an acid catalyst;
(b) providing an open mold having a cavity with the desired configuration for said object, said cavity having a portion thereof with a thickness of at least about ½ inch;
(c) forming a continuous film of polyethylene on the portions of said mold defining said cavity into which said composition is to be introduced;
(d) thereafter introducing said composition into said mold cavity to fill said cavity until at least about ½ inch in thickness of said composition is deposited in said cavity;
(e) heating said composition in said mold at a temperature below 150° F. at a rate of heating insufficient to cause internal foaming of said composition.
(f) maintaining said composition at said temperature for a period of time sufficient to advance said composition to a solidified, set stage;
(g) separating the solidified composition together with said film of polyethylene from the mold;
(h) stripping said film from the molded, solidified composition;
(i) post curing the stripped molded composition by heating said composition to between about 150° F. and about 280° F. for a period of time sufficient to complete curing without alteration of the characteristics of the exterior molded surface thereof.

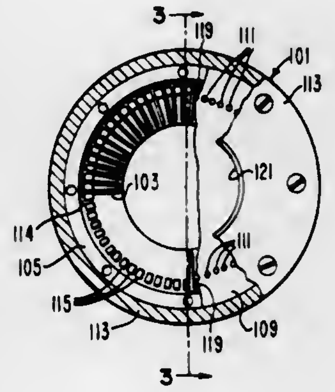
3,529,054

METHOD FOR FABRICATING PRINTING DRUMS

Neal Hepner, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 15, 1967, Ser. No. 690,041
Int. Cl. B29c *5/04, 25/00;* **B29d** *3/00*
U.S. Cl. 264—261 **2 Claims**

The disclosure embodies a method for fabricating a printing drum which comprises a mounting shaft, a plurality of type carrying segments to form a drum rim, and a solid connecting web such as a resin epoxy connecting the rim segments together and to the shaft. The method involves a preliminary fabrication of the drum rim by the use of apparatus including a rotatable fixture mold wherein the segments are held with their type characters in rows in parallel to an axis of rotation. A solidifiable, but readily removable material is introduced into the fixture-mold while the latter is rotating and the centrifugal

force disperses the material outwardly so that on solidification it forms a temporary holding frame and sealer connecting the outer ends of the segments as a unitary structure. This step of the method makes it possible to place the resultant unitary structure into a second mold where the segments can be molded together and to the shaft, such as by means of a resin epoxy poured into the mold cavity to form a solid connecting web.



3,529,055

SUNTAN COMPOSITION AND METHOD CONTAINING ALKALI SOLUBLE POLYMERIC SUN SCREENING AGENTS

Martin Skoultchi, Somerset, and Joseph Fertig, Elizabeth, N.J., and Albert I. Goldberg, Englefield Green, England, assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 18, 1966, Ser. No. 535,352
Int. Cl. A61k *9/06;* **A61l** *23/00*
U.S. Cl. 424—47 **6 Claims**

Suntan formulations containing polymeric sun screen agents comprising copolymers of at least one ethylenically unsaturated ultra-violet absorbing compound and at least one acidic comonomer comprising an ethylenically unsaturated carboxylic acid containing at least one available carboxyl group; the presence of these polymeric sun screen agents providing these suntan formulations with unusual solubility characteristics along with excellent sun screening properties.

3,529,056

METHOD OF PRODUCING JOWL ABSCESS VACCINE

Harlen J. H. Engelbrecht, Fort Dodge, Iowa, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 7, 1968, Ser. No. 727,338
Int. Cl. C12k *5/00*
U.S. Cl. 424—92 **5 Claims**

A method of preparing a live vaccine for preventing hog jowl abscess disease (due to a Lancefield Group E Streptococcus infection) is described, which method comprises culture of Group E Streptococcus isolated from clinical cases of hog jowl abscess in gradually increasing concentrations of acriflavine until a culture of the Streptococci is obtained which is less hemolytic than the fully virulent when grown on blood agar and is capable, when orally administered, of conferring immunity on susceptible swine without causing any clinical symptoms of disease.

3,529,057

PURIFIED PERIODIC ACID-OXIDIZED MUCOPEPTIDE OF MYCOBACTERIA CELL WALLS CONSTITUTING A VACCINE ENHANCING NON-SPECIFIC HOST RESISTANCE AGAINST PATHOGENIC BACTERIAL INFECTIONS

Kanzi Tsuchiya, Takarazuka, and Akira Misaki, Nishinomiya, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
Continuation-in-part of application Ser. No. 479,518, Aug. 13, 1965. This application Aug. 20, 1968, Ser. No. 754,023
Claims priority, application Japan, Aug. 14, 1964, 39/46,863; Aug. 19, 1964, 39/47,443
Int. Cl. C12k *5/00*
U.S. Cl. 424—92 **5 Claims**

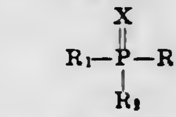
A purified non-specific vaccine for enhancing non-specific resistance of a host to virulant bacterial infections and process for producing it. A mucopeptide-containing component of cell walls of mycobacteria is oxidized with periodic acid or a water-soluble salt in an aqueous medium and the resulting component is hydrolyzed with an acid.

3,529,058

FEEDSTUFF FOR SILKWORM LARVAE

Tetsuo Okauchi, Hirakata, Japan, assignor to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,313
Claims priority, application Japan, Feb. 24, 1966, 41/11,372
Int. Cl. A01n *9/36*
U.S. Cl. 424—200 **4 Claims**

Weight of silkworm cocoons, and especially of cocoon layers, is increased by feeding the 4th instar silkworm larvae feedstuff containing a compound of the formula



$$R_1-\overset{\overset{X}{\|}}{\underset{\underset{R_3}{|}}{P}}-R_2$$

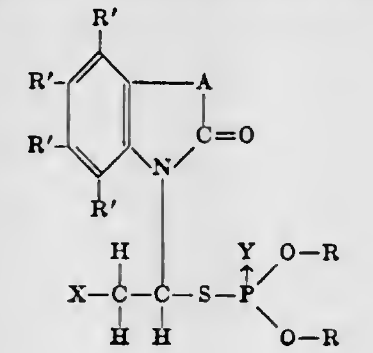
wherein X is a member selected from the group consisting of O and S, and each of R_1, R_2 and R_3 is dialkylamino, or ethyleneimino (aziridin-1-yl).

3,529,059

CERTAIN 2-BENZOXAZOLINONE AND 2-BENZOTHIAZOLINONE DERIVATIVES OF O,O-DIALKYL S-[2-HALOETHYL] PHOSPHOROTHIOATES AND DITHIOATES FOR KILLING SOUTHERN ARMY WORM LARVAE

Joel D. Jamison, New Castle County, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 601,553, Dec. 14, 1966, which is a continuation-in-part of application Ser. No. 535,735, Mar. 21, 1966, which in turn is a continuation-in-part of application Ser. No. 417,516, Dec. 10, 1964. This application Feb. 24, 1969, Ser. No. 801,767
Int. Cl. A01n *9/36*
U.S. Cl. 424—200 **7 Claims**

Disclosed are compounds of the formula:



wherein each R is a lower alkyl radical, Y is selected from the group consisting of the oxo and thioxo radicals, X is a halo radical, A is selected from the group consisting of the oxy and thio radicals, and each R′ is selected from the group consisting of the hydrogen and halo radicals. These compounds are highly toxic to southern army worm larvae.

3,529,060
BETAMETHASONE 17-BENZOATE AND ITS USE AS AN ANTI-INFLAMMATORY

Alberto Ercoli, Milan, and Rinaldo Gardi, Carate Brianza, Milan, Italy, assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Feb. 26, 1968, Ser. No. 707,961
Claims priority, application Italy, Mar. 1, 1967, 13,231/67
Int. Cl. A61k *17/06;* **C07c** *169/34*
U.S. Cl. 424—243 5 Claims

There has been prepared the new 17α-benzoyloxy-9α-fluoro-16β-methyl-$\Delta^{1,4}$-pregnadiene-11β,21-diol - 3,20 - dione useful as antiinflammatory agent. It may be incorporated in a topically suitable pharmaceutical carrier to obtain pharmaceutical compositions which may be administered locally as ointments, creams or lotions, for the treatment of inflammatory conditions.

3,529,061
COMPOSITION AND METHOD FOR PROTECTING MICE FROM IONIZING RADIATION

David Norman, Redondo Beach, and Robert D. Schultz, Whittier, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed May 25, 1964, Ser. No. 369,975
Int. Cl. A61k *27/00;* **A61l** *23/00*
U.S. Cl. 424—274 8 Claims

Compositions are described comprising suspensions of carbinol analogues of plant growth regulators in pharmaceutical aqueous media. In particular, the compounds include beta-indolyl-3-ethanol, 2,3,5-triiodobenzyl alcohol and 2,4,5-trichlorophenoxy-ethanol. The aqueous pharmaceutical mixtures of these materials are intraperitoneally injected into mice which are subsequently exposed to gamma radiation in a dose greater than the lethal dose for untreated animals. A substantial fraction of the irradiated subjects were protected from the normally lethal dose of radiation. In addition, the animals are also deeply anesthetized by injection of the carbinol analogues of the plant growth regulators.

3,529,062
INDOLE DERIVATIVES AS ANTITUSSIVE AGENTS

Ulrich Renner, Riehen, Switzerland, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Original application Dec. 1, 1965, Ser. No. 510,946, now Patent No. 3,419,569, dated Dec. 31, 1968. Divided and this application Sept. 6, 1968, Ser. No. 803,493
Claims priority, application Switzerland, Dec. 3, 1964, 15,658/64, 15,659/64
Int. Cl. A61k *27/00*
U.S. Cl. 424—274 17 Claims

3-loweralkyl or (3 - benzyl)-2,3,4,5-tetrahydro-1H-azepino-[4,5-b] indoles and derivatives thereof are prepared by reacting a hexahydro-4H-azepino-4-one with a di-aryl lower-alkyl hydrazine in an ice cooled alcoholic medium saturated with hydrogen chloride, removing the ammonium chloride as it forms, refluxing until the reaction is complete (approx. 2 hours) and recovering the desired 2,3,4,5 - tetrahydro-1H-azepino[4,5-b]indole by conventional means. These compounds have strong antitussive activity and are indicated for inhibiting cough.

3,529,063
PHARMACEUTICAL COMPOSITIONS CONTAINING OXIMES OF BENZOCYCLOBUTENE AND METHOD FOR EFFECTING SKELETAL MUSCLE RELAXATION

Joseph A. Skorcz, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 388,311, Aug. 7, 1964. This application Jan. 5, 1968, Ser. No. 695,890
The portion of the term of the patent subsequent to Sept. 30, 1986, has been disclaimed
Int. Cl. A61k *27/00*
U.S. Cl. 424—327 7 Claims

The pharmaceutical compositions contain oxime derivatives of benzocyclobutene in combination with a pharmaceutical diluent. The compositions are useful in a method of effecting skeletal muscle relaxation in animals. A composition specifically disclosed contains 1-acetylbenzocyclobutene oxime in combination with a pharmaceutical diluent.

3,529,064
ANOREXIC COMPOSITION CONTAINING 2-PROPENYL - 2 - CYCLOHEXEN - 1 - ONE AND METHOD OF USING SAME

Gustav Richard Jansen, Scotch Plains, and Eugene E. Howe, Somerset, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed July 29, 1966, Ser. No. 568,739
Int. Cl. A61k *9/04, 27/00*
U.S. Cl. 424—331 3 Claims

Method for combatting and curbing the appetite through the use of 2-propenyl-2-cyclohexen-1-one to induce anorexia. Compositions containing 2-propenyl-2-cyclohexen-1-one useful in appetite control.

3,529,065
PROCESS FOR MAKING DRY VITAMIN A MATERIAL

Herbert W. Flandreau, Jr., Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed May 2, 1967, Ser. No. 635,354
Int. Cl. A61k *15/02*
U.S. Cl. 424—344 4 Claims

An improved process for making dry, free-flowing compositions containing vitamin A material which comprises freezing a dispersion of vitamin A material in a solution of a water-soluble gelable colloid, cold-milling the frozen dispersion and then drying the milled dispersion to a desired water content.

3,529,066
METHOD OF LOWERING SERUM CHOLESTEROL

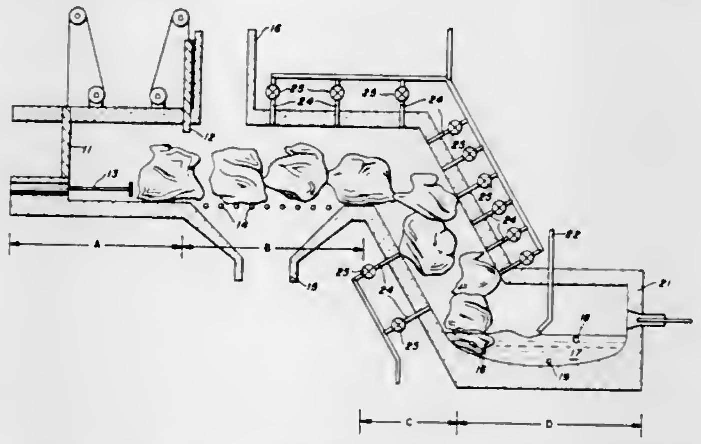
James W. Barnhart, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 1, 1967, Ser. No. 642,683
Int. Cl. A61k *27/00*
U.S. Cl. 424—346 6 Claims

Methods useful for lowering serum cholesterol in animals comprising administration to the animal of a hypocholesteremic amount of a 2,2′-alkylidenebisdialkylphenol compound such as 2,2′-methylenebis(4,6-di-tert-butylphenol), and compositions to be employed in practicing the method.

ELECTRICAL

3,529,067
METHOD AND APPARATUS FOR RECLAIMING LOW-DENSITY CONTAMINATED SCRAP STEEL

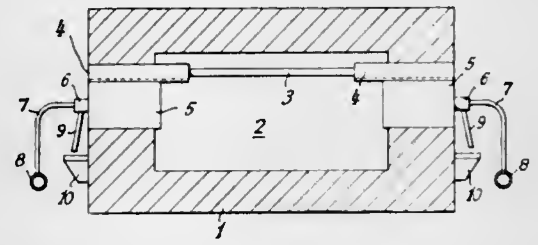
Gerald J. Grott, 1205 Orlando Drive, Coolidge, Ariz. 85228
Filed Aug. 21, 1968, Ser. No. 754,413
Int. Cl. H05b *7/18*
U.S. Cl. 13—1 7 Claims



Steel is reclaimed from low-density scrap assemblies by subjecting the scrap to a calcining step in which organic impurities are gasified, a vaporization step in which certain metallic impurities are fumed off of the scrap, and a refining step in which the scrap is melted and, preferably, oxidized in the presence of a flux to separate slag-forming metallic impurities. The heat requirements for these steps are supplied by introducing a partially combustible fuel-oxygen mixture into the refining zone and passing the resultant partial combustion products countercurrently through the vaporization and calcining zones. Additional air is injected at spaced points along the vaporization and calcining zones to progressively increase the degree of combustion of the countercurrent gas stream, liberating the additional heat required for these steps.

3,529,068
ELECTRIC FURNACE

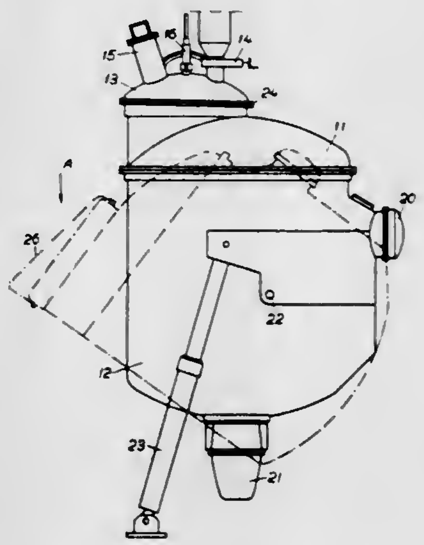
Frederick James Edwards, Hebron, Morpeth, Northumberland, and Norman Hughes, Newcastle-upon-Tyne, England, assignors to Thermal Syndicate Limited, Northumberland, England, a British company
Filed Jan. 31, 1969, Ser. No. 795,568
Claims priority, application Great Britain, Feb. 2, 1968, 5,418/68
Int. Cl. H05b *3/64, 3/66*
U.S. Cl. 13—25 5 Claims



The invention relates to an electric furnace comprising a heating chamber and a plurality of individual resistive linear heating elements each extending through the heating chamber and removably mounted in the furnace, each heating element being slidably supported against a conducting block at opposite sides of the heating chamber with each conducting block being electrically insulated from adjacent blocks and having its own current supply connection.

3,529,069
CHANNEL TYPE INDUCTION FURNACE

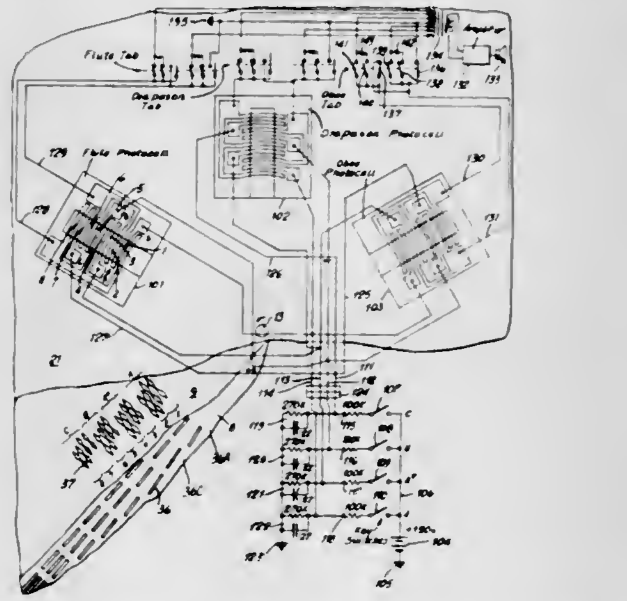
Bengt Fredriksson and Kare Folgero, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Oct. 3, 1968, Ser. No. 764,671
Claims priority, application Sweden, Oct. 13, 1967, 14,057/67
Int. Cl. H05b *5/00*
U.S. Cl. 13—31 10 Claims



Channel-type induction furnace tiltable about a shaft and provided with a lid for sealing against the atmosphere and having a furnace hearth in the form of an upright cylinder, the furnace having a charging means and an air-tight closing sluice applied near the lid.

3,529,070
ELECTRICAL MUSICAL INSTRUMENT PROVIDED WITH WAVE FORM MODULATION

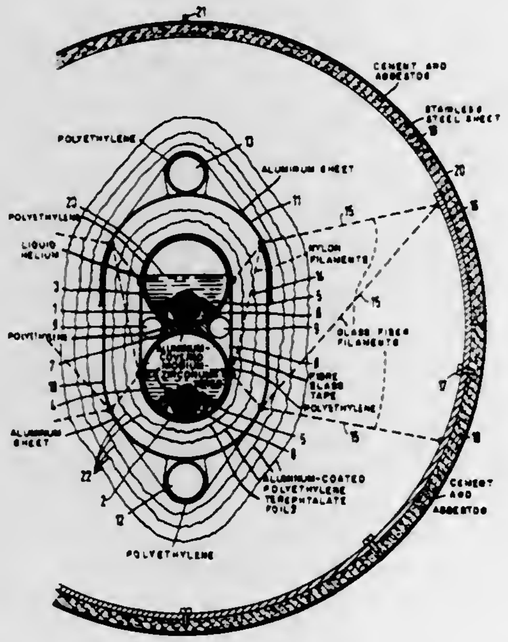
Edward M. Jones, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 16, 1966, Ser. No. 557,958
Int. Cl. G10h *3/04, 1/01*
U.S. Cl. 84—1.28 15 Claims



An electrical musical instrument having a tone generator for generating an electrical signal for each note to be produced in which the frequency of the electrical signal is modulated as to amplitude and as to frequency at a rate less than 1⁄50 of the frequency of the electrical signal. In the illustrated embodiment, the electrical signals are generated photoelectrically using a pitch disc and a tone disc in which the size and spacing of transparent areas in the pitch disc are used to frequency and amplitude modulate the electrical signal.

3,529,071
SUPERCONDUCTING CABLE FOR TRANSMITTING HIGH ELECTRICAL CURRENTS

Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Apr. 26, 1968, Ser. No. 724,537
Claims priority, application Germany, Apr. 29, 1967, S 109,663
Int. Cl. H01b *7/34*
U.S. Cl. 174—15 27 Claims

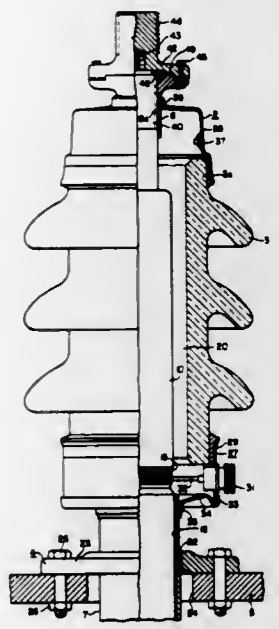


A superconducting cable designed to be capable of transmitting high electrical currents. The cable includes an electrically non-conductive refrigerant tube which has its interior partly filled with a liquid refrigerant which occupies the lowermost interior portion of this refrigerant tube. A superconductor extends along the interior of the refrigerant tube in the lowermost interior portion thereof and is at all times completely submerged within the liquid refrigerant, and a fixing means fixes the superconductor within the refrigerant tube in a manner substantially preventing any movement of the superconductor with respect to the refrigerant tube while at the same time providing for substantially unobstructed movement of vapor bubbles of the refrigerant from the superconductor outwardly through the liquid refrigerant to a space within the refrigerant tube located over the liquid refrigerant therein.

3,529,072
HIGH-MECHANICAL-STRENGTH TERMINAL BUSHING HAVING BUSHING BODY PORTION FIXEDLY SUPPORTED BY FLANGE-TUBE ASSEMBLY AND FLEXIBLE CASING SUPPORT

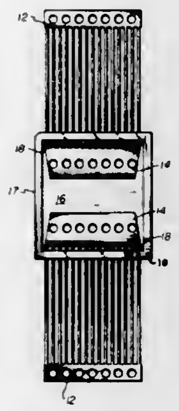
Charles F. Sonnenberg, Monroeville, and James H. Frakes, Penn Hills, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 25, 1968, Ser. No. 715,848
Int. Cl. H01b *17/26*
U.S. Cl. 174—31 10 Claims

An insulating body for a terminal bushing is firmly secured, or fastened to the flange sleeve of the flange-mounting structure; and the upper and lower insulating casings are flexibly secured to the mounting flange assembly, so that no stresses are imposed upon the upper and lower insulating casing structures. The insulating medium between the inner walls of the upper and lower insulating casings and the condenser body may be a suitable dielectric liquid, such as oil, or the intervening space may be filled with a high-dielectric-strength gaseous medium, such as sulfur hexafluoride (SF_6) gas, preferably under pressure, such as 45 p.s.i. The insulating casings may be of porcelain, butyl rubber, an elastomeric material, or a resinous material, such as an epoxy resin or a polyester resin. The condenser body may be of kraft-paper windings with metallic foil inserted into the paper during the winding operation, or the insulating body of the terminal bushing may be a thermosetting resin, such as a suitable polyester resin or an epoxy resin. Ducts or passages are provided along the mounting-flange assembly so that there exists communication between the upper and lower chambers, so that oil or gaseous fluids may freely communicate between the upper and lower chambers through the intervening passages provided by the mounting-flange construction.



3,529,073
FLAT-PACK SUB-ASSEMBLY FOR INTEGRATED CIRCUITS AND A METHOD FOR MAKING SAME

George Leonard, Spring Valley, N.Y., assignor to Alpha Metals, Inc., Jersey City, N.J., a corporation of New Jersey
Filed May 8, 1968, Ser. No. 727,393
Int. Cl. H05k *7/02*
U.S. Cl. 174—52 4 Claims

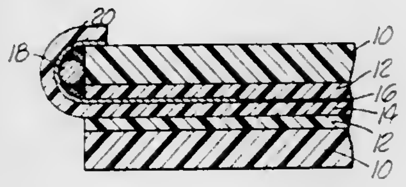


A method for making an integrated circuit module in which the lead frame has the inner ends of the leads as well as the outer ends of the leads interconnected until the lead frame is secured to the module, after which the interconnection on the inner end of the leads is broken away.

A lead frame for a module for integrated circuit flatpack which has the inner ends of the leads all interconnected by an integral strip which can be broken off at a score line after the lead frame is attached to the module.

3,529,074
EXTERNAL BUSBAR SYSTEM

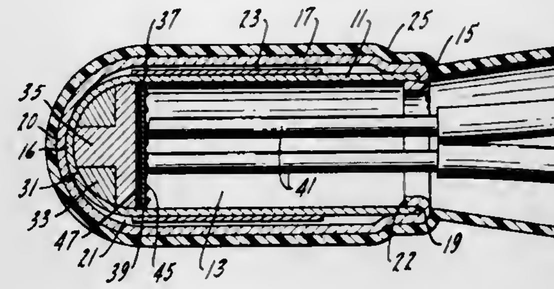
Thomas H. Lewis, Canoga Park, Calif., assignor to The Sierracin Corporation, Sylmar, Calif., a corporation of California
Filed May 7, 1968, Ser. No. 727,180
Int. Cl. H05b *3/06;* **H05k** *1/06*
U.S. Cl. 174—68.5 16 Claims



This patent describes a novel laminated structure comprising two outer layers, a layer of tough flexible soft plastic interlayer material or adhesive adhered to the inner surface of at least one of said outer layers, between said outer layers an electrically conductive coating which coating extends beyond an edge of at least one of said outer layers, and at least one electrically conductive busbar positioned externally to at least one of said outer layers and being electrically connectetd to that portion of the electrically conductive coating extending beyond an edge of at least one of said outer layers. This patent additionally describes methods for the fabrication of the novel laminated structure of the present invention.

3,529,075
EXPLOSION CONNECTOR WITH IGNITION ARRANGEMENT

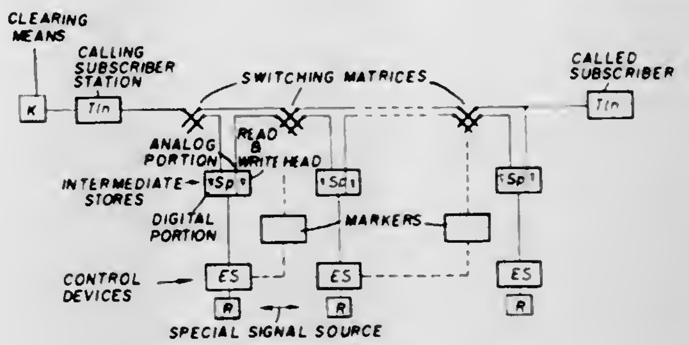
Harrison M. McDonald, De Kalb, Ill., assignor to Ideal Industries, Inc., Sycamore, Ill., a corporation of Delaware
Continuation of application Ser. No. 682,191, Nov. 13, 1967. This application May 21, 1969, Ser. No. 830,197
Int. Cl. H02g *15/08*
U.S. Cl. 174—87 14 Claims



A connector for joining wires, cables and the like including a deformable member, a non-deformable member positioned around said deformable member to form a chamber therebetween, a heat sensitive explosive located in said chamber, and a heat producing ignitor located in the bore of said deformable member and adapted to be actuated by the wires, cables and the like inserted in said bore, said ignitor being capable of producing sufficient heat to ignite said explosive.

3,529,076
ARRANGEMENT FOR THE OVERFLOW STORAGE WITH RESPECT TO BUSY LINES IN TELECOMMUNICATION THROUGH SWITCHING (CIRCUIT-SWITCHING) SYSTEMS

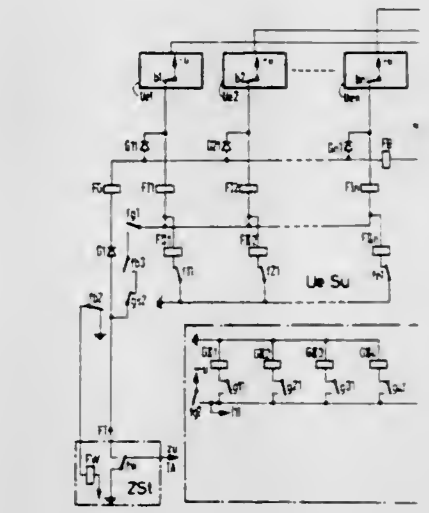
Kurt Sobotta, Ditzingen, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,186
Int. Cl. H04n *15/00, 3/64*
U.S. Cl. 178—2 3 Claims



Storage system which enables subscriber at calling line to exercise option of cancelling a call reaching a busy junction or of storing digital and speech messages for later transmittal. Storage means are provided for storing numbers being called and a message if called extension is busy. When called extension becomes idle, connection between storage device and extension is made and message is delivered automatically.

3,529,077
TELECOMMUNICATIONS EXCHANGE SYSTEMS

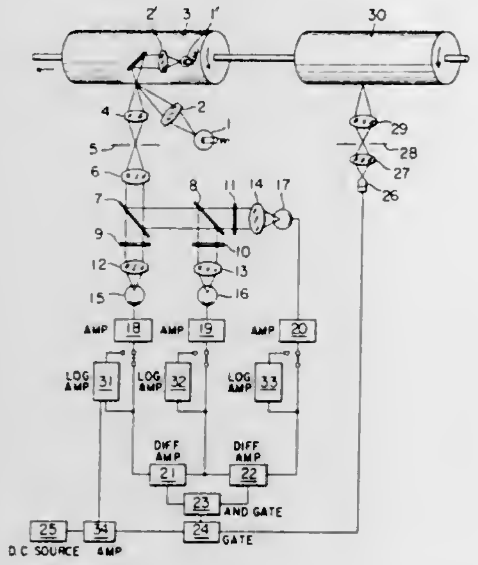
Albert Peltz, 28 Preysingstrasse, 8 Munich 8, Germany
Filed June 1, 1967, Ser. No. 642,889
Claims priority, application Germany, June 3, 1966, S 104,131
Int. Cl. H04l *11/00*
U.S. Cl. 178—3 4 Claims



A system to determine the release supervision time for long distance transmission in centrally controlled teleprinter dial exchange installations wherein the outgoing trunk-line circuits associated with a connection are successively made available and a busy signal is produced only after the seizure of all lines. A group of trunk-line circuits are arranged to be successively seized, and means are provided for delaying renewed seizure of any trunk-line circuit in said group which are operative only after seizure of all trunk-lines of the group and even if any of the seized trunk-lines of the group becomes free.

3,529,078
OPTICAL SCANNING SYSTEM FOR TRANSFER OF SELECTED COLOR PATTERNS

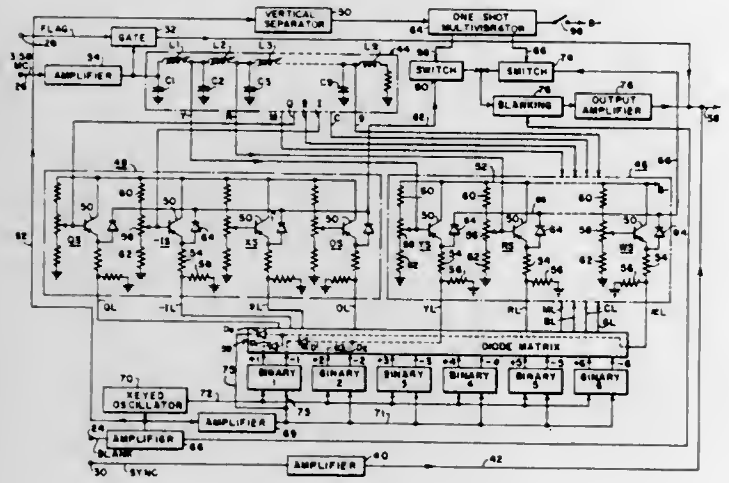
Yoshio Murata, Suita-shi, Japan, assignor of one-half each to Dianippon Ink and Chemicals, Incorporated, Tokyo, Japan, a corporation of Japan, and Yoshio Murata, Osaka-fu, Japan
Filed Feb. 13, 1967, Ser. No. 615,659
Claims priority, application Japan, Feb. 16, 1966, 41/8,803
Int. Cl. H04n *1/46, 9/10, 9/14*
U.S. Cl. 178—5.2 **16 Claims**



An image transfer system for transferring from a multicolor pattern that portion thereof consisting of only the color whose transfer is desired, said system comprising an optical separating means, a photoelectric transforming means, amplifiers, differential means, a gate and reproducing means.

3,529,079
COLOR BAR GENERATOR

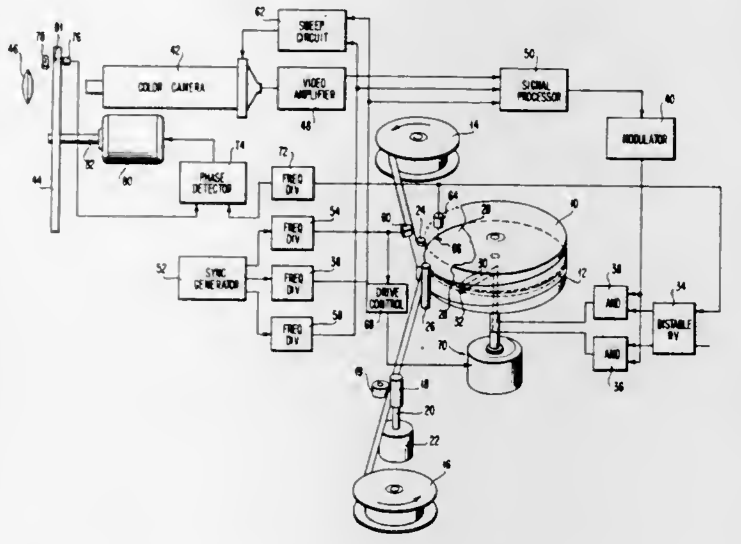
Irving Moskovitz, Roslyn Heights, and George E. Petrilak, Kings Park, N.Y., assignors, by mesne assignments, to Ward Electronic Industries, a corporation of New Jersey
Filed Mar. 23, 1967, Ser. No. 625,417
Int. Cl. H04n *9/12*
U.S. Cl. 178—5.4 **19 Claims**



This invention relates to apparatus for generating chroma test signals, and more particularly to a television color bar generator in which color carrier signals of various phase relationships denoting colors in the spectrum are derived from a delay line and displayed in succession during each horizontal scan of a television receiving tube by means of switching apparatus controlled by a pulse counter.

3,529,080
COLOR VIDEO RECORD AND PLAYBACK SYSTEM

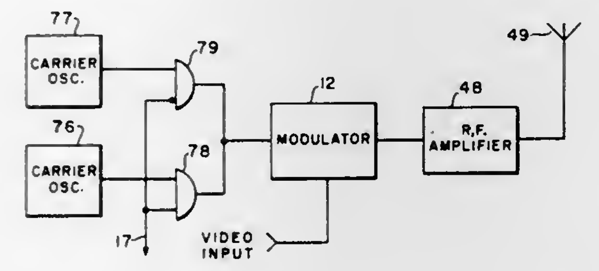
Ernie G. Nassimbene, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 14, 1967, Ser. No. 682,844
Int. Cl. H04n *5/76, 9/02*
U.S. Cl. 178—5.4 **11 Claims**



A color video recording and playback system employs a rotary head having two adjacent magnetic transducers for helical scanning of a magnetic tape that is advanced intermittently. An image pickup tube or camera having a single gun operates in conjunction with a color wheel for recording the color components of the image on separate track segments. During playback, the recorded color signal components are retrieved and interlaced for display.

3,529,081
MEANS FOR APPLYING ADDITIONAL COMMUNICATIONS SIGNALS TO EXISTING CHANNELS

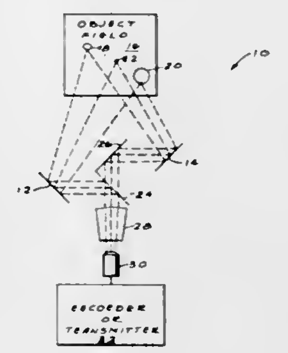
Bernard Rider, Bethesda, Md., assignor to The Western Union Telegraph Company, New York, N.Y., a corporation of New York
Filed Jan. 11, 1967, Ser. No. 608,626
Int. Cl. H04n *7/04*
U.S. Cl. 178—5.6 **7 Claims**



Means for modulating information having a high time rate of information transfer onto a television picture signal from the transmitting end of a television signal transmission channel, and for recovering said information at the receiving end of the signal transmission channel, by applying appropriate modulation to the television carrier wave so as to cause binary coded information to be present during the existing blanking pulses of the television wave.

3,529,082
MULTIDIMENSIONAL ELECTRICAL-OPTICAL TRANSMITTING AND REPRODUCING SYSTEM

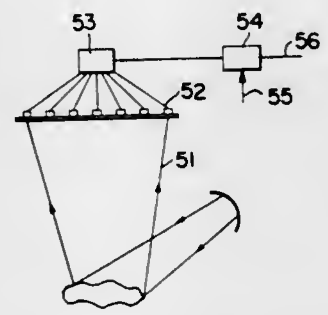
Henry T. Hoesli, Saugus, Calif.
Filed Feb. 16, 1967, Ser. No. 616,729
Int. Cl. H04n *9/56, 9/58*
U.S. Cl. 178—6.5 **4 Claims**



The specification discloses, as an example of the invention, a means for developing a stereoscopic pair of horizontally striated images of a three dimensional object field. The image pairs are then combined in an optically interlaced manner, and recorded, or transmitted via substantially conventional television means. The receiver displays a representation of the composite interlaced image and a separating grid having a horizontal grating or striation pattern correlated to the original image striations is disposed a predetermined, relatively short distance in front of the cathode ray tube display screen. The striations of the separating grid serve to mask one interlaced half of the composite display; which half is masked depends upon the relative elevation of the viewing eye. When the relative elevation of the eyes are slightly different, one eye sees one stereoptic half image and the other eye by virtue of the parallax of the masking separating grid, sees only the other stereoptic half image.

3,529,083
SYSTEM FOR PRODUCING HOLOGRAPHIC INFORMATION

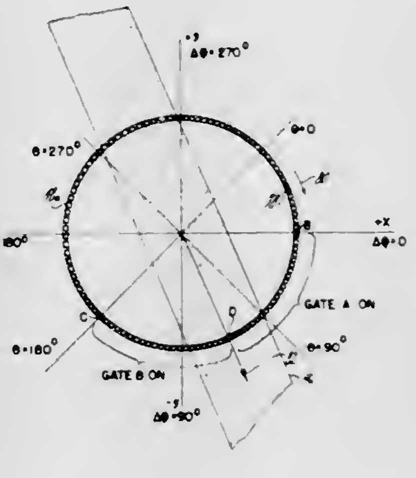
Richard L. Nelson, Worthington, Ohio, and Daniel S. St. John, Hockessin, Del., assignors to Holotron Corporation, Wilmington, Del., a corporation of Delaware
Filed Feb. 14, 1967, Ser. No. 616,086
Int. Cl. G02b *23/12, 27/22;* **H04n** *5/84*
U.S. Cl. 178—6.8 **32 Claims**



A method of producing and detecting holographic information of large object scenes capable of transmission by means of conventional television systems in which the object scene is illuminated with incoherent light which has been intensity-modulated with coherent microwave radiation. The holographic information, i.e., the amplitude and phase information of the object scene is detected by detecting light intensity variations reflected from the object and either simultaneously or thereafter mixing a reference signal coherent with the microwave modulating radiation with the detected signal.

3,529,084
LINE FOLLOWER

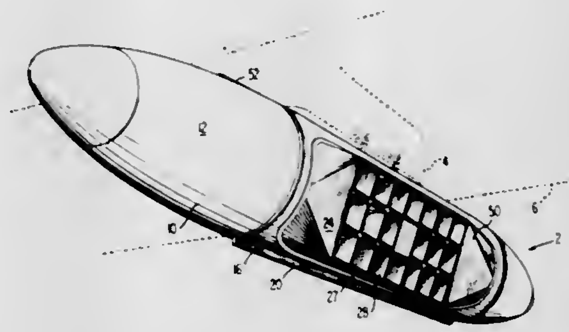
Leonard G. Rich, West Hartford, Conn., assignor to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut
Filed Apr. 17, 1967, Ser. No. 631,249
Int. Cl. H04n *3/30*
U.S. Cl. 178—6.8 **16 Claims**



A device is provided for automatically following a line existing on a sheet of paper, pattern or the like. The line may be drawn or otherwise present on the surface of the material or may be an edge of the material. The line is optically scanned by a scanner having a circular scan path. A given angular portion of the scan circle represents an "aperture" which is shifted angularly to maintain the line centered therein and the angular position of the aperture in turn controls a drive for the scanner to cause it to be driven along the line. A manual steering device may also be included for overriding the automatic system or for aiding the automatic system in choosing a desired line when going through an intersection.

3,529,085
POD AUDIO SYSTEM

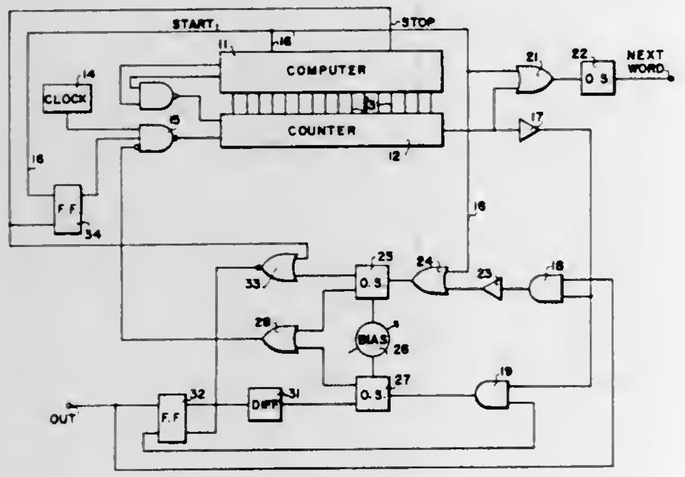
Charles R. Banks, 2350 Duke St., Alexandria, Va. 22314
Filed Jan. 19, 1968, Ser. No. 699,119
Int. Cl. H04r *1/30*
U.S. Cl. 179—1 **4 Claims**



A bank of loudspeaker cones is mounted amidships of a streamline pod shell, with the sound-projecting speaker projecting laterally and downwardly from one side of the pod. An audio amplifier is mounted in the pod shell rearwardly of the speaker bank. The pod shell is adapted for mounted in a bomb rack on an aircraft wing so that sound may be continuously directed to a given location on the ground by circling the aircraft around such location.

3,529,086
APPARATUS FOR THE DIGITAL GENERATION OF ACOUSTIC WAVEFORMS

Robert A. Atchison, Rockville, Robert E. Lutolf, College Park, and Edward F. Magee, Crofton, Md., assignors to Singer-General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,237
Int. Cl. G10l *1/00*
U.S. Cl. 179—1 **7 Claims**

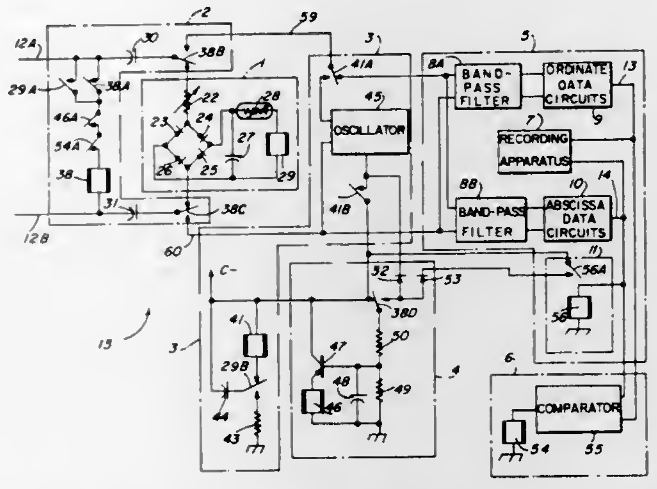


The generation of desired sounds and sound waveforms is useful in many fields. For this reason there have been many sound generators devised over the years. The system of this invention utilizes an automatic programming device to control the generation of a large variety of different sounds and sound waveforms. The apparatus comprises a flip-flop or similar device having a plurality of stable conditions. The flip-flop is alternately placed in each of its stable operative states under the control of an automatic programming device. The duration of a complete flip-flop cycle is determinative of the frequency of the generated waveform, and the relative proportioning of the separate portions of the flip-flop cycle determines the amplitude of the generated waveform. One automatic programming device which has been useful in this system is a general purpose digital computer. The system described herein is an improvement over the system described in the copending patent application Ser. No. 707,615, Sound Generator filed in the names of William E. Beavers, Jr. and William H. Sturdevant on Feb. 23, 1968.

3,529,087
AUTOMATIC LINE RELEASING APPARATUS

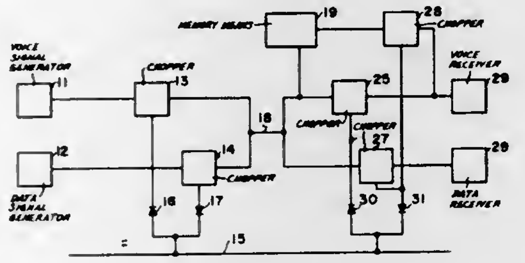
Susumu Kawase and Katsuhiko Mori, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Filed May 29, 1967, Ser. No. 642,072
Claims priority, application Japan, May 28, 1966, 41/34,171
Int. Cl. H04m *11/08*
U.S. Cl. 179—2 **2 Claims**

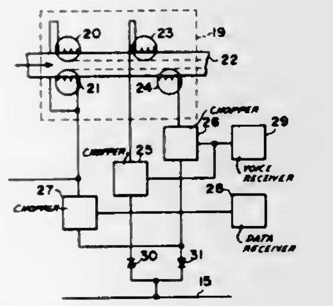
An automatic line release appartus for a graphic recording communication system of the kind including a remote graphic communication receiver connected through a transmission line to a switch board and actuated by two frequency-modulated coordinate signals. The release apparatus includes a D.C. loop circuit that is connected to the transmission line and that is actuatable from an open condition to a closed condition. A ring signal received closes the D.C. loop circuit upon receipt of an A.C. ring signal from the switchboard, the ring signal receiver including a time delay circuit actuating a relay. A time limiting circuit comprising a normally-energized relay is connected to the graphic communication receiver and to the D.C. loop circuit; the relay is de-energized to open the D.C. loop circuit whenever the receiver does not develop one coordinate signal within a predetermined time interval following initiation of a call, thereby restoring the system to condition for receipt of another call. An answering signal, including an oscillator and a timing relay, circuit is coupled to the D.C. loop circuit to generate an answering signal of predetermined duration each time the D.C. loop circuit is closed. The answering signal circuit is interconnected with the time limiting circuit so that the time limiting circuit begins its operation following termination of the answering signal. An on-hook detector is also provided to open the D.C. loop circuit under certain coordinate signal conditions.



3,529,088
MULTIPLEX VOICE AND DATA TRANSMISSION SYSTEM

Werner Hauer, R.D. 2, Box 219, Sayre, Pa. 18840
Filed May 2, 1967, Ser. No. 635,572
Int. Cl. H04j *3/00*
U.S. Cl. 179—15 **8 Claims**

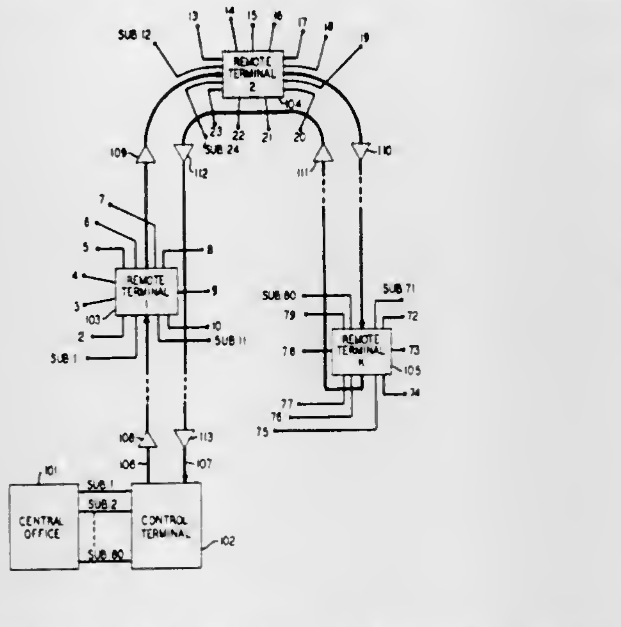




My invention relates to intelligence transmission generally and specifically to a duplex voice and data transmission system wherein a single transmission channel may be employed to transmit simultaneously both substantially live-time, continuous intelligence such as voice as well as discontinuous live-time intelligence which may be a data, a video or a second, chopped voice channel.

3,529,089
DISTRIBUTED SUBSCRIBER CARRIER-CONCENTRATOR SYSTEM

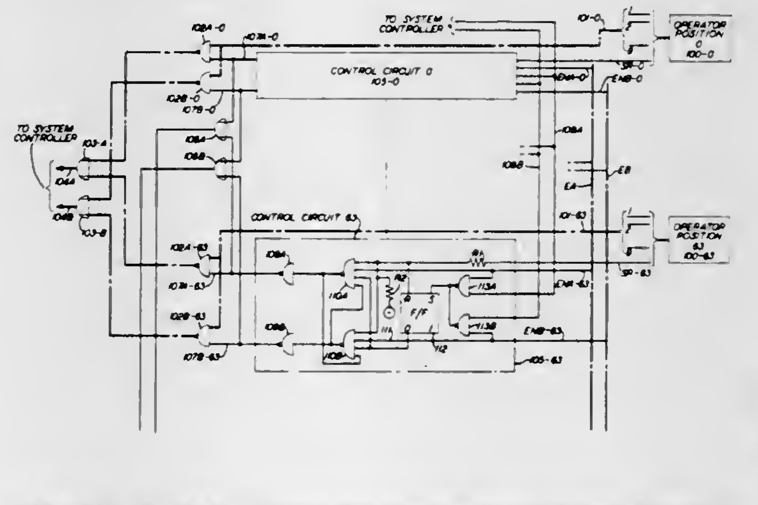
Claude G. Davis, Colts Neck, and Donald Hirsch, Matawan, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 28, 1968, Ser. No. 756,062
Int. Cl. H04j *3/08*
U.S. Cl. 179—15 **8 Claims**



A multichannel delta modulation subscriber carrier-concentrator telephone system serves up to eighty subscribers over fourteen time-division channels. At a central office control terminal, a channel sequence position is assigned to each call and both message digits and such associated non-message control digits as companding and signaling digits are inserted in the bit stream in accordance with the assigned channel sequence position. An identification of the assigned channel sequence position is transmitted to the remote terminal serving the subscriber originating or receiving the call, stored there, and used to control the extraction of both message and associated non-message digits from the incoming bit stream and to control their reinsertion into the outgoing bit stream for transmission back to the central office control terminal.

3,529,090
SCANNING EQUIPMENT

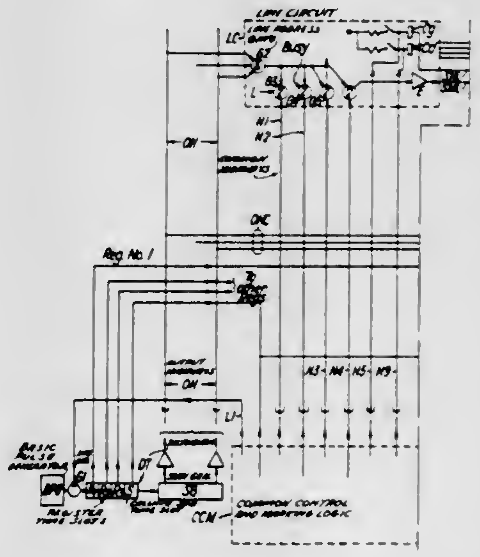
George Riddell, Lincroft, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 24, 1966, Ser. No. 537,224
Int. Cl. H04q *3/18*
U.S. Cl. 179—18 **17 Claims**



A pair of free running scanners are disclosed for scanning the potential state of the common group of terminals. The first scanner to reach an energized terminal stops and transmits information to a system controller identifying the terminal. A stopped scanner remains at a terminal and does not resume active scanning until it receives a signal indicating that the transmitted information has been satisfactorily received by the controller. Circuitry is provided to prevent both scanners from concurrently stopping on the same terminal.

3,529,091
TELEPHONE EXCHANGES WITH DUAL USE OF LINK CIRCUIT

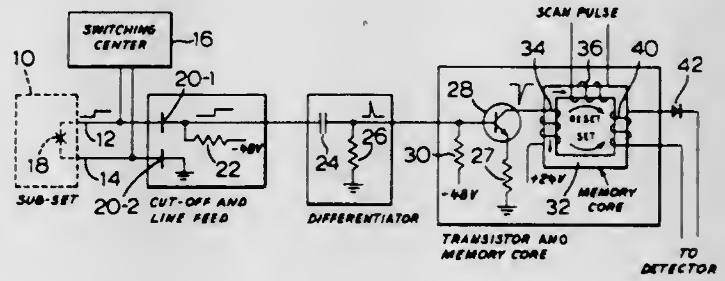
John Anthony Weeks Butcher, Stanstead, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,566
Claims priority, application Great Britain, Nov. 10, 1965, 47,657/65
Int. Cl. H04q *3/42*
U.S. Cl. 179—18 **10 Claims**



A telephone exchange comprising a switching network having inlets and outlets. Means are provided for using the originally seized link circuit that is used in coupling the calling line to the register for further use in connecting the calling line to the called line.

3,529,092
LINE CIRCUIT

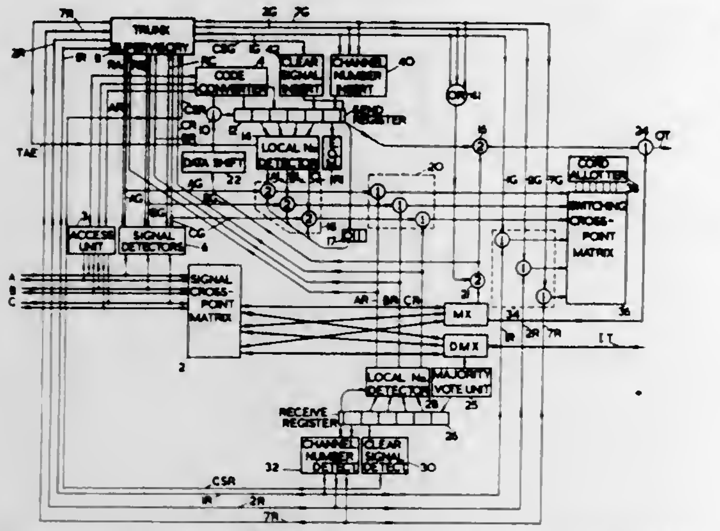
Robert Kenedl, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Oct. 3, 1966, Ser. No. 583,844
Int. Cl. H04q *3/18*
U.S. Cl. 179—18 **2 Claims**



Circuitry detects the change of potential on a line of an automatic telephone switching system when a circuit is closed through a sub-set connected to that line, differentiates the change of potential to provide a pulse, applies the pulse to create one binary state in a destructive readout memory element, a scan pulse detects the existence of such binary state and returns the element to the other binary state.

3,529,093
TELEPHONE EXCHANGE APPARATUS

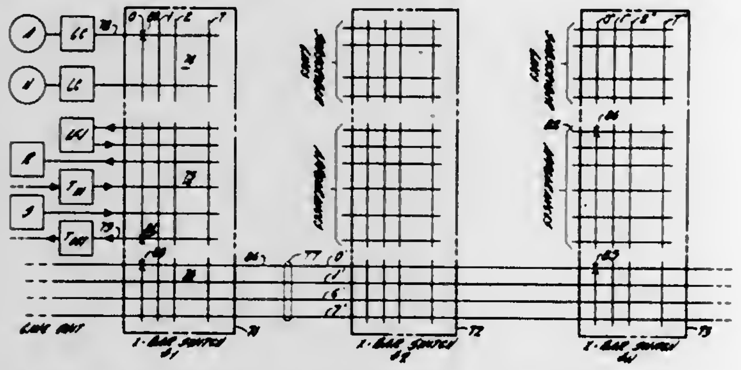
Peter Heaton, Christchurch, England, assignor to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Nov. 2, 1966, Ser. No. 591,528
Claims priority, application Great Britain, Nov. 4, 1965, 46,752/65
Int. Cl. H04q *3/28*
U.S. Cl. 179—18 **16 Claims**



Telephone exchange apparatus comprising a shift register for holding a subscriber's number, a trunk channel number and a herald digit, apparatus for inserting a subscriber's number and a herald digit in the shift register and shifting signals along the shift register with the herald digit leading, a local number detector responsive to the arrival of a herald digit in a given stage of the shift register, and a switching crosspoint matrix connected to outputs of the local number detector. Trunk channel supervisory circuits are provided for inserting the number of an available trunk channel into the shift register and causing the contents of the register to be sequentially transmitted to a distant exchange, whenever a distant subscriber's number is applied to the local number detector. Circuits for receiving such signals and completing connections between subscribers are also described. The local number detector is a conventional matrix or tree circuit.

3,529,094
PREFERENCE CHANNEL SELECTOR FOR SWITCHING NETWORK MARKER

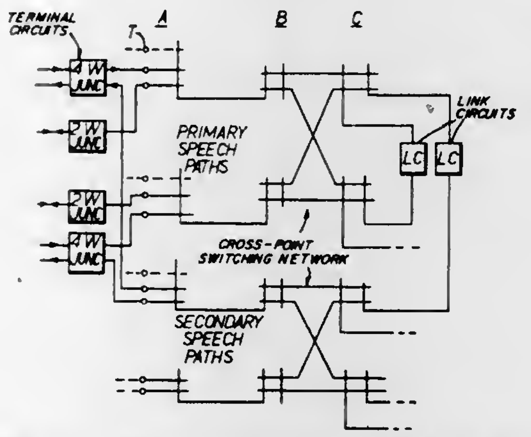
Edson L. Erwin, Towaco, N.J., and Joseph P. Field, Hato Rey, Robert J. Mahood, Miramar, and Roger Cohen, Bayamon, Puerto Rico, assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 15, 1967, Ser. No. 623,339
Int. Cl. H04q *3/42*
U.S. Cl. 179—18 **18 Claims**



A channel selector for a multistage switching system (such as a crossbar system) selects a switching path between calling and called points of access. A plurality of paths extend between these points, the various paths including different numbers of cascaded stages. The channel selector selects the shortest and most direct path through the least number of stages which is then idle and available. The criteria for network layout and path selection area: (1) the shortest available path should be selected and (2) the path should go through a progressively larger number of stages as the size of the system increases.

3,529,095
TELECOMMUNICATION SWITCHING ARRANGEMENT EMPLOYING SINGLE-WIRE TWO-WAY SIGNALLING SYSTEM

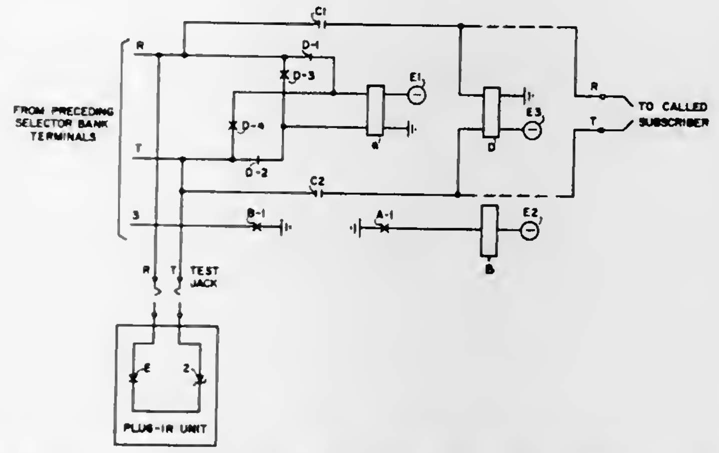
Bloomfield James Warman, London, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed June 12, 1967, Ser. No. 645,110
Claims priority, application Great Britain, June 22, 1966, 27,966/66
Int. Cl. H04m *3/22;* **H04q** *3/00*
U.S. Cl. 179—18 **3 Claims**



In an automatic telecommunication switching system, a cross-point switching network which affords 2-wire working connecting paths through itself is arranged to provide 4-wire working connecting paths by the establishment of two 2-wire working connecting paths in parallel. A single wire two-way signalling system provides a switching system requiring only eight wire connections instead of nine, so that only two four-connection cross-point switching arrangeemnts need be operated in parallel to provide the necessary connections. The eight wire connections are set up contemporaneously.

3,529,096
ANNOYANCE CALL HOLDING DEVICE

Ronald Benjamin Hosking, Baie D'Urfe, Quebec, and Lionel V. Dufresne, Montreal, Quebec, Canada, assignors to The Bell Telephone Co. of Canada, Montreal, Quebec, Canada
Filed Jan. 29, 1968, Ser. No. 701,266
Int. Cl. H04m *3/42*
U.S. Cl. 179—18 **5 Claims**

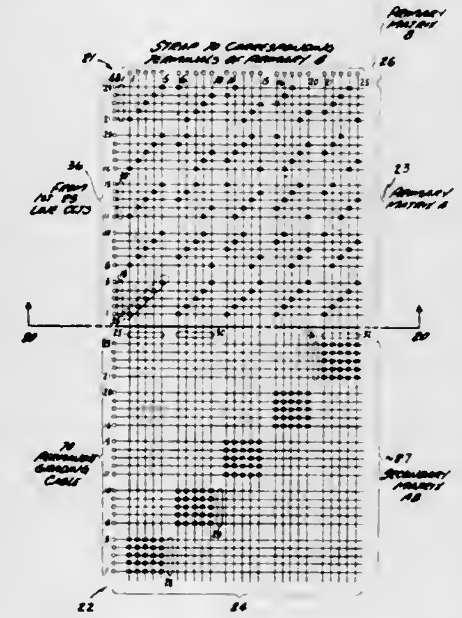


A call control circuit for use with step-by-step telephone switching systems to enable tracing an annoyance call by transferring control of the call from the calling subscriber to the called subscriber. The circuit consists

of a Zener diode in series with a conventional diode connected across the calling subscriber's loop at the called subscriber's connector to hold the connection even if the calling subscriber hangs up and to maintain the connection until the called subscriber hangs up.

3,529,097
HOMOGENEOUS MATRIX SWITCHING NETWORK

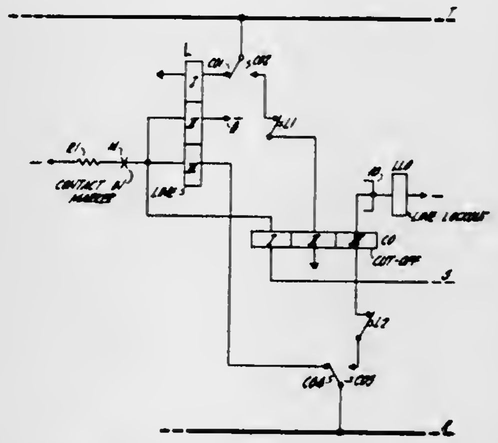
Theron L. Bowers, Western Springs, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Original application July 24, 1964, Ser. No. 384,909, now Patent No. 3,400,220, dated Sept. 3, 1968. Divided and this application Apr. 16, 1968, Ser. No. 738,751
Int. Cl. H04q *3/42*
U.S. Cl. 179—18 **7 Claims**



A plurality of small cascaded matrices are assembled into a switching network. The crosspoints of the first stage matrices are distributed in a manner which produces a homogeneous outflow of traffic from that stage despite the fact that the traffic input into that stage is not homogeneous. The crosspoints of the second stage are distributed in a manner which preserves the homogeneous traffic flow throughout the network.

3,529,098
TWO RELAY LINE CIRCUIT

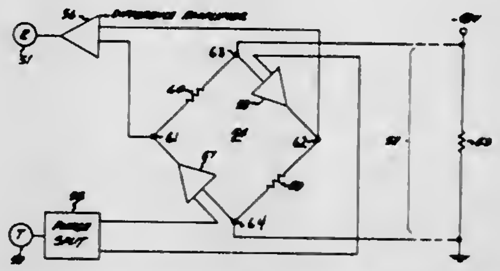
Stephen H. Chapman, Apolo, Guaynabo, Puerto Rico, assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed May 19, 1967, Ser. No. 639,779
Int. Cl. H04q *1/30*
U.S. Cl. 179—19 **6 Claims**



A two-relay line circuit is positively driven to indicate each of the four possible logic conditions: line normal, line demanding service, service being given, and line in lockout. The line circuit does not include any slow release relays that are sensitive to marginal conditions which depend upon loop characteristics. The relays may be less expensive, and the lines may have wider parameters.

3,529,099
TELEPHONE SUBSET WITH RESISTIVE HYBRID NETWORK

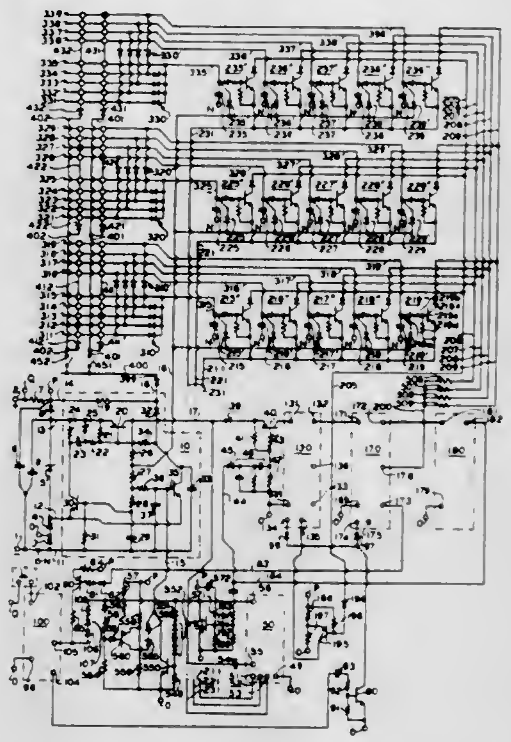
Morris Ribner, Chicago, Ill., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed May 10, 1967, Ser. No. 637,557
Int. Cl. H04m *1/58, 1/60*
U.S. Cl. 179—81 **7 Claims**



A non-inductive telephone network has a diamond-shaped bridge circuit with a pair of oppositely directed amplifiers in opposite arms thereof. The other two opposite arms of the bridge are resistive and capacitive. A difference amplifier is coupled across diagonal node points on the bridge. The other two node points on the bridge are connected to a telephone line.

3,529,100
TELEPHONE DIALING APPARATUS

Charles T. Jacobs, Bernardsville, N.J., assignor to G-V Controls Inc., Essex County, N.J., a corporation of New Jersey
Filed Oct. 21, 1966, Ser. No. 588,366
Int. Cl. C04m *1/45*
U.S. Cl. 179—90 **11 Claims**

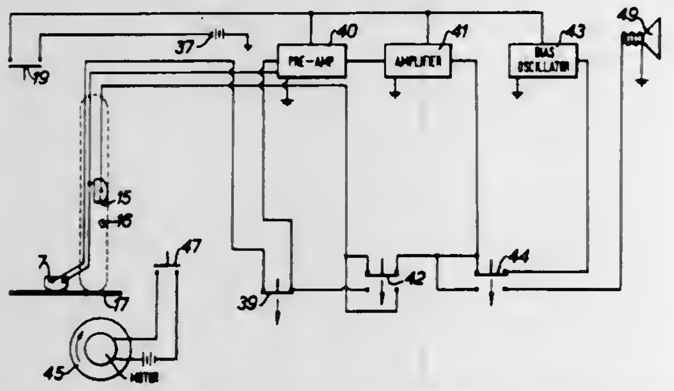


A combination of a plurality of groups, each of a plurality of capacitors, is used in a repertory dialling apparatus. The capacitors are connected to circuitry which is normally effective to maintain each of the capacitors in a normal state of charge. A switching means is employed between the capacitors and a conductor operating to connect at least one selected capacitor in each group to the conductor to effect the changing of the state of charge on the selected capacitors. A stepping means is actuated to establish with respect to the selected capacitors in a predetermined group-to-group succession, current flows tending to restore their normal states of charge, the current flows being used to control the transmission of dialing signals.

3,529,101

INSTRUMENT USING INTERMEDIATE STORAGE FOR REPRODUCING PRE-RECORDED INFORMATION

Albert E. Du Bord, 4980 W. Broadway, Montreal 29, Quebec, Canada
Filed May 20, 1968, Ser. No. 730,559
Claims priority, application Canada, Jan. 9, 1968, 9,438
Int. Cl. G11b *5/86, 15/42, 23/02*
U.S. Cl. 179—100.2 5 Claims

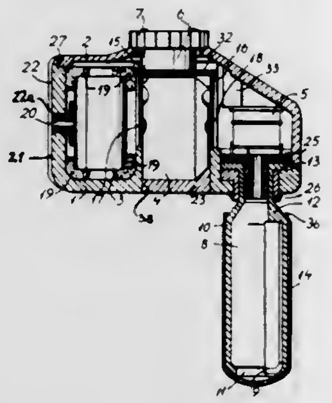


An instrument is provided for retrieving information from a medium having a pre-recorded information pattern. The instrument comprises intermediate storage means adapted to be driven by contact thereof with said medium. A pickup head located adjacent the medium is connected to pass information signals from the pre-recorded medium to a recording head located adjacent the intermediate storage means to record information on the intermediate storage means at the rate that the pickup head scans the pre-recorded medium. Information is then retrieved from the intermediate storage means by driving said storage means at the same speed used when the pre-recorded pattern was initially recorded on said medium.

3,529,102

ARRANGEMENT IN HEARING AIDS ESPECIALLY FOR BEING PLACED IN THE EAR

Gerd Rosenstand, Copenhagen, Denmark, assignor to Danavox International A/S, Copenhagen, Denmark
Continuation of application Ser. No. 474,049, July 22, 1965. This application Mar. 21, 1969, Ser. No. 809,436
Claims priority, application Denmark, Mar. 26, 1965, 1,576/65
Int. Cl. H04r *25/02*
U.S. Cl. 179—107 6 Claims

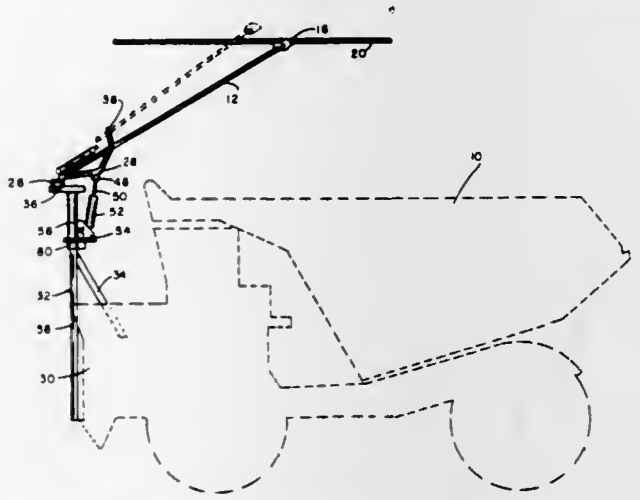


A hearing aid having a housing with a plurality of cells, electrical components are received in said cells, a holder and a receiver located in said holder, said holder being arranged for at least partial insertion in the auditory canal and being attached to the housing turnably substantially about the axis of the auditory canal.

3,529,103

TROLLEY POLE RETRACTOR

Darrell G. Wortman, Tulsa, Okla., assignor to Unit Rig & Equipment Company, Tulsa, Okla., a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,203
Int. Cl. B60l *5/28*
U.S. Cl. 191—50 12 Claims

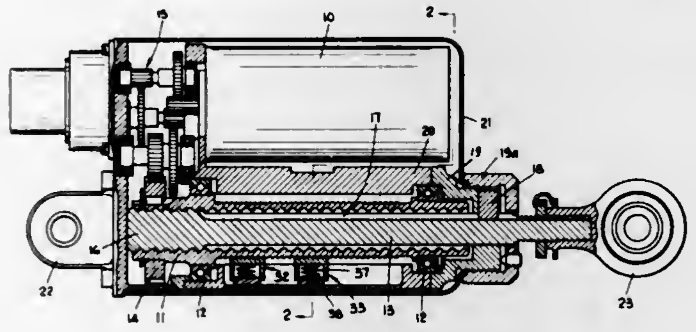


A trolley pole retractor for automatically retracting the trolley poles of an electric powered vehicle, and particularly an electric powered rubber tired off-highway vehicle. The retractor device maintains the trolley poles in an efficient engagement with the trolley lines during the operation of the vehicle under the power supplied by the electric current carried by the trolley wires. When it is desired to release the engagement between the poles and the trolley wires, the poles are initially automatically lowered slightly to effect a disengagement from the wires. The poles are then further lowered and simultaneously rotated for moving the poles to a downward and substantially horizontally disposed position. This places the poles in an "out of the way" position with respect to the continued operation of the vehicle under auxiliary power means, and maintains the poles in a disengaged position with respect to the trolley wires.

3,529,104

LIMIT SWITCH OPERATING MECHANISM FOR ACTUATORS

William H. Angle, Rahway, N.J., assignor to Plessey Airborne Corporation, Hillside, N.J., a corporation of New Jersey
Filed Apr. 19, 1968, Ser. No. 722,714
Int. Cl. H01n *3/16*
U.S. Cl. 200—47 8 Claims

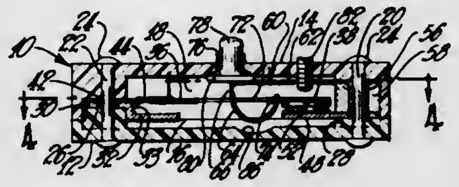


A pair of sliders have threaded rack portions normally biased into meshing engagement with an external thread on the rotatable drive screw of a linear or rotary actuator. Rotation of the drive screw in one or the other direction, by the actuator drive motor, results in the simultaneous, linear displacement of both sliders for actuation of limit switches, thereby to limit the actuator to a predetermined operating range.

3,529,105

SNAP SWITCH AND THERMORESPONSIVE ACTUATOR

John W. Huffman, Mansfield, Ohio, assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Feb. 15, 1967, Ser. No. 616,394
Int. Cl. H01h *21/04, 21/24, 21/44*
U.S. Cl. 200—67 2 Claims

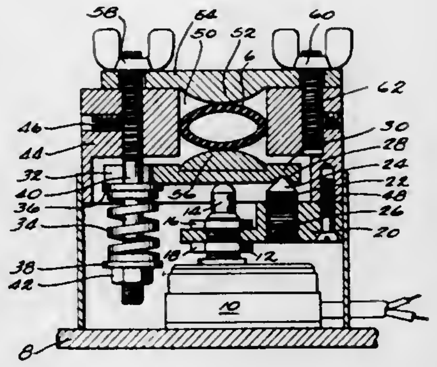


A switch mechanism of a miniature or microswitch type embodying snap action for engaging and disengaging relatively movable contacts and wherein the switch mechanism is of compact construction contained within a housing of insulating material. The invention includes thermoresponsive devices arranged to actuate a component of the switch mechanism under the influence of temperature variations, the invention including means for adjusting the relative position of an actuating member with respect to a thermoresponsive means.

3,529,106

SANITARY PRESSURE SWITCH

Clarence W. Little, Jr., Brookfield, Wis., assignor, by mesne assignments, to Waukesha Foundry Company, Inc., a corporation of Wisconsin
Filed Jan. 4, 1968, Ser. No. 695,753
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 7 Claims



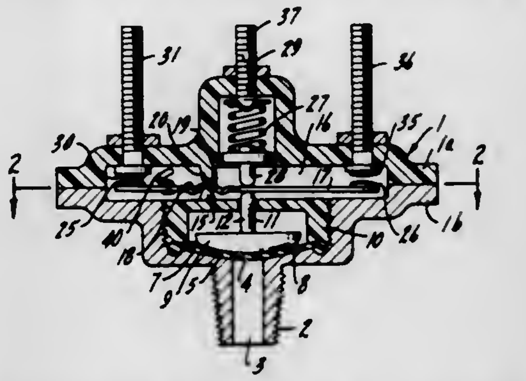
Fluid is admitted under pressure to a tube readily removable for cleaning or replacement. A portion of the tube is indented between a fixed boss and a boss mounted on a lever which is subject to adjustable spring pressure and which, when displaced by pressure within the tube, actuates the operating plunger of a microswitch.

3,529,107

DOUBLE THROW SWITCH

Harold L. Dobrikin, Highland Park, Ill., assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed May 9, 1968, Ser. No. 727,855
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 9 Claims

A double throw switch having a pair of spaced terminals, a flexible switch arm fulcrummed intermediate its ends and between said terminals, the switch arm carrying contact elements at its opposite ends and being urged

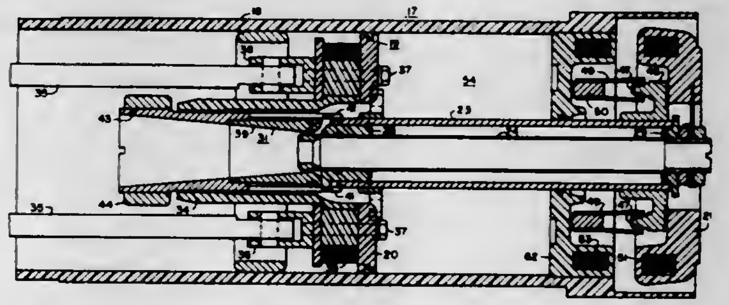


about said fulcrum in one direction in response to fluid pressure and urged in an opposite direction by a spring.

3,529,108

NOZZLE AND CONTACT CONSTRUCTION FOR FLUID-BLAST CIRCUIT INTERRUPTERS

Robert M. Roidt, Edgewood, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 1, 1966, Ser. No. 576,711
Int. Cl. H01h *33/12, 33/86*
U.S. Cl. 200—148 9 Claims



A fluid-blast type of circuit interrupter is provided having separable stationary and movable contact structures. The movable contact structure comprises an outer main movable contact tube insulatingly encompassing an inner movable arcing contact. The stationary contact structure includes outer main stationary contact fingers and an inner conducting orifice, through which the fluid blast exhausts.

The operation is such that the main current arc, drawn between the main contact fingers and the outer movable conducting tube, is transferred, by the radial inward fluid blast through the stationary conducting nozzle, to the inner movable arcing contact, thereby inserting into series circuit impedance means. The impedance means may assume the form of a resistance, or accelerating coils, to assist piston motion in creating the desired fluid blast. The fluid-flow path through the conducting stationary nozzle is smoothly configured to avoid stagnant regions, and to rapidly open up the nozzle flow area.

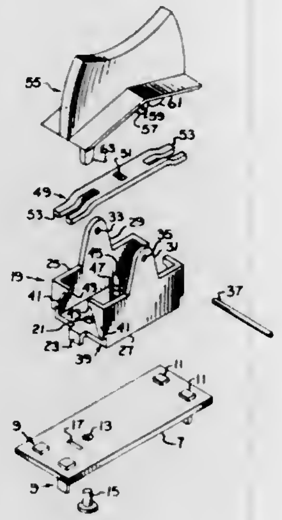
A modification of the invention provides a biased inner conducting nozzle having a lost-motion connection with the outer main contact fingers.

3,529,109

MULTIPLE CIRCUIT CONTROL SWITCH WITH GUIDE STOPS FOR LIMITING THE VERTICAL TRAVEL OF A SPRINGLIKE MOVABLE CONTACT

Donald John Cross, Tonawanda, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 12, 1968, Ser. No. 712,415
Int. Cl. H01h *3/04*
U.S. Cl. 200—153 1 Claim

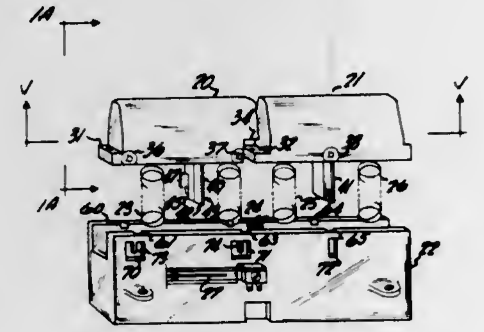
A multiple circuit control switch manually operable in a pivotal movement to provide circuit closure of electrical connectors is positionally held in central circuit disengaged position by a contacting springlike member forcibly held by a compressed spring against inwardly extending guidestop members of a support and guide member.



3,529,110

DOUBLE ACTING PUSHBUTTON ASSEMBLY

Eugen O. Rothacker, Corinth, Miss., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 14, 1968, Ser. No. 705,504
Int. Cl. H01h *3/12*
U.S. Cl. 200—159 4 Claims



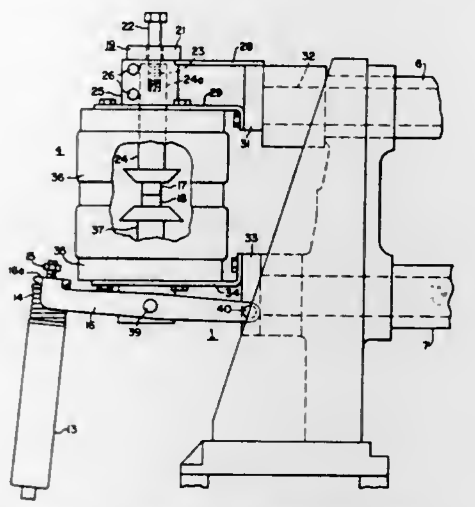
A double action pushbutton assembly includes an element which floats on relatively long coil springs. Guideways in molded piece parts guide the pushbutton to either of two laterally displaced locking positions and to either of two vertically displaced non-locking positions.

3,529,111

BOUNCE-SUPPRESSING ARRANGEMENT FOR SEPARABLE ELECTRICAL CONTACTS

Ronald P. Luplsh, Ringoes, N.J., and Stanislaw A. Milianowicz, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1968, Ser. No. 709,124
Int. Cl. H01h *1/50*
U.S. Cl. 200—166 11 Claims

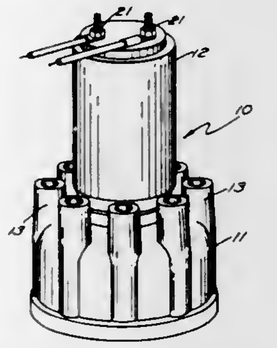
A circuit interrupter having separable contacts, susceptible to bouncing conditions, has associated with the stationary contact an inertia member, or weight, which is supported in a loose condition relevant to the stationary contact. During the closing operation, the impact of closing of the movable contact against the stationary contact causes a compression wave to pass through the stationary contact and be absorbed by the inertia member, which member moves in the closing direction to absorb part of the kinetic energy of the movable contact. Subsequently, the inertia member, or inertia weight settles to its original state, either moving freely or enclosed within a dashpot device to gradually absorb the returning energy.



3,529,112

DISTRIBUTOR CAP AND IGNITION COIL ASSEMBLY

Joseph E. Morra, 115 Paine Ave., Cranston, R.I. 02910
Filed Mar. 10, 1969, Ser. No. 805,640
Int. Cl. H01h *9/04*
U.S. Cl. 200—168 10 Claims



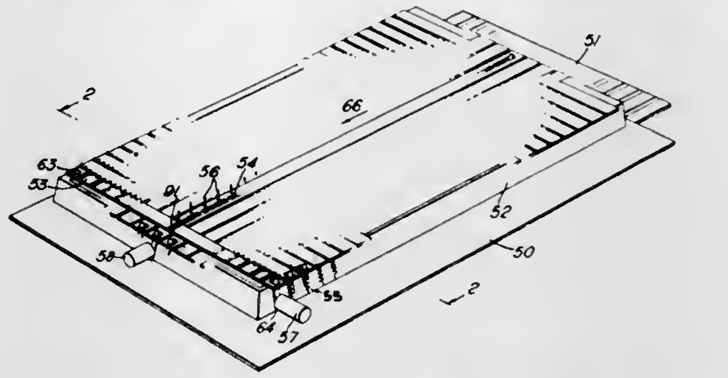
The device comprises a distributor cap and ignition coil assembly. The cap has a large central opening surrounded by a flat bearing surface, grooved to receive a sealing ring. The ignition coil has a bottom end with a complementary flat bearing surface which seats on the cap and the sealing rig. The bottom of the coil has a carbon contact for contacting the distributor rotor. The coil and cap are releasably locked to each other by threading or by a simple bayonet connection.

3,529,113

MINIATURE CROSSBAR SWITCH WITH FLEXIBLE TAPE SELECTING MEANS AND MECHANICAL LATCH

Charles Vazquez and Guy Claude Dufresnoy, Paris France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,791
Claims priority, application France, Oct. 20, 1966, 80,753
Int. Cl. H01h *63/00*
U.S. Cl. 200—175 16 Claims

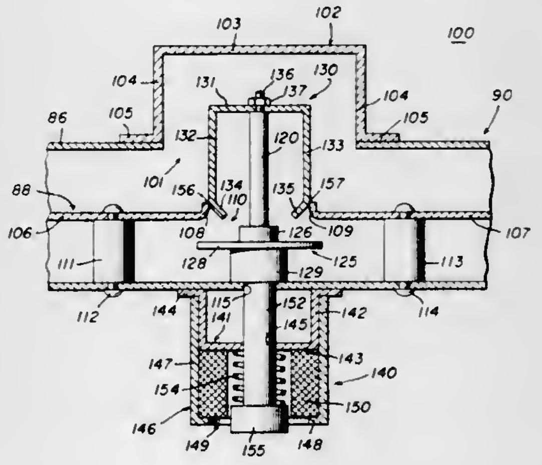
The invention provides a crossbar switch mounted on a printed circuit card. In greater detail, the printed circuit card supports a lightweight plastic frame having a number of coiled springs stretched across its top side to provide bare wire verticals. The moving contacts are short lengths of tightly wound, coiled, finger springs standing upright in the printed circuit card and normally resting in an open contact position away from the bare wire verticals owing to their own spring tension. The crosspoint contacts are closed by a coordinate array of plastic tapes having escapement windows therein. These tapes capture the finger springs and pull them to a closed contact position when intersecting tapes are sequentially and momentarily pulled responsive to the receipt of pulses from electronic control circuitry. If the tapes are pulled nonsequentially, the captured finger spring escapes and returns to the open contact position.



3,529,114

TWO-POSITION PHASE-MATCHING DEVICE FOR ELECTRONIC OVENS

James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Oct. 25, 1968, Ser. No. 770,729
Int. Cl. H05b *9/06;* **H03j** *3/20*
U.S. Cl. 219—10.55 23 Claims



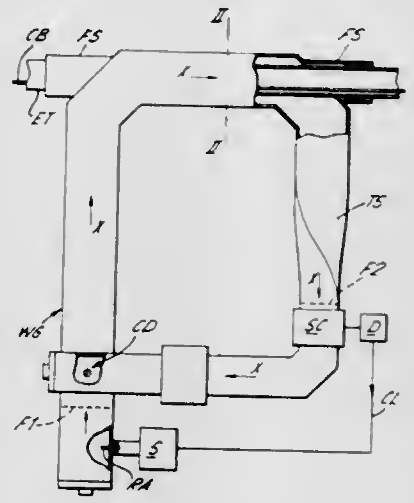
An electronic oven is disclosed including a cooking cavity and a source of microwave energy coupled thereto by a coaxial-type transmission line the inner conductor of which comprises two spaced-apart sections defining therebetween a gap of a predetermined length, and a two-position phase-matching apparatus including two electrically conductive members of different lengths not less than the predetermined length for phase matching the source to the cooking cavity when either thawed or frozen foods are disposed therein by bridging the gap with one or the other of the conductive members respectively when the apparatus is in its first or second positions.

3,529,115

HEATING DEVICES

Tadeusz Bronislaw Jawor, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain
Filed June 3, 1968, Ser. No. 733,838
Claims priority, application Great Britain, June 6, 1967, 26,098/67
Int. Cl. H05b *5/00, 9/06*
U.S. Cl. 219—10.55 11 Claims

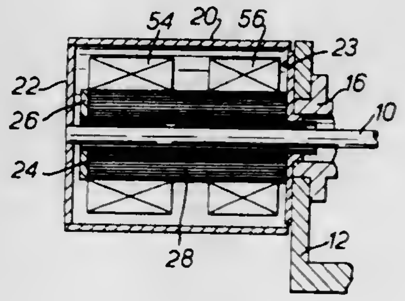
A heating device, e.g. for preparing plastics material for moulding, utilises a beam of microwave radiation propagated through a wave-guide from a source at one end thereof, past an irradiating zone through which articles to be heated are conveyed, to the other end of the waveguide, and means are provided connecting said other end to an intermediate point of the wave-guide (between the source and the irradiating zone) to form a loop so that the beam passes any point around such loop at least twice.



3,529,116

HEATING ROTARY DRUM APPARATUS HAVING SHAPED FLUX PATTERN

Harumi Miyagi, Kyoto, Japan, assignor to Tokushu Denki Kabushikikaisha, a corporation of Japan
Original application Nov. 22, 1965, Ser. No. 509,004, now Patent No. 3,412,228, dated Nov. 19, 1968. Divided and this application Aug. 13, 1968, Ser. No. 755,494
Claims priority, application Japan, Nov. 21, 1964, 39/66,111; Jan 20, 1965, 40/2,953
Int. Cl. H05b *5/00, 9/02*
U.S. Cl. 219—10.61 2 Claims



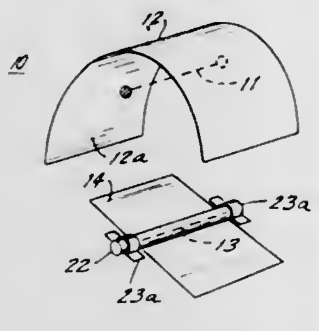
A rotary drum apparatus for use in heating purposes is disclosed herein which is heated inductively by means for developing magnetic flux in a predetermined field pattern along the length of the drum so that flux density is greater and produces more heat at predetermined locations along the drum than at others.

3,529,117

SOLDERING APPARATUS

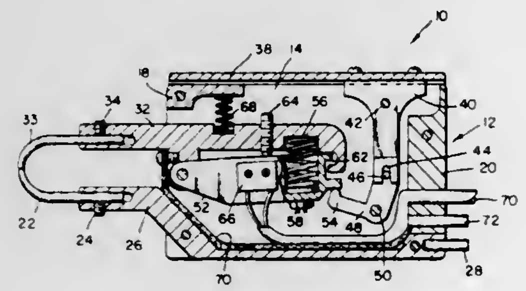
Bernard J. Costello, Ringoes, N.J., assignor to Argus Engineering Company, Inc., Hopewell, N.J.
Continuation of application Ser. No. 606,670, Jan. 3, 1967. This application Sept. 11, 1969, Ser. No. 860,158
Int. Cl. B23k *1/02*
U.S. Cl. 219—85 16 Claims

This invention teaches a new method and apparatus for joining two materials together when using radiant energy as a heat source. Conventional methods require means for holding the two materials rigidly together in order to satisfactorily perform the heating operation. The conventional holding means usually absorbs a good deal of the irradiation or otherwise diverts the irradiation from the materials to be heated resulting in an ineffective seal. The instant invention provides a novel transparent holding means combined with an irradiation source emitting infra-red rays, for example, which are focused upon the materials to be heated. The transparent holding means is light transmissive enabling substantially all of the rays to be concentrated upon the materials being heated thereby providing an effective joining of the two materials. In the case where one of the materials being held down has irregularities, the rigid light transmissive means may further be coated with a conventional light transmissive material which conforms to the irregularities so as to apply substantially equal holding pressure over the surface of the material containing the irregularities.



3,529,118
PORTABLE SPOT WELDING HANDPIECE

Franz X. Eisele, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 715,259
Int. Cl. B23k *9/28*
U.S. Cl. 219—90 **4 Claims**

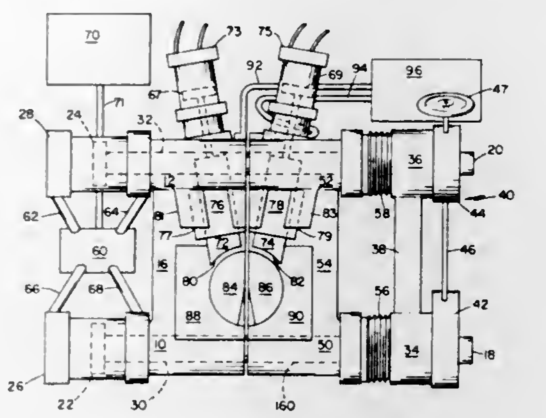


The portable spot welding handpiece has a fixed and a movable electrode holder. The movable electrode holder is moved from an open position away from the fixed electrode holder, toward the fixed electrode holder by operation of an external operating handle. The interconnection between the operating handle and the movable electrode holder provides a mechanical advantage so that the interelectrode force can exceed the operating handle force. Internal switch means signals for start of the weld cycle when interelectrode force has reached a predetermined value. This is controlled by adjustable resilient means between the operating handle and the movable electrode holder.

3,529,119
FLASH WELDING MACHINE

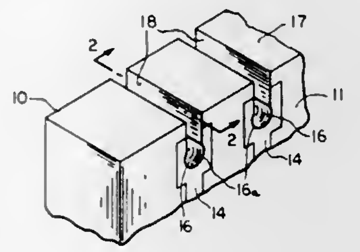
Charles Dana Moore, Rowley, Mass., assignor to Thomson Electric Welder Company, Inc., Lynn, Mass., a corporation of Massachusetts
Filed July 10, 1967, Ser. No. 652,218
Int. Cl. B23k *11/04*
U.S. Cl. 219—97 **5 Claims**

A flash welding machine including a first cylinder and first piston for applying force along a first axis, a second cylinder and second piston for applying force along a second axis, stationary platens mounted with each of the cylinders and movable platens mounted with each of the pistons, a first clamp mounted with a portion on each of the stationary platens and a second clamp mounted with a portion on each of the movable platens for holding the work to be welded intermediate the axes.



3,529,120
TERMINAL CONSTRUCTION FOR ELECTRICAL CIRCUIT DEVICE

Anthony L. J. Andrasfay, Huntington Beach, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed June 26, 1968, Ser. No. 740,288
Int. Cl. H05k *1/10; 3/32*
U.S. Cl. 219—107 **5 Claims**

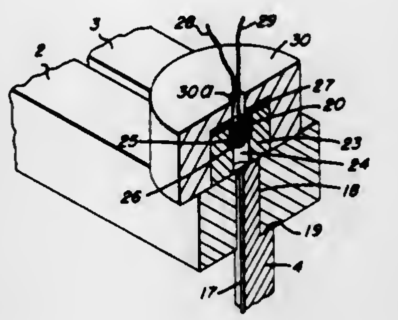


An electrical assembly formed of a nonconductive base member adapted to receive and support a variety of electrical components on at least one surface thereof and including at least one terminal member mechanically attached to and protruding from the base member. The base member has a first hole formed therein which communicates with the surface of the base member and a second hold intersecting the first hole within the base member. The terminal member is provided with a first pin section and a second pin section positioned respectively in the first and second holes formed within the base member. The first pin section is upset or deformed within its hole to provide a positive mechanical interference fit between the sides of the pin section and the surface of the hole and the second pin section has its end thereof welded to the first pin section, the second pin section protruding outwardly from the base member for connecting the device into an external electrical circuit.

3,529,121
WELDING APPARATUS

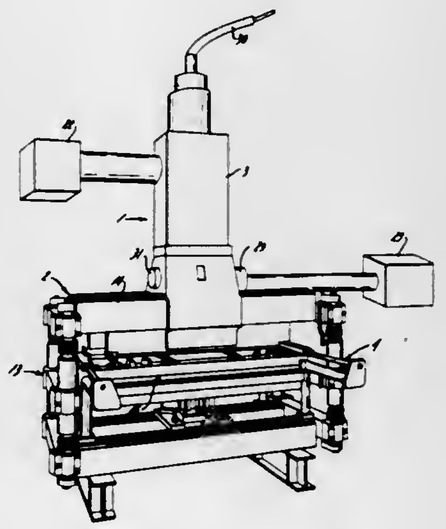
Stephen N. Bobo, Cohasset, and Ricardo Vanzetti, Walpole, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 3, 1967, Ser. No. 628,058
Int. Cl. B23k *11/00*
U.S. Cl. 219—109 **19 Claims**

An infra-red radiation conduit having one end located adjacent a source of heat which causes a section at the end of the conduit to become optically degraded and to itself emit radiation corresponding in intensity to the temperature of the heat source, which emitted radiation is transmitted by the remainder of the conduit to the opposite end located adjacent and directed toward a temperature measuring device.



3,529,122
ELECTRON BEAM WELDING OF RIMMED CARBON STEEL

John F. Hinrichs, Menomonee Falls, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 6, 1967, Ser. No. 607,826
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **4 Claims**



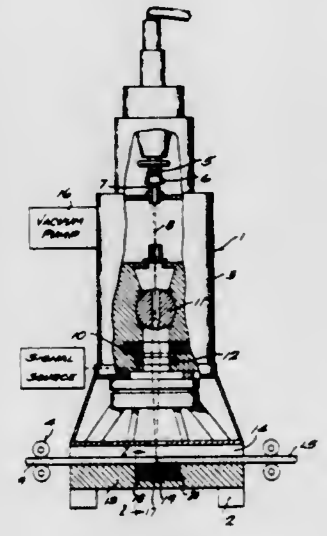
A method of welding low carbon steel using an electron beam, and more particularly, an assembly line method of electron beam welding structural blank components. Only the portion of the workpiece being welded is enclosed in the vacuum welding chamber, and the electron beam is intentionally defocused to obtain a low depth-to-width ratio in the weld section.

The electron beam gun and the workpiece both remain stationary during welding and the beam is deflected along the welding path on the workpiece.

The welding chamber comprises an upper and lower shell which moves apart to receive a portion of a workpiece therebetween. The shells are provided with vacuum-tight seals which clamp over only a portion of the workpiece, thereby facilitating a "pass-through" assembly line welding sequence because only a small volume chamber need be pumped down from atmospheric pressure to vacuum welding conditions, and the workpieces can travel in a continuous flow through the welding fixture.

3,529,123
ELECTRON BEAM HEATING WITH CONTROLLED BEAM

John F. Hinrichs, Menomonee Falls, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed July 24, 1968, Ser. No. 747,166
Int. Cl. B23k *15/00*
U.S. Cl. 219—121 **13 Claims**

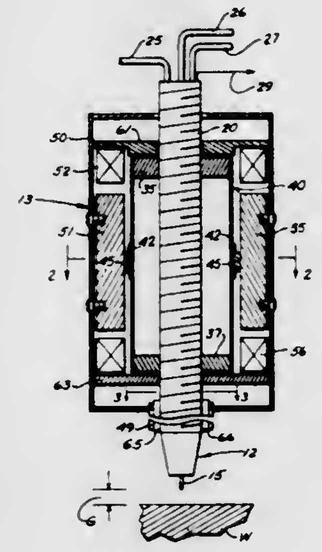


This disclosure relates to electron beam welding wherein a beam of electrons is focused on a weld line and directly effects a welding of a metal workpiece.

The emitted beam from the back side of the work or weld is deflected backwardly onto the weld line by a suitable magnetic field. The emitted beam may be deflected forwardly in front of the actual weld to preheat the work or rearwardly onto the weld to post heat the weld. The beam proper may be back and forth along the weld line to provide a multiple treatment or rewelding of the weld.

3,529,124
AUTOMATIC VOLTAGE CONTROL FOR ELECTRIC ARC DISCHARGE DEVICE

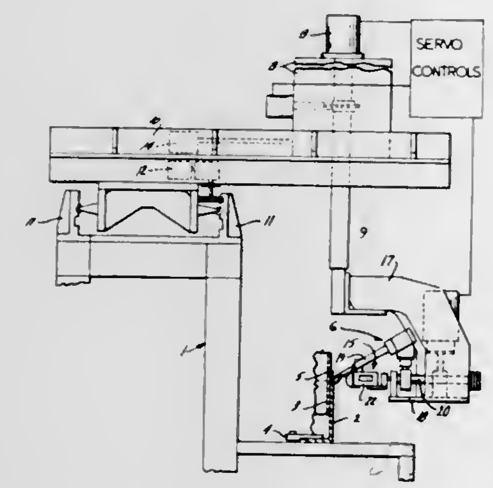
Douglas I. MacFarlane and Robert F. Keating, Woodland Hills, Calif., assignors to North American Rockwell Corporation
Filed Jan. 15, 1968, Ser. No. 697,712
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **10 Claims**



Apparatus for maintaining a constant predetermined arc voltage and arc gap between the electrode of an electrical arc discharge device such as a welding torch and a workpiece. The welding torch is connected to an electromechanical actuator by a coupling which allows virtually no backlash as the torch is lowered toward or raised from the workpiece to reestablish a desired arc gap. The arc gap is automatically restored to the predetermined length by feeding back arc voltage information to an electric circuit that transmits variable frequency pulses to the electromechanical actuator which then positionally adjusts the torch.

3,529,125
AUTOMATIC WELD TRACER WITH LATERAL ELECTRODE POSITIONING FOR LAP JOINTS

Nicholas J. Ferrier, Menomonee Falls, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 24, 1969, Ser. No. 793,861
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 7 Claims

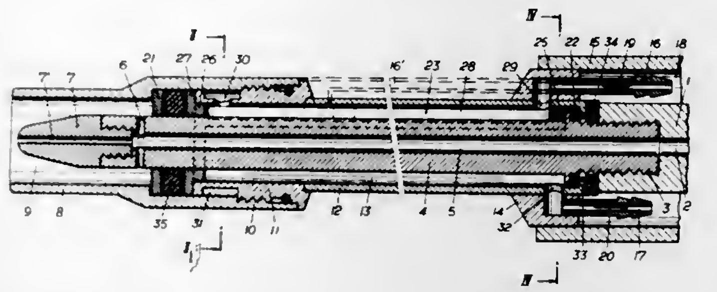


This disclosure includes a weld head driven along a weld lap joint of two overlapping plates. A floating probe unit has a first follower riding on the top of the first plate and is mounted for linear movement normal to the weld joint and for pivotal vertical movement. A pair of linear voltage differential transformers are mounted to the probe unit and the cores positioned in accordance with the weld joint. The output of the transformers locates the tip of a consumable electrode on the center of the top edge of the first plate. A lateral positioning follower is connected to the first follower and extends downwardly into engagement with the face of the first plate and positively prevents the first follower from moving in beyond the center of the plate. The electrode is thereby properly centered on the edge and prevented from missing the edge of the outer plate at a gap between the two plates.

3,529,126
INERT GAS SHIELDED WELDING TORCH

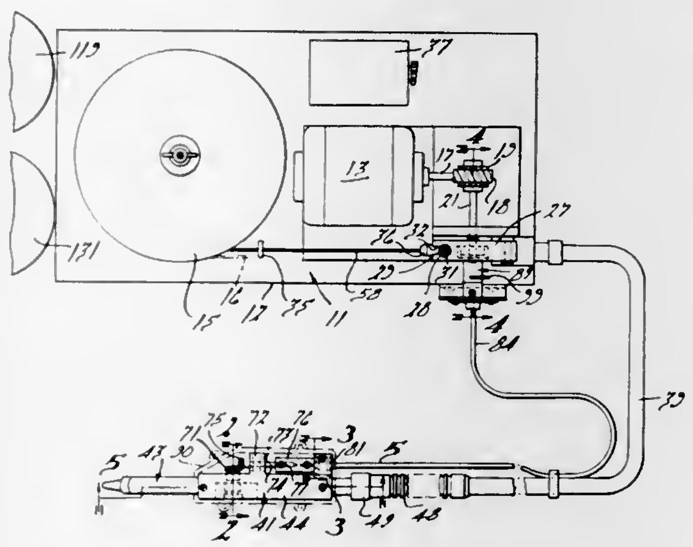
Olaf Reeb, Adalbert-Stifter-Str. 1, Munich-Unterpfaffenhofen, Germany
Filed Mar. 25, 1968, Ser. No. 715,908
Claims priority, application Austria, Apr. 4, 1967, A 3,234/67
Int. Cl. B23k *9/26*
U.S. Cl. 219—130 4 Claims

The welding head of an inert gas shielded welding torch is cooled by a coolant which is circulated through an annular space between an outer burner tube and a coaxially disposed inner contact tube and at least one conducting element is disposed in this annular space and defines axially parallel canals in which the coolant circulates in opposite directions.



3,529,127
WELDING DEVICE

Dewey J. Smith, 8733 Hupp St., Warren, Mich. 48089
Filed Mar. 2, 1967, Ser. No. 620,061
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 8 Claims

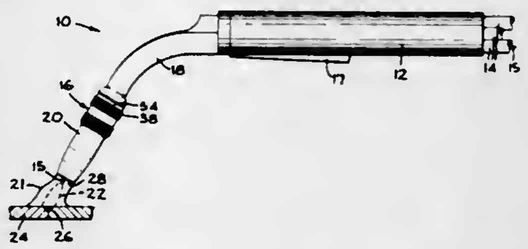


Between the welding head and the cable sheath containing supply means for current and gas and the control conductors therefor, a head is inserted having driving means for pulling the welding wire through the cable sheath located directly adjacent to the welding nozzle. The pulling device is driven through a flexible driving element remotely driven from the motor employed for pushing a welding wire through the cable sheath to the welding nozzle. It was found that while the steel type of welding wire could be pushed through the flexible sleeve within the cable sheath, the soft aluminum type of wire could not be successfully pushed and required pulling at a point adjacent to the nozzle.

3,529,128
WELDING TORCH

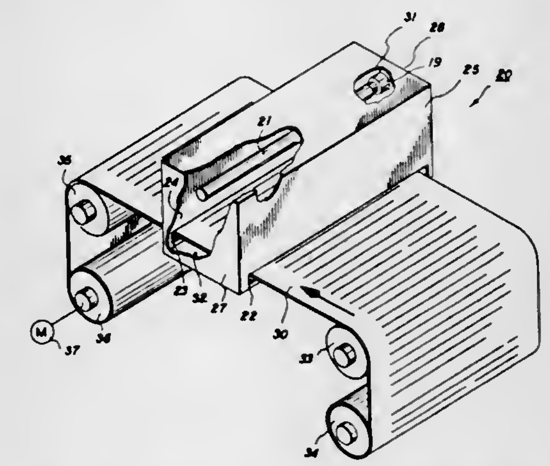
Joseph Cruz, Jr., San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,041
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 7 Claims

A modified electrode guide tip and gas nozzle construction is provided for one conventional type of metal-inert gas welding torch. The tip cost is materially reduced because the tip is formed of a plain length of stock copper tubing modified only by a simple bevel. The nozzle assembly comprises a barrel that carries the electrical insulating parts of the assembly, and a nozzle section which is less expensive than the conventional one-piece barrel and nozzle since the insulating parts are eliminated from the rapidly wearing end portion of the nozzle assembly.



3,529,129
REFLECTION TYPE FLASH FUSER

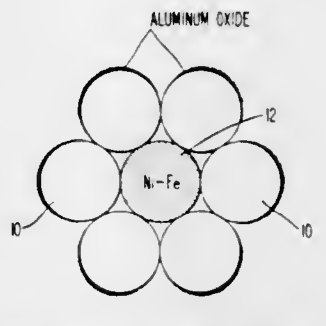
James D. Rees, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 23, 1968, Ser. No. 707,612
Int. Cl. G03g *13/20, 15/20;* **H05b** *3/00*
U.S. Cl. 219—216 6 Claims



Apparatus and method to fix an electroscopic image to a final support material in which the image bearing support material is placed within an integrating cavity and exposed to radiation emanating from a flash lamp. The cavity walls, the flash lamp, and the support material are positioned in relation to each other such that the electroscopic powder is fixed efficiently and uniformly.

3,529,130
COATED CONFIGURATION AND METHOD FOR PREVENTION OF VAPORIZATION SPLATTERING OF THIN FILM SURFACES

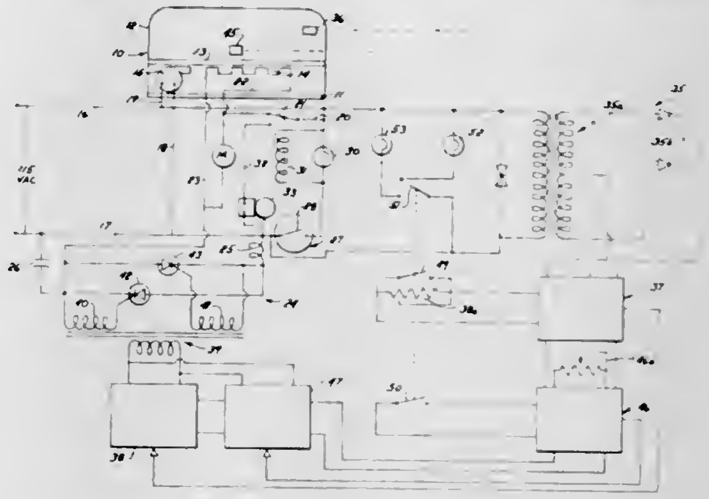
Rudolph A. Cola, Philadelphia, and Johannes F. Gerber, King of Prussia, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 27, 1968, Ser. No. 732,269
Int. Cl. C23c *13/00*
U.S. Cl. 219—275 6 Claims



In the art of thin film coating by the vaporization of metals, an improvement in evaporation techniques by resistive heating of tungsten wires spirally wrapped around a core of the metal evaporant wherein the splattering of globules of the metal on the substrate is eliminated by coating the outer surfaces of the assembly.

3,529,131
INCUBATOR TEMPERATURE CONTROL SYSTEM

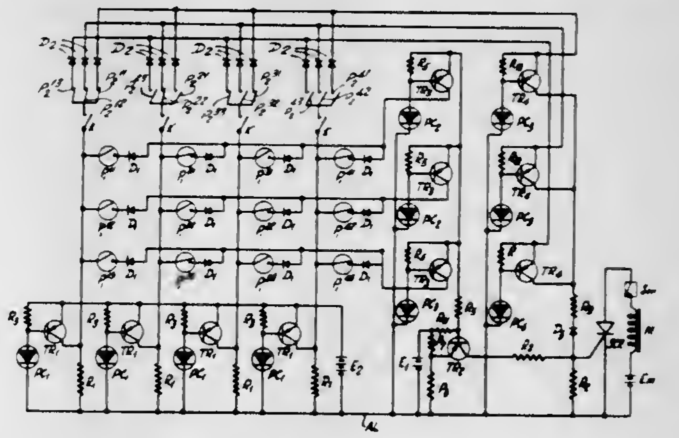
Marvin Gordon, Southampton, and Harold K. Richter, Hatboro, Pa., assignors to Air-Shields, Inc., Hatboro, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 673,613, Oct. 9, 1967. This application Sept. 30, 1968, Ser. No. 763,527
Int. Cl. H05b *1/02;* **A01g** *23/10*
U.S. Cl. 219—413 6 Claims



Incubator heater control system provides for limiting incubator air temperature and for proportioning heat delivered to the incubator as a function of heat requirements. Themistors are incorporated in an air temperature responsive circuit and an infant temperature responsive circuit, which in turn control a proportioning circuit which connects the incubator heater to the power supply.

3,529,132
PUNCH CARD READER

Genzo Isobe, Tomomasa Tanaka, and Tadao Honda, Tokyo-to, Japan, assignors to Tanaka Seiki Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed Feb. 28, 1966, Ser. No. 530,655
Claims priority, application Japan, Apr. 20, 1965, 40/22,933
Int. Cl. G06k *7/00;* **B07c** *5/342*
U.S. Cl. 235—61.11 8 Claims

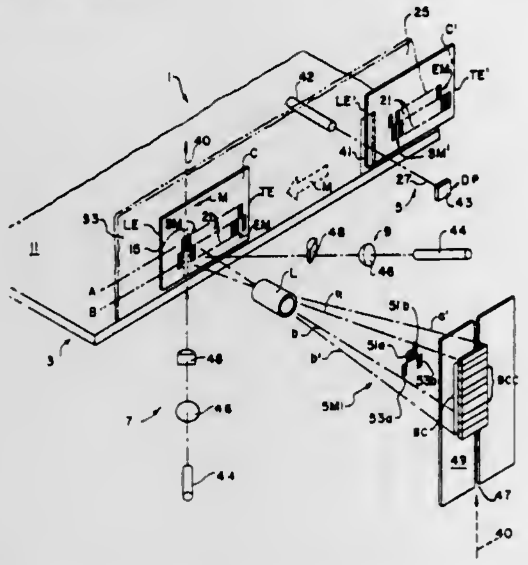


A punched card hole sensing network includes a first photocell exposable to light through a punch hole coded area and second and third photocells exposed to light flashes when the coded area registers with the first photocell. The second and third photocells control second and third solid state switches which control a classifying solenoid and the first photocell controls a first solid state switch whose output is switch connected to alternatively control the enabling of the second and third solid state switches so as to selectively alternatively energize or deenergize the solenoid with the presence or absence of a hole in the sensed area. A plurality of the basic networks are associated to sense predetermined hole arrangements.

3,529,133
ENCODING SYSTEM

John C. Kent, Lexington, Robert C. Engelhardt, Waltham, Terrance Trickett, Bedford, and James R. Relyea, Framingham, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Mar. 3, 1966, Ser. No. 531,441
Int. Cl. G01n *21/30;* **G06k** *7/10*
U.S. Cl. 235—61.11 17 Claims

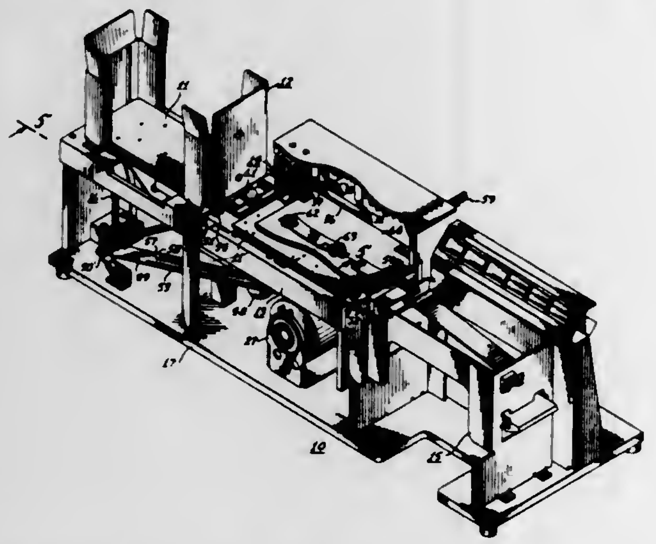


A code reading system for interpreting bar code character patterns aligned along tracks on a document. Translating means propel the document past a read station comprising a plurality of detector means arranged along a read axis for sensing light and dark areas of the bar code patterns. Electronic memory means are connected to receive and store the output of each detector means at successive bit intervals. Control means are provided to interpret the output signals and transmit successive character representing signals to utilization means; the control means including means for selectively inverting the bit signals comprising each character in response to a predetermined directional shift of the output signal pattern.

3,529,134
TIMING CONTROL MECHANISM FOR DATA PROCESSING APPARATUS

John Ashworth, San Jose, Calif., assignor to General Electric Company, a corporation of New York

Filed Nov. 29, 1966, Ser. No. 597,774
Int. Cl. G06k *7/16*
U.S. Cl. 235—61.11 19 Claims

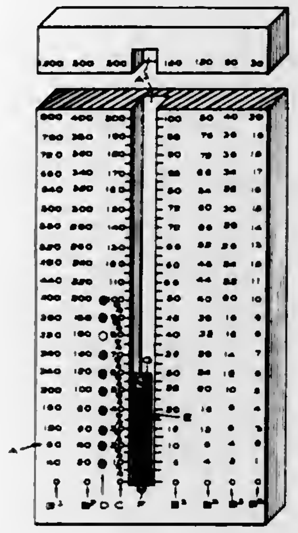


A timing mechanism for deriving timing signals to control a sensing mechanism to sense intelligence data contained on a moving record wherein the moving record drives the timing mechanism to derive signals indicative of the position of the data on the record relative to the sensing mechanism.

3,529,135
RATIO AND PROPORTION CALCULATOR

Robert L. Rienecker, 1524 Cabrillo Ave., Burlingame, Calif. 94010

Filed Oct. 23, 1968, Ser. No. 769,927
Int. Cl. G06c *27/00;* **G01d** *13/02*
U.S. Cl. 235—71 3 Claims

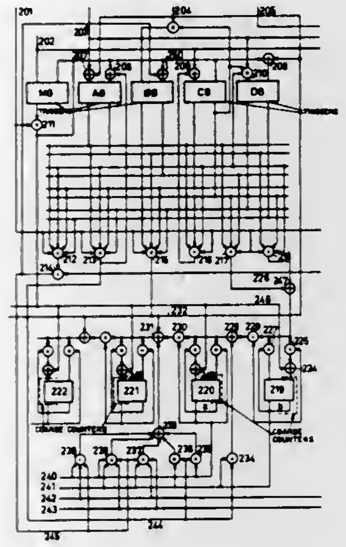


A ratio and proportion calculator having a base member which is provided with at least one numerical scale, a percentage scale and a column of distinctive symbols identifying each percentage graduation on the percentage scale. A stretchable element having corresponding distinctive indicia with the scales to provide a solution to a ratio or proportion problem.

3,529,136
ARRANGEMENT FOR DIGITALLY ESTABLISHING A VALUE, PROVIDED WITH A FINE- AND A COARSE-READING SYSTEM

Rienk Pieter Offereins, Hengelo, Overijsel, Netherlands, assignor to N.V. Hollandse Signaalapparaten, Hengelo, Overijsel, Netherlands, a firm of the Netherlands

Filed June 20, 1966, Ser. No. 558,862
Int. Cl. H03k *13/02*
U.S. Cl. 235—92 5 Claims

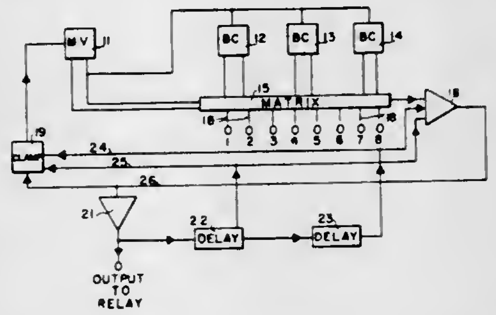


A device for digitizing a measurable quantity occurring after a marking pulse and between two electrical pulses, wherein a coarse counter and a fine counter are employed. One signal initiates counting, the second stops it. The coarse counter is accurately pre-set to a value somewhat below zero and, after counting is complete, certain stages thereof are compared with stages in the fine counter. Lack of correspondence causes adjustment of the coarse. Complemental operation is achieved by virtue of logic gating and is used where the second signal precedes the first.

3,529,137
COUNTER SYSTEM

Charles J. Van Houten, San Mateo, Calif., assignor to Singer-General Precision, Inc., a corporation of Delaware

Filed Oct. 12, 1966, Ser. No. 586,235
Int. Cl. G06k; H04q; G06f *7/38;* **G06g** *7/00*
U.S. Cl. 235—92 6 Claims

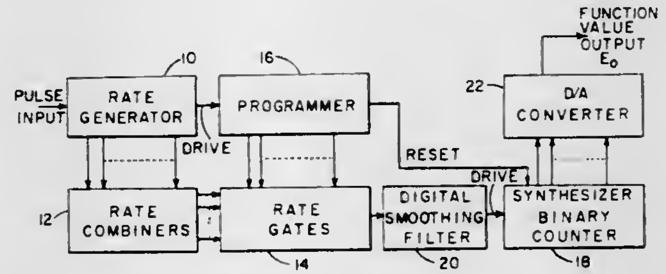


The device is primarily useful in devices where the duration of the input pulses is comparatively long. A plurality of channels is provided, each channel having its own storage capacitor and associated transistor switching means. A clock drives a plurality of binary counters which are connected through a matrix to the outputs of the individual stages. An input pulse into any of the stages, whether or not that pulse occurs simultaneously with another pulse in another stage, charges the capacitor in its stage. When the entire system is scanned by means of the binary counters and matrix, each charged capacitor produces a separate and distinct output pulse. The scanning rate for the entire assembly is smaller than the time duration of any individual input pulse, and the various stages of assembly are scanned in sequence. The scanning and readout also returns each stage to its normal condition.

3,529,138
DIGITAL FUNCTION SYNTHESIZER

Stephen N. Andre, Tonawanda, William E. De Lisle, Buffalo, and Ronald D. Hettich, Depew, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,136
Int. Cl. G06f *15/34;* **G06j** *1/00*
U.S. Cl. 235—150.53 8 Claims

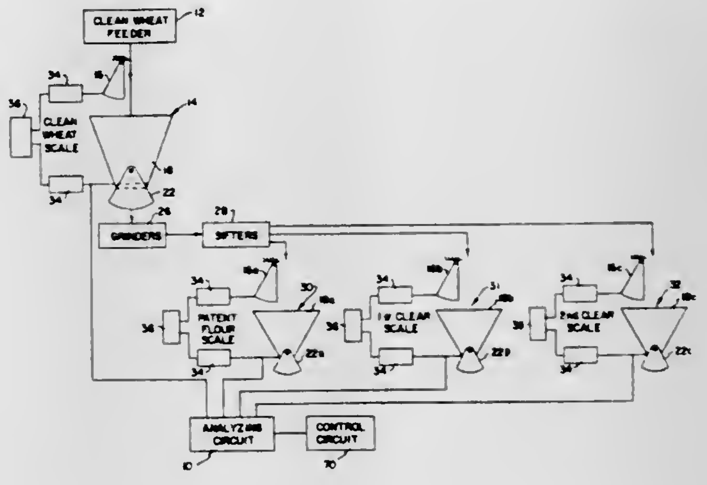


A function synthesizer comprising a rate generator for producing a plurality of interleaved pulse trains in response to applied input pulses, and a set of logic gates for combining the interleaved pulse trains to form desired composite rate pulse trains. A second set of logic gates are programmer controlled to select the generated composite pulse trains one at a time according to a pre-established sequence and apply the selected pulse trains through a digital smoothing filter to drive a binary counter. A digital to analog converter is connected to the parallel outputs of the counter for generating the output function values.

3,529,139
ANALYZING CIRCUIT

Gilbert A. Godwin, Oakland, N.J., assignor to Howe Richardson Scale Company, Clifton, N.J., a corporation of Delaware

Filed Aug. 11, 1967, Ser. No. 660,105
Int. Cl. G06g *7/12;* **G01g** *11/14, 13/00*
U.S. Cl. 235—151.3 13 Claims

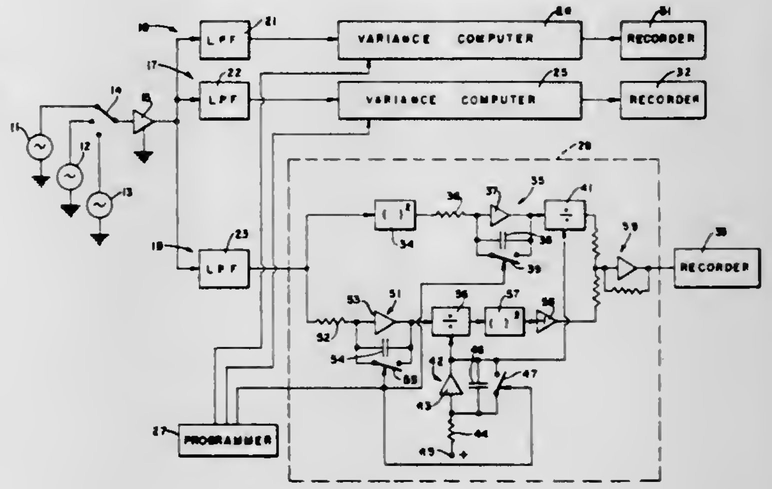


An electrical anaylzing circuit for solving mathematical expressions which contain the feed rates of ingredients being processed. Signals representing the material feed rates are each developed by dividing an integrator ramp signal into a pre-set signal. The ramp signal represents the time in which a predetermined weight of the material moves past a given point, and the pre-set signal represents the predetermined weight.

3,529,140
SPECTRUM ANALYZER

George I. Doering, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

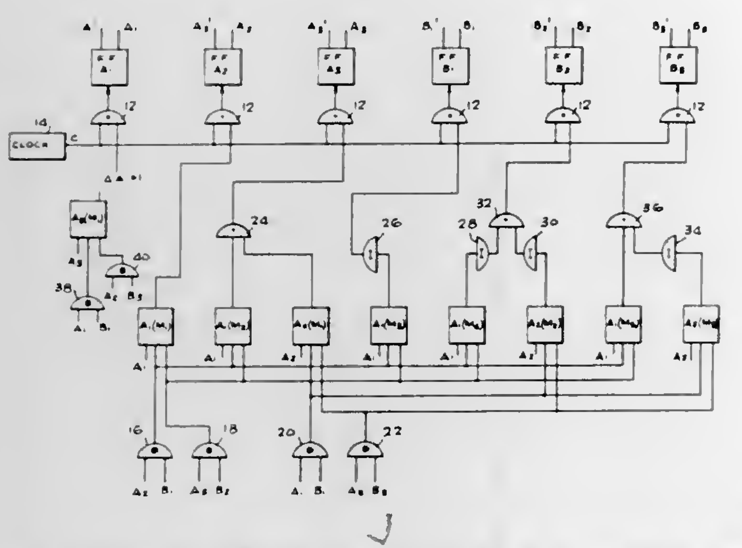
Filed Apr. 28, 1967, Ser. No. 634,565
Int. Cl. G01r *23/00;* **G06g** *7/12*
U.S. Cl. 235—151.31 15 Claims



Disclosed is a system for computing the variance of a signal over a plurality of spectral bands. In one embodiment, the signal is applied to a plurality of channels, each including a low pass filter cascaded with a variance computer, having an activation time to define a low frequency cut off. In a second embodiment, a recorder repetitively feeds a single filter and variance computer, having adjustable cut off frequencies and activation times to simulate the characteristics of plural band pass filters.

3,529,141
ERROR TOLERANT SEQUENTIAL CIRCUITS

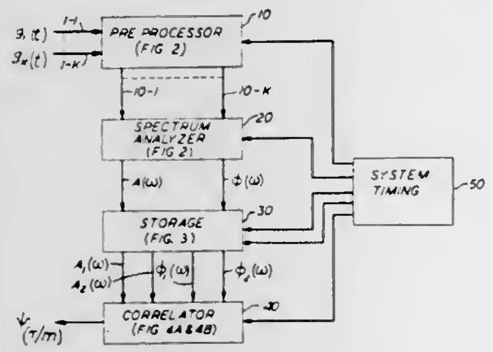
Irving S. Reed, Santa Monica, Calif., assignor to Technology Service Corporation, Santa Monica, Calif., a corporation of California
Filed Sept. 5, 1967, Ser. No. 665,524
Int. Cl. G05b *23/02;* **G06m** *3/12*
U.S. Cl. 235—153 **10 Claims**



A failure to tolerant binary circuit is a multibit sequential circuit with additional parity bits. At each internal state of the counter, the parity bits are driven to a known state relationship. Redundant logic is employed to control the change of states of the various bits so that even when one or more of the bits or logic elements fails, a minimum combination of bits and elements are included in the counter to define correctly each of its internal states.

3,529,142
PLURAL SIGNAL PROCESSOR AND CORRELATOR FOR FOURIER TRANSFORMED INPUTS

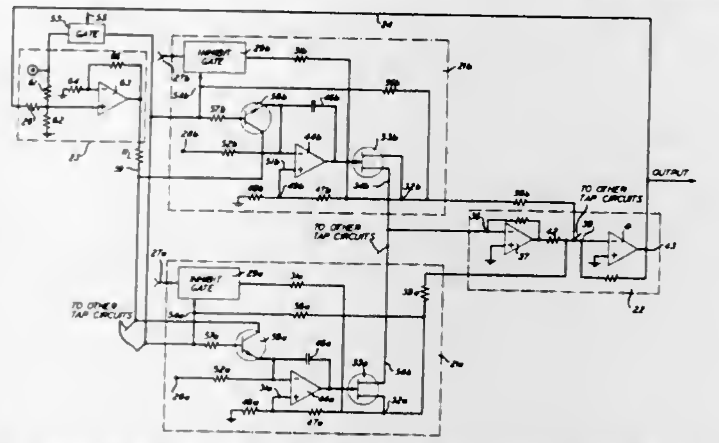
George H. Robertson, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 17, 1967, Ser. No. 684,063
Int. Cl. G06f *7/38*
U.S. Cl. 235—181 **6 Claims**



Signals representing selected portions of the correlation functions of many pairs of equal-length signal segments are obtained consecutively, in real time, with one correlator. The correlation function of a pair of equal-length signal segments, each signal segment composed of harmonics of the same fundamental frequency, equals the sum of a series of amplitude-adjusted cosinusoids possessing frequencies corresponding on a one-to-one basis to the harmonics of this fundamental frequency. Artificially increasing the frequencies of the cosinusoids by an amount *m*, reduces by 1/*m* the time needed to generate the selected portion of the correlation function. Thus one correlator, with appropriate multiplexing, can correlate many pairs of signal segments in real time.

3,529,143
SYSTEM FOR INITIALLY SETTING A PLURALITY OF INTERACTING ANALOG MULTIPLIERS

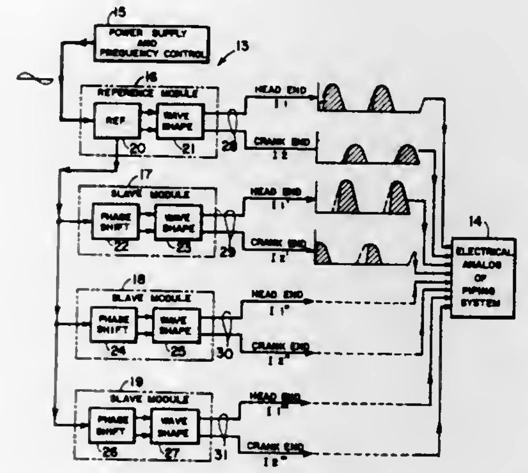
Donald Hirsch, Matawan, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 13, 1968, Ser. No. 728,644
Int. Cl. G06g *7/16;* **H04b** *3/04*
U.S. Cl. 235—193 **4 Claims**



A feedback circuit is described in which output signals from a pair of equalizer tap circuits are added together to provide an equalized output signal. During an initial start-up interval the equalizer output signal is forced to zero by feedback circuits in each tap circuit. A second feedback loop senses the equalized output signal to correct the reference level supplied to the tap circuit feedback circuits if a non-zero output is present.

3,529,144
WAVEFORM GENERATOR FOR COMPRESSOR FLOW SIMULATION

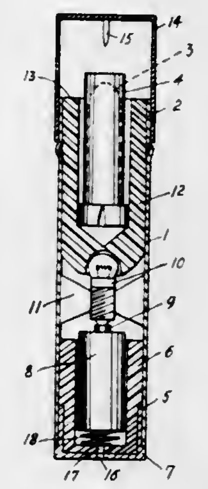
Marvin LeRoy Patterson, 3975 Vincente St., and Erich Kurt Laetsch, Jr., 703 Acosta Drive, both of Camarillo, Calif. 93010
Filed May 22, 1968, Ser. No. 731,175
Int. Cl. G06g *7/57*
U.S. Cl. 235—197 **11 Claims**



An electrical waveform generator provides a plurality of electrical output signals having wave shapes simulating given fluid flow patterns such as might appear at the outlet valves of a multi-cylinder compressor. These waveforms are utilized with an electrical analog of a piping system where they will induce a response analogous to that caused by an actual compressor in an actual piping system. The electrical output signals themselves can be adjusted in relative phase relationship to simulate the phasing output of fluid flow patterns from the various cylinders in the compressor. Further, the waveform of the various electrical output signals can be shaped by varying their cyclic starting positions in time, the slopes of their leading edges, and their amplitudes so that an accurate presentation of fluid flow conditions from the compressor is realized. Suitable internal circuitry monitors the frequency of operation and adjusts both the position in time and the slope or rate of change of the leading waveform edge to represent accurately the time and rate of valve opening for the compressor, all in such a manner that the relative shaping of the waveform is maintained throughout all frequencies of operation. Finally, an amplitude-frequency switch control is provided to increase the amplitude of the electrical output signals with increasing frequency when in one switched condition and to maintain constant the amplitude of the electrical output signals with increasing frequency when in a second switched position. These first and second conditions represent, respectively, increasing flow rate or volume of fluid per unit time from an actual compressor, and a normalized flow or volume of fluid per cycle.

3,529,145
COSMETIC STICK HOLDER WITH LIGHTING MEANS

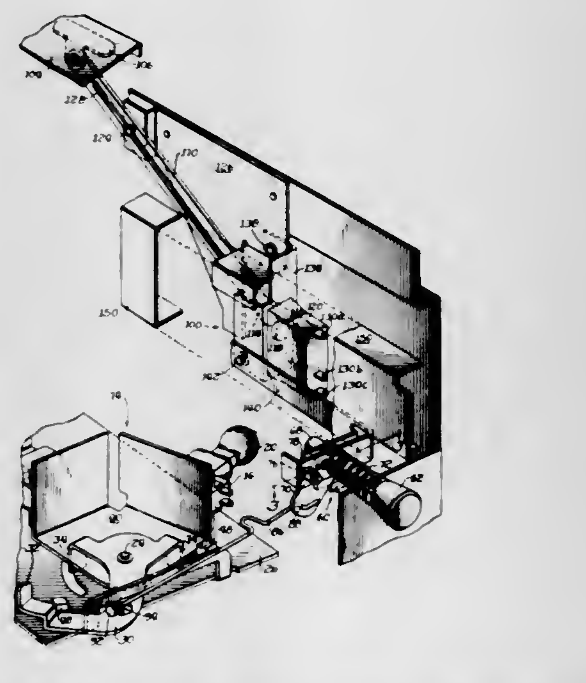
John Siemss, Hamburg, Germany, assignor to Hanke & Co., Ratingen-Tiefenbroich, Germany, a firm
Filed June 5, 1967, Ser. No. 643,470
Int. Cl. F21v *33/00*
U.S. Cl. 240—6.4 **4 Claims**



A cosmetic stick holder integrally formed with a lighting means. The holder includes a casing having an open end and a closed bottom end portion. A cosmetic stick is movably mounted at the open end of the casing and may either project from or be retracted into the open end thereor. A detachable closing cap member is removably mounted over the open end of the casing. A battery is mounted within the closed end portion of the casing and a light bulb is located between the cosmetic stick and the battery within the casing. A transparent member is located between the cosmetic stick and the inside of the casing to permit light to pass between the cosmetic stick and the inside of the casing when the light bulb is turned on. A switching means is mounted on the holder to close an electrical circuit between the battery means and the light bulb to turn on the light bulb and cause light to be admitted through the transparent member. A feature of the invention requires that the transparent member comprise a sleeve member which completely surrounds the cosmetic stick within the casing. A further feature of the invention includes a spring located at the bottom of an insulated pot-shaped container which receives the battery. A more specific feature of this invention requires a switching means to include a tripping pin that is located on the inner side of the bottom of the closing cap member which fits over the open end of the casing. This tripping pin is insertable through registered holes located in the end faces of the bottom end portion of the casing and the insulated pot-shaped container. When the tripping pin is placed through the end face holes and touches the bottom of the battery, the electrical circuit is closed between the light bulb and the battery and the light bulb is turned on.

3,529,146
LAMP TURRET ASSEMBLY WITH SAFETY ELECTRICAL INTERLOCK

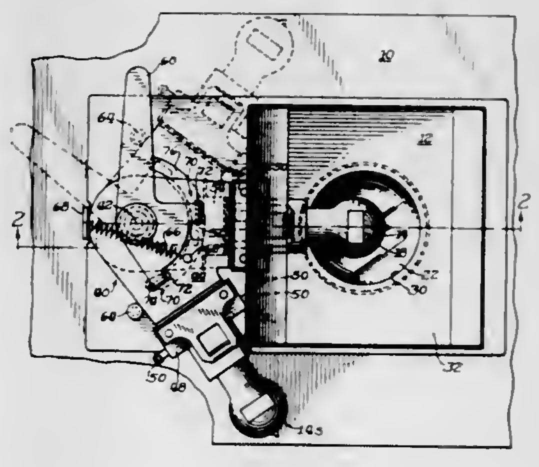
Frank W. Betlejewski and George F. Krtous, Chicago, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1968, Ser. No. 711,397
Int. Cl. F21v *19/04*
U.S. Cl. 240—37 **9 Claims**



A novel, safety inspired, control system for use in an overhead projector having a movable lamp turret containing a primary lamp and a second lamp locatable in the optical axis of the projector. A unidirectionally operable lamp turret control requires that the control be withdrawn and rotated before the secondary lamp can be positioned in the optical axis. The control prevents unauthorized operators from energizing first one lamp, then the other. Further, an interlock system deenergizes the sockets of the lamp turret upon opening of a lamp chamber access cover, or when the control is activated.

3,529,147
LAMP TURRET ASSEMBLY WITH ENERGIZING AND ALIGNING DEVICE

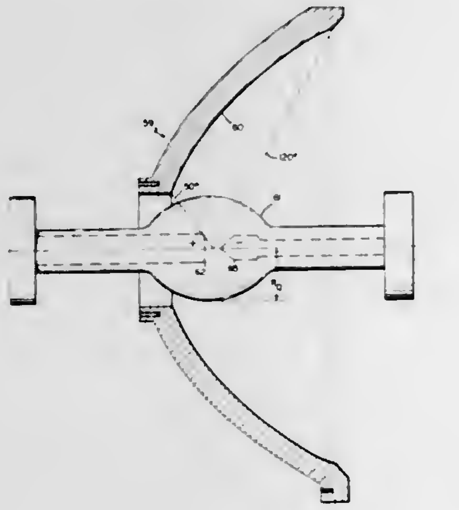
Frank C. Badalich, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1968, Ser. No. 711,302
Int. Cl. F21v *19/04*
U.S. Cl. 240—37 **5 Claims**



A primary lamp aligned in an optical path and a spare lamp are supported on a turret which is adjustable to selectively and positively position the spare lamp in the optical path. The turret assembly carries structure to energize the spare lamp only after it has been aligned in the optical path.

3,529,148
COLLECTOR AND METHOD FOR PRODUCING A NEARLY UNIFORM DISTRIBUTION OF FLUX DENSITY ON A TARGET PLANE PERPENDICULAR TO THE OPTICAL AXIS

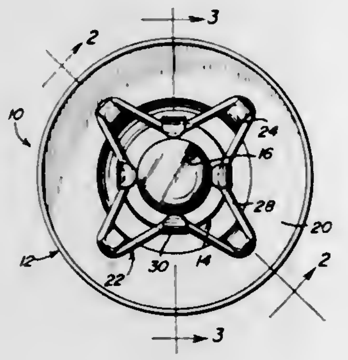
Nicholas M. Stefano, Rolling Hills Estates, and Allan D. le Vantine, Tarzana, Calif., assignors to TRW, Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Dec. 13, 1967, Ser. No. 690,285
Int. Cl. F21v *7/00, 7/09*
U.S. Cl. 240—41.35 **25 Claims**



A collector having a curved surface for producing a nearly uniform distribution of flux density from a radiant source on a target plane perpendicular to the optical axis of the collector. The collector is formed of two adjoining curved reflecting surfaces each producing an image of the radiant source in the form of a circular band at selected portions on the target plane. The curved surfaces produce circular bands having complementary flux density fields whereby the form of the fields is nearly uniform over the circular target.

3,529,149
SHOCK MOUNT FOR LAMP BULB

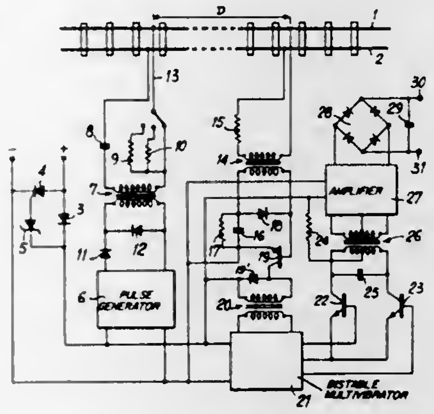
Gerald E. Dwyer, Frewsburg, N.Y., assignor to Truck-Lite Company, Inc., a corporation of New York
Filed Nov. 22, 1967, Ser. No. 685,055
Int. Cl. F21v *17/00*
U.S. Cl. 240—90 **7 Claims**



A yieldable suspension for lamp bulb sockets on a reflector to dampen high shock impulses. The socket is provided with anchoring members for an elastic member tensioned at locations spaced radially inwardly of and angularly between a plurality of lugs projecting from the reflector on which the elastic is supported.

3,529,150
ELECTRONIC TRACK CIRCUIT FOR RAILWAY SIGNALLING

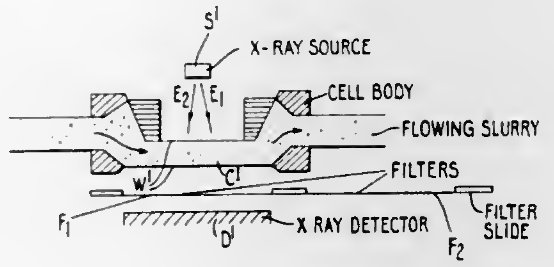
Claude Coupin, Epinay-sur-Seine, France, assignor to Societe de Constructions Electromecaniques Jeumont-Schneider, Paris, France
Filed Mar. 14, 1968, Ser. No. 713,020
Claims priority, application France, Mar. 17, 1967, 99,165
Int. Cl. B61l *21/00;* **H04b** *1/10*
U.S. Cl. 246—34 **4 Claims**



An electronic track circuit wherein short voltage pulses are supplied to the rails of the track at one end of a zone and picked up at the other end, the pulses being converted into signals whose frequency is half the recurrence frequency.

3,529,151
METHOD OF AND APPARATUS FOR DETERMINING THE MEAN SIZE OF GIVEN PARTICLES IN A FLUID

Kenneth Garfield Carr-Brion, Stevenage, England, assignor to National Research Development Corporation, London, England
Filed Mar. 20, 1967, Ser. No. 624,461
Claims priority, application Great Britain, Mar. 28, 1966, 13,598
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **12 Claims**

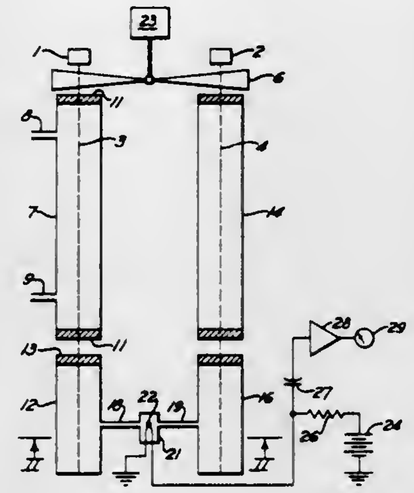


A method of and apparatus for determining the mean size of given solid particles in a fluid in which two respective penetrating radiations such as X-rays having different respective mean energies. These energies are so chosen that the respective radiation intensities after transmission through the fluid are respectively independent of and dependent on the mean particle size in the fluid, so that comparison of these intensities provides an indication of the mean particle size.

3,529,152
INFRARED RADIATION DETECTION DEVICE FOR A NON-DISPERSIVE SELECTIVE INFRARED GAS ANALYSIS SYSTEM

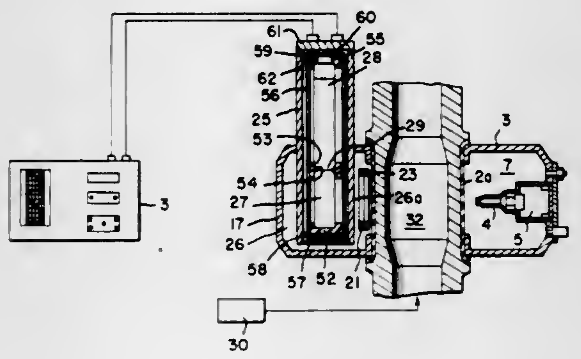
John P. Strange, Murrysville, and Glenn H. Fertig, Cheswick, Pa., assignors to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 23, 1967, Ser. No. 648,340
Int. Cl. G01n *21/26, 21/36*
U.S. Cl. 250—43.5 **5 Claims**

This invention relates to non-dispersive and selective infrared gas analysis, in which infrared rays are passed by way of a shutter device along two beam paths, one an analytical path containing a sample gas to be tested and the other a reference path containing a reference gas, the rays afterwards acting upon the contents of two absorption chambers, one in each path, containing the component gas to be detected or a gas of similar infrared absorption properties. The invention is predicated on the combination of the foregoing elements with (1) a gas flow chamber that communicates with each of the absorption chambers and (2) a detector in the form of a thermally sensitive electrical resistance element mounted in an enlarged portion of the flow chamber that is responsive to the flow of gas through the flow chamber.



3,529,153
METHODS AND APPARATUS FOR MEASURING SLURRY DENSITY WITH GAMMA RAYS

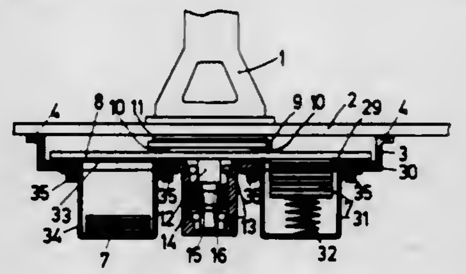
Carl W. Zimmerman and Robert O. Wilson, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,291
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **11 Claims**



Method and apparatus for measuring the density of a slurry including diverse solid materials. One solid material has a cation having an atomic number on the order of 38 or higher, while another solid material has a cation with an appreciably lower atomic number. High energy primary photons are passed through the slurry. Low energy photons generated by multiple Compton scatterings are substantially blocked or attenuated as they issue from the slurry. The photons which successfully penetrate the blocking and attenuation are impinged upon scintillation counting means. The discrimination level of the scintillation counting means is adjusted to detect photons having an energy level substantially lower than that of the primary photons which impinge upon the scintillation counting means and maintain maximum operating stability for the scintillation counting means.

3,529,154
ELECTRON BEAM APPARATUS HAVING MEANS TO SELECTIVELY UTILIZE A LUMINESCENT SCREEN OR A PHOTOGRAPHIC PLATE

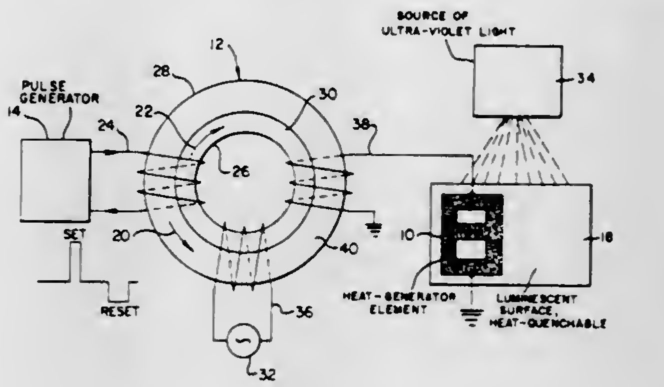
Arend Jan Bouwmeester, Emmasingel, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 11, 1967, Ser. No. 659,919
Claims priority, application Netherlands, Aug. 13, 1966, 6611426
Int. Cl. H01j *37/22, 37/26*
U.S. Cl. 250—49.5 **7 Claims**



An electron beam apparatus, for example an electron microscope, including a luminescent screen moveable in the axial direction of the electron beam and rotatable in a plane perpendicular to the electron beam axis, a magazine for photographic plates located to the side of the aperture formed when the screen is rotated out of position, and means to move a photographic plate into the position of the screen in the aperture.

3,529,155
LUMINESCENT DISPLAY WITH A MEMORY AND A HEAT-QUENCHING ELEMENT

Raymond J. Hansen, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio
Filed Mar. 15, 1967, Ser. No. 623,446
Int. Cl. G08b *23/00;* **G01n** *21/38*
U.S. Cl. 250—71 **4 Claims**



A heat-quenchable layer, such as zinc-cadmium-sulfide, that is activated by nickel, is bathed in ultra-violet light to produce a fluorescent display surface. This display surface is placed adjacent to a heat-generating element. The heat-generating element is in heat-conducting relationship with the fluorescent display surface and is associated with a ferrite memory core which operates in a partial switching mode. A high-frequency A.C. signal applied to the ferrite memory core is coupled through the memory core to the heat-generating element with a large amplitude when the memory core is in one memory state and with a small amplitude when the memory core is in the other memory state. The state of the memory core is determined by a pulse-switching means which causes partial switching of the ferrite memory core. Therefore, when the memory core is in one memory state, the heat-generating element receives a large amount of energy, which is converted into heat that quenches the fluorescing state of the memory device in the vicinity of the heat-generating element. When the memory core is in the other memory state, however, the amount of energy received from the A.C. signal source is not sufficient to exceed the heat-quenching threshold of the fluorescent display surface.

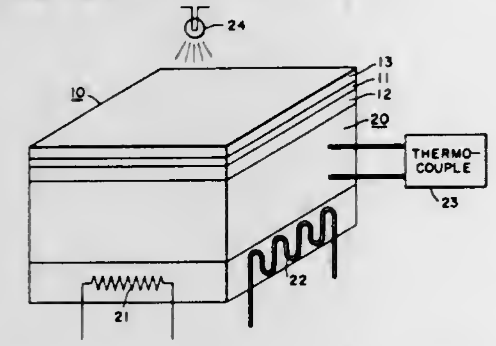
3,529,156
HYSTERETIC CHOLESTERIC LIQUID CRYSTALLINE COMPOSITIONS AND RECORDING DEVICES UTILIZING SUCH COMPOSITIONS

James L. Fergason, Penn Hills, Verona, and Newton N. Goldberg, Penn Hills, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 13, 1966, Ser. No. 557,060

Int. Cl. G01n *21/00*

U.S. Cl. 250—83 **12 Claims**



This invention relates generally to cholesteric liquid crystalline compositions and to devices utilizing such compositions for recording or storing information.

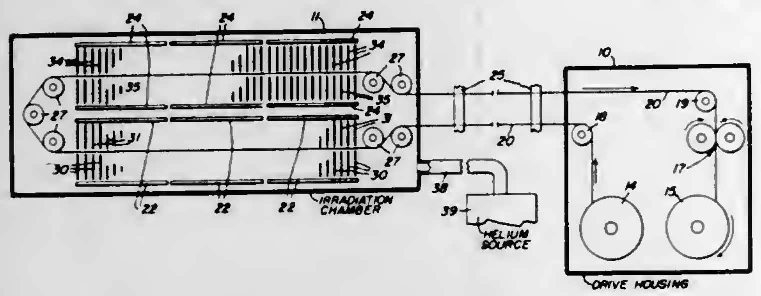
3,529,157
METHOD AND APPARATUS FOR FISSION-FRAGMENT IRRADIATION

Robert B. Johnston, Hayward, and Charles R. Porter and Dennis W. Wilson, Livermore, Calif., assignors to General Electric Company, a corporation of New York

Filed Aug. 11, 1966, Ser. No. 571,819

Int. Cl. G01t *5/00*

U.S. Cl. 250—83 **5 Claims**



A method and apparatus for continuously irradiating a strip of dielectric material with fission fragments. In a typical embodiment, a tape of a dielectric material is passed adjacent a sheet of fissionable material which is bombarded with neutrons to cause the emission of fission fragments from the fissionable material. The fission fragments are collimated and impinge on the tape, forming damage tracks therethrough. The thus irradiated strip is suitable for treatment in an etchant which removes material along the damage tracks formed by the fission fragments. These strips are then ready for use as membrane filters.

3,529,158
INTERCHANGEABLE FIXED AND PORTABLE COATING THICKNESS MEASURING APPARATUS

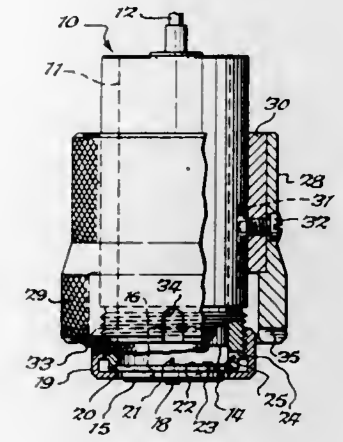
Boris B. Joffe, Buffalo, N.Y., and Helmut Fischer, Gechingen, Germany, assignors to Twin City Testing Corporation, Tonawanda, N.Y.

Filed Dec. 2, 1966, Ser. No. 598,696

Int. Cl. G01t *1/18*; G21f *5/02*

U.S. Cl. 250—83 **11 Claims**

A portable measuring head adapted to be hand-carried and held against an object having a coating to be measured can be releasably secured to a fixed stand in position to support such an object. The head carries an object-engaging platen having an exposure aperture and which is removable for substitution of a platen having a different exposure aperture, a radiation source holder positioned to transmit radiation through the aperture and a radiation detector including a window receiving radiation backscatter through the aperture. A portable locator having a guide for positioning the locator relative to an object and a base receiving the head for alining the exposure aperture with the object also is provided. In addition, a collar telescopingly receives the head in predetermined angular orientation with the platen and has a surface engaging portion for positioning the head relative to a surface to be measured.



3,529,159
SEMICONDUCTOR DEVICE FOR DETECTING AND/OR MEASURING RADIATION

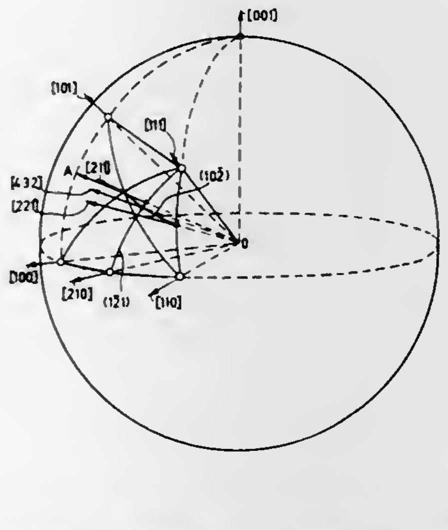
Jan Hornstra, Emmasingel, Eindhoven, and René van Dantzig and Dirk Pieter Oosthoek, Amsterdam, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1967, Ser. No. 619,466

Claims priority, application Netherlands, Mar. 1, 1966, 6602606

Int. Cl. G01t *1/24*

U.S. Cl. 250—83 **5 Claims**



A semiconductor detector employing a single crystal disc of semiconductor material having a diamond crystal structure, wherein the crystal is cut such that the normal to the disc is oriented, within 5°, in an irrational direction which deviates by an angle of 1° from the [432]-direction towards the [111]-direction.

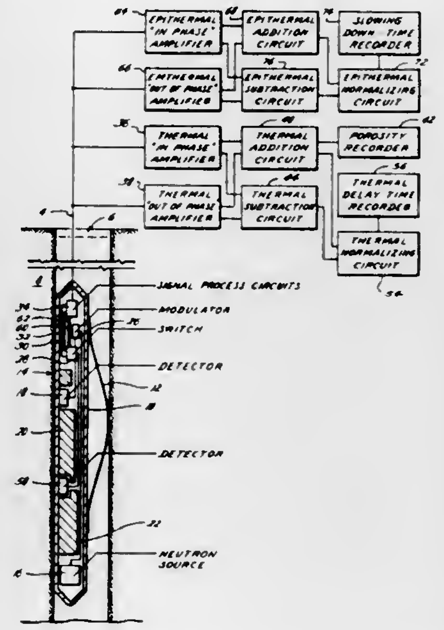
3,529,160
METHOD AND APPARATUS FOR SIMULTANEOUS POROSITY AND CHLORINITY LOGGING

James H. Moran, Danbury, Conn., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed May 10, 1967, Ser. No. 637,548

Int. Cl. G01v *5/00*

U.S. Cl. 250—83.1 **12 Claims**


EPITHERMAL "IN PHASE" AMPLIFIER
EPITHERMAL ADDITION CIRCUIT
SLOWING DOWN TIME RECORDER
EPITHERMAL "OUT OF PHASE" AMPLIFIER
EPITHERMAL SUBTRACTION CIRCUIT
EPITHERMAL NORMALIZING CIRCUIT
THERMAL "IN PHASE" AMPLIFIER
THERMAL ADDITION CIRCUIT
POROSITY RECORDER
THERMAL DELAY TIME RECORDER
THERMAL "OUT OF PHASE" AMPLIFIER
THERMAL SUBTRACTION CIRCUIT
THERMAL NORMALIZING CIRCUIT
SIGNAL PROCESS CIRCUITS
MODULATOR
SWITCH
DETECTOR
DETECTOR
NEUTRON SOURCE

One embodiment of the invention shows a well logging tool that contains a source for emitting neutron pulses of equal duration and spacing. An epithermal or thermal and epithermal neutron detector signal registered during each pulse is added to a detector signal registered between each pulse in order to produce an indication of formation porosity. The difference between these detector signals is divided by the detector signal sum to provide a normalized log of thermal neutron decay time that characterizes the chlorine concentration in the formation. The technique also can be applied to measure epithermal or thermal and epithermal neutron slowing down time. The neutron population, moreover, can be measured through the gamma radiation that results from neutron interaction with the nuclear structure of the earth formation.

3,529,161
SEMICONDUCTOR DEVICE FOR DETECTING AND/OR MEASURING RADIATION

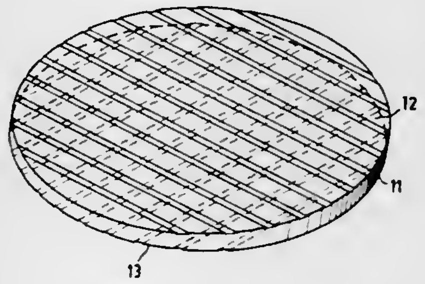
Dirk Pieter Oosthoek and Erwin Kok, Amsterdam, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1967, Ser. No. 619,465

Claims priority, application Netherlands, Mar. 1, 1966, 6602606

Int. Cl. G01t *1/24*

U.S. Cl. 250—83.3 **11 Claims**



A detector for energetic particles comprising a single crystal disc of semiconductor material with electrodes on opposite surfaces. Each electrode is subdivided into a plurality of parallel, spaced, strips which cross the strips of the other electrodes forming a so-called checker board counter which allows the precise point where the particle impacts on the disc to be located.

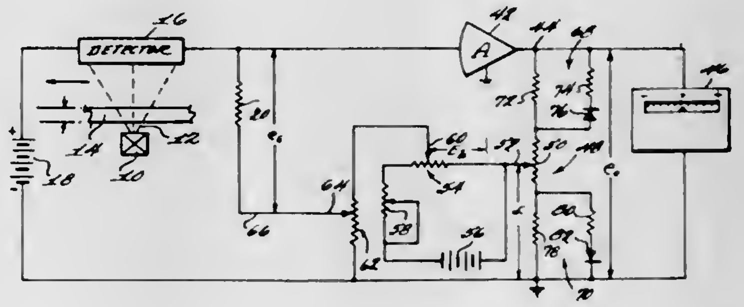
3,529,162
ABSORPTION CURVE MATCHING CIRCUIT IN NUCLEONIC MEASURING SYSTEM

Paul H. Troutman, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio

Filed May 2, 1967, Ser. No. 635,436

Int. Cl. G01t *1/16*

U.S. Cl. 250—83.3 **9 Claims**



A nucleonic measuring system which normally operates over a limited portion of a non-linear absorption curve, is extended in this case in its operation along that curve with substantially uniform sensitivity to weight-per-unit area changes, by automatically adjusting the sensitivity as a function of amplifier output voltage.

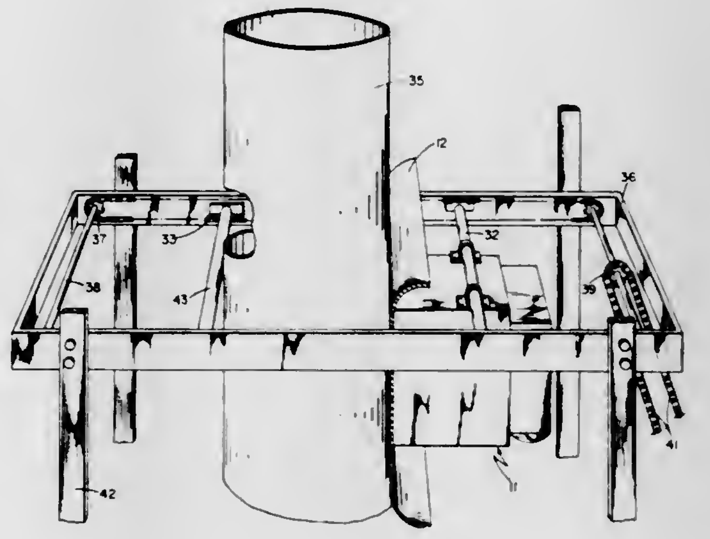
3,529,163
RADIATION GAUGE SYSTEM FOR TUBULAR PLASTIC FILM

Fred W. Hannula, Medfield, Mass., Alfred F. Stanko, West Islip, N.Y., and Daniel F. Kelleher, Framingham, Mass., assignors to Lee Corporation, a corporation of Delaware

Filed Sept. 14, 1967, Ser. No. 667,776

Int. Cl. G01n *23/20*

U.S. Cl. 250—83.3 **2 Claims**

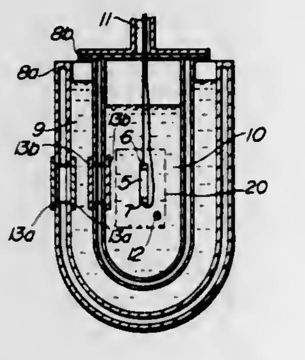


A backscatter type radiation guage arranged to operate at a substantially fixed distance from the surface of a plastic tube just above the front line which exists in the blown film process. The guage source and detector are contained in a single housing and the housing is carried by a frame which surrounds the tube of plastic material. More particularly, the frame is provided with a chain drive to which the housing is attached so that it can be moved horizontally into and out of an operative position. In operation, a shoe which extends out ahead of the detector housing or head is pushed against the side of the tube to establish the proper spacing to the head. The shoe is essentially rectangular in shape and is sufficiently wide so that its sides extend beyond the portion of the film in contact therewith. Also, its top and bottom are curved away from the film to further minimize friction as the plastic film passes over the surface of the shoe. To maintain the film in contact with the shoe, and to prevent axial displacement of the bubble when the shoe is placed against it, a roller is provided which pushes against the opposite side of the tube urging it toward the surface of the shoe. Thus, penetrative radiation emanating from the source in the head is beamed through an appropriately shaped aperture in the shoe and onto a relatively small rectangular patch of the film which is exposed through the aperture. The amount of radiation which is backscattered from the film, into the detector portion of the head is dependent upon the film thickness. By means of the detector, an electrical signal is developed in response to the backscattered radiation and by conventional circuitry converted into an appropriate form of indication, such as a line on a chart record.

3,529,164
RADIATION DETECTOR IN A FREQUENCY RANGE INCLUDING INFRA-RED AND MILLIMETER WAVES

Kiichi Komatsubara, Kodaira-shi, and Nobuo Kotera, Kokubunji-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed Mar. 21, 1968, Ser. No. 714,845
Claims priority, application Japan, Mar. 31, 1967, 42/19,997
Int. Cl. G01t *1/24*
U.S. Cl. 250—83.3 5 Claims



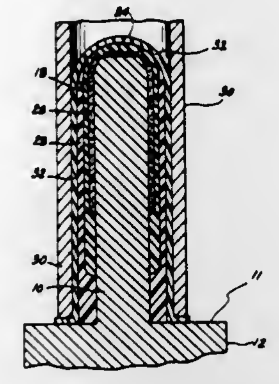
A radiation detector which converts the radiation energy absorbed by a semiconductor body, to which a magnetic field is applied, into a change in electric current running through said body, said change in electric current being caused by the resonance of the carriers energized by the absorption of the radiation energy with the optical phonons in said body.

3,529,165
BETA RADIATION SOURCE AND THE FABRICATION THEREOF

Jacques J. Weinstock, 71—47 171st St., Flushing, N.Y. 11365

Filed Oct. 22, 1965, Ser. No. 501,439
Int. Cl. G21f *5/02;* **G21h** *5/00*
U.S. Cl. 250—106 12 Claims

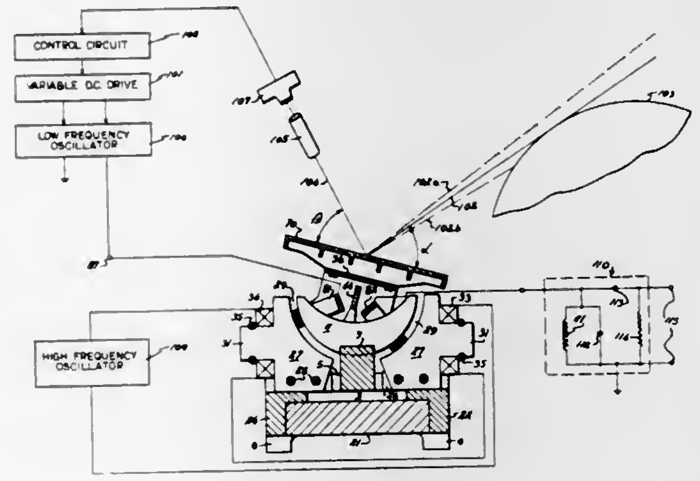
Beta ray point source and fabrication method therefor wherein the beta ray emitting isotope constitutes the dried residue of a solution thereof confined on the end of a support mandrel by surrounding hydrophobic material with said isotope being overlaid by a protective film and disposed with a longitudinally extending collimating tube.



3,529,166
ELECTROMAGNETIC POSITION-INDICATING SYSTEM

Jerome W. Gootherts, Sunnyvale, and Sheldon A. Knight, Mountain View, Calif., assignors, by mesne assignments, to TRW Inc., a corporation of Ohio

Filed July 1, 1963, Ser. No. 292,042
Int. Cl. G01j *1/20*
U.S. Cl. 250—203 14 Claims

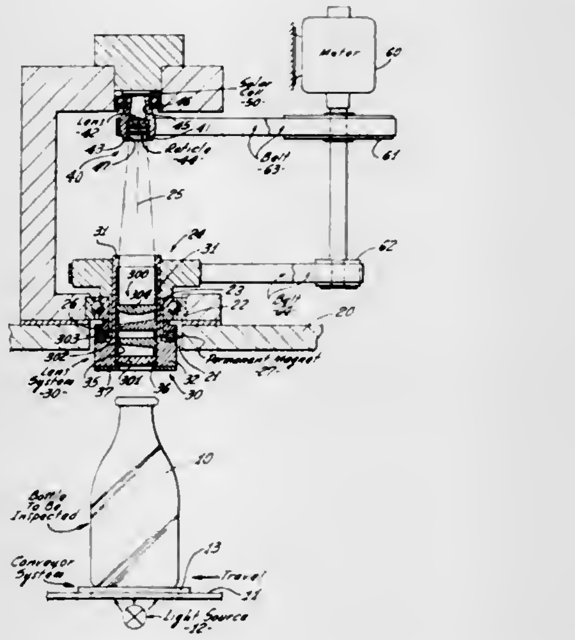


9. A position-indicating system comprising: a frame, magnetic means mounted on said frame for developing a steady, closed-loop, magnetic field and having opposed pole pieces, an armature core supported by said frame between said pole pieces and in spaced relation thereto, the adjacent surfaces of said pole pieces and armature core defining an annular space gap, a scanning member, two opposed pairs of opposed flexure pivot assemblies mounting said scanning member on said frame for rotation of said scanning member on said frame about the axis of said annular space gap, a drive coil mounted for movement with said scanning member and disposed in said space gap for angular displacement in accordance with the current flowing through said drive coil, a low-frequency drive source having a frequency lower than the electro-mechanical resonant frequency of said drive coil and electrically connected through said flexure pivot assemblies to said drive coil, said scanning member having a scanning output adapted to be null when the nominal position of the line of sight of said scanning member is directed towards a discontinuity of a radiant energy source, means responsive to variations of the scanning output of said scanning member from null to impress a D.C. voltage through said flexure pivot assemblies on said drive coil to angularly displace said drive coil and scanning member to a position wherein said scanning output returns to null, a field coil inductively coupled to said drive coil, and a high-frequency excitation source having a frequency higher than the electro-mechanical resonant frequency of said drive coil and electrically connected to one of said coils, the other of said coils having an output terminal.

3,529,167
CONTAINER INSPECTION APPARATUS WITH NUTATING INSTANTANEOUS FIELD OF OBSERVATION

Frederick L. Calhoun, Torrance, Calif., assignor, by mesne assignments, to Automatic Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio

Filed Aug. 16, 1967, Ser. No. 660,978
Int. Cl. G06m *7/00;* **H01j** *39/12*
U.S. Cl. 250—223 20 Claims



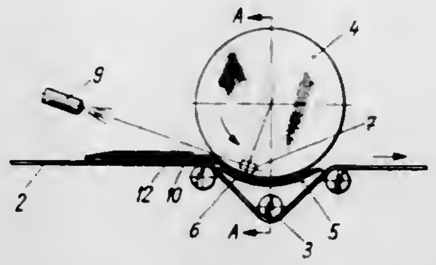
A container inspection device is disclosed wherein the bottom of a bottle is observed by an exchangeable lens system with a nutating, instantaneous object field of view. A reticle with opaque and transparent areas of greatly differing size modulates the light from the object field and the modulated light is detected by a solar cell. The solar cell is A-C coupled to a detector circuit responding to A-C signals within a particular frequency range when exceeding a threshold. The threshold level is controlled through a circuit which is D-C coupled to the solar cell. Signals exceeding the threshold control separation of the bottle from others.

3,529,168
AUTOMATIC DEVICE FOR COUNTING FOLDED PAPERSHEETS OR PRINTED MATTERS, ESPECIALLY FOLDED NEWSPAPERS WHICH ARE CONVEYED IN SHINGLED MANNER ON A CONVEYORBAND

Ernst Guggisberg, Bern, Switzerland, assignor to Graphicart Internationale Ausrustungsgesellschaft fur Graphische Kunst AG, Bern, Switzerland, a company of Switzerland

Filed Feb. 23, 1967, Ser. No. 617,954
Int. Cl. G06m *7/00;* **H01j** *39/12*
U.S. Cl. 250—223 5 Claims

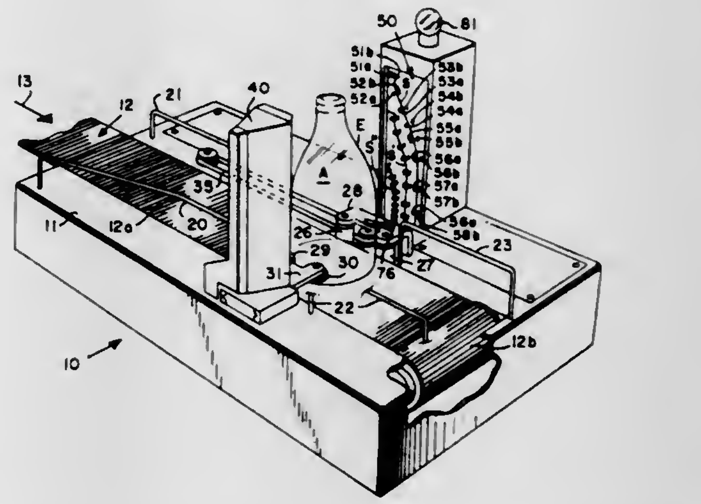
A device for counting paper sheets or folded matters, especially newspapers which are quickly conveyed in shingled manner with their fold ahead on top of conveyorbelts, having an electronic light barrier which is laid through a gap produced between the papers travelling along and which is connected to an electric counter registering every time the gap is closed through the following paper on the conveyorbelts. The light barrier is laid at right angle to the route direction through a gap produced at the outside edge of the paper.



3,529,169
PHOTOELECTRIC APPARATUS FOR DETECTING SHAPE OF BOTTLES

Richard Heaney, Campbell, Calif., and George Sarnack, Henrietta, N.Y., assignors to FMC Corporation, San Jose, Calif., a corporation of California

Filed Dec. 6, 1967, Ser. No. 688,457
Int. Cl. G06m *7/00*
U.S. Cl. 250—223 4 Claims



The present invention relates to apparatus for inspecting the configuration of ware. Toward this end, ware, such as glassware, is advanced along a predetermined path and rotated about its vertical axis when the ware arrives at an inspection station. On one side of the path at the inspection station is positioned a suitable source of light, which is projected through the ware being rotated at the inspection station along an upwardly directed edge thereof. On the other side of the path and located at the inspection station is a vertically disposed array of light responsive devices. The light projected through the ware being rotated is cast in the direction of the array of light responsive devices for impingement thereon.

When light is projected through the rotating ware, a ware profile in the form of a shadow is cast on the array of light responsive devices. Such a shadow represents the configuration or profile of the ware. The array of light responsive devices, in turn, are arranged to detect both inward and outward deviations from a standard or desired shadow profile or a desired configuration of the rotating ware. Ware with no distortion or configuration defect will have a stationary pattern or a preselected shadow profile. On the other hand, a ware with distortion or with a configuration defect will produce a moving shadow or a nonconforming shadow profile. It is the array of light responsive devices that detects whether the configuration of the rotating ware conforms to preselected conditions and controls the operation of a decision circuit for either signalling the reject or accept status of the rotating ware or for controlling the operation of a reject or accept device disposed in the path of travel of the ware after the ware leaves the inspection station.

3,529,170

APPARATUS FOR SIGNALLING THE INSTANTANEOUS POSITION OF AN OBJECT MOVABLE ALONG A PREDETERMINED PATH

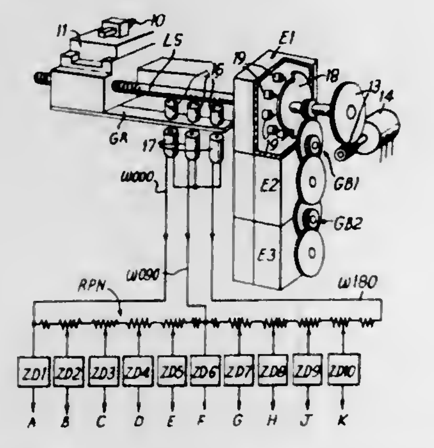
Alexander Russell, Glasgow, Scotland, assignor to National Research Development Corporation, London, England, a British corporation

Filed Aug. 5, 1966, Ser. No. 570,526

Claims priority, application Great Britain, Aug. 6, 1965, 33,831/65: Dec. 2, 1965, 51,257/65

Int. Cl. H01j *5/16, 39/12*

U.S. Cl. 250—237 27 Claims



An arrangement for signalling the instantaneous position of an object, such as a machine tool, movable along a predetermined path and comprising encoder means coupled for operation by the object and including an optical grating and associated photoelectric reading means to develop a plurality of fluctuating signals of which each fluctuation cycle corresponds to movement of the object by a distance equal to one division of the grating and which are phase displaced relative to one another so that the instants of passage of the signals through a given datum level of amplitude, e.g. zero, corresponds to different displacement positions of the object equally spaced over the range of each grating division, a plurality of signal examining means supplied with said fluctuating signals and operative to detect the instants of passage of each signal through said datum level to develop a corresponding plurality of position code waveforms which have one level of amplitude when the object is on one side of the related displacement position and at another level of amplitude when on the opposite side of said displacement position, and logic circuit means for examining said code signals in different combinations to provide for energization of that one of a plurality of outputs which uniquely indicates the position of the object within any grating division. Additional encoder/decoder means of similar or electromechanical form operate similarly to provide further numerical indications in terms of multiples of the dimension of one division of the grating.

3,529,171

VEHICLE BRAKE FAILURE WARNING SYSTEM

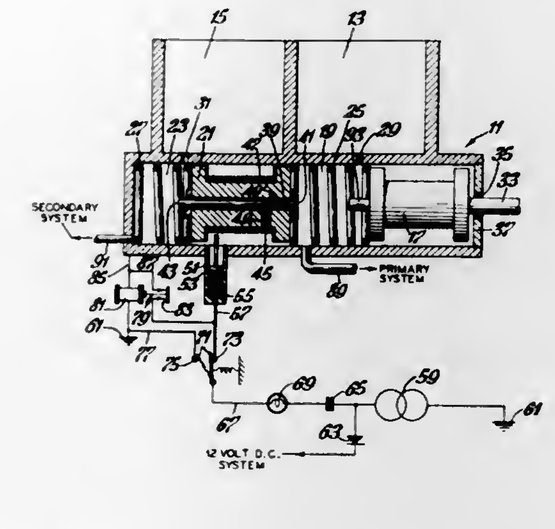
David H. Hultgren, South Salem, and Robert A. Jackson, Mamaroneck, N.Y., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

Filed Jan. 9, 1969, Ser. No. 790,094

Int. Cl. B60q *1/26*

U.S. Cl. 307—10 6 Claims

An electrical signal warning system for incorporation in a vehicular brake hydraulic master cylinder apparatus which provides a malfunction signal such as an indicator lamp energization when the hydraulic fluid level is abnormally low or fluid pressure lost during brake activation due to a line rupture or other system malfunction by permitting electrical circuit closure through a first contact on a reciprocally moving hydraulic piston and a second relatively fixed contact in the apparatus thus connecting the indicator means to an electrical energy source such as the vehicle alternator.



3,529,172

STATIC CONVERTER STATION WITH PROVISION FOR FEEDING A LOCAL NETWORK

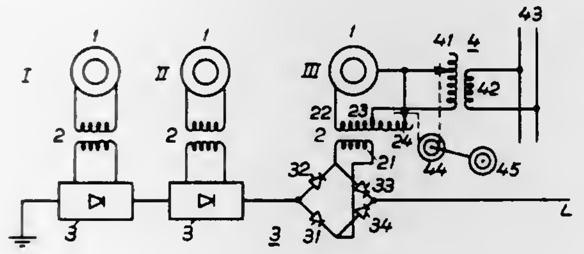
Hans Stackegard, Ludvika, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Sept. 9, 1968, Ser. No. 758,316

Claims priority, application Sweden, Sept. 19, 1967, 12,900/67

Int. Cl. G05f *1/14;* **H02j** *3/46*

U.S. Cl. 307—26 3 Claims



A converter station is formed of a number of converters with their direct current sides connected in series to a power transmission line, and their alternating current sides connected to individual alternating current machines through converter transformers. The converter-transformer of one of the converters is provided with an adjustable output including an adjustable transformer to feed a local network.

3,529,173

INCREMENTAL MODULATING CONTROLLER FOR ELECTRICAL APPARATUS

Sheonarayan Verma, Michigan City, Ind., assignor to Weil-McLain Company, Inc., Michigan City, Ind., a corporation of Indiana

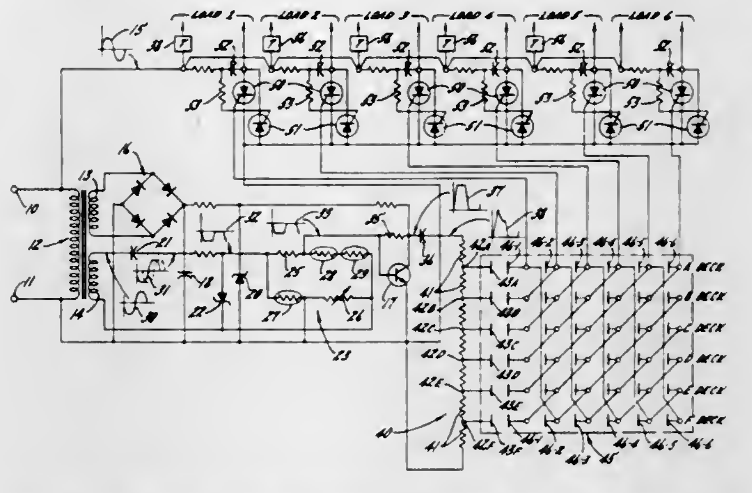
Filed Feb. 5, 1968, Ser. No. 702,869

Int. Cl. H02j *3/14*

U.S. Cl. 307—41 13 Claims

A controller is described for electrical loads which are progressively energized in sequential fashion according to

variations in one or more control conditions. Sensing elements are used in a bridge circuit to trigger the energization of one or more electrical loads, and the order of energization is selectively shiftable by means of a selector switch.



3,529,174

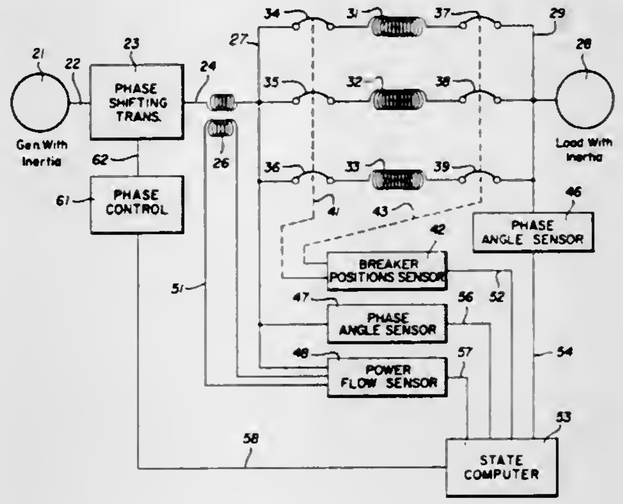
POWER SYSTEM WITH TRANSIENT CONTROL AND METHOD

Otto J. M. Smith, 612 Euclid Ave., Berkeley, Calif. 94708

Filed Aug. 8, 1966, Ser. No. 570,805

Int. Cl. H02j *1/10*

U.S. Cl. 307—43 94 Claims



Transient control system and method for a power transmission system consisting of a series capacitor normally short-circuited, which is first inserted into the transmission line at the start of the transient to increase the line admittance, and which is first removed when the line phase angular velocity deviation is zero, and which may be inserted a second time if the line phase angular velocity deviation exceeds a preselected fraction of the previous maximum deviation, and removed a second time when the velocity deviation again is zero. Control can also be effected by switched shunt reactors or capacitors, and by switched machine field voltages.

3,529,175

TIMER OPERATED TUNING DEVICE

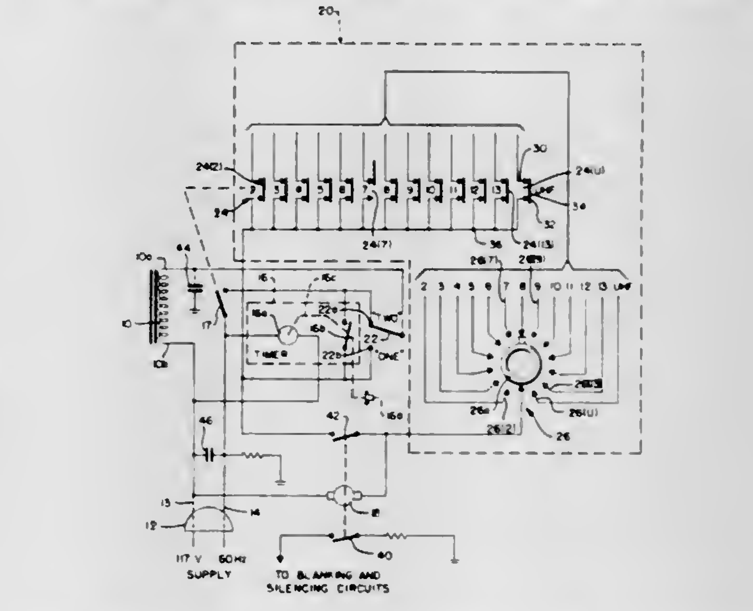
William Feingold, Fresh Meadows, N.Y., assignor to Andrea Radio Corporation, Long Island City, N.Y., a corporation of New York

Filed Dec. 16, 1968, Ser. No. 784,059

Int. Cl. H04b *1/06*

U.S. Cl. 307—141.8 9 Claims

A timer operated device for tuning a television receiver, or the like, to a specified channel at a desired time, or, alternatively, for switching from a first to a second channel at a preselected time. The device includes a bank of push button switches corresponding to the individual channels, each switch being interlocked with a power switch, and a tuner motor which is controlled by the switch bank to select the channel corresponding to a depressed push button. An automatic timer includes a normally open switch connected in the circuit with a mode selection switch such that in one position



("one channel" operation) of the mode selection switch, the timer contacts serve to connect the primary of the power transformer across a power line, while in a second position ("two channel" operation), the timer contacts are bypassed. In the first mode switch position, the timer contacts are connected in the energizing circuit for the tuner motor through the mode selection switch; in the second switch position, the mode selection switch is bypassed by the motor energizing circuit.

3,529,176

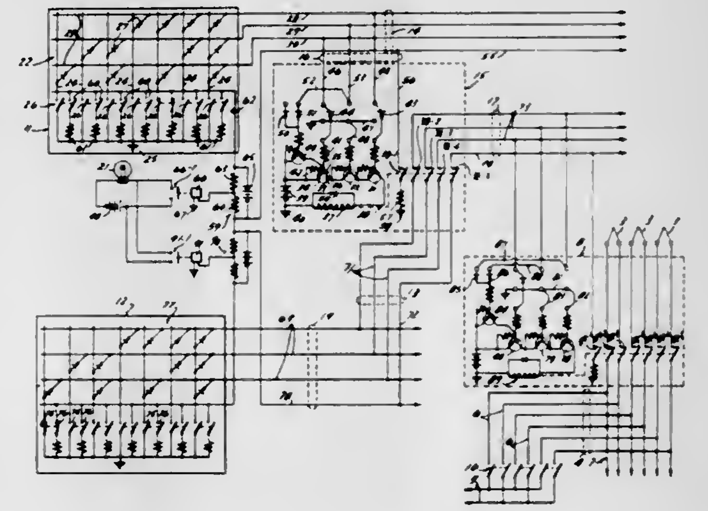
BINARY LOGIC CODED CONTROL

William P. Chapman, Milwaukee, and Carleton C. Smith, Menomonee Falls, Wis., assignors to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Original application Aug. 21, 1962, Ser. No. 218,386, now Patent No. 3,300,759. Divided and this application Aug. 8, 1966, Ser. No. 571,111

Int. Cl. H03k *19/22*

U.S. Cl. 307—218 3 Claims



A system employing a binary code is used to establish control for selection of a plurality of remotely located devices. The decoders in the system includes a plurality of dual state switching elements which are interconnected in an AND logical system. The AND gates have two operating conditions, one for each bit of the binary code.

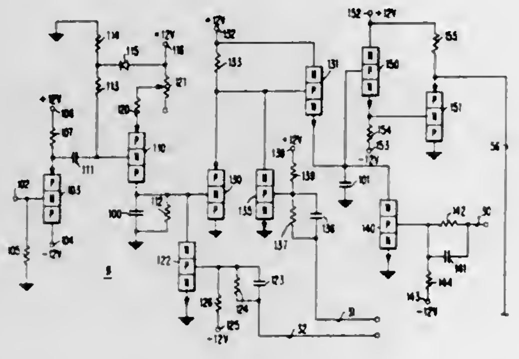
3,529,177
SIGNAL INTEGRATOR AND CHARGE TRANSFER CIRCUIT

Joseph P. Pawletko, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application July 6, 1965, Ser. No. 469,499, now Patent No. 3,471,832, dated Oct. 7, 1969. Divided and this application June 5, 1969, Ser. No. 830,644

Int. Cl. G06g *7/12*

U.S. Cl. 307—229 **3 Claims**



An improved signal integrating and charge transfer circuit is characterized by first and second capacitors which are normally isolated from each other. Input transistor means cause a voltage to be produced across the first capacitor which is substantially a linear function of the amplitudes of signals applied to the input. Transistor circuit means couple the first capacitor to the second capacitor through a low impedance circuit to transfer the voltage across the first capacitor to the second capacitor, after which the capacitors are again isolated from each other. Transistor means are provided for selectively discharging each of the capacitors at desired intervals.

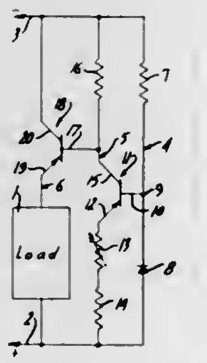
3,529,178
VARIABLE SIGNAL DETECTING CIRCUIT

James R. Bailey, Milwaukee, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed June 22, 1966, Ser. No. 559,482

Int. Cl. H03k *5/20*

U.S. Cl. 307—235 **4 Claims**



The disclosure includes a circuit connected to a selected portion of an incoming direct current signal. A first branch includes a forward biased diode and a resistance to provide a fixed bias voltage at the junction. The second branch includes a first transistor having the base connected to this junction and a variable resistor in the emitter circuit and having a suppression resistor in the collector circuit. A selected constant voltage drop appears across the suppression resistor. The load circuit is an emitter-follower circuit having the load in the emitter of a solid state unit, the base of which is connected to the collector of the first transistor.

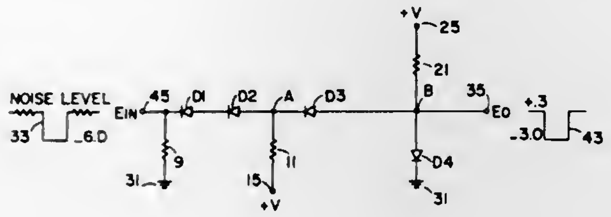
3,529,179
LOGIC NOISE SUPPRESSOR

Irving F. Orrell, Jr., Whitinsville, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Nov. 1, 1967, Ser. No. 679,937

Int. Cl. H03k *5/08*

U.S. Cl. 307—237 **1 Claim**



A logic circuit having a number of diodes serially connected between an input voltage and an output voltage. The serially connected diodes limit the output voltage to a determined level of the input voltage by proper choice of the number and type diodes and their polarity arrangements and biasing. A small forward bias present at the output side of the last serially connected diode and to one side of another diode connected to a fixed potential insures a firm "off" voltage, free of noise, at the output.

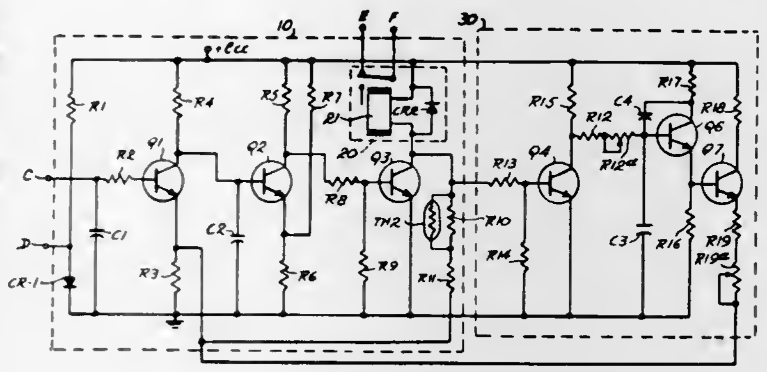
3,529,180
PROPORTIONING CONTROL CIRCUIT

Amelio P. Micheli, Medford, Mass., assignor to United Electric Controls Company, Watertown, Mass., a corporation of Massachusetts

Filed Dec. 13, 1966, Ser. No. 601,425

Int. Cl. H03k *5/20*

U.S. Cl. 307—265 **7 Claims**



A proportioning control circuit which has two output states and which varies the ratio of duration of the two output states according to the amplitude of an input control voltage includes a triggered switch, for example a Schmitt trigger, of the type responsive to a triggering voltage and switching to its first output state when the triggering voltage rises to a first critical value, and to its second output state when its triggering voltage descends to a second critical value. A transistor inverter, operated by the Schmitt trigger, drives an integrating circuit formed by a resistor and capacitor in series, and alternately charges and discharges the capacitor exponentially during successive intervals between switches of the Schmitt trigger. The capacitor voltage is the input to a double emitter follower amplifier, which feeds back a portion of the charging and discharging voltage to the Schmitt trigger, where it appears in series with said input control voltage, so that the triggered switch is responsive to said portion and to said control voltage. Since the integrating circuit will charge and discharge with rates determined by the amplitude of the control voltage, the ratio of duration of the two output states of the triggered switch will vary with the amplitude of the control voltage.

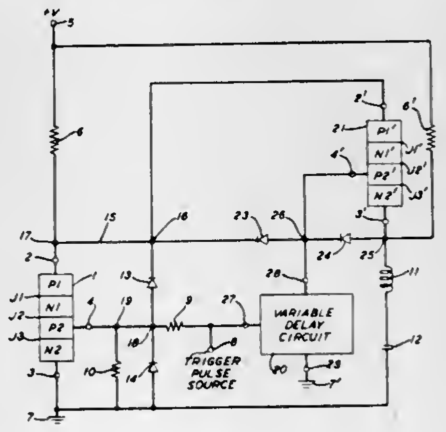
3,529,181
THYRISTOR SWITCH

Leon E. Cameron, Morris Plains, and Richard P. Massey, Westfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 19, 1968, Ser. No. 722,704

Int. Cl. H03k *1/18*

U.S. Cl. 307—265 **9 Claims**



An improved variable width pulse modulator having fast-acting pulse-terminating means for effecting an appreciable reduction in the time interval between the application of terminating trigger current and the actual termination of the associated pulse. The improvement comprises a pair of diodes connected between the load circuit and the resonant turn-off circuit for normally blocking the second half-cycle of reverse ringing current. These diodes are bridged by a pulse-terminating thyristor which, when turned on by trigger current, quickly releases the ringing current to effect the termination of the pulse.

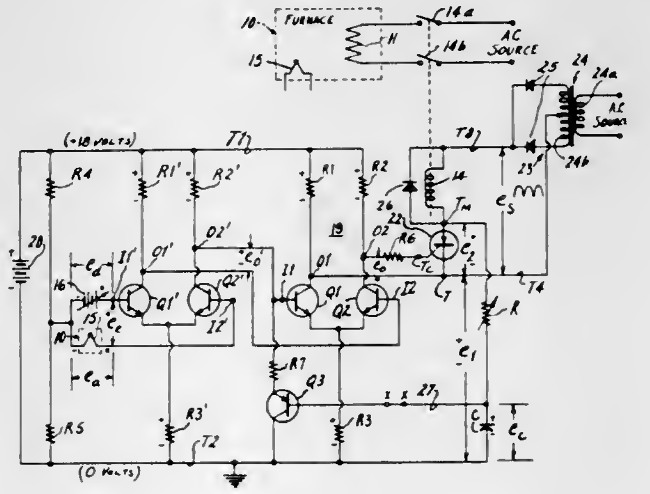
3,529,182
TIME PROPORTIONING FEEDBACK BETWEEN DISTINCT CIRCUITS IN A CONTROL SYSTEM

Eugene R. Jornod, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois

Filed May 5, 1967, Ser. No 636,336

Int. Cl. H03k *3/26*

U.S. Cl. 307—284 **6 Claims**



An improvement in on-off condition controlling systems wherein a first proportional circuit responsive to an error signal utilizes a differential amplifier served by one voltage source to supply an output signal to a second on-off circuit served by another voltage source, and wherein the step changes in a voltage occuring in the second circuit are coupled back through a permanently connected chargeable and dischargeable capacitor to the first circuit with a negative feedback sense, so that a time-proportioned response is obtained.

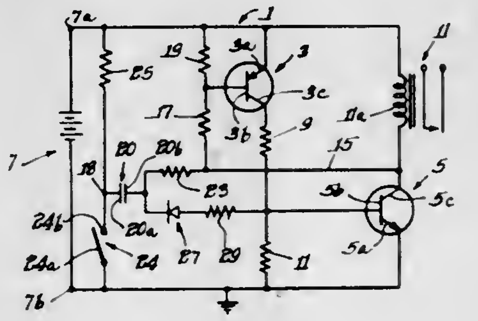
3,529,183
COMPLEMENTARY TRANSISTOR CONTROL CIRCUIT

Richard Goldstein, Deerfield, Ill., assignor to Chamberlain Manufacturing Corporation, Elmhurst, Ill., a corporation of Iowa

Filed May 27, 1968, Ser. No. 732,115

Int. Cl. H03k *3/00*

U.S. Cl. 307—288 **9 Claims**



A complementary transistor circuit operated by successive uni-polarity signals which, in the bistable embodiment of the invention, alternately render the transistors simultaneously conductive and non-conductive by virtue of a unique combination of capacitor charge and discharge circuits which charge the capacitor in one direction during the initial signal through the base circuit of one of the transistors to trigger the same into conduction, and which render the other transistors conductive, discharge and reverse charge of the capacitor when the initial signal disappears, and then discharges the capacitor through a rectifier isolated circuit coupled to the base circuit of said other transistor during the next signal to trigger first said other and then said one transistor into non-conduction.

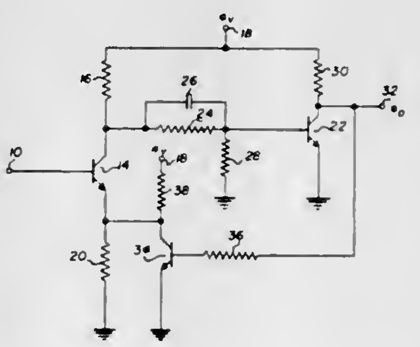
3,529,184
LOW POWER TRANSISTOR TRIGGER CIRCUIT

Barry G. Conklin, State College, Pa., assignor to HRB-Singer, Inc., State College, Pa., a corporation of Delaware

Filed May 18, 1967, Ser. No. 639,522

Int. Cl. H03k *3/286*

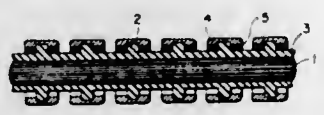
U.S. Cl. 307—290 **5 Claims**

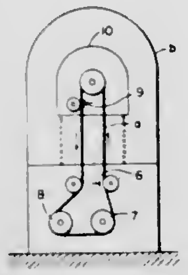


A waveform squaring circuit responsive to predetermined input amplitude levels having a square wave output whose base line is substantially zero volts.

3,529,185
ELECTROSTATIC GENERATOR OF THE VAN DE GRAAFF TYPE

Akira Isoya, Fukuoka, and Noriyosi Yosinaga, Kurume, Japan; said Yosinaga assignor to The Moon-Star Rubber Ltd., Kurume, Japan
Filed Feb. 4, 1969, Ser. No. 796,438
Claims priority, application Japan, Mar. 21, 1968, 43/18,714; Aug. 2, 1968, 43/55,093
Int. Cl. H02n *1/12*
U.S. Cl. 310—6 **15 Claims**

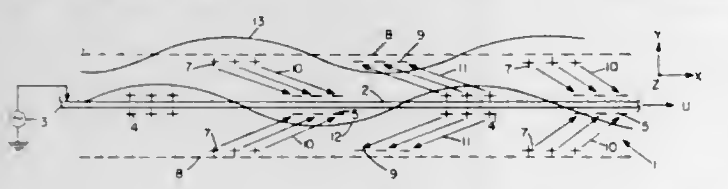




A charge carrying element for a Van de Graaff generator comprises a flexible endless cord of dielectric material, such as synthetic and other fibers having a small elongation and a high resistance to repeated bending, coated or impregnated with rubber, a layer of rubber enclosing the cord and formed with external annular ribs at substantially uniformly spaced intervals along the length of the cord, and a series of electroconductive rings mounted on respective ribs and spaced axially from each other. The radially inner surface of each electrically conductive ring, in conjunction with the rubber layer and the associated rib, defines a pair of annular cavities opening in axially opposite directions from the associated rib. A first rotatable inductor electrode applies charges to the charge carrying element by electrostatic induction, and a second rotatable inductor electrode transfers charges, by electrostatic induction, from the charge carrier to a high voltage electrode. Respective wipers engage the peripheral surfaces of the inductor electrodes to clean the same.

3,529,186
ELECTROHYDRODYNAMIC GENERATOR

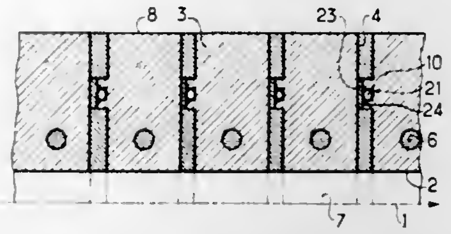
James R. Melcher, Lexington, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Mar. 11, 1968, Ser. No. 711,951
Int. Cl. H02n *1/12*
U.S. Cl. 310—10 **27 Claims**



An electrohydrodynamic generator wherein an electric power output is effected by moving an electrically positively and negatively charged high-resistance belt or other medium relative to a plurality of electrodes thereby to charge the electrodes, by electrical inductive field effect, alternately positively and negatively. If the electrodes are connected to an inductive load and the value of inductance is properly chosen, the system can be made self-excited at a frequency related to the relative movement. A further facet disclosed is the provision of substantially large inductances or capacitances for loading the generator by a tuning fork or other electromechanical-elastic devices which may be coupled to the generator system, but which have other uses as well.

3,529,187
MAGNETOHYDRODYNAMIC GENERATOR

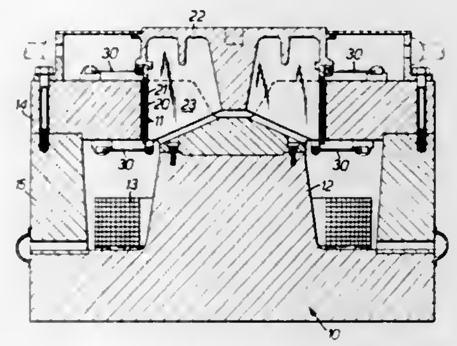
Jean-Claude de Simone, Paris, and Jean-Francois D. Ecomard, Chilly-Mazarin, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed Nov. 13, 1968, Ser. No. 775,244
Claims priority, application France, Nov. 14, 1967, 128,148
Int. Cl. H02n *4/02*
U.S. Cl. 310—11 **13 Claims**



A conversion nozzle for a magnetohydrodynamic generator has stacked electrically conductive members which are electrically insulated from each other. At least one metallic O-ring packing partially engages a groove in one of the two adjacent conductive members to provide a fluid-tight seal between the members.

3,529,188
ELECTRO-MAGNETIC VIBRATOR SUSPENSION

James Walter Gearing, Sussex, England, assignor to Derritron Electronic Vibrators Limited, Sussex, England, a company of Great Britain
Filed Sept. 29, 1967, Ser. No. 671,854
Claims priority, application Great Britain, Sept. 29, 1966, 43,613/66
Int. Cl. H02k *35/04*
U.S. Cl. 310—27 **10 Claims**

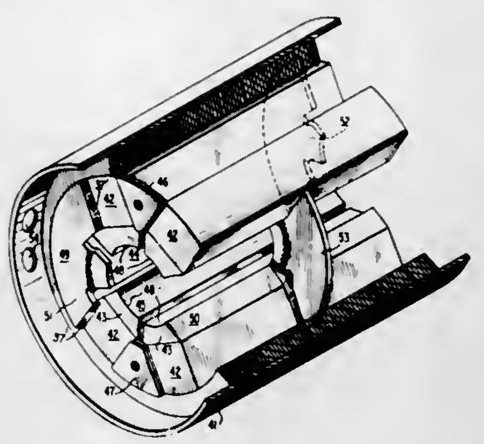


In an electromagnetic vibrator the moving coil and output member are connected to the fixed structure for vibratory movement along the axis, by means of two sets of radial beams each having at one or both ends a coupling of the type comprising a cylindrical or part-spherical rubber bush with its axis tangential in relation to that of the vibrator. To facilitate access both sets of beams may be above the magnetic circuit.

3,529,189
ROTOR COOLING TECHNIQUE

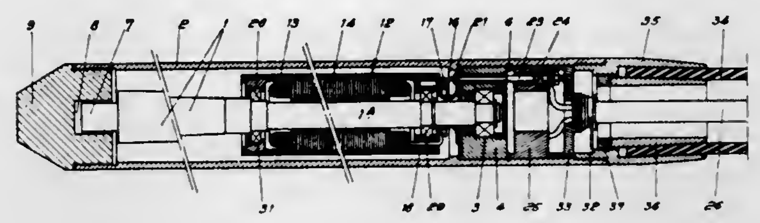
Fredrick J. Armstrong, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed June 9, 1969, Ser. No. 831,465
Int. Cl. H02k *9/10*
U.S. Cl. 310—59 **9 Claims**

A high performance dynamoelectric machine includes a stator having a bore and a rotor disposed in the bore for rotation relative to the stator. The stator has at least two magnetic poles formed of a plurality of permanent magnets having pole pieces attached thereto. Cooling fluid is introduced at one end of the machine and is exhausted at the opposite end of the machine. Cooling fluid passages which communicate with the bore are formed between the poles. Alternately placed baffles in these passages cause cooling fluid to flow transversely over and around the rotor disposed in the bore. Also, additional baffles may be fixed to the stationary structure for directing the flow of cooling fluid to a commutator mounted on the rotor. In addition, a pump or fan may be connected to the machine for forcing a flow of cooling fluid through the passages.



3,529,190
VIBRATOR

Michel A. Fontaine, Boisemont, France, assignor to Vebratechniques S.A., Paris, France, a corporation of France
Filed June 12, 1968, Ser. No. 736,450
Claims priority, application France, June 13, 1967, 110,148
Int. Cl. H02k *7/10*
U.S. Cl. 310—81 **11 Claims**

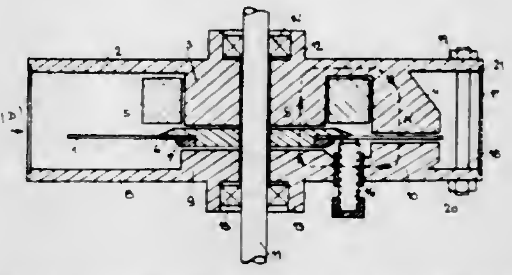


A pendulum-type vibrator comprising a tubular casing having a pendulum positioned therein, the free end of the pendulum being adapted to roll around an annular path formed on the inside of the casing. The pendulum is rotated by an electric motor, the rotor of which is fixedly secured to the pendulum. The stator of the electric motor is nonrotatably fixed relative to the casing while being mounted to follow the conical pendulum motion of the rotor.

3,529,191
HOMOPOLAR MACHINE HAVING DISKLIKE ROTOR

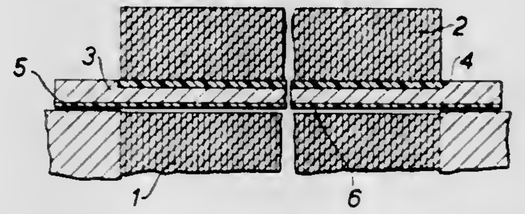
Jacques Henry-Baudot, Antony, France, assignor to Photocircuits Corporation, a corporation of New York
Filed Mar. 8, 1968, Ser. No. 711,787
Claims priority, application France, Mar. 28, 1967, 100,544
Int. Cl. H02k *31/00*
U.S. Cl. 310—178 **23 Claims**

A rotary dynamoelectric machine of the flat annular airgap type having a disc-shaped rotor disposed in the airgap and the rotor having a winding in an annular band thereon has a field structure which causes magnetic flux to pass through the winding portion of the rotor in discrete circumferentially spaced zones and the flux in each such zone is in the same direction. The return flux paths are through portions of the rotor which do not carry windings.



3,529,192
DYNAMO-ELECTRIC MACHINES HAVING SLOTLESS CONCENTRICALLY WOUND ARMATURE WINDINGS

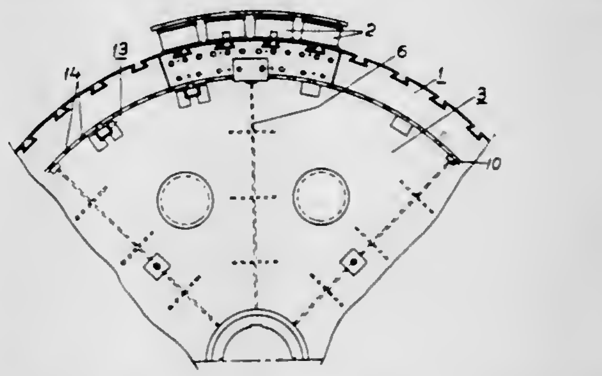
Evan John Davies, Sutton Coldfield, Birmingham, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Dec. 3, 1968, Ser. No. 780,687
Claims priority, application Great Britain, Dec. 5, 1967, 55,329/67
Int. Cl. H02k *3/00, 3/46*
U.S. Cl. 310—179 **5 Claims**



An alternator has a slotless three-phase armature winding which is concentrically wound. The winding may be short pitched by arranging for the different phase bands to overlap and the thickness of the windings in the end turns is reduced by accommodating the conductors of each phase winding within a limited depth. One-phase winding is split in the end region to occupy two different radial levels and the remaining phase windings are sandwiched between the levels.

3,529,193
ROTOR FOR ELECTRIC MACHINE WITH VERTICAL SHAFT

Åke Lindstedt, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Jan. 24, 1969, Ser. No. 793,811
Claims priority, application Sweden, Jan. 29, 1968, 1,113/68
Int. Cl. H02k *1/28*
U.S. Cl. 310—264 **1 Claim**

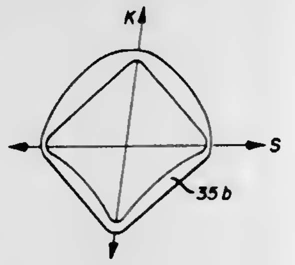


A dynamo-electric machine rotor is formed of a rotor ring and a supporting structure which includes a hub and axially spaced end plates secured to the hub. Radially extending web plates stiffen the end plates. The rotor ring has slots in its inside surface in which engage wedges for connecting the rotor ring to the end plates. The wedges are mounted in wedge holders carried by the end plates and extending through openings in the periphery thereof which are wider than the wedge holders. Blocking plates secured to the rotor ring at points adjacent the web plates hold the ring on the web.

3,529,194

CATHODE RAY TUBE

Klaus Schaffernicht and Gottfried Schädlich, Ulm, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed July 17, 1968, Ser. No. 745,580
Claims priority, application Germany, July 18, 1967, 1,614,840
Int. Cl. H01j *29/74*
U.S. Cl. 313—78 **10 Claims**

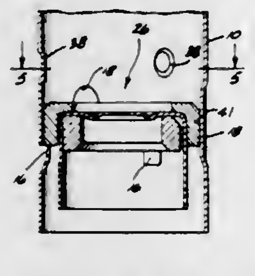


A cathode ray tube wherein there is provided a screen and two deflecting means spaced from each other in the direction of the electron beam for deflecting the electron beam in two mutually perpendicular deflection directions. An electron-permeable, planar after-acceleration electrode is disposed transverse to the tube axis and behind the deflecting means in the direction of the electron beam for producing an after-acceleration field between the after-acceleration electrode and the screen. An electrode means is disposed at the periphery of the after-acceleration electrode for more strongly converging the after-acceleration field with increasing distance from the tube axis in the diagonal deflection directions than in the two mutually perpendicular directions while leaving unaffected the rotational symmetry of the after-acceleration field in the vicinity of the after-acceleration electrode, in consequence of which pincushion distortion is reduced or eliminated.

3,529,195

ELECTRON GUN ELECTRODE MOUNTING ARRANGEMENT

Frederick G. Oess, Oceanside, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,080
Int. Cl. H01j *29/00, 31/00*
U.S. Cl. 313—82 **7 Claims**

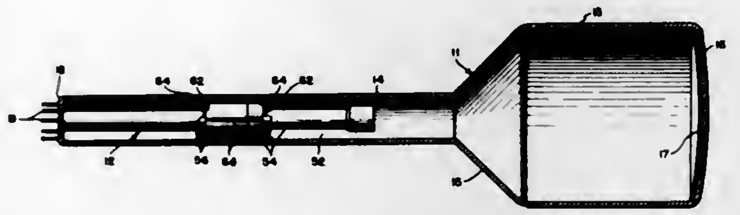


An electron gun cylinder is deformed to provide a press fit and abutment means for an insulative G1 electrode mounting and dimpled to offer spot-weld mounting for a G2 electrode. The G2 electrode includes bosses which abut against the G1 electrode insulative mounting to axially secure the G1 electrode.

3,529,196

CATHODE RAY TUBE WITH AXIALLY SEPARABLE TUBE MEANS FOR MOUNTING THE ELECTRODES THEREIN

Alexander Bell, Carlsbad, Calif., assignor to Stromberg Datagraphics, Inc., San Diego, Calif., a corporation of Delaware
Filed July 19, 1968, Ser. No. 746,046
Int. Cl. H01j *1/92, 29/02*
U.S. Cl. 313—82 **11 Claims**

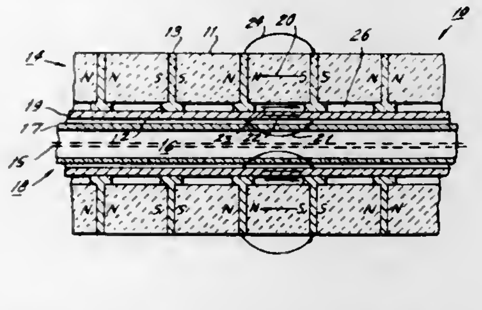


A cathode ray tube is described including a plurality of internal elements supported in a surrounding coaxial ceramic tube. Some of the internal elements are of larger diameter than the others and the ceramic tube has a correspondingly larger diameter portion at these elements and is axially separable at the larger portion.

3,529,197

ELECTRON TUBE DEVICE PROVIDED WITH A PERIODIC PERMANENT MAGNET FOCUSSING MEANS AND MAGNETIC FLUX TEMPERATURE COMPENSATING MEANS

Ryuzo Orui, Tokyo-to, Japan, assignor to Nippon Electric Company, Limited, Tokyo-to, Japan
Filed June 26, 1968, Ser. No. 740,190
Claims priority, application Japan, June 29, 1967, 42/41,724
Int. Cl. H01j *29/46;* **H01f** *7/02*
U.S. Cl. 313—84 **4 Claims**

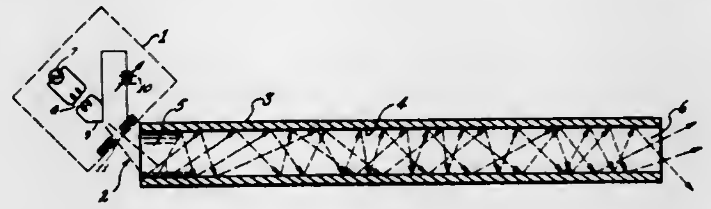


A periodic permanent magnet focussing assembly for use in traveling-wave tubes. The assembly is comprised of substantially cylindrical-shaped permanent magnets arranged in tandem fashion so that their central axes are colinear and so that the polarity of adjacent magnets are the same. A plurality of annular-shaped pole pieces are interspersed between adjacent magnets and have central axes which are colinear with one another as well as being colinear with the axis of the permanent magnet members. A hollow substantially continuous elongated cylinder of magnetic material is positioned within the hollow space defined by the permanent magnet members and pole pieces such that its longitudinal axis is substantially colinear with the longitudinal axes of the pole pieces and permanent magnets. The magnetic metallic cylinder is formed of a material having a negative temperature coefficient of permeability so that the magnetic field developed by the permanent magnet members within the interior space of the magnetic cylinder is maintained substantially constant in spite of changes in ambient temperature which normally affects the magnetic field generated by the permanent magnet members. The magnetic cylinder assures positive symmetrical alignment of all components of the focussing means as well as simplifying the assembly of the focussing structure.

3,529,198

APPARATUS TO CONTROL THE ENERGY DISTRIBUTION OF AN ELECTRON BEAM

William W. Hunt, Jr., Chelmsford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 10, 1968, Ser. No. 720,263
Int. Cl. H01j *29/46*
U.S. Cl. 313—85 **2 Claims**

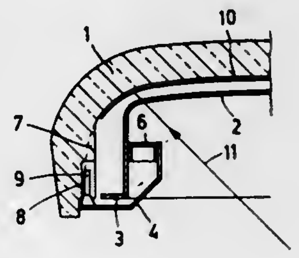


Apparatus to narrow the energy distribution of an electron beam wherein an electron reflector receives at the input thereof an electron beam. The electrons of the beam are forced to geometrically undergo successive collisions with the reflecting surface of the reflector. The output electron beam from the reflector has a substantially narrower energy distribution than the input electron beam.

3,529,199

SHADOW MASK HAVING ELEMENTS BRIDGING CORNERS OF INTEGRAL, LONGITUDINALLY-EXTENDING PORTIONS

Jan Hendrik Duistermaat and Johannes Driedijk, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed May 24, 1968, Ser. No. 731,930
Claims priority, application Netherlands, June 30, 1967, 6709114
Int. Cl. H01j *29/46, 1/96*
U.S. Cl. 313—85 **2 Claims**



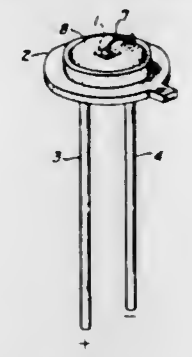
A cathode-ray tube for the display of color television images employing a shadow mask supported within the envelope by resilient members which are secured to the mask by auxiliary members which bridge the corners of the mask.

3,529,200

LIGHT-EMITTING PHOSPHOR-DIODE COMBINATION

Ralph M. Potter, Pepper Pike, Ohio, and Simeon V. Galginaitis, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Mar. 28, 1968, Ser. No. 716,897
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—108 **10 Claims**

A light-emitting device consisting of an infrared-emitting semiconductor p-n junction body or diode combined with a stepwise-excited phosphor which converts the infrared energy into visible light. Efficient combinations comprise gallium arsenide using silicon as an acceptor dopant, or mixed crystals of gallium-indium arsenide or of gallium arsenide-antimonide for the infrared-emitting body; and lanthanum fluoride activated by erbium or thulium and sensitized by ytterbium for the phosphor.

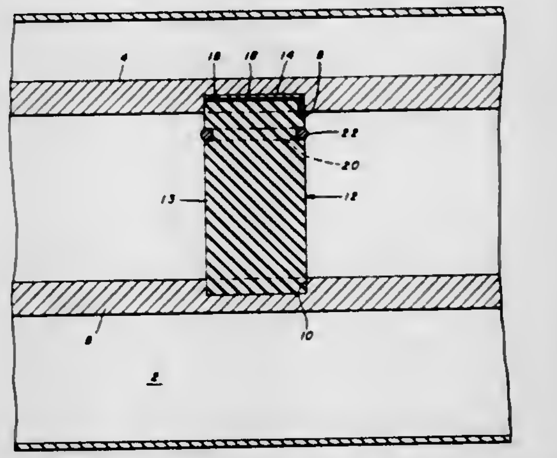


The combination makes a solid state lamp having a bright green or blue response.

3,529,201

GLOW DISCHARGE SUPPRESSING INSULATOR

Ralph G. Rudolph, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 775,001
Int. Cl. H01j *1/88*
U.S. Cl. 313—268 **8 Claims**

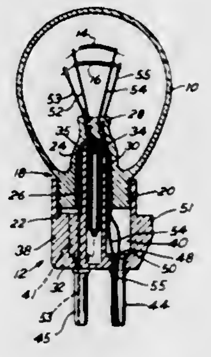


A high voltage insulator for use in a sub-atmospheric chamber between cathode and anode. The cathode end of the insulator has a conductive plate thereon and a metal corona ring is provided on the insulator adjacent its cathode end to suppress arcing.

3,529,202

LAMP BULB WITH TUBULAR BASE PORTION HAVING THREE NOTCHES THEREIN TO MAINTAIN CONDUCTORS SEPARATED

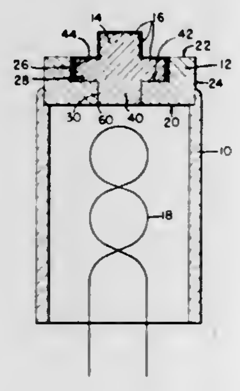
Anthony J. Taormina, Detroit, Mich., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan
Filed Apr. 19, 1968, Ser. No. 722,626
Int. Cl. H01j *5/48*
U.S. Cl. 313—318 **7 Claims**



A lamp bulb having a sealed glass envelope and having at least one filament therein. A sealed end of the envelope includes a concave depression and the sealed end is inserted into and bonded in the open end of a cup-shaped base. The base includes a tubular member extending longitudinally along the axis of the base and into the concave depression abutting the sealed end of the envelope. The end of the tubular member has notches thereon and the base includes a plurality of passages therein. A plurality of electrical conductors extend from the filament through the individual notches and passages and into electrical terminals extending from the closed end of the cup-shaped base, the notches and passages maintaining the conductors separated from each other. The sealed end of the envelope carries an exhaust tube which extends into the tubular member.

3,529,203
ELECTRON INHIBITED ELECTRODE MEMBER AND METHOD OF MAKING SAME

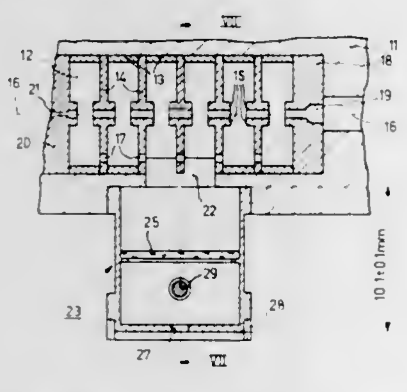
Otto G. Koppius, Florence, Ky.
(280 Lakeshore Drive, Clermont, Fla. 32711)
Filed Jan. 25, 1968, Ser. No. 700,411
Int. Cl. H01j *1/20, 19/14*
U.S. Cl. 313—337 **21 Claims**



An electrode for use in conjunction with a dispenser cathode for limiting and precisely defining the effective emissive area of the cathode, wherein the electrode constitutes a carburizable refractory metal the outer surface of which comprises a barium oxide reactive alloy of the refractory metal, and wherein certain of said alloyed surfaces are carburized for rendering them non-emissive in the presence of barium oxide at temperatures in excess of 850° C.

3,529,204
ELECTRON BEAM DISCHARGE TUBE HAVING A RETARDING STRUCTURE WITH A TUNING DEVICE

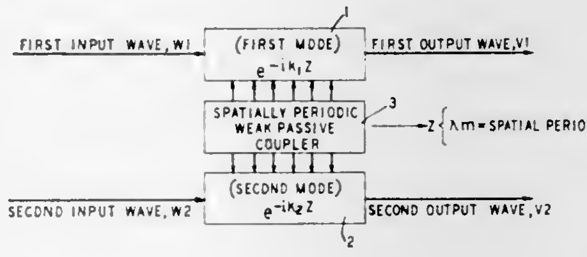
Bernardus Bastiaan van Iperen and Wilhelmus Kuypers, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,487
Claims priority, application Netherlands, May 5, 1967, 6706280
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **2 Claims**



An electron beam tube having a retarding structure including at least three substantially identical cavity resonators arranged successively in the direction of length of the tube and coupled electromagnetically, the retarding structure also including a device for tuning the retarding structure which is directly coupled to at least one cavity resonator which is substantially at the center of the series of cavity resonators.

3,529,205
SPATIALLY PERIODIC COUPLING FOR MODES HAVING DIFFERING PROPAGATION CONSTANTS AND TRAVELING WAVE TUBE UTILIZING SAME

Stewart E. Miller, Middletown Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 21, 1968, Ser. No. 769,108
Int. Cl. H01j *25/34;* **H01p** *3/20, 5/08*
U.S. Cl. 315—3.5 **22 Claims**

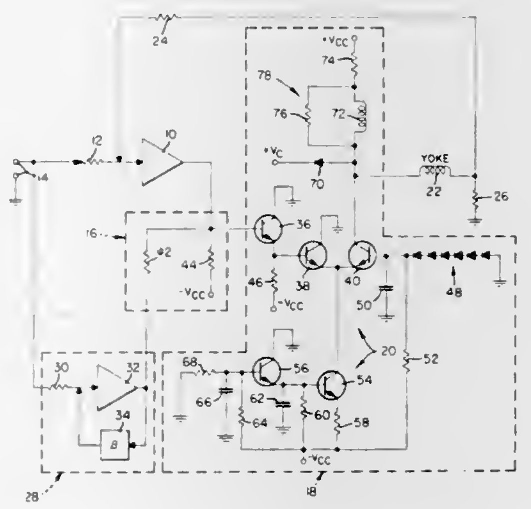


In a passive directional coupler with or without mode conversion, optimum transfer of energy from a first wave having a propagation constant k_1 to a second wave having a propagation constant k_2 is obtained by means of a weak coupling coefficient which has a spatial periodicity λ_m given by:

$$\lambda_m = 2\pi/(k_1 - k_2)$$

3,529,206
RAPID RETRACE YOKE DRIVER

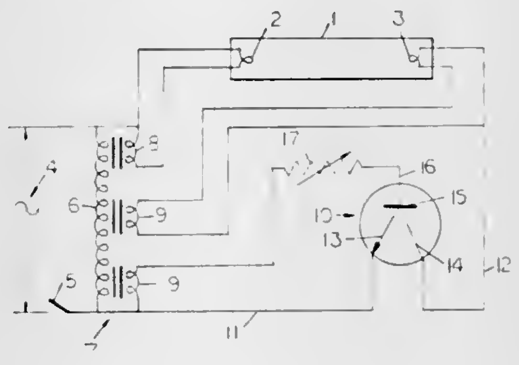
David R. Rodal, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Mar. 1, 1968, Ser. No. 709,681
Int. Cl. H01j *29/76*
U.S. Cl. 315—27 **3 Claims**



Apparatus for improving the time response and linearity of a deflection yoke driver circuit for electron beams, including a feedforward amplifier loop used in conjunction with a conventional feedback amplifier circuit, wherein the feedforward loop is coupled across the conventional amplifier circuit to overcome the bandwidth limitations of the amplifier circuit and the deflection yoke. The apparatus includes an inductor coupled to and thus forming a part of, the output stage of the amplifier circuit for storing the energy required to rapidly switch the current introduced to the deflection yoke through a relatively large current change.

3,529,207
FLUORESCENT LAMP CONTROL

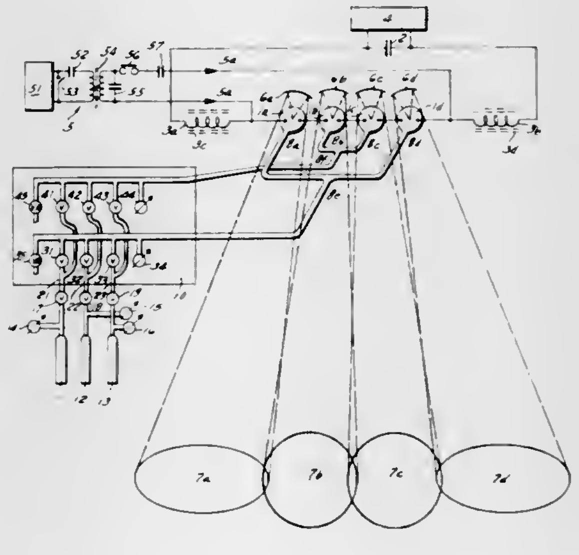
Philip C. Webb, 4752 Pin Oak Trail, Jackson, Mich. 49201
Filed Apr. 18, 1968, Ser. No. 722,440
Int. Cl. H05b *39/00*
U.S. Cl. 315—94 **6 Claims**



A fluorescent lamp having heated filaments energized by separate coils which are in turn energized at different potentials from a power supply transformer, a transistor connected in series in a regulating conductor of one filament with the emitter connected to the power source and the collector of the transistor connected to the filament, and a control resistor connected between the base of the transistor the same side of the power supply as the regulating conductor through a biasing coil in the transformer.

3,529,208
DISCHARGE LAMP ARRANGEMENT FOR LIGHTING PURPOSES

Frank Frungel, Herwigredder 105a, Hamburg-Rissen, Germany
Filed Aug. 24, 1967, Ser. No. 663,144
Claims priority, application Germany, Aug. 26, 1966, F 50,041
Int. Cl. H01j *7/16, 61/28*
U.S. Cl. 315—110 **8 Claims**

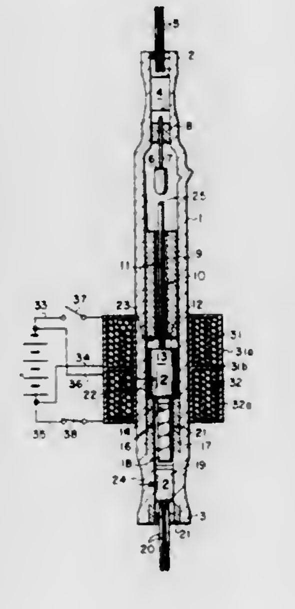


A discharge lamp arrangement for lighting purposes consisting of a multiplicity of gas filled discharge lamps connected to a common circuit is provided with means for varying the characteristics of the gas contents of at least one of said lamps thereby varying the lighting characteristics as desired.

For instance the gas pressure or the type of gas supplied to the lamps may be varied.

3,529,209
SELF-STARTING COMPACT ARC LAMP

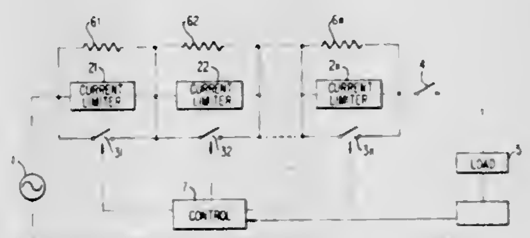
Otto E. Lienhard, Upper Montclair, and Michael Skal, Passaic, N.J., assignors to Engelhard Hanovia, Inc., Newark, N.J., a corporation of New Jersey
Filed June 12, 1967, Ser. No. 645,187
Int. Cl. H01j *7/36;* **H05b** *31/22*
U.S. Cl. 315—327 **1 Claim**



The present invention deals with a hermetically sealed compact arc lamp in which the electrodes, e.g. in a high pressure xenon atmosphere, are brought into physical contact momentarily and then separated, thereby drawing an arc discharge between them. For this purpose, one of the electrodes is movable relative to the other and actuated by a magnetic field provided by solenoid means comprising wire coils mounted on the lamp envelope.

3,529,210
CURRENT LIMITING CIRCUIT

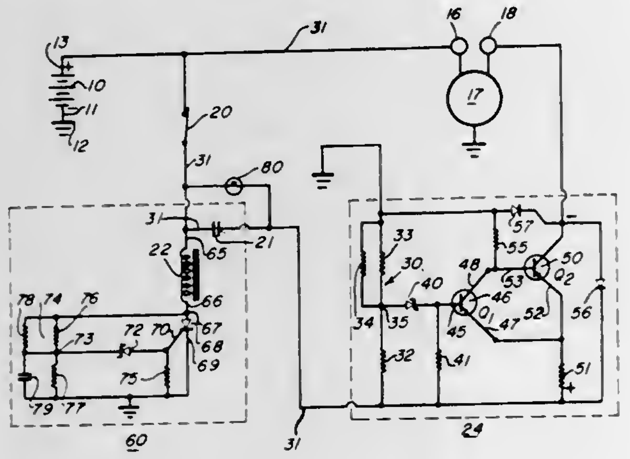
Toshio Ito, Tsohio Miyamoto, Yutaka Murai, and Yuichi Wada, Amagasaki-shi, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Feb. 26, 1968, Ser. No. 708,406
Claims priority, application Japan, Feb. 28, 1967 (utility model), 42/16,746
Int. Cl. H02h *3/00*
U.S. Cl. 317—20 **2 Claims**



A current limiting circuit using a current limiting device of a self-restoration type wherein a current limiting operation by evaporation of an alkali metal is utilized. The alkali metal present in liquid or solid state at ordinary temperatures is contained in a casing as a current limit material, a switch is installed parallel to the current limiting device which performs a current limit operation due to evaporation of the alkali metal caused by flow of a short-circuit current.

3,529,211
GENERATOR PROTECTIVE DEVICE USING A ZENER DIODE AS AN OVERVOLTAGE SENSOR

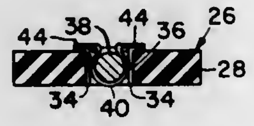
Elwin John Brayley, East Longmeadow, Mass., assignor, by mesne assignments, to Eltra Corporation, Toledo, Ohio, a corporation of New York
Filed May 1, 1967, Ser. No. 635,045
Int. Cl. H02h *1/04, 3/20, 7/14*
U.S. Cl. 317—31 **4 Claims**



A voltage sensing protection circuit which uses a Zener diode and a silicon control rectifier to open the normally closed contacts in the field circuit of a voltage regulated battery supply system.

3,529,212
PRINTED CIRCUIT ASSEMBLY

Robert A. Ballard, Bradford, Pa., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,267
Int. Cl. H05k *1/18*
U.S. Cl. 317—101 **4 Claims**

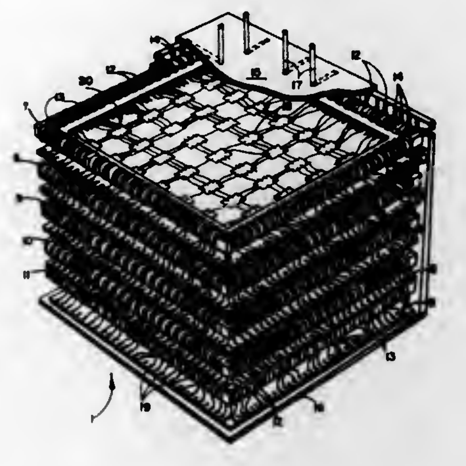


A printed circuit assembly wherein leadless electrical components are substantially wholly contained within apertures in the circuit substrate.

3,529,213
EXTENDABLE PACKAGE FOR ELECTRONIC ASSEMBLIES

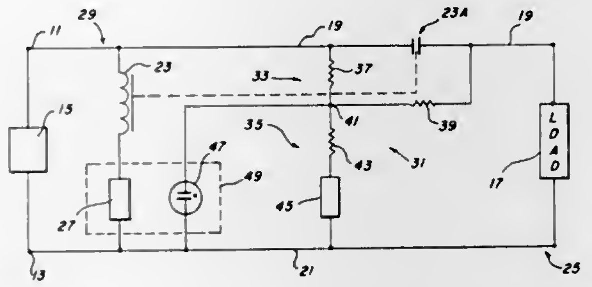
William A. Farrand, Fullerton, and Malcolm F. Thompson, Santa Ana, Calif., assignors to North American Rockwell Corporation
Filed Apr. 8, 1969, Ser. No. 814,304
Int. Cl. H05k *7/02*
U.S. Cl. 317—101 **4 Claims**

Modules comprising an electronic system are assembled within a housing which includes rails orthogonal to the output contact terminals about the peripheries of the module boards. The rails, insulated from each other, comprise a conducting layer. Frames each including a plurality of compressible electrical connectors corresponding to the rails are placed between each of the modules so that when the modules are assembled inside the housing, the connectors are compressed into contact with the conducting layer to form an electrical connection between the corresponding output contact terminals of each module. Frames are also positioned between the outermost modules and cover plates which are provided on their inner surfaces with peripheral contacts and wiring patterns connected to electrical connectors on the outside of the plates. The exterior connectors enable the assembled electronic system to be interconnected to other electronic systms.



3,529,214
LIGHT RESPONSIVE CONTROL SYSTEM

Prentice R. Corn, Memphis, Tenn., assignor to American Electric Manufacturing Corporation, Southaven, Miss., a corporation of Tennessee
Filed Dec. 26, 1967, Ser. No. 693,601
Int. Cl. H01h *47/24*
U.S. Cl. 317—124 **8 Claims**



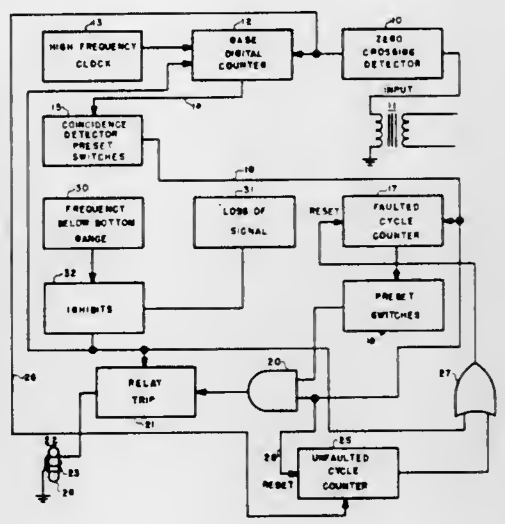
A control system which includes a relay having a coil and a switch, a source of power, and an electrical device or load to be controlled by the relay switch. The relay actuating means includes an enclosed photo-amplifier consisting of a first photo-conductor and illuminating means therefor. Also included is a second photo-conductor exposed to the ambient light for causing actuation of the above mentioned illuminating means responsive to changes in the ambient light. Various modifications are shown for accentuating the effect of the illuminating means on the first photo-conductor, and a modification is shown for delaying actuation of the illuminating means following sudden flashes of light on the second photoconductor.

3,529,215
DIGITAL OFF FREQUENCY RELAY

Miguel A. Xavier and Sidney R. Platt, Denver, Colo., assignors to Hathaway Instruments, Inc., Denver, Colo., a corporation of Colorado
Filed Oct. 2, 1967, Ser. No. 672,236
Int. Cl. H01h *47/20*
U.S. Cl. 317—147 **7 Claims**

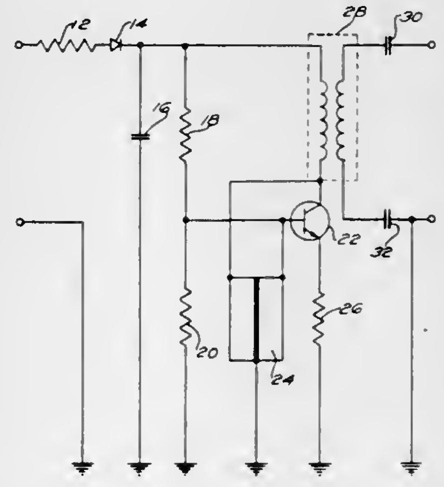
A frequency deviation relay for electric power systems comprises basic digital counting circuitry including a high frequency clock and a counter for accumulating

the number of clock pulses in each cycle of the alternating voltage of the system; an underfrequency registers more clock pulses then normal and an overfrequency less. A coincidence detector is employed to sense a deviation in frequency. Unnecessary operations of the relay are prevented by employing a timer which requires a predetermined number of non-normal or "faulted" voltage cycles to occur before the relay is tripped. The relay is inhibited from operating during switching transients, loss of voltage and frequencies above or below a predetermined value. The relay is highly accurate and may be set to extremely close tolerances to the nominal frequency of the system.



3,529,216
REMOTE CONTROL SYSTEM UTILIZING A.C. TRANSMISSION LINES

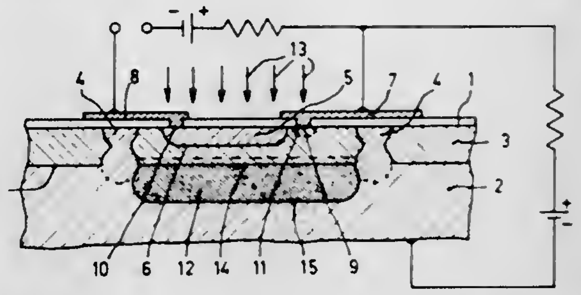
Eric A. Kolm, Brookline, and John J. Harris, Millis, Mass., assignors to Sonus Corporation, Natick, Mass., a corporation of Delaware
Filed June 29, 1967, Ser. No. 650,104
Int. Cl. H01h *47/20, 47/32, 51/32*
U.S. Cl. 317—147 **7 Claims**



This invention is directed at a remote control system for appliances using a transmitter and a receiver utilizing A.C. lines such as are found in houses, factories or other wired buildings. Particularly and notably this invention deals with A.C. line transmission, which has completely overcome the well-known problems which have plagued all attempts in this field before and which rendered A.C. transmission practically useless for the system mentioned.

3,529,217
PHOTOSENSITIVE SEMICONDUCTOR DEVICE

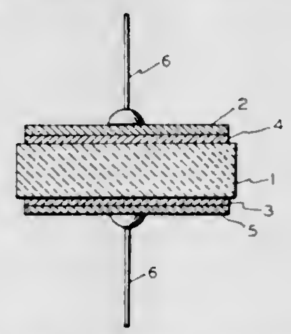
Johannes Gerrit van Santen, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 10, 1968, Ser. No. 735,703
Claims priority, application Netherlands, July 1, 1967, 6709192
Int. Cl. H01l *15/00*
U.S. Cl. 317—235 **9 Claims**



A photosensitive diode or transistor for incorporation in an integrated circuit is described, wherein the photosensitive pn-junction is located in a pn-junction isolated epitaxial island over a buried layer located primarily in the substrate with the photosensitive junction separated from the epitaxial-substrate interface by a distance smaller than an absorption length. The result is to reduce the leakage current in the back-biased isolation junction and improve the photosensitive efficiency.

3,529,218
CERAMIC RECTIFIER AND A METHOD FOR PREPARING THE SAME

Tsuneharu Nitta, Hiromitsu Taki, Kaneomi Nagase, and Shigeru Hayakawa, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
Filed July 26, 1968, Ser. No. 747,918
Claims priority, application Japan, July 28, 1967, 42/48,991; Apr. 26, 1968, 43/28,966
Int. Cl. H01g *9/16;* **H01l** *7/02*
U.S. Cl. 317—238 **7 Claims**

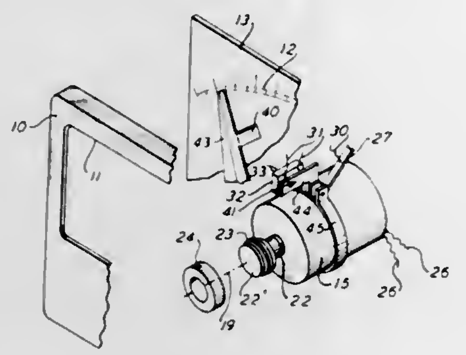


A ceramic rectifier is provided which is made up of a semiconductive (e.g. barium titanate) plate having a non-ohmic electrode on one surface thereof and an ohmic electrode on the other surface. The non-ohmic electrode consists essentially of 68 to 92.4% of silver and 7.2 to 32% of lead oxide+bismuth oxide in a mol ratio of 0.5 to 1.50. The titanate plate comprises barium nitrate of a gain size of 15 to 70 microns and has an electrical resistivity less than 10 ohm-cm. Such rectifiers are suitable for use in varistors.

3,529,219
CIRCUIT CONTROL INSTRUMENT WHERE ONE TRANSMITTER FOLLOWS ANOTHER

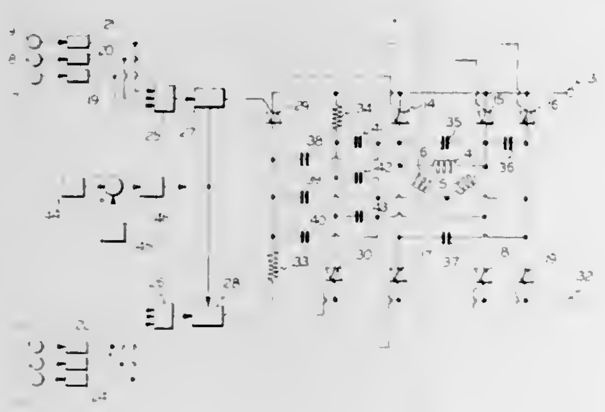
William E. Engelhard, Apalachin, N.Y., assignor to Pyro-Serv Instruments, Inc., North Arlington, N.J., a corporation of New Jersey
Filed June 14, 1968, Ser. No. 737,067
Int. Cl. G05b *11/16*
U.S. Cl. 318—675 **4 Claims**

An instrument having a motor housing rotatably mounted therein for the control of furnaces, cryogenic equipment or other apparatus, on actuation of a switch member, on rotation of the motor housing, the armature (output) shaft being held stationary, thereby moving a second switch element, carried by the motor casing, into actuating registry with the first switch member, the latter being secured to a control shaft or knob, set by user to a point on the instrument scale at which it is desired that the circuit controlled by the instrument shall thus be opened or closed.



3,529,220
BRUSHLESS DC MOTOR

Kazutsugu Kobayashi and Hisayuki Matsumoto, Osaka, Japan, assignors to Matsushita Electric Industrial Co. Ltd., Osaka, Japan
Filed Mar. 21, 1968, Ser. No. 715,014
Claims priority, application Japan, Mar. 24, 1967, 42/18,763
Int. Cl. H02k *29/00*
U.S. Cl. 318—138 4 Claims

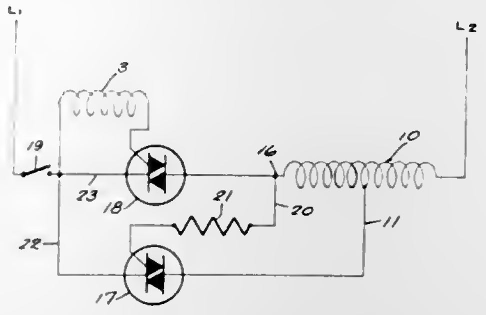


A direct current motor which has no commutator or brushes. The motor has a permanently magnetized rotor on an output shaft and a plurality of windings in the stator. An energizing circuit is coupled to the windings to produce a field to cause the rotor to rotate. The energizing circuit has gate controlled switching devices therein which are actuated by energy transducers, which in turn operate by a disc coupled to the rotor and rotate in synchronism with the rotor. Control means is also provided in the energizing to control the energizing time for the stator windings.

3,529,221
SOLID STATE STARTING CIRCUIT FOR ELECTRIC MOTORS

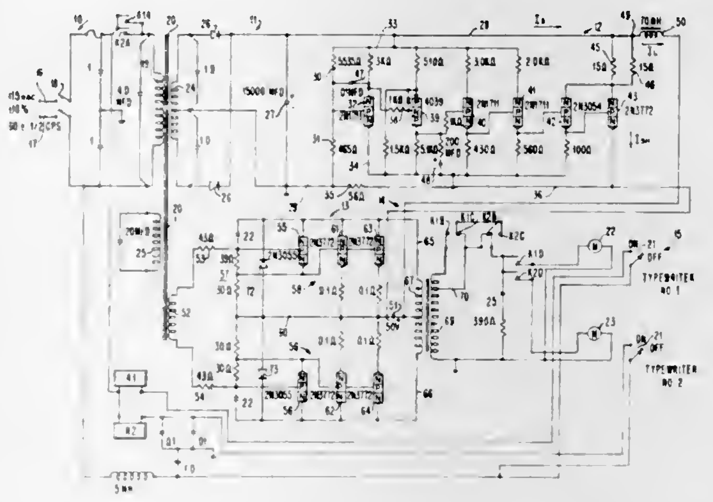
Herbert J. Reinke, 2220 S. 82nd St., Milwaukee, Wis. 53219
Filed Aug. 8, 1968, Ser. No. 751,177
Int. Cl. H02p *1/44*
U.S. Cl. 318—221 3 Claims

This disclosure relates to a solid state starting circuit for electric motors in which the motor winding has multiple taps to which line voltage is selectively applied through triac switches, the gate circuits of which are subject to the control of a sensor responsive to motor speed.



3,529,222
CONSTANT INPUT IMPEDANCE POWER SUPPLY CIRCUIT

Ronald E. Gaitten and Henry W. Simpson, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 16, 1968, Ser. No. 698,296
Int. Cl. H02p *5/40;* **H02m** *5/40;* **H02j** *1/04*
U.S. Cl. 318—227 8 Claims



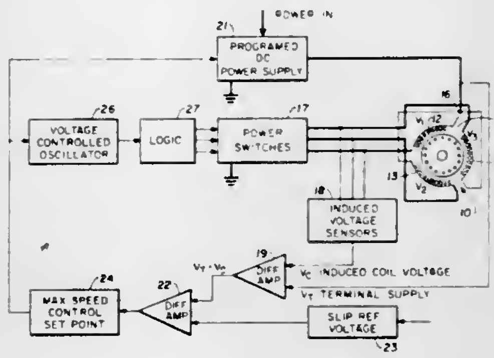
A power supply circuit appears as a constant input impedance and load fluctuations are not reflected back to a power source. A regulator draws constant direct current from a rectifier that converts an alternating current supply to direct current voltage. The regulator supplies a varying direct current to a convertor which changes the regulated varying signal to an alternating varying signal for driving an alternating current reactive load. The varying direct current is derived by sensing the requirements of the convertor and the load. A compensating network associated with the convertor reduces effects of reactive energy from the load.

3,529,223
VARIABLE SPEED INDUCTION MOTOR CONTROLLER WITH ROTOR FREQUENCY SENSING

Jules P. Vergez, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 4, 1967, Ser. No. 672,852
Int. Cl. H02p *5/40*
U.S. Cl. 318—230 18 Claims

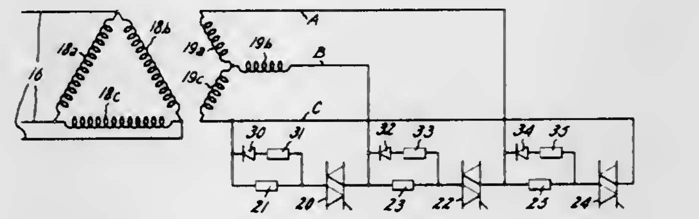
Apparatus for controlling an induction motor including means responsive to an induced voltage in the stator windings proporational to the actual speed of the motor. The motor windings have one common connection to a programmed DC power supply and are individually

connected to ground through a plurality of power switches sequenced by a logic circuit controlled from a variable oscillator. A voltage proportional to the difference between the induced voltage and the applied winding voltage is compared with a slip speed reference voltage in a differential amplifier. The output of the differential amplifier controls the programmed DC power supply and the variable oscillator.



3,529,224
SPEED CONTROL OF INDUCTION MOTORS WITH SEMICONDUCTORS AND RESISTORS

Burnice D. Bedford, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 28, 1968, Ser. No. 709,027
Int. Cl. H02p *7/62*
U.S. Cl. 318—237 8 Claims

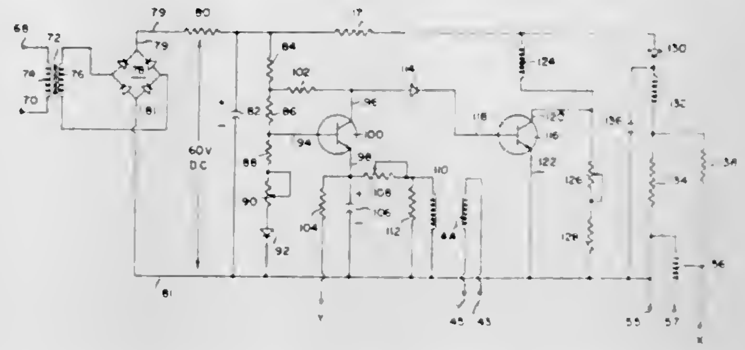


A wound rotor polyphase induction motor has a delta-connected speed control circuit connected to the rotor windings comprising in each phase a resistor in series with a triac or diac which is phase controlled to conduct in one or both directions to change the effective resistance of the rotor circuit. For a greater range of resistance with good wave shape and power factor, another resistor, diode, inductor, or contactors are placed in circuit with the first resistor. In other circuits the resistance in the output of a phase controlled full wave bridge rectifier employing silicon controlled rectifiers is varied to achieve starting or running speed control, and by adding a commutation circuit for the thyristor the turn-off is also selected to control the power factor. A cascade induction motor with intercoupled rotors has connected to the second stator windings a phase controlled bridge rectifier of the foregoing type, or a diode bridge rectifier and a time ratio control circuit for varying the effective resistance.

3,529,225
MOTOR SPEED CONTROLS

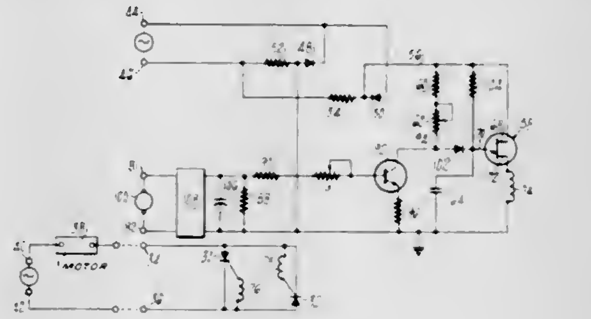
William Mohan, Grand Island, N.Y., assignor to Roberts Machine Rebuilders, Inc., Buffalo, N.Y., a corporation of New York
Filed June 6, 1968, Ser. No. 735,075
Int. Cl. H02p *5/18*
U.S. Cl. 318—308 4 Claims

A motor speed control device utilizing silicon controlled rectifiers, the gates of which are controlled by the primary windings of a magnetic amplifier. Three control windings are utilized in the magnetic amplifier and a negative feedback loop and a positive feedback loop control the saturation point of the magnetic amplifier, thereby determining the firing point of the silicon controlled rectifiers.



3,529,226
TACHOMETER SPEED CONTROL FOR A LINEAR INDUCTION MOTOR

Robert E. Correll, Middlebury, and Francis Norman Wroble, Wethersfield, Conn., assignor to Skinner Precision Industries, Inc., New Britain, Conn., a corporation of Connecticut
Filed Dec. 19, 1966, Ser. No. 602,801
Int. Cl. H02p *5/34*
U.S. Cl. 318—341 12 Claims

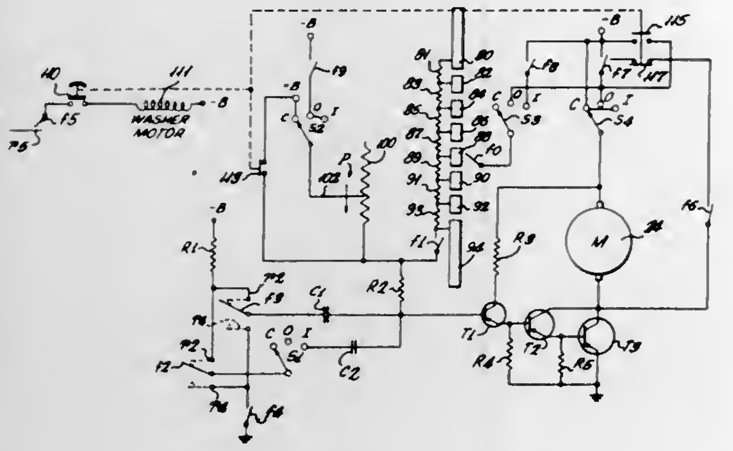


Disclosed is a linear induction motor speed control using a tachometer to sense the motor speed and a controlled rectifier to regulate the power applied to the linear motor. The controlled rectifiers are triggered during each half cycle of the AC power source so that a pulse of power is delivered to the motor regardless of the motor speed to ensure smooth operation.

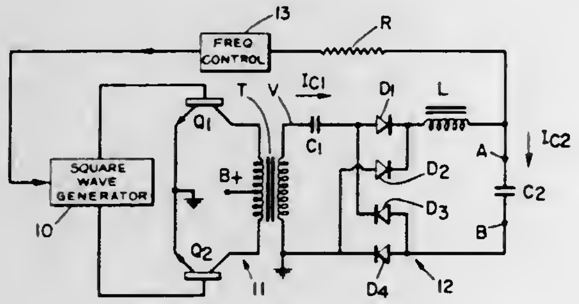
3,529,227
WINDSHIELD WIPER CONTROL

Robert W. Kearns, 20524 Rutherford Ave., Detroit, Mich. 48235
Filed Mar. 3, 1967, Ser. No. 620,525
Int. Cl. H02p *1/00*
U.S. Cl. 318—443 17 Claims

The specification and drawings disclose an electrical control device for controlling the operation of windshield wiper blades of a vehicle. The control device includes a dashboard mounted control switch having three positions which enables the operator to turn the switch to one position for continuous operation of the wiper blades, to a second position to turn them off, or to a third position for intermittent operation. In the intermittent mode of operation the wiper blades dwell at the end of each wiping cycle for a dwell period determined by the weather with respect to the car as measured by a controlled sample of the moisture falling on the windshield. When the moisture on the windshield increases, the dwell period decreases. When the moisture on the windshield decreases the dwell period increases. Therefore on a wet windshield the number of strokes per minute of the wiper blades increases and on a drier windshield the number of strokes per minute of the wiper blade decreases.



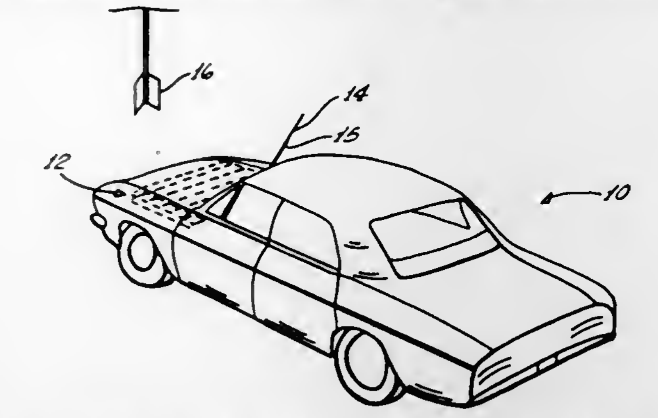
3,529,228
LOW LOSS CAPACITOR CHARGING CIRCUIT
Clifford B. Cordy, Jr., Granada Hills, Calif., assignor to Korad Corporation, a corporation of New York
Filed July 8, 1966, Ser. No. 563,765
Int. Cl. H02n *3/32;* **G05f** *1/56, 1/68*
U.S. Cl. 320—1 **4 Claims**



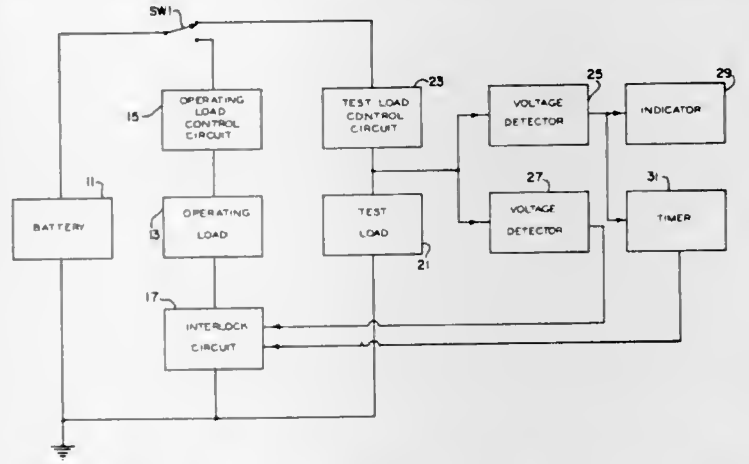
A low loss resonant type capacitor charging circuit using a DC to DC converter is provided with an additional capacitor of considerably smaller value than the capacitor to be charged. This additional capacitor is coupled through a rectifying means in the form of a diode bridge to the input of an inductor to define a resonant circuit with the inductor for providing a charging current. The small additional capacitor is charged resonantly through the inductor in the circuit on each half cycle of the chopper frequency and in this respect the inductor need not be large. The value of the additional capacitor and the inductor are selected so that the capacitor charges in considerably less time than half the period of the chopper frequency. After the small additional capacitor is charged each time, current continues to flow through the diode bridge to the main capacitor to be charged thus further charging this capacitor.

3,529,229
ELECTRIC CAR BATTERY RECHARGE SYSTEM
Robert B. Kennedy, 251 Greenoaks Drive,
Atherton, Calif. 94025
Filed Jan. 2, 1968, Ser. No. 694,935
Int. Cl. H02j *7/02*
U.S. Cl. 320—2 **5 Claims**

A battery recharge system for automatically recharging the battery of an electric car from a municipal source of electric energy when the car is in a predesignated parking area. The system comprises electrical conductors communicable to the exterior of the electric car, means for electrically coupling the conductors with battery terminals, and means for automatically coupling the conductors with the municipal source of electric energy when the car is in the predesignated parking area.



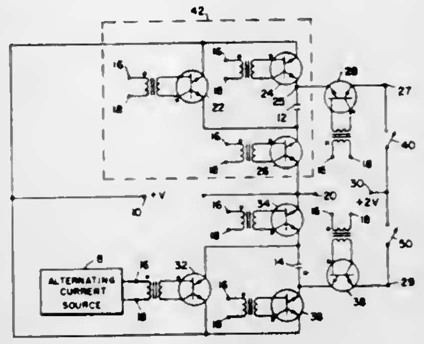
3,529,230
BATTERY TESTING APPARATUS
David C. Tedd, Cornwells Heights, Pa., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 20, 1967, Ser. No. 669,001
Int. Cl. H02j *7/04*
U.S. Cl. 320—48 **21 Claims**



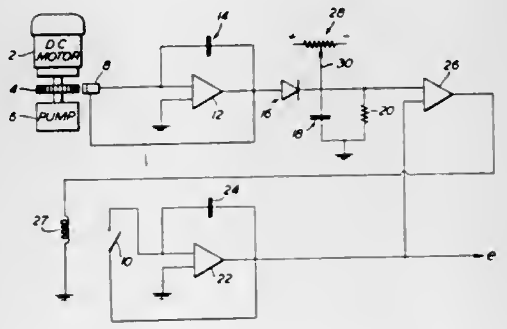
Apparatus is disclosed for periodically testing the state of charge of the battery of an electrically power forklift truck. Each time the truck's drive motor is deenergized, a test load is connected across the battery for a predetermined interval so that the battery voltage during this period is an accurate indication of the condition of the battery. If the battery voltage under the test load is below a preselected level, an indicator is energized to advise the truck operator of this fact. After a predetermined delay following the energization of the indicator, means are automatically operated for preventing the operation of the truck's lifting apparatus and then, after a further delay, means are operated for preventing operation of the truck's motor. In this way, damage to the battery through overdischarge is prevented and yet the operator of the truck is given time in which to complete an operation then in progress when the indicator is energized and to return the truck to a place where its batteries can be recharged.

3,529,231
DIRECT CURRENT TRANSFORMER
George D. Brown, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 26, 1968, Ser. No. 787,080
Int. Cl. H02m *3/18, 3/22*
U.S. Cl. 321—2 **3 Claims**

A push-pull type direct current transformer circuit having a direct current voltage connected at an input terminal for being transformed up or down at an output terminal. Four integrated chopper type transistors and a storage capacitor are used in each side of the push-pull circuit. An alternating current source has a primary coil and eight secondary coils with the secondary coils connected across the base-collector electrodes of the eight integrated chopper type transistors. The alternating current source switches the direct current flow through the transistors in such a manner that each side of the push-pull circuit alternately charges and discharges their respective capacitors in opposite phase. The capacitors alternately dump their charges to the output terminal through mechanically closed switches.



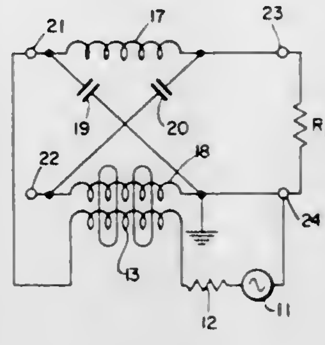
3,529,232
METHOD AND APPARATUS FOR FREQUENCY-TO-FREQUENCY CONVERSION
Lawrence C. Porter, Palos Verdes Peninsula, and Kenneth E. Graves, Saratoga, Calif., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,377
Int. Cl. H02m *5/00*
U.S. Cl. 321—60 **24 Claims**



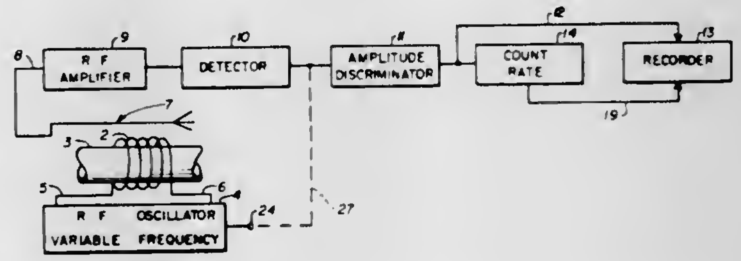
In a motor-driven pumping system, the transfer rate of the pump is not necessarily functionally related to the rotation of the pump shaft. Accordingly, means and method are provided for converting a fluctuating measurement signal having a frequency representative of motor or pump shaft rotation, into an indicator signal having a frequency functionally related to the transfer rate of the pump.

3,529,233
LATTICE TYPE PHASE SHIFTING NETWORK
Allen F. Podell, Cambridge, Mass., assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts
Filed Oct. 8, 1968, Ser. No. 765,866
Int. Cl. H03h *7/04*
U.S. Cl. 323—124 **7 Claims**

A phase shifting network operating in the radio frequency range for transmitting with a phase shift, a signal from an unbalanced source to an unbalanced load. The network is free from the loss characteristics and frequency limitations inherent in the use of a balun to connect the phase shift network to either the source or the load. In addition to the inductors required for the phase shift lattice, one additional inductor closely coupled magnetically to one of the lattice inductors is used to provide for coupling to the source or load.



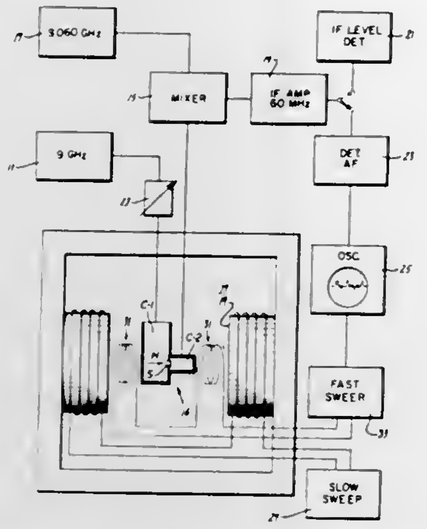
3,529,234
VAPOR QUALITY MEASURING DEVICE
Robert D. Keen, Canoga Park, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 13, 1967, Ser. No. 690,252
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **5 Claims**



A method and apparatus for measuring "void fraction" or vapor quality in a flowing two-phase liquid metal stream. Bubbles are also detected, and the size of bubbles can be determined. The tank coil of a high frequency oscillator is placed about a pipe containing the flowing fluid which may be in either a liquid or vapor phase or combination thereof. At a particular frequency, resonance coupling occurs between the coil and the nuclei of the fluid, resulting in an absorption of energy by the nuclei. The amount of energy absorption depends upon the cross sectional area of the fluid as modified by any vapor bubbles, so that the output from a detecting circuit will indicate the bubble content of a liquid fluid system or the vapor quality of amount of liquid in a vapor system.

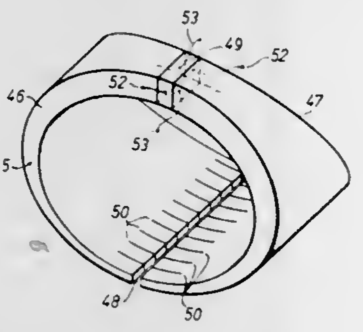
3,529,235
MAGNETIC INDUCTION SPECTROMETER EMPLOYING A PAIR OF COUPLED RESONANT CAVITIES
John D. Allen Day, Berkeley, Calif., assignor to E-H Research Laboratories, Inc., Oakland, Calif., a corporation of California
Filed July 10, 1968, Ser. No. 743,881
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **6 Claims**

A spectrometer for analyzing magnetic spin resonance in the presence of a DC magnetic biasing field including a pair of electromagnetic cavities having orthogonal magnetic field relations in a common coupling region at which the electric fields are at a null. The DC biasing field is arranged orthogonal to the magnetic fields at the coupling region. The sample is positioned in the coupling region and serves to transfer energy between the cavity at the sample resonance in the DC magnetic field. Decoupling screws are used to reduce the coupling between the cavities and thereby reduce system noise.



3,529,236
MAGNETIC FLUX SENSORS HAVING CORE STRUCTURE OF GENERALLY CLOSED CONFIGURATION FOR USE IN NONDESTRUCTIVE TESTING

Noel B. Proctor, Houston, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 3, 1967, Ser. No. 680,404
Int. Cl. G01r *33/12;* **G11b** *5/38*
U.S. Cl. 324—37 **8 Claims**

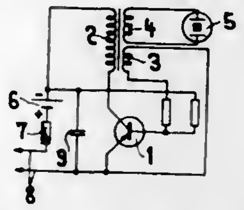


This application discloses magnetic flux detectors in the form of C-shaped or E-shaped magnetic core structures using flux responsive transducers such as Hall effect devices or flux gate magnetometers in the core structures. The magnetic sensing devices are particularly useful in pipeline inspection.

3,529,237
CIRCUIT TESTING OSCILLATOR HAVING AN AUDIBLE OUTPUT AND A PROTECTIVE CONDENSER

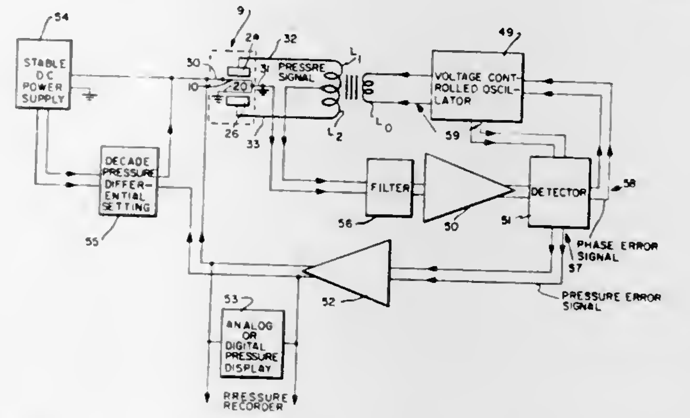
Peter Kilchhofer, Liebefeld, Bern, Switzerland, assignor to Elektrische Apparate- und Stanzwerkzeugfabrik E. Schori AG, Bumpliz, Switzerland
Filed Sept. 11, 1967, Ser. No. 666,771
Claims priority, application Germany, Sept. 28, 1966, E 32,555
Int. Cl. G01r *31/02*
U.S. Cl. 324—51 **7 Claims**

A test buzzer having an electronic oscillator, an electro-acoustic transducer connected to the output of the oscillator and at least one test circuit connected to the oscillator input for energizing the oscillator, an audible signal being produced by said transducer when the oscillator is energized through said test circuit, protecting means against over-voltages or over-currents being provided in said test circuit.



3,529,238
PRESSURE GAUGE WITH DIAPHRAGM NULL POSITION MEANS

Owen O. Fiet, Redondo Beach, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Oct. 9, 1968, Ser. No. 766,201
Int. Cl. G01r *27/26*
U.S. Cl. 324—61 **12 Claims**

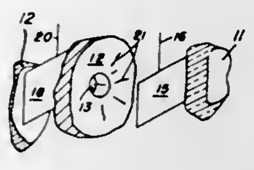


A very sensitive diaphragm sensor is used in a closed loop electromechanical null seeking servosystem. Differential fluid pressure applied to the diaphragm is opposed by an equal electromagnetic diaphragm pressure produced by the interaction of diaphragm current and magnetic fields, the value of which provides a precise analog of the differential fluid pressure. A reference diaphragm, exposed on both faces to a reference pressure is used to electrically nullify error caused by external noise, external vibration, gas species, temperature and similar disturbances.

3,529,239
ELECTRODE ARRANGEMENT FOR A PARTICLE MEASURING APPARATUS

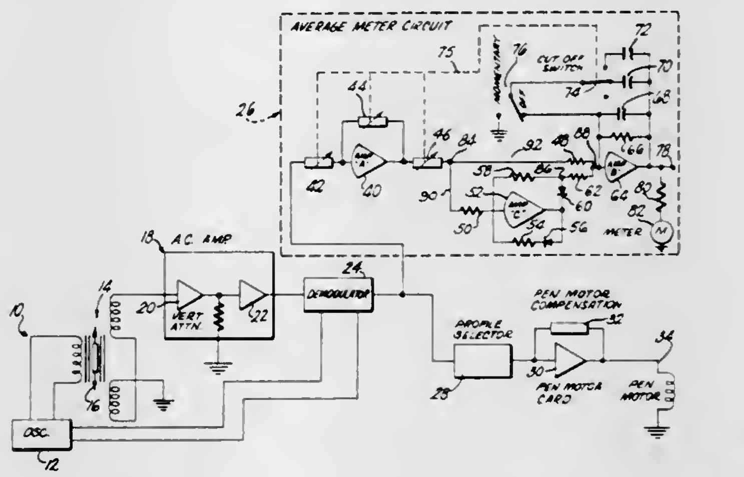
Richard B. Valley and Theodore H. Morse, Rochester, N.Y., assignors, by mesne assignments, to Coulter Electronics, Hialeah, Fla., a corporation of Illinois
Application Apr. 29, 1968, Ser. No. 725,228, which is a continuation of application Ser. No. 348,239, Feb. 28, 1964. Divided and this application Sept. 27, 1968, Ser. No. 785,413
Int. Cl. G01n *27/00*
U.S. Cl. 324—71 **4 Claims**

A particle measuring apparatus employing a particle studying circuit wherein electrical insulating means define an orifice and a constricted flow path through which a particle containing fluid sample may communicate, and electrical circuit means for establishing a complete circuit through the fluid sample in said orifice; said circuit means, due to the measurably different electrical characteristics of the fluid and the particles suspended therein, producing detectable pulses as particles are caused to pass through said orifice. The electrical circuit means includes an electrode secured external to and proximate to each of the opposite ends of the orifice and the constricted flow path, so as not to interfere with the flow of the particles through the flow path, such as by causing relative misalignment of the particles within the flow path.



3,529,240
AVERAGE METER FOR PROVIDING AN AVERAGE SIGNAL VALUE

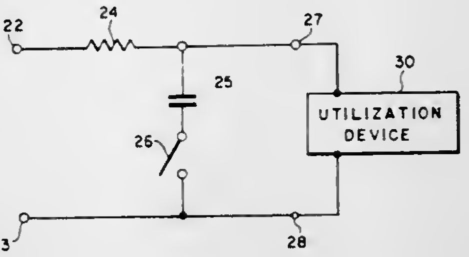
William J. Sanders, Grandville, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Nov. 17, 1966, Ser. No. 595,147
Int. Cl. G01b *5/28;* **G01r** *11/00*
U.S. Cl. 324—111 **6 Claims**



An average meter including a bandpass amplifier, absolute value circuit, and integrating network for converting the mechanical motion of a probe moving across the surface of a workpiece to an electrical voltage representative of the average roughness of that surface. The device herein disclosed includes a switching mechanism for selecting ranges of values to be recorded and averaged. Electrical delay in the system herein described for converting a probe motion to an average output signal is minimized by a unique, rapid read switch that minimizes the charge time of the integrating network regardless of the range of values selected to be averaged.

3,529,241
SYSTEM FOR INDICATING RATE OF CHANGE OF VOLTAGE

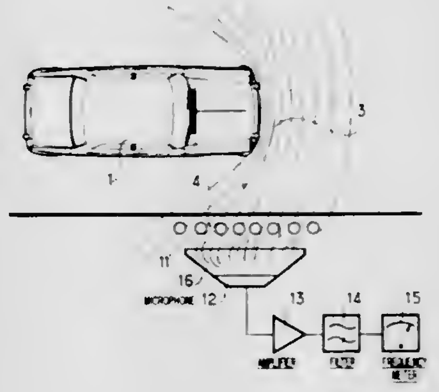
James A. Bright, Denver, Colo., assignor to Hathaway Instruments, Inc., Denver, Colo., a corporation of Colorado
Filed Jan. 19, 1967, Ser. No. 610,445
Int. Cl. G01r *1/00, 19/12*
U.S. Cl. 324—111 **3 Claims**



A system for detecting rates of change of voltage. An electronic circuit comprises a switch for connecting a voltage source and an RC circuit alternately and periodically to a utilization device which is thereby made responsive to the rate of change of the source voltage.

3,529,242
STATIONARY SOUND RESPONSIVE VELOCIMETER FOR AUTOMOBILE VEHICLES

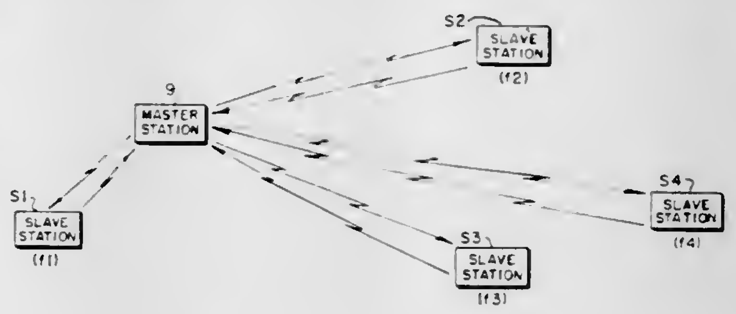
Henri Sulzer, Saint-Remy-les-Chevreuse, France, assignor to Compagnie Generale d'Electricite, Paris, France, a French corporation
Filed Aug. 9, 1967, Ser. No. 659,525
Claims priority, application France, Aug. 12, 1966, 73,070
Int. Cl. G01p *3/54*
U.S. Cl. 324—166 **4 Claims**



A velocimeter for determining the velocity of moving objects including a grid formed of regularly spaced bars disposed vertically in parallel relationship for generating a periodic disturbance of the air at a rate which is the function of the speed of the object including means for transducing the periodic disturbance into an electrical signal of corresponding frequency to be detected by a frequency meter.

3,529,243
SYNCHRONOUS TACTICAL RADIO COMMUNICATION SYSTEM

Adolf Reindl, Asbury Park, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 11, 1967, Ser. No. 674,686
Int. Cl. H04b *1/44*
U.S. Cl. 325—55 **6 Claims**

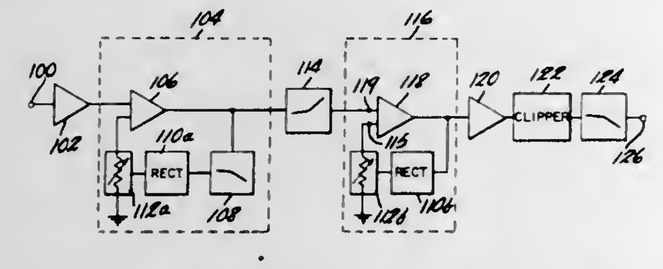


This system comprises a master station and a plurality of slave stations, each of which is operated on a different frequency or channel. Each station receives and transmits in alternate time periods on the same frequency. The system is synchronous in that the reception and transmission periods of all slave stations are controlled by the master station. Conversations between slave stations are relayed through the master station. The timing of the transmission and reception periods is such that interference between nearby slave stations operating on nearby frequencies is eliminated.

3,529,244
METHOD AND APPARATUS FOR FREQUENCY SENSITIVE AMPLITUDE LIMITING

Emil Torick, Darien, Conn., and Richard G. Allen, Pound Ridge, N.Y., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed Mar. 13, 1967, Ser. No. 622,518
Int. Cl. H04b *1/04, 1/62*
U.S. Cl. 325—147 **7 Claims**

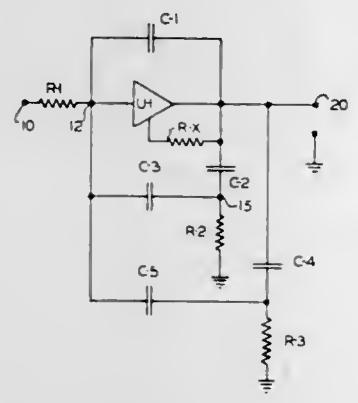


A technique and apparatus for signal limiting in a system where the permissible maximum signal amplitude characteristic is not constant with frequency. The signal is modified in an equalization network in accordance with the inverse of the output characteristic and by means of filters and separate automatic gain control circuits, different frequency ranges are maintained at levels corresponding to the output characteristic. Short duration peaks are clipped and the signal then restored, by a complementary equalization network, to its original spectral response. In an F.M. transmitting system, the first equalization network has a conventional preemphasis characteristic and the second provides complementary deemphasis. Upon application to the transmitter preemphasis network, the resultant signal levels are such that substantially 100% modulation is obtained and overmodulation avoided.

3,529,245
CAPACITOR SOAKAGE COMPENSATION

Charles H. Single, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan

Filed Mar. 27, 1967, Ser. No. 626,254
Int. Cl. G06g *7/18*
U.S. Cl. 328—127 **9 Claims**

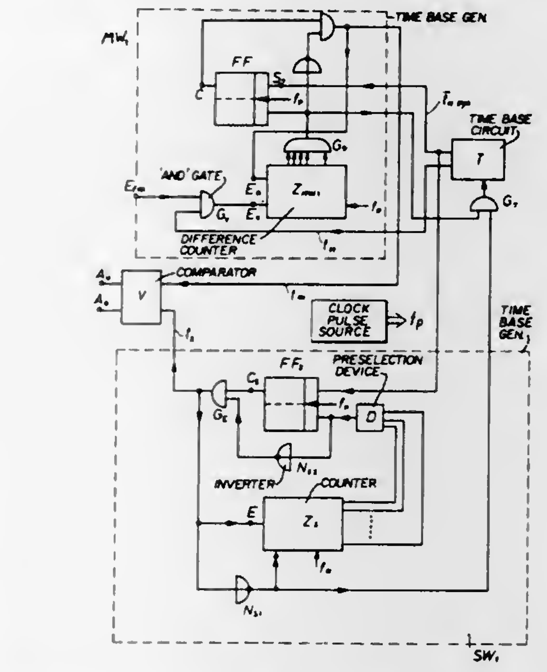


Provision of a negative feedback RC network around a Miller integrator, which incorporates an operational amplifier and a capacitor, to cancel out integration errors due to capacitor absorption.

3,529,246
FREQUENCY AND TIME-PROPORTIONAL SIGNAL CONTROL DEVICES EMPLOYING SEPARATE CONVERTERS FOR CONVERTING A PRESCRIBED VALUE AND THE MEASURED VALUE

Gerhard Kaps, Hamburg-Lokstedt, and Winfried Schott, Garstedt, Germany, assignors, by mesne assignments to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No: 544,015
Claims priority, application Germany, May 22, 1965, P 36,867
Int. Cl. H03b *3/02, 3/04*
U.S. Cl. 328—134 **4 Claims**

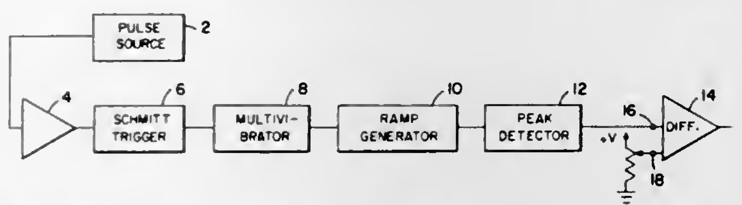


A device for producing a voltage in response to a frequency difference by converting a measured frequency to a voltage, a fixed frequency to a second voltage, and comparing both voltages.

3,529,247
PULSE REPETITION TO ANALOG VOLTAGE CONVERTER

George F. Nelson, Anoka, Minn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Sept. 20, 1967, Ser. No. 669,318
Int. Cl. H03k *9/06, 5/20*
U.S. Cl. 328—140 **3 Claims**



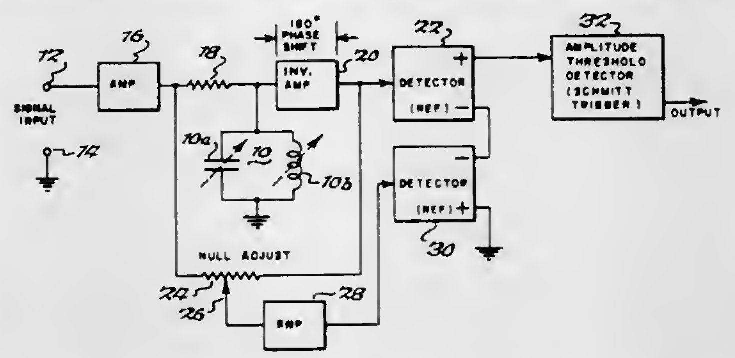
An electronic converter having a free-running ramp generator, a source of non-random pulses having a variable repetition rate, means connecting the pulse source to the generator whereby each pulse resets the generator, and means converting the output of the generator to an analog voltage which varies linearly with the repetition rate of the input pulses.

3,529,248
TONE SENSOR

Gilbert L. Boelke, West Seneca, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 23, 1968, Ser. No. 746,829
Int. Cl. H03k *9/06*
U.S. Cl. 328—140 **19 Claims**

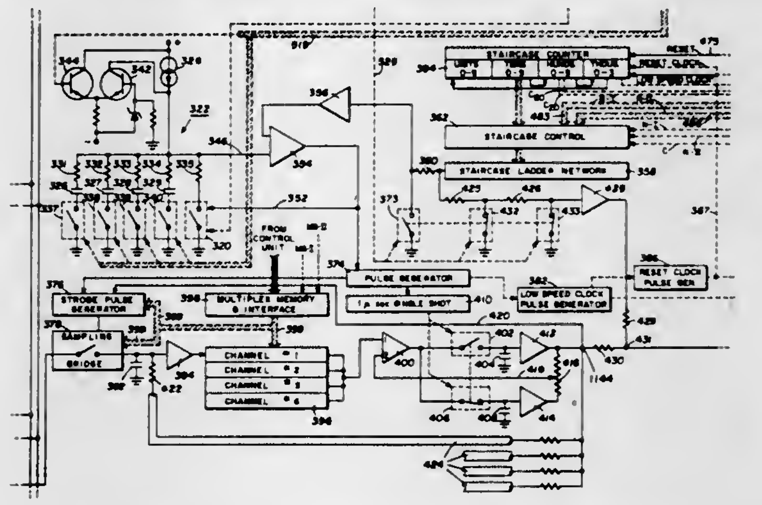
A tone sensing circuit wherein a received signal is applied through a series impedance device to a parallel resonant circuit tuned to select a signal of predetermined frequency and reject all other frequency signals. The output of the parallel resonant circuit is coupled through a phase inverting amplifier to a detector adapted to provide a positive output voltage. The received signal and the output of the inverting amplifier are also connected to respective terminals of a variable resistor having a tap adjusted to the voltage null position for the case where the received signal is a single tone at the predetermined parallel resonance frequency. The variable resistor tap is coupled through an amplifier to a detector adapted to provide a negative output voltage, and the outputs of the two detectors are combined to provide a composite output signal to a threshold detector.



3,529,249
SAMPLE AND STORE APPARATUS INCLUDING MEANS TO COMPENSATE FOR BASE LINE DRIFT

Leslie L. Jasper and Howell R. Phelps, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 7, 1965, Ser. No. 512,168
Int. Cl. G01r *27/28;* **H03k** *17/00*
U.S. Cl. 328—151 **11 Claims**

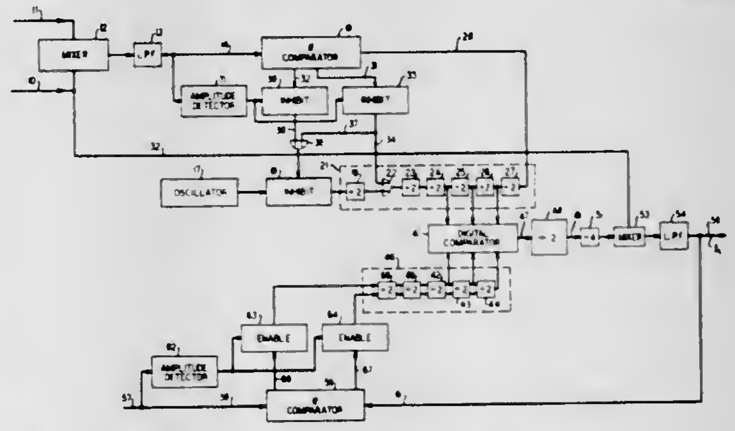


A system for automatically making substantially any static or dynamic test on a multilead integrated circuit. The system includes a test station having a plurality of D.C. bias supplies, a plurality of pulse generators for producing repetitive pulse waveforms, a socket for receiving the integrated circuit, switch means for selectively connecting any D.C. bias supply and/or any pulse generator to any lead or leads of the integrated circuit, and sensing means for selectively connecting any lead of the integrated circuit to either a static measuring unit or a dynamic measuring unit. The dynamic measuring unit makes either time or amplitude measurements on the signal at any lead of the integrated circuit and produces a pulse train and a count data signal which are collectively representative of the magnitude of the time or amplitude measurement. The static measuring unit makes either static voltage or current measurements on the signal at any selected lead of the integrated circuit and produces a pulse train signal the frequency of which is representative of the magnitude of the measurement. A data readout system counts the pulses either from the dynamic measuring unit during the count data signal, or the pulses from the static measuring unit during a predetermined reference time period to indicate the results of the measurement. A programmable control means automatically operates the total system to make substantially any selected amplitude, time, voltage or current measurement on the signal occurring at or between substantially any lead or leads of the integrated circuit.

3,529,250
DIGITAL PHASE SHIFTER

Cecil W. Farrow, Monmouth Hills, William J. Lawless, Middletown, and Joseph Maruscsak, Howell Township, Monmouth County, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Sept. 26, 1967, Ser. No. 670,715
Int. Cl. H03b *3/04*
U.S. Cl. 328—155 **5 Claims**

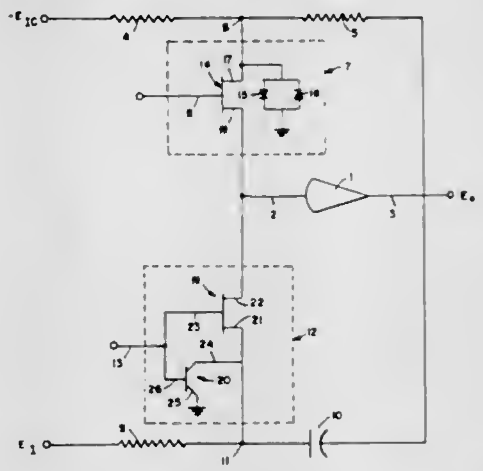


A carrier recovery system in which a digital comparator is employed to compare a number stored in an up-down counter to a number in a multistate counter which is counting down from an oscillator to provide a phase shifted output signal. The value stored in the up-down counter is set during an initial start-up sequence by comparing the locally generated carrier to a received carrier signal. If, during normal transmission, the received signal is lost, the oscillator continues to drive the multistate counter so that upon return of the received signal a properly phased locally generated carrier can be restored without resorting to a second start-up sequence.

3,529,251
HIGH SPEED SWITCHING CIRCUIT

John R. Edwards, 153 S. Park Blvd., Glen Ellyn, Ill. 60137

Filed Sept. 13, 1967, Ser. No. 667,494
Int. Cl. H03f *3/16, 1/02;* **H03k** *17/60*
U.S. Cl. 330—9 **2 Claims**

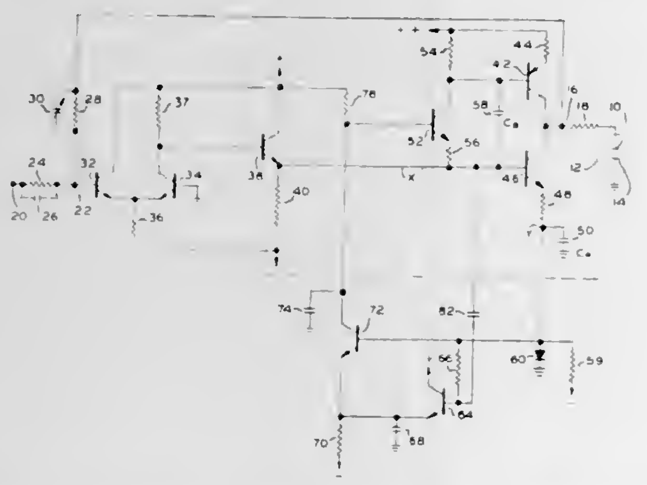


The invention disclosed herein consists of high speed switching circuitry for analog computer mode control.

The switching circuits, which utilize field effect transistors, provide a low resistance conduction path in the ON state and a very high impedance path in the OFF state. Leakage currents to ground and other points are minimized. Inasmuch as only a few reliable components are used, the overall circuit is simpler and more reliable than previous switching methods.

3,529,252
SELF-ADAPTIVE AMPLIFIER

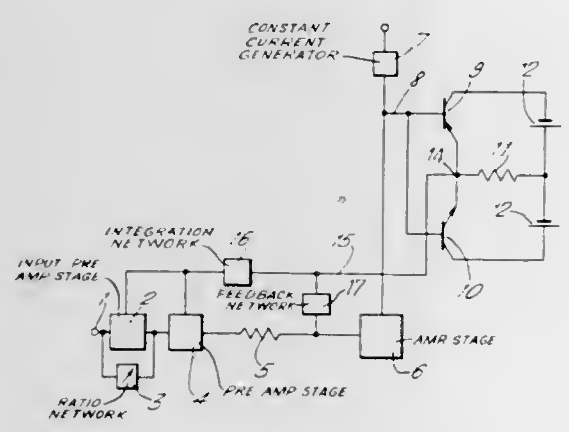
Gordon D. Long, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Feb. 28, 1968, Ser. No. 708,838
Int. Cl. H03f *3/18;* **H03g** *3/30*
U.S. Cl. 330—13 10 Claims



An amplifier for driving cathode ray tube deflection plates or the like is adapted for normally operating at a low power level, but is also responsive to increased power requirements. When the amplifier does not provide sufficient current for insuring linear operation, means detect the state of the amplifier and provide additional standing current therefor. In a preferred form, the requirement for an increased output is detected in a feedback circuit and alters the amplifier bias so that an increased standing current is delivered to the amplifier.

3,529,253
CLASS B PUSH-PULL ELECTRICAL AMPLIFIER

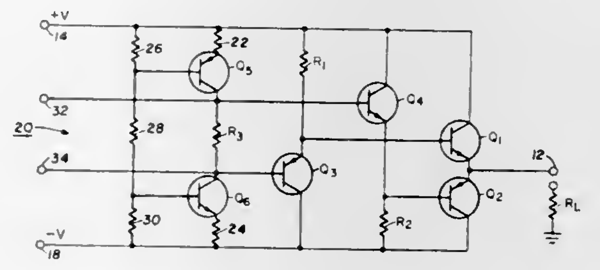
Gordon Malcolm Edge, Cambridge, England, assignor to Cambridge Consultants Limited, Cambridge, England, a British company
Filed June 7, 1968, Ser. No. 735,412
Claims priority, application Great Britain, June 10, 1967, 26,900/67
Int. Cl. H03f *3/04, 3/18, 3/26*
U.S. Cl. 330—13 6 Claims



An electrical amplifier which includes a transistor output stage arranged to be operated in class B and having two transistors connected to provide a push-pull output, and an amplifying stage feeding signals to the output stage, the amplifying stage being fed with current from a constant current generator source.

3,529,254
CLASS B AMPLIFIER CIRCUIT

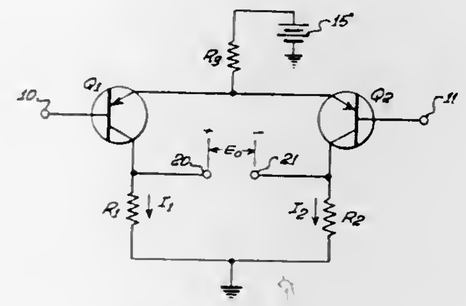
Lorimer K. Hill, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Mar. 22, 1966, Ser. No. 536,405
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 3 Claims



Disclosed are amplifier circuits having a pair of complementary output transistors with their emitter electrodes interconnected and D.C. connected to the output circuit of the amplifier; and having a pair of emitter-follower input transistors with their base electrodes interconnected and D.C. connected to the input circuit of the amplifier; and wherein the NPN emitter-follower input transistor drives the PNP output transistor while the PNP emitter-follower input transistor drives the NPN output transistor; and whereby the base-emitter voltages of the emitter-follower input transistors respectively bias the complementary output transistors at different levels when no signal is applied to the input circuit of the amplifier so as to respectively cause the complementary output transistors to conduct in their linear regions.

3,529,255
ELECTRONIC AMPLIFIER TECHNIQUES

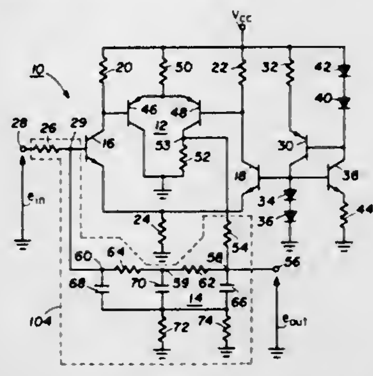
Robert H. Russell, Altadena, Calif., assignor, by mesne assignments, to Dynasciences Corporation, Blue Bell, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 504,009, Oct. 23, 1965. This application July 25, 1968, Ser. No. 751,673
Int. Cl. H03f *3/04, 3/26*
U.S. Cl. 330—15 4 Claims



The technique of minimizing quiescent power consumption of Class A push-pull amplifiers in unidirectional output signal applications by setting the quiescent current of the amplifying element the conduction of which is enhanced under normal signal conditions, to a value not in excess of about one-fifth the maximum load current.

3,529,256
INTEGRATED BAND-PASS FILTER

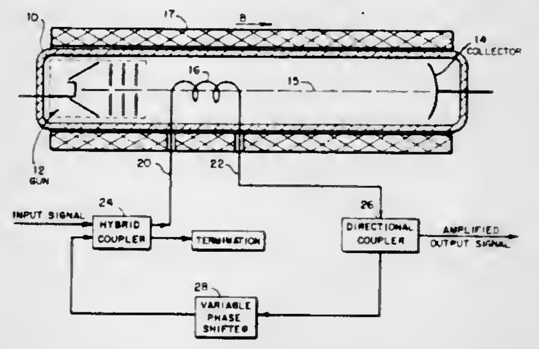
James S. Crabbe, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 561,986, June 30, 1966. This application Oct. 7, 1968, Ser. No. 802,302
Int. Cl. H03f *3/04*
U.S. Cl. 330—24 8 Claims



Disclosed is a band-pass filter which includes an integrated circuit amplifier formed in a common semiconductor substrate and a notch filter connected in a feed back relationship with the amplifier to form the band-pass filter.

3,529,257
LOW-NOISE TRAVELLING WAVE TUBE AMPLIFIER

Charles M. DeSantis, Neptune, and Bruno W. Zotter, Belmar, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 22, 1967, Ser. No. 685,208
Int. Cl. H03f *3/58*
U.S. Cl. 330—43 4 Claims

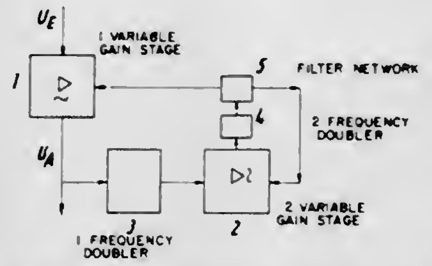


A low-noise microwave travelling wave tube amplifier in which the interaction length of the slow-wave structure is very short and the beam is initially decoupled from the slow-wave structure such that only enough gain is achieved to overcome the inherent losses of the amplifier and maintain the noise figure at a minimum. A positive feedback path is provided from the output of the amplifier back to the input of the amplifier through a phase shifter and hybrid circuit such that the gain of the amplifier is increased without increasing the noise figure.

3,529,258
VARIABLE GAIN AMPLIFIER

Hansrichard Schulz, Villingen, Black Forest, Germany, assignor to Saba Schwarzwalder, Apparate-Bau-Anstalt August Schwer Söhne G.m.b.H., Villingen, Black Forest, Germany
Filed Oct. 23, 1968, Ser. No. 769,869
Claims priority, application Germany, Aug. 12, 1968, 1,762,228
Int. Cl. H03g *3/20*
U.S. Cl. 330—85 6 Claims

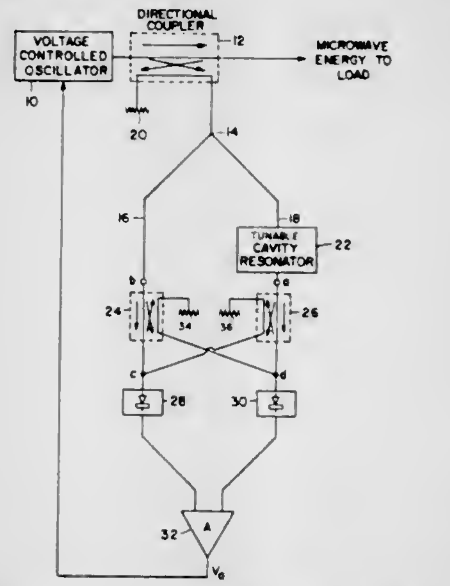
The feedback path of an AC amplifier is inductively coupled to the output of the amplifier. It comprises a first full wave rectifier for generating the second harmonic of signal frequency and an amplifier tuned to the second harmonic. It further comprises a second full wave rectifier for generating the fourth harmonic of the signal frequency inductively coupled to the amplifier in the feedback circuit. The output of the second full wave rectifier



is filtered and applied to the input stage of the amplifier for varying the gain of said amplifier. It is further applied to the input of the amplifier in the feedback path also for varying the gain of the amplifier.

3,529,259
DISCRIMINATOR SYSTEM UTILIZING A SINGLE MODE CAVITY RESONATOR

George T. Holmes III, and June Singletary, Jr., Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 21, 1968, Ser. No. 730,856
Int. Cl, H03b *3/04*
U.S. Cl. 331—9 5 Claims

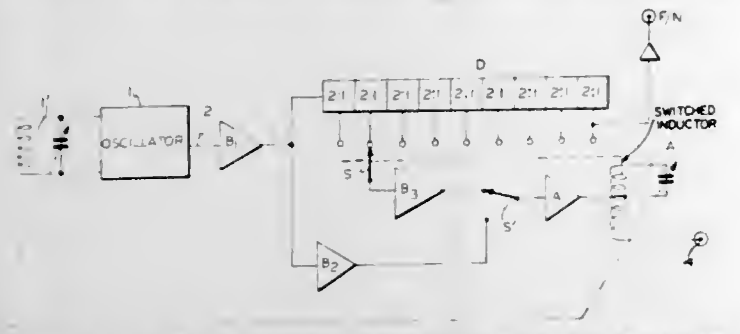


A discriminator circuit for VHF and UHF signal generating systems for stabilizing the frequency thereof. A single mode cavity resonator is employed as a frequency standard and may be tunable if desired. The use of a single mode resonator permits resonator tuning over a wide range of frequencies. The discriminator samples a portion of the energy generated by a voltage controlled oscillator and compares its frequency with the resonant frequency of the resonator. A difference therebetween produces a DC output signal from a differential amplifier which is fed back to the frequency control electrode of the oscillator to reduce the frequency difference.

3,529,260
OSCILLATOR WITH FREQUENCY DIVIDERS FOR PROVIDING TUNABLE SINUSOIDAL OUTPUTS

Atherton Noyes, Jr., Concord, Mass., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed May 31, 1968, Ser. No. 733,593
Int. Cl. H03b *19/00*
U.S. Cl. 331—74 10 Claims

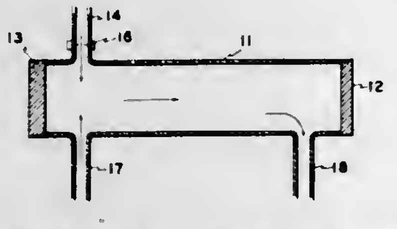
Signal generator in which a single high-stability oscillator with a continuously variable tuned circuit produces sine waves which are applied by a buffer amplifier to a frequency-divider chain, the square-wave output of any stage of the chain being selectively applied to a power amplifier with a tuned circuit ganged to that of the oscillator and with frequency-selective elements switched concurrently with the selection of the frequency-divider stages, thereby to generate sinusoidal oscillations of any desired frequency in any of successive frequency ranges.



3,529,261

LASER HAVING AN ACTIVE MEDIUM WHICH IS AN EXCITED HALOGEN WHOSE LOWER ENERGY STATE IS DEPLETED BY REACTING WITH AN ALKALI METAL

Walter Roth, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 10, 1964, Ser. No. 395,986
Int. Cl. H01s *3/09, 3/22*
U.S. Cl. 331—94.5 12 Claims

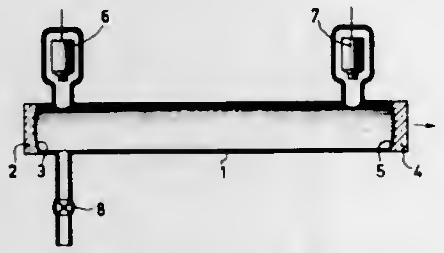


Method and apparatus for achieving population inversion in a Laser by depleting those particles in a particle ensemble in the ground state or other lower energy state configuration by reacting them with a reagent which forms a compound with the lower energy state particles at a faster net rate than it does with higher energy state particles. The population inversion may also be accomplished by reacting the upper and lower energy state configurations with a compound which has a disassociative reaction such that the net disassociative rate of the upper energy compound exceeds the net disassociative rate of the lower energy state compound.

3,529,262

INFRARED LASER WITH DISCHARGE GAS INCLUDING CARBON DIOXIDE, NITROGEN AND WATER VAPOR

Wilhelmus Jacobus Witteman, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,864
Claims priority, application Netherlands, July 28, 1965, 6509730
Int. Cl. H01s *3/22, 3/09, 3/02*
U.S. Cl. 331—94.5 6 Claims

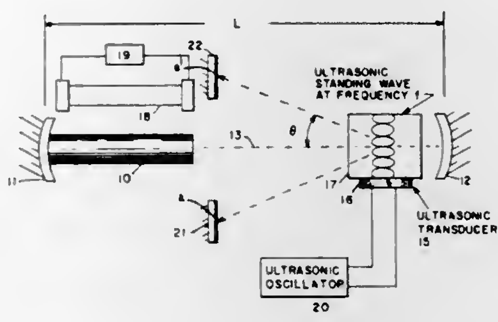


A gas discharge laser with an atmosphere of carbon dioxide, nitrogen and water vapor.

3,529,263

MEANS FOR EXTRACTING LIGHT FROM MODE-LOCKED LASERS

William W. Simmons, Palos Verdes Peninsula, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed June 16, 1967, Ser. No. 646,656
Int. Cl. H01s *3/10*
U.S. Cl. 331—94.5 4 Claims

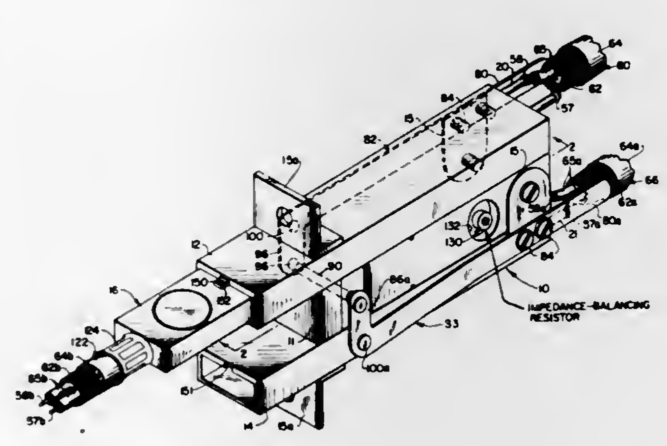


An ultrasonic transducer is interposed in the resonant cavity of a laser. Means are provided for exciting the ultrasonic transducer at a preselected frequency, thereby creating an ultrasonic standing wave which diffracts light energy from the laser cavity.

3,529,264

SHIELDED ELECTRICAL SWITCHING JACK WITH IMPEDANCE BALANCING NETWORK

Jesse F. Lancaster, Great Falls, Va., assignor to Cook Engineering Company, Alexandria, Va., a corporation
Filed Dec. 7, 1967, Ser. No. 692,625
Int. Cl. H01p *1/10;* **H02j** *9/04*
U.S. Cl. 333—7 19 Claims

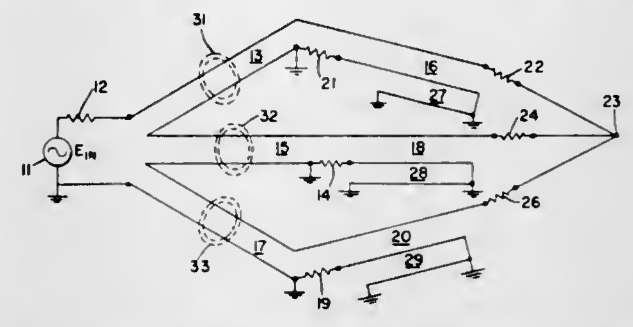


An electrical switching jack device for use in circuit patchfields and having input and output terminals electrically interconnected through a first internal contact assembly. The shields on coaxial type conductors which are connected to the terminals are adapted to be electrically interconnected through a second internal contact assembly to establish electrical continuity. A plug connected on the end of a further shielded conductor is operative upon insertion into one of a pair of female connector receptacles of the switching device to interrupt the normal through circuit between the input and output terminals by actuating the first contact assembly, to electrically connect either the input or output terminals to the plug-connected conductor depending upon which female receptacle it is inserted into, to interrupt the internal connection between the conductor shields by actuating the second contact assembly, and to electrically connect the patched-in conductor shield to the shield remaining in the active circuit.

3,529,265

RADIO FREQUENCY POWER DIVIDER

Allen F. Podell, Cambridge, Mass., assignor to Adams-Russell Co., Inc., Waltham, Mass., a corporation of Massachusetts
Filed Sept. 29, 1969, Ser. No. 861,980
Int. Cl. H01p *5/12*
U.S. Cl. 333—9 9 Claims

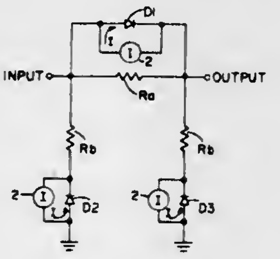


An N way radio frequency power divider employing a set of N quarter wave length sections of transmission lines having their input ends connected in series across an input port. A second set of like transmission lines is connected to the first at the opposite ends from the input port, the grounded conductor of each of the first set of transmission lines is connected through an output load impedance equal in value to the impedance of the input port to one conductor of each of the second set. This conductor in the second set is also grounded at its unconnected end and forms with the conducting wall of the box for the circuit a shorted quarter wave line to produce compensation and increase bandwidth. The non-grounded conductors of the second set are connected at the input end to the non-grounded conductors of the first set and at the output end through terminating impedances to a floating junction.

3,529,266

CONTINUOUSLY AND DYNAMICALLY VARIABLE PIN DIODE ATTENUATOR

Fred N. King, Rockville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Aug. 12, 1968, Ser. No. 752,061
Int. Cl. H01p *1/22;* **H03h** *7/24*
U.S. Cl. 333—81 8 Claims



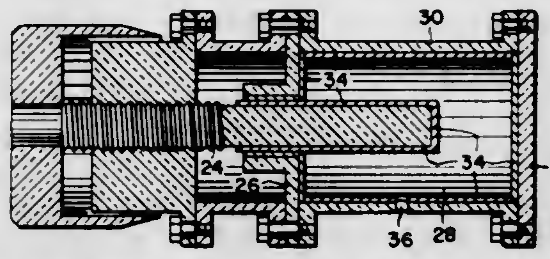
PIN diodes are connected in various series and parallel configurations with resistors to provide an attenuator for nanosecond pulses. Advantage is taken of the variable resistance characteristics of PIN diodes to provide an attenuator whose input and output impedances remain constant while the attenuation varies.

3,529,267

MICROWAVE CAVITY RESONATOR USING COATED FUSED SILICA OR GLASS CERAMIC

Leslie C. Gunderson, Gerhard K. Megla, and David M. Smith, Raleigh, N.C., assignors to Corning Glass Works, New York, N.Y., a corporation of New York
Filed Oct. 20, 1967, Ser. No. 676,772
Int. Cl. H01p *7/06*
U.S. Cl. 333—83 12 Claims

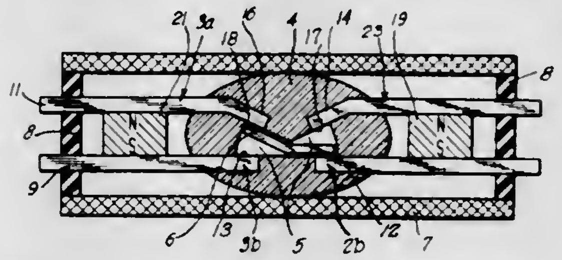
A cylindrical cavity resonator and waveguide constructed from a low expansion fused silica or glass ceramic material and having a high order of frequency and dimensional stability as a function of temperature and time. The high level of stability achieved eliminates the need for frequency compensation which characteristically degrades with age.



3,529,268

POSITION-INDEPENDENT MERCURY RELAY

Ulf Rauterberg, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 29, 1968, Ser. No. 779,896
Claims priority, application Germany, Dec. 4, 1967, 1,614,671
Int. Cl. H01h *29/04*
U.S. Cl. 335—56 14 Claims

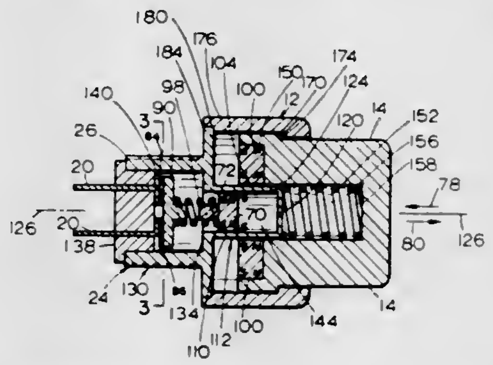


A position-independent mercury relay having two pairs of magnetically and electrically conductive contacts with one end portion of each contact forming a portion of an interior wall surface of a hermetically switching sealed space. The hermetically sealed space contains a floating armature surrounded by a mist of mercury droplets. At least one pair of the contacts may provide oppositely poled magnets establishing a magnetic flux within the space to normally maintain the floating armature in a rest position in bridging relationship with that pair of contacts. An energizing field is provided to selectively overcome the magnetic flux within the space and switch or move the armature into bridging relationship with the other pair of contacts. The armature is sized to sweep the entire available volume of the switching space to collect the mercury droplets between the contacts bridged and the armature for forming a fluid connection.

3,529,269

MAGNETIC SWITCH

William P. Gardiner, 4822 36th St.,
Columbus, Nebr. 68601
Filed Aug. 1, 1966, Ser. No. 569,375
Int. Cl. H01h *9/22*
U.S. Cl. 335—207 12 Claims

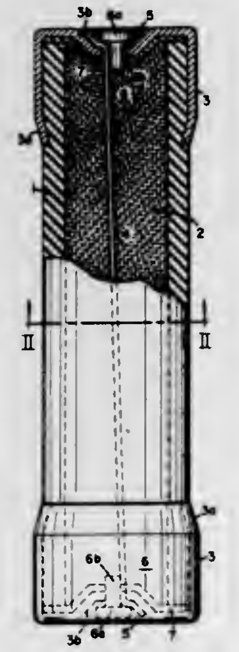


A panel mountable magnetic switch of the type having an inner magnet and contact area enclosed in a sealed housing with a magnet outside the housing controlling the magnet inside in which the housing has a threaded exterior at one end for insertion into a panel so that the leads are on one side of the panel and actuating means for the control of the outer magnet are on the outer side of the panel.

3,529,270

ELECTRIC HIGH INTERRUPTING CAPACITY FUSE FOR LOW CURRENT RATINGS

Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed May 13, 1968, Ser. No. 728,413
Int. Cl. H01h *85/06*
U.S. Cl. 337—232 **6 Claims**

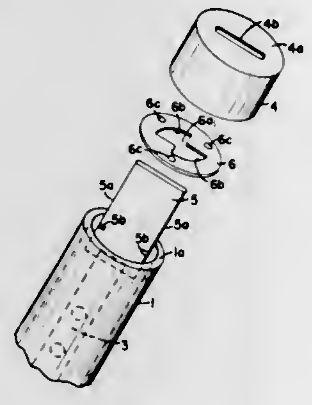


The casing of an electric fuse having a high interrupting capacity and a small current rating is filled with quartz sand and provided with a fusible element in the form of a cadmium wire having ends that are conductively connected by soft solder joints to the terminal caps closing the casing of the fuse. An additional heat sink is operatively related to each of said pair of caps.

3,529,271

ELECTRIC CARTRIDGE FUSES HAVING BLADE CONTACTS

Kenneth W. Swain, North Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.
Filed Aug. 6, 1968, Ser. No. 750,569
Int. Cl. H01h *85/16*
U.S. Cl. 337—236 **1 Claim**

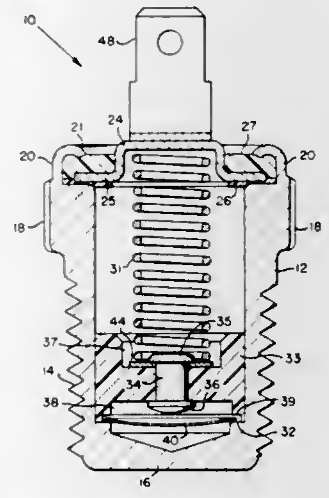


An electric cartridge fuse is provided with a pair of washers which interlock in bayonet-fastener-fashion with the blade contacts of the fuse, and firmly hold the latter in their proper positions. The aforementioned pair of washers is provided with centering means for properly positioning the same relative to the casing of the fuse during assembly operations thereof.

3,529,272

TEMPERATURE SWITCH

Robert A. Johnson and Peter M. Byam, Greece, N.Y., assignors to Fasco Industries, Inc., Rochester, N.Y., a corporation of New York
Filed May 21, 1968, Ser. No. 730,706
Int. Cl. H01h *37/04, 37/52*
U.S. Cl. 337—380 **4 Claims**

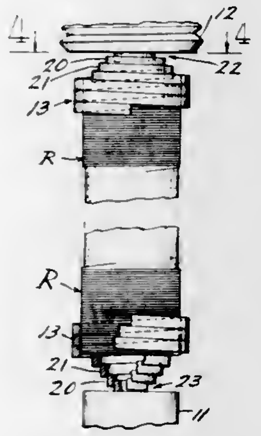


A hermetically sealed, metal housing contains an insulator plug, which is seated resiliently against an internal shoulder in the housing by a metal spring. A metal rivet is secured in the plug for engagement by a bimetallic, temperature-responsive disc, which is mounted between the shoulder and plug to flex axially in opposite directions with predetermined changes in ambient temperature. The housing is externally threaded for mounting in a grounded hole: and the cap has a contact for connecting the switch through a safety device to a power supply, so that the device will be energized whenever the disc flexes into contact with the rivet.

3,529,273

WOUND RESISTOR

Robert G. Morris, Toledo, Ohio, assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Original application July 31, 1967, Ser. No. 657,235. Divided and this application Aug. 5, 1969, Ser. No. 847,676
Int. Cl. H01c *3/02*
U.S. Cl. 338—302 **6 Claims**

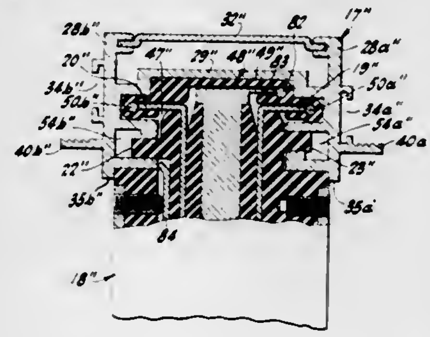


A spark plug including a suppressor resistor mounted within its ceramic insulator to reduce undesirable radio frequency emanations. The internally mounted resistor is held within the axial bore of the insulator between a pair of resilient coil springs having a minimum effective inductance when compressed to secure the resistor in place. The spring is wound from a resilient conductor of rectangular cross section with the major dimension of the wire cross section parallel to the axis of the spring. Successive turns in a major portion of the spring are of reduced diameter so that these adjacent turns, when the spring is compressed, engage one another in electrically conductive contact to effectively form a single turn or sleeve, thus reducing the effective inductance to a minimum, thereby reducing to a minimum any undesirable radio frequency emanations due to resonance of the inductance of the spring and capacitance inherent in the spark plug.

3,529,274

POWER DISTRIBUTION SYSTEM

Larry L. Routh, Castro Valley, Calif., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,655
Int. Cl. H01r *9/22*
U.S. Cl. 339—21 **26 Claims**



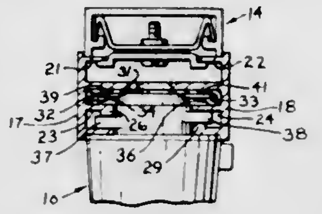
A power distribution system providing a substantially continuous convenience outlet enabling electrical plugs to be connected thereto at any selected location therealong. The system includes one or more elongated track components adapted to be partially or completely embedded within a ceiling or other building wall, and such components are provided with a conductor assembly extending therealong and equipped with spaced apart conductors with which the contacts of a male fitting or plug are electrically connectible. The track components are provided externally along opposite sides thereof with longitudinally extending channels offset with respect to each other so as to polarize the track components and thereby enforce a predetermined orientation on a succession of track components interconnected one with another. The substantially continuous convenience outlet is provided by a longitudinally extending receptacle having offset recesses therein defining polarization means enabling a complementary-polarized plug to be connected therewith in only one predetermined orientation. Certain of the track components define splice boxes provided with selectively attachable bottom closures, and other of the track components have removably mounted top covers therefor. The track components may be supported by means of hanger elements receivable within the external polarization channels extending along the side walls of each track component.

3,529,275

ELECTRIFIED TRACK SYSTEM FOR LIGHTING FIXTURES AND THE LIKE

Larry L. Routh, Castro Valley, Calif., assignor to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 4, 1968, Ser. No. 695,774
Int. Cl. H01r *13/60*
U.S. Cl. 339—22 **14 Claims**

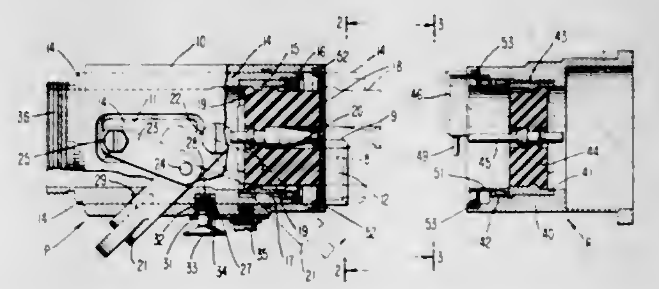
A system of electrified track for securance to a ceiling, and which is adapted to the mechanical and electrical connection of lighting fixtures to the track at any desired position thereof. The system includes one or more sections of track, connectors, and various couplers which may be assembled in a highly versatile manner to form unlimited design arrangements for meeting the requirements of a variety of types of lighting conditions. The system features a versatile hanger means for securing the tracks to a ceiling in an extremely expeditious manner.



3,529,276

ELECTRICAL CONNECTOR

Walter F. Hennessey, Jr., Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,807
Int. Cl. H01r *13/54*
U.S. Cl. 339—45 **10 Claims**

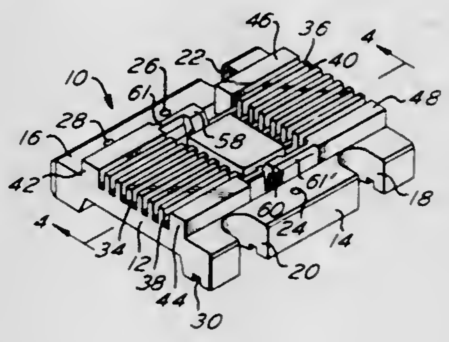


A heavy duty plug and socket type electrical connector having a lever-actuated, linearly-movable component for engaging and disengaging the mating contacts and for releasably locking the separable connector parts together.

3,529,277

INTEGRATED CIRCUIT CARRIER

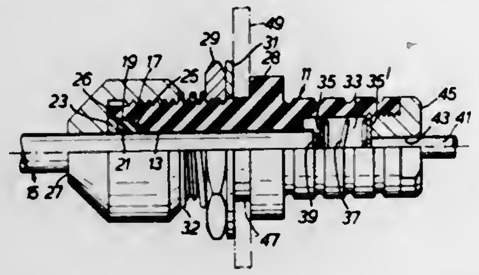
George W. Barnes, Upper Darby, Pa., assignor to Barnes Corporation, Lansdowne, Pa., a corporation of Pennsylvania
Filed May 1, 1968, Ser. No. 725,684
Int. Cl. H01r *13/60*
U.S. Cl. 339—119 **1 Claim**



A one-piece carrier is disclosed for a flat pack integrated circuit having integral side-biased latches or retention clips. The retention clips are positioned so as not to interfere with the entire exposure of both surfaces of the flat pack integrated circuit.

3,529,278
ELECTRICAL CONNECTIONS

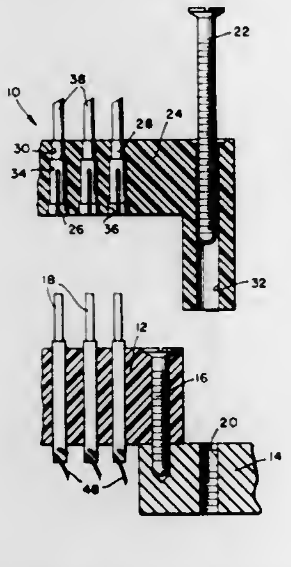
Graham P. Bishop, Lewisham, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed July 11, 1968, Ser. No. 744,203
Claims priority, application Great Britain, July 14, 1967, 32,405/67
Int. Cl. H01r *19/40*
U.S. Cl. 339—130 **3 Claims**



A cable connector for receiving and securing a cable, has a body of electrically insulative material having a cable receiving passage therethrough. One end portion of the passage tapers in the longitudinal direction of the cable. A sealing ring of elastomeric material and a washer through which a said cable can pass are located in the tapering portion of said passage. A lock nut is provided for urging the presser member against the sealing ring whereby, when a said cable is located in said passage the sealing ring is so compressed between the presser member and the wall of the tapering portion of the passage that that portion of the cable lying within the sealing ring is compressed radially inwardly.

3,529,279
SEPARABLE ADAPTER FOR TERMINAL BOARDS

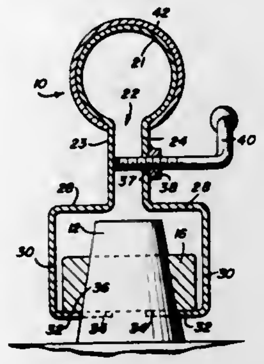
Vernon J. Logue and Maurice E. Westfall, Ridgecrest, and Stuart G. Fields, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 23, 1968, Ser. No. 707,594
Int. Cl. H01r *23/10, 11/06, 11/08*
U.S. Cl. 339—176 **1 Claim**



An adapter is provided with a plurality of female contacts on one side designed to fit onto a like plurality of conventional squared, elongated terminals. The opposite side of the adapter is provided with a like plurality of prongs in direct electrical communication with the corresponding female terminals. The prongs on the latter side are adapted for the soldering of wires of larger diameter than could be attached in any practical manner to the squared terminals.

3,529,280
BATTERY GROUNDING DEVICE

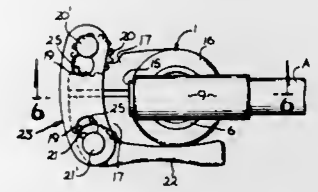
Clarence A. Best, Box 341, New Albany, Ind. 47150
Filed Aug. 5, 1968, Ser. No. 750,050
Int. Cl. H01r *11/26*
U.S. Cl. 339—226 **1 Claim**



A spring-loaded conductive clamp adapted for mounting on a battery post. Adjustment means are provided for selectively retaining the clamp jaws in a separated position while the clamp is positioned on a battery post. A terminal is provided on the body of the clamp to permit the connection of an electrical cable thereto.

3,529,281
BATTERY CABLE CONNECTOR

David M. Martinez, Sylmar, and Wilfred F. Martinez, Van Nuys, Calif., assignors of one-third to Estelle P. Murphy, Van Nuys, Calif.
Filed June 19, 1968, Ser. No. 738,190
Int. Cl. H01r *7/06*
U.S. Cl. 339—239 **8 Claims**

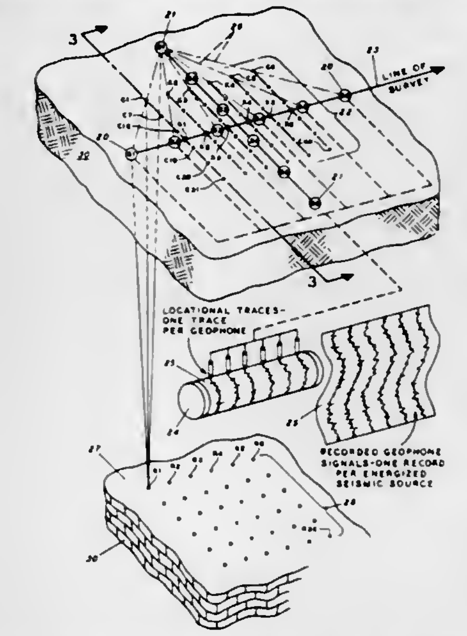


A quick detachable connector for electrical conductors suitable for such uses as connecting cables to storage battery terminals and comparable electrical connections and, in some embodiments, employing an operating means of the general type disclosed in a hereinafter identified copending application of one of the present applicants, the invention being directed to increased resistance to corrosion, by increased range of constriction incident to attachment to a terminal, by unlimited capacity for attachment in a desired position circularly of the axial line of the terminal post to which it is to be connected, by improved solderless means for attaching the connector to the conductor end and in some embodiments, by improved design eliminating the in situ molding of a metal contact component within a nonconductive body component.

3,529,282
METHOD FOR DETERMINING IN-LINE AND CROSS DIP EMPLOYING CROSS STEERING OF SEISMIC DATA

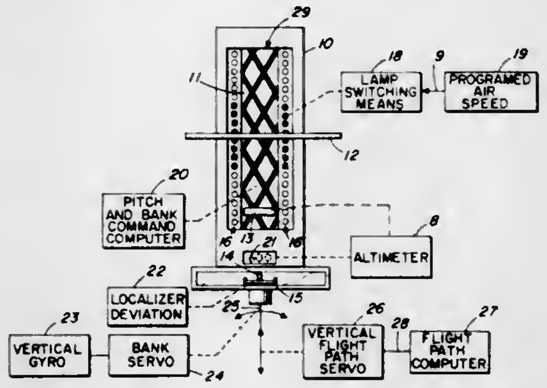
Robert J. S. Brown, 916 W. Fern Drive, Fullerton, Calif. 92633; Ian R. Mariarky, 674 Picacho Drive, La Habra, Calif. 90631; and Francis G. Blake, 17762 Calgary Ave., Yorba Linda, Calif. 92686
Filed Jan. 29, 1968, Ser. No. 701,145
Int. Cl. G01v *1/28, 1/20*
U.S. Cl. 340—15.5 **6 Claims**

A method for collecting and processing seismic data to determine the attitude of strata below the surface of the earth. An array of seismic sources and detectors is arranged with respect to a survey line at the surface of the earth such that center points between all possible source and detector pairs form a uniform grid of center points that can be associated with a like grid of reflection points on the strata below the surface. Multitrace records of seismic traces are produced representing energy reflected from said strata after initiation of each seismic source individually. These traces are rearranged and then processed by a technique known as beam steering to produce traces of directional seismic data in planes perpendicular to the line of survey. One component of the attitude of subsurface strata can be determined by comparing the directional traces within any one plane. Another component of attitude can be determined by comparing directional traces from adjacent or nearby planes. Selected directional traces may be displayed to produce a representation of varying directional cross-section planes through the line of survey and the subsurface formations.


LINE OF SURVEY
LOCATIONAL TRACES-ONE TRACE PER GEOPHONE
RECORDED GEOPHONE SIGNALS-ONE RECORD PER ENERGIZED SEISMIC SOURCE

3,529,283
AIRCRAFT FLIGHT DIRECTOR INSTRUMENT

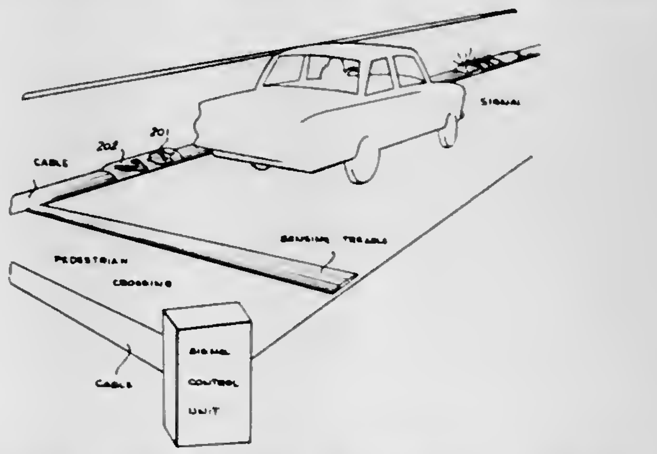
Kenneth C. Emerson and Kenneth G. Martin, Cedar Rapids, Iowa, and Siegfried Knemeyer, Yellow Springs, Ohio, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Nov. 14, 1967, Ser. No. 682,834
Int. Cl. G01c *23/00*
U.S. Cl. 340—27 **20 Claims**



A landing aid device for mounting ahead of the aircraft windscreen in the line of sight of the pilot which may be used for visual flight rule, landing approaches or instrument flight rule landing approaches, combining the requirements and advantages of both types of instruments. The instrument basically combines a dynamic steering indication readily observable and instinctively interpretable without direct observation by the observer with an observable speed control indication and common reference index which doubles as a sighting index with respect to a ground aimpoint.

3,529,284
TRAFFIC CONTROL SYSTEM AND SIGNAL EQUIPMENT FOR USE THEREIN

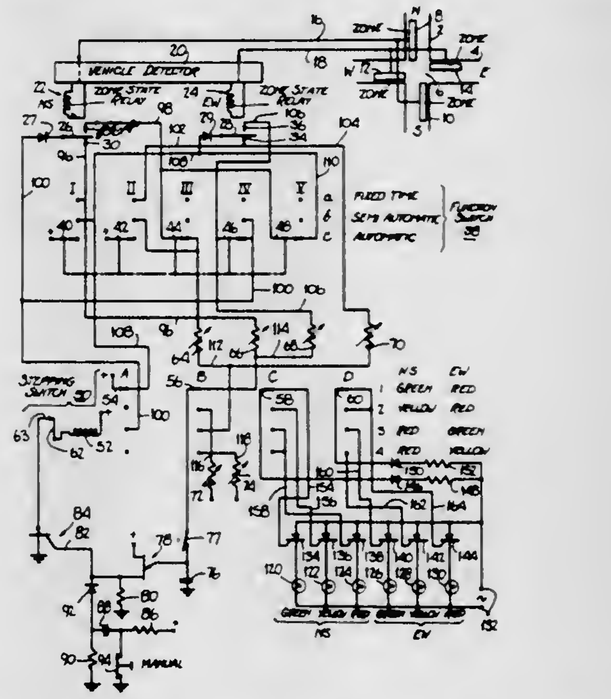
Charles Auguste Villemain, Versailles, France, assignor to Societe d'Etudes Techniques et d'Entreprises Generales Sodetég, Le Plessis-Robinson, France, a corporation of France
Filed June 22, 1967, Ser. No. 647,993
Claims priority, application France, June 24, 1966, 66,894
Int. Cl. G08g *1/08, 1/095*
U.S. Cl. 340—35 **15 Claims**



A sequential series of traffic control lights are mounted on the roadway to be visible from a single lane and by a single vehicle only, and sequentially energized with green, preferably in intermittent flashes, to form a progressive wave of blinking lights for control of individual vehicles traveling in a group at a speed determined by the progressive green blinks.

3,529,285
TRAFFIC CONTROL SYSTEM

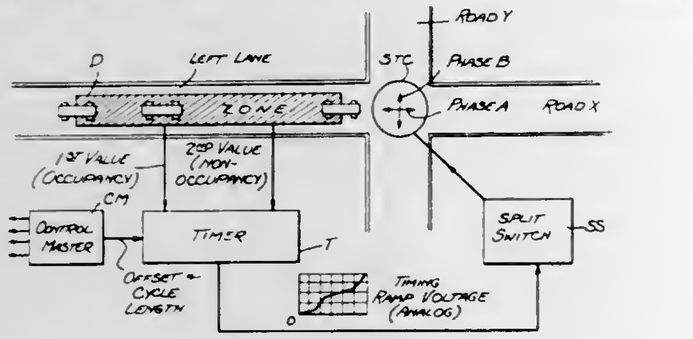
Joseph S. Wapner, Levittown, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 359,831, Apr. 15, 1964. This application May 11, 1967, Ser. No. 637,783
Int. Cl. G08g *1/08*
U.S. Cl. 340—37 **7 Claims**



A system adapted to regulate the flow of traffic at an intersection of two roads, and including a traffic controller which in one phase of operation gives the right of way only on traffic in one of the roads, and in another phase of operation gives the right of way only to traffic in the other road. The operation of the controller is governed by a timer which produces a timing interval which depends on traffic conditions, the traffic controller being caused to switch phase at the end of this interval.

3,529,286
CAPACITY DEMAND TRAFFIC CONTROL SYSTEM

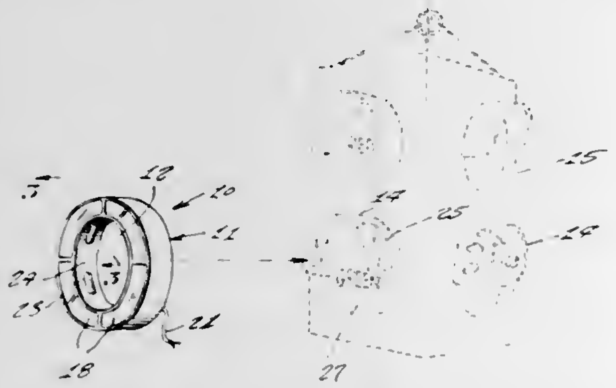
Joseph S. Wapner, Levittown, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 637,783, May 11, 1967. This application Apr. 23, 1968, Ser. No. 723,495
Int. Cl. G08g *1/07*
U.S. Cl. 340—37 **9 Claims**



A traffic control system in which local controllers are stationed at various intersections, the operation of these controllers being coordinated by a control master. Each local controller includes means producing a time cycle of traffic indications which sequentially in one phase accords the right-of-way along one traffic direction, and then in another phase, which is initiated at a preset split point, accords the right-of-way along the cross traffic direction. The time cycles of the controllers are initiated by the control master, which also determines the cycle length and the offset therebetween. At critical intersections, apparatus is provided to divide each phase into a guaranteed period and a variable extension period. The duration of the extension period is determined by the actual capacity demand during the phase according the right-of-way, which capacity demand is the time required by prevailing traffic to clear the intersection under efficient flow conditions. A split is effected at the conclusion of the extension period, and the difference in time between this point and the preset split point is added as a bonus interval to the subsequent phase.

3,529,287
TRAFFIC CIRCLE AMBER LIGHT

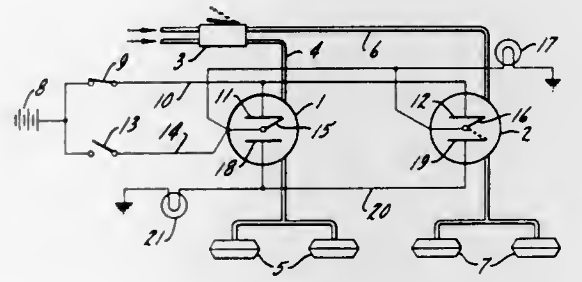
Albert Frank Southerland, 2096 U.S. 19 S. Lot 345, Clearwater, Fla. 33516
Filed Oct. 27, 1967, Ser. No. 678,639
Int. Cl. G08g *1/096*
U.S. Cl. 340—43 **5 Claims**



An improved traffic signal attachment having self-ontained means to indicate to drivers and pedestrians the amount of time remaining before a green light is changed to red, thus informing the person whether there is sufficient time for him to cross the intersection safely.

3,529,288
BRAKE SYSTEM SAFETY INDICATOR

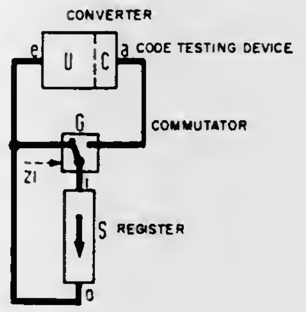
Harold L. Dobrikin, Highland Park, Ill., assignor to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois
Filed Jan. 10, 1967, Ser. No. 608,389
Int. Cl. B60g *1/00, 1/44*
U.S. Cl. 340—60 **2 Claims**



An electrical assembly including interrelated normal and warning circuits and independent switches, each switch independently responsive to pressure in an associated part of a vehicle air brake system to complete a normal electrical circuit and each responsive to loss of pressure in its associated part of said system to complete a warning circuit. The vehicle stop light, ignition and starter switches are included in the assembly.

3,529,289
PULSE CODE CONVERTER APPARATUS

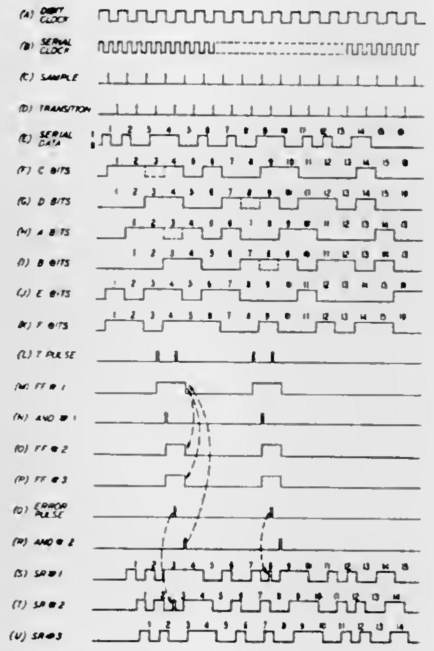
Otto Kneisel, Herbststrasse 28, Gauting, Germany; Edmund Ptacnik, Ahornweg 20, Socking, Germany; and Karl-Anton Lutz, Strahuberstrasse 12, Munich-Solln, Germany
Filed Nov. 16, 1965, Ser. No. 508,126
Claims priority, application Germany, Nov. 17, 1964, S 94,210
Int. Cl. H04l *3/02, 1/10*
U.S. Cl. 340—146.1 **6 Claims**



System for on command conversion and re-storing of multi-element information stored in pulse form in a plurality of circulation stores, for instance for counting of time-spaced signal pulses. The store outlets are directly connected to the inlets of the converter, but the converter outlets are connected to the inlets of the stores only upon receipt of a command pulse. At all other times the store inlets are connected to the corresponding outlets thereof for recirculation of the stored pulses.

3,529,290
NONREDUNDANT ERROR DETECTION AND CORRECTION SYSTEM

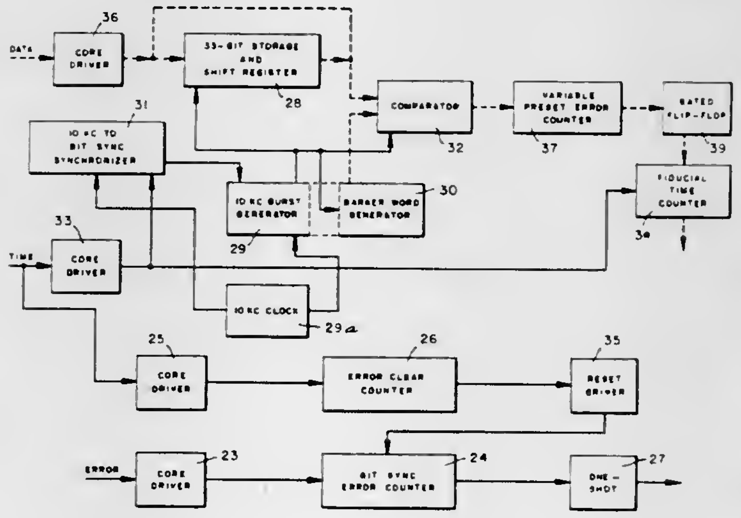
Henry C. Schroeder, East Brunswick, and John R. Sheehan, Red Bank, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed May 10, 1968, Ser. No. 728,156
Int. Cl. G08c *25/00;* **H04l** *1/10*
U.S. Cl. 340—146.1 **9 Claims**



A nonredundant error detection and correction technique for differentially encoded phase-modulation data transmission systems in which errors are detected by comparing phases determined from successive pairs of adjacent signals with phases determined from corresponding alternate pairs of nonadjacent signals. Failure of such comparison to be consistent determines the presence of error. Logical determination of the adjacent phase difference that validates the comparison corrects the error. All phase differences are digitally encoded to facilitate the implementation of the technique.

3,529,291
SYNCHRONIZED SEQUENCE DETECTOR

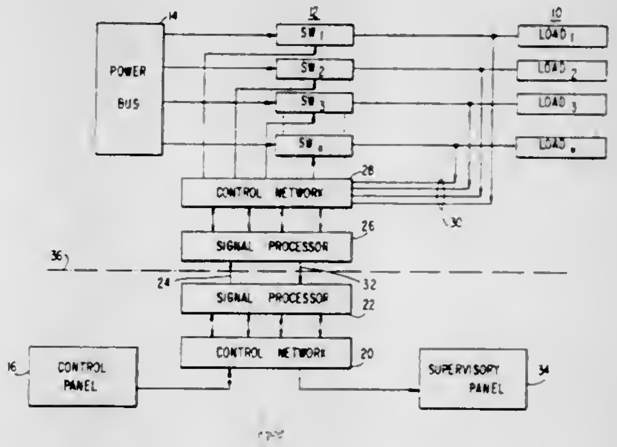
Claude W. Brown, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 4, 1967, Ser. No. 687,813
Int. Cl. G06f *7/02*
U.S. Cl. 340—146.2 **2 Claims**



A synchronized sequence generator uses a coded signal generator and detector network with a pulse storage and shift register to receive and temporarily store coded communication signals. A pulse pattern generator comprising a series of core-transistor logic elements and having an output consisting of a 33 bit pattern of ONE and Zero pulses is used to generate a comparison signal. The pattern, known as the Barker Word consists of an 11-bit phrase, the phrase repeated and the phrase complement. Bit Snyc Clock pulses related to the received signal are synchronized with pulses from a pulse burst generator which latter pulses are related to the comparison signal so that the received signal may be compared BIT by BIT with the comparison signal.

3,529,292
REMOTELY CONTROLLED LOAD CONTROLLING AND PROTECTION SYSTEM WITH SUPERVISION

Daniel L. Neill, Jackson, and Gordon A. Roberts and Thomas W. Butler, Ann Arbor, Mich., assignors to Howard Aiken Industries, Inc., Carlisle, Pa., a corporation of Delaware
Filed Oct. 31, 1966, Ser. No. 590,688
Int. Cl. G08b *26/00*
U.S. Cl. 340—163 **3 Claims**

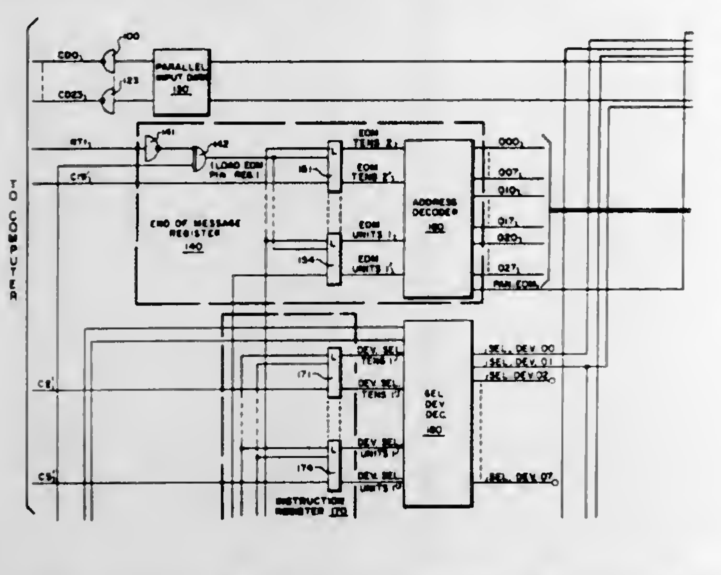


An improved supervisory and control system for controlling loads and displaying an indication of their condition on both a control panel and a supervisory panel. A ten digit tone selector selects a load for control or interrogation and a numerical identification of the selected load is displayed at the control panel on a digital display. Before a selected load is controlled or interrogated as to its condition, an erase button may be operated to de-select an improperly selected load. If a fault exists on a selected load, a red alarm lamp is illuminated behind the digital display which is displaying the load's numerical identification. The condition of each load is also continuously and simultaneously indicated on a separate supervisory panel.

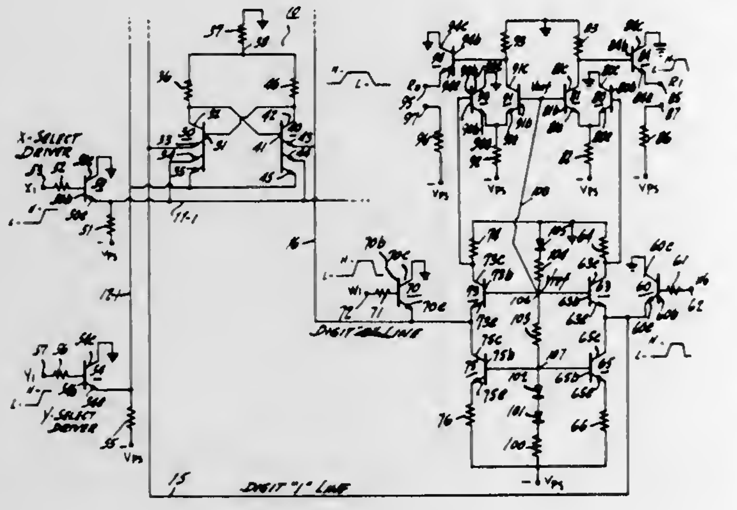
3,529,293
SUPERVISORY AND CONTROL SYSTEM

Joseph F. Sullivan, Lombard, Ronald E. Schauer, Chicago, Richard P. Sanders, Lisle, Bruno A. Mattedi, Villa Park, and Neil B. Johnson, St. Charles, Ill., assignors, by mesne assignments, to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Apr. 10, 1967, Ser. No. 629,708
Int. Cl. H04q *5/00*
U.S. Cl. 340—163 **25 Claims**

A system employing a digital computer, to periodically scan a number of remotely located devices in accordance with a predetermined scan program, and report the status of same to a central location. Dispatcher controlled apparatus at the central location interrupts the predetermined scan program to cause the computer to control selected remotely located devices in accordance with a control program.



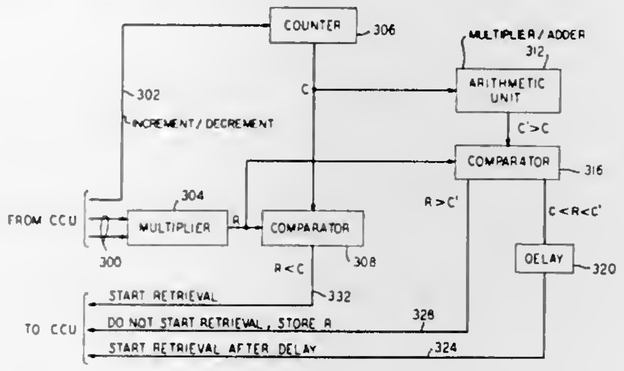
3,529,294
INFORMATION SWITCHING AND STORAGE CIRCUITRY
Borys Zuk, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 2, 1967, Ser. No. 672,089
Int. Cl. H04q *9/00;* **H03k** *3/26*
U.S. Cl. 340—166 **6 Claims**



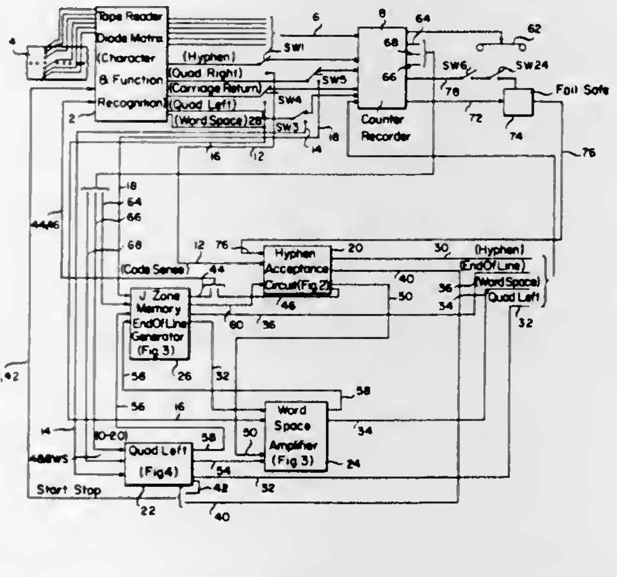
Information storage arrangements including a nonsaturating binary memory cell and emitter-coupled transistor read and write (R-W) circuits are described. The nonsaturating binary cell includes a common resistor for the collector circuits of a cross-coupled transistor pair. The R-W circuitry includes a pair of circuits each of which forms a current mode amplifier with one of the cross-coupled transistor pair.

3,529,295
DATA RETRIEVAL SYSTEM EMPLOYING AN AUTOMATIC START OF RETRIEVAL FEATURE
Robert L. Brass, Colts Neck, and Hamilton I. Rothrock, Jr., Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed May 17, 1967, Ser. No. 639,224
Int. Cl. H04j *3/14*
U.S. Cl. 340—172.5 **14 Claims**

A data retrieval system is proposed for use by telephone information operators in retrieving telephone directory listings. The operators located at a plurality of request stations cause the generation of various characters which specify the directory listings which the operator desires to retrieve. Each group of characters generated by a particular operator is transmitted to a common time-shared information retrieval center (IRC) where they are processed to determine if a sufficient number of characters has been generated to warrant accessing a main storage file where the directory listings are stored. If it is determined that a sufficient number of characters has been generated, then retrieval of the listings is automatically initiated, otherwise, the IRC waits for the receipt of more characters. The decision as to whether or not a sufficient number of characters has been received is made by associating each received character or combination of characters from a request station with corresponding predetermined probability measures, combining these measures in an arithmetic fashion, and comparing the resultant with a threshold measure which may be varied according to the number of requests being initiated. If, upon comparison, a certain arithmetic relationship is detected, then retrieval of the listings is initiated. Otherwise, the arithmetic resultant is stored until the next character is received at which time the resultant is arithmetically combined with the probability measure associated with the new character and the process is repeated.

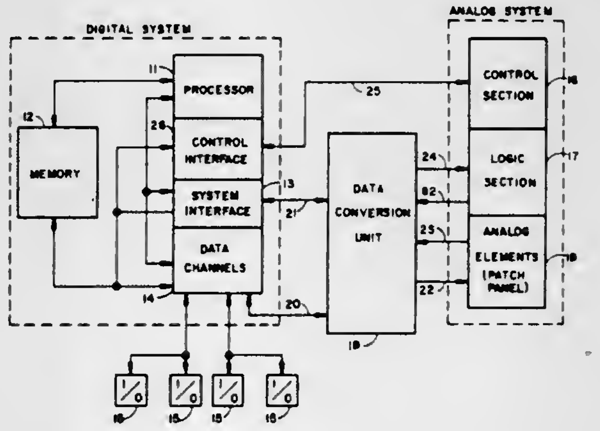


3,529,296
HYPHEN-BASED LINE COMPOSING APPARATUS AND METHOD
Allan Friedman, Highland Park, and James V. Spano, Evanston, Ill., assignors to Filmotype Corporation, Skokie, Ill., a corporation of Illinois
Filed June 8, 1967, Ser. No. 644,513
Int. Cl. G06c *11/10*
U.S. Cl. 340—172.5 **12 Claims**



A hyphen-based system and method for adding end-of-line signals to a series of first character and word space signals to divide the same into lines of substantially equal length. The first signals are obtained from a first register into which they have been entered (1) without any regard to line length, character width, font, type size or the like, (2) with single hyphens inserted between the syllables of each multi-syllable word, and (3) with double hyphens inserted when a single hyphen is actually to appear in the text. Hyphen acceptance circuit means accept only one of the double hyphens when outside the justification zone, and operate an end-of-line signal generator when either a single hyphen or a double hyphen is received when in the justification zone.

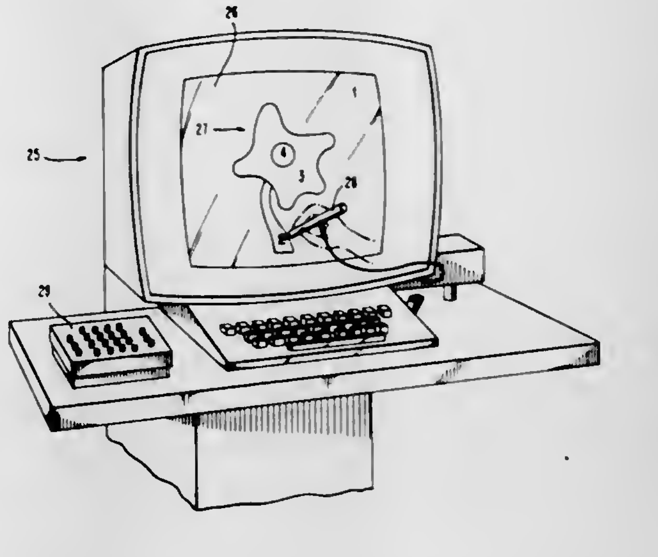
3,529,297
HYBRID INTERFACE HAVING REPETITIOUS CHANNEL ADDRESSING
Jay Paul Landauer, Trenton, and Walter C. Tetschner, Lincroft, N.J., assignors to Electronic Associates, Inc., Long Branch, N.J., a corporation of New Jersey
Filed Dec. 6, 1967, Ser. No. 688,472
Int. Cl. G06j *1/00;* **H03k** *13/254;* **H04j** *3/00*
U.S. Cl. 340—172.5 **2 Claims**



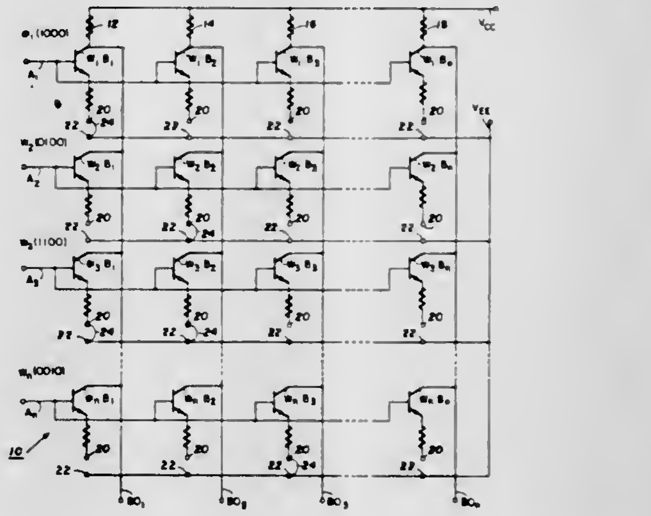
A hybrid-digital/analog computing system is provided with an interface unit adapted for the transfer of large amounts of data to or from a finite number of analog channels on the execution of but a single data transfer instruction which specifies the first analog channel to be accessed or sampled and the last analog channel to be accessed or sampled in the sequential order with the interface unit including means to increment the address of the first channel upon the transfer of a data segment to provide the address of the second of a sequence of channels and so on, until the updated channel address compares with that of the last channel specified whereupon the interface unit again accesses the first channel with the cycle being repeated until all of the data specified by the instruction has been transferred. The time at which each data value is transferred may be controlled by a signal from the programmed logic section of the analog system.

3,529,298
GRAPHICAL DESIGN OF TEXTILES
Janice Richmond Lourie, New York, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 23, 1967, Ser. No. 662,621
Int. Cl. D03d *49/00;* **G06d** *7/00*
U.S. Cl. 340—172.5 **36 Claims**

The disclosed textile designing method, called "textile graphics" for convenience, enables a human designer-operator to control an electronic data processing system equipped with a graphical display unit for causing desired weave patterns (each having a distinctive arrangement of warp and weft interlacings) to be manifested in selected pattern areas of arbitrary configurations which are displayed on an electronic viewing screen, and it furthermore enables the weave pattern displayed in any selected pattern area or portion thereof to be altered or replaced at the option of the operator, all of these design choices being manifested on the viewing screen immediately in response to the operator's selections as the same are communicated to the system through light pen, pushbuttons or other appropriate instrumentalities.



3,529,299
PROGRAMMABLE HIGH-SPEED READ-ONLY MEMORY DEVICES
David Hsiong Chung and Thomas W. Doss, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,493
Int. Cl. G11c *5/02, 11/40, 17/00*
U.S. Cl. 340—173 **8 Claims**



High-speed read-only memory devices of the type that are programmable for permanently storing a plurality of words with each word having an equal number of corresponding bit positions for selectively storing logic "1" and "0" values wherein a plurality of transistors are respectively located at the bit positions of each word and are interconnected so that when an input signal is applied to one of the word address inputs, the bit outputs that are connected to selected ones of the transistors will have a logic "1" value thereon, while the bit outputs of the remaining transistors will have a logic "0" value thereon, thereby electrically representing one of the permanently stored words.

3,529,300

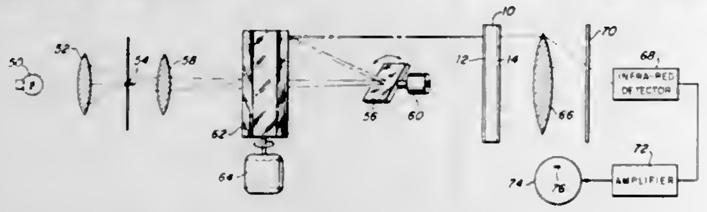
METHOD AND APPARATUS FOR RETRIEVING INFORMATION STORED BY PERSISTENT INTERNAL POLARIZATION USING A PURE OPTICAL READ OUT TECHNIQUE

Gene Warner McDaniel, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Mar. 12, 1968, Ser. No. 712,421

Int. Cl. G11b *7/00, 11/08;* **G11c** *13/04*

U.S. Cl. 340—173 20 Claims



Means are disclosed for irradiating a photoelectret, capable of having stored in it by persistent internal polarization information in the form of an image, to release free carriers trapped by persistent internal polarization in the photoelectret, for irradiating the photoelectret with infrared radiation susceptible of absorption by the free carriers, and for detecting infra-red radiation which has penetrated the photoelectret without being absorbed by the free carriers and providing a representation of the distribution of free carriers, thus the persistent internal polarization pattern which defines the image stored in the photoelectret.

3,529,301

MAGNETIC DISC MEMORY HOUSING DEVICE

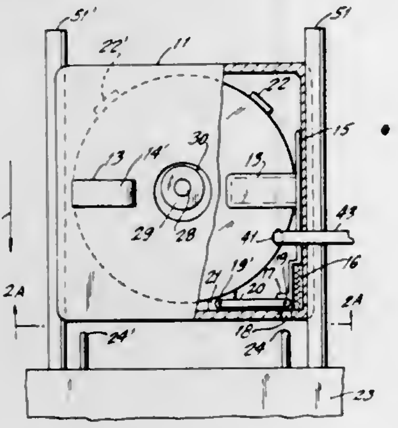
Katsuya Hiruta, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan

Filed May 31, 1968, Ser. No. 733,517

Claims priority, application Japan, May 31, 1967, 42/45,959, 42/45,960, 42/45,961, 42/45,962 (all utility models)

Int. Cl. G11b *5/82, 17/00, 23/04*

U.S. Cl. 340—174.1 7 Claims



A memory device comprised of a magnetic disc memory encased within a housing. The housing, which substantially permanently encases the magnetic disc, is provided with apertures arranged in radial fashion, relative to the disc, along the housing for enabling access to the disc by magnetic record and/or read-out heads. A central opening in the housing, located relative to the disc spindle, provides access to the disc spindle by disc driving means. Shutters, movably mounted within the housing, are normally biased to seal the radially aligned openings when the memory assembly is not in use. The housing is provided with openings for receiving projecting pins extending from information storage equipment which enter into the housing and engage slide members for the purpose of opening the shutters when the housing is inserted along guide rails provided within the information storage equipment. Also mounted in the housing is a braking device normally making abutting engagement with the edge of the disc to restrain the disc from movement during the times in which the assembly is not in place within the magnetic disc equipment. Insertion of the aforementioned projecting pins, in addition to opening the normally closed shutters, also simultaneously releases the braking member from braking engagement with the disc so as not to hamper rotation thereof.

3,529,302

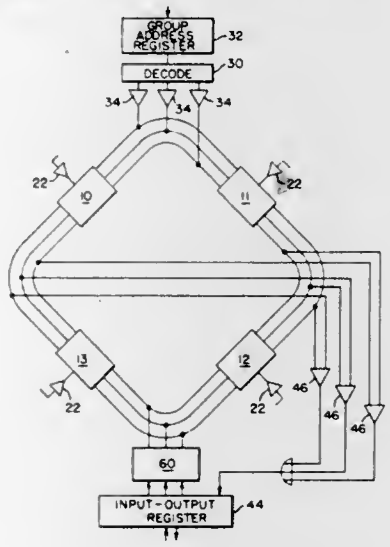
THIN FILM MAGNETIC MEMORY SWITCHING ARRANGEMENT

William F. Bartlett, Rochester, and Thaddeus F. Bryzinski and Frank Niertit, West Webster, N.Y., assignors to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed Oct. 16, 1968, Ser. No. 767,939

Int. Cl. G11c *5/02, 11/14*

U.S. Cl. 340—174 3 Claims



A magnetic memory of large capacity and high density storage configuration, with a switching arrangement for inserting data into and retrieving data from it. Thin films of anisotropic magnetic material electroplated on wires constitute the storage media. The wires are closely spaced in planar arrays, each array being encircled by conductive straps extending normally to the wires. Electric currents in the straps disturb the remanent flux in the magnetic films to produce electrical signals in the wires indicating the data stored in the magnetic films. The wires are connected in bridge circuits, each bridge including one wire from each of four different arrays.

3,529,303

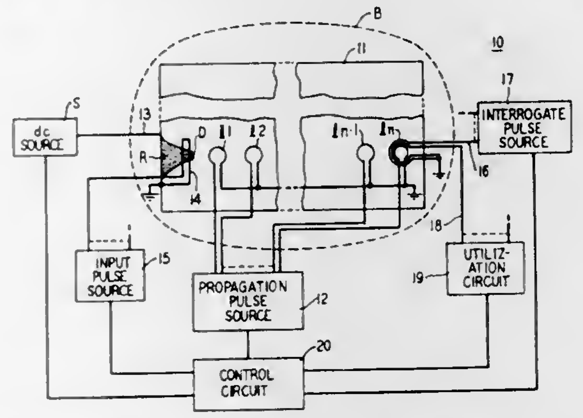
DOMAIN PROPAGATION ARRANGEMENT

Andrew H. Bobeck, Chatham, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Nov. 12, 1968, Ser. No. 774,766

Int. Cl. G11c *11/14, 19/00*

U.S. Cl. 340—174 6 Claims



An external means for supplying a bias field of a polarity to contract single wall domains employed to insure the stability of single wall domains in some orthoferrite sheets has been found to be unnecessary if the surface layers of the sheet are prepared so that those surfaces are permanently magnetized normal to the sheet and exchange-coupled to the body of the sheet.

3,529,304

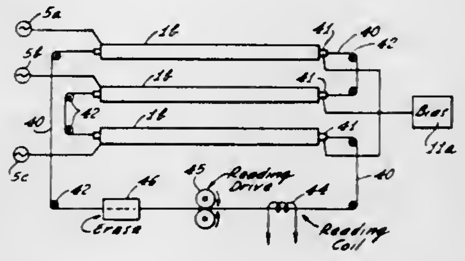
MICROSECOND SIGNAL RECORDING EMPLOYING MAGNETIC CABLE WITHIN DELAY LINE

Walter E. Crandall, Malibu, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed June 14, 1966, Ser. No. 557,573

Int. Cl. G11b *5/02, 5/74;* **H03h** *13/00*

U.S. Cl. 340—174.1 7 Claims



A recording medium in the form of a stationary length of magnetic coaxial cable positioned in a similar length of hollow electronic delay line. A short signal to be recorded is fed to the delay line, and at the instant the signal is spatially distributed along the line, a bias pulse is applied to the coaxial cable. This produces a remnant magnetized condition of the cable which corresponds to the input signal, and this recorded signal can be subsequently reproduced by drawing the coax cable through a reading coil.

3,529,305

CONDITION MONITORING SYSTEM

John O. Hardin, Garland, Tex., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 22, 1965, Ser. No. 500,955

Int. Cl. G08b *19/00, 29/00*

U.S. Cl. 340—213.1 10 Claims

1. In a monitoring system for monitoring a plurality of variable conditions having individual means to indicate the corresponding conditions,

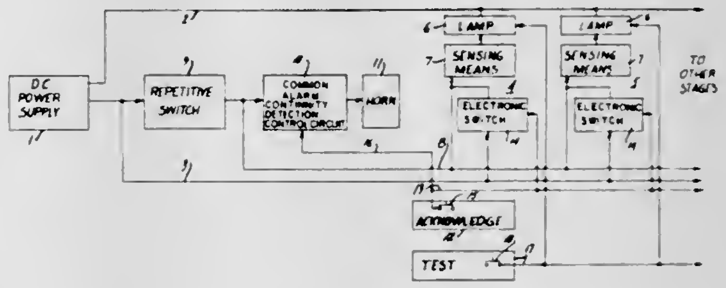
a plurality of condition sensitive circuits each including condition sensitive switch means and an individual alarm,

a common alarm having a common alarm energizing circuit,

acknowledgment switch means to acknowledge an abnormal condition and a reset of an abnormal condition to normal, and

an intermittent switching means connected in circuit with the condition sensitive circuits and the common alarm energizing circuit and responsive to actuation of a condition sensitive switch means to intermittently energize the corresponding individual alarm and the common alarm, said acknowledgment switch means being connected to the condition sensitive circuits and to the common alarm energizing circuit and actuated to acknowledge the alarm and operable to continuously energize the corresponding individual alarm and de-energize the common alarm, and circuit means responsive to reset of the abnormal condition after actuation of the acknowledgment switch means to de-energize the individual alarm and continuously energize the common alarm and responsive to subsequent actuation of the switch means and the reset of the abnormal condition to silence the common alarm,

each of said condition sensitive circuits including a half wave rectifier in series with the individual alarm and the condition sensitive switch means between a power connection lead and a common pulse lead,



said intermitent switching means including timing means connected to drive a power pulse amplifier between a first output level and a second output level for supplying a pulsating current sufficient to operate all the individual alarms in the system, said amplifier having an output means connected in series with the pulse lead to intermittently energize an individual alarm upon closure of a related condition sensitive switch,

each of said condition sensitive circuits including a controlled rectifier connected in parallel with the half wave rectifier and the amplifier and operable to back bias the corresponding half wave rectifier when said controlled rectifier is conducting, said controlled rectifier having a firing circuit,

said acknowledgment switch means connecting said firing circuit to the power leads for triggering the rectifier to conduct,

said common alarm energizing circuit having a first input circuit connected to said pulse lead for intermittent actuation of the common alarm in response to actuation of any sensitive switch.

DESIGNS

SEPTEMBER 15, 1970

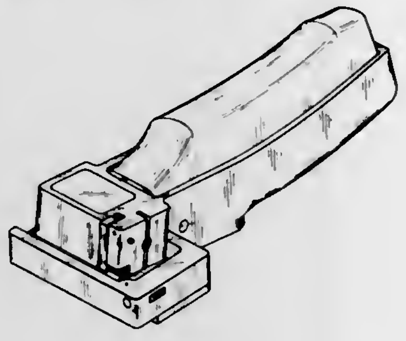
218,671

PUNCH

Kay L. Ruggles, Salt Lake City, Utah, assignor to Bio-Logics, Inc., Salt Lake City, Utah, a corporation of Delaware

Filed Aug. 13, 1969, Ser. No. 18,671
Term of patent 14 years
Int. Cl. D8—*02*

U.S. Cl. D8—52



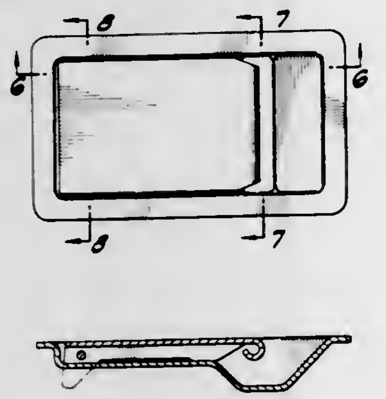
218,672

COMBINED LATCH CASE AND ACTUATOR

Warner R. Lauper, San Pedro, Calif., assignor to Adams Rite Manufacturing Company, Glendale, Calif., a corporation of California

Filed Nov. 22, 1968, Ser. No. 14,591
Term of patent 3½ years
Int. Cl. D8—*03*

U.S. Cl. D8—109



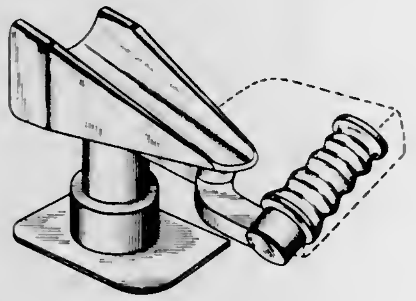
218,673

SINGLE HANDLE CONTROL

Ernest C. Carlson, Hinsdale, Marvin D. Jennings, Naperville, and Robert W. Woodring, La Grange, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed June 30, 1969, Ser. No. 17,960
Term of patent 14 years
Int. Cl. D8—*03*

U.S. Cl. D8—152



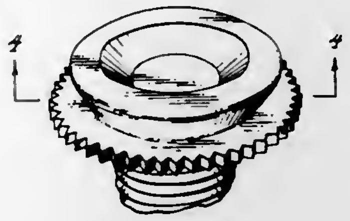
218,674

STUD

Richard B. Ernest, Richboro, Pa., assignor to Penn Engineering & Manufacturing Corporation, Danboro (Doylestown), Pa., a corporation of Delaware

Filed Apr. 10, 1969, Ser. No. 16,677
Term of patent 14 years
Int. Cl. D8—*04*

U.S. Cl. D8—267



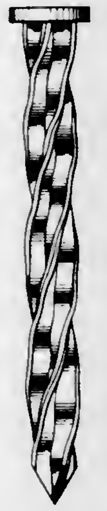
218,675

FLUTED NAIL

Phillip D. Stone, Hanover, and Michael F. Stone, Brockton, Mass., assignors to Philstone Nail Corporation, Canton, Mass., a corporation of Massachusetts

Filed Aug. 12, 1969, Ser. No. 18,654
Term of patent 14 years
Int. Cl. D8—*03*

U.S. Cl. D8—271



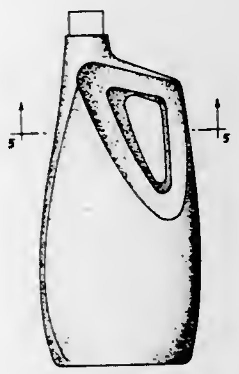
218,676

JUG OR SIMILAR ARTICLE

Ted L. Beaver, Roselle, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 16, 1969, Ser. No. 17,181
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—42

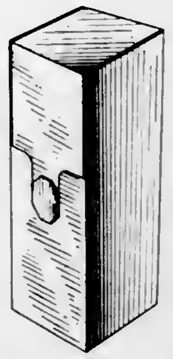


218,677

CARTON OR SIMILAR ARTICLE

Thomas Biallo, 430 E. 56th St.,
New York, N.Y. 10022
Filed May 20, 1968, Ser. No. 12,013
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—230



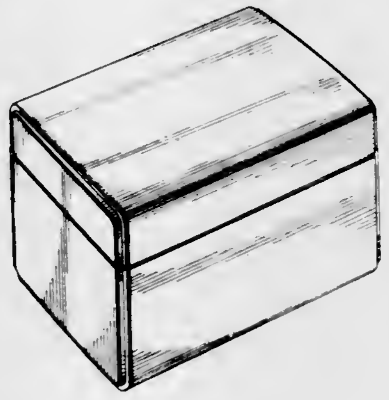
218,678

CONTAINER FOR SEWING MACHINE ATTACHMENTS OR SIMILAR ARTICLE

Wayne A. Current, Belleville, and Henry J. Milan, Clark, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 28, 1969, Ser. No. 15,971
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—235



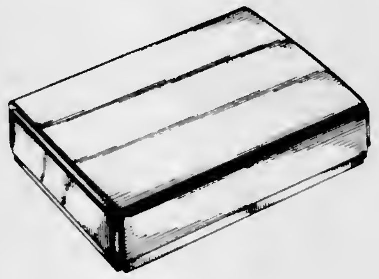
218,679

CONTAINER FOR SEWING MACHINE ATTACHMENTS OR SIMILAR ARTICLE

Wayne A. Current, Belleville, and Henry J. Milan, Clark, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Feb. 28, 1969, Ser. No. 15,981
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—235

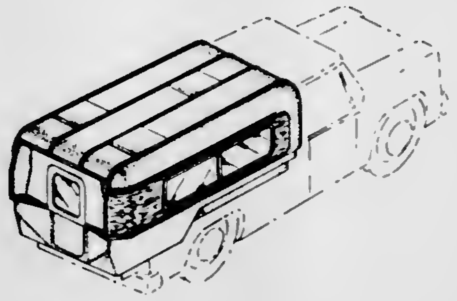


218,680

CAMPER BODY

Robert D. Hall, 10320 Sunland Blvd.,
Sunland, Calif. 91040
Filed Jan. 26, 1970, Ser. No. 21,076
Term of patent 14 years
Int. Cl. D12—*10*

U.S. Cl. D14—3



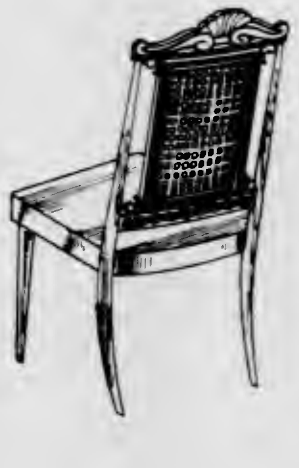
218,681

CHAIR

Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles

Filed June 2, 1969, Ser. No. 17,435
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1



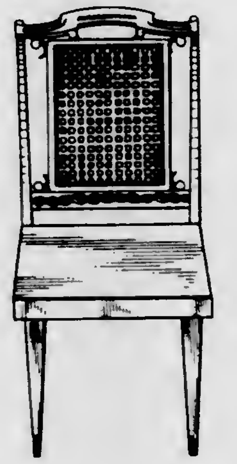
218,682

CHAIR

Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger N.V.), New York, N.Y., a corporation of the Netherlands Antilles

Filed June 2, 1969, Ser. No. 17,436
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1



218,683
CHAIR

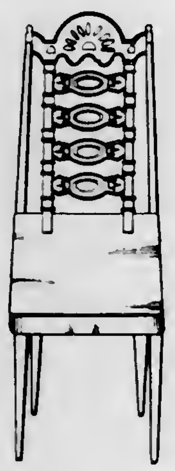
Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger, N.V.), New York, N.Y., a corporation of the Netherlands Antilles

Filed June 2, 1969, Ser. No. 17,437

Term of patent 14 years

Int. Cl. D6—*01*

U.S. Cl. D15—1



218,684
CHAIR

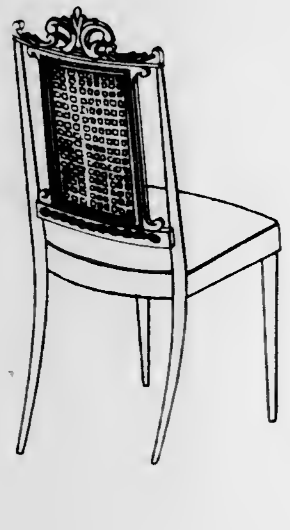
Robert E. Kjer Jakobsen, Compton, Calif., assignor to Schlumberger Limited (Schlumberger, N.V.), New York, N.Y., a corporation of the Netherlands Antilles

Filed June 2, 1969, Ser. No. 17,478

Term of patent 14 years

Int. Cl. D6—*01*

U.S. Cl. D15—1



218,685
COMBINED BRACKET AND DISPOSABLE FILTER FOR HOME AQUARIUMS

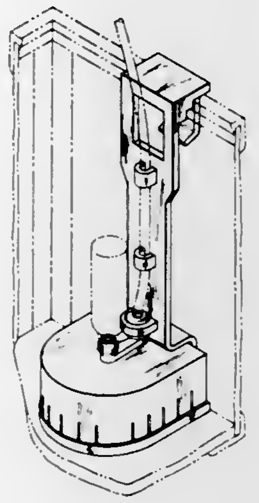
David D. Lovitz, Short Hills, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey

Filed Apr. 25, 1969, Ser. No. 16,900

Term of patent 14 years

Int. Cl. D23—*01*

U.S. Cl. D23—4



218,686
OZONE GENERATOR

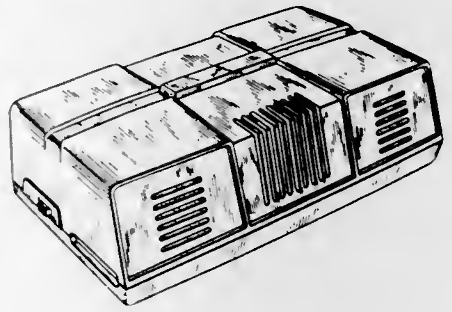
Nobutaka Saito, Tokyo, Japan, assignor to Tanaka Instrument Company, Ltd., Kamiochiai, Yono-shi, Japan

Filed July 2, 1969, Ser. No. 18,033

Term of patent 14 years

Int. Cl. D23—*04*

U.S. Cl. D23—150



218,687
LASER POWER SUPPLY OR SIMILAR ARTICLE

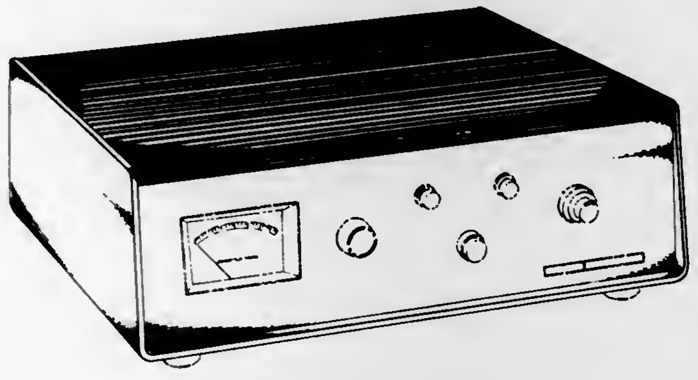
Richard S. Reynolds, Mountain View, and William R. Hill, Santa Clara, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 19, 1969, Ser. No. 15,841

Term of patent 14 years

Int. Cl. D14—*04*

U.S. Cl. D26—14



218,688
VIDEOTELEPHONE TRANSCEIVER CONTROL UNIT

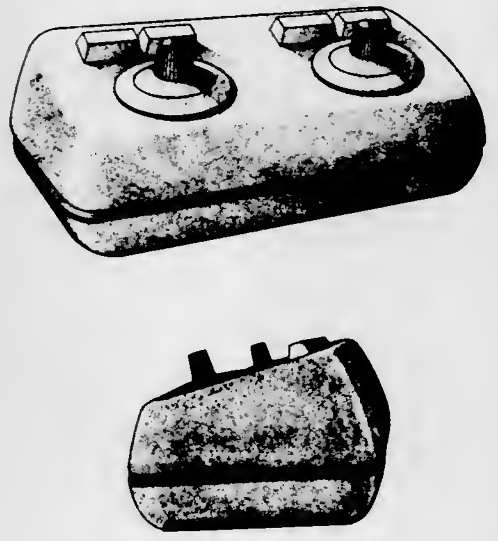
Henry Dreyfuss, South Pasadena, Calif., and Rembert R. Stokes, Middleton, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Original design application Nov. 24, 1967, Ser. No. 9,549, now Patent No. 215,159, dated Sept. 9, 1969. Divided and this application Oct. 3, 1968, Ser. No. 15,937

Term of patent 14 years

Int. Cl. D14—*03*

U.S. Cl. D26—14



218,689
CHRISTMAS ORNAMENT

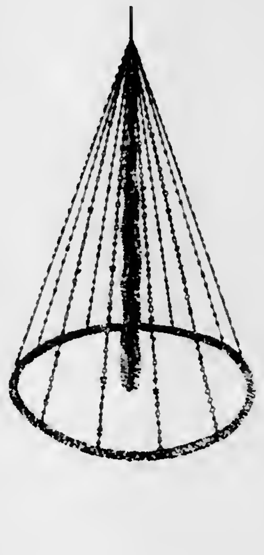
Miller C. Johnson, Jr., 7595 Terri Drive, Westland, Mich. 48185

Filed Feb. 13, 1969, Ser. No. 15,762

Term of patent 14 years

Int. Cl. D11—*05*

U.S. Cl. D29—1



218,690
COMMEMORATIVE MEDALLION OR THE LIKE

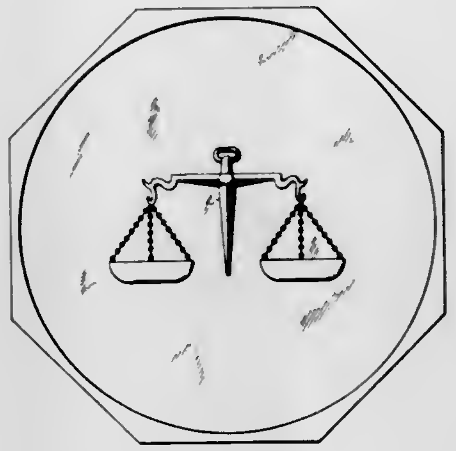
Virgil M. Hanks, Jr., 89 San Pablo Ave., San Francisco, Calif.

Filed Mar. 7, 1969, Ser. No. 16,105

Term of patent 14 years

Int. Cl. D11—*03*

U.S. Cl. D29—19



218,691
BOOKRACK

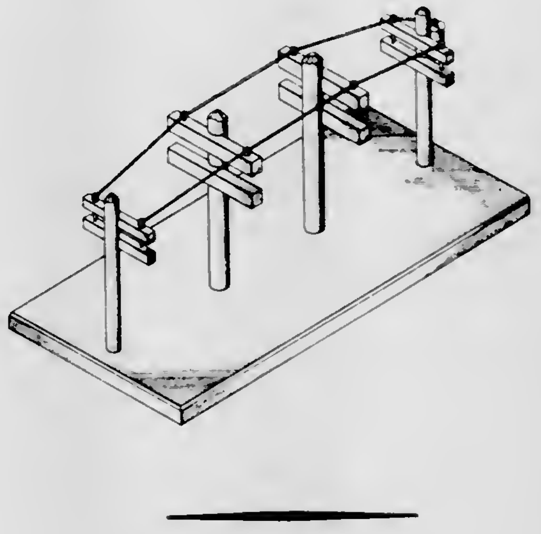
Frank Skupien, 5543 S. Wolcott, Chicago, Ill. 60609

Filed June 30, 1969, Ser. No. 17,967

Term of patent 14 years

Int. Cl. D6—*01*

U.S. Cl. D33—2



218,692
CRIBBAGE BOARD

Robert McSweeney, 2430 Oak St., Winnipeg 9, Manitoba, Canada

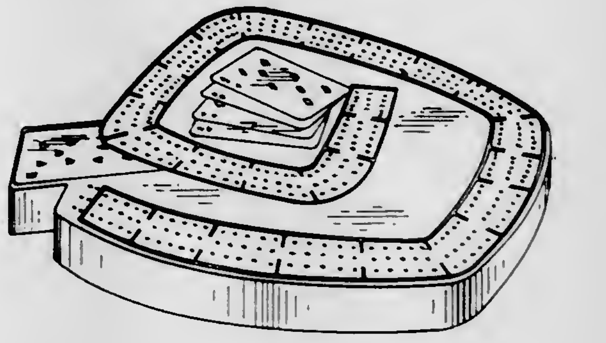
Filed Aug. 21, 1969, Ser. No. 18,790

Claims priority, application Canada July 7, 1967

Term of patent 14 years

Int. Cl. D21—*02*

U.S. Cl. D34—5

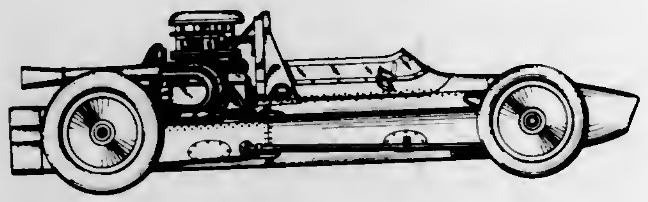


218,693
MODEL RACING CAR

John Newton Cooper, Rustington, England, assignor to The Cooper Car Company Limited, Byfleet, Surrey, England

Filed June 6, 1969, Ser. No. 17,542
Claims priority, application Great Britain Dec. 6, 1968; Feb. 11, 1969
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—15

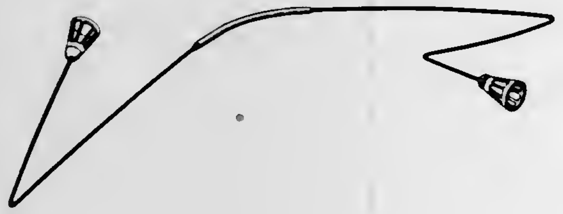


218,694
WHIRLING AMUSEMENT DEVICE

Julius D. Becker, 21217 De La Guerra, Woodland Hills, Calif. 91346

Filed Aug. 8, 1969, Ser. No. 18,595
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—15

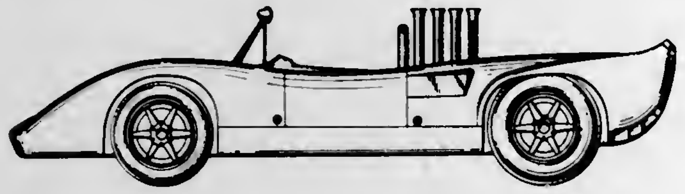


218,695
MODEL CAR

Eric Harrison Broadley, Flackwell Heath, England, assignor to Lola Cars Limited, Slough, England

Filed Oct. 1, 1969, Ser. No. 19,372
Claims priority, application Great Britain Aug. 26, 1969
Term of patent 7 years
Int. Cl. D21—*02*

U.S. Cl. D34—15

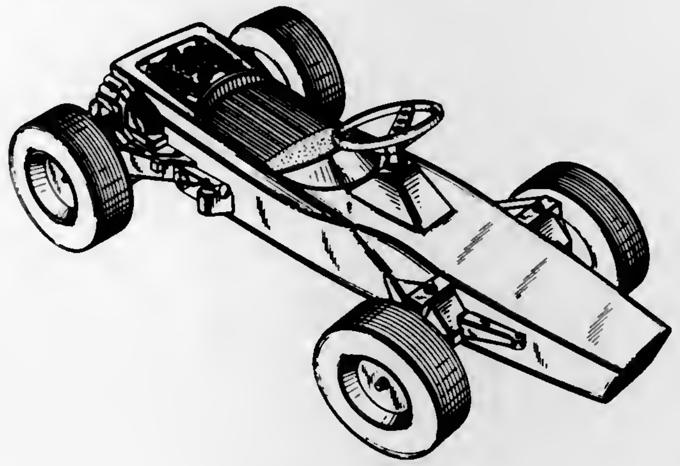


218,696
TOY VEHICLE

Robert Thomas Auer, Laurie Jay Campbell, and Calvin S. Cook, Erie, Pa., assignors to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York

Filed Feb. 16, 1970, Ser. No. 21,447
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—15

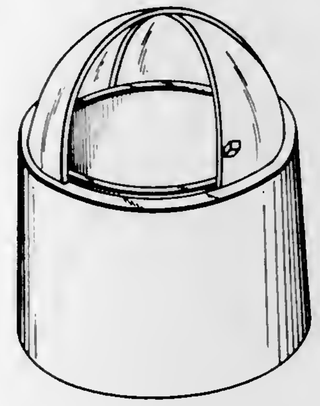


218,697
ICE BUCKET, OR THE LIKE

Nicholas P. Angelakos, Brooklyn, N.Y., assignor to Lancaster Colony Corporation, a corporation of Delaware

Filed Nov. 12, 1969, Ser. No. 20,037
Term of patent 14 years
Int. Cl. D7—*99*

U.S. Cl. D44—1

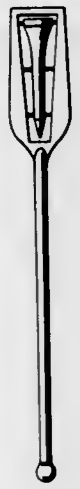


218,698
BEVERAGE STIRRER

Robert E. Mannheimer, Jr., 7902 E. Latham St., Scottsdale, Ariz. 83257

Filed Sept. 26, 1969, Ser. No. 19,319
Term of patent 14 years
Int. Cl. D7—*99*

U.S. Cl. D44—29

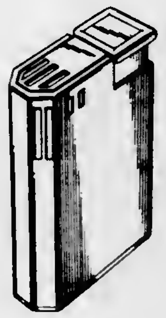


218,699
CIGARETTE LIGHTER OR SIMILAR ARTICLE

Sado Yoshinaga, Tokyo, Japan, assignor to Yoshinaga Prince Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 18, 1969, Ser. No. 20,166
Term of patent 14 years
Int. Cl. D27—*05*

U.S. Cl. D48—27

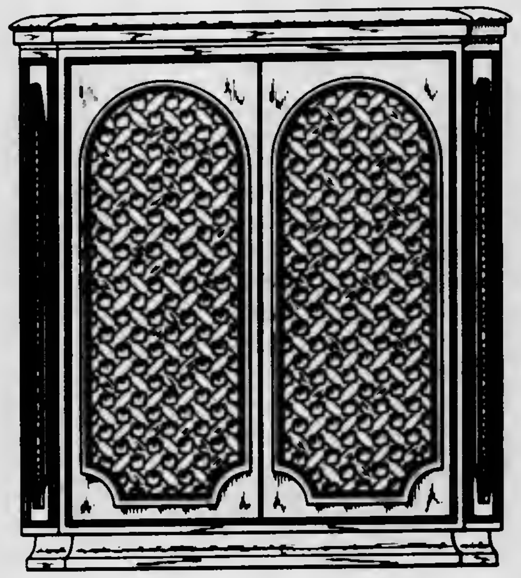


218,700
HAMPER

Monte L. Levin, New York, N.Y., assignor to Pearl-Wick Corporation, Long Island City, N.Y., a corporation of New York

Filed Aug. 28, 1969, Ser. No. 18,889
Term of patent 14 years
Int. Cl. D7—*06*

U.S. Cl. D49—8.2

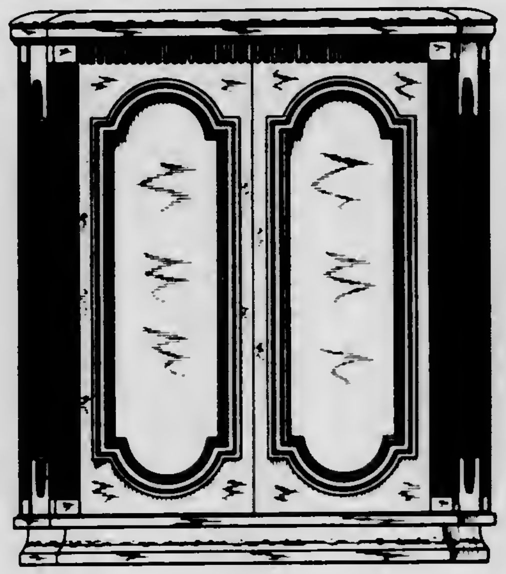


218,701
HAMPER

Monte L. Levin, New York, N.Y., assignor to Pearl-Wick Corporation, Long Island City, N.Y., a corporation of New York

Filed Aug. 28, 1969, Ser. No. 18,888
Term of patent 14 years
Int. Cl. D7—*06*

U.S. Cl. D49—8.2

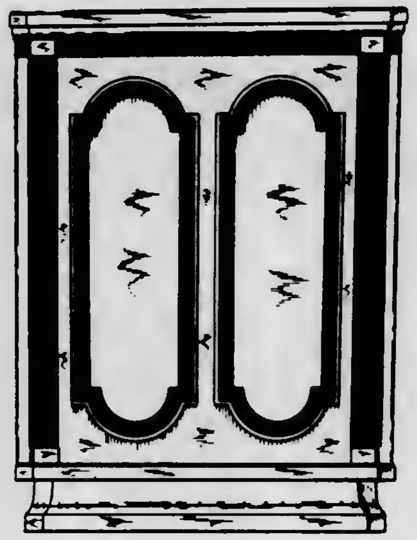


218,702
WASTE BASKET

Monte L. Levin, New York, N.Y., assignor to Pearl-Wick Corporation, Long Island City, N.Y., a corporation of New York

Filed Aug. 28, 1969, Ser. No. 18,903
Term of patent 14 years
Int. Cl. D7—*06*

U.S. Cl. D49—30

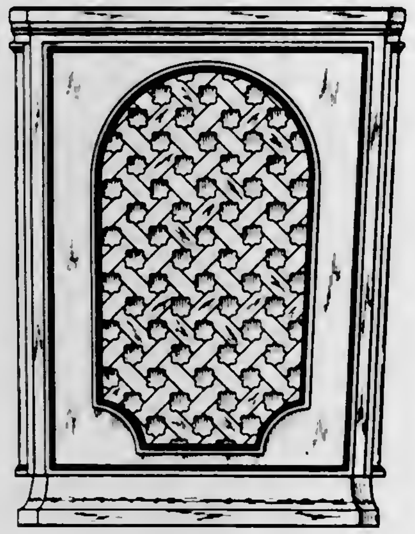


218,703
WASTE BASKET

Monte L. Levin, New York, N.Y., assignor to Pearl-Wick Corporation, Long Island City, N.Y., a corporation of New York

Filed Aug. 28, 1969, Ser. No. 18,902
Term of patent 14 years
Int. Cl. D7—*06*

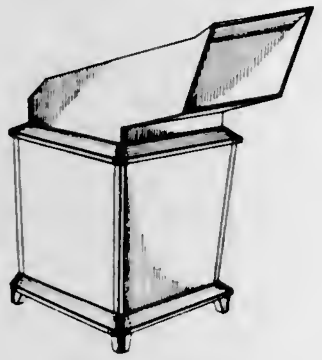
U.S. Cl. D49—30



218,704
TRASH RECEPTACLE

Felice Pipolo, 270 Bellingham Drive,
Williamsville, N.Y. 14221
Filed May 8, 1969, Ser. No. 17,086
Term of patent 14 years
Int. Cl. D7—*99*

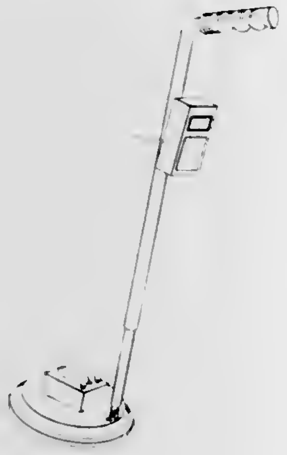
U.S. Cl. D49—35



218,705
HOUSING FOR METAL DETECTOR

Thomas H. Doss, P.O. Box 10563,
Houston, Tex. 77018
Filed Mar. 3, 1969, Ser. No. 15,991
Term of patent 14 years
Int. Cl. D10—*99*

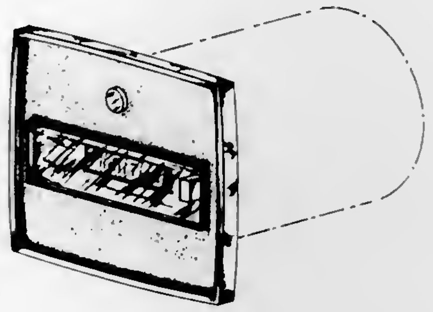
U.S. Cl. D52—6



218,706
INSTRUMENT FRONT MOUNTING PLATE

Anthony J. DiPinto, 301 Commonwealth Ave.,
Claymont, Del. 19703
Filed Mar. 10, 1969, Ser. No. 16,138
Term of patent 14 years
Int. Cl. D10—*08*

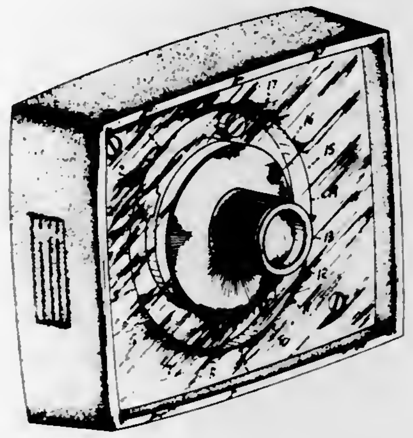
U.S. Cl. D52—6



218,707
INSTRUMENT MOUNTING PLATE

Anthony J. Di Pinto, 301 Commonwealth Ave.,
Claymont, Del. 19703
Filed Mar. 12, 1969, Ser. No. 16,215
Term of patent 14 years
Int. Cl. D10—*08*

U.S. Cl. D52—6

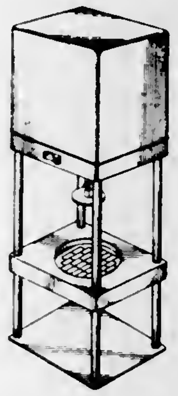


218,708
CASING FOR MOULDABLE FOOD PRODUCT EXTRUDER

Gorden Edward Sloan, 345 Carousel Place, Anaheim, Calif. 92805, and Floyd Vernon Edwards, 2526 S. Rita Way, Santa Ana, Calif. 92704

Filed May 21, 1969, Ser. No. 17,263
Term of patent 14 years
Int. Cl. D15—*12*

U.S. Cl. D55—1

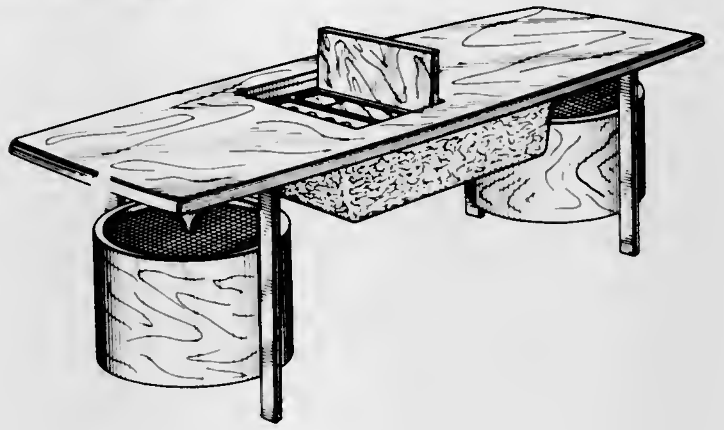


218,709
STEREO RADIO-PHONOGRAPH

David P. Chuboff, North Barrington, and Kendrick T. Parsell, Chicago, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed July 2, 1969, Ser. No. 18,026
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D56—4

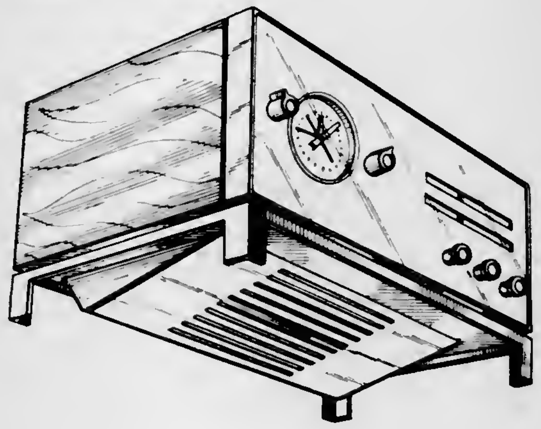


218,710
CLOCK RADIO CABINET

Melvin H. Boldt, Glenview, and Anthony J. Cascarano, Lake Forrest, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 21, 1969, Ser. No. 19,663
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D56—4

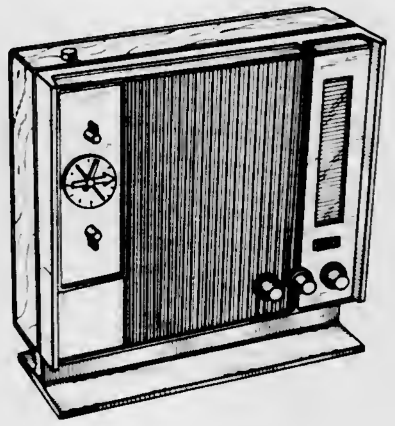


218,711
CLOCK RADIO CABINET

Robert W. Becker, Naperville, and Melvin H. Boldt, Glenview, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 21, 1969, Ser. No. 19,660
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D56—4

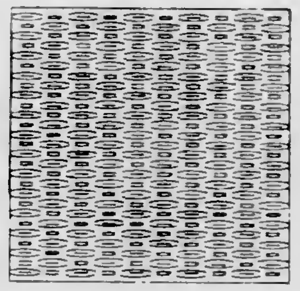


218,712
SAFETY PAPER OR SIMILAR ARTICLE

Carl Couve, Rolling Meadows, Ill., assignor, by mesne assignments, to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

Filed Mar. 21, 1969, Ser. No. 16,361
Term of patent 14 years
Int. Cl. D19—*05*

U.S. Cl. D59—6

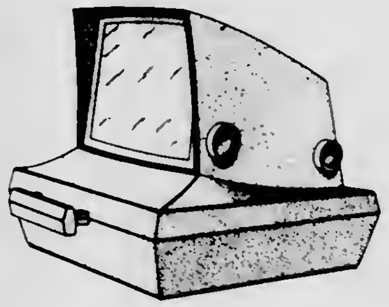


218,713
COMBINED PHONOGRAPH AND SLIDE PROJECTOR

Terry L. Bernard, Cincinnati, Ohio, assignor to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware

Filed Aug. 22, 1969, Ser. No. 18,819
Term of patent 14 years
Int. Cl. D16—*03*

U.S. Cl. D61—1

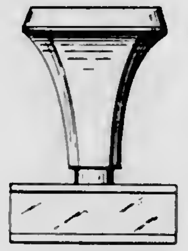


218,714
HAND STAMP

Robert Erignac, Paris, France, assignor to Kartro International, Société a Responsabilite Limitee, Paris, France

Filed May 8, 1969, Ser. No. 17,073
Claims priority, application France Dec. 6, 1968
Term of patent 7 years
Int. Cl. D18—99

U.S. Cl. D64—10

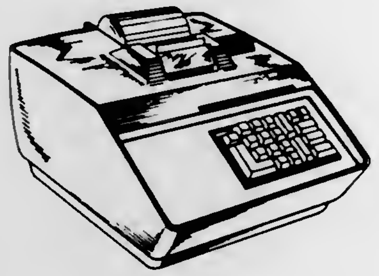


218,715
CALCULATOR OR SIMILAR ARTICLE

Edward E. Salter, Fairport, and Hugh M. Lee and Lewis W. Bennett, Rochester, N.Y., assignors to The Singer Company, a corporation of New Jersey

Filed Mar. 3, 1969, Ser. No. 15,984
Term of patent 14 years
Int. Cl. D18—*01*

U.S. Cl. D64—11

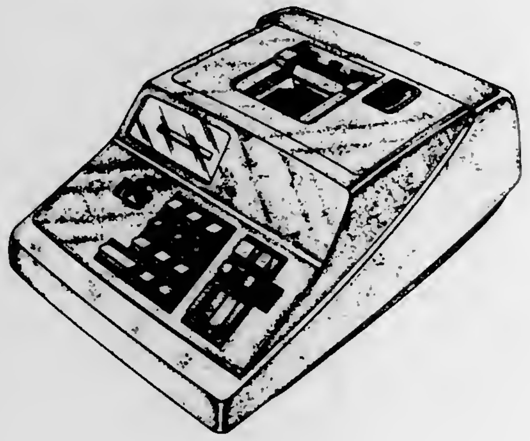


218,716
ELECTRONIC DESK CALCULATOR

Masakatsu Yotsukura, Narashino-shi, Japan, assignor to Citizen Watch Co., Ltd., Tokyo, Japan

Filed July 29, 1969, Ser. No. 18,448
Term of patent 14 years
Int. Cl. D18—*01*

U.S. Cl. D64—11

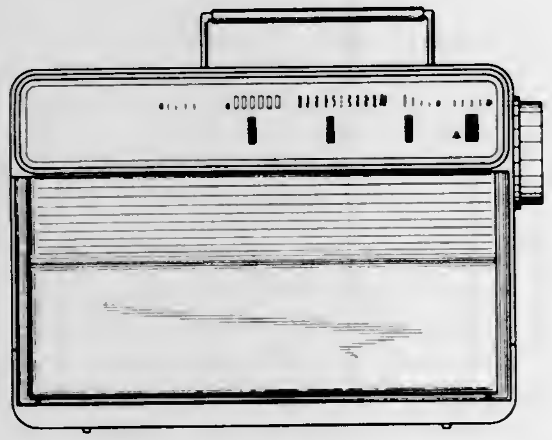


218,717
PORTABLE SEWING MACHINE

Marcel Fresard, Petit-Lancy, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a corporation of Switzerland

Filed Aug. 12, 1969, Ser. No. 18,650
Claims priority, application Switzerland Mar. 20, 1969
Term of patent 14 years
Int. Cl. D15—*09*

U.S. Cl. D70—1

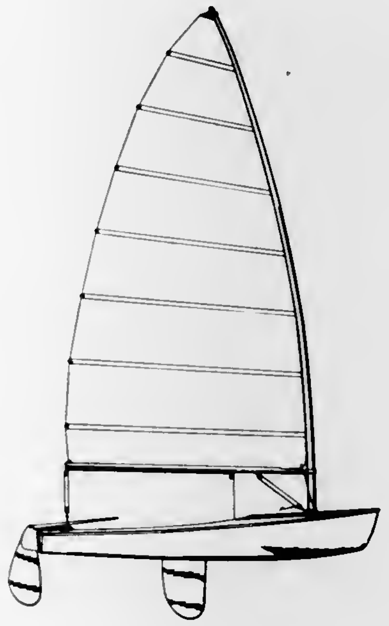


218,718
SAILBOAT

Carter Pyle, 1421 Front St., Lahaina, Hawaii 96761, and Joe Quigg, 4797 Farmer Road, Honolulu, Hawaii 96761

Filed Apr. 1, 1969, Ser. No. 16,542
Term of patent 14 years
Int. Cl. D12—*06*

U.S. Cl. D71—1

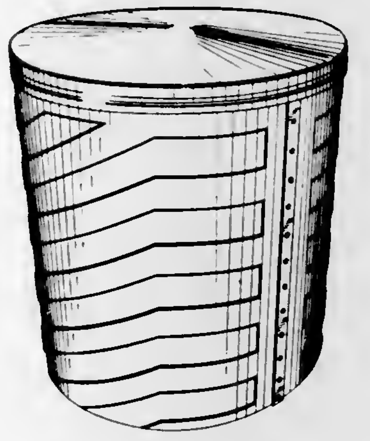


218,719
TRAFFIC BARRIER

Louis H. Peters, Somerville, N.J., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York

Filed June 6, 1969, Ser. No. 17,561
Term of patent 14 years
Int. Cl. D29—*99*

U.S. Cl. D72—1

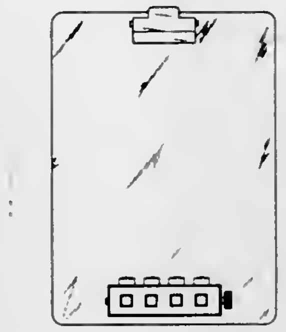


218,720
COMBINED CLIPBOARD AND ADDING MACHINE

Henry Shahan, Placentia, Calif., assignor to Shahan Products Inc., Placentia, Calif., a corporation of California

Filed June 30, 1969, Ser. No. 17,986
Term of patent 14 years
Int. Cl. D19—*99*

U.S. Cl. D74—2

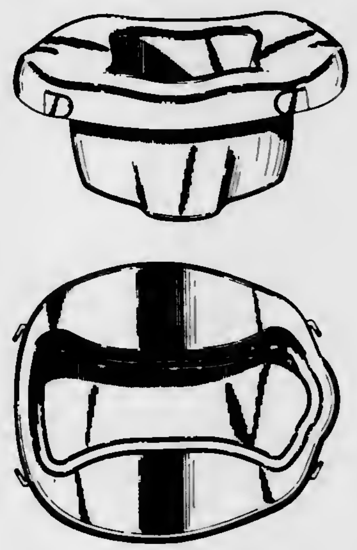


218,721
BEDPAN

Dallas N. Davenport, Nashua, and Martin J. McMahon, Windham, N.H., and Sidney Z. Smith, Worcester, Mass., assignors to The General Tire & Rubber Company, a corporation of Ohio

Filed Aug. 27, 1969, Ser. No. 18,868
Term of patent 14 years
Int. Cl. D24—*05*

U.S. Cl. D83—1

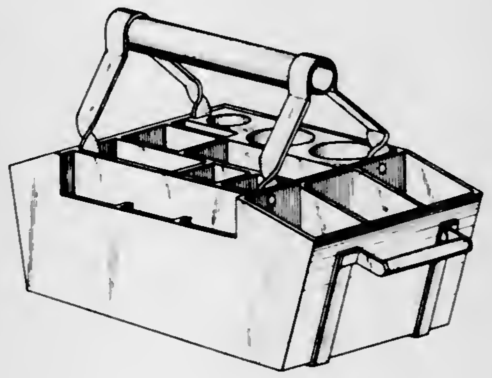


218,722
PLUMBER'S TOOL CARRIER OR SIMILAR ARTICLE

Joseph R. Vaccaro, Flanders, N.J. 07836

Filed Sept. 26, 1969, Ser. No. 19,304
Term of patent 14 years
Int. Cl. D3—*99*

U.S. Cl. D87—1

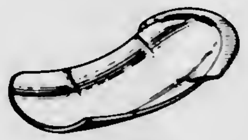


218,723
VEGETABLE POD OPENER

Charles L. Westbrook, 715 Washington Ave., Ayden, N.C. 28513

Filed Jan. 9, 1969, Ser. No. 15,277
Term of patent 14 years
Int. Cl. D7—*99*

U.S. Cl. D89—1

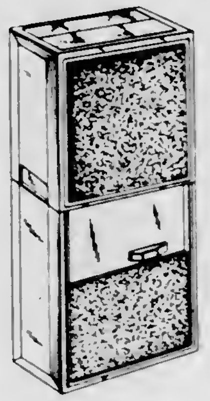


218,724
COMBINED ELECTRIC SHAVER AND STORAGE BASE

Melvin H. Boldt, Glenview, Ill., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware

Filed July 18, 1968, Ser. No. 12,823
Term of patent 14 years
Int. Cl. D28—*03*

U.S. Cl. D95—3

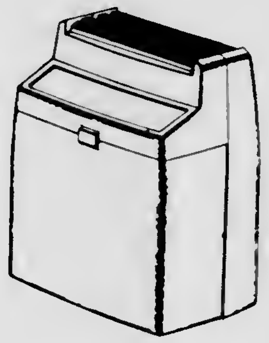


218,725
SHAVER

John F. Daniels, Bridgeport, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 7, 1969, Ser. No. 16,125
Term of patent 14 years
Int. Cl. D28—*03*

U.S. Cl. D95—3



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 15TH DAY OF SEPTEMBER, 1970

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Aaron, John W. Snowmobile safety pad. 3,528,520, Cl. 180-9.24
- Abbott, Robert L.: *See—*
  - Williams, Forrest S., and Abbott, Robert L. 3,528,165.
- Abell, Jerrold J., and Kosa, Bruce G., to Rogers Corporation. Method of making a microporous sheet material having an air-permeable coating. 3,529,049, Cl. 264-112.
- Aboytes, Peter, to Huber, J. M., Corporation. Sulfonated carbon black. 3,528,840, Cl. 106-307.
- Abraham, Garnett. Two way draw curtain apparatus. 3,528,477, Cl. 160-84.
- Abramo, John W. Brassiere. 3,528,431, Cl. 128-484.
- Abramowitz, William L. Means and method for internally detecting the presence of an intrauterine contraceptive device. 3,528,402, Cl. 128-2.
- ACF Industries, Incorporated: *See—*
  - Kolb, John P., 3,528,447.
- Achorn, George S., to Sinclair-Koppers Company. Modified olefin polymers of improved properties. 3,528,958, Cl. 260-94.9
- Adamic, Joseph W., Jr., to Texas Instruments, Incorporated. Method of making a semiconductor device. 3,528,168, Cl. 29-571.
- Adams, Roger E., and Lyda, Samuel J., to Velcon Filters Inc. Water sensitive flow monitor. 3,528,547, Cl. 210-96.
- Adams-Rusell Co., Inc.: *See—*
  - Podell, Allen F., 3,529,265.
- Adams-Russell Co., Inc.: *See—*
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- AeroChem Research Laboratories, Inc.: *See—*
  - Fontijn, Arthur, 3,528,779.
- Agfa-Gevaert Aktiengesellschaft: *See—*
  - Danhauser, Justus, Ohlschlager, Hans, Pelz, Willibald, and Riester, Oskar, 3,528,812.
  - Riester, Oskar, Danhauser, Justus, and Ohlschlager, Hans, 3,528,813.
  - Riester, Oskar, Danhauser, Justus, Ohlschlager, Hans, Seelig, Eckart, and Pelz, Willibald, 3,528,814.
  - Weisbeck, Roland, 3,528,770.
  - Weyde, Edith, Von Konig, Anita, Von Rintelen, Harald, and Wagner, Siegfried, 3,528,810.
- Aichenegg, Paul C., and Emerson, Carl D., to Chemagro Corporation. Method for producing bis(polychloroethyl) sulfides and polychlorovinyl sulfides. 3,529,025, Cl. 260-609.
- Aiken, Howard, Industries, Inc.: *See—*
  - Neill, Daniel L., Roberts, Gordon A., and Butler, Thomas W., 3,529,292.
- Air Production Company, Incorporated: *See—*
  - Saal, Stanley, 3,528,259.
- Air Products and Chemicals, Inc.: *See—*
  - Jones, Robert D., and Klee, David J., 3,528,201.
- Air-Shields, Inc.: *See—*
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- Ajinomoto Co., Inc.: *See—*
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- Akra Stamp Machine Co., Inc.: *See—*
  - Walker, James H., 3,528,594.
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  - Dobbs, Marvin C., 3,528,562.
- Alfa-Laval AB: *See—*
  - Floter, Sigismund, 3,528,389.
- Alford, Wilbur J.: *See—*
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- Alfsen, Christian A.: *See—*
  - Bluitt, Thomas P., Alfsen, Christian A., and Koivu, Arvi 3,528,735.
- Alger, Jerry T., to Honeywell Inc. Pilot burner. 3,528,754, Cl. 431-78.
- Allen, Irwin T., and Martinez, Santiago, to Chromalloy American Corporation. Apparatus or contour grinding of vanes and blades. 3,528,200, Cl. 51-143.
- Allen, Richard G.: *See—*
  - Torick, Emil, and Allen, Richard G. 3,529,244.
- Alley, George C., and Valory, Mark, said Alley assor. to said Valory. Lifter and support apparatus for piling and the like. 3,528,563, Cl. 214-3.
- Alley, Ralph D.: *See—*
  - Sheridan, David S., and Alley, Ralph D. 3,528,427.
- Allied Chemical Corporation: *See—*
  - Miles, Roy, and Anderson, Norman L., 3,528,961.
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- Allis-Chalmers Manufacturing Company: *See—*
  - Ellis, Henry P., 3,528,521.
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  - Fredriksson, Bengt, and Folgero, Kare, 3,529,069.
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- Alpha Metals, Inc.: *See—*
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- Aluminum Company of America: *See—*
  - Brown, Melvin Henry, 3,528,890.
- Alvarez, Ramon A. Container package and blank for same. 3,528,599, Cl. 229-40.
- Amberg, Ralph G.: *See—*
  - Amberg, Stephen W., and Amberg, Ralph G. 3,528,865.
- Amberg, Stephen W., and Amberg, Ralph G., to Owens-Illinois, Inc., mesne. Method of deep-stretching plastic sheet material to receptacle shape. 3,528,865, Cl. 156-214.
- American Cyanamid Company: *See—*
  - Sheehan, Gerard Martin, 3,528,837.
  - Taylor, Arthur Sinclair, Hansen, Lloyd Frank, Yen, Ernest Chu, and Vincent, James G., Jr., 3,529,043.
- American Electric Manufacturing Corporation: *See—*
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- American Home Products Corporation: *See—*
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  - Sulkowski, Theodore S., and Wille, Myles A., 3,528,981.
- American Hospital Supply Corporation, : *See—*
  - Smith, Joe B., and Farrand, Robert Merrill, 3,529,053.
- American Machine & Foundry Company: *See—*
  - Goodman, Barnard P., 3,528,868.
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- American Physical Fitness Research Institute, Inc.: *See—*
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  - Brown, Arthur S., Leiby, Harold E., and Miller, Earle A., 3,528,163.
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  - Resener, Baird E., 3,528,526.
- Anaconda Wire and Cable Company: *See—*
  - Olson, Emil H., Arndt, Rudolph P., and Filius, Ronald H., 3,528,852.
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- Anderson, Norman L.: *See—*
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  - Yoshida, Tsunemi, Ishikawa, Koichi, Ando, Masatoshi, Ueno, Yoshihiko, and Arisawa, Kunio 3,529,047.
- Andolsek, Rudolph A., to Diagraph Bradley Industries, Inc. Stencil cutting apparatus. 3,528,335, Cl. 83-416.
- Andrasfay, Anthony L. J., to Beckman Instruments, Inc. Terminal construction for electrical circuit device. 3,529,120, Cl. 219-107.
- Andre, Stephen N., De Lisle, William E., and Hettich, Ronald D., to Sylvania Electric Products, Inc. Digital function synthesizer. 3,529,138, Cl. 235-150.53
- Andrea Radio Corporation: *See—*
  - Feingold, William, 3,529,175.
- Andrew Engineering Company: *See—*
  - Dulebohn, David H., 3,528,337.
- Angle, William H., to Plessey Airborne Corporation. Limit switch operating mechanism for actuators. 3,529,104, Cl. 200-47.
- anter, Wolfgang, and Dinger, Horst, to Messrs Gebruder Junghans Gesellschaft mit beschrankter Haftung. Balance construction. 3,528,239, Cl. 58-28.
- Aoebelein, Hans: *See—*
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- Appelt, Walter, Weitz, Hans-Martin, and Golser, Leopold, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Removing nitric acid from aqueous solutions. 3,528,913, Cl. 210-59.

- Appleton Wire Works Corporation, : *See—*
  - Lee, Charles A., and Sorrells, Frank D., 3,528,227.
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- Applied Dynamics, Inc.: *See—*
  - Single, Charles H., 3,529,245.
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- Ara, Inc.: *See—*
  - Mazelsky, Bernard, 3,528,529.
- Arbon, Robert Stanley, Bennett, JohGodolphin, Bright, Colin Douglas, and Hodgson, Anthony Malcolm, to Structural Communication Systems Limited. Teaching machines. 3,528,181, Cl. 35-9.
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  - Atherton, James G., Nemeth, Harold C., and Miller, Eugene J., Jr., 3,528,923.
- Armstrong Cork Company: *See—*
  - Celmer, Frank, and Waters, Ernest B., Jr., 3,528,846.
- Armstrong, Edward, and Mc Carthy, Peter J., to Darchem Engineering Limited, and Nuclear Power Group Limited, The. Thermal insulation. 3,528,495, Cl. 165-135.
- Armstrong, Fredrick J., to General Electric Company. Rotor cooling technique. 3,529,189, Cl. 310-59.
- Armstrong, Kirk R., and Mikolyczyk, Edward, to Capital Records, Inc. Endless loop tape bin. 3,528,593, Cl. 226-97.
- Arndt, Rudolph P.: *See—*
  - Olson, Emil H., Arndt, Rudolph P., and Filius, Ronald H. 3,528,852.
- Arnold, Fred W., Jr., to Pet Incorporated. Infrared oven for roasting. 3,528,362, Cl. 99-357.
- Arvin Industries, Inc.: *See—*
  - Stevens, Loren D., 3,528,866.
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- Ashworth Bros. Inc.: *See—*
  - Bechtel, Alfred R., Jr., Bridges, Luther W., Jr., and Chandler, Norman F., 3,528,136.
- Ashworth, John, to General Electric Company. Timing control mechanism for data processing apparatus. 3,529,134, Cl. 235-61.11
- Associated Electrical Industries Limited: *See—*
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- Associated Sales Enterprises, Inc.: *See—*
  - Fergerson, William, 3,528,119.
- Atherton, James G., Nemeth, Harold C., and Miller, Eugene J., Jr., to Armour Industrial Chemical Company. Lime soap dispersant. 3,528,923, Cl.
- Atichison, Robert E., Lutolf, Robert E., and Magee, Edward F., to Singer-General Precision, Inc. Apparatus for the digital generation of acoustic waveforms. 3,529,086, Cl. 179-1.
- Atkinson, Robert P., to General Motors Corporation. Bearing lubrication. 3,528,711, Cl. 308-187.
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  - Lehman, Kenneth A., 3,528,497.
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- aus der Funten, Helmut, and Richtzenhain, Hermann, to Dynamit Nobel Aktiengesellschaft. Unsaturated nitriles containing carbonyl groups and preparation thereof. 3,529,009, Cl. 260-464.
- Austin, James E., to Texas Instruments, Incorporated. Solid state modular microwave system and cooling means therefor. 3,528,492, Cl. 165-80.
- Austin, Robert R., to Perkin-Elmer Corporation, The. Narrow band interference light filter. 3,528,726, Cl. 350-166.
- Austin, Russell A., to Austin Sporting Goods, Inc. Shoulder guard. 3,528,106, Cl. 2-2.
- Austin Sporting Goods, Inc.: *See—*
  - Austin, Russell A., 3,528,106.
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- Ayres, Waldemar A. Laser surgical knife equipment. 3,528,424, Cl. 128-303.1
- Baak, Nils Tryggve E. A., and Rapp, Charles F., to Owens-Illinois, Inc. Low expansion glass compositions. 3,528,829, Cl. 106-52.
- Bachmann, Dieter: *See—*
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- Badalich, Frank C., to Bell & Howell Company. Lamp turret assembly with energizing and aligning device. 3,529,147, Cl. 240-37.
- Badham, John Wilkinson, to Imperial Chemical Industries of Australia and New Zealand Limited. Adiponitrile process. 3,529,011, Cl. 260-465.8
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
  - Appelt, Walter, Weitz, Hans-Martin, and Golser, Leopold, 3,528,913.
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- Bailey, James R., to Johnson Service Company. Variable signal detecting circuit. 3,529,178, Cl. 307-235.
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- Baltz, Hans, Pritzkow, Wilhelm, and Schmidt, Harald, to VEB Leuna Werke Walter Ulbricht. Process for the cyclotrimerization of butadiene for obtaining cyclododecatriene (1,5,9). 3,529,028, Cl. 260-666.
- Bambury, Ronald E., and Kim, Hyun Koo, to Richardson-Merrell Inc. Cycloalkyl nitrofuryl nitrones. 3,528,971, Cl. 260-240.
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- Barrett, Harold F., Schneider, Donald J., Strickland, Marion C., and Childers, James H., to Barrett, Harold F., and Fusco, Anthony. Method and apparatus for making fermentable beverages. 3,528,817, Cl. 99-35.
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- Boop, Billy Joe, and Hile, George B., Jr., to Western Company of North American, Inc., The. Apparatus for sealing chambers in a perforating tool. 3,528,511, Cl. 175-4.55

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- Bushmeyer, Richard W., to Case, J. I., Company. Tensioning means for plow trip. 3,528,504, Cl. 172-264.
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- Caracciolo, Vincent P., to Du Pont de Nemours, E. I., and Company. Permeition sepiration device for separating fluids. 3,528,553, Cl. 210-321.
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- Carlson, Dana Peter, to Du Pont de Nemours, E. I., and Company. Process for homopolymerization of tetrafluoroethylene and copolymerization of sime with fluoro comonomers in the solvent 1,1,2-trichloro-1,2,2- trifluoroethane. 3,528,954, Cl. 260-87.5
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  - Bell, William W., Jr., 3,528,491.
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- Denner, David L., and Stoll, Donald E., to Overhead Door Corporation. Vehicle cargo elevator and storing arrangement therefor. 3,528,574, Cl. 214-77.
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- Dipelesi, James L. Carpet fastening device. 3,528,123, Cl. 16-16.
- Di Ponio, John J., to Ford Motor Company. Method for rolling a race for a ball bearing. 3,528,271, Cl. 72-108.
- Distler, Harry, and Schneider, Kurt, to Bidische Anilin- & Soda-Fabrik Iktiengesellschaft. Production of glycol monoesters of carboxylic acids. 3,529,002, Cl. 260-410.6
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- Dobrikin, Harold L., to Berg Mfg. & Sales Co. Double throw switch. 3,529,107, Cl. 200-83.
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- Doering, George I., to Industrial Nucleonics Corporation. Spectrum analyzer. 3,529,140, Cl. 235-151.31
- Donaldson, Charles R., and Yang, James S., to National Distillers and Chemical Corporation. Method for reducing tackiness of polymer pellets. 3,528,841, Cl. 117-16.
- Donley, Harold E., to PPG Industries, Inc. Pyrolyzation process for forming silver films. 3,528,845, Cl. 117-124.
- Donner, Fredrik, to Oy Tampella AB. Muzzle assembly for smoothbore projectiles. 3,528,336, Cl. 89-14.
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- Duff, James B., and Mason, Lowell M., to General Electric Company. Method and apparatus for axialy developing electrical coils. 3,528,170, Cl. 29-596.

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- Dulebohn, David H., to Andrew Engineering Company. Tracing machine. 3,528,337, Cl. 90-13.7
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- Frazel, Wilbur H., Turtle, Quentin C., and Yip, Thomas, to General Signal Corporation. Chlorine residual controlling system. 3,528,545, Cl. 210r96.
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- Hinrichs, John F., to Smith, A. O., Corporation. Electron beam heating with controlled beam. 3,529,123, Cl. 219-121.
- Hirsch, Arthur, and Orphanos, Demetrius G., to Canadian Technical Tape Ltd. Phthalazine-bromine complexes and method of preparing of preparing same. 3,528,979, Cl. 260-250.
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- Keller, Carl Hess, Jr., and Jones, Arthur Burton, Jr., to United Aircraft Corporation. Fusible shim for preloaded bearing. 3,528,713, Cl. 308-189.
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- Plucker, Julius, III, to Mobil Oil Corporation. Vapor-liquid ratio monitor. 3,528,440, Cl. 137-3.
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- Riester, Oskar, Danhauser, Justus, Ohlschlager, Hans, Seelig, Eckart, and Pelz, Willibald, to Agfa-Gevaert Aktiengesellschaft. Sensitization of light-sensitive polymers. 3,528,814, Cl. 96-115.
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- Rinkler, Heinrich, and Nischk, Gunther, to Farbenfabriken Bayer Aktiengesellschaft. Acylonitrile graft copolymers. 3,529,040, Cl. 260-898.
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Vullo, William J., and Wagner, George M., to Hooker Chemical Corporation. Method for imparting oil and water repellency to textile materials. 3,528,849, Cl. 117-139.5
Wada, Yuichi: *See—*
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Wadleigh, James R., to International Business Machines Corporation. Apparatus and process for handling needle-like objects. 3,528,160, Cl. 29-429.
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Wangerin, Elmer O., to Eastman Kodak Company. Reel spindle drive means for film reader or the like. 3,528,628, Cl. 242-201.
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Weber, Horst, to Farbenfabriken Bayer Aktiengesellschaft. Black pigments with spinel structure. 3,528,839, Cl. 106-304.
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Weesner, William E., and Schiar, John L., to Monsanto Research Corporation. Trimethylsilylmethyl derivatives of substituted benzylamines. 3,529,004, Cl. 260-448.2
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  Patrick, Paul D., Jr., and Thomas, Brantley D., Jr., 3,528,959.
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Witte, Robert S., and Wood, Charles E., to TRW Inc. Fluid flow control apparatus. 3,528,449, Cl. 137-251.
Witteman, Wilhelmus Jacobus, to U.S. Philips Corporation, mesne. Infrared laser with discharge gas including carbon dioxide, nitrogen and water vapor. 3,529,262, Cl. 331-94.5
Witten, Alvin E. Temperature responsive foundation ventilator. 3,528,606, Cl. 236-48.
Wognum, James N., Simich, Emil, and Winkler, Alvin L., to Interlake Steel Corporation. Continuous casting machine. 3,528,487, Cl. 164-280.
Wollrab, Friedrich, and Gerkens, Maurice, to Solvay & Cie. Method of cross-linking amorphous polymers and copolymers of 31 olefins and the resultant products. 3,528,942, Cl. 260-41.
Wolz, Hermann, Blocher, Karl-Heinz, Friedrich, Adolf, and Kashelikar, Dattatraya Vinayak, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of azodicarbonamide. 3,528,962, Cl. 260-192.
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Wunder, Heinrich. Safety ski binding. 3,528,672, Cl. 280-11.35
Wyeth, John, & Brother Limited, : *See—*
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Xavier, Miguel A., and Platt, Sidney R., to Hathaway Instruments, Inc. Digital off frequency relay. 3,529,215, Cl. 317-147.
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- 10-X Manufacturing Company: *See—*
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- Yamikawi, Kazumi. Dismountable moving toy. 3,528,193, Cl. 46-17.
- Yanagisawa, Sizuyasu: *See—*
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- Yip, Thomas: *See—*
  - Frazel, Wilbur H., Turtle, Quentin C., and Yip, Thomas 3,528,545.
- Yoshida, Tsunemi, Ishikawa, Koichi, Ando, Masatoshi, Ueno, Yoshihiko, and Arisawa, Kunio, to Furukawa Electric Company Limited, The. Method for continuous manufacture of corrugated plastic pipes. 3,529,047, Cl. 264-89.
- Yosinaga, Noriyosi: *See—*
  - Isoya, Akira, and Yosinaga, Noriyosi 3,529,185.
- Yost, John V. Trimaran with sprung center hull section. 3,528,380, Cl. 114-66.5
- Young, Robert W.: *See—*
  - Graf, Robert E., and Young, Robert W. 3,528,927.
- Zahalka, Jindrich: *See—*
  - Plander, Emil, Zahalka, Jindrich, and Formacek, Viktor 3,528,899.
- Zastrow, Harold G., to Waldorf, Hoerner, Corporation. Dispensing container. 3,528,597, Cl. 229-17.
- Zeiss Ikon Aktiengesellschaft: *See—*
  - Konig, Karl-Heinz, and Thiele, Heinz, 3,528,351.
- Zengierski, Leon: *See—*
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- Zenith Radio Corporation: *See—*
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  - Dickinson, George R., and Schmid, Richard G., 3,528,306.
- Zerbib, Jean Claude: *See—*
  - Lasseur, Claude, Tonnelier, Claude, and Zerbib, Jean Claude 3,528,279.
- Zievers, James F., Passalaqua, Joseph J., and Kulousek, Elmer J., to Industrial Filter and Pump Mfg. Co. Unrollable filter element with throw-away cartridge. 3,528,555, Cl. 210-387.
- Zimmerman, Carl W., and Wilson, Robert O., to Halliburton Company. Methods and apparatus for measuring slurry density with gamma rays. 3,529,153, Cl. 250-43.5
- Zimmermann, Markus, to Geigy Chemical Corporation. N'-acetyl-N'-(cyclopropyl-4-pyrimidinyl)- sulphanilamides. 3,528,967, Cl. 260-239.75
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- Zirkle, Charles L.: *See—*
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- Zitko, Ronald F.: *See—*
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- Zoebelein, Hans, to Henkel & Cie, G.m.b.H. Polyurethane coated rubber. 3,528,848, Cl. 117-138.8
- Zoerb, Edward G., to Honeywell Inc. Fluidic sensing apparatus. 3,528,298, Cl. 73-521.
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LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 15TH DAY OF SEPTEMBER, 1970

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- Adams Rite Mfg. Co.: *See—*
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- Angelakos, Nicholas P., to Lancaster Colony Corp. Ice bucket, or the like. 218,967, 9–15–70, Cl. D44—1.
- Auer, Robert T., L. J. Campbell, and C. S. Cook, to Louis Marx & Co., Inc. Toy vehicle. 218,696, 9–15–70, Cl. D34—15.
- Beaver, Ted L., to Continental Can Co., Inc. Jug or similar article. 218,676, 9–15–70, Cl. D9—42.
- Becker, Julius D. Whirling amusement device. 218,694, 9–15–70, Cl. D34—15.
- Becker, Robert W., and M. H. Boldt, to Zenith Radio Corp. Clock radio cabinet. 218,711, 9–15–70, Cl. D56—4.
- Bell Telephone Laboratories, Inc.: *See—*
  - Dreyfuss, Henry, and Stokes. 218,688.
- Bennett, Lewis W.: *See—*
  - Salter, Edward E., Lee, and Bennett. 218,715.
- Bernard, Terry L., to Kenner Products Co. Combined phonograph and slide projector. 218,713, 9–15–70, Cl. D61—1.
- Biallo, Thomas. Carton or similar article. 218,677, 9–15–70, Cl. D9—230.
- Bio-Logics, Inc.: *See—*
  - Ruggles, Kay L. 218,671.
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- Boldt, Melvin H.: *See—*
  - Becker, Robert W., and Boldt. 218,711.
- Boldt, Melvin H., to Schick Electric Inc. Combined electric shaver and storage base. 218,724, 9–15–70, Cl. D95—3.
- Broadley, Eric H., to Lola Cars Ltd. Model car. 218,695, 9–15–70, Cl. D34—15.
- Campbell, Laurie J.: *See—*
  - Auer, Robert T., Campbell, and Cook. 218,696.
- Carlson, Ernest C., M. D. Jennings, and R. W. Woodring, to International Harvester Co. Single handle control. 218,673, 9–15–70, Cl. D8—152.
- Cascarano, Anthony J.: *See—*
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- Chuboff, David P., and K. T. Parsell, to Zenith Radio Corp. Stereo radio-phonograph. 218,709, 9–15–70, Cl. D56—4.
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- Continental Can Co., Inc.: *See—*
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- Cooper Car Co. Ltd., The: *See—*
  - Cooper, John N. 218,693.
- Cooper, John N., to The Cooper Car Co. Ltd. Model racing car. 218,693, 9–15–70, Cl. D34—15.
- Couve, Carl, to The Mead Corp. Safety paper or similar article. 218,712, 9–15–70, Cl. D59—6.
- Current, Wayne A., and H. J. Milan, to The Singer Co. Container for sewing machine attachments or similar article. 218,678, 9–15–70, Cl. D9—235.
- Current, Wayne A., and H. J. Milan, to The Singer Co. Container for sewing machine attachments or similar article. 218,679, 9–15–70, Cl. D9—235.
- Daniels, John F., to Sperry Rand Corp. Shaver. 218,725, 9–15–70, Cl. D95—3.
- Davenport, Dallas N., M. J. McMahon, and S. Z. Smith, to The General Tire & Rubber Co. Bedpan. 218,721, 9–15–70, Cl. D83—1.
- Di Pinto, Anthony J. Instrument front mounting plate. 218,706, 9–15–70, Cl. D52—6.
- Di Pinto, Anthony J. Instrument mounting plate. 218,707, 9–15–70, Cl. D52—6.
- Doss, Thomas H. Housing for metal detector. 218,705, 9–15–70, Cl. D52—6.
- Dreyfuss, Henry, and R. R. Stokes, to Bell Telephone Laboratories, Inc. Videotelephone transceiver control unit. 218,688, 9–15–70, Cl. D26—14.
- Edwards, Floyd V.: *See—*
  - Sloan, Gordon E., and Edwards. 218,708.
- Erignac, Robert, to Kartro International, Societe a Responsabilite Ltd. Hand stamp. 218,714, 9–15–70, Cl. D64—10.
- Ernest, Richard B., to Penn Engineering & Mfg. Corp. Stud. 218,674, 9–15–70, Cl. D8—267.
- Fresard, Marcel, to Mefina S.A. Portable sewing machine. 218,717, 9–15–70, Cl. D70—1.
- General Tire & Rubber Co., The: *See—*
  - Davenport, Dallas N., McMahon, and Smith. 218,721.
- Hall, Robert D. Camper body. 218,680, 9–15–70, Cl. D14—3.
- Hanks, Virgil M., Jr. Commemorative medallion or the like. 218,690, 9–15–70, Cl. D29—19.
- Hill, William R.: *See—*
  - Reynolds, Richard S., and Hill. 218,687.
- International Harvester Co.: *See—*
  - Carlson, Ernest C., Jennings, and Woodring. 218,673.
- Jakobsen, Robert E. K., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 218,681, 9–15–70, Cl. D15—1.
- Jakobsen, Robert E. K., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 218,682, 9–15–70, Cl. D15—1.
- Jakobsen, Robert E. K., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 218,683, 9–15–70, Cl. D15—1.
- Jakobsen, Robert E. K., to Schlumberger Ltd. (Schlumberger N.V.). Chair. 218,684, 9–15–70, Cl. D15—1.
- Jennings, Marvin D.: *See—*
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- Johnson, Miller C., Jr. Christmas ornament. 218,689, 9–15–70, Cl. D29—1.
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- Lee, Hugh M.: *See—*
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- Levin, Monte L., to Pearl-Wick Corp. Hamper. 218,700, 9–15–70, Cl. D49—8.2.
- Levin, Monte L., to Pearl-Wick Corp. Hamper. 218,701, 9–15–70, Cl. D49—8.2.
- Levin, Monte L., to Pearl-Wick Corp. Waste basket. 218,702, 9–15–70, Cl. D49—30.
- Levin, Monte L., to Pearl-Wick Corp. Waste basket. 218,703, 9–15–70, Cl. D49—30.
- Mannheimer, Robert E., Jr. Beverage stirrer. 218,698, 9–15–70, Cl. D44—29.
- McMahon, Martin J.: *See—*
  - Davenport, Dallas N., McMahon, and Smith. 218,721.
- McSweeney, Robert. Cribbage board. 218,692, 9–15–70, Cl. D34—5.
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- Lola Cars Ltd.: *See—*
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- Lovitz, David D., to Sternco Industries, Inc. Combined bracket and disposable filter for home aquariums. 218,685, 9–15–70, Cl. D23—4.
- Marx, Louis, & Co., Inc.: *See—*
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- Pearl-Wick Corp.: *See—*
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- Philstone Nail Corp.: *See—*
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- Pipolo, Felice. Trash receptacle. 218,704, 9–15–70, Cl. D49—35.
- Pyle, Carter, and J. Quigg. Sailboat. 218,718, 9–15–70, Cl. D71—1.
- Reynolds, Richard S., and W. R. Hill, to Sylvania Electric Products Inc. Laser power supply or similar article. 218,687, 9–15–70, Cl. D26—14.
- Ruggles, Kay L., to Bio-Logics, Inc. Punch. 218,671, 9–15–70, Cl. D8—52.
- Saito, Nobutaka, to Tanaka Instrument Co., Ltd. Ozone generator. 218,686, 9–15–70, Cl. D23—150.
- Salter, Edward E., H. M. Lee, and L. W. Bennett, to The Singer Co. Calculator or similar article. 218,715, 9–15–70, Cl. D64—11.
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- Shahan, Henry, to Shahan Products Inc. Combined clipboard and adding machine. 218,720, 9–15–70, Cl. D74—2.
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  - Current, Wayne A., and Milan. 218,679.
  - Salter, Edward E., Lee, and Bennett. 218,715.
- Skupien, Frank. Book rack. 218,691, 9–15–70, Cl. D33—2.
- Sloan, Gordon E., and F. V. Edwards. Casing for mouldable food product extruder. 218,708, 9–15–70, Cl. D55—1.
- Smith, Sidney Z.: *See—*
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Yoshinaga Prince Co., Ltd.: *See*—
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Yoshinaga, Sadao, to Yoshinaga Prince Co., Ltd. Cigarette lighter or similar article. 218,699, 9–15–70, Cl. D48—27.
Yotsukura, Masakatsu, to Citizen Watch Co., Ltd. Electronic desk calculator. 218,716, 9–15–70, Cl. D64—11.
Zenith Radio Corp.: *See*—
  Chuboff, David P., and Parsell. 218,709.
  Boldt, Melvin H., and Cascarano. 218,710.
  Becker, Robert W., and Boldt. 218,711.

CLASSIFICATION OF PATENTS

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NOTE.—First number, class; second number, subclass; third number, patent number

2– 2 : 3,528,106
19 : 3,528,107
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A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

September 15, 1970 Volume 878 Number 3

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 403,472 (ARCHIE COMICS), Archie Comic Publications, Inc., Magazine; **Reg. No. 570,560** (ARCHIE'S PAL JUGHEAD), Magazine published bi-weekly; **Reg. No. 598,225** (ARCHIE'S GIRLS BETTY AND VERONICA), Close-Up, Inc., Printed periodical; **Reg. No. 868,222** (BETTY AND ME), same, Comic magazine; **Reg. No. 870,122** (REGGIE AND ME), same; **Reg. No. 880,946** (BETTY AND VERONICA), same, **filed** June 12, 1970, D.C., E.D. Mich. (Bay City), Doc. 3047, *Archie Enterprises, Inc. et al.* v. *Delta Promotions, Inc. et al.* Consent decree and permanent injunction entered upon stipulation, July 14, 1970.

Reg. No. 442,723 (MATERNALLY YOURS), Maternally Yours, Inc., Maternity apparel consisting of dresses, slips, bloomers, toppers, lounging robes, housecoats, girdles, brassieres and nightgowns, **filed** July 17, 1970, D.C., S.D. Fla. (Miami), Doc. 70–1067–C–JE, *Maternally Yours, Inc.* v. *Josephine Devore, doing business as Maternalie.*

Reg. No. 570,560. (See Reg. No. 403,372.)

Reg. No. 573,249 (BIC), Waterman-Bic Pen Corporation, Writing instruments—namely, fountain pens, ball-point fountain pens, and parts thereof, **filed** July 16, 1970, D.C., S.D.N.Y., Doc. 70–C–3037, *Waterman-Bic Pen Inc. and Societe Bic* v. *Beisinger Industries Corp.*

Reg. No. 573,655 (LAST WORD), Last Word Sales and Engineering Co., Grinding wheel dressing tools for cutting the grinding surfaces of grinding wheels to predetermined configurations, **filed** July 10, 1970, D.C., E.D. Mich. (Detroit), Doc. 35105, *L. S. Starrett Co.* v. *Elway P. Gray, doing business as Last Word Sales Co.*

Reg. No. 581,361. (See Reg. No. 834,117.)

Reg. No. 598,225. (See Reg. No. 403,372.)

Reg. No. 688,085. (See Reg. No. 834,117.)

Reg. No. 692,146 (MOCHA MIX), R.G.B. Laboratories, Inc., Cream substitute containing essentially hydrogenated vegetable oils, dextrose, vegetable protein, stabilizer, salt, artificial coloring and flavor, but containing no milk or milk products, **filed** July 21, 1970, D.C., S.D. Fla. (Miami), Doc. 70–1086–C–TC, *R.G.B. Laboratories, Inc.* v. *Edwin Golstein et al.*

Reg. No. 775,943 (See Reg. No. 784,193.)

Reg. No. 784,193 (ALO-FACE), Aloe Creme Laboratories, Inc., Face Cream; **Reg. No. 775,943** (TRAV-ALO), same, Combination Package containing five items—namely, bottles of face lotion, hand lotion, body lotion, leg lotion and shampoo; **Reg. No. 781,194** (ALO-PLUS), same, Face cream; **Reg. No. 812,766** (ALO-HANDS AND DESIGN), same, Hand lotion; **Reg. No. 815,248** (ALO-COSMETICS), same, Face cream, **filed** Feb. 14, 1968, D.C., S.D. Fla. (Miami), Doc. 68–155–C–CA, *Aloe Creme Laboratories, Inc.* v. *Universal Beauty Supply Co., Inc. and Martha Sage, doing business as Marty's Beauty Salon.* Pursuant to Rule 41 of FRCP, action is hereby dismissed without prejudice, July 9, 1970.

CONDITION OF TRADEMARK APPLICATIONS AS OF JUNE 30, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	24, 142
Date of oldest new application	June 13, 1969
Date of oldest amended application (filing date)	September 27, 1965

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	9–24–69	11–30–67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11–3–69	9–27–65
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36	12–24–69	6–19–67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6–13–69	5–18–67
Renewals (All Classes)	5–11–70	....
Sec. 12(c) Publications (All Classes)	5–15–70	....

Applications filed during the month of June 1970—3,042

Registrations Issued	500—No. 898,501 to No. 899,000
Renewals Issued	130

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 784,194. (See Reg. No. 784,193.)

Reg. No. 812,766. (See Reg. No. 784,193.)

Reg. No. 813,086. (See Reg. No. 852,841.)

Reg. No. 815,248. (See Reg. No. 784,193.)

Reg. No. 834,117 (HAIR DEW), Clairol Incorporated, Cosmetics and toilet preparations—namely, creme rinse, penetrating lotion conditioner; **Reg. No. 688,085**, same, Hair conditioning preparations; **Reg. No. 581,361** (HAIR DO), The Hair Do Company, Hair lacquer, **filed** June 11, 1969, D.C., N.J. (Newark), Doc. 665–69, *Clairol Incorporated* v. *The Wella Corporation*. Stipulation, complaint and amended answer and counterclaim deemed amended to eliminate reference to any trademark of plaintiff Clairol Inc. other than the trademark HAIR DEW, July 10, 1970.

Reg. No. 848,257. (See Reg. No. 852,841.)

Reg. No. 852,841 (PFAELZER), Armour and Company, doing business as Pfaelzer Brothers, Fresh meats, poultry, sea foods, cheeses, and precooked frozen poultry; **Reg. No. 848,257** (PFAELZER BROTHERS AND DESIGN), same; **Reg. No. 813,086** (PFAELZER'S WESTCHESTER STYLE), same, Fresh beef ribs, **filed** July 15, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1739, *Armour & Co.* v. *Original Pfaelzer's Gourmet Meats Inc.*

Reg. No. 861,955 (IFD), In-Flight Devices Corp., Computer for automatically actuating aircraft landing gear mechanisms, **filed** Jan. 28, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c193, *IFD In-Flight Devices Corporation* v. *IP In-Flite Products Inc. and In-Flite Products Inc.* v. *In-Flight Devices Corp. et al.* Order, dismissing cause, complaint, counterclaim and crossclaim without prejudice, July 20, 1970.

Reg. No. 868,222. (See Reg. No. 403,372.)

Reg. No. 870,122. (See Reg. No. 403,372.)

Reg. No. 878,691 (ICE), Integrated Circuit Engineering Corp., Textbooks, treatises, periodic reports, manuals, bibliographies, all relating to design, fabrication, testing application and marketing of electronic apparatus and devices; **Reg. No. 881,044**, same, Consultation services relating to the design and fabrication of electronic circuits, Class 100; Consultation services relating to the marketing of electronic circuits, Class 101, **filed** July 17, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1575–HP, *Integrated Circuit Engineering Corp.* v. *I/C Engineering Corporation.*

Reg. No. 880,946. (See Reg. No. 403,372.)

Reg. No. 881,044. (See Reg. No. 878,691.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 263,712. Typographics Communications, Inc., New York, N.Y. Filed Jan. 31, 1967.

tgc

Class 101—Advertising and Business

For Performing Typesetting Services for Others in Lithographic, or Photographic Reproduction (Int. Cl. 35).

Class 106—Material Treatment

For Preparation of Plates and Design of Type (Int. Cl. 40).

First use Dec. 5, 1966.

SN 280,834. Cl. Lageman G.m.b.H., Aachen, Germany. Filed Sept. 21, 1967.

VITABLUT

Owner of German Reg. No. 629,912, dated Nov. 14, 1952.

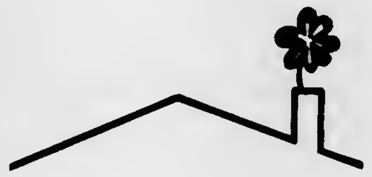
Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceutical Preparations for Birds (Int. Cl. 5).

Class 46—Foods and Ingredients of Foods

For Food and Dietetic Foods for Birds (Int. Cl. 31).

SN 282,465. Home Interiors & Gifts, Inc., Dallas, Tex. Filed Oct. 13, 1967.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Metal Coffee and Teapots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls and Jars and Vases (Int. Cl. 21).

Class 30—Crockery, Earthenware, and Porcelain

For Ceramic Coffee and Teapots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls and Jars and Vases (Int. Cl. 21).

Class 33—Glassware

For Glass Coffee and Teapots, Sugar Bowls, Creamers, Cups, Pitchers, Covered Bowls and Jars and Vases (Int. Cl. 21).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Candle Holders and Candelabras (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

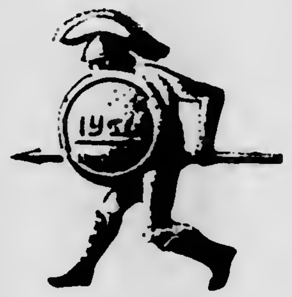
For Wall Decorations in the Form of Wall Hung Planters, Plaques, Trivets of Metal, Ceramics, Wood and Glass (Int. Cl. 21).

Class 101—Advertising and Business

For Providing Demonstrations of Interior Decorating Items at Home Meetings (Int. Cl. 35).

First use on or about Dec. 20, 1958.

SN 291,271. Lucta, S.A., Barcelona, Spain. Filed Feb. 16, 1968.



Class 6—Chemicals and Chemical Compositions

For Essential Oils, Extracts and Fragrances Used in the Manufacture of Consumer Products and Used for Masking Industrial Odors (Int. Cl. 3).
First use July 6, 1944; in commerce June 27, 1964.

Class 46—Foods and Ingredients of Foods

For Essential Oils, Extracts, Flavorings and Fragrances Used in the Manufacture of Foods (Int. Cl. 3).
First use June 1, 1949; in commerce Sept. 10, 1964.

SN 296,762. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

Class 1—Raw or Partly Prepared Materials

For Asphalt (Int. Cl. 19).

Class 12—Construction Materials

For Asphalt for Construction Purposes (Int. Cl. 19).

First use Nov. 6, 1967.

SN 297,624. Dixi Chem of Greenville, Inc., Greenville, S.C. Filed May 8, 1968.

THE ALL-AMERICAN

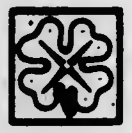
Class 6—Chemicals and Chemical Compositions

For Insecticides (Int. Cl. 5).
First use in or about October 1968.

Class 18—Medicines and Pharmaceutical Preparations

For Pharmaceuticals—Namely, Throat and Cough Preparations; Preparations for Treatment of Stomach Disorders, Namely, Diarrhea, Nausea and Heartburn; Toothache Drops and Toothache Treatment Kits (Int. Cl. 5).
First use Feb. 1, 1968.

SN 298,971. W. Seibel, Mettmann, Rhineland, Germany. Filed May 23, 1968.



KLEEBLATT
CLOVER-LEAF
FEUILLE DE TRÈFLE
TRIFOGLIO
HOJA DE TRÉBOL

Owner of German Reg. No. 832,593, dated Feb. 11, 1967; and U.S. Reg. No. 88,580.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Serving Dishes, Platters, Toastholders, and Butter Dishes, All Being Made of Steel (Int. Cl. 21).

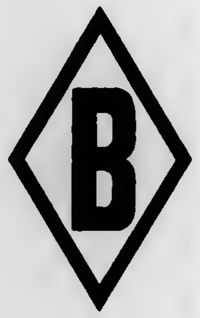
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Carving Knives, Paring Knives, Hunting Knives and Table Flatware Made of Steel (Int. Cl. 8).

Class 28—Jewelry and Precious-Metal Ware

For Cutlery, Flatware, Serving Dishes, Platters, Toastholders, and Butter Dishes All Being Made of Silver or Being Silver-Plated (Int. Cls. 8 and 14).

SN 303,733. J. G. Boswell Company, Los Angeles, Calif. Filed July 29, 1968.



Class 100—Miscellaneous

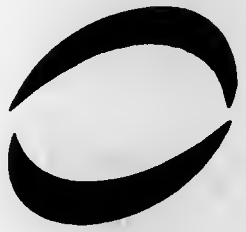
For Cattle Feeding Services, i.e., Feeding Cattle Belonging to Others; and Ginning Services for Others (Int. Cl. 42).

Class 101—Advertising and Business

For Marketing Cattle, Raw Cotton (Cotton Bolls), Citrus Fruits, and Similar Farm Commodities for Others (Int. Cl. 35).

First use in 1937.

SN 307,375. Texize Chemicals, Inc., Greenville, S.C. Filed Sept. 16, 1968.



Class 6—Chemicals and Chemical Compositions

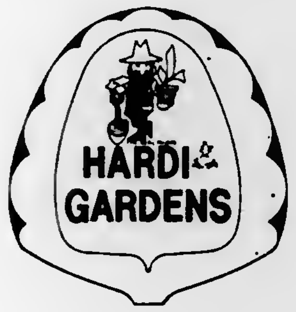
For Solvents for Industrial Use, Rust Inhibitors, Bleach-Disinfectant, Laundry Starches, Laundry Whiteners, Fabric Softeners, Ammonia, Room Deodorants, Disinfectants, Disinfectant-Germicides, Insecticides, Weed Killers, Textile Sizing Compounds, Textile Lubricants, Textile Wetting Agents, Liquid Dispersant Preparations, Emulsifying Preparations, Surfactants, Laundry Sours, and Spray Paint Booth Deflocculant Preparations (Int. Cls. 1, 2, 3, and 5).

Class 52—Detergents and Soaps

For Soaps and detergents for Personal, Household and Commercial Use; Cleaning and Degreasing Solvents; Cleansers for Household and Commercial Use; Rug Cleaners; Glass Cleaners; Spray Cleaners for Household and Commercial Use; General Purpose Cleaners; Stain Removers; Enzyme Cleaners; Drain Openers; Paint Strippers and Wax Strippers (Int. Cl. 3).

First use Oct. 15, 1963.

SN 310,771. Hardi-Gardens, Inc., Nashville, Tenn., by merger from Garden Centers, Inc., Nashville, Tenn. Filed Oct. 29, 1968.



The word "Gardens" is disclaimed apart from the mark as shown.

Class 100—Miscellaneous

For Landscaping and Lawn Care Services (Int. Cl. 42).

Class 101—Advertising and Business

For Retail Garden Supply Store Services (Int. Cl. 35).

First use Oct. 10, 1968.

SN 311,512. Petroleum Energy Producing Corporation, Chicago, Ill. Filed Nov. 6, 1968.

PEPCOR

Class 101—Advertising and Business

For Procuring Leases for Oil Wells and Gas Wells, etc., Selling Working Interests in Gas and Oil Wells, and Operating and Managing Gas and Oil Wells for the Benefit of Others (Int. Cl. 35).

Class 102—Insurance and Financial

For Drilling Oil and Gas Wells (Int. Cl. 37).

First use on or about Jan. 22, 1967.

SN 314,668. Metallurgical International, Inc., New Shrewsbury, N.J. Filed Oct. 22, 1968.

COLDSTREAM

Class 1—Raw or Partly Prepared Materials

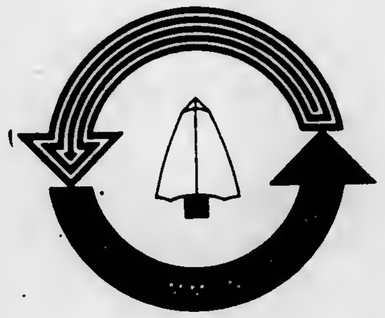
For Polytetrafluoroethylene Powder (Int. Cl. 1).

Class 14—Metals and Metal Castings and Forgings

For Refractory Metal Powders—Namely, Tungsten, Tungsten Carbide, Tungsten-Copper, Molybdenum and Heavy Metals; Metal Alloy Powders—Namely, Stainless Steel, Tool Steel, Super Alloys, Brazing and Hardfacing Alloys, Nickel-Silver, Monel, Nickel, Cobalt and Iron Based Alloys and Master Alloys; Tantalum Powder and Cobalt Powder (Int. Cl. 6).

First use Nov. 30, 1965.

SN 315,000. Anaconda Wire and Cable Company, New York, N.Y. Filed Dec. 23, 1968.



The word "Communications" is disclaimed apart from the mark as shown. Owner of Reg. No. 828,896.

Class 100—Miscellaneous

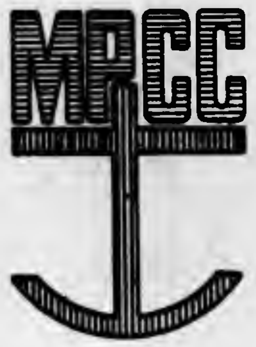
For Development and Design of Communications Systems (Int. Cl. 42).

Class 103—Construction and Repair

For Installation and maintenance of Communications Systems (Int. Cl. 37).

First use Oct. 17, 1965.

SN 316,446. Marine Pollution Control Corporation, Detroit, Mich. Filed Jan. 13, 1969.



The drawing is lined for the colors red and blue.

Class 100—Miscellaneous

For Consulting Services in the Area of Water Pollution Abatement (Int. Cl. 40).

Class 106—Material Treatment

For Water Pollution Abatement Services Specializing in Combating Oil Spills of Various Kinds (Int. Cl. 42).

First use May 10, 1968.

SN 320,673. B. Rich's Sons, Inc., Washington, D.C. Filed Mar. 4, 1969.

ESP

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Handbags (Int. Cl. 25).

Class 39—Clothing

For Pants, Pant Suits, Skirts, Blouses, Scarves, Dresses, and Shoes (Int. Cl. 25).

First use Feb. 28, 1969.

SN 322,139. Armstrong Paint & Varnish Works, Inc., Chicago, Ill. Filed Mar. 19, 1969.

BLIT-ZIT

Class 12—Construction Materials

For Waterproofing and Patching Composition for Use on Roofs, Foundations, Wells, Boat Bottoms and Like Surfaces and Paste Wood Filler (Int. Cl. 19).

Class 16—Protective and Decorative Coatings

For Paints, Varnishes, Enamels, Stains and Clear Penetrating Wood Sealer and Finish for Bare Wood Surfaces (Int. Cl. 2).

First use Mar. 3, 1969.

SN 322,760. Testing Systems, Inc., Glenside, Pa. Filed Mar. 25, 1969.

TSi

Owner of Reg. No. 844,828.

Class 6—Chemicals and Chemical Compositions

For Flaw Detection Chemicals—Namely, Visible and Fluorescent Magnetic Inspection Powder; and Rust and Corrosion Inhibitors (Int. Cls. 1 and 2).
First use at least as early as September 1968.

Class 15—Oils and Greases

For Synthetic Lubricants (Int. Cl. 4).
First use Feb. 1, 1969.

SN 324,800. Cinderella Cleaners, Inc., Cincinnati, Ohio. Filed Apr. 17, 1969.

CINDERELLA

Class 103—Construction and Repair

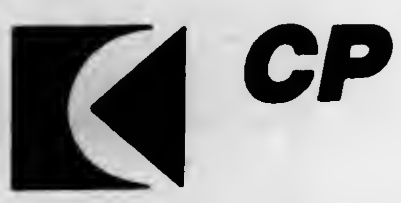
For Dry Cleaning Services (Int. Cl. 37).

Class 105—Transportation and Storage

For Storage Services (Int. Cl. 39).

First use on or about Dec. 1, 1954.

SN 324,965. Canadian Pacific Railway Company, Montreal, Quebec, Canada. Filed Dec. 9, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed June 14, 1968; Reg. No. 163,899, dated July 11, 1969.

Class 100—Miscellaneous

For Hotel Services (Int. Cl. 42).

Class 104—Communication

For Telecommunication Services—Namely, Public Message Service by Telegrams, Cablegrams, and Telex Service, Broadband Service, Stock Ticker Service, Private Line Circuitry for Both Voice and Data Service, Hot Line Telephone Service (Int. Cl. 38).

Class 105—Transportation and Storage

For Transportation of Goods and Persons by Railway, Air, Ship, and Truck (Int. Cl. 39).

SN 324,966. Canadian Pacific Railway Company, Montreal, Quebec, Canada. Filed Dec. 9, 1968.

CP

Priority claimed under Sec. 44(d) on Canadian application filed Sept. 5, 1968; Reg. No. 165,671, dated Oct. 10, 1969.

Class 100—Miscellaneous

For Hotel Services (Int. Cl. 42).

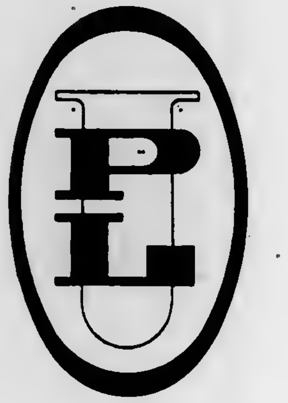
Class 104—Communication

For Telecommunication Services—Namely, Public Message Service by Telegrams, Cablegrams, and Telex Service, Broadband Service, Stock Ticker Service, Private Line Circuitry for Both Voice and Data Service, Hot Line Telephone Service (Int. Cl. 38).

Class 105—Transportation and Storage

For Transportation of Goods and Persons by Railway, Air, Ship, and Truck (Int. Cl. 39).

SN 325,916. Precision Laboratories, Inc., Northbrook, Ill. Filed Apr. 30, 1969.



Class 4—Abrasives and Polishing Materials

For Metal Polishes, Furniture Polish, and Floor Wax (Int. Cl. 3).
First use Feb. 14, 1967.

Class 6—Chemicals and Chemical Compositions

For Insecticides, Rodenticides, Fungicides, Disinfectants, Weed Killers, Brush Killers, Grass Killers, Algaecides, Etching Solutions, Enzymes for Liquefying Solids in Sewer Systems, Room Deodorants, and Ice Melting Preparations (Int. Cls. 1 and 5).
First use Sept. 14, 1965.

Class 10—Fertilizers

For Fertilizers (Int. Cl. 1).
First use Sept. 12, 1965.

Class 12—Construction Materials

For Curing and Sealing Compounds for Concrete and Terrazzo (Int. Cl. 1).
First use Mar. 23, 1966.

Class 15—Oils and Greases

For Fuel Oil Additives, Silicone Spray Lubricants, Fluorocarbon Spray Lubricants, and Lubricating Grease (Int. Cl. 4).
First use Nov. 1, 1965.

Class 18—Medicines and Pharmaceutical Preparations

For Medicated Clear Plastic Bandages, Antiseptic Foot Powder, Medicated Analgesic Anti-Bacterial Fungicidal (Int. Cl. 5).
First use Apr. 3, 1967.

Class 52—Detergents and Soaps

For Industrial Degreasers, Laundry Soaps, Household Detergents, Detergents for Washing Automotive Equipment, Detergents for Washing Floors, Rug Shampoo, Wax Strippers, Hand Cleaners, Spot Removers, Glass Cleaners, Drain Solvents, and Industrial Cleaning Solvents (Int. Cl. 3).
First use Nov. 26, 1965.

SN 326,202. Chicopee Mills, Inc., New York, N.Y. Filed May 2, 1969.

TYBAK

Class 37—Paper and Stationery

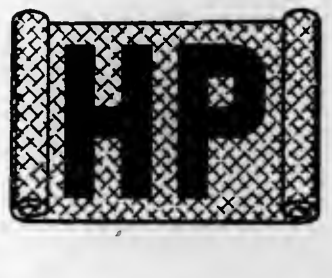
For Paper Counter Towels (Int. Cl. 16).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabric Counter Towels (Int. Cl. 24).

First use Mar. 31, 1969.

SN 327,208. Home Plastics, Inc., Des Moines, Iowa. Filed May 14, 1969.



The drawing is lined for the color orange, but no claim is made as to color.

Class 1—Raw or Partly Prepared Materials

For Printed Polyethylene Roll Stock To Be Converted Into Packaging and Wrapping Form (Int. Cl. 17).

Class 2—Receptacles

For Flexible Packaging and Wrapping Material—Namely, Paper and Polyethylene Bags and Sacks (Int. Cls. 16 and 20).

First use August 1959.

SN 328,617. Adamson Company, Inc., Richmond, Va. Filed May 29, 1969.

ADAMSON

Class 2—Receptacles

For Fuel Storage and Pressure Vessels (Int. Cl. 6).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Water Heaters and Heat Exchangers (Int. Cl. 11).

First use Jan. 2, 1920.

SN 329,100. Lippincott & Margulies, Inc., New York, N.Y. Filed June 4, 1969.

MULTIQUEST

Class 100—Miscellaneous

For Consulting Services for Various Business Enterprises Including the Selection of Trade Name, Trademarks, and Design of Stationery, Packaging and the Like (Int. Cl. 42).

Class 101—Advertising and Business

For Marketing Research Analysis for Various Business Enterprises (Int. Cl. 35).

First use May 9, 1969.

SN 329,558. Avon Products, Inc., New York, N.Y. Filed June 10, 1969.

MARABOU

Class 51—Cosmetics and Toilet Preparations

For Cologne, Foaming Bath Oil, and Filled Powder Compact (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Mar. 3, 1969.

SN 333,626. The Conard-Pyle Company, West Grove, Pa. Filed July 28, 1969.

STAR ROSE

The word "Rose" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 372,251 and 556,945.

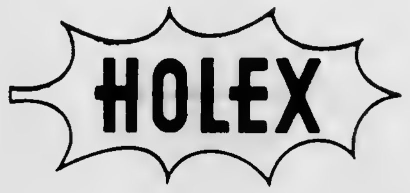
Class 6—Chemicals and Chemical Compositions

For Insecticide-Fungicide for Use on Roses (Int. Cl. 5).
First use during or about March 1934.

Class 10—Fertilizers

For Plant Nutrient, Soil Food and Fertilizer for Roses (Int. Cl. 1).
First use during or about March 1951.

SN 339,063. Holex Incorporated, Hollister, Calif. Filed Sept. 29, 1969.



Class 9—Explosives, Firearms, Equipments, and Projectiles

For Packaged Explosive Power Initiators and Actuators—Namely, Explosive Bolt Cartridges, Pressure Cartridges, Igniters, and Parts Therefor (Int. Cl. 13).

Class 100—Miscellaneous

For Explosive Power Engineering Services—Namely, Design, Testing, and Consultation Services in the Application and Packaging of Explosive Power (Int. Cl. 42).

First use Jan. 15, 1958.

SN 339,064. Holex Incorporated, Hollister, Calif. Filed Sept. 29, 1969.

HOLEX

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Packaged Explosive Power Initiators and Actuators—Namely, Explosive Bolt Cartridges, Pressure Cartridges, Igniters, and Parts Therefor (Int. Cl. 13).

Class 100—Miscellaneous

For Explosive Power Engineering Services—Namely, Design, Testing, and Consultation Services in the Application and Packaging of Explosive Power (Int. Cl. 42).

First use June 20, 1957.

SN 342,923. Lansil Limited, Lancaster, England. Filed Nov. 7, 1969.

LANCOLA

Owner of British Reg. Nos. 741,231, 741,232, and 741,233, dated Apr. 7, 1955.

Class 39—Clothing

For Skirts, Sweaters, Dresses, Suits, Coats, Blouses, Lingerie, and Sleepwear (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Piece Goods, Bed and Table Covers (Int. Cl. 24).

Class 43—Thread and Yarn

For Yarns and Threads (Int. Cl. 23).

SN 343,899. Sumner Williams, Inc., East Boston, Mass. Filed Nov. 19, 1969.

SWI

Class 6—Chemicals and Chemical Compositions

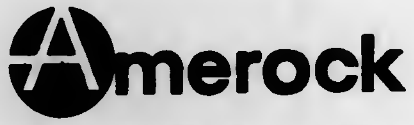
For Chemicals for Use in the Graphic Arts, Photoengraving, Lithography, Gravure and Printing—Namely, Developing Inks, Printing Gums, Etching Liquid, Lacquers, Developers, Desensitizers and Sensitizers (Int. Cl. 1).

Class 50—Merchandise Not Otherwise Classified

For Pre-Sensitized and Wipe-On Lithographic and Printing Plates (Int. Cl. 7).

First use Sept. 12, 1969.

SN 354,762. Amerock Corporation, Rockford, Ill. Filed Mar. 23, 1970.



Owner of Reg. Nos. 831,468, 864,115, and others.

Class 12—Construction Materials

For Decorative Moldings (Int. Cl. 19).
First use January 1968.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cabinet Door and Drawer Pulls and Knobs, Door Hinges; Drawer Slides, Desk and Chair Hardware; Rotating Shelves and Shelf Hardware; Pulls and Hinges for Vending Machines, Dishwathers, Washers, Ovens and Refrigerators; Rollers and Pulls for Sliding Patio Doors; Finger Lifts, Operators and Counterbalancing Devices for Windows; Coat Hooks; Door Stops; Handrail Brackets; and Cabinet Assembly Clips (Int. Cl. 6).
First use January 1968.

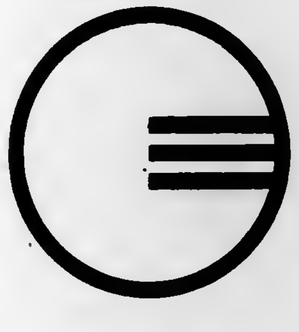
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Tools for Installing Pulls, Knobs, Hinges, Catches, Moldings and Drawer Slides; Tools for Adjusting Hinges; and Tools for Cutting Moldings (Int. Cl. 8).
First use February 1969.

Class 25—Locks and Safes

For Catches for Cabinet Doors and Drawers; Locks for Windows and Patio Doors; and Latches for Vending Machines, Dishwashers, and Ovens (Int. Cl. 6).
First use January 1968.

SN 355,948. The Gillette Company, Boston, Mass. Filed Apr. 6, 1970.



Class 40—Fancy Goods, Furnishings, and Notions

For Hair Curlers (Int. Cl. 26).

Class 51—Cosmetics and Toilet Preparations

For Hair Coloring Preparations, Hair Conditioner, Hair Dressing, Hair Lightener, Hair Relaxer Preparations, Hair Rinse, Hair Setting Gel, Hair Spray, Hair Waving Preparations; After Shave Lotion, Antiperspirant, Breath Drops, Cologne, Deodorant for Personal Use, Shaving Cream; and Facial Cleanser, Facial Washing Cream, Skin Cream, and Skin Lotion (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Hair Shampoo and Toilet Soap (Int. Cl. 3).
First use Jan. 21, 1970.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

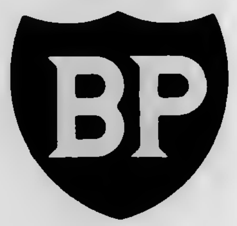
Class 1—Raw or Partly Prepared Materials

SN 322,270. Central States Products Company, St. Louis, Mo. Filed Mar. 20, 1969.

WILLIAMSBURG

For Vinyl Film and Sheeting, Sold for Incorporation Into Other Products (Int. Cl. 17).
First use Mar. 13, 1969.

SN 322,823. The British Petroleum Company Limited, London, England. Filed Mar. 26, 1969.



Owner of British Reg. No. 899,038, dated Sept. 5, 1966.
For Asphalt, Pitch, Bitumen, Asphaltic Bitumen; Compounds, Solutions and Emulsions of Asphaltic Bitumen (None Being in the Nature of Paints); All Being Goods Derived From Petroleum (Int. Cl. 19).

SN 324,282. Disogrin Industries, Manchester, N.H. Filed Apr. 11, 1969.

DISOFLEX

Owner of Reg. No. 641,917.
For Plastic Rod and Sheet Stock Made of Elastic Material (Int. Cl. 17).
First use May 17, 1963.

SN 330,485. Engelhard Minerals & Chemicals Corporation, Edison, N.J. Filed June 19, 1969.

ULTRA COTE

The word "Cote" is disclaimed apart from the mark as shown.
For Clays for Coating and Filling Paper and Paperboard (Int. Cl. 1).
First use May 6, 1969.

SN 334,628. Soybean Research Foundation, Inc., Mason City, Ill. Filed Aug. 6, 1969. COLLECTIVE MARK.

SRF

For Field Seeds and Grain Seeds (Int. Cl. 31).
First use Mar. 6, 1969.

SN 334,742. Rohm and Haas Company, Philadelphia, Pa. Filed Aug. 7, 1969.

ANIMATE

For Elastomeric Fibers, Continuous Filaments and Staple Lengths for Further Manufacture and Other Uses in the Industrial Arts (Int. Cl. 22).
First use on or about Aug. 1, 1969.

SN 334,743. Rohm and Haas Company, Philadelphia, Pa. Filed Aug. 7, 1969.

FORMELLE

For Elastomeric Fibers, Continuous Filaments and Staple Lengths for Further Manufacture and Other Uses in the Industrial Arts (Int. Cl. 22).
First use on or about July 31, 1969.

SN 347,952. Mitsui Toatsu Chemicals, Chiyoda-ku, Tokyo, Japan. Filed Jan. 7, 1970.

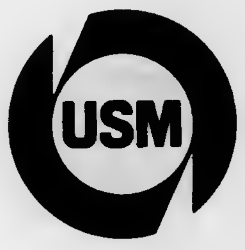
For Plastic Resins (Int. Cl. 1).
First use July 1956; in commerce Sept. 15, 1968.

SN 348,025. Fiber Industries, Inc., Charlotte, N.C. Filed Jan. 8, 1970.

ECF

For Man-Made Fibers (Int. Cl. 22).
First use Nov. 4, 1969.

SN 348,066. USM Corporation, Boston, Mass. Filed Jan. 8, 1970.



Owner of Reg. Nos. 798,451, 803,747, and others.
For Polyvinyl Chloride Material in Pellet Form (Int. Cl. 1).
First use Sept. 3, 1969.

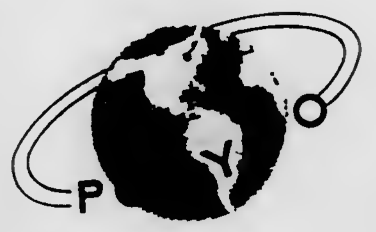
SN 361,075. Rayonier Canada Sales Limited, Vancouver, British Columbia, Canada. Filed May 28, 1970.

ALICETA

For Wood Pulp (Int. Cl. 1).
First use May 3, 1968; in commerce Jan. 7, 1970.

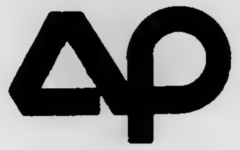
Class 2—Receptacles

SN 310,918. Polyco, Incorporated, Engelwood, Colo. Filed Oct. 30, 1968.



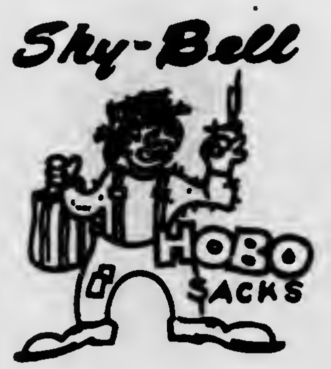
For Flexible Packaging Bags (Int. Cl. 20).
First use in or about January 1962.

SN 324,382. Alton Box Board Company, Wilmington, Del. Filed Apr. 14, 1969.



For Packaging Products—Namely, Cartons, Boxes, Tube Containers, and Parts Therefor (Int. Cl. 16).
First use Mar. 27, 1969.

SN 325,400. Lee Shy-Bell Schauble, Manteno, Ill. Filed Apr. 23, 1969.



Applicant disclaims the word "Sacks" and the descriptive representation of the sack.
For Sacks (Int. Cl. 22).
First use in 1865.

SN 326,614. Alton Box Board Company, Wilmington, Del. Filed May 7, 1969.

ALTON PACKAGING

"Packaging" is disclaimed apart from the mark as shown.
For Packaging Products—Namely, Cartons, Boxes, Shipping Containers, and Parts Therefor (Int. Cl. 16).
First use Mar. 27, 1969.

SN 343,157. Republic Corporation, Century City, Calif. Filed Nov. 10, 1969.

EVERYWARE

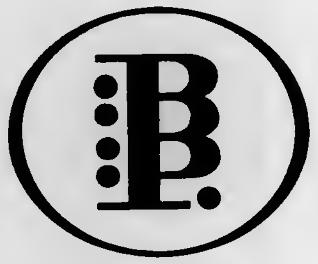
For Plastic Dishware (Int. Cl. 21).
First use Mar. 19, 1969.

SN 343,940. F. N. Burt Company Inc., Buffalo, N.Y. Filed Nov. 19, 1969.

PERMA-PHUSE

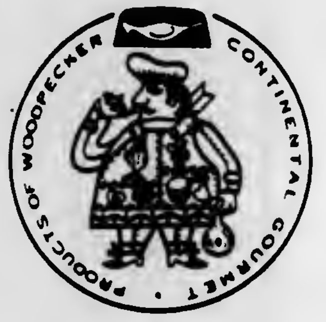
Owner of Reg. No. 754,831.
For Paperboard Cartons (Int. Cl. 16).
First use Oct. 1, 1969.

SN 344,210. Basic Plastics, Baltimore, Md. Filed Nov. 21, 1969.



The mark consists of the letters "B, P and I" in stylized form and design.
For Plastic Bottles (Int. Cl. 21).
First use July 22, 1968.

SN 348,499. Continental Gourmet, Inc., Los Angeles, Calif. Filed Jan. 14, 1970.



For Pantryware—Namely, Canisters, Bread Boxes, Spice Jars, Salt and Pepper Shakers, Recipe Card Boxes and Napkin Holders, Salad Bowls, Condiment Sets, and Serving Trays and Dishes Made of Wood or Plastic; Bath Accessories—Namely, Soap Dishes, Tumblers, Trays, Tissue Boxes, Waste Baskets, and Hampers Made of Wood or Plastic (Int. Cl. 21).
First use Mar. 1, 1969.

SN 350,523. Pretty Products, Inc., Coshocton, Ohio. Filed Feb. 4, 1970.

RUBBER QUEEN

The word "Rubber" is disclaimed apart from the mark as shown.
For Waste Container (Int. Cl. 21).
First use Jan. 11, 1970.

SN 362,453. Kimberly-Clark Corporation, Neenah, Wis. Filed June 12, 1970.

KIMBIES

Owner of Reg. No. 862,792.
For Disposable Diaper Pails and Bags Therefor (Int. Cl. 16).
First use May 22, 1970.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 329,984. Independent Retailers Syndicate, Inc., New York, N.Y. Filed June 13, 1969.

BRYSON

Owner of Reg. Nos. 534,826, 777,070, and others.
For Luggage—Namely, Suitcases, Travel Cases and Brief Cases (Int. Cl. 18).
First use 1949.

SN 341,267. Dixon-Bartlett-Lambrecht, Inc., Baltimore, Md. Filed Oct. 21, 1969.

HILL AND DALE

Owner of Reg. No. 535,080.
For Women's Handbags (Int. Cl. 18).
First use July 1967.

SN 362,810. Eagle Clothes, Inc., d.b.a. B & B Lorrys Stores, New York, N.Y. Filed June 16, 1970.

BB Lorrys

Owner of Reg. Nos. 769,216 and 808,537.
For Luggage, Pocket Books, Bill Folds, Key Holders, and Wallets (Int. Cl. 18).
First use August 1965; December 1919 as to "B & B"; August 1930 as to "Lorrys."

Class 4 — Abrasives and Polishing Materials

SN 324,714. Formica Corporation, Cincinnati, Ohio. Filed Apr. 16, 1969.

FORMICA

Owner of Reg. Nos. 698,357, 742,863, and others.
For Floor Polish (Int. Cl. 3).
First use Apr. 9, 1969.

SN 357,521. Sterling Drug Inc., New York, N.Y. Filed Apr. 21, 1970.

MOPSIE

For Liquid Preparation for Cleaning and Polishing Floors (Int. Cl. 3).
First use Mar. 25, 1970.

Class 5 — Adhesives

SN 343,291. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1969.

ASBESTOGARD

For Roofing Adhesive (Int. Cl. 1).
First use at least on or about Sept. 17, 1968.

SN 354,958. Johns-Manville Corporation, New York, N.Y. Filed Mar. 24, 1970.

CORRUMASTIC

For Synthetic Resin Adhesive Material for Sealing the Joints Between Structural Panels (Int. Cl. 1).
First use at least on or about June 5, 1953.

Class 6 — Chemicals and Chemical Compositions

SN 306,253. Masanori Konaka, Chuo-ku, Tokyo, Japan. Filed Aug. 29, 1968.

Cho cho san

蝶々さん

"Cho Cho San" fully translated means "cute little butterfly lady."
For Incense (Int. Cl. 3).
First use Sept. 1, 1960; in commerce Sept. 1, 1960.

SN 309,837. Ciba Limited, Basel, Switzerland. Filed Oct. 17, 1968.

TERALAN

Owner of Swiss Reg. No. 229,438, dated Jan. 3, 1968; and U.S. Reg. No. 650,745.
For Dyestuffs, Coloring Matters (Int. Cl. 2).

SN 314,471. D. A. Stuart Oil Co., Limited, Chicago, Ill. Filed Dec. 13, 1968.

DASCO PA-COND

Owner of Reg. Nos. 524,061, 806,617, and others.
For Alkaline Concentrates To Be Mixed With Water for Use in a Water Curtain To Trap Overspray of Paint To Render It Tack-Free (Int. Cl. 1).
First use March 1966.

SN 319,766. Dow Corning Corporation, Midland, Mich. Filed Feb. 24, 1969.

SNUG & DRY

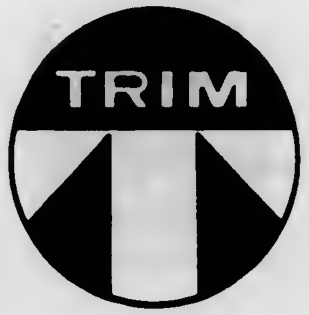
For Silicone Water Repellent and Leather Dressing for Shoes (Int. Cl. 1).
First use Jan. 15, 1969.

SN 320,159. Masanori Konaka, Chuo-ku, Tokyo, Japan, Filed Feb. 26, 1969.

FAITH

For Incense (Int. Cl. 3).
First use Dec. 9, 1968; in commerce Dec. 9, 1968.

SN 323,586. Master Chemical Corporation, Perrysburg, Ohio. Filed Apr. 3, 1969.



Owner of Reg. Nos. 601,823 and 767,813.
For Additive Anti-Foaming Agent for Use in Cutting Fluid Coolants (Int. Cl. 1).
First use January 1967.

SN 323,601. Sel-Rex Corporation, Nutley, N.J. Filed Apr. 3, 1969.

RUTHENEX

For Ruthenium Plating Chemicals (Int. Cl. 1).
First use Mar. 21, 1969.

SN 324,156. American Metal Climax, Inc., d.b.a. Southwest Potash Corporation, New York, N.Y. Filed Apr. 10, 1969.

POT-NITE M.P.

For Nitrate of Potash in Prilled Form, for use in Glassmaking (Int. Cl. 1).
First use Mar. 10, 1969.

SN 327,692. Southern Auto Supply, Bakersfield, Calif. Filed May 19, 1969.

ANTI-HEAT

For Coolant for Internal Combustion Engines and Radiators (Int. Cl. 1).
First use Oct. 19, 1959.

SN 327,705. R. T. Vanderbilt Company, Inc., New York, N.Y. Filed May 19, 1969.

EP-AQUA

For Emulsifying Agent for Epoxy Resin Emulsions Used in Surface Coatings (Int. Cl. 1).
First use Mar. 26, 1969.

SN 329,011. NOR-AM Agricultural Products, Inc., Chicago, Ill., assignee of Schering Aktiengesellschaft, Berlin, Germany. Filed June 3, 1969.

FUNDAL

For Insecticides and Acaricides (Int. Cl. 5).
First use Jan. 1, 1967; in commerce Jan. 28, 1969.

SN 329,721. The Hugé Company, Inc., St. Louis, Mo. Filed June 11, 1969.

EXCELCIDE

For Insecticides, Rodenticides, Larvacides, and Bird Repellants (Int. Cl. 5).
First use Aug. 3, 1939.

SN 331,892. Humphrey Chemical Corporation, Edgewood Arsenal, Md. Filed July 7, 1969.

ARSONAX

For Fire Retardant Composition for Use in Paper and Paperboard (Int. Cl. 1).
First use May 21, 1969.

SN 332,996. Schering Aktiengesellschaft, Berlin, Germany. Filed July 18, 1969.

ARGALUX

Owner of German Reg. No. 762,908, dated Feb. 9, 1961.
For Silver Plating Solutions and Salts, Brighteners and Additives for Such Silver Plating Solutions (Int. Cl. 1).

SN 336,453. Keltron AG, Rumlang, Zurich, Switzerland. Filed Aug. 27, 1969.

OILEX

Owner of Swiss Reg. No. 221,775, dated Nov. 3, 1966.
For Preparations in Granulated or Pulverized Form for the Absorption of Contaminants in Engine Oil, Heating Oil, and Kerosene (Int. Cl. 1).

SN 343,969. George A. Goulston Company, Scituate, Mass. Filed Nov. 19, 1969.

LUROL

For Textile Fiber Lubricants (Int. Cl. 4).
First use June 17, 1969.

SN 343,970. George A. Goulston Company, Scituate, Mass. Filed Nov. 19, 1969.

PYRONIL

For Textile Fiber Lubricants (Int. Cl. 4).
First use Feb. 14, 1964.

SN 346,224. Chevron Chemical Company, San Francisco, Calif. Filed Dec. 15, 1969.

WEED-B-GON

Owner of Reg. Nos. 324,546 and 433,172.
For Herbicides (Int. Cl. 5).
First use Sept. 1, 1945.

SN 346,779. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Dec. 19, 1969.

LOK-SIZE

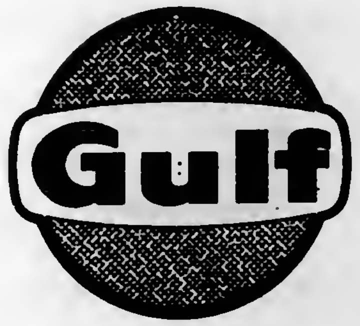
For Industrial Starch (Int. Cl. 1).
First use Nov. 14, 1969.

SN 346,838. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Dec. 22, 1969.

NEOZAPON

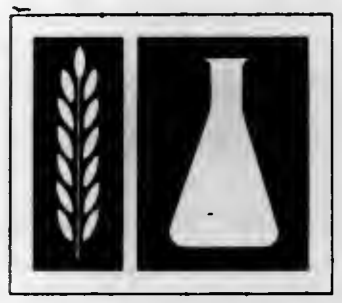
For Dyes (Int. Cl. 2).
First use Mar. 15, 1962; in commerce October 1967.

SN 346,897. Gulf Oil Corporation, Pittsburgh, Pa. Filed Dec. 22, 1969.



The drawing is lined for the colors orange and blue. Owner of Reg. Nos. 710,757, 710,758, and others.
For Linear Fatty Acids (Int. Cl. 1).
First use on or about Nov. 12, 1969.

SN 346,960. Research Products Company, Kansas City, Mo. Filed Dec. 22, 1969.



For Insecticides and Fumigants—Namely, Liquid Grain Fumigants; Mill and Bin Sprays; Machinery Fumigants; Spot Fumigants; Roach and Fly Killer Granules; Insect Sprays, Including Sprays Containing Lindnane and Sprays Containing Chlordane; and Residual and Contact Sprays for Insects (Int. Cl. 5).
First use Jan. 1, 1965.

SN 347,392. Chemical Associates, Inc., Houston, Tex. Filed Dec. 30, 1969.

FRIDGE FRESH

For Refrigerator Deodorizer (Int. Cl. 5).
First use Oct. 30, 1969.

SN 347,781. Protex Industries, Inc., Denver, Colo. Filed Jan. 5, 1970.

PROPLATE

For Coloring and Hardening Agents for Concrete (Int. Cls. 1 and 2).
First use September 1967.

SN 347,782. Protex Industries, Inc., Denver, Colo. Filed Jan. 5, 1970.

PROCRON

For Coloring and Hardening Agents for Concrete (Int. Cls. 1 and 2).
First use September 1967.

SN 347,794. Sunreco Chemical Company, Fresno, Calif. Filed Jan. 5, 1970.

TBF

For Tire Balancing Fluid (Int. Cl. 1).
First use May 14, 1968.

SN 349,800. S. C. Jonson & Son, Inc., Racine, Wis. Filed Jan. 28, 1970.

ENDURE

For Spray Starch for Fabrics (Int. Cl. 3).
First use Dec. 23, 1969.

SN 350,670. Certified Laboratories, Inc., Fort Worth, Tex. Filed Feb. 6, 1970.

CERTI-FOG

For Insecticide (Int. Cl. 5).
First use May 1964.

SN 350,697. Certified Laboratories, Inc., Fort Worth, Tex. Filed Feb. 6, 1970.

COM-KILL

For Weed Killer (Int. Cl. 5).
First use November 1966.

SN 353,011. Standard Oil Company, Flemington, N.J. Filed Mar. 4, 1970.

ESCOFLEX

Owner of Reg. Nos. 403,479, 759,015, and others.
For Plasticizers (Int. Cl. 1).
First use Dec. 11, 1969.

SN 359,786. GAF Corporation, New York, N.Y. Filed May 15, 1970.

GAFQUAT

Owner of Reg. Nos. 704,803, 872,372, and others.
For Synthetic Copolymers for Use in the Cosmetic, Pharmaceutical, Textile, Adhesive, Paper, and Pollution Control Industries (Int. Cl. 1).
First use May 1, 1970.

Class 7 — Cordage

SN 296,765. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

For Rope and Cordage (Int. Cl. 22).
First use Oct. 13, 1967.

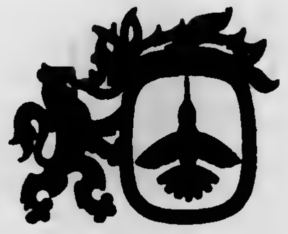
Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 353,184. Paul Garrity, Stamford, Conn. Filed Mar. 5, 1970.

SWINGER

For Cigar, Cigarette and Pipe Lighter (Int. Cl. 34).
First use July 29, 1969.

SN 358,280. Colibri Lighters Limited, London, England. Filed Apr. 29, 1970.



Owner of British Reg. No. 909,289, dated May 10, 1967.
For Cleaners, Lighters for Smokers, Flints, Pipes, and Pochettes for Lighters (Int. Cl. 34).

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 326,416. Nosler Bullets, Inc., Bend, Oreg. Filed May 5, 1969.

NOSLER

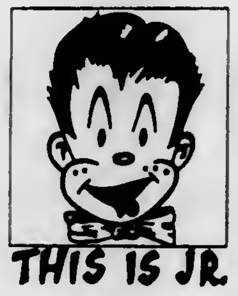
For Rifle Bullets (Int. Cl. 13).
First use 1949.

SN 336,313. Wilhelm Brenneke KG, Berlin, Germany. Filed Aug. 26, 1969.

TUG

For Bullets, Shot Gun Slugs, Soft Point Bullets, and Cartridges (Int. Cl. 13).
First use 1917; in commerce 1927.

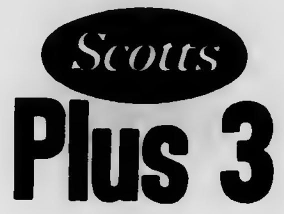
SN 338,681. Jr. Food Stores, Inc., Panama City, Fla. Filed Sept. 23, 1969.



For Matches (Int. Cl. 34).
First use May 1, 1969.

Class 10 — Fertilizers

SN 300,376. The O. M. Scott & Sons Company, Marysville, Ohio. Filed June 13, 1968.



Owner of Reg. Nos. 276,868 and 562,404.
For Fertilizer With Weed Control (Int. Cl. 1).
First use Apr. 30, 1968.

SN 336,056. Excel-Mineral Company, Inc., d.b.a. Excel Mineral Co., Los Angeles, Calif. Filed Aug. 25, 1969.

VITA-RICH

For Granular Water-Absorptive Soil and Turf Additive Used To Increase the Porosity of the Soil and To Increase Its Water-Retentive Qualities (Int. Cl. 1).
First use July 24, 1969.

SN 342,934. Howard B. Johnson, Viroqua, Wis. Filed Nov. 7, 1969.

HOWARD JOHNSON'S

For Plant Fertilizer (Int. Cl. 1).
First use Sept. 6, 1969; at least as early as April 1966 in a different form.

SN 345,127. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Dec. 3, 1969.

FLORAMULL

For Soil Conditioner, Specifically Urea-Formaldehyde Resins Which Are Processed Into Soil Improvers Used Particularly for Increasing Water Retaining Power, for the Preparation of Horticultural Earth and for Waste Land Recovery (Int. Cl. 1).
First use Nov. 20, 1969; in commerce Nov. 20, 1969.

Class 12 — Construction Materials

SN 322,963. Carew Corporation, York, Pa. Filed Mar. 27, 1969.

CONWALL

For Pre-Cast Building Panels Composed of a Rigid Material Such as Concrete (Int. Cl. 19).
First use since approximately June 1963.

SN 323,343. Maplex, S.A., Valencia, Spain. Filed Apr. 1, 1969.

MAPLEXINE

Owner of Spanish Reg. No. 455,546, dated Apr. 19, 1965.
For Coating Material for Wall Surfaces of Buildings, Both Interior and Exterior, and Composed of Ground Stone and Binder (Int. Cl. 19).

SN 325,679. American Plywood Association, Tacoma, Wash. Filed Apr. 28, 1969. COLLECTIVE MARK.

TROPHY-WALL

The word "Wall" is disclaimed separate and apart from the mark as shown, applicant reserving its common law rights therein.
For Plywood (Int. Cl. 19).
First use Mar. 25, 1969.

SN 326,088. Flangeklamp Corporation, Buffalo, N.Y. Filed May 1, 1969.

DIMENSION-WALL

For Perimeter and Partition Wall Structures and Modular Assemblies (Int. Cl. 19).
First use at least as early as Oct. 2, 1968.

SN 330,215. Textron Inc., Providence, R.I. Filed June 16, 1969.

PARKWALL

For Metal Building Panels (Int. Cl. 6).
First use Feb. 14, 1969.

SN 343,296. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1969.

ASBESTOGARD

For Roofing Felts (Int. Cl. 19).
First use at least on or about Sept. 17, 1968.

SN 344,050. Burke Concrete Accessories, Inc., Burlingame, Calif. Filed Nov. 20, 1969.

SNAPLUG

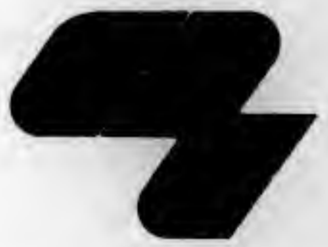
For Bonding Agent To Secure Cement Plugs Used To Fill Constructional Voids in Cement Surfaces (Int. Cl. 19).
First use November 1965.

SN 345,197. Peachtree Doors, Inc., Atlanta, Ga. Filed Dec. 3, 1969.

SAFETY GUARD

For Tempered Glass Panes Sold as Components of Glass Bath Enclosures and Doors (Int. Cl. 19).
First use Jan. 25, 1961.

SN 347,153. Crown Zellerbach Corporation, San Francisco, Calif. Filed Dec. 29, 1969.



The mark consists of a fanciful representation of the letters "CZ." Owner of Reg. Nos. 601,509, 711,427, and 871,975.
For Lumber (Int. Cl. 19).
First use Nov. 29, 1969.

SN 354,256. AC AND S Inc., Lancaster, Pa. Filed Mar. 17, 1970.

ACandS

For Insulating Materials—Namely, Thermal and Sound Insulation in the Form of Boards, Sheets, Blocks and in Loose and Granulated Form, and Insulating Cement (Int. Cl. 17).
First use Aug. 1, 1969.

SN 355,236. Inland-Ryerson Construction Products Company, Milwaukee, Wis. Filed Mar. 27, 1970.

MILCOR

Owner of Reg. Nos. 179,554, 515,121, and 530,519.
For Basement Windows, Window Stools, Utility Windows and Accessories, Area Walls, Lintels, Stud Tracks or Runners, Stud Channels, Steel Structural Studs, Lath Clips, Metal Trim Bases, Metal Trim Moulds and Chair Rails, Roof Hatches, Smoke Vents, Floor Doors and Sidewalk Doors (Int. Cls. 6 and 19).
First use at least September 1958.

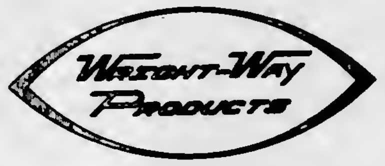
SN 362,956. Diamond Shamrock Corporation, Cleveland, Ohio. Filed June 18, 1970.

DURO-PATCH

For Asphaltic Material for Paving Surfaces and for Repairing and Patching Paved Surfaces (Int. Cl. 19).
First use May 22, 1970.

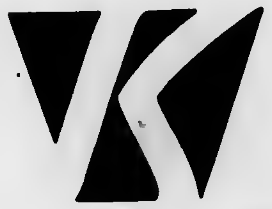
Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 294,105. Wright Way Products, Inc., Houston, Tex. Filed Mar. 25, 1968.



Applicant disclaims the word "Products" apart from the mark as shown. The drawing is lined for the color red; no claim is made as to color.
For Plastic Pouring Spouts (Int. Cl. 21).
First use Feb. 1, 1968.

SN 336,454. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Aug. 27, 1969.



For Nails (Int. Cl. 6).
First use June 10, 1969.

SN 348,778. Illinois Tool Works Inc., Chicago, Ill. Filed Jan. 16, 1970.

METALWOOD

For Self-Drilling Screws (Int. Cl. 6).
First use on or before Nov. 3, 1969.

SN 355,293. Harvey Hubbell, Incorporated, Bridgeport, Conn. Filed Mar. 24, 1970.

DUA-PULL

For Open Weave Wire Gripping Devices (Int. Cl. 6).
First use on or about Oct. 7, 1969.

SN 362,954. Central Screw Company, Broadview, Ill. Filed June 18, 1970.

CALFAST

For Metal Fasteners and Parts Thereof, Including Screws, Bolts, Nuts, and Washers (Int. Cl. 6).
First use on or about June 1, 1951.

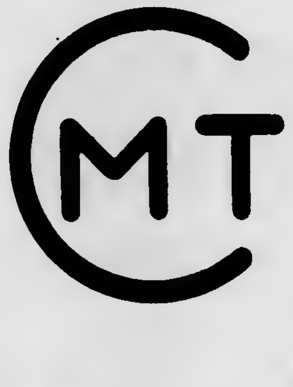
Class 14 — Metals and Metal Castings and Forgings

SN 334,581. Grinding Specialties Corporation, Farmingdale, N.Y. Filed Aug. 6, 1969.

SELECT-A-SIZE

For Stainless Steel Rods in Stock Form (Int. Cl. 6).
First use Mar. 1, 1969.

SN 336,344. McConway & Torley Corporation, Pittsburgh, Pa. Filed Aug. 26, 1969.



Owner of Reg. No. 50,628.
For Iron and Steel Castings and Forgings (Int. Cl. 6).
First use Dec. 31, 1894.

SN 344,694. Diversified Industries, Inc., Clayton, Mo. Filed Nov. 26, 1969.

CU•BITS

Owner of Reg. No. 855,831.
For Copper Granules (Int. Cl. 6).
First use Oct. 29, 1969.

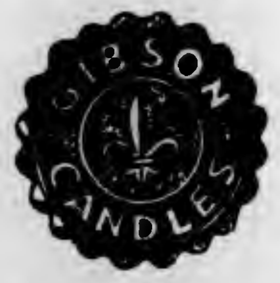
Class 15 — Oils and Greases

SN 318,447. MOC Products Company, Inc., Glendale, Calif. Filed Feb. 5, 1969.

AVCO

For Fuel Additive for Removing Gum and Varnish From Gasoline Engines (Int. Cl. 1).
First use 1953.

SN 332,477. Gibson Greeting Cards, Inc., Cincinnati, Ohio. Filed July 14, 1969.



The word "Candles" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 503,979 and 783,866.
For Candles (Int. Cl. 4).
First use on or about Mar. 1, 1969.

SN 341,490. Motive Suppliers, Inc., Philadelphia, Pa. Filed Oct. 23, 1969.

MOTIVE AID

For Silicone Lubricant, and Starting Fluid for Gasoline and Diesel Engines (Int. Cl. 4).
First use on or about Nov. 10, 1966.

Class 17—Tobacco Products

SN 325,264. International Sales & Import Corporation N.V., Amsterdam, Netherlands. Filed Mar. 4, 1969.

FILIGRAIN

Owner of Dutch Reg. No. 167,055, dated Mar. 19, 1968.
For Cigarettes (Int. Cl. 34).

SN 326,938. Alvaro Gonzalez Gonzalez, d.b.a. Fabrica de Tabacos Alvaro, La Laguna de Tenerife, Islas Canarias, Spain. Filed May 9, 1968.

BREVAS

For Cigars (Int. Cl. 34).
First use at least as early as Apr. 21, 1968; in commerce at least as early as Apr. 21, 1968.

SN 328,076. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V., Wageningen, Netherlands. Filed May 22, 1969.

SUCCES

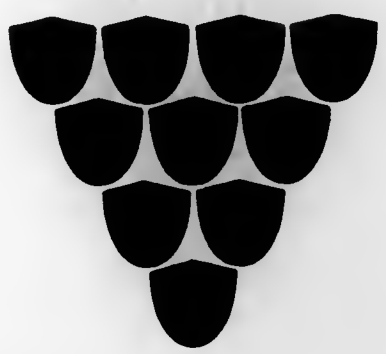
For Cigars (Int. Cl. 34).
First use Feb. 5, 1959; in commerce Feb. 5, 1959.

SN 329,056. Schimmelpenninck Sigarenfabrieken v/h Geurts & Van Schuppen N.V., Wageningen, Netherlands. Filed June 2, 1969.

CALENDULA

For Cigars (Int. Cl. 34).
First use June 1958; in commerce October 1959.

SN 331,642. Jeno F. Paulucci, d.b.a. The Sentinel Company, Duluth, Minn. Filed July 2, 1969.



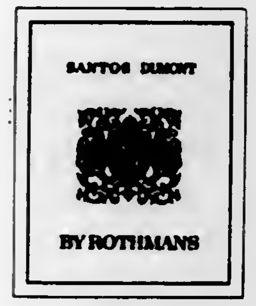
For Cigarettes (Int. Cl. 34).
First use on or about June 9, 1969.

SN 331,643. Jeno F. Paulucci, d.b.a. The Sentinel Company, Duluth, Minn. Filed July 2, 1969.

SENTINEL

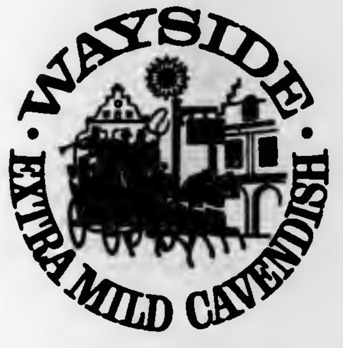
For Cigarettes (Int. Cl. 34).
First use on or about June 9, 1969.

SN 333,440. Rothmans of Pall Mall Limited, Zurich, Switzerland. Filed July 24, 1969.



Owner of Reg. Nos. 865,626, 867,399, and 867,400.
For Cigarettes (Int. Cl. 34).
First use June 10, 1969; in commerce June 10, 1969.

SN 334,306. John Chapman Limited, Johannesburg, Transvaal, Republic of South Africa. Filed Aug. 4, 1969.



Applicant makes no claim to the phrase "Extra Mild Cavendish." Owner of U.S. Reg. No. 384,091.
For Smoking Tobacco (Int. Cl. 34).
First use June 18, 1969; in commerce June 18, 1969.

SN 359,468. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

GRANADA

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

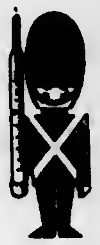
Class 18—Medicines and Pharmaceutical Preparations

SN 326,459. The Upjohn Company, Kalamazoo, Mich. Filed May 5, 1969.

DEPO-PROVERA 150

The number "150" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 515,760, 717,437, and others.
For Medicinal Progestational Preparation for Contraceptive Use (Int. Cl. 5).
First use Feb. 18, 1969.

SN 331,674. Plough, Inc., Memphis, Tenn. Filed July 2, 1969.



The stippling shown on the drawing represents contrast in color; however, applicant makes no claim as to color.
For Aspirin (Int. Cl. 5).
First use Mar. 28, 1969.

SN 338,990. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Sept. 26, 1969.

PROPLEX

For Prothrombin Complex (Human), for Intravenous Administration (Int. Cl. 5).
First use May 5, 1969.

SN 345,063. Conal Pharmaceuticals, Inc., Chicago, Ill. Filed Dec. 2, 1969.

LUBRACON

For Urethral Lubricating Jelly (Int. Cl. 5).
First use Nov. 14, 1969.

SN 345,073. Gold Leaf Pharmacal Co., Inc., Englewood, N.J. Filed Dec. 2, 1969.

VIGOSAN

For Preparation Containing Male Sex Hormone, Specifically Testosterone, and Vitamin E, for Use in Male Sex Hormone Deficiency as Lack of Libido, Various Forms of Eunuchoidism and Male Climacteric (Int. Cl. 5).
First use about 1952.

SN 345,088. A. Nattermann & Cie. GmbH, Cologne, Braunsfeld, Germany. Filed Dec. 2, 1969.

EPLID

For Anticholesterol Drug (Int. Cl. 5).
First use Oct. 5, 1962; in commerce Oct. 5, 1962.

SN 345,121. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Dec. 3, 1969.

GEL-PILO

For Ophthalmic Preparations (Int. Cl. 5).
First use Nov. 3, 1969.

SN 345,517. USV Pharmaceutical Corporation, New York, N.Y. Filed Dec. 5, 1969.

ITISIL

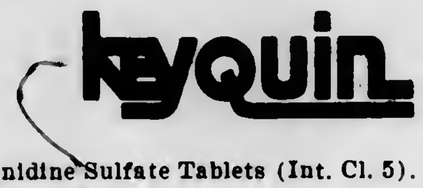
For Multiple Vitamins (Int. Cl. 5).
First use Nov. 17, 1969.

SN 345,939. Geigy Chemical Corporation, Ardsley, N.Y. Filed Dec. 11, 1969.

PRESCOM

For Diuretic and Anti-Hypertensive Preparation (Int. Cl. 5).
First use Nov. 19, 1969.

SN 350,550. Key Pharmaceuticals, Inc., Miami, Fla. Filed Feb. 5, 1970.



For Quinidine Sulfate Tablets (Int. Cl. 5).
First use Oct. 27, 1969.

SN 354,999. Rucker Pharmacal Co., Inc., Shreveport, La. Filed Mar. 25, 1970.

THREE-EST

For Injectable Suspension for Treatment of Menopausal Disturbances and Other Female Disorders (Int. Cl. 5).
First use July 18, 1963.

SN 355,000. Rucker Pharmacal Co., Inc., Shreveport, La. Filed Mar. 25, 1970.

RU-CORT

For Suspension of Predisolone Acetate for Intra-Articular and Intra-Muscular Injection (Int. Cl. 5).
First use Nov. 9, 1961.

SN 355,496. S. F. Durst & Co., Inc., Philadelphia, Pa. Filed Mar. 31, 1970.

PEDAMETH

For Capsules for Oral Administration to Infants and Children for Treatment of Diaper Rash and Dermatitis (Int. Cl. 5).
First use Jan. 12, 1953.

SN 358,232. H. & F. Campbell Co., Inc., Indianapolis, Ind. Filed Apr. 29, 1970.

For Preparation To Aid in Removing Corns and Callouses (Int. Cl. 5).
First use Apr. 2, 1970.

SN 361,216. Diamond Laboratories, Inc., Des Moines, Iowa. Filed June 1, 1970.

TALODEX

For Pharmaceutical To Aid in the Treatment and Control of Fleas, Ticks, Demodectic Mange, Certain Intestinal Parasites and Heartworm Microfilaria in Dogs (Int. Cl. 5).
First use Feb. 19, 1969.

SN 361,241. Parke, Davis & Company, Detroit, Mich. Filed June 1, 1970.

BETAPAR

For Anti-Inflammatory Preparation (Int. Cl. 5).
First use on or before Feb. 20, 1970.

Class 19—Vehicles

SN 330,939. Lord Corporation, Erie, Pa. Filed June 25, 1969.

LASTOSPHERE

For Bonded Rubber-Metal Springs Primarily for Railway, Highway, and Off-Highway Vehicles, and Parts Thereof (Int. Cl. 12).
First use September 1968.

SN 338,518. Americar, Inc., Daytona Beach, Fla. Filed Sept. 22, 1969.

ECONO-CAR

Owner of Reg. Nos. 772,037 and 795,732.
For Automobiles and Trucks (Int. Cl. 12).
First use on or about Nov. 1, 1961.

SN 362,487. The Commodore Corporation, Omaha, Nebr. Filed June 12, 1970.

LYNBROOK

For Mobile Homes (Int. Cl. 12).
First use Feb. 1, 1970.

SN 363,661. Mallard Coach Corporation, West Bend, Wis. Filed June 25, 1970.

MALLARD

Owner of Reg. Nos. 603,537, 880,791, and others.
For Motor Homes (Int. Cl. 12).
First use Jan. 14, 1970.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 321,142. Angstrohm Precision Incorporated, Van Nuys, Calif. Filed Mar. 10, 1969.

FIX-TRIM

For Electrical Resistors Adapted for Adjustment by Grinding (Int. Cl. 9).
First use June 14, 1968.

SN 323,114. Mole-Richardson Co., Hollywood, Calif. Filed Mar. 28, 1969.

SOLARSPOT

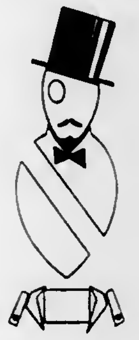
For Lamps for Motion Picture, Television and Photographic Stages and Studios (Int. Cl. 11).
First use 1935.

SN 324,500. Dart Industries Inc., Los Angeles, Calif., by change of name from Rexall Drug and Chemical Company, d.b.a. The West Bend Company, Los Angeles, Calif. Filed Apr. 14, 1969.

See'n Serve

For Electric Automatic Corn Poppers for Domestic Use (Int Cl. 11).
First use Apr. 2, 1969.

SN 325,860. GCL Mercantile Corporation, Hawthorne, N.J. Filed Apr. 29, 1969.



The mark consists of a fanciful representation of the letters "GCL."
For Combination Radio, Phonograph and High-Fidelity Stereo Set (Int. Cl. 9).
First use on or about Mar. 10, 1969.

SN 334,258. Superior Continental Corporation, Hickory, N.C. Filed Aug. 1, 1969.

GRIPLOK

For Electrical Connectors Which Are in the Form of Metallic Grippers and Which Are Suitable Only for Use in Cable Bonding or Grounding Harnesses for Engaging Metallic Shields of Communication Cable To Establish Continuity Between Two Cable Shields or Between One Cable Shield and Ground (Int. Cl. 8).
First use August 1969.

SN 335,052. Pierce Corporation, River Falls, Wis. Filed Aug. 11, 1969.

PIERCE

The drawing is lined for the color red, but applicant disclaims the color as an integral feature of the mark.
For Electric Erasers (Int. Cl. 16).
First use July 30, 1969.

SN 336,493. Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka Prefecture, Japan. Filed Aug. 27, 1969.

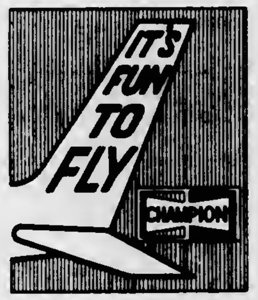
For Electric Rice Cookers (Int. Cl. 11).
First use at least as early as Apr. 28, 1960; in commerce at least as early as Apr. 28, 1960.

SN 340,527. Dependable Electric Mfg. Co. Inc., Brooklyn, N.Y. Filed Oct. 13, 1969.

Gleam-Lites

For Christmas Tree Electric Light Sets and Electric Lamps (Int. Cl. 11).
First use March 1959.

SN 351,904. Champion Spark Plug Company, Toledo, Ohio. Filed Feb. 20, 1970.



The drawing is lined for the color red. Owner of Reg. No. 540,137.
For Aviation Spark Plugs (Int. Cl. 7).
First use Jan. 27, 1970.

SN 352,364. The Murdock Corporation, Chelsea, Mass. Filed Feb. 25, 1970.

D.I.L.

For Induction Coils for Use With Cordless Transmission of Sound, Audio Amplifiers for Feeding Signals To Such Coils, and Cordless Head Phones and Speakers for Receiving Such Signals (Int. Cl. 9).
First use Nov. 12, 1969.

SN 354,409. Dominion Electric Corporation, Mansfield, Ohio. Filed Mar. 18, 1970.

ELECTRICOLOR

For Electric Skillets and Electric Corn Poppers (Int. Cl. 11).
First use on or about Jan. 12, 1970.

SN 354,606. Essex International, Inc., Fort Wayne, Ind. Filed Mar. 19, 1970.

CORO-FLEX

For Coaxial Cable Radio Frequency Transmission Lines Having a Corrugated Metal Jacket (Int. Cl. 9).
First use Dec. 9, 1966.

SN 354,607. Essex International, Inc., Fort Wayne, Ind. Filed Mar. 19, 1970.

ENSOLON

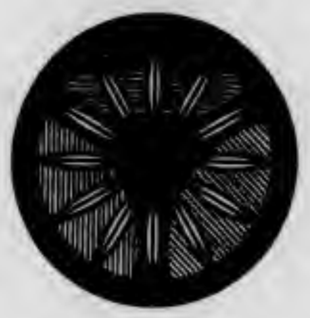
Owner of Reg. No. 733,558.
For Film Insulated Magnet Wire (Int. Cl. 9).
First use on or before Jan. 1, 1964.

SN 354,754. Wells Mfg. Corp., Fond Du Lac, Wis. Filed Mar. 20, 1970.

ROAD AMERICA

For Automotive Ignition Parts—Namely, Distributors, Coils, Switches, Relays, Starters, Condensers, and Components Thereof (Int. Cls. 9 and 12).
First use Feb. 10, 1969.

SN 355,285. Zenith Radio Corporation, Chicago, Ill. Filed Mar. 27, 1970.



The drawing is lined for the colors red, blue and green. Owner of Reg. No. 776,516.
For Color Television Receivers (Int. Cl. 9).
First use at least as early as January 1970.

SN 355,375. The Feldman Company, Los Angeles, Calif. Filed Mar. 30, 1970.

MARQUEE

For Electric Lighting Fixtures (Int. Cl. 11).
First use on or about Feb. 20, 1970.

SN 355,602. Anaconda Wire and Cable Company, New York, N.Y. Filed Apr. 1, 1970.

SECURITYFLEX

For Electric Wires and Cables (Int. Cl. 9).
First use Apr. 30, 1929.

SN 356,092. International Battery, Inc., Schiller Park, Ill. Filed Apr. 6, 1970.

POLY DYNE

For Automotive Lead-Acid Storage Batteries (Int. Cl. 9).
First use at least as early as March 1970.

SN 356,747. The Pittman Corporation, Sellersville, Pa. Filed Apr. 13, 1970.

PITMO

For Miniature Electric Motors (Int. Cl. 7).
First use Mar. 19, 1970.

SN 356,952. Dupree, Inc., d.b.a. Western Indicator Co., South El Monte, Calif. Filed Apr. 15, 1970.

FIREFLY

For Electric Lamp Sockets (Int. Cl. 11).
First use January 1970.

SN 357,415. Proctor-Silex Incorporated, Philadelphia, Pa. Filed Apr. 20, 1970.

WINDSOR

Owner of Reg. Nos. 585,865 and 726,234.
For Electric Irons and Toasters (Int. Cls. 9 and 11).
First use in or about September 1950.

SN 361,656. RCA Corporation, New York, N.Y. Filed June 4, 1970.

AccuColor

The drawing is lined for the colors blue, red, and yellow. Color is not claimed as an essential feature of the mark, and no claim is made to color.

For Televison Sets, Television Picture Tubes, and Television Tuning Systems (Int. Cl. 9).
First use on or about May 15, 1970.

SN 361,657. RCA Corporation, New York, N.Y. Filed June 4, 1970.

AccuColor

For Television Sets, Television Picture Tubes, and Television Tuning Systems (Int. Cl. 9).
First use on or about May 18, 1970.

SN 362,202. Sterling Electronics Corporation, Houston, Tex. Filed June 10, 1970.

SHERATON

For Radios (Int. Cl. 9).
First use at least as early as June 3, 1970.

SN 362,626. Roach-Appleton Manufacturing Company, South Bend, Ind. Filed June 15, 1970.

B-M

Owner of Reg. Nos. 340,116 and 825,639.
For Electrical Connectors and Couplings (Int. Cl. 9).
First use June 1934.

SN 363,388. Farmland Industries, Inc., Kansas City, Mo. Filed June 23, 1970.

Farmland

The drawing is lined for the colors green and orange, but no claim is made to any particular color. Owner of Reg. No. 852,208.

For Batteries for Motor Vehicles (Int. Cl. 9).
First use June 11, 1970.

Class 22 — Games, Toys, and Sporting Goods

SN 305,349. Georges Beuchat, Marsailles, France, assignee of Sports Industries, Inc., Gardena, Calif. Filed Aug. 16, 1968.

JETFIN

The word "Fin" is disclaimed apart from the mark, all without prejudice to applicant's common law rights. Owner of U.S. Reg. No. 764,232.

For Swim Fins (Int. Cl. 28).
First use Mar. 18, 1965; in commerce Mar. 18, 1965.

SN 310,847. Brunswick Corporation, Chicago, Ill. Filed Oct. 30, 1968.

ALL SEASONS

For Equipment Comprising a Penetrable Screen, Optics for Projecting Upon Said Screen Fairway Scenes and Maps of Hole Layouts, an Indexible Tee Presenting a Variety of Simulated Fairway Surfaces From Which a Golf Ball May Be Hit, Electronic Sensing and Computing Elements To Measure the Velocity and Trajectory of a Golf Ball Hit From Said Indexible Tee and Project a Light Spot on the Screen Representing the Ball, Specially Prepared Film Strips of Selected Fairway Scenes and Mechanical, Optical and Electrical Elements To Sequentially Present These Scenes on the Screen; said Equipment Permitting the Golfer To Play Indoors or in a Limited Space With Regulation Equipment Under Conditions Which Accurately Simulate Those Which Would Be Encountered in Outdoor Play (Int. Cl. 28).

First use Aug. 26, 1966.

SN 312,504. Schutt Manufacturing Company, Litchfield, Ill. Filed Nov. 18, 1968.

SUPER-PRO

For Face Masks for Football Helmets (Int. Cl. 28).
First use Mar. 11, 1968.

SN 313,566. Falls Resources Corporation, Jamaica, N.Y. Filed Dec. 4, 1968.

THE LOVER

For Golf Balls and Tennis Rackets (Int. Cl. 28).
First use Nov. 1, 1968.

SN 318,482. IMA Inventors Marketing of Canada Limited, Toronto, Ontario, Canada. Filed Feb. 4, 1969.

POW-R-PUCK

Owner of Canadian Reg. No. 159,499, dated Nov. 22, 1968.
For Hockey Pucks (Int. Cl. 28).

SN 320,447. Deeks, Inc., Salt Lake City, Utah. Filed Mar. 3, 1969.

DEEKS

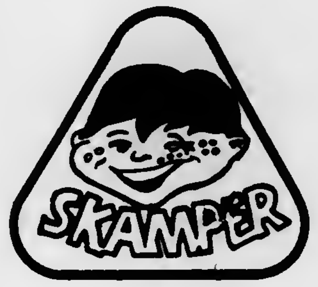
For Inflatable Rubber Decoys (Int. Cl. 28).
First use on or about May 15, 1940.

SN 320,543. The Franklin Mint, Inc., Yeadon, Pa. Filed Mar. 3, 1969.

HEROES OF THE AMERICAN FRONTIER

For Equipment or Apparatus for Playing a Game Including a Gameboard (Int. Cl. 28).
First use Feb. 27, 1969.

SN 326,809. Anthony J. Verbiscar and Robert J. Licher (joint venture), d.b.a. Sierra Madre Toy Company, Sierra Madre, Calif. Filed May 8, 1969.



For Wheeled Toys—Namely, Scooters (Int. Cl. 28).
First use Apr. 22, 1969.

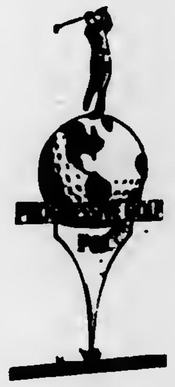
SN 329,641. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed June 10, 1969.

DOLL CLASSICS

No claim of exclusive right is made to "Doll" for the goods recited.

For Dolls and Doll Accessories (Int. Cl. 28).
First use on or about Jan. 31, 1969.

SN 329,887. Progressive Golf, Inc., Salem, Oreg. Filed June 12, 1969.



Applicant disclaims exclusive right to the use of the word "Golf" and the representation of a golf ball, apart from the mark as shown.

For Golf Balls (Int. Cl. 28).
First use May 2, 1969.

SN 330,139. House of Games Corporation Limited, Don Mills, Ontario, Canada. Filed June 16, 1969.

ULCERS

Priority claimed under Sec. 44(d) on Canadian Application filed Dec. 19, 1968; Reg. No. 165,432, dated Sept. 26, 1967.

For Equipment Sold as a Unit for Playing a Board Game (Int. Cl. 28).
First use Feb. 12, 1969; in commerce Feb. 18, 1969.

SN 330,513. Kastinger & Co. KG, Seewalchen am Attersee, Austria. Filed June 19, 1969.

GOLDEN Kastinger

Priority claimed under Sec. 44(d) on Austrian Reg. No. 64,124, dated Dec. 19, 1968.

Owner of U.S. Reg. Nos. 853,576 and 853,577.
For Sport Shoes, Specifically Ski Boots (Int. Cl. 28).
First use October 1968; in commerce December 1968.

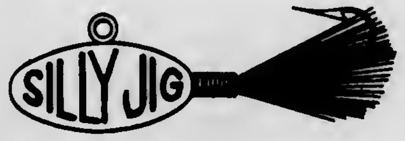
SN 332,464. Dolphin, Inc., Anaheim, Calif. Filed July 14, 1969.

FISH JOGGER

The term "Fish" is disclaimed apart from the mark as shown without waiving any common law rights therein.

For Fish Line Mountable Device for Positioning the Line Through a Series of Pulls and Releases on the Line (Int. Cl. 28).
First use July 18, 1967.

SN 333,384. Walter C. Dette, Roscoe, N.Y. Filed July 24, 1969.



No claim of exclusive right is made to the representation of a fishing lure or to the word "Jig" for the goods recited.

For Fishing Lure (Int. Cl. 28).
First use June 25, 1969.

SN 333,843. Pittman Products, Inc., d.b.a. Sportsways, Huntington Park, Calif. Filed July 29, 1969.

SCENE-O-RAMA

For Underwater Diving Masks (Int. Cl. 28).
First use Jan. 10, 1969.

SN 335,011. Frabill Manufacturing Company, Milwaukee, Wis. Filed Aug. 11, 1969.

PRO-SHOT

Owner of Reg. No. 775,310.
For Devices for Games Using Inflated Balls, Specifically, Tether Balls, Basketballs and Basketball Back Boards, Goals, and Nets (Int. Cl. 28).
First use July 1, 1965.

SN 335,955. Educational Games, Inc., New York, N.Y. Filed Aug. 22, 1969.

ENDS 'N BLENDS

For Equipment Sold as a Unit for Playing an Educational Word-Type Board Game (Int. Cl. 28).
First use Mar. 4, 1968.

SN 335,957. Educational Games, Inc., New York, N.Y. Filed Aug. 22, 1969.

SHAPE UP

For Equipment Sold as a Unit for Playing an Educational Game (Int. Cl. 28).
First use Mar. 17, 1969.

SN 337,235. Moon River Corp., Boston, Mass. Filed Sept. 8, 1969.

THE FIRST STEP DIAL

Applicant disclaims the word "Dial" apart from the mark as shown.
For Occult Communication Devices in the Form of Boards Imprinted With Messages and Having Spinners Attached Thereto (Int. Cl. 28).
First use at least as early as Aug. 21, 1969.

SN 339,091. Mattel, Inc., Hawthorne, Calif. Filed Sept. 29, 1969.

TRUSTY-TIM

Owner of Reg. No. 687,510.
For Toy Musical Jack in the Box on Wheels (Int. Cl. 28).
First use Aug. 14, 1969.

SN 339,094. Mattel, Inc., Hawthorne, Calif. Filed Sept. 29, 1969.

TEETER-TIME BABY

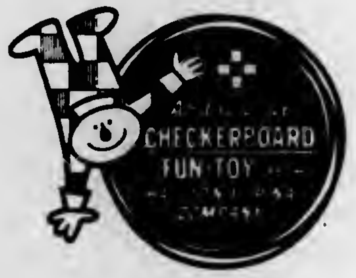
Applicant disclaims the word "Baby" apart from the mark.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use July 31, 1969.

SN 339,670. Eldon Industries, Inc., Hawthorne, Calif. Filed Oct. 3, 1969.

COLLECT-A-CAR RACEWAY

The word "Raceway" is disclaimed apart from the mark as shown.
For Road Race Sets and Cars and Track (Int. Cl. 28).
First use July 7, 1969.

SN 344,644. Ralston Purina Company, St. Louis, Mo. Filed Nov. 26, 1969.



Applicant makes no claim to the words "Exclusive Fun Toy," "An," "From" and "Company" apart from the mark as shown.
For Play Barns and Model Wagon Kits (Int. Cl. 28).
First use Sept. 30, 1969.

SN 345,158. G.P.I., Franklin Lakes, N.J. Filed Dec. 3, 1969.

DYNA-SYN

For Golf Putters (Int. Cl. 28).
First use Jan. 1, 1968.

SN 345,429. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 5, 1969.

CHATTER CHUB

For Artificial Fish Lures (Int. Cl. 28).
First use Sept. 5, 1969.

SN 345,430. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 5, 1969.

FLIP-N-SLIP

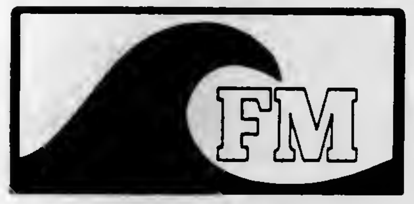
For Artificial Fish Lures (Int. Cl. 28).
First use May 10, 1968.

SN 345,431. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 5, 1969.

HOP-A-LONG

For Artificial Fish Lures (Int. Cl. 28).
First use Aug. 18, 1965.

SN 345,928. Federal Marine Products, Inc., Farmingdale, N.Y. Filed Dec. 11, 1969.



For Life Preserver (Int. Cl. 9).
First use Mar. 13, 1969.

SN 346,062. Chemold Corp., Jamaica, N.Y. Filed Dec. 12, 1969.

CHEMOLD

For Golf Balls and Tennis Racquets (Int. Cl. 28).
First use Dec. 15, 1968.

SN 350,996. Eldon Industries, Inc., Hawthorne, Calif. Filed Feb. 10, 1970.

STEER 'N SCORE

For Equipment (or Apparatus) Sold as a Unit for Playing a Battery-Operated, Skill Type Board Game (Int. Cl. 28).
First use Jan. 30, 1970.

SN 352,301. Rainbow Crafts, Inc., Cincinnati, Ohio. Filed Feb. 25, 1970.

CRAZY POP IT

Applicant disclaims the words "Pop It" apart from the mark as shown.
For Equipment Sold as a Unit for Playing a Parlor Type Amusement Game (Int. Cl. 28).
First use on or about Jan. 30, 1970.

SN 362,125. Tomy Kogyo Co., Ltd., Katsushika-ku, Tokyo, Japan. Filed June 9, 1970.

FLIPPITY FLYER

Applicant disclaims exclusive right to the word "Flyer" independently of the mark.
For Toy Airplane and Trackway (Int. Cl. 28).
First use May 3, 1970; in commerce May 3, 1970.

SN 362,605. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

ANTEATER

For Toy Automobile (Int. Cl. 28).
First use May 19, 1970.

SN 362,606. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

HANDI

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use May 19, 1970.

SN 362,607. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

FEATHERHEAD

For Toy Plush Animal (Int. Cl. 28).
First use May 19, 1970.

SN 362,608. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

THE HOOD

For Toy Automobile (Int. Cl. 28).
First use May 19, 1970.

SN 362,609. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

SMUG BUG

For Toy Automobile (Int. Cl. 28).
First use May 19, 1970.

SN 362,610. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

HEAVIES

For Toy Trucks (Int. Cl. 28).
First use May 19, 1970.

SN 362,612. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

TEE-HEE

For Doll, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use May 19, 1970.

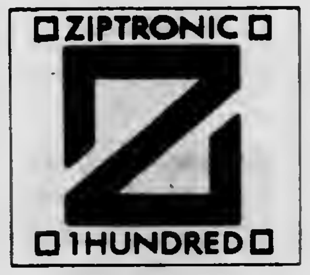
SN 362,613. Mattel, Inc., Hawthorne, Calif. Filed June 15, 1970.

HO-HUM

For Doll, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use May 19, 1970.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 266,114. Universal Business Machines, Inc., Columbia, S.C. Filed Mar. 6, 1967.



For Automatic and Semi-Automatic Mail Sorting Machines, and Parts Therefor (Int. Cl. 7).
First use Oct. 26, 1966.

SN 309,969. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Oct. 18, 1968.

COUNTRY STYLE

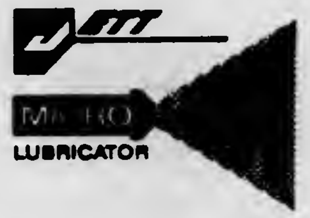
The word "Style" is disclaimed apart from the mark as shown.
For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Sept. 24, 1968.

SN 310,271. Zip Penn Inc., Erie, Pa. Filed Oct. 22, 1968.

ZIP

For Saw Chains and Chain Saw Bars and Sprockets (Int. Cl. 7).
First use Aug. 9, 1962.
Subj. to Intf. with SN 262,073 and SN 262,818.

SN 310,462. Jett Manufacturing Corporation, Charlotte, N.C. Filed Oct. 24, 1968.



Applicant disclaims the word "Lubricator."
For Lubricators for Knitting Machines (Int. Cl. 7).
First use Jan. 30, 1967.

SN 314,433. Oneida Ltd., Oneida, N.Y. Filed Dec. 13, 1968.

LA ROSE

Applicant disclaims the word "Rose" apart from the mark as shown. Owner of Reg. No. 635,559.
For Flatware Made of Non-Precious Metal (Int. Cl. 8).
First use June 1, 1964.

SN 326,254. Flex-O-Kool, Sepulveda, Calif. Filed May 2, 1969.

FLEX-O-KOOL

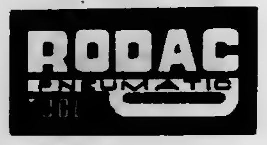
For Vehicle Transmission Components—Namely, Coolant Conducting Tubes and Connectors for Securing Coolant Conducting Tubes to Transmission Portions (Int. Cl. 12).
First use Nov. 28, 1968.

SN 336,999. Bio-Logics, Inc., Salt Lake City, Utah. Filed Sept. 4, 1969.

P-S

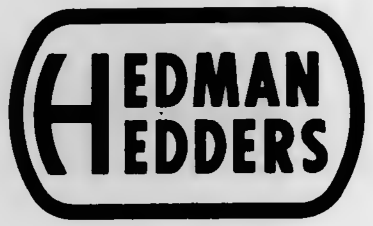
For Hand Tools in the Nature of Punches for Transferring Medical Indicia From One Device to Another (Int. Cl. 8).
First use Aug. 8, 1969.

SN 339,766. Rodac Pneumatic Tools, Gardena, Calif. Filed Oct. 3, 1969.



The words "Pneumatic Tools" are disclaimed apart from the mark as shown. The black, rectangular design on the drawing is not part of the mark, but rather a portion of the nameplate which serves as a background.
For Random Orbital Air Sanders, Sander-Grinders, Orbital Action Sanders, Pneumatic Spray Guns, Industrial Air Drills, Straight Line Sander Filers, Pneumatic Sanders, Dual Action Finishing Sanders, Straight Line Pneumatic Sanders, and Straight Line Pneumatic Sander-Filers (Int. 7).
First use in or about November 1967.

SN 340,918. Hedman Manufacturing Corporation, Culver City, Calif. Filed Oct. 16, 1969.



The word "Hedder" is disclaimed apart from the mark as a whole, but applicant waives none of its common law rights in the mark or any feature thereof.
For Automotive Exhaust Headers (Int. Cl. 7).
First use May 1956.

SN 341,466. Hollis Engineering, Inc., Nashua, N.H. Filed Oct. 20, 1969.

OPTOLINE

For Automatic Assembling Machine for Component Insertion Into Printed Circuit Boards (Int. Cl. 7).
First use Sept. 6, 1969.

SN 342,534. Studebaker Corporation, Muskegon, Mich. Filed Nov. 3, 1969.

SPACE VAC

For Commercial Vacuum Cleaners (Int. Cl. 9).
First use on or about June 11, 1969.

SN 346,590. Ames Supply Company, Downers Grove, Ill. Filed Dec. 18, 1969.

AMCO

For Office Machines—Namely, Typewriters (Int. Cl. 16).
First use May 20, 1969.

SN 351,183. Applied Technology Corporation, Seattle, Wash. Filed Feb. 12, 1970.

FROSTOP

For Mechanical Device Which Produces Stable Water Fogs for Protection of Growing Crops (Int. Cl. 7).
First use Mar. 15, 1969.

SN 351,207. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

CHANELLE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 19, 1970.

SN 351,208. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

DELICADO

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 22, 1970.

SN 351,209. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

FLOWER DANCE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 22, 1970.

SN 351,210. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

CHARISMA

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 13, 1970.

SN 351,211. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

ELYSEE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 13, 1970

SN 351,213. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 12, 1970.

SATINAIRE

For Stainless Steel Knives, Forks, and Spoons (Int. Cl. 8).
First use Jan. 13, 1970.

SN 351,531. Portec, Inc., Oak Brook, Ill. Filed Feb. 16, 1970.

PORTEC

For Railway Rail and Wheel Flange Lubricators (Int. Cl. 7).
First use Aug. 16, 1968.

SN 351,831. Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y. Filed Feb. 19, 1970.

FLICKER

For Razor Blades (Int. Cl. 8).
First use Jan. 29, 1970.

SN 351,832. Philip Morris Incorporated, d.b.a. American Safety Razor Company, New York, N.Y. Filed Feb. 19, 1970.

AMERICAN 74

For Razor Blades (Int. Cl. 8).
First use Jan. 20, 1970.

SN 352,042. Technica-Guss G.m.b.H., Wurzburg, Germany. Filed Feb. 24, 1970.

T.G.

For Casting Machines (Int. Cl. 7).
First use at least as early as May 1967; in commerce at least as early as Nov. 22, 1968.

SN 353,480. The General Tire & Rubber Company, Akron, Ohio. Filed Mar. 9, 1970.

Q/T

For Vehicle Mufflers (Int. Cl. 12).
First use Feb. 10, 1970.

SN 353,528. Midland-Ross Corporation, Cleveland, Ohio. Filed Mar. 9, 1970.

SYNCROFORM

For Machines for Blow-Molding Articles From Extruded Plastic Tubing (Int. Cl. 7).
First use on or about Dec. 30, 1969.

SN 353,781. R. Olleo & Sons Machine Corp., New York, N.Y. Filed Mar. 11, 1970.

STRINGMASTER

For Sewing Machines (Int. Cl. 7).
First use in or about 1958.

SN 353,782. R. Olleo & Sons Machine Corp., New York, N.Y. Filed Mar. 11, 1970.

PLUSHMASTER

For Sewing Machines (Int. Cl. 7).
First use in or about 1956.

SN 354,314. Hydraulics Unlimited Mfg. Co., Eaton, Colo. Filed Mar. 17, 1970.

HARSH

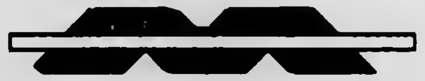
Owner of Reg. No. 763,412.
For Feed Mixers (Int. Cl. 7).
First use Sept. 28, 1962.

SN 354,661. Portable Elevator Manufacturing Company, Bloomington, Ill. Filed Mar. 19, 1970.

SOIL SAVER

For Combination Chisel Plow (Cultivator), Ammonia Applicator and Stalk Cutter (Int. Cl. 7).
First use Oct. 10, 1969.

SN 355,143. Midland Manufacturing Co., Inc., Electric Mills, Miss. Filed Mar. 26, 1970.



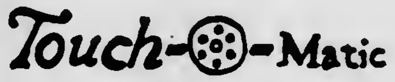
The drawing is lined for the color red. Owner of Reg. No. 875,564.
For Disk Harrows, Sod Seeders, and Rotary Cutters (Int. Cl. 7).
First use February 1967.

SN 355,393. Harris-Intertype Corporation, Cleveland, Ohio. Filed Mar. 30, 1970.

SPEED-SET

For Machine for Slitting and Scoring Corrugated Paperboard (Int. Cl. 7).
First use Mar. 3, 1970.

SN 355,395. The House of Sewing, Inc., Phoenix, Ariz. Filed Mar. 30, 1970.



For Sewing Machines (Int. Cl. 7).
First use January 1967.

SN 362,952. Abell-Howe Company, Forest Park, Ill. Filed June 18, 1970.

CRANEMASTER

For Double Girder Type Overhead Travelling Cranes (Int. Cl. 7).
First use at least as early as 1956.

SN 364,190. The Gillette Company, Boston, Mass. Filed July 2, 1970.

ORBITOR 4000

For Razors and Razor Blades (Int. Cl. 8).
First use June 9, 1970.

Class 24 — Laundry Appliances and Machines

SN 319,134. Colmac Industries, Inc., Colville, Wash. Filed Feb. 14, 1969.

CONNIE

For Commerical Garment Pressing and Finishing Machines (Int. Cl. 7).
First use as early as Jan. 1, 1966.

SN 319,303. Gebr. Poensgen Gesellschaft mit beschrankter Haftung, Dusseldorf-Rath, Germany. Filed Feb. 17, 1969.

EXTRACTO-WASH

For Laundry Extractor-Washers (Int. Cl. 7).
First use Dec. 1, 1968.

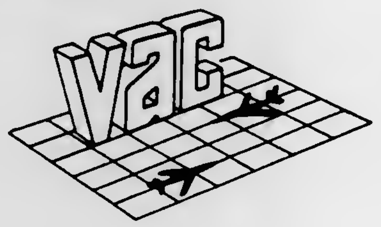
SN 343,148. The Maytag Company, Newton, Iowa. Filed Nov. 10, 1969.

PORTA-PAIR

Owner of Reg. Nos. 702,535, 872,538, and 884,604.
For Washers and Dryers (Int. Cl. 7).
First use Sept. 29, 1969.

Class 26—Measuring and Scientific Appliances

SN 302,389. Butler National Corporation, Minneapolis, Minn. Filed July 10, 1968.



Owner of Reg. No. 847,358.
For Aircraft Navigational Instruments (Int. Cl. 9).
First use Oct. 11, 1966.

SN 330,895. Anagram Corporation, Springfield, Va. Filed June 25, 1969.

ACCUFILE

For Computer Information Storage and Retrieval System Tapes (Int. Cl. 9).
First use February 1967.

SN 347,709. Berkeley Scientific Laboratories, Inc., Berkeley, Calif. Filed Jan. 5, 1970.

VERIDATA

For Computer Access Terminals and Read Out for Use in Laboratory Testing and Handling of Medical Records (Int. Cl. 9).
First use Mar. 12, 1969.
Subj. to Intf. with SN 340,133.

SN 356,118. Nutting Industries, Ltd., Milwaukee, Wis. Filed Apr. 6, 1970.

DUAL-IQ

Owner of Reg. No. 867,886.
For Electronic Multiple Choice Question and Answer Machines Usable by One or More Persons Simultaneously as an Entertainment Device and as an Instructional Apparatus (Int. Cl. 9).
First use at least as early as October 1969.

SN 356,616. Bushnell Optical Corporation, Pasadena, Calif. Filed Apr. 13, 1970.

EXPO

For Binoculars (Int. Cl. 9).
First use Mar. 18, 1970.

SN 356,738. National Sonics Corporation, Farmingdale, N.Y. Filed Apr. 13, 1970.

THE SECRET'S IN THE GAP

For Ultrasonic Sensing Systems—Namely, Level Sensors, Interface Sensors, Acoustic Impedance Sensors, and Associated Controls (Int. Cl. 9).
First use Mar. 26, 1970.

SN 356,865. Delta Design, Inc., La Mesa, Calif. Filed Apr. 14, 1970.

CHARGER

For Apparatus for Moving Test Items in and Out of Environmental Test Chambers (Int. Cl. 9).
First use Aug. 1, 1967.

SN 361,070. Karl R. Lewis, Wethersfield, Conn. Filed May 28, 1970.

PROARMCO

For Sunglasses (Int. Cl. 9).
First use February 1970.

SN 362,597. Foster Grant Co., Inc., Leominster, Mass. Filed June 15, 1970.

THE SUNFIGHTERS

For Sunglasses, Including Clip-Ons (Int. Cl. 9).
First use in or about March 1970.

SN 362,882. Wheaton Glass Company, Millville, N.J. Filed June 17, 1970.

VITRO

For Scientific Apparatus—Namely, Laboratory Glassware (Int. Cl. 9).
First use Nov. 30, 1964.

Class 27—Horological Instruments

SN 272,318. Edward Trauner, Inc., New York, N.Y. Filed May 24, 1967.

GUARDSMAN

For Watches, Watch Movements, and Parts Therefor (Int. Cl. 14).
First use Feb. 21, 1967.

SN 331,746. Gruen Industries, Inc., New York, N.Y. Filed July 3, 1969.

SPACE KING

For Watches (Int. Cl. 14).
First use June 26, 1969.

SN 336,107. Fabrique d'Horlogerie de Fontainemelon S.A., Fontainemelon, Neuchatel, Switzerland. Filed Aug. 25, 1969.

FONTOSPORT

Owner of Swiss Reg. No. 236,857, dated Feb. 14, 1969; and U.S. Reg. Nos. 566,273, 880,443, and others.
For Watches, Self-Winding Watches, Electrically Driven Watches, Watch Movements, Watch Dials, Waterproof Watches, and Watch Parts (Int. Cl. 14).

SN 339,791. Fortis Uhren AG., d.b.a. Fortis Watch Ltd. and Montreas Fortis S.A., Grenchen, Switzerland. Filed Oct. 6, 1969.

FORTIS FLIPPER

Owner of Swiss Reg. No. 237,003, dated Dec. 13, 1968.
For Watches, Clocks, and Parts (Int. Cl. 14).

SN 355,322. Jules Racine & Co., Inc., New York, N.Y. Filed Mar. 30, 1970.

NATIONAL PARK

For Watches, Stopwatches, and Parts Thereof (Int. Cl. 14).
First use July 1899.

Class 28—Jewelry and Precious-Metal Ware

SN 323,144. The Stieff Company, Baltimore, Md. Filed Mar. 28, 1969.

PURITAN

For Hollow Ware and Flatware, All Made of Sterling Silver or Solid Gold (Int. Cls. 8 and 14).
First use 1927.

SN 325,572. Boas Son Ltd., Chicago, Ill. Filed Apr. 25, 1969.

Cardé

For Jewelry (Int. Cl. 14).
First use June 1, 1967.

SN 329,898. Tamraz Incorporated, Chicago, Ill. Filed June 12, 1969.

FACES OF EVE

For Personal Jewelry—Namely, Simulated Pearl Jewelry Items, Necklaces, Broaches, Earrings, and Clips (Int. Cl. 14).
First use May 8, 1969.

SN 346,758. Sidney S. Kampf, Inc., d.b.a. Western Manufacturing Jewelers, Los Angeles, Calif. Filed Dec. 19, 1969.

Jolie

Owner of Reg. No. 777,587.
For Brooches, Crosses, and Pendants (Int. Cl. 14).
First use at least as early as Apr. 20, 1962.

SN 351,006. VB Creations, Inc., New York, N.Y. Filed Feb. 10, 1970.

VALENTINO

For Jewelry (Int. Cl. 14).
First use Dec. 16, 1969.

Class 29—Brooms, Brushes, and Dusters

SN 362,814. Eagle Clothes, Inc., d.b.a. B & B Lorrys Stores, New York, N.Y. Filed June 16, 1970.

B&B Lorrys

Owner of Reg. Nos. 769,216 and 808,537.
For Hat Brushes, Hair Brushes, Clothes Brushes, Nail Brushes, Shaving Brushes, Toilet Brushes, Tooth Brushes, Bath Brushes, and Shoe Brushes (Int. Cl. 21).
First use August 1965; December 1919 as to the mark "B & B"; August 1930 as to the mark "Lorrys."

Class 30—Crockery, Earthenware, and Porcelain

SN 322,443. Interpace Corporation, d.b.a. Shenango China, New Castle, Pa. Filed Mar. 21, 1969.

NOVA

For China Dinnerware (Int. Cl. 21).
First use Nov. 11, 1968.

SN 339,939. Seymart Importing Co., Inc., Rockville Centre, N.Y. Filed Oct. 6, 1969.

CROWN EMPIRE

For Porcelain Chinaware—Namely, Dinnerware (Int. Cl. 21).
First use Aug. 29, 1969.

Class 32—Furniture and Upholstery

SN 331,062. NOL Corporation, Minato-ku, Tokyo, Japan. Filed June 26, 1969.

PIPa

Owner of Japanese Reg. No. 756,030, dated Sept. 25, 1967.
For Tea Wagons, Box Shelves and Shadow Boxes, Room Partitions and Screens, and Miniature Stools (Int. Cl. 20).

SN 359,805. Alma Desk Company, High Point, N.C. Filed May 15, 1970.

DEVONSHIRE

For Office Furniture—Namely, Office Desks, Tables, Chairs, Bookcases, and Cabinets (Int. Cl. 20).
First use Mar. 15, 1969.

SN 361,587. Marks Fitzgerald Furniture Co., Birmingham, Ala. Filed June 3, 1970.

Postomedic

For Mattresses and Box Springs (Int. Cl. 20).
First use Apr. 15, 1970.

Class 33 — Glassware

SN 350,355. Marguerite Carter World Enterprises, Inc., Indianapolis, Ind. Filed Feb. 3, 1970.

MARGUERITE CARTER

The name "Marguerite Carter" is fanciful and not the name of any living individual.
For Stemware, Vases, Bowls, and Pitchers (Int. Cl. 21).
First use July 16, 1969.

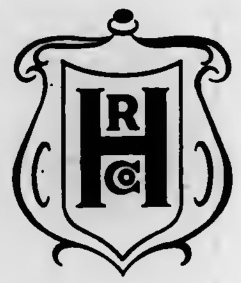
Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 334,478. Johns-Manville Corporation, New York, N.Y. Filed Aug. 5, 1969.

SWAB

For Clutch Facings (Int. Cl. 17).
First use at least on or about Aug. 14, 1968.

SN 340,145. Harrelson Rubber Company, Asheboro, N.C. Filed Oct. 8, 1969.



For Tread Rubber (Int. Cl. 12).
First use November 1965.

SN 341,063. Hi-Flex International Limited, London, England. Filed Oct. 17, 1969.

SILVOFLEX

For High-Pressure Hose for Use for Hydraulics, Air, Grease, Crude and Fuel Oils, Petrol and Various Other Fluids, and Hose Assemblies (Int. Cl. 17).
First use July 15, 1969; in commerce July 15, 1969.

Class 37 — Paper and Stationery

SN 309,484. Sarrio, Compania Anonima de Papeles S.A., Leiza, Navarra, Spain. Filed Oct. 11, 1968.

MARTELE

Owner of Spanish Reg. No. 455,213, dated Mar. 1, 1965.
For All Fine Papers, Coated Papers, All Cardboards, and Coarse Papers (Int. Cl. 16).
First use 1964.

SN 310,355. Paramed Incorporated, New York, N.Y. Filed Oct. 23, 1968.

CD-LOG

For Partially Printed Inventory, Display and Record Keeping Forms for the Controlled Handling and Administration of Medicaments (Int. Cl. 16).
First use December 1967.

SN 320,613. Kimberly-Clark Corporation, Neenah, Wis. Filed Mar. 3, 1969.

Neenah

The mark is used as a watermark on the goods. Owner of Reg. Nos. 516,829, 518,352, and 526,871.
For Writing Paper (Int. Cl. 16).
First use June 1912.

SN 343,444. Venus Esterbrook Corporation, New York, N.Y. Filed Nov. 13, 1969.

SCRIBBLER

For Pencils, Pens, and Markers (Int. Cl. 16).
First use on or about May 1, 1925.

SN 350,071. Diagraph-Bradley Industries, Inc., Herrin, Ill. Filed Jan. 30, 1970.

StāMARK

For Felt-Tip Markers (Int. Cl. 16).
First use Jan. 5, 1970.

SN 360,641. Kimberly-Clark Corporation, Neenah, Wis. Filed May 25, 1970.

DELISOFT

Owner of Reg. Nos. 354,948, 869,871, and others.
For Toilet Tissue (Int. Cl. 16).
First use Oct. 30, 1969.

Class 38 — Prints and Publications

SN 320,660. Train-Aide Corporation, Los Angeles, Calif. Filed Mar. 3, 1969.

train'aide

For Medical Training Film and Printed Medical Programmed Instructional Booklet Material, and Test Unit Answer Sheet (Int. Cls. 9 and 16).
First use Apr. 1, 1968.

SN 340,817. Penn-York Champion Co., Inc., Syracuse, N.Y. Filed Oct. 15, 1969.

VISUAL ENCYCLOPEDIA

Applicant disclaims exclusive use of the word "Encyclopedia" apart from the mark as shown.
For Map Products—Namely, Folding Maps, Wall Maps, Atlasses, and Maps for Photographic Projection (Int. Cl. 16).
First use Oct. 7, 1969.

SN 346,060. Chicago Province of the Society of Jesus, d.b.a. Loyola University Press, Chicago, Ill. Filed Dec. 12, 1969.

ComEd

For Educational Materials—Namely, Books and Pamphlets Used To Teach the Art of Communication (Int. Cl. 16).
First use Oct. 21, 1969.

SN 349,436. Gordon's Turf Service, Chicago, Ill. Filed Jan. 23, 1970.

GORDON'$

For Bulletins, Fact Sheets and Printed Letters to Clients Relating to Horse Racing (Int. Cl. 16).
First use in or prior to 1955.

SN 358,984. Norcross, Inc., New York, N.Y. Filed May 6, 1970.

POODLES

Owner of Reg. No. 791,062.
For Greeting Cards (Int. Cl. 16).
First use Apr. 16, 1970.

Class 39 — Clothing

SN 327,956. Robert-Walters Corp., Chicago, Ill. Filed May 21, 1969.

ADD ONE

For Maternity Dresses, Blouses, Skirts, Tunics, and Slacks (Int. Cl. 25).
First use Apr. 16, 1969.

SN 330,736. Gem International Inc., Kansas City, Mo. Filed June 23, 1969.

IMPERIAL GUARD

For Men's and Boys' Sport Coats, Men's and Boys' Raincoats, Men's and Boys' Slacks, Men's and Boys' Jackets, Men's and Boys' Shirts; Men's Sweaters; Men's and Boys' Swimwear, Men's and Boys' Hosiery, Men's and Boys' Underwear, Men's and Boys' Pajamas, Men's and Boys' Robes, Men's and Boys' Neckwear; and Boys' Suits (Int. Cl. 25).
First use April 1963.

SN 338,506. White Stag Manufacturing Co., Portland, Oreg. Filed Sept. 22, 1969.

Surfcastor
White Stag

Owner of Reg. Nos. 369,881, 892,102, and others.
For Girls' Pants (Int. Cl. 25).
First use May 25, 1962.

SN 338,955. Marjorie Montgomery of California, Los Angeles, Calif. Filed Sept. 25, 1969.

GERARD

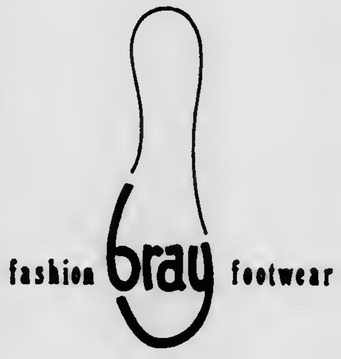
For Women's, Juniors', and Misses' Dresses, Skirts, Sweaters, Blouses, Jackets, Suits, Coats, Bathing Suits, Shorts and Halter Sets, Shifts, Shorts, Slacks, and Beachwear (Int. Cl. 25).
First use 1966.

SN 339,924. P.L.W., Inc., Kansas City, Mo. Filed Oct. 6, 1969.

Plw

For Dresses (Int. Cl. 25).
First use July 31, 1969.

SN 341,361. J. W. Bray Company, Inc., Dalton, Ga. Filed Oct. 22, 1969.



No claim is made to the words "Fashion Footwear" apart from the mark as shown. Owner of Reg. No. 862,776.
For Slippers (Int. Cl. 25).
First use Sept. 24, 1969.

SN 341,399. The Larson Company, Inc., McLean, Va. Filed Oct. 22, 1969.

TRANQUILITY

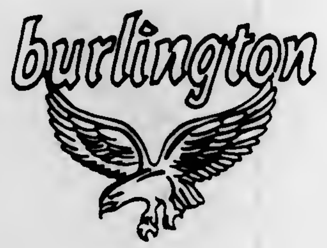
For Women's Underwear (Int. Cl. 25).
First use Oct. 8, 1969.

SN 342,264. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Oct. 31, 1969.

Michel Daniel

"Michael Daniel" is the name of a living individual whose consent is of record. Owner of Reg. No. 774,581.
For Ladies' Coats, Dresses, and Suits (Int. Cl. 25).
First use on or about Jan. 4, 1960, on ladies' coats.

SN 344,051. Burlington Belt Corporation, Elon College, N.C. Filed Nov. 20, 1969.



Owner of Reg. No. 809,445.
For Sandals (Int. Cl. 25).
First use January 1965.

SN 346,899. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. Filed Dec. 22, 1969.

Michael Daniel

"Michael Daniel" is the name of a living individual whose consent is of record. Owner of Reg. No. 774,581.
For Ladies' Coats, Dresses, and Suits (Int. Cl. 25).
First use on or about Oct. 16, 1969, on ladies' coats.

SN 348,291. Hollywood Needlecraft, Incorporated, Los Angeles, Calif. Filed Jan. 12, 1970.

For Layettes and Sleepwear for Infants and Children (Int. Cl. 25).
First use June 15, 1969.

SN 351,484. The H. D. Lee Company, Inc., Shawnee Mission, Kans. Filed Feb. 16, 1970.

MISS LEE

Owner of Reg. Nos. 130,792, 875,201, and others.
For Ladies' and Misses' Jeans and Slacks (Int. Cl. 25).
First use Feb. 2, 1970; 1916 as to "Lee."

SN 351,969. Perfection Frocks, Inc., New York, N.Y. Filed Feb. 20, 1970.

Esteem

For Women's Dresses (Int. Cl. 25).
First use June 15, 1967.

SN 352,692. Wembley Industries, Inc., New Orleans, La. Filed Feb. 27, 1970.

NADIR

For Men's Neckwear (Int. Cl. 25).
First use Dec. 22, 1969.

SN 353,527. Merrimaid Manufacturing Co., Inc., Manchester, N.H. Filed Mar. 9, 1970.

ZIPA-KINI

For Ladies' Underwear (Int. Cl. 25).
First use Jan. 15, 1970.

SN 357,383. Manhattan Industries, Inc., New York, N.Y. Filed Apr. 20, 1970.

PRIVATEER

For Outer Shirts of Knitted and/or Woven Material or Combinations Thereof (Int. Cl. 25).
First use Mar. 23, 1970.

SN 358,660. Knit Products Corporation, Belmont, N.C. Filed May 4, 1970.

U-SHAPE IT

For Panty Hose (Int. Cl. 25).
First use Apr. 14, 1970.

SN 360,513. M. Hoffman & Co., Inc., Boston, Mass. Filed May 22, 1970.

Landlubber

Owner of Reg. Nos. 817,035 and 881,132.
For Dungarees, Jeans, Coats and Jackets for Men, Women, and Children (Int. Cl. 25).
First use in or about September 1964.

SN 360,524. Plymouth Wholesale Corporation, New York, N.Y. Filed May 22, 1970.

GINA MORETTI

"Gina Moretti" is not a name of any known living individual.
For Wearing Apparel for Women and Young Women—Namely, Skirts, Blouses, Outer Dress and Sport Shirts, Sweaters, Jackets, Trousers of Assorted Length, Outer Shorts, Dresses, Pullovers, and Vests (Int. Cl. 25).
First use June 1, 1967.

SN 360,525. Plymouth Wholesale Corporation, New York, N.Y. Filed May 22, 1970.

GINO MORETTI

"Gino Moretti" is not a name of any known living individual.
For Outer Dress and Sport Shirts, Sweaters and Ski Coats and Trousers (Int. Cl. 25).
First use June 1, 1967.

SN 361,212. Charles H. Bacon Company, Inc., Lenoir City, Tenn. Filed June 1, 1970.

FUNN-EES

For Hosiery (Int. Cl. 25).
First use May 21, 1970.

SN 361,932. International Playtex Corporation, New York, N.Y. Filed June 8, 1970.

SEEMS-LESS

For Foundation Undergarments and Women's Underwear (Int. Cl. 25).
First use May 8, 1970.

SN 361,933. International Playtex Corporation, New York, N.Y. Filed June 8, 1970.

WRAP-UP

For Foundation Undergarments and Women's Underwear (Int. Cl. 25).
First use May 8, 1970.

SN 362,454. Kimberly-Clark Corporation, Neenah, Wis. Filed June 12, 1970.

KIMBIES

Owner of Reg. No. 862,792.
For Disposable Clothing for Infants—Namely, Training Panties and Bibs (Int. Cl. 25).
First use May 22, 1970.

SN 363,390. Ocean Pool Supply Company, Inc., Huntington Station, N.Y. Filed June 23, 1970.

OCEAN POOL

Owner of Reg. Nos. 779,937, 797,285, and others.
For Bathing Suits, Bathing Caps and Pool Caps for Women, Men, and Juniors (Int. Cl. 25).
First use as early as 1938.

SN 363,391. Ocean Pool Supply Company, Inc., Huntington Station, N.Y. Filed June 23, 1970.

OCEAN BEAUTI

Owner of Reg. Nos. 779,937, 797,285, and others.
For Female Bathing Suits (Int. Cl. 25).
First use as early as 1965.

SN 363,393. Ocean Pool Supply Company, Inc., Huntington Station, N.Y. Filed June 23, 1970.

OCEAN POOL

Owner of Reg. Nos. 779,937, 797,285, and others.
For Bathing Suits, Bathing Caps and Pool Caps for Women, Men, and Juniors (Int. Cl. 25).
First use as early as 1938.

Class 40—Fancy Goods, Furnishings, and Notions

SN 315,900. Evelyn Hat Co. Inc., Allston, Mass. Filed Jan. 6, 1969.

BRYNEL

For Wigs, Toupees, Hairpieces, Falls, Combs, Hair Pins and Hair Rollers (Int. Cls. 21 and 26).
First use Dec. 16, 1966.

SN 344,894. The Songrand Corporation, Kansas City, Mo. Filed Nov. 28, 1969.

SO-NO

For Hair Curlers (Int. Cl. 26).
First use on or about May 28, 1969.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 298,579. Continella Textile Corporation, New York, N.Y. Filed May 20, 1968.

AFRICANA

For Piece Goods for Making Dresses, Jackets, Raincoats and the Like and for Drapery and Upholstery Purposes (Int. Cl. 24).
First use June 30, 1966.

SN 327,863. Crown Zellerbach Corporation, San Francisco, Calif. Filed May 21, 1969.

CROWNTEX

Owner of Reg. Nos. 379,518, 782,871, and others.
For Non-Woven Disposable Paper Fabric and Products Made Therefrom—Namely, Bedsheets and Pillow Covers (Int. Cl. 24).
First use May 9, 1969.

SN 330,702. Baumritter Corporation, New York, N.Y. Filed June 23, 1969.

ETHAN ALLEN

"Ethan Allen" is the name of the early American patriot who is now deceased. Owner of Reg. Nos. 381,746 and 737,146.
For Rugs and Upholstery Fabrics (Int. Cls. 24 and 27).
First use at least as early as 1946.

SN 332,184. Desiree Kantrim, West Hyattsville, Md. Filed July 7, 1969.

"Desirée"

For Fabrics Made of Cotton, To Be Used for Embroidery (Int. Cl. 24).
First use Nov. 1, 1964.

SN 332,388. Waumbec Mills, Incorporated, New York, N.Y. Filed July 11, 1969.

CLUB TWEED

The term "Tweed" is disclaimed apart from the mark as shown, without waiving any common law rights.
For Textile Fabrics, Including Knitted Textile Fabrics, Comprised of Synthetic and/or Natural Fibers and/or Blends Thereof for Fabricating Apparel (Int. Cl. 24).
First use June 11, 1969.

SN 341,308. Burlington Industries, Inc., New York, N.Y. Filed Oct. 22, 1969.

AQUA-VINO

Owner of Reg. Nos. 791,905, 841,297, and others.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Mar. 19, 1969.

SN 359,774. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 15, 1970.

HERE AND NOW

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 359,775. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed May 15, 1970.

HAWAIIAN SUNSET

For Carpets (Int. Cl. 27).
First use May 6, 1970.

SN 360,416. Deering Milliken, Inc., New York, N.Y. Filed May 21, 1970.

GUEST HOUSE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Sept. 25, 1968.

SN 360,633. Deering Milliken, Inc., New York, N.Y. Filed May 25, 1970.

AMERICAN HEARTH

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Aug. 28, 1967.

SN 362,455. Kimberly-Clark Corporation, Neenah, Wis. Filed June 12, 1970.

KIMBIES

Owner of Reg. No. 862,792.
For Towels, Crib Blankets and Sheets, Mattress Pads for Cribs, Covers for Pads in Play Pens, Wash Cloths, All of Disposable Material (Int. Cl. 24).
First use May 22, 1970.

Class 43 — Thread and Yarn

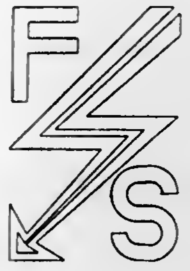
SN 333,399. Glen Raven Mills, Inc., Glen Raven, N.C. Filed July 24, 1969.

AWAKE

For Yarn (Int. Cl. 23).
First use at least as early as June 24, 1969.

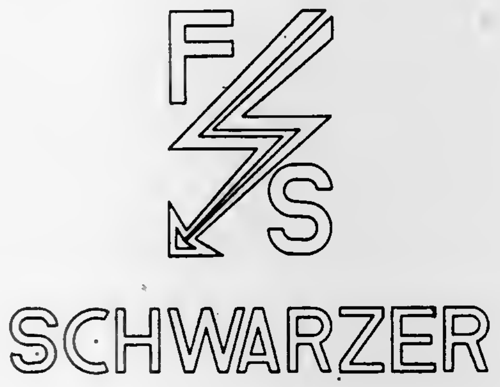
Class 44 — Dental, Medical, and Surgical Appliances

SN 314,624. Fritz Schwarzer GmbH, Munich, Germany. Filed Dec. 16, 1968.



For Medical Instruments—Namely, Electrocordiographs, Electrophonocardiographs, and Electroencephalographs (Int. Cl. 10).
First use October 1954; in commerce October 1954.

SN 314,625. Fritz Schwarzer GmbH, Munich, Germany. Filed Dec. 16, 1968.



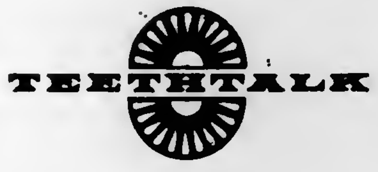
For Medical Instruments—Namely, Electrocardiographs, Electrophonocardiographs, and Electroencephalographs (Int. Cl. 10).
First use October 1954; in commerce October 1954.

SN 350,791. Viggo AB, Halsingborg, Sweden. Filed Feb. 6, 1970.

VENFLON

Owner of Swedish Reg. No. 124,595, dated Aug. 16, 1968.
For Hypodermic Needles, Hypodermic Syringes, Catheters, Adapters, and Stop-Cocks (Int. Cl. 10).

SN 351,018. Ceram-Dent, Inc., Phoenix, Ariz. Filed Feb. 10, 1970.



For Ceramic and Plastic False Teeth (Int. Cl. 10).
First use on or about Sept. 1, 1967.

SN 351,458. The Harris Calorific Company, Cleveland, Ohio. Filed Feb. 16, 1970.

SWIVELTRACH

For Medical Apparatus—Namely, Connectors for Tracheostomy Tubes (Int Cl. 10).
First use at least as early as Jan. 7, 1970.

SN 351,594. Syntex Laboratories, Inc., Palo Alto, Calif. Filed Feb. 17, 1970.

AARHALER

For Medical Apparatus—Namely, Inhalers for the Application of Drugs (Int. Cl. 10).
First use Jan. 5, 1970.

SN 351,685. William Cooper & Nephews, Inc., Chicago, Ill. Filed Feb. 18, 1970.

VAXIMATIC

For Vaccinating Systems, Including Coordinated Sealed Vaccine Containers and Syringes (Int. Cl. 10).
First use Sept. 15, 1969.

SN 351,745. The Algonquin Corporation, Norridge, Ill. Filed Feb. 16, 1970.

PUSH-MATIC

For Invalid Walkers (Int. Cl. 10).
First use Dec. 12, 1969.

SN 356,662. General International Industries, Inc., Oakbrook, Ill. Filed Apr. 13, 1970.

ULTRASAGE

For Electric Massagers (Int. Cl. 10).
First use Dec. 29, 1969.

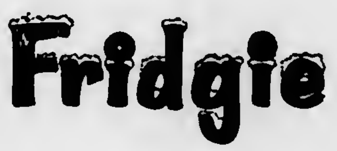
SN 364,200. Parke, Davis & Company, Detroit, Mich. Filed July 2, 1970.

MONOSPAR

For Electronic Stylus for Medical Instrumentation (Int. Cl. 10).
First use on or before Nov. 1, 1969.

Class 45 — Soft Drinks and Carbonated Waters

SN 294,939. K-B Enterprises, Rockford, Ill. Filed Apr. 4, 1968.



For Carbonated Soft Drink—Namely, a Slush Drink (Int. Cl. 32).
First use Mar. 14, 1968.
Subj. to Intf. with SN 304,469.

SN 304,469. Icy Drink of Florida, Inc., Fort Lauderdale, Fla. Filed Aug. 6, 1968.

FRIDGIE

For Semi-Frozen Soft Drink (Int. Cl. 32).
First use Nov. 10, 1967.
Subj. to Intf. with SN 294,939.

SN 340,876. The Coca-Cola Company, Atlanta, Ga. Filed Oct. 16, 1969.

BRIGHT'N EARLY ORANGE

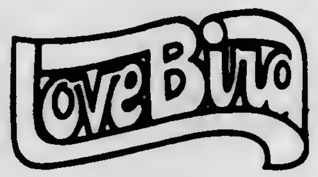
Applicant disclaims the word "Orange" apart from the mark as shown.
For Frozen Concentrate, Containing Water, for Imitation Orange Juice (Int. Cl. 32).
First use July 25, 1969.

SN 363,241. Tasty-Mates Company, Camden, N.J. Filed June 22, 1970.

CORRAL

For Soft Drinks and Bases Therefor (Int. Cl. 32).
First use at least as early as Apr. 29, 1970.

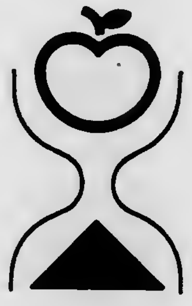
SN 363,614. Holland House Brands, Inc., Ridgefield, N.J. Filed June 25, 1970.



For Non-Alcoholic Cocktail Mix (Int. Cl. 32).
First use May 15, 1970.

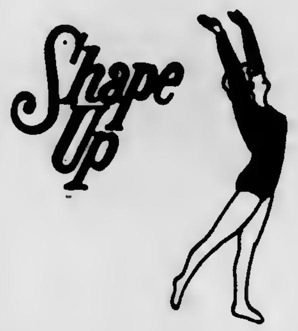
Class 46 — Foods and Ingredients of Foods

SN 316,197. Foamat Foods, Corp., Corvallis, Oreg. Filed Jan. 9, 1969.



For Dehydrated Foods—Namely, Strawberries, Raspberries, Blackberries, Cranberries, Blueberries, Cherries, Bananas, Fruit Juices, Tomatoes, and Coffee (Int. Cls. 29, 30, and 32).
First use Sept. 8, 1967.

SN 328,925. Zausner Foods Corp., Mountainside, N.J. Filed June 2, 1969.



For Cottage Cheese (Int. Cl. 29).
First use May 8, 1969.

SN 330,059. Latin Bakery Company, Northridge, Calif. Filed June 16, 1969.

El Gozo

"El Gozo" is a Spanish word meaning "joy."

For Crackers, French Bread, Sweet Rolls, and Pie Crusts (Int. Cl. 30).

First use Jan. 31, 1968.

Subj. to Intf. with SN 331,393.

SN 330,600. Heublein, Inc., Hartford, Conn. Filed June 20, 1969.

BRUNCH

For Non-Alcoholic Cocktail Mixes Containing Vegetable Juices and Fruit Juices (Int. Cl. 32).

First use Mar. 12, 1969.

SN 330,695. Baumritter Corporation, New York, N.Y. Filed June 23, 1969.

ETHAN ALLEN

"Ethan Allen" is the name of the early American patriot who is now deceased. Owner of Reg. Nos. 381,746 and 737,146.

For Maple Syrup (Int. Cl. 30).

First use at least as early as 1956.

SN 333,745. Harvey Smith Peeler, d.b.a. Peeler's Dairy, Gaffney, S.C. Filed July 28, 1969.

JERSEY BOUNCE

For Low Fat Fresh Milk (Int. Cl. 29).

First use June 26, 1969.

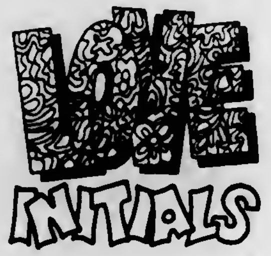
SN 335,576. Hilton Meat Company, Brooklyn, N.Y. Filed Aug. 18, 1969.

FROSTLAND'S

For Fresh and Frozen Meats and Prepared Meat Products (Int. Cl. 29).

First use on or about Aug. 1, 1959.

SN 335,784. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed Aug. 20, 1969.



The word "Initials" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.

For Chewing Gum, Sold in Conjunction With Adhesively Backed Labels (Int. Cl. 30).

First use July 3, 1969.

SN 337,514. Borden, Inc., New York, N.Y. Filed Sept. 10, 1969.

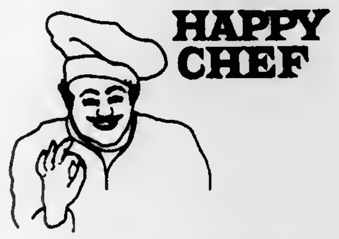
BORDEN

Owner of Reg. Nos. 55,233, 572,693, 722,059, and others.

For Water Ices and Sherbets (Int. Cl. 30).

First use on or before Apr. 30, 1968.

SN 339,658. Happy Chef Foods, Inc., Springdale, Ark. Filed Oct. 3, 1969.



Owner of Reg. No. 836,854.

For Canned Vegetables—Namely, Sweet Potatoes, Lima Beans, Chili Beans, Cut Green Beans, Pork and Beans, Potatoes; Canned Fruits and Preserves; Dehydrated Potatoes; Pickles; Salad Dressing; Catsup, Whole and Sliced Tomatoes, Tomato Sauce, Tomato Paste, Tomato Puree, Crushed Tomatoes, Diced Tomatoes in Juice and Puree, Pizza Sauce; and Olives (Int. Cls. 29 and 30).

First use June 30, 1969; Aug. 31, 1966, as to "Happy Chef."

SN 340,129. Dalt International Inc., Oradell, N.J. Filed Oct. 8, 1969.

MERRY CHERRIES

The word "Cherries" is disclaimed apart from the mark as shown.

For Preserved Cherries in Brandy (Int. Cl. 29).

First use January 1969.

SN 342,704. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed Nov. 5, 1969.

CANTAB

For Combination of Dextrose and Corn Syrup Solids for Food Manufacturing (Int. Cl. 30).

First use Oct. 6, 1969.

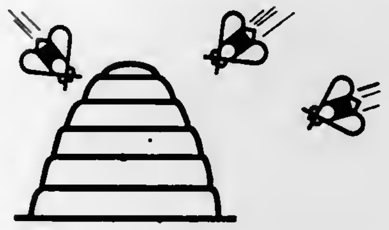
SN 343,758. SCM Corporation, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Nov. 17, 1969.

DELI-DILLS

For Pickles (Int. Cl. 29).

First use Oct. 21, 1969.

SN 344,526. Sucrest Corporation, New York, N.Y. Filed Nov. 25, 1969.



For Food Supplement for Bees—Namely, a Dry, Granular Product Containing in Various Combinations Sugar, Invert Sugar, Soy Flour, and Pollen (Int. Cl. 31).

First use Aug. 28, 1969.

SN 351,890. Allen Baron, d.b.a. ABCO Laboratories, Walnut Creek, Calif. Filed Feb. 20, 1970.

LACTINATE

For Food Binder and Emulsifier (Int. Cl. 30).

First use Mar. 15, 1965.

SN 356,223. Pierce Pre-Cooked Foods, Inc., Moorefield, W. Va. Filed Apr. 7, 1970.

GAYMEBIRDS

For Frozen Pre-Cooked Chicken Parts (Int. Cl. 29).

First use Jan. 23, 1970.

SN 362,623. The Pillsbury Company, Minneapolis, Minn. Filed June 15, 1970.

LIFT OFFS

For High Protein, Nutritionally Balanced Instant Meal in Solid Form (Int. Cl. 5).

First use Dec. 1, 1969.

SN 363,232. House of Gold Cheese Co., Inc., Lena, Wis. Filed June 22, 1970.

HOUSE OF GOLD

For Cheese and Cheese Foods (Int. Cl. 29).

First use October 1967.

Class 47 — Wines

SN 344,879. Ocean Spray Cranberries, Inc., Hanson, Mass. Filed Nov. 28, 1969.

OCEAN SPRAY

Owner of Reg. Nos. 107,323, 860,251, and others.

For Rosé Wine (Int. Cl. 33).

First use Nov. 7, 1969.

Class 49 — Distilled Alcoholic Liquors

SN 291,596. Double Springs Distillers, Inc., d.b.a. Greenbrier, Bardstown Distillery, Louisville, Ky. Filed Feb. 21, 1968.

CHRISTY & BROOKS

For Whiskey (Int. Cl. 33).

First use December 1960.

SN 317,336. Freixas & Cia, S.A.I. & C., Buenos Aires, Argentina. Filed Jan. 23, 1969.

LICOR 8 HERMANOS

Priority claimed under Sec. 44(d) on Argentine application filed Dec. 20, 1968; Reg. No. 658,382, dated Nov. 7, 1969. No claim is made to the word "Licor" apart from the mark shown. The word "Hermanos" means "brothers" in Spanish.

For Aniseed Liqueur (Int. Cl. 33).

Class 50 — Merchandise Not Otherwise Classified

SN 330,791. Trio Manufacturing Co., Griggsville, Ill. Filed June 23, 1969.

TRIO-WADE

Owner of Reg. No. 793,766.

For Bird Houses (Int. Cl. 21).

First use June 16, 1969.

SN 348,384. Cimex Limited, Orpington, Kent, England. Filed Jan. 13, 1970.

CIMEX

Owner of Reg. No. 779,822.

For Doormats (Int. Cl. 27).

First use Feb. 26, 1960; in commerce September 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 349,948. Citroleum Company, Miami, Fla. Filed Jan. 29, 1970.

For Sun Tan Creams and Dry Skin Creams (Int. Cl. 3).

First use Nov. 10, 1962.

SN 352,240. Sonia, Annette Rykiel, Paris, France. Filed Feb. 24, 1970.

SONIA RYKIEL

Owner of French Reg. No. 757,535, dated July 3, 1968.

For Perfumes (Int. Cl. 3).

SN 356,928. Ar. Winarick, Inc., New York, N.Y. Filed Apr. 15, 1970.

RATED X

For After Shave (Int. Cl. 3).

First use Feb. 27, 1970.

Subj. to Intf. with SN 353,081, SN 353,082, SN 353,083, and SN 353,084.

SN 358,146. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

FADE OUT

For Cosmetic Facial Cleanser (Int. Cl. 3).
First use Mar. 31, 1970.

Class 52 — Detergents and Soaps

SN 318,516. Alberto-Culver Company, Melrose Park, Ill. Filed Feb. 6, 1969.

THE STAIN FIGHTER

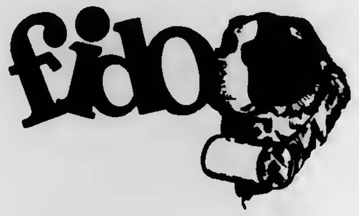
Applicant disclaims the words "The Stain" apart from the mark as shown.
For Pre-Laundry Spot and Stain Remover (Int. Cl. 3).
First use June 17, 1968.

SN 328,643. The Scott & Fetzer Company, Toledo, Ohio. Filed Mar. 16, 1970.

BUDGETEER

For Concentrated General Purpose Cleaner (Int. Cl. 3).
First use Aug. 12, 1968.

SN 329,233. The Fitch Dustdown Company, Baltimore, Md. Filed June 5, 1969.



For Janitorial Supplies—Namely, All Purpose Cleaner for Floors, Woodwork, Furniture, Painted or Enameled Surfaces; Hand Soaps; Cleaner, Soil Remover and Wax Stripper for Use on Floors (Int. Cl. 3).
First use on or about Nov. 1, 1968.

SN 334,982. Caron Corporation, New York, N.Y. Filed Aug. 11, 1969.

FLEURS DE ROCAILLE

The English translation of the mark is "rock garden flowers." Owner of Reg. No. 656,216 and others.
For Beauty Soap (Int. Cl. 3).
First use July 10, 1969.

SN 338,001. W. R. Grace & Co., New York, N.Y. Filed Sept. 15, 1969.

1 STROKE ENVIRON

Owner of Reg. Nos. 746,348, 835,255, and 885,684.
For Germicidal Detergent (Int. Cl. 3).
First use Apr. 12, 1968.

SN 340,250. Chemtronics Inc., Brooklyn, N.Y. Filed Oct. 9, 1969.

TUN-O-FOAM

For Aerosol Foam Cleaner With Incidental Lubricating and Polishing Properties for Use With Television Tuner Contacts (Int. Cl. 3).
First use on or about Apr. 17, 1969.

SN 340,536. Economics Laboratory, Inc., St. Paul, Minn. Filed Oct. 13, 1969.

MAGNUCARB

Owner of Reg. No. 373,289.
For Decarbonizing and Paint Removing Composition for Industrial Use (Int. Cl. 1).
First use Aug. 29, 1969.

SN 349,306. Armour-Dial, Inc., Chicago, Ill. Filed Jan. 22, 1970.

COLUV

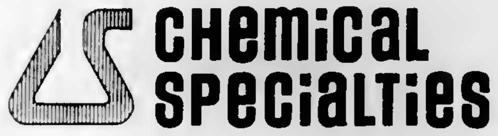
For Toilet Soap (Int. Cl. 3).
First use on or prior to Dec. 30, 1969.

SN 350,639. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Feb. 5, 1970.

LAUD

For Laundry Detergent Particularly Adapted for Industrial Usage (Int. Cl. 3).
First use Apr. 25, 1969.

SN 356,579. Ralston Purina Company, St. Louis, Mo. Filed Apr. 13, 1970.



The drawing is lined for the color red, but no claim is made as to color. Applicant disclaims the words "Chemical Specialties" apart from the mark as shown, but waives no common law rights thereto.
For All-Purpose Cleaner (Int. Cl. 3).
First use Feb. 25, 1970.

SN 359,050. Carter-Wallace, Inc., New York, N.Y. Filed May 7, 1970.

DOPEY SOAP

Applicant disclaims the word "Soap" apart from the mark as shown.
For Toilet Soap (Int. Cl. 3).
First use Feb. 24, 1970.

SN 362,446. Economics Laboratory, Inc., St. Paul, Minn. Filed June 12, 1970.

AUTOMATE

Owner of Reg. No. 747,960.
For Chlorinated Dishwashing Compound for Machine Dishwashing (Int. Cl. 3).
First use May 1, 1965.

SERVICE MARKS

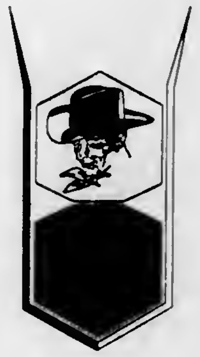
Class 100 — Miscellaneous

SN 265,689. The Cattleman, Inc., New York, N.Y. Filed Mar. 1, 1967.

THE CATTLEMAN

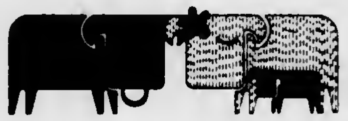
For Restaurant Services (Int. Cl. 42).
First use September 1959.
Subj. to Intf. with SN 280,015.

SN 291,446. The Texan Drive-Ins Limited, Vancouver, British Columbia, Canada. Filed Feb. 19, 1968.



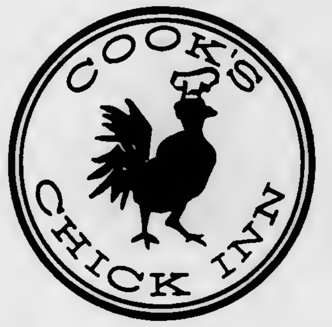
Priority claimed under Sec. 44(d) on Canadian application filed Sept. 29, 1967; Reg. No. 158,451, dated Sept. 27, 1968. The whole of the design, including the representation of a cowboy in a ten-gallon hat, is fictitious.
For Drive-In Restaurant Services (Int. Cl. 42).

SN 310,927. Sizzler Family Steak Houses, Los Angeles, Calif. Filed Oct. 30, 1968.



The drawing is lined for the colors gold and purple.
For Restaurant Services (Int. Cl. 42).
First use June 6, 1968.

SN 311,464. James W. Cook & June H. Cook, Sarasota, Fla. Filed Nov. 6, 1968.



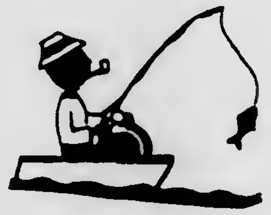
The separate words "Chick" and "Inn" are disclaimed apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use in 1964.

SN 312,773. The Hostels, Inc., Jackson Hole, Wyo. Filed Nov. 21, 1968.

THE HOSTEL X

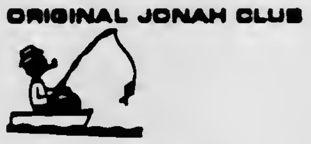
The word "Hostel" is disclaimed apart from the mark as shown.
For Lodging Accommodation Services (Int. Cl. 42).
First use November 1967.

SN 315,479. Jonah Club and Original Jonah Club (partnership), Warsaw, Ind. Filed Dec. 31, 1968.



For Catering Fish Fries (Int. Cl. 42).
First use May 15, 1948.

SN 315,481. Jonah Club and Original Jonah Club (partnership), Warsaw, Ind. Filed Dec. 31, 1968.



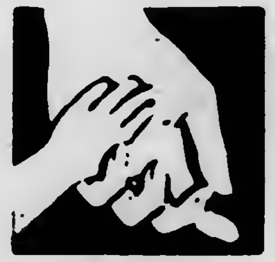
For Catering Fish Fries (Int. Cl. 42).
First use May 15, 1948; Apr. 14, 1934, as to "Original Jonah Club."

SN 317,936. The Diaper Service Industry Association, d.b.a. National Baby Care Council, Philadelphia, Pa. Filed Jan. 30, 1969.

NATIONAL BABY CARE COUNCIL

Applicant disclaims the words "Baby Care Council."
For Association Services—Namely, Promoting the Health, Education, and Welfare of Babies (Int. Cl. 42).
First use July 15, 1966.

SN 317,937. The Diaper Service Industry Association, d.b.a. National Baby Care Council, Philadelphia, Pa. Filed Jan. 30, 1969.



For Association Services—Namely, Promoting the Health, Education, and Welfare of Babies (Int. Cl. 42).
First use July 15, 1966.

SN 323,438. Dunkin' Donuts Incorporated, d.b.a. Chas. Goodlight & Sons, Ltd., Boston, Mass. Filed Apr. 2, 1969.

Chas. Goodlight & Sons, Ltd.

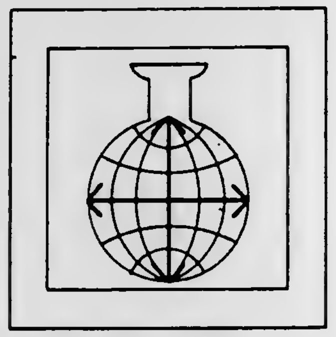
For Restaurant Services (Int. Cl. 42).
First use Jan. 17, 1969.

SN 324,373. Seaboard Seed Company, Bristol, Ill. Filed Apr. 14, 1969.

DOCTOR LAWN

Applicant disclaims the term "Lawn" apart from the mark as shown.
For Lawn Information Services—Namely, Rendering Advice on Proper Seeding Procedures, Proper Fertilizing Procedures, Proper Watering, Frequency and Degree of Mowing, and Weed Control (Int. Cl. 35).
First use Feb. 15, 1969.

SN 325,201. International Research and Development Corporation, Mattawan, Mich. Filed Apr. 22, 1969.



For Laboratory Services and Consultation Services in Toxicology, Pharmacology, Pathology, Analytical Chemistry, Biochemistry, and Other Life Sciences (Int. Cl. 42).
First use 1962.

SN 325,510. Rembrandt's Paint Factory Catering Service, Inc., Houston, Tex. Filed Apr. 24, 1969.

REMBRANDT'S

For Night Club Services (Int. Cl. 42).
First use Apr. 15, 1968.

SN 325,512. Rembrandt's Paint Factory Catering Service, Inc., Houston, Tex. Filed Apr. 24, 1969.

REMBRANDT'S PAINT FACTORY

For Night Club Services (Int. Cl. 42).
First use Apr. 15, 1968.

SN 328,528. Brothers Koroulakis, Inc., Washington, D.C. Filed May 28, 1969.

LA TRATTORIA

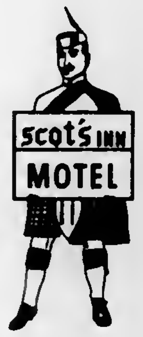
For Restaurant Services (Int. Cl. 42).
First use November 1966.

SN 328,982. Hanover Development Corporation, Chicago, Ill. Filed June 3, 1969.

NEWPORT CLUB APARTMENTS

The term "Apartments" is disclaimed apart from the mark as shown and without prejudice to applicant's common law rights therein.
For Renting Apartments and Encouraging, Organizing and Directing Concerted Social and Recreational Activities Among the Tenants (Int. Cl. 42).
First use May 27, 1969.

SN 330,956. Scot's Inn Management Co., Columbus, Ohio. Filed June 25, 1969.



The words "Inn" and "Motel" are disclaimed apart from the mark as shown.
For Motel and Restaurant Services (Int. Cl. 42).
First use Dec. 28, 1964.

SN 334,232. Huddle House, Inc., Decatur, Ga. Filed Aug. 1, 1969.

HUDDLE HOUSE

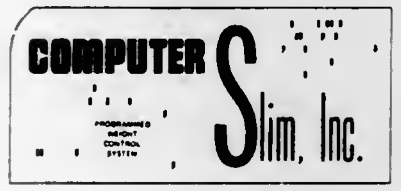
Without waiving any of its common-law rights therein, applicant disclaims the word "House" apart from the mark as shown in the drawing.
For Restaurant Services (Int. Cl. 42).
First use Apr. 22, 1964.

SN 335,346. Intermodal Systems Leasing, Inc., New York, N.Y. Filed Aug. 14, 1969.

INTERMODAL

For Leasing of Industrial Equipment (Int. Cl. 42).
First use July 25, 1969.

SN 340,127. Computer Slim, Inc., Independence, Mo. Filed Oct. 8, 1969.



For Preparing Individualized Diet Schedules Using Computers (Int. Cl. 42).
First use Mar. 3, 1969.

SN 340,602. Rice Council for Market Development, Houston, Tex. Filed Oct. 13, 1969.

VA-RICE-ITY

For Association Services—Namely, Promoting the Sale of Rice and Rice Products (Int. Cl. 42).
First use Oct. 4, 1968.

SN 343,904. Creative Computers Corporation, Chicago, Ill. Filed Nov. 19, 1969.

[redacted]

No claim is made to the word "Computer" separate and apart from the mark except insofar as any common law rights may have been or may hereafter be acquired therein.
For Computer Services—Namely, Computer Time Sharing Services (Int. Cl. 42).
First use Aug. 25, 1969.

SN 347,179. Unicare Health Services, Inc., Milwaukee, Wis. Filed Dec. 29, 1969.

UNICARE

For Providing Nursing Home Services and Sheltered Care Services for Mentally Retarded, Socially Disturbed, Dependent and Neglected Children (Int. Cl. 42).
First use Oct. 1, 1968.

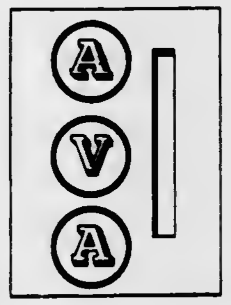
SN 347,555. Marriott Corporation, Washington, D.C. Filed Jan. 2, 1970.

MARRIOTT INN

The word "Inn" is disclaimed apart from the mark as shown, however, applicant waives none of its common law rights thereto. Owner of Reg. Nos. 815,612, 840,991, and others.
For Motel Services (Int. Cl. 42).
First use at least as early as September 1969.

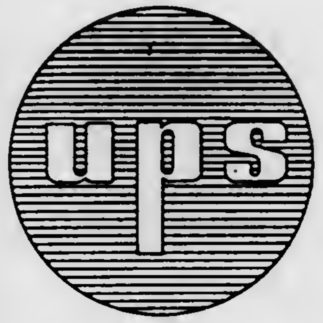
Class 101—Advertising and Business

SN 315,528. Automatic Vendors of America, Inc., Atlanta, Ga. Filed Jan. 2, 1969.



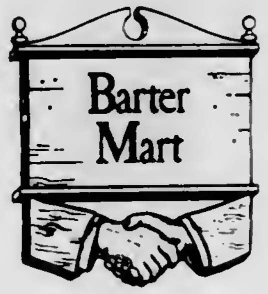
For Brokerage Services in Vending Machines and Related Equipment, and in Stocks for Vending Machines (Int. Cl. 35).
First use at least as early as July 15, 1964.

SN 315,620. Universal Promotions & Specialties, Inc., Morganton, N.C. Filed Dec. 31, 1968.



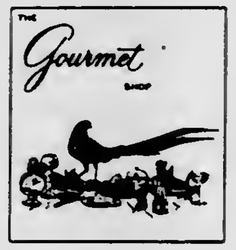
The drawing is lined for the color blue.
For Market Services—Namely, Establishing Retail Marketing Programs for Products of Others (Int. Cl. 35).
First use Mar. 1, 1968.

SN 318,944. Barter Mart, Inc., Rye, N.Y. Filed Feb. 12, 1969.



Applicant disclaims the word "Barter" apart from the mark as shown.
For Arranging for Barter Transactions Among Business Men and Clearing Accounts for Them Periodically (Int. Cl. 35).
First use July 8, 1968.

SN 319,513. Sullivan's of Liberty, Inc., Liberty, N.Y. Filed Feb. 18, 1969.



Applicant disclaims the words "The Gourmet Shop" apart from the mark as a whole while retaining all common law rights therein.
For Retail Food Store Services Dealing in Quality Items (Int. Cl. 35).
First use November 1968.

SN 319,792. Alphanumeric, Incorporated, Lake Success, N.Y. Filed Feb. 24, 1969.

TEXTRAN

For Photocomposition Printing Services (Int. Cl. 35).
First use October 1968.

SN 323,166. Wohl Shoe Company, St. Louis, Mo. Filed Mar. 28, 1969.

SHOEARAMA

For Retail Shoe Store Services (Int. Cl. 35).
First use Feb. 24, 1969.

SN 325,619. The Market Is Most* Ltd., New York, N.Y. Filed Apr. 25, 1969.

The market is MOST*

Applicant disclaims the word "Market" apart from the mark as shown.
For Manufacturers Representative in the Field of Ladies Ready To Wear Apparel (Int. Cl. 35).
First use Nov. 1, 1967.

SN 334,257. Strawbridge & Clothier, Philadelphia, Pa. Filed Aug. 1, 1969.

Owner of Reg. Nos. 279,567 and 556,666.
For Retail Department Store Services (Int. Cl. 35).
First use 1911.

SN 353,832. The Miller-Wohl Company, Inc., New York, N.Y. Filed Mar. 12, 1970.

Jean Nicole

"Jean Nicole" is a fictitious name. Owner of Reg. No. 700,224.
For Retail Apparel and Accessory Store Services (Int. Cl. 35).
First use Nov. 2, 1969.

SN 353,836. Ski-Media Ltd., New York, N.Y. Filed Mar. 12, 1970.

SKI-MEDIA

For Advertising Services—Namely, Placing Advertising for Others in Ski Resort and Other Resort Areas, on or in Proximity to Chair Lifts and Similar Devices (Int. Cl. 35).
First use June 1, 1969.

SN 357,113. Picatape International, Inc., Oklahoma City, Okla. Filed Apr. 16, 1970.

PICATAPE

For Aiding in the Establishment and Operation of Stereo Equipment Outlets for Others (Int. Cl. 35).
First use Feb. 18, 1970.

SN 357,780. The Artisans Guild, Inc., Cambridge, Mass. Filed Apr. 24, 1970.

The Artisans Guild

For Mail Order Services in the Field of Needlepoint and Embroidery Crafts (Int. Cl. 35).
First use Dec. 16, 1969.

SN 361,217. R. R. Donnelley & Sons Company, Chicago, Ill. Filed June 1, 1970.

For Printing Service (Int. Cl. 35).
First use Feb. 14, 1968.

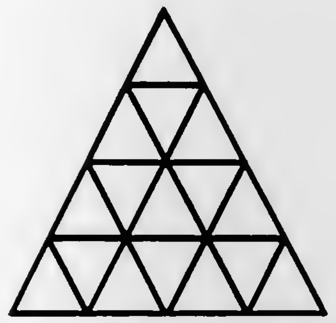
SN 361,945. Ralston Purina Company, St. Louis, Mo. Filed June 8, 1970.

PET LODGE

Applicant makes no claim to the word "Pet" apart from the mark as shown, waives none of its common law rights therein.
For Pet Store Services (Int. Cl. 35).
First use Apr. 16, 1970.

Class 102 — Insurance and Financial

SN 346,188. Shadur, La Vine & Gallop, Inc., Encino, Calif. Filed Dec. 15, 1969.



FINANCIAL ARCHITECTS

The words "Financial Architects" are disclaimed.
For Evaluation and Assistance in Analysis of Profit Sharing and Pension Plans, Tax Sheltered Programs, Estate Planning, Employee Benefit Programs, Employee Communications, Business Insurance and Investment Planning (Int. Cl. 36).
First use Sept. 11, 1968.

Class 103 — Construction and Repair

SN 315,401. T. C. Esser Company, Milwaukee, Wis. Filed Dec. 30, 1968.

GLASS ON WHEELS

Applicant disclaims any exclusive right to the term "Glass" apart from the mark as shown.
For Installing and Repairing Glass Windows (Int. Cl. 37).
First use Sept. 20, 1968.

SN 326,255. National Trade Industries, Inc., Houston, Tex. Filed May 2, 1969.

BLITZ

For Car Washing Services (Int. Cl. 37).
First use Dec. 25, 1968.

SN 326,993. Chemogenics Division, Mobley Company, Inc., Kilgore, Tex. Filed May 12, 1969.

TURBOTRIM

For Right-of-Way Maintenance and Clearing Through Vegetation Control (Int. Cl. 37).
First use at least as early as Feb. 15, 1969.

SN 329,659. Moby Dick Car Washes, Inc., Franklin Park, Ill. Filed June 11, 1969.

MOBY DICK

For Vehicle Washing and Cleaning Services (Int. Cl. 37).
First use on or about Dec. 7, 1968.

SN 336,221. Astro-Matic Lubricare, Inc., Nashville, Tenn. Filed Aug. 21, 1969.

PIT STOP

For Automobile Service Station Services (Int. Cl. 37).
First use May 16, 1969.

Class 105 — Transportation and Storage

SN 311,107. Allied Tube & Conduit Corporation, Harvey, Ill. Filed Nov. 1, 1968.

KANGAROO

For Delivery of Tubing by Wheeled Vehicles (Int. Cl. 39).
First use Aug. 28, 1968.

SN 318,184. Global Van Lines, Inc., Anaheim, Calif. Filed Feb. 3, 1969.

GLOBAL

Owner of Reg. No. 661,769.
For Packing, Storing and Transporting Goods for Others (Int. Cl. 39).
First use on or about May 1, 1956.

Class 106 — Material Treatment

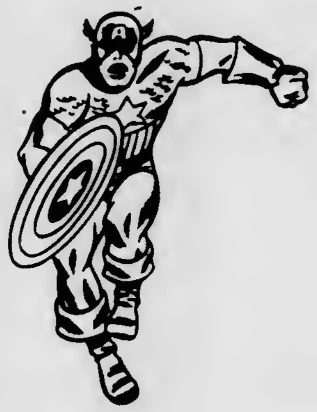
SN 362,208. Zayre Corp., Natick, Mass. Filed June 10, 1970.

ZAYRE

For Photo Finishing Services (Int. Cl. 40).
First use at least as early as March 1964.

Class 107 — Education and Entertainment

SN 325,366. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y. Filed Apr. 23, 1969.



Owner of Reg. No. 854,204.
For Entertainment Services, Particularly the Exhibition of Films Recording Story and Character Material (Int. Cl. 41).
First use at least by about 1966; in or about 1943, in a different form.

SN 344,863. The James Gang, Cleveland, Ohio. Filed Nov. 28, 1969.

THE JAMES GANG

For Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use on or about September 1966.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 342,797. Phi Mu Alpha Sinfonia, Evansville, Ind. Filed Nov. 6, 1969.

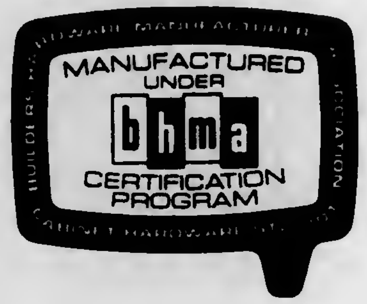
ΦMA

For Indicating Membership in Applicant.
First use Oct. 6, 1898.

CERTIFICATION MARKS

Class A — Goods

SN 334,810. Builders Hardware Manufacturers Association, New York, N.Y. Filed Aug. 8, 1969.

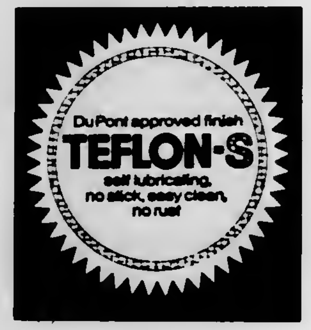


The mark certifies that the goods meet the qualifications according to the standards set up by the cabinet hardware section of the Builders Hardware Manufacturers Association.

For Cabinet Hardware, Including But Not Limited to Cabinet Hinges, Knobs, Pulls, Catches, Drawer Slides, and Shelf Hardware.

First use Jan. 15, 1969.

SN 346,795. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 22, 1969.

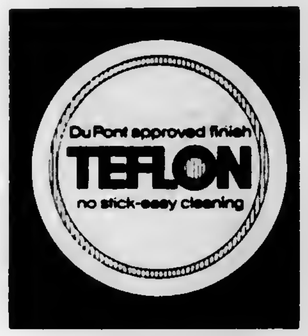


The drawing is lined for the color yellow and claim is made to this color as a feature of the mark. Applicant disclaims any rights in the words "Self Lubricating," "No Stick," "Easy Clean," and "No Rust" except as a feature of the mark. The mark certifies that the goods listed have been coated with primers, enamels, and clear formulated finishes sold by applicant under its trademark Teflon–S and that the coating has been applied in accordance with standards imposed by applicant. Owner of Reg. Nos. 418,698, 828,023, and others.

For Consumer Hardware Articles Such as Lawn and Garden Tools, Snow Shovels, Saws, Drills, Shears, Axes, and Drapery Hardware.

First use at least as early as July 1, 1968.

SN 346,796. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 22, 1969.

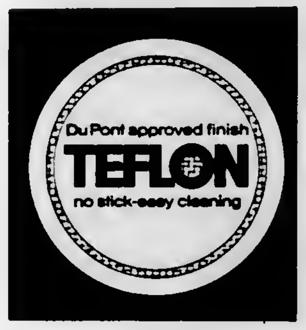


The drawing is lined for the color red and claim is made to this color as a feature of the mark. Applicant disclaims any rights in the words "No Stick-Easy Cleaning" except as a feature of the mark. The mark certifies that the goods listed have been coated with primers, enamels, and clear formulated finishes sold by applicant under its trademark Teflon and that the coating has been applied in accordance with standards imposed by applicant. Owner of Reg. Nos. 418,698, 828,023, and others.

For Household Equipment and Hardware Such as Steam and Dry Electric Irons and Snow Shovels.

First use at least as early as Sept. 1, 1969.

SN 346,797. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 22, 1969.

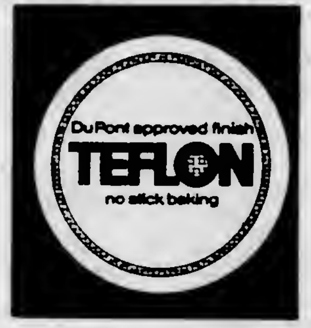


The drawing is lined for the color gold and claim is made to this color as a feature of the mark. Applicant disclaims any rights in the words "No Stick-Easy Cleaning" except as a feature of the mark. The mark certifies that the goods listed have been coated with primers, enamels, and clear formulated finishes sold by applicant under its trademark Teflon and that the coating has been applied in accordance with standards imposed by applicant. Owner of Reg. Nos. 418,698, 828,023, and others.

For Oven Panels, Certain Top-of-the-Stove and Electric Cookware and Miscellaneous Kitchen Equipment Such as Roasting Racks, Egg Poachers, Coffee Makers, Toasters, Corn Poppers, Ice Cream Scoops, and Food Turners.

First use at least as early as Sept. 1, 1969.

SN 346,798. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 22, 1969.

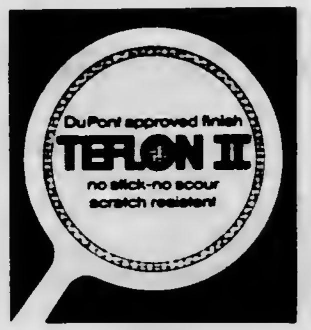


The drawing is lined for the color gold and claim is made to this color as a feature of the mark. Applicant disclaims any rights in the words "No Stick Baking" except as a feature of the mark. The mark certifies that the goods listed have been coated with primers, enamels, and clear formulated finishes sold by applicant under its trademark Teflon and that the coating has been applied in accordance with standards imposed by applicant. Owner of Reg. Nos. 418,698, 828,023, and others.

For Bakeware and Oven Utensils Such as Cookie Sheets, Muffin Tins, Pie Tins, Bake and Roast Pans, Certain Roasting Pans, and Pizza Pans.

First use at least as early as Sept. 1, 1969.

SN 346,799. E. I. du Pont de Nemours and Company, Wilmington, Del. Filed Dec. 22, 1969.



The drawing is lined for the color gold and claim is made to this color as a feature of the mark. Applicant disclaims any right in the words "No Stick-No Scour Scratch Resistant" except as a feature of the mark. The mark certifies that the goods listed have been coated with primers, enamels, and clear formulated finishes sold by applicant under its trademark Teflon and that the coating has been applied in accordance with standards imposed by applicant. Owner of Reg. Nos. 418,698, 828,023, and others.

For Cooking Utensils (Such as Sauce Pans, Electric and Non-Electric Fry Pans and Skillets, Electric and Non-Electric Griddles, Electric and Non-Electric Broilers, Electric and Non-Electric Sandwich Grills, and Combination Grills and Warmers, Bacon Grills, Chicken Fryers, Deep Fat Fryers, Waffle Irons, and Pressure Cookers) and Certain Baking and Roasting Utensils (Such as Casseroles, Roasters, and Dutch Ovens).

First use at least as early as July 1, 1968.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

898,501. DE KALB WHEAT AND DESIGN. DeKalb AgResearch, Inc. SN 316,190. Pub. 6–30–70. Filed 1–9–69.

898,502. INSULDEK. Sackner Products, Inc. SN 327,417. Pub. 6–30–70. Filed 5–15–69.

898,503. MICHELON. General Wig Manufacturers, Inc. SN 334,470. Pub. 6–30–70. Filed 8–5–69.

898,504. ANTELOPE. United Seeds, Inc. SN 334,649. Pub. 6–30–70. Filed 8–6–69.

898,505. KRATON. Shell Oil Company. SN 339,495. Pub. 6–30–70. Filed 10–2–69.

898,506. POLYPRES. Polyplastex United, Inc. SN 339,930. Pub. 6–30–70. Filed 10–6–69.

Class 2 — Receptacles

898,507. BILL'S PILL BOX TURN 'N' TAKE AND DESIGN. W. P. Anderson, d.b.a. Bill's Pill Box. SN 307,962. Pub. 6–30–70. Filed 9–23–68.

898,508. KRAZY ICE. Dallas Systems Corp. MULTIPLE CLASS (Classes 2, 31, and 45). SN 312,364. Pub. 6–30–70. Filed 11–18–68.

898,509. E-Z CONVENIENCE FOOD SERVICE AND DESIGN. Gulf States Paper Corporation. SN 318,418. Pub. 6–30–70. Filed 2–5–69.

898,510. LABPAK. GAF Corporation. SN 329,653. Pub. 6–30–70. Filed 6–11–69.

898,511. TRIPLE CHECK AND DESIGN. G. C. Murphy Company. MULTIPLE CLASS (Classes 2 and 16). SN 331,097. Pub. 6–30–70. Filed 6–27–69.

898,512. PRINCE GARDNER. Swank, Inc. MULTIPLE CLASS (Classes 2 and 28). SN 332,775. Pub. 6–30–70. Filed 7–17–69.

898,513. SENTRY. Sentry Hardware Corporation. SN 338,615. Pub. 6–30–70. Filed 9–22–69.

898,514. FIBROLENE, Contico International, Inc., assignee of Continental Manufacturing Co. SN 341,440. Pub. 6–30–70. Filed 10–20–69.

898,515. DYNA·WELD. National Can Corporation. SN 347,036. Pub. 6–30–70. Filed 12–23–69.

898,516. STERALCON. Consolidated Aluminum Corporation. SN 351,603. Pub. 6–30–70. Filed 2–17–70.

898,517. AUTO-SIP. Henry M. Chang. SN 352,943. Pub. 6–30–70. Filed 3–3–70.

898,518. SHAFT-HUGGERS. Euclid Spiral Paper Tube Corp. SN 353,864. Pub. 6–30–70. Filed 3–12–70.

898,519. SHOP-IN. Pak-Well Paper Products Co. SN 354,024. Pub. 6–30–70. Filed 3–13–70.

898,520. SHOO-IN. Pak-Well Paper Products Co. SN 354,025. Pub. 6–30–70. Filed 3–13–70.

898,521. EASY CRISP. Dart Industries Inc., d.b.a. Tupperware. SN 354,145. Pub. 6–30–70. Filed 3–16–70.

898,522. MISCELLANEOUS DESIGN. Packaging Corporation of America. SN 355,986. Pub. 6–30–70. Filed 4–6–70.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

898,523. TEL-STAR. United Products Corporation. SN 337,598. Pub. 6–30–70. Filed 9–10–69.

Class 4 — Abrasives and Polishing Materials

898,524. PELL-A-SIL. Pelletronics, Inc. SN 331,530. Pub. 6–30–70. Filed 7–1–69.

898,525. PELL-A-MET. Pelletronics, Inc. SN 331,531. Pub. 6–30–70. Filed 7–1–69.

898,526. PELL-A-SPEC. Pelletronics, Inc. SN 331,532. Pub. 6–30–70. Filed 7–1–69.

Class 5 — Adhesives

898,527. COROTHENE. Fritz Muller Coroplast K.G. SN 332,337. Pub. 6–30–70. Filed 7–11–69.

898,528. CZ DESIGN. Crown Zellerbach Corporation. SN 347,151. Pub. 6–30–70. Filed 12–29–69.

Class 6 — Chemicals and Chemical Compositions

898,529. PHYBAN. The Ansul Company. SN 286,490. Pub. 6–30–70. Filed 12–8–67.

898,530. DERMINOL. Canadian Hoechst Limited. SN 311,014. Pub. 6–30–70. Filed 10–31–68.

898,531. CORONASTAT. SCM Corporation. MULTIPLE CLASS (Classes 6 and 37). SN 312,370. Pub. 6–30–70. Filed 11–18–68.

898,532. K-50. Chemical Dynamics Corporation. MULTIPLE CLASS (Classes 6 and 52). SN 314,052. Pub. 2–10–70. Filed 12–10–68.

898,533. A.C.C. Armour Pharmaceutical Company, d.b.a. Reheis Chemical Company. SN 315,874. Pub. 6–30–70. Filed 1–6–69.

898,534. ROTOX. Ferguson Fumigants, Inc. SN 324,709. Pub. 6–30–70. Filed 4–16–69.

898,535. PHILLIPS PETROLEUM 66 AND SHIELD DESIGN. Phillips Petroleum Company. SN 328,198. Pub. 6–30–70. Filed 5–23–69.

898,536. RES-O-MAT. Mallinckrodt Chemical Works. SN 333,584. Pub. 6–30–70. Filed 7–25–69.

898,537. CHAMPION. Stonetree Corp. SN 339,290. Pub. 6–30–70. Filed 9–30–69.

898,538. GOLDEN T. T.G. & Y. Stores Company. SN 339,370. Pub. 6–30–70. Filed 9–30–69.

898,539. BIG BOY. Escambia Chemical Corporation. SN 340,986. Pub. 6–30–70. Filed 10–17–69.

898,540. METSO. Philadelphia Quartz Company. MULTIPLE CLASS (Classes 6 and 52). SN 341,099. Pub. 6–30–70. Filed 10–20–69.

898,541. TARTAN-CLAD. Minnesota Mining and Manufacturing Company. SN 341,330. Pub. 6–30–70. Filed 10–22–69.

898,542. DI-NOC. Minnesota Mining and Manufacturing Company. SN 341,331. Pub. 6–30–70. Filed 10–22–69.

898,543. 3M. Minnesota Mining and Manufacturing Company. SN 341,332. Pub. 6–30–70. Filed 10–22–69.

898,544. PRESTIGE. Gem, Incorporated. MULTIPLE CLASS (Classes 6 and 52). SN 343,025. Pub. 6–30–70. Filed 11–10–69.

898,545. SS 65. Philadelphia Quartz Company. SN 353,963. Pub. 6–30–70. Filed 3–13–70.

898,546. SURE-TOUCH. Rite-Line Corporation. SN 353,964. Pub. 6–30–70. Filed 3–13–70.

898,547. SPRINGTIME. Topco Associates, Inc. SN 355,506. Pub. 6–30–70. Filed 3–31–70.

898,548. BARLOX. Baird Chemical Industries, Inc. SN 356,323. Pub. 6–30–70. Filed 4–9–70.

Class 7 — Cordage

898,549. LADY CLAIR. St. Clair Mfg. Corp. SN 338,858. Pub. 6–30–70. Filed 9–25–69.

Class 8 — Smokers' Articles, Not Including Tobacco Products

898,550. THE SMOKER. Jay Dental Products Co. SN 325,875. Pub. 6–30–70. Filed 4–29–69.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

898,551. INDIOS FFF, ETC. AND DESIGN. Dynamit Nobel Aktiengesellschaft. SN 320,457. Pub. 6–30–70. Filed 3–3–69.

898,552. FINNWOLF. Firearms International Corporation. SN 327,377. Pub. 6–30–70. Filed 5–15–69.

898,553. SHIELD (DESIGN). Federal Cartridge Corporation. SN 330,268. Pub. 6–30–70. Filed 6–17–69.

898,554. AQUANAL. Atlas Chemical Industries, Inc. SN 340,498. Pub. 6–30–70. Filed 10–13–69.

898,555. SPESCO-FALCON. The Spesco Corporation. SN 346,517. Pub. 6–30–70. Filed 12–17–69.

898,556. STRIKE. Federal Sign and Signal Corporation. SN 350,894. Pub. 6–30–70. Filed 2–9–70.

898,557. SAFETY-SIX. Sturm, Ruger & Co., Inc. SN 354,232. Pub. 6–30–70. Filed 3–16–70.

898,558. SECURITY-SIX. Sturm, Ruger & Co., Inc. SN 354,233. Pub. 6–30–70. Filed 3–16–70.

898,559. SPEED-SIX. Sturm, Ruger & Co., Inc. SN 354,234. Pub. 6–30–70. Filed 3–16–70,

898,560. HENSLEY & GIBBS. Wayne C. Gibbs, d.b.a. Hensley & Gibbs. SN 355,226. Pub. 6–30–70. Filed 3–27–70.

Class 12 — Construction Materials

898,561. EX-PAND-A-POOL. Sylvan Pools, Inc. SN 317,884. Pub. 6–30–70. Filed 1–29–69.

898,562. X-PAND-A-POOL. Sylvan Pools, Inc. SN 317,885. Pub. 6–30–70. Filed 1–29–69.

898,563. SECTIONAL STRUCTURES INC. AND DESIGN. Sectional Structures Inc. SN 333,444. Pub. 6–30–70. Filed 7–24–69.

898,564. CEDAR-BESTOS. Johns-Manville Corporation. SN 343,297. Pub. 6–30–70. Filed 11–12–69.

898,565. TRU-THERM. American Saint Gobain Corporation. SN 353,246. Pub. 6–30–70. Filed 3–6–70.

898,566. RE-GLASS-IT. Woolsey Marine Industries, Inc. SN 353,261. Pub. 6–30–70. Filed 3–6–70.

898,567. STRAIT-WALL. Rafters, Inc. SN 353,383. Pub. 6–30–70. Filed 3–9–70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

898,568. CORONATION. Hyer Hardware Mfg. Co. SN 324,918. Pub. 6–30–70. Filed 4–18–69.

898,569. TT (DESIGN). Truly Tubular Fitting Corporation. SN 329,050. Pub. 6–30–70. Filed 6–4–69.

898,570. MCK. McKinney Manufacturing Company. SN 330,175. Pub. 6–30–70. Filed 6–16–69.

898,571. THE ELIMINATOR. Continental Industries, Inc. SN 332,763. Pub. 6–30–70. Filed 7–16–69.

898,572. LEE SPIN JET AND DESIGN. The Lee Company. SN 336,250. Pub. 6–30–70. Filed 8–15–69.

898,573. FLUID-FAST. Federal Screw Works. SN 342,252. Pub. 6–30–70. Filed 10–31–69.

898,574. BON CHEF. Aimcee Wholesale Corporation. SN 342,697. Pub. 6–30–70. Filed 11–5–69.

898,575. SWIVETTE. Dover Corporation. SN 347,087. Pub. 6–30–70. Filed 12–24–69.

898,576. TOWN HOUSE. Dart Industries Inc., d.b.a. The West Bend Company. SN 347,487. Pub. 6–30–70. Filed 12–31–69.

898,577. ALUMA TRAP AND DIAMOND DESIGN. Die Mesh Corporation. SN 348,021. Pub. 6–30–70. Filed 1–8–70.

898,578. LOK-A-LOY. American Hoist & Derrick Company. SN 354,109. Pub. 6–30–70. Filed 3–16–70.

898,579. SECUR-A-TIE. Dennison Manufacturing Company. SN 356,554. Pub. 6–30–70. Filed 4–13–70.

Class 14 — Metals and Metal Castings and Forgings

898,580. TRU-CAST. Manco Products Incorporated. SN 302,095. Pub. 6–30–70. Filed 7–5–68.

898,581. P AND TRIANGLE (DESIGN). Pacific Steel Foundry Co. SN 320,368. Pub. 6–30–70. Filed 2–28–69.

898,582. BESCO. Bridgeport Engravers Supply Co., Inc. MULTIPLE CLASS (Classes 14 and 52). SN 323,236. Pub. 6–30–70. Filed 4–1–69.

898,583. TATTLE-TAPE. Minnesota Mining and Manufacturing Company. SN 345,255. Pub. 6–30–70. Filed 12–4–69.

898,584. STANDARD. The Eastern Company. SN 348,275. Pub. 6–30–70. Filed 1–12–70.

Class 15 — Oils and Greases

898,585. TAPFREE. Winfield Brooks Company, Inc. SN 310,722. Pub. 6–30–70. Filed 10–28–68.

898,586. BROOKS. The Brooks Oil Company. SN 318,524. Pub. 6–30–70. Filed 2–6–69.

898,587. T. Master Chemical Corporation. SN 323,579. Pub. 6–30–70. Filed 4–3–69.

898,588. T AND DESIGN. Master Chemical Corporation. SN 323,580. Pub. 6–30–70. Filed 4–3–69.

898,589. T TRIM AND DESIGN. Master Chemical Corporation. SN 323,582. Pub. 6–30–70. Filed 4–3–69.

898,590. CONTRAN. Sun Oil Company. SN 337,708. Pub. 6–30–70. Filed 9–11–69.

898,591. ALTRAN. Sun Oil Company. SN 337,711. Pub. 6–30–70. Filed 9–11–69.

898,592. SURMAC. Sun Oil Company. SN 337,713. Pub. 6–30–70. Filed 9–11–69.

898,593. PR (DESIGN). Swiss American Laboratory. SN 352,681. Pub. 6–30–70. Filed 2–27–70.

Class 16 — Protective and Decorative Coatings

898,511. (See Class 2 for this trademark.)

898,594. MISCELLANEOUS DESIGN. Universal Chemicals & Coatings, Inc. MULTIPLE CLASS (Classes 16 and 21). SN 301,791. Pub. 6–30–70. Filed 7–1–68.

898,595. SLIKIT! W. C. Richards Co. SN 303,446. Pub. 6–30–70. Filed 7–23–68.

898,596. QUALIWARE. D.A.W. Rainbow Painting Company, Inc. SN 313,273. Pub. 6–30–70. Filed 11–29–68.

898,597. VERSA-TONE. Gilman Paint & Varnish Company. SN 330,498. Pub. 6–30–70. Filed 6–19–69.

898,598. TENDURA. Spramor Corporation of America. SN 338,188. Pub. 6–30–70. Filed 9–17–69.

Class 17 — Tobacco Products

898,599. PAUL REVERE AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 322,742. Pub. 6–30–70. Filed 3–25–69.

898,600. MONTAGU. St. Regis Tobacco Corporation Limited. SN 322,748. Pub. 6–30–70. Filed 3–25–69.

898,601. MONIC. Alvaro Gonzalez Gonzalez, d.b.a. Fabrica de Tabacos Alvaro. SN 326,935. Pub. 6–30–70. Filed 5–9–69.

898,602. KENT AND DESIGN. Lorillard Corporation. SN 328,563. Pub. 6–30–70. Filed 5–28–69.

898,603. LEVEL HEAD. Lorillard Corporation. SN 328,709. Pub. 6–30–70. Filed 5–29–69.

898,604. MOGUL. Lorillard Corporation. SN 328,710. Pub. 6–30–70. Filed 5–29–69.

898,605. HENELEIGH. Carreras Limited. SN 329,837. Pub. 6–30–70. Filed 6–12–69.

Class 18 — Medicines and Pharmaceutical Preparations

898,606. ALTRIPRES-15. Merck & Co., Inc. SN 319,334. Pub. 6–30–70. Filed 2–17–69.

898,607. AUREO S·P 250 AND DESIGN. American Cyanamid Company. SN 325,560. Pub. 6–30–70. Filed 4–25–69.

898,608. SOM OPHYLLIN. Lepler Laboratories, Inc. SN 327,156. Pub. 6–30–70. Filed 5–13–69.

898,609. NIGHT WATCH. Bristol-Myers Company. SN 336,671. Pub. 6–30–70. Filed 8–29–69.

898,610. MISCELLANEOUS DESIGN. Parke, Davis & Company. SN 341,992. Pub. 6–30–70. Filed 10–29–69.

898,611. SHIPGUARD. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 342,796. Pub. 6–30–70. Filed 11–6–69.

898,612. LINEBACKER. Murphy Products Company, Inc. MULTIPLE CLASS (Classes 18 and 46). SN 344,524. Pub. 6–30–70. Filed 11–25–69.

898,613. ESTRATAB. Reid-Provident Laboratories Inc. SN 345,571. Pub. 6–30–70. Filed 12–8–69.

898,614. A·V·E. American Home Products Corporation. SN 350,023. Pub. 6–30–70. Filed 1–30–70.

898,615. CYCLOPEN. The Upjohn Company. SN 350,431. Pub. 6–30–70. Filed 2–4–70.

898,616. GOLDEN FIFTY. Golden Fifty Pharmaceutical Co., Inc. SN 351,754. Pub. 6–30–70. Filed 2–19–70.

898,617. HABIT-X. Glenden Corporation. SN 352,563. Pub. 6–30–70. Filed 2–27–70.

898,618. TREXAMATE. Carter-Wallace, Inc. SN 354,066. Pub. 6–30–70. Filed 3–16–70.

Class 19 — Vehicles

898,619. SIS AND DESIGN. Sis-Veiculos Motorizados, Limitada. SN 269,932. Pub. 6–30–70. Filed 4–24–67.

898,620. EAZ-LIFT. Eaz-Lift Spring Corporation. SN 322,975. Pub. 6–30–70. Filed 3–27–69.

898,621. FANTIC MOTOR AND DESIGN. Fantic Motor S.r.L. Fabbrica Veicoli Ricreativi. SN 324,058. Pub. 6–30–70. Filed 4–9–69.

898,622. DYNACOACH. GMC/Dynacoach, Inc. SN 332,935. Pub. 6–30–70. Filed 7–18–69.

898,623. CELEBRITY. Celebrity Homes Corporation. SN 333,902. Pub. 6–30–70. Filed 7–30–69.

898,624. SKIPPER. ATV Manufacturing Limited. SN 341,130. Pub. 6–30–70. Filed 10–20–69.

898,625. FUN-TOON. Muncie Metal Spinning, Inc. SN 345,188. Pub. 6–30–70. Filed 12–3–69.

898,626. HB AND DESIGN. Hackney Bros. Body Co. SN 353,194. Pub. 6–30–70. Filed 3–5–70.

898,627. REGAL. Regal Marine Industries, Inc. SN 354,980. Pub. 6–30–70. Filed 3–24–70.

898,628. SIGHTSEER. Sightseer Corporation. SN 356,434. Pub. 6–30–70. Filed 4–9–70.

Class 20 — Linoleum and Oiled Cloth

898,629. SHAND KYDD. Shand Kydd Limited. MULTIPLE CLASS (Classes 20 and 37). SN 332,061. Pub. 6–30–70. Filed 7–9–69.

Class 21 — Electrical Apparatus, Machines, and Supplies

898,594. (See Class 16 for this trademark.)

898,630. CRANCO. The Crandall Wholesale Company. SN 295,120. Pub. 6–30–70. Filed 4–8–68.

898,631. SNAP-AWAY. The Singer Company. SN 310,137. Pub. 6–30–70. Filed 10–21–68.

898,632. PIPE HORN. Utility Tool Company. SN 317,651. Pub. 6–30–70. Filed 1–27–69.

898,633. WEBCOR AND DESIGN. U.S. Industries, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 321,298. Pub. 6–30–70. Filed 3–10–69.

898,634. ISOMITE. McDonnell Douglas Corporation. SN 321,822. Pub. 6–30–70. Filed 3–14–69.

898,635. READYFILE. Visual Electronics Corporation. SN 323,492. Pub. 6–30–70. Filed 4–2–69.

898,636. BARKERS. Franklin Stores Corporation, d.b.a. Barkers. SN 332,007. Pub. 6–30–70. Filed 7–8–69.

898,637. ELBO. Gene S. Tepper, d.b.a. Elbo Products. SN 342,767. Pub. 6–30–70. Filed 11–5–69.

898,638. SIGNAL-MATIC. Fedtro, Inc. SN 343,215. Pub. 6–30–70. Filed 11–12–69.

898,639. FADEX AND DESIGN. Lear Siegler, Inc. SN 346,915. Pub. 6–30–70. Filed 12–22–69.

898,640. COLORFOIL. Essex International, Inc. SN 348,917. Pub. 6–30–70. Filed 1–19–70.

898,641. WSC. Houdaille Industries, Inc. SN 349,867. Pub. 6–30–70. Filed 1–28–70.

898,642. DELMICA. Del Electronics Corp. SN 350,070. Pub. 6–30–70. Filed 1–30–70.

898,643. CHROMATICS. Hardy Scales Company. SN 350,089. Pub. 6–30–70. Filed 1–30–70.

898,644. FLOCK SHOCK AND HEN (DESIGN). Fl-Shock, Inc. SN 350,386. Pub. 6–30–70. Filed 2–3–70.

898,645. OMNI-LUG. Coilform Company. SN 351,426. Pub. 6–30–70. Filed 2–16–70.

898,646. CLORPHEN A. Jard Company, Incorporated. SN 352,145. Pub. 6–30–70. Filed 2–24–70.

898,647. CLORPHEN. Jard Company, Inc. SN 352,146. Pub. 6–30–70. Filed 2–24–70.

898,648. MICROMATIC. Illinois Tool Works Inc. SN 352,347. Pub. 6–30–70. Filed 2–25–70.

898,649. TCS. LTV Ling Altec, Inc. SN 353,200. Pub. 6–30–70. Filed 3–5–70.

898,650. COMM SCOPE AND DESIGN. Superior Continental Corporation. SN 353,792. Pub. 6–30–70. Filed 3–11–70.

898,651. COMM/SCOPE. Superior Continental Corporation. SN 353,793. Pub. 6–30–70. Filed 3–11–70.

898,652. STRATA SHIELD. Superior Continental Corporation. SN 353,928. Pub. 6–30–70. Filed 3–12–70.

898,653. RACO AND DESIGN. All-Steel Equipment Inc. SN 356,830. Pub. 6–30–70. Filed 4–14–70.

Class 22 — Games, Toys, and Sporting Goods

898,654. THE ARMCHAIR QUARTERBACK. Hubert D. Oster, Jr., d.b.a. RDR Manufacturing Company. SN 309,985. Pub. 6–30–70. Filed 10–18–68.

898,655. PUSH-A-SHOW. Kenner Products Company. SN 323,310. Pub. 6–30–70. Filed 4–1–69.

898,656. MICRO-LITE 400. Northwestern Golf Company. SN 324,303. Pub. 6–30–70. Filed 4–11–69.

898,657. VS-MULTIFLEX-KANTE. Franz Kneissl, Skifabrik, Kufstein. SN 326,223. Pub. 6–30–70. Filed 5–2–69.

898,658. DUMY RUMY. Leisure Dynamics, Inc., assignee of CO-5 Company, Inc. SN 327,237. Pub. 6–30–70. Filed 5–14–69.

898,659. LANGE-FLEX. The Lange Co. SN 327,501. Pub. 6–30–70. Filed 5–16–69.

898,660. LANGE-FLO. The Lange Co. SN 327,502. Pub. 6–30–70. Filed 5–16–69.

898,661. LIVEDGE. True Temper Corporation. SN 328,748. Pub. 6–30–70. Filed 5–29–69.

898,662. COURT KING. George W. Fols. SN 332,472. Pub. 6–30–70. Filed 7–14–69.

898,663. KUP-L-UPS. Dart Industries Inc., d.b.a. Tupperware. SN 334,057. Pub. 6–80–70. Filed 7–31–69.

898,664. PATTER PAL. Mattel, Inc. SN 334,522. Pub. 6–30–70. Filed 8–6–69.

898,665. MISCELLANEOUS DESIGN. James W. Strader. SN 334,879. Pub. 6–30–70. Filed 8–8–69.

898,666. TEE PARTY, Milton Bradley Company. SN 335,319. Pub. 6–30–70. Filed 8–14–69.

898,667. PEE-WEE. Stearns Manufacturing Company. SN 335,715. Pub. 6–30–70. Filed 8–19–69.

898,668. ESCORT. Gentex Corporation. SN 335,861. Pub. 6–30–70. Filed 8–21–69.

898,669. GUARDIAN. Gentex Corporation. SN 335,862. Pub. 6–30–70. Filed 8–21–69.

898,670. MICRO 300. SW Industries, Inc. SN 336,352. Pub. 6–30–70. Filed 8–26–69.

898,671. LADDIE. Mercer Tackle Co., Inc. SN 336,827. Pub. 6–30–70. Filed 9–2–69.

898,672. CHALLENGE BRIDGE. Minnesota Mining and Manufacturing Company. SN 345,050. Pub. 6–30–70. Filed 12–2–69.

898,673. PLANO. Plano Molding Company. SN 349,140. Pub. 6–30–70. Filed 1–21–70.

898,674. PLUG-A-JUG. Parker Brothers, Inc. SN 351,001. Pub. 6–30–70. Filed 2–10–70.

898,675. GYPSY WITCH. The United States Playing Card Company. SN 351,005. Pub. 6–30–70. Filed 2–10–70.

898,676. INTERNATIONAL. Wilson Sporting Goods Co. SN 351,742. Pub. 6–30–70. Filed 2–18–70.

898,677. HORSIN' AROUND. Rainbow Crafts, Inc. SN 352,804. Pub. 6–30–70. Filed 2–25–70.

898,678. BUGEYE. Mattel, Inc. SN 353,825. Pub. 6–30–70. Filed 3–12–70.

898,679. WAILIN'. Mattel, Inc. SN 354,088. Pub. 6–30–70. Filed 3–16–70.

898,680. VISITIN' VALERIE. Mattel, Inc. SN 354,089. Pub. 6–30–70. Filed 3–16–70.

898,681. TOP ELIMINATOR. Mattel, Inc. SN 354,353. Pub. 6–30–70. Filed 3–18–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

898,682. POWER PULSE. Outboard Marine Corporation. SN 287,089. Pub. 6–30–70. Filed 12–18–67.

898,683. KORKELE AND DESIGN. Korkele, Inc. SN 294,399. Pub. 6–30–70. Filed 3–28–68.

898,684. ASBURY. Asbury Universal, Inc. SN 306,325. Pub. 6–30–70. Filed 8–30–68.

898,685. G GUARDIAN AND DESIGN. Guardian Export Corp. SN 310,092. Pub. 4–14–70. Filed 10–21–68.

898,686. SUPER-B. Beard Equipment Company. SN 316,596. Pub. 6–30–70. Filed 1–15–69.

898,687. ORCHARD-AIDE. Highway Trailer Industries, Inc., assignee of Windy Point Farms. SN 323,259. Pub. 6–30–70. Filed 4–1–69.

898,688. ARC JOINT. Sears, Roebuck and Co. SN 327,784. Pub. 6–30–70. Filed 5–20–69.

898,689. KOBO. Hapman Corporation. SN 329,857. Pub. 6–30–70. Filed 6–12–69.

898,690. RAZOSHARP. Ralph Levin, d.b.a. Razosharp. SN 333,415. Pub. 6–30–70. Filed 7–24–69.

898,691. MONTREAL. Oneida Ltd. SN 336,156. Pub. 6–30–70. Filed 8–25–69.

898,692. GEYSER. Kansas Instruments, Incorporated. SN 339,191. Pub. 6–30–70. Filed 9–29–69.

898,693. SPICE TREE, ETC. AND DESIGN. Dudley Kebow, Inc. SN 339,902. Pub. 6–30–70. Filed 10–6–69.

898,694. MTC. Markwell Manufacturing Company, Inc. SN 348,303. Pub. 6–30–70. Filed 1–12–70.

898,695. HAPPY HELPERS. Imperial Knife Associated Companies, Inc. SN 348,539. Pub. 6–30–70. Filed 1–14–70.

898,696. MIRAMARA. Imperial Knife Associated Companies, Inc. SN 348,540. Pub. 6–30–70. Filed 1–14–70.

898,697. SIEMAG. Siemag Siegener Maschinenbau Gesellschaft mit beschraenkter Haftung. SN 349,089. Pub. 6–30–70. Filed 1–20–70.

898,698. HY-TUBE. Symons Mfg. Company. SN 349,514. Pub. 6–30–70. Filed 1–23–70.

898,699. FOREWAY. Sukup Manufacturing Company. SN 349,698. Pub. 6–30–70. Filed 1–26–70.

898,700. UNI-PRESSURE. FMC Corporation. SN 349,854. Pub. 6–30–70. Filed 1–28–70.

898,701. BIG RED AND DESIGN. Cutting Edges Pty. Ltd. SN 325,271. Pub. 7–14–70. Filed 12–27–68.

898,702. NEUTRON AND DESIGN. Harold B. Hacker, d.b.a. Neutron Co. SN 356,246. Pub. 6–30–70. Filed 4–8–70.

898,703. RAPIDOR. Bokum Tool Company, Inc. SN 356,544. Pub. 6–30–70. Filed 4–13–70.

Class 25 — Locks and Safes

898,704. SNUG LUG. John J. Rudolf, Jr. SN 332,994. Pub. 6–30–70. Filed 7–18–69.

Class 26—Measuring and Scientific Appliances

898,705. VIRGLAS. The Virtis Company, Inc. SN 318,346. Pub. 6–30–70. Filed 2–4–69.

898,706. CAMRALARM. Spiratone, Inc. SN 320,867. Pub. 6–30–70. Filed 3–5–69.

898,707. MARSYN AND DESIGN. Marsyn Corporation. SN 322,458. Pub. 6–30–70. Filed 3–21–69.

898,708. MAT SCAN. Star-New Era, Inc., by change of name from Powers & Eaton Industries, Inc. SN 322,739. Pub. 6–30–70. Filed 3–25–69.

898,709. GELATRAN. Berkey/Colortran Mfg., Inc. SN 329,827. Pub. 6–30–70. Filed 6–12–69.

898,710. SQUEEZE-METER. Robert J. Donoghue. SN 329,843. Pub. 6–30–70. Filed 6–12–69.

898,711. HEATRONICS. Teckton, Inc. SN 330,054. Pub. 6–30–70. Filed 6–16–69.

898,712. DENSIMUD. Geoservices Societe Anonyme. SN 332,102. Pub. 6–30–70. Filed 7–9–69.

898,713. COPYSTAR. Mita Kogyo Kabushiki Kaisha. SN 332,248. Pub. 6–30–70. Filed 7–10–69.

898,714. AUTOLIGN. Computervision Corporation. SN 334,557. Pub. 6–30–70. Filed 8–6–69.

898,715. CHICK-HUT. Kimtec, Incorporated. SN 334,726. Pub. 6–30–70. Filed 8–7–69.

898,716. COMPUCIRCUIT. Computervision Corporation. SN 339,301. Pub. 6–30–70. Filed 9–30–69.

898,717. CELLTRIFUGE. American Instrument Company, Inc. SN 347,578. Pub. 6–30–70. Filed 1–2–70.

898,718. STROBOTUNER. C. G. Conn Ltd. SN 348,120. Pub. 6–30–70. Filed 1–9–70.

898,719. VARISYSTEMS. Varisystems Corporation. SN 349,233. Pub. 6–30–70. Filed 1–21–70.

898,720. ELECTROTEMP. Electrovision, Inc. SN 350,167. Pub. 6–30–70. Filed 1–28–70.

898,721. ALUMINARIES. Renauld International, Ltd. SN 350,609. Pub. 6–30–70. Filed 2–5–70.

898,722. MERCOR. Mercury Instruments, Inc. SN 350,757. Pub. 6–30–70. Filed 2–6–70.

898,723. KEYLINE. Textron Inc. SN 351,633. Pub. 6–30–70. Filed 2–17–70.

898,724. NOTABLE. Textron Inc. SN 351,634. Pub. 6–30–70. Filed 2–17–70.

Class 27—Horological Instruments

898,725. AMERICAN LEADERSHIP. Gruen Industries, Inc. SN 343,549. Pub. 6–30–70. Filed 11–14–69.

898,726. TRANS WORLD. Gruen Industries, Inc. SN 343,556. Pub. 6–30–70. Filed 11–14–69.

898,727. VOLTRON. Compagnie Des Montres Marvin S.A. SN 355,956. Pub. 6–30–70. Filed 4–6–70.

Class 28—Jewelry and Precious-Metal Ware

898,512. (See Class 2 for this trademark.)

898,728. C AND DESIGN. Cardow, Incorporated. SN 337,887. Pub. 6–30–70. Filed 9–15–69.

898,729. ZAYRE. Zayre Corp. SN 339,523. Pub. 6–30–70. Filed 10–2–69.

898,730. SILVER CREST. Oneida Ltd. SN 344,128. Pub. 6–30–70. Filed 11–20–69.

898,731. DMR. Litton Precision Products, Inc. SN 345,650. Pub. 6–30–70. Filed 12–8–69.

Class 30—Crockery, Earthenware, and Porcelain

898,732. CARRIAGEHOUSE. Interpace Corporation, d.b.a. Castleton China. SN 322,440. Pub. 6–30–70. Filed 3–21–69.

Class 31—Filters and Refrigerators

898,508. (See Class 2 for this trademark.)

898,733. TRICRON. Schroeder Brothers Corporation. SN 322,913. Pub. 6–30–70. Filed 3–26–69.

898,734. FLEX-ICE. Union Carbide Corporation. SN 335,082. Pub. 6–30–70. Filed 8–11–69.

898,735. CYLFORM AND DESIGN. Mr. Charles W. Jones, Jr. SN 347,023. Pub. 6–30–70. Filed 12–23–69.

898,736. CHANNEL-HOOD. Flanders Filters, Inc. SN 356,565. Pub. 6–30–70. Filed 4–13–70.

Class 32—Furniture and Upholstery

898,737. MISCELLANEOUS DESIGN. Tendo Mokko Co., Ltd. SN 323,607. Pub. 6–30–70. Filed 4–3–69.

898,738. CRAGWOOD. Contract Sales, Inc. SN 332,922. Pub. 6–30–70. Filed 7–18–69.

898,739. R RIVERSIDE BRINGING BEAUTY TO THE HOME AND DESIGN. Riverside Furniture Corporation. SN 339,043. Pub. 6–30–70. Filed 9–26–69.

898,740. K MART AND DESIGN. S. S. Kresge Company. SN 349,652. Pub. 6–30–70. Filed 1–26–70.

898,741. SSK AND DESIGN. S. S. Kresge Company. SN 349,653. Pub. 6–30–70. Filed 1–26–70.

898,742. SUNCRAFT OF CALIFORNIA. Aberdeen Manufacturing Corporation. SN 351,083. Pub. 6–30–70. Filed 2–11–70.

898,743. LEGENDWOOD. James Summerton. SN 351,554. Pub. 6–30–70. Filed 2–16–70.

Class 34—Heating, Lighting, and Ventilating Apparatus

898,744. TRANSAIRE. E. Sam Dick Company, Inc. SN 318,849. Pub. 6–30–70. Filed 2–7–69.

898,745. GALVSWET. Bow Solder Products Co., Inc. SN 345,596. Pub. 6–30–70. Filed 12–8–69.

898,746. SUE. CCI Aerospace Corporation. SN 349,944. Pub. 6–30–70. Filed 1–29–70.

898,747. OCEANAIRE. Masco Corporation. SN 350,281. Pub. 6–30–70. Filed 2–2–70.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

898,748. HABASIT. Habasit, Ltd. SN 282,187. Pub. 6–30–70. Filed 10–10–67.

898,749. 999. Dana Corporation. SN 346,227. Pub. 6–30–70. Filed 12–15–69.

Class 36—Musical Instruments and Supplies

898,633. (See Class 21 for this trademark.)

898,750. TEAC. TEAC Corporation of America. SN 315,116. Pub. 5–7–70. Filed 12–23–68.

898,751. ACOUSTIFONE. Acoustifone Corporation. SN 319,125. Pub. 2–10–70. Filed 2–14–69.

898,752. "VIBRA-BELL". Grossman Music Corporation. SN 325,035. Pub. 6–30–70. Filed 4–21–69.

898,753. EXCELSIOR AND DESIGN. Deutsche Grammophon Gesellschaft m.b.H. SN 325,180. Pub. 4–28–70. Filed 4–22–69.

898,754. MELODIE VENDOR. Melodie Vendor Corporation. SN 335,999. Pub. 6–30–70. Filed 8–22–69.

898,755. CPI NEWSTAPE. McGraw-Hill, Inc. SN 338,424. Pub. 6–30–70. Filed 9–19–69.

898,756. ARIES AND DESIGN. Aries Record Productions, Inc. SN 344,206. Pub. 6–30–70. Filed 11–21–69.

898,757. CURVED SIDE DESIGN. Lanier Electronic Laboratory, Inc. SN 345,961. Pub. 6–30–70. Filed 12–11–69.

898,758. S (DESIGN). Superscope, Inc. SN 351,734. Pub. 6–30–70. Filed 2–18–70.

898,759. LA FLOR RECORDS AND DESIGN. La Flor Records, Inc. SN 352,155. Pub. 6–30–70. Filed 2–24–70.

898,760. INCA RECORDS AND DESIGN. La Flor Records, Inc. SN 352,157. Pub. 6–30–70. Filed 2–24–70.

898,761. AUTOCHORD. Hammond Corporation. SN 353,303. Pub. 6–30–70. Filed 3–6–70.

Class 37—Paper and Stationery

898,531. (See Class 6 for this trademark.)

898,629. (See Class 20 for this trademark.)

898,762. PROGRAMAID. Seymour Bosworth. SN 303,888. Pub. 6–30–70. Filed 7–30–68.

898,763. JEEVES. Fort Howard Paper Company. SN 319,039. Pub. 6–30–70. Filed 2–13–69.

898,764. CARDS OF WOOD. Lenderink, Inc. MULTIPLE CLASS (Classes 37 and 38). SN 328,063. Pub. 6–30–70. Filed 5–22–69.

898,765. EL MARKO. The Gillette Company, d.b.a. The Paper Mate Company. SN 348,146. Pub. 6–16–70. Filed 1–9–70.

898,766. INSTANT-PAY. Instant-Pay, Inc., assignee of Instant-Pay. SN 352,349. Pub. 6–30–70. Filed 2–25–70.

898,767. UNIVEL. Graphic Controls Corporation. SN 352,636. Pub. 6–30–70. Filed 2–27–70.

898,768. KAPOFF. Chemolene Industries, Inc. SN 353,033. Pub. 6–30–70. Filed 3–4–70.

898,769. EUROBOURSE AND DESIGN. Societe dite: Eurofinance S.A.R.L. MULTIPLE CLASS (Classes 38 and 102). SN 307,374. Pub. 6–30–70. Filed 9–16–68.

Class 38—Prints and Publications

898,764. (See Class 37 for this trademark.)

898,770. FLOWER NEWS. Central Flower News, Inc. SN 316,929. Pub. 6–30–70. Filed 1–21–69.

898,771. EXECUTIVE. Editrice Lutetia, S.R.L. SN 324,902. Pub. 6–30–70. Filed 4–18–69.

898,772. PACER. Digital Systems Corporation. SN 327,813. Pub. 6–30–70. Filed 5–21–69.

898,773. THE CALIFORNIA POLL. Field Research Corporation. MULTIPLE CLASS (Classes 38 and 101). SN 333,866. Pub. 6–30–70. Filed 7–30–69.

898,774. ELECTRIC HEAT AND AIRCONDITIONING. Heating Publishers, Inc. SN 338,052. Pub. 6–30–70. Filed 9–16–69.

898,775. UNITE I. United Computing Corporation. SN 340,055. Pub. 6–30–70. Filed 10–7–69.

898,776. DARJE. Darje, Inc. SN 347,726. Pub. 6–30–70. Filed 1–5–70.

Class 39—Clothing

898,777. ENTER-EASE POCKET. Lebow Bros., Inc. SN 330,154. Pub. 6–30–70. Filed 6–16–69.

898,778. CARLA. Spartans Industries, Inc. SN 331,248. Pub. 6–30–70. Filed 6–27–69.

898,779. ENRICO CAPUCCI. Mr. Henry, Inc. SN 331,406. Pub. 6–30–70. Filed 6–30–69.

898,780. SUZEE JR. AND DESIGN. Norman Wiatt Co. SN 331,415. Pub. 6–30–70. Filed 6–30–69.

898,781. ANACAPA. Cole of California, Inc. SN 336,767. Pub. 6–30–70. Filed 9–2–69.

898,782. MIRACLE-MATES. Kayser-Roth Corporation. SN 336,810. Pub. 6–30–70. Filed 9–2–69.

898,783. CAREER FASHIONS. Angelica Corporation. SN 337,877. Pub. 6–30–70. Filed 9–15–69.

898,784. RELAXAHAND GLOVE. Consolidated Foods Corporation. SN 338,302. Pub. 6–30–70. Filed 9–19–69.

898,785. GENTLE MASSAGE GLOVE. Consolidated Foods Corporation. SN 338,303. Pub. 6–30–70. Filed 9–19–69.

898,786. ISOMETRIC EXERCISE GLOVE. Consolidated Foods Corporation. SN 338,304. Pub. 6–30–70. Filed 9–19–69.

898,787. MON AMOUR AND DESIGN. Stanley J. Love. SN 338,586. Pub. 6–30–70. Filed 9–22–69.

898,788. SPRINGFOOT. Springfoot, Inc. SN 338,818. Pub. 6–30–70. Filed 9–24–69.

898,789. "THE DISPENSABLES." Servisco. SN 339,459. Pub. 6–30–70. Filed 10–1–69.

898,790. JAVELIN. Anvil Brand, Incorporated. SN 340,215. Pub. 6–30–70. Filed 10–9–69.

898,791. BRAEMAR AND STAG HEAD (DESIGN). Braemar Knitwear Limited. SN 340,761. Pub. 6–30–70. Pub. 10–15–69.

898,792. ALL MAN-PART PURITAN. The Puritan Sportswear Corporation. SN 341,694. Pub. 6–30–70. Filed 10–24–69.

898,793. DAMART-THERMAWEAR. Bolfra, Societe Anonyme. SN 342,726. Pub. 6–30–70. Filed 11–5–69.

898,794. KNITISSIMO. Danoca Industries, Inc. SN 343,090. Pub. 6–30–70. Filed 11–10–69.

898,795. GLO LITE. Wellco Enterprises, Inc. SN 347,666. Pub. 6–30–70. Filed 1–2–70.

898,796. MISS BROADWAY. N. Edelson Sons Corporation. SN 348,138. Pub. 6–30–70. Filed 1–9–70.

898,797. BIG OX AND DESIGN. Gamble-Skogmo, Inc. SN 348,282. Pub. 6–30–70. Filed 1–12–70.

898,798. SPRINGFOOT. Springfoot, Inc. SN 349,697. Pub. 6–30–70. Filed 1–26–70.

898,799. GREAT LEGS. Hanes Corporation. SN 353,828. Pub. 6–30–70. Filed 3–12–70.

898,800. PLAYTEX. International Playtex Corporation. SN 354,549. Pub. 6–30–70. Filed 3–19–70.

898,801. PLAYTEX. International Playtex Corporation. SN 354,550. Pub. 6–30–70. Filed 3–19–70.

898,802. TRICO-SHEEN. International Playtex Corporation. SN 354,553. Pub. 6–30–70. Filed 3–19–70.

898,803. STRETCH LITE. Converse Rubber Corporation. SN 355,494. Pub. 6–30–70. Filed 3–31–70.

Class 40—Fancy Goods, Furnishings, and Notions

898,804. JEROME ALEXANDER. Jerrax Imports, Inc. SN 297,192. Pub. 6–30–70. Filed 5–2–68.

898,805. REMMI HAIR. Peter Suba and Emma Suba (joint owners), d.b.a. Continental Tress Fashions. SN 303,545. Pub. 6–30–70. Filed 7–24–68.

898,806. FLING WIGS. Center City Beauty Salon, Inc. SN 330,477. Pub. 6–30–70. Filed 6–19–69.

898,807. FACIAL DESIGN. Cosmo Currie Limited. SN 332,454. Pub. 6–30–70. Filed 7–14–69.

898,808. CASA SEVILLE. La Marquesa Wig Corporation. SN 339,330. Pub. 6–30–70. Filed 9–30–69.

898,809. DYNASTY. Mandarin Textiles Limited. SN 339,906. Pub. 6–30–70. Filed 10–6–69.

898,810. EYE TURN ON. Appearance Products Corporation. SN 341,571. Pub. 6–30–70. Filed 10–24–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

898,811. PLUSH PAD. General Polyflex, Incorporated. SN 330,236. Pub. 6–30–70. Filed 6–17–69.

898,812. SAJA. Hayden Textiles, Inc. SN 333,826. Pub. 6–30–70. Filed 7–29–69.

898,813. FAIRFAX. West Point-Pepperell, Inc. SN 334,890. Pub. 6–30–70. Filed 8–8–69.

898,814. PENGUIN. J. P. Stevens & Co., Inc. SN 340,289. Pub. 6–30–70. Filed 10–9–69.

898,815. DAMART-THERMAWEAR. Bolfra, Societe Anonyme. SN 342,725. Pub. 6–30–70. Filed 11–5–69.

898,816. DENSI-TEE. E. T. Barwick Industries, Inc. SN 352,409. Pub. 6–30–70. Filed 2–26–70.

Class 43 — Thread and Yarn

898,817. SPECTRODYE. American Enka Corporation. SN 330,686. Pub. 6–30–70. Filed 6–23–69.

Class 44 — Dental, Medical, and Surgical Appliances

898,818. MISCELLANEOUS DESIGN. Johnson & Johnson. SN 323,569. Pub. 6–30–70. Filed 4–3–69.

898,819. ECHOTROL. Hoffrel Instruments Incorporated. SN 329,356. Pub. 6–30–70. Filed 6–6–69.

898,820. GAMMA VUE. Nuclear Associates, Inc. SN 333,057. Pub. 6–30–70. Filed 7–22–69.

898,821. URIFLO. Abbott Laboratories. SN 336,993. Pub. 6–30–70. Filed 9–4–69.

898,822. MYDENT. Medico-Dental Technical Corporation. SN. 337,184. Pub. 6–30–70. Filed 9–5–69.

898,823. UROMATIC. Baxter Laboratories, Inc. SN 338,870. Pub. 6–30–70. Filed 9–25–69.

898,824. M AND DESIGN. MacTavish Industries Inc. SN 339,029. Pub. 6–30–70. Filed 9–26–69.

898,825. F/O. Propper Manufacturing Company, Inc. SN 353,380. Pub. 6–30–70. Filed 3–9–70.

Class 45 — Soft Drinks and Carbonated Waters

898,826. BERNARD AND DESIGN. Bernard Food Industries, Inc. MULTIPLE CLASS (Classes 45, 46, and 50). SN 286,806. Pub. 6–30–70. Filed 12–13–67.

898,827. HOME OF THE WHOPPER. Burger King Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 306,088. Pub. 6–30–70. Filed 9–9–68.

898,508. (See Class 2 for this trademark.)

898,828. SUN-GLO. Brooks Products, Inc. SN 329,221. Pub. 6–30–70. Filed 6–5–69.

898,829. CHAN-JUREEN. PepsiCo, Inc. SN 339,813. Pub. 6–30–70. Filed 10–6–69.

898,830. CHERRY-AKI. PepsiCo, Inc. SN 339,814. Pub. 6–30–70. Filed 10–6–69.

898,831. MARCO POLO. PepsiCo, Inc. SN 339,817. Pub. 6–30–70. Filed 10–6–69.

898,832. YO HOS. ITT Continental Baking Company, by merger from Continental Baking Company. SN 255,602. Pub. 9–19–67. Filed 10–3–66.

Class 46 — Foods and Ingredients of Foods

898,612. (See Class 18 for this trademark.)

898,826. (See Class 45 for this trademark.)

898,827. (See Class 45 for this trademark.)

898,833. FUN BUNS. Eastern Bakeries Limited. SN 269,523. Pub. 6–30–70. Filed 4–19–67.

898,834. CHOW MANIA. The Quaker Oats Company. SN 279,032. Pub. 11–14–67. Filed 8–25–67.

898,835. POLAR WHIP. Costa Ice Cream Company. SN 288,940. Pub. 9–24–68. Filed 1–16–68.

898,836. PLUM NELLY. International Food Corporation. SN 296,168. Pub. 6–30–70. Filed 4–22–68.

898,837. DEWIED REAL CASING. A. Dewied Casing Company. SN 305,726. Pub. 6–30–70. Filed 8–22–68.

898,838. A ALBERS TROPHY AND DESIGN. Carnation Company. SN 306,334. Pub. 6–30–70. Filed 8–30–68.

898,839. MORCILLA AND DESIGN. A. & R. Meat Co. SN 313,877. Pub. 6–30–70. Filed 12–9–68.

898,840. HARBIN SHAKEMIX-R ETC. AND DESIGN. Clyde A. Harbin. SN 314,220. Pub. 6–30–70. Filed 12–11–68.

898,841. H WUFFLE-DUST MAKES MIXES AND DESIGN. Clyde A. Harbin. SN 314,222. Pub. 6–30–70. Filed 12–11–68.

898,842. Q AND EGG DESIGN. Quality Egg Co., Inc. SN 316,130. Pub. 6–30–70. Filed 1–8–69.

898,843. PAN-CHIPS. Alimentos Selecionados Amaral S.A. SN 320,781. Pub. 6–30–70. Filed 3–5–69.

898,844. BUFFET SUPPER. F. M. Stamper Company, d.b.a. Banquet Canning Co. SN 320,977. Pub. 6–30–70. Filed 3–6–69.

898,845. GOLDEN GATE. Oroweat Baking Co. of San Francisco, d.b.a. Golden Gate Bakery. SN 321,323. Pub. 6–30–70. Filed 3–3–69.

898,846. PET LIFE. Hi-Life Packing Company. SN 321,933. Pub. 6–30–70. Filed 3–17–69.

898,847. SNOW WHITE AND DESIGN. Snow White Mushroom Co. SN 321,996. Pub. 6–30–70. Filed 3–17–69.

898,848. FULLBACK. Quarterback Sports Federation, Inc. SN 322,469. Pub. 6–30–70. Filed 3–21–69.

898,849. LINEBACKER. Quarterback Sports Federation, Inc. SN 322,470. Pub. 6–30–70. Filed 3–21–69.

898,850. HALFBACK. Quarterback Sports Federation, Inc. SN 322,471. Pub. 6–30–70. Filed 3–21–69.

898,851. REDFERN. Redfern Foods Corporation. SN 324,608. Pub. 6–30–70. Filed 4–15–69.

898,852. SAUER'S GOLD MEDAL. The C. F. Sauer Company. SN 325,228. Pub. 6–30–70. Filed 4–22–69.

898,853. GOLD MEDAL BY SAUER AND DESIGN. The C. F. Sauer Company. SN 325,229. Pub. 6–30–70. Filed 4–22–69.

898,854. MINI-TACOS. Pet Incorporated. SN 328,247. Pub. 6–30–70. Filed 5–26–69.

898,855. WITHDRAWN.

898,856. SUPERVAN. David Michael & Co., Inc. SN 330,607. Pub. 6–30–70. Filed 6–20–69.

898,857. MILL QUEEN. Agway, Inc. SN 331,002. Pub. 6–30–70. Filed 6–26–69.

898,858. HEART OF FLORIDA CITRUS AND DESIGN. Richard H. DeMott, assignee of Beymer-Mann Company. SN 331,010. Pub. 6–30–70. Filed 6–26–69.

898,859. TOP TOMATA. Hunt-Wesson Foods, Inc. SN 331,041. Pub. 6–30–70. Filed 6–26–69.

898,860. MR. COOKIE AND DESIGN. Silver Lake Cookie Co., Inc. SN 331,431. Pub. 6–30–70. Filed 6–30–69.

898,861. FLORASYNTHETIC. Florasynth, Inc. SN 331,606. Pub. 6–30–70. Filed 7–2–69.

898,862. EGGO. Fearn International Inc. SN 335,443. Pub. 6–30–70. Filed 8–15–69.

898,863. PETER BAKER'S. Frito-Lay, Inc. SN 336,062. Pub. 6–30–70. Filed 8–25–69.

898,864. TREE HOUSE. General Mills, Inc. SN 336,744. Pub. 6–30–70. Filed 9–2–69.

898,865. OVER SAUCES. General Mills, Inc. SN 337,408. Pub. 6–30–70. Filed 9–9–69.

898,866. KIVA. Desert Citrus Co. SN 339,390. Pub. 6–30–70. Filed 10–1–69.

898,867. STEAK N SHAKE JR. Steak n Shake, Inc. SN 339,606. Pub. 6–30–70. Filed 10–2–69.

898,868. KORN TOP. Bartlow Brothers, Inc. SN 340,470. Pub. 6–30–70. Filed 10–13–69.

898,869. BUN-BUDDIES. Seitz Packing Company, Inc. SN 340,949. Pub. 6–30–70. Filed 10–16–69.

898,870. GOLDEN MAID. Lillian T. Borchard. SN 340,982. Pub. 6–30–70. Filed 10–17–69.

898,871. QUICKSAND. Fleer Corp. SN 341,024. Pub. 6–30–70. Filed 10–17–69.

898,872. PRESIDENTS TABLE. John Morrell & Co. SN 341,248. Pub. 6–30–70. Filed 10–21–69.

898,873. MR. BOSTON AND DESIGN. Mr. Boston Seafoods Corp. SN 343,054. Pub. 6–30–70. Filed 11–10–69.

898,874. CETECO. Curacao Trading Company, Inc. SN 343,212. Pub. 6–30–70. Filed 11–12–69.

898,875. FLAKE 'N PEL. Allied Mills, Inc. SN 343,873. Pub. 6–30–70. Filed 11–13–69.

898,876. BUTTERCUT. Geo. A. Hormel & Company. SN 343,560. Pub. 6–30–70. Filed 11–14–69.

898,877. HAPPY CAKE. Kemoo Farm Foods, Ltd. SN 346,255. Pub. 6–30–70. Filed 12–15–69.

898,878. STRIPPLE ZIPS. Worthington Foods, Inc. SN 346,676. Pub. 6–30–70. Filed 12–18–69.

898,879. WORTHINGTON AND W DESIGN. Worthington Foods, Inc. SN 346,999. Pub. 6–30–70. Filed 12–22–69.

898,880. TALK TURKEY. Sunshine Biscuits, Inc. SN 347,693. Pub. 6–30–70. Filed 1–5–70.

898,881. BANKIT. Armour-Dial, Inc. SN 348,631. Pub. 6–30–70. Filed 1–15–70.

898,882. VITAMAN THE GREAT. The Quaker Oats Company. SN 349,432. Pub. 6–30–70. Filed 1–23–70.

898,883. CLAMINARA. Aunt Millie's Sauces, Inc. SN 350,448. Pub. 6–30–70. Filed 2–4–70.

898,884. NO·DK AND DESIGN. Edward H. Bohlmann, d.b.a. No·DK Distributors. SN 350,452. Pub. 6–30–70. Filed 2–4–70.

898,885. EASY DRESS. Carter-Wallace, Inc. SN 350,647. Pub. 6–30–70. Filed 2–6–70.

898,886. AIRLIGHT. H. C. Cole Milling Company. SN 352,293. Pub. 6–30–70. Filed 2–25–70.

898,887. MISCELLANEOUS DESIGN. Frito-Lay, Inc. SN 354,260. Pub. 6–16–70. Filed 3–17–70.

Class 47 — Wines

898,888. AMSELFELDER. A. Racke KG. SN 300,111. Pub. 6–30–70. Filed 6–10–68.

898,889. LANSON AND LABEL DESIGN. Lanson Pere & Fils, Societe Anonyme. SN 337,333. Pub. 6–30–70. Filed 9–8–69.

Class 48 — Malt Beverages and Liquors

898,890. BIG MOUTH. Associated Brewing Company. SN 333,355. Pub. 6–30–70. Filed 7–24–69.

898,891. INSTA-BRAU. Asreco Products Co. SN 343,929. Pub. 6–30–70. Filed 11–19–69.

898,892. LUCKY AND DESIGN. Lucky Breweries, Inc. SN 354,194. Pub. 6–30–70. Filed 3–16–70.

Class 49 — Distilled Alcoholic Liquors

898,893. ZIMEROV. Zimmerman's Cut Rate Liquor Store, Inc. SN 297,912. Pub. 6–30–70. Filed 5–10–68.

898,894. GLENGLASSAUGH. The Highland Distilleries Company Limited. SN 333,567. Pub. 6–30–70. Filed 7–25–69.

898,895. PIPE'N KILT. Don J. Carew, d.b.a. Carew Distributing Company. SN 336,208. Pub. 6–30–70. Filed 8–22–69.

Class 50 — Merchandise Not Otherwise Classified

898,826. (See Class 45 for this trademark.)

898,896. KLEERITE. American Biltrite Rubber Co., Inc. SN 335,313. Pub. 6–30–70. Filed 8–14–69.

898,897. AKRO AND A DESIGN. The Akro Corporation. SN 342,384. Pub. 6–30–70. Filed 11–3–69.

898,898. CUCKOO STRAWS. General Mills, Inc. SN 354,768. Pub. 6–30–70. Filed 3–23–70.

Class 51 — Cosmetics and Toilet Preparations

898,899. GENIE. Colgate-Palmolive Company, assignee, by mesne assignment, of Ellen Kay Laboratories, Inc. SN 313,651. Pub. 4–22–69. Filed 12–5–68.

898,900. REDI-SPRAY. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company. SN 316,131. Pub. 6–30–70. Filed 1–8–69.

898,901. PRE-TALK. Dart Industries Inc., assignee of Chesebrough-Pond's Inc. SN 323,760. Pub. 9–16–69. Filed 4–7–69.

898,902. FINAL-EYES. Luzier Incorporated. SN 326,110. Pub. 6–30–70. Filed 5–1–69.

898,903. ABYSSALE. Lancome S.A. SN 330,152. Pub. 6–30–70. Filed 6–16–69.

898,904. DENTU-MIST. Block Drug Company, Inc. (New Jersey corporation), by merger from Block Drug Company, Inc. (Delaware corporation). SN 330,710. Pub. 6–30–70. Filed 6–23–69.

898,905. SECOND SKIN. Posner Laboratories, Inc. SN 331,239. Pub. 6–30–70. Filed 6–27–69.

898,906. ARRETE LA MARCHE DU TEMPS. Beecham Inc. SN 332,573. Pub. 6–30–70. Filed 7–15–69.

898,907. DR. CARE AND HORSE AND BUGGY DESIGN. Century Creations, Incorporated, d.b.a. Dairimetics, Ltd. SN 335,547. Pub. 6–30–70. Filed 8–18–69.

898,908. LASH-A-DASHERY. Max Factor & Co. SN 336,108. Pub. 6–30–70. Filed 8–25–69.

898,909. A TOUCH OF SILK. Charmaceuticals, Inc. SN 337,849. Pub. 6–30–70. Filed 9–15–69.

898,910. PRESTIGE. Northern Laboratories, d.b.a. Prestige. MULTIPLE CLASS (Classes 51 and 52). SN 338,013. Pub. 6–30–70. Filed 9–16–69.

898,911. TIE-BREAKER. A. H. Robins Company, Incorporated. SN 342,903. Pub. 6–30–70. Filed 11–6–69.

898,912. LU-MOIST. Luzier Incorporated. SN 345,184. Pub. 6-30-70. Filed 12-3-69.

898,913. DYNEX. Colgate-Palmolive Company. SN 354,935. Pub. 6-30-70. Filed 3-24-70.

Class 52 — Detergents and Soaps

898,532. (See Class 6 for this trademark.)

898,540. (See Class 6 for this trademark.)

898,544. (See Class 6 for this trademark.)

898,582. (See Class 14 for this trademark.)

898,910. (See Class 51 for this trademark.)

898,914. PINK DELIGHT. National Tea Co. SN 315,484. Pub. 6-30-70. Filed 12-30-68.

898,915. Z-P. Caled Products Company, Inc. SN 316,605. Pub. 6-30-70. Filed 1-15-69.

898,916. SUPER CAL. Caled Products Company, Inc. SN 316,607. Pub. 6-30-70. Filed 1-15-69.

898,917. ECONO-CHARGE. Caled Products Company, Inc. SN 316,615. Pub. 6-30-70. Filed 1-15-69.

898,918. DISH DROPS. Amway Corporation. SN 324,787. Pub. 6-30-70. Filed 4-17-69.

898,919. TRI-ZYME. Amway Corporation. SN 338,867. Pub. 6-30-70. Filed 9-25-69.

Class 100 — Miscellaneous

898,920. PARAMED. Paramed, Incorporated, SN 300,287. Pub. 6-30-70. Filed 6-12-68.

898,921. PICA. The Printing Industry of the Carolinas, Inc. SN 315,694. Pub. 6-30-70. Filed 12-12-68.

898,922. SUPERVISE AND DESIGN. Superintendence Company Inc. SN 326,805. Pub. 6-30-70. Filed 5-8-69.

898,923. MISTER BEEFE ETC. AND DESIGN. Mister Beefe International, Inc. SN 328,508. Pub. 6-30-70. Filed 5-28-69.

898,924. MISCELLANEOUS DESIGN. Bratskellars of America, Inc. SN 329,332. Pub. 6-30-70. Filed 6-6-69.

898,925. SOP. Some Other Place, Inc. SN 334,903. Pub. 6-30-70. Filed 8-8-69.

898,926. MISS KABOB. John A. Pace. SN 336,632. Pub. 6-30-70. Filed 8-29-69.

898,927. R AND DESIGN. Regis Corporation. SN 338,491. Pub. 6-30-70. Filed 9-22-69.

898,928. STEAK N SHAKE JR. Steak n Shake, Inc. SN 339,605. Pub. 6-30-70. Filed 10-2-69.

898,929. —AN ISLAND OF REFRESHMENT. A & W International, Inc. SN 354,376. Pub. 6-30-70. Filed 3-18-70.

898,930. SIZZLEBORD. Sizzlebord Restaurants, Inc. SN 354,781. Pub. 6-30-70. Filed 3-23-70.

Class 101 — Advertising and Business

898,773. (See Class 38 for this trademark.)

898,931. BUY-POWER. Consumer Controls, Inc. SN 293,237. Pub. 6-30-70. Filed 3-14-68.

898,932. BUY POWER AND DESIGN. Consumer Controls, Inc. SN 293,238. Pub. 6-30-70. Filed 3-14-68.

898,933. LEX COMPUTER SYSTEMS AND DESIGN. Lex Computer Systems. SN 313,311. Pub. 6-30-70. Filed 11-29-68.

898,934. ANIMAL KINGDOM. Dr. Richard L. Williamson, d.b.a. Animal Kingdom Pet Supplies. SN 321,309. Pub. 6-30-70. Filed 3-10-69.

898,935. BOOKLAND. Bookland of Huntsville, Inc. SN 327,841. Pub. 6-30-70. Filed 5-21-69.

898,936. BOWL & BOARD. Bowl & Board, Inc. SN 327,846. Pub. 6-30-70. Filed 5-21-69.

898,937. THE HOUSE OF KITCHENS AND DESIGN. The House of Kitchens, Inc. SN 331,200. Pub. 6-30-70. Filed 6-27-69.

898,938. ATR AND DESIGN. Avitron Corporation. SN 331,688. Pub. 6-30-70. Filed 7-3-69.

898,939. PAY-ALL. Central Information Processing Corporation. SN 332,916. Pub. 6-30-70. Filed 7-18-69.

898,940. MDC. MDC Systems, Inc. SN 335,822. Pub. 6-30-70. Filed 8-21-69.

898,941. EUROPEAN FLOWER MARKET. Bachman's Inc. SN 340,309. Pub. 6-30-70. Filed 10-10-69.

898,942. EUROPEAN FLOWER MARKET AND AWNING DESIGN. Bachman's Inc. SN 340,310. Pub. 6-30-70. Filed 10-10-69.

898,943. V.I.P. V.I.P., Inc. SN 341,764. Pub. 6-30-70. Filed 10-27-69.

898,944. NU-ART AND DESIGN. Violetta Tartaglia, d.b.a. Nu-Art Advertising. SN 345,705. Pub. 6-30-70. Filed 12-9-69.

898,945. PAY-FONE. Lewis Greenwood, d.b.a. L. Greenwood Company. SN 346,806. Pub. 6-30-70. Filed 12-22-69.

898,946. MONI-CHEK. Lever Brothers Company. SN 351,079. Pub. 6-30-70. Filed 2-11-70.

Class 102 — Insurance and Financial

898,769. (See Class 38 for this trademark.)

898,947. XTRACHEX. South Suburban Federal Savings and Loan Association. SN 331,246. Pub. 6-30-70. Filed 6-27-69.

Class 103 — Construction and Repair

898,948. DIGUN. Dresser Industries, Inc. SN 309,553. Pub. 6-30-70. Filed 10-14-68.

898,949. CTI AND DESIGN. DASA Corporation, by merger from Cyber-Tronics, Inc. SN 323,943. Pub. 6-9-70. Filed 4-8-69.

Class 104 — Communication

898,950. ATC AND DESIGN. American Television and Communications Corporation. SN 311,108. Pub. 6-30-70. Filed 11-1-68.

898,951. FCI. Facsimile Centers Incorporated. SN 330,121. Pub. 6-30-70. Filed 6-16-69.

898,952. FCI AND DESIGN. Facsimile Centers Incorporated. SN 330,487. Pub. 6-30-70. Filed 6-19-69.

898,953. MISCELLANEOUS DESIGN. Phone Depots, Inc. SN 339,681. Pub. 6-30-70. Filed 10-3-69.

Class 105 — Transportation and Storage

898,954. BAHAMA-RAMA. Fun-Tyme Packages, Inc. SN 333,267. Pub. 6-30-70. Filed 7-23-69.

Class 106 — Material Treatment

898,955. DR AND DESIGN. Dun-Rite Leather & Suede Processing. SN 297,663. Pub. 6-30-70. Filed 5-8-68.

898,956. TICERMET. Lubeco, Inc. SN 313,513. Pub. 6-30-70. Filed 12-3-68.

898,957. FCA. Film Corporation of America. SN 334,225. Pub. 6-30-70. Filed 8-1-69.

898,958. FCA AND DESIGN. Film Corporation of America. SN 344,357. Pub. 6-30-70. Filed 11-24-69.

Class 107 — Education and Entertainment

898,959. THE CASANOVAS. Paul Alton Proctor, d.b.a. The Casanovas. SN 311,058. Pub. 6-30-70. Filed 10-31-68.

898,960. MAGIC WORLD. Madison Square Garden Corporation. SN 315,006. Pub. 6-30-70. Filed 12-23-68.

898,961. THE DALE CARNEGIE SUPERVISION & MANAGEMENT SEMINAR AND DESIGN. Dale Carnegie & Associates, Inc. SN 318,951. Pub. 6-30-70. Filed 2-12-69.

898,962. PRODUCTION CHART (DESIGN). Scientific Methods, Inc. SN 320,384. Pub. 6-30-70. Filed 2-28-69.

898,963. CINCINNATI ROYALS AND DESIGN. Cincinnati Basketball Club Company. SN 331,865. Pub. 6-30-70. Filed 7-7-69.

898,964. MGI DESIGN. Management Games Institute, Inc. SN 340,720. Pub. 6-30-70. Filed 10-15-69.

898,965. DIMENSIONAL SALES TRAINING. Psychological Associates, Inc. SN 340,736. Pub. 6-30-70. Filed 10-15-69.

898,966. NEW ORLEANS SQUARE. Walt Disney Productions. SN 352,423. Pub. 6-30-70. Filed 2-26-70.

898,867. UNITEK. Unitek Corporation. SN 355,192. Pub. 6-30-70. Filed 3-27-70.

Collective Membership Mark

Class 200

898,968. ARABIC CLUB ETC. AND DESIGN. The Arabic Club. SN 331,713. Pub. 6-30-70. Filed 7-3-69.

Certification Mark

Class A — Goods

898,969. NEMA VERIFIED-HEAT LIMITATION AND DESIGN. National Electrical Manufacturers Association. SN 352,842. Pub. 6-30-70. Filed 3-2-70.

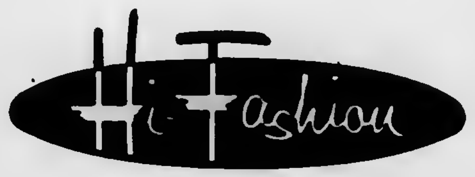
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

898,978. Hi-Fashion Knits, Inc., Green Bay, Wis. SN 298,377. Filed P.R. 5-17-68; Am. S.R. 7-17-70.



Applicant disclaims the words "Hi" and "Fashion" when used descriptively.

Class 26—Measuring and Scientific Appliances

For Sewing Patterns (Int. Cl. 16).

Class 38—Prints and Publications

For Sewing Booklets (Int. Cl. 16).

Class 40—Fancy Goods, Furnishings, and Notions

For Sewing Supplies—Namely, Basting Clips, Cutting Board Tacks, and Sewing Clamps (Int. Cl. 7).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabrics for Making Sweaters, Swim Suits, Slacks, Skirts, Dresses, Coats, Suits and the Like, and Lining, Interlining, and Elastic Fabrics for the Same (Int. Cl. 24).

Class 107—Education and Entertainment

For Conducting Classes in Sewing (Int. Cl. 41).

First use Mar. 25, 1968.

SECTION 2

Class 2 — Receptacles

898,970. Brown & Brown, Mobile, Ala. SN 335,939. Filed P.R. 8-22-69; Am. S.R. 4-22-70.

KOLD KOVER

For Thermal Control Envelopes for the Transportation of Frozen Foods in Palletized Racks (Int. Cl. 17).
First use June 19, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

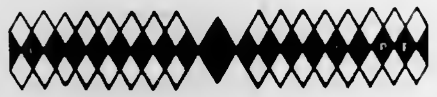
898,971. Seward Luggage Manufacturing Company, Inc., Petersburg, Va. SN 321,989. Filed P.R. 3-17-69; Am. S.R. 6-1-70.

SEWARD

For Luggage (Int. Cl. 18).
First use on or about Aug. 20, 1968.

Class 5—Adhesives

898,972. Atlantic Gummed Paper Corporation, Brooklyn, N.Y. SN 308,253. Filed P.R. 7-22-68; Am. S.R. 1-13-70.



No claim is made to the word "tape" apart from the mark as shown.

For Reinforced Gummed Sealing Paper Tape (Int Cl. 17).
First use May 1, 1968.

Class 6—Chemicals and Chemical Compositions

898,973. Turtle Wax, Inc., Chicago, Ill. SN 330,794. Filed P.R. 6-23-69; Am. S.R. 6-23-70.

AUTO COOL

For Engine Coolant With Rust Inhibitor (Int. Cl. 1).
First use June 12, 1969.

Class 8—Smokers' Articles, Not Including Tobacco Products

898,974. Rogers, Inc., Bridgeport, Conn. SN 342,066. Filed 10-29-69.

AIR-SEAL'D

Owner of Reg. No. 443,166.
For Tobacco Pouches (Int. Cl. 34).
First use Oct. 17, 1945.

Class 12—Construction Materials

898,975. Edward B. Currigan, d.b.a. Nupave Products Co. Oakland, Calif. SN 276,647. Filed P.R. 7-24-67; Am. S.R. 4-27-70.

NUPAVE

For Packaged Ready Mixed Asphaltic Material for Paving and Surfacing and Asphaltic Primers for Pavement Surfaces (Int. Cl. 19).
First use Jan. 1, 1949.

Class 21—Electrical Apparatus, Machines, and Supplies

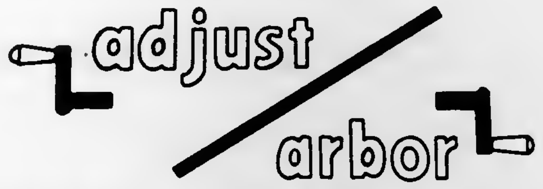
898,976. T.A.D. Avanti, Inc., Paramount, Calif. SN 322,213. Filed P.R. 3-20-69; Am S.R. 3-9-70.

RECORD-A-CALL

For Automatic Telephone Answering Devices, of the Type in Which Incoming Telephone Messages Are Recorded in Response to Recorded Instructions (Int. Cl. 9).
First use June 1968.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

898,977. FJM Products, Inc., Buckingham, Pa. SN 341,451. Filed P.R. 10-20-69; Am. S.R. 6-5-70.



No claim is made to the representation of the goods apart from the mark as shown.

For Winding Mandrel (Int. Cl. 7).
First use July 26, 1968.

Class 26—Measuring and Scientific Appliances

898,978. See Section 1 (Combined Certificate).

898,979. Strainsert Company, Bryn Mawr, Pa. SN 309,309. Filed P.R. 10-9-68; Am. S.R. 6-8-70.

FLAT LOAD CELL

For Strain Gages (Int. Cl. 9).
First use at least as early as Apr 1, 1966.

898,980. Lab-Aids Incorporated, Farmingdale, N.Y. SN 321,560. Filed P.R. 4-4-69; Am. S.R. 6-22-70.

MAKE-A-GAS

For Educational Laboratory Gas Study Kit (Int. Cl. 9).
First use on or about Dec. 23, 1968.

Class 27—Horological Instruments

898,981. Voumard Montres S.A., Port D'Hauterive, Hauterive (Neuchatel), Switzerland. SN 337,470. Filed P.R. 9-9-69; Am. S.R. 6-15-70.

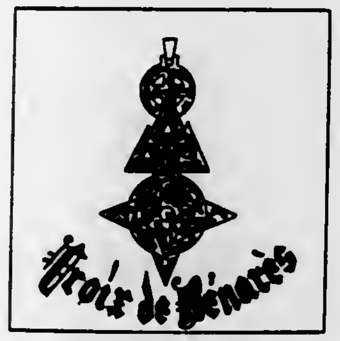
VOUMARD

Priority claimed under Sec. 44(d) on Swiss Reg. No. 239,041 dated May 9, 1969.

For Watches and Parts Thereof (Int. Cl. 14).

Class 28—Jewelry and Precious-Metal Ware

898,982. Suzanne Leleu nee Quehen, Nice, France. SN 297,569. Filed P.R. 5-7-68; Am. S.R. 5-27-70.



Priority claimed under Sec. 44(d) on French Reg. No. 733,320 dated Jan. 26, 1968. The English translation of "Croix de Benares" is "Cross of Benares."

For Jewelry, Especially Crosses and Pendants (Int. Cl. 14).

Class 32—Furniture and Upholstery

898,983. Tycodyne Industries Corporation, Buffalo, N.Y. SN 296,057. Filed P.R. 4-19-68; Am. S.R. 6-29-70.

For Children's Furniture—Namely, Chairs, Cabinets, and Tables (Int. Cl. 20).
First use Mar. 22, 1968.

Class 34—Heating, Lighting, and Ventilating Apparatus

898,984. Universal Oil Products Company, Des Plaines, Ill. SN 278,258. Filed P.R. 8-14-67; Am. S.R. 2-16-70.

FLOATING BED

For Wet Scrubber Apparatus for Washing Gaseous Streams in the Presence of Mobile Contact Elements (Int. Cl. 11).
First use May 15, 1961.

Class 38—Prints and Publications

898,978. See Section 1 (Combined Certificate).

Class 39—Clothing

898,985. J. Renbo, Bogense, Denmark. SN 335,914. Filed P.R. 8-22-69; Am. S.R. 4-3-70.

Owner of Danish Reg. No. A3,238/62, dated Aug. 17, 1963.

For Brassieres, Corsets, Corselets, Girdles, Panty-Girdles, and Pantalets (Int. Cl. 25).
First use Sept. 21, 1962.

Class 40—Fancy Goods, Furnishings, and Notions

898,978. See Section 1 (Combined Certificate).

898,986. Italhair, Inc., New York, N.Y. SN 297,415. Filed P.R. 5-6-68; Am. S.R. 6-22-70.

CUFFIETTA

For Hair Pieces and Wigs (Int. Cl. 26).
First use May 15, 1967.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

898,978. See Section 1 (Combined Certificate).

Class 46—Foods and Ingredients of Foods

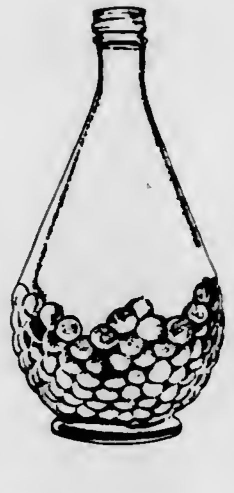
898,987. Draper-King Cole, Inc., Milton, Del. SN 342,732. Filed P.R. 11-5-69; Am. S.R. 6-25-70.

MIX VEG

For Canned Vegetables (Int. Cl. 29).
First use March 1968.

Class 47—Wines

898,988. E. & J. Gallo Winery, Modesto, Calif. SN 316,742. Filed P.R. 1-16-69; Am. S.R. 6-26-70.



For Wines (Int. Cl. 33).
First use October 1961.

Class 48—Malt Beverages and Liquors

898,989. The William Simon Brewery, Buffalo, N.Y. SN 314,626. Filed P.R. 12-16-68; Am. S.R. 12-3-69.

FOR PURE DRINKING PLEASURE

For Beer and Ale (Int. Cl. 32).
First use Sept. 11, 1967.

Class 51—Cosmetics and Toilet Preparations

898,990. Zsa Zsa Limited, New York, N.Y. SN 329,153. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

RED CLARET

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

898,991. Zsa Zsa Limited, New York, N.Y. SN 329,154. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

GOLDEN DAIQUIRI

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

898,992. Zsa Zsa Limited, New York, N.Y. SN 329,155. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

RASPBERRY JULEP

For Make-Up Base (Int. Cl. 3).
First Use May 2, 1969.

898,993. Zsa Zsa Limited, New York, N.Y. SN 329,157. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

CHERRY WINE

For Make-Up Base (Int. Cl. 3).
First use Apr. 28, 1969.

898,994. Zsa Zsa Limited, New York, N.Y. SN 329,161. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

CREME SHERRY

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

898,995. Zsa Zsa Limited, New York, N.Y. SN 329,163. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

POUSSE CAFE

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

898,996. Zsa Zsa Limited, New York, N.Y. SN 329,164. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

DRY VERMOUTH

For Make-Up Base (Int. Cl. 3).
First use May 9, 1969.

898,997. Zsa Zsa Limited, New York, N.Y. SN 329,165. Filed P.R. 6-4-69; Am. S.R. 5-19-70.

ORANGE STINGER

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

Class 52 — Detergents and Soaps

898,998. Kenneth Beauty Salons & Products, Inc., New York, N.Y. SN 323,320. Filed P.R. 4-1-69; Am. S.R. 5-11-70.

THE SHAMPOO THAT KENNETH USES

Owner of Reg. No. 767,981.
For Hair Shampoo (Int. Cl. 3).
First use Feb. 20, 1969.

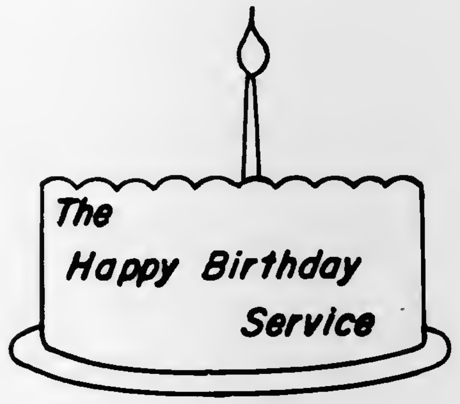
898,999. Texize Chemicals, Inc., Greenville, S.C. SN 326,145. Filed P.R. 5-1-69; Am. S.R. 6-19-70.

NO SOAK

For Soil and Stain Remover (Int. Cl. 3).
First use Apr. 8, 1969.

Class 105 — Transportation and Storage

899,000. Jon C. Malstrom, d.b.a. The Happy Birthday Service, Los Angeles, Calif. SN 343,915. Filed P.R. 11-19-69; Am. S.R. 6-15-70.



For Cake Delivery Services (Int. Cl. 39).
First use 1963.

Class 107 — Education and Entertainment

898,978. See Section 1 (Combined Certificate).

TRADEMARK REGISTRATIONS RENEWED

78,575. RIPPLETTE. Cl. 42 (Int. Cl. 24). 6-28-10.
78,698. FISHER. Cl. 13 (Int. Cl. 7). 7-5-10.
79,118. BOSTON GARTER. Cl. 39 (Int. Cl. 25). 8-9-10.
79,446. 38. Cl. 16 (Int. Cl. 2). 9-6-10.
79,520. 61. Cl. 16 (Int. Cl. 2). 9-13-10.
79,522. PRATT'S PATENT LIQUID DRYER. Cl. 16 (Int. Cl. 2). 9-13-10.
79,678. "PREMIER" WITHIN OCTAGONAL DESIGN. Cl. 42 (Int. Cl. 24). 9-27-10.
80,118. GRINNELL. Cl. 23 (Int. Cl. 9). 11-8-10.
271,354. "WHIZZ" AND DESIGN. Cl. 46 (Int. Cl. 29). 6-3-30.
272,208. ASEPTOFORM. Cl. 18 (Int. Cl. 5). 7-1-30.
272,254. DUMPTOR. Cl. 19 (Int. Cl. 12). 7-1-30.
272,577. "JAY HAWK COAL" AND DRAWING, LINED FOR RED AND BLUE. Cl. 1 (Int. Cl. 4). 7-8-30.
272,585. "TOWN CRIER" AND DESIGN. Cl. 46 (Int. Cl. 30). 7-8-30.
272,684. ADAPATCH. Cl. 12 (Int. Cl. 19). 7-8-30.
272,685. ADACHROME. Cl. 12 (Int. Cl. 19). 7-8-30.
272,689. "JOHNS-MANVILLE JM" AND DESIGN. Cl. 12 (Int. Cl. 17). 7-8-30.
273,090. GRANITEX. Cl. 12 (Int. Cl. 19). 7-22-30.
274,691. "BABBITT'S" ETC. AND DESIGN. Cl. 52 (Int. Cl. 3). 9-2-30.
275,205. GREAT STATES. Cl. 28 (Int. Cl. 7). 9-16-30.
275,408. MAINEFOLD. Cl. 37 (Int. Cl. 16). 9-23-30.
275,592. HUNNY-BEL. Cl. 46 (Int. Cl. 30). 9-23-30.
275,889. "JOHNS-MANVILLE JM" AND DESIGN. Cl. 35 (Int. Cls. 7 and 17). 10-7-30.
276,170. TROLUOIL. Cl. 6 (Int. Cl. 1). 10-7-30.
277,381. WHITE SEAL. Cl. 37 (Int. Cl. 16). 11-11-30.
277,473. SYMPHONIE. Cl. 51 (Int. Cl. 3). 11-11-30.
277,569. TRICOL. Cl. 46 (Int. Cl. 30). 11-18-30.
277,903. YALE. Cl. 25 (Int. Cl. 6). 12-2-30.
444,348. CASTLE. Cl. 43 (Int. Cl. 23). 12-5-50.
444,356. SOLITAIRE. Cl. 17 (Int. Cl. 34). 12-12-50.
522,917. SUB-CYCLE AND DESIGN. Cl. 21 (Int. Cl. 9). 3-28-50.

443,928. ARRESTO-MOTH. Cl. 6 (Int. Cl. 5). 4-18-50.
444,097. PAR AND DESIGN. Cl. 23 (Int. Cl. 7). 7-25-50.
444,162. NOZZLE-MATIC. Cl. 23 (Int. Cl. 7). 8-22-50.
523,468. INDIVIDUALLY YOURS. Cl. 39 (Int. Cl. 25). 4-4-50.
523,723. DEXTER. Cl. 46 (Int. Cl. 29). 4-11-50.
525,043. M&T. Cl. 6 (Int. Cl. 1). 5-9-50.
525,638. "L-M-C." Cl. 38 (Int. Cl. 16). 5-30-50.
526,251. KARNAK. Cl. 16 (Int. Cl. 2). 6-13-50.
526,873. SUNBEAM NEWS. Cl. 38 (Int. Cl. 16). 6-27-50.
526,942. COUNTRY CHARM. Cl. 46 (Int. Cl. 29). 6-27-50.
527,189. OLIVER. Cl. 31 (Int. Cl. 7). 7-4-50.
527,190. SWEETLAND. Cl. 31 (Int. Cl. 7). 7-4-50.
527,202. SUPAR. Cl. 23 (Int. Cl. 12). 7-4-50.
527,263. BRU-CEX. Cl. 6 (Int. Cl. 1). 7-4-50.
527,294. HAPPY SMOKER. Cl. 17 (Int. Cl. 34). 7-4-50.
527,304. DE-MOIS. Cl. 6 (Int. Cl. 1). 7-4-50.
527,328. SUNFLEX. Cl. 14 (Int. Cl. 6). 7-4-50.
527,583. KEMPER INSURANCE AND DESIGN. Cl. 102 (Int. Cl. 36). 7-11-50.
527,728. ANTARON. Cl. 6 (Int. Cl. 1). 7-18-50.
527,795. SECCO. Cl. 6 (Int. Cl. 1). 7-18-50.
528,105. VLCHEK. Cl. 23 (Int. Cl. 8). 7-25-50.
528,156. CHRIS HOLLY. Cl. 1 (Int. Cl. 31). 7-25-50.
528,297. THE PURPLE AND GOLD. Cl. 38 (Int. Cl. 16). 8-1-50.
528,333. BERYLCO. Cl. 6 (Int. Cl. 6). 8-1-50.
528,464. FABREZ. Cl. 6 (Int. Cl. 1). 8-1-50.
528,576. ORANGE TEACO. Cl. 45 (Int. Cl. 32). 8-8-50.
528,706. BUTLER. Cl. 12 (Int. Cl. 6). 8-8-50.
528,775. REAL GOLD. Cl. 45 (Int. Cl. 32). 8-8-50.
528,814. LAMIDALL. Cl. 12 (Int. Cl. 19). 8-8-50.
529,086. FROST-KING. Cl. 12 (Int. Cl. 17). 8-15-50.
529,490. PHILHARMONIC. Cl. 17 (Int. Cl. 34). 8-22-50.
529,622. BRINKS. Cl. 101 (Int. Cl. 35). 8-22-50.
529,783. AWFUL AWFUL. Cl. 46 (Int. Cl. 30). 8-29-50.
529,802. KELLY. Cl. 31 (Int. Cl. 7). 8-29-50.
529,803. OLIVER-CAMPBELL. Cl. 31 (Int. Cl. 7). 8-29-50.
529,992. TRULITE. Cl. 39 (Int. Cl. 25). 8-29-50.
530,001. STROKE-MASTER. Cl. 39 (Int. Cl. 25). 8-29-50.
530,167. CHEMLON. Cl. 35 (Int. Cls. 7 and 17). 9-5-50.
530,270. AEROLITE. Cl. 6 (Int. Cl. 1). 9-5-50.
530,288. SECON. Cl. 14 (Int. Cl. 6). 9-5-50.
530,294. YOUNGSTOWN. Cl. 21 (Int. Cl. 9). 9-5-50.
530,352. VALENDEAUX. Cl. 39 (Int. Cl. 25). 9-5-50.
530,354. CYKELIN. Cl. 16 (Int. Cl. 2). 9-5-50.
530,470. DUAL-CLONE. Cl. 23 (Int. Cl. 11). 9-12-50.
530,591. RM WADE & CO. AND DESIGN. Cl. 23 (Int. Cl. 7). 9-12-50.
530,634. CIBANONE. Cl. 6 (Int. Cl. 2). 9-12-50.
530,643. VARIAMINE. Cl. 6 (Int. Cl. 2). 9-12-50.
530,774. KARTRIDG-PAK. Cl. 23 (Int. Cl. 7). 9-19-50.
530,775. VICKERS. Cl. 23 (Int. Cl. 7). 9-19-50.
530,863. NITE GLO SLIPPERCRAFT AND DESIGN. Cl. 39 (Int. Cl. 25). 9-19-50.
530,908. HOLIDAY. Cl. 45 (Int. Cl. 32). 9-19-50.
531,013. A FIGURE DESIGN. Cl. 28 (Int. Cl. 7). 9-19-50.
531,077. FENALAC. Cl. 6 (Int. Cl. 2). 9-19-50.
531,314. INDUSTRIAL PSYCHOLOGY. Cl. 88 (Int. Cl. 16). 9-26-50.
531,769. GIBSILOY. Cl. 21 (Int. Cl. 9). 10-10-50.
532,243. DAYCO. Cl. 23 (Int. Cl. 7). 10-17-50.
532,442. PRESCOLITE. Cl. 21 (Int. Cl. 9). 10-24-50.
532,718. FIGURE OF LITTLE MAN. Cl. 1 (Int. Cl. 31). 10-31-50.
532,838. LUSTRIC. Cl. 44 (Int. Cl. 5). 10-31-50.
532,885. OUR LAND. Cl. 46 (Int. Cl. 31). 10-31-50.
533,004. GOLDENIGEM. Cl. 46 (Int. Cl. 30). 11-7-50.
533,152. O-KAY. Cl. 13 (Int. Cl. 6). 11-7-50.
533,211. CADAYLYTE. Cl. 6 (Int. Cl. 1). 11-7-50.
533,255. WOOD GRIP. Cl. 13 (Int. Cl. 6). 11-7-50.
533,375. Q CREAM. Cl. 51 (Int. Cl. 3). 11-14-50.
533,380. ATOM BOMB. Cl. 51 (Int. Cl. 3). 11-14-50.
533,437. CIBA AND DESIGN. Cl. 52 (Int. Cl. 3). 11-14-50.
533,461. CAPARSOLATE. Cl. 18 (Int. Cl. 5). 11-14-50.
533,474. DUTCHER. Cl. 23 (Int. Cl. 7). 11-14-50.
533,689. BONNIE. Cl. 37. 11-21-50.
533,844. MALLINCKRODT. Cls. 6, 14, and 16 (Int. Cls. 1, 2, and 6). 11-28-50.
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Consolidated Foods Corp., Chicago, Ill. 898,784–6, pub. 6–30–70. Cl. 39.
Consolidated Thermoplastics Co., Los Angeles, Calif. 773,892, canc. Cl. 1.
Consumer Controls, Inc., Liverpool, N.Y. 898,931–2, pub. 6–30–70. Cl. 101.
Contico International, Inc., from Continental Mfg. Co., St. Louis, Mo. 898,514, pub. 6–30–70. Cl. 2.
Continental Baking Co.: *See—*
ITT Continental Baking Co.
Continental Industries, Inc., Tulsa, Okla. 898,571, pub. 6–30–70. Cl. 13.
Continental Mfg. Co.: *See—*
Contico International, Inc.
Contract Sales, Inc., Wheaton, Ill. 898,738, pub. 6–30–70. Cl. 32.
Converse Rubber Corp., Malden, Mass. 898,803, pub. 6–30–70. Cl. 39.
Cortland Industries, Inc., Cortland, N.Y. 774,028, canc. Cl. 22.
Cosmo Currie Ltd., New York, N.Y. 898,807, pub. 6–30–70. Cl. 40.
Costa Ice Cream Co., Woodbridge, N.J. 898,835, pub. 9–24–68. Cl. 46.
Crandall Wholesale Co., The, Ferndale, Mich. 898,630, pub. 6–30–70. Cl. 21.
Crane Packing Co., Morton Grove, Ill. 530,167, ren. 9–15–70. Cl. 35.
Cresthill Industries, Inc., Yonkers, N.Y. 774,195, canc. Cl. 40.
Crown Zellerbach Corp., San Francisco, Calif. 898,528, pub. 6–30–70. Cl. 5.
Crystal, David, Inc., New York, N.Y. 535,038, ren. 9–15–70. Cl. 39.
Curacao Trading Co., Inc., New York, N.Y. 898,874, pub. 6–30–70. Cl. 46.
Currigan, Edward B., d.b.a. Nupave Products Co., Oakland, Calif. 898,975. Cl. 12.
Custer, Loren G., Salem, Oreg. 774,015, canc. Cl. 21.
Cutting Edges Pty. Ltd., Botany, New South Wales, Australia. 898,701, pub. 7–14–70. Cl. 23.
Cyber-Tronics, Inc.: *See—*
DASA Corp.
DASA Corp., from Cyber-Tronics, Inc., New Hyde Park, N.Y. 898,949, pub. 6–9–70. Cl. 103.
D.A.W. Rainbow Painting Co., Inc., Clayton, Mo. 898,596, pub. 6–30–70. Cl. 16.
Dana Corp., Toledo, Ohio. 898,749, pub. 6–30–70. Cl. 35.
Danoca Industries, Inc., New York, N.Y. 898,794, pub. 6–30–70. Cl. 39.
Darje, Inc., Sioux City, Iowa. 898,776, pub. 6–30–70. Cl. 38.
Dart Industries Inc., d.b.a. Tupperware, Los Angeles, Calif. 898,521, pub. 6–30–70. Cl. 2.
Dart Industries Inc., d.b.a. The West Bend Co., Los Angeles, Calif. 898,576, pub. 6–30–70. Cl. 13.
Dart Industries Inc., d.b.a. Tupperware, Los Angeles, Calif. 898,663, pub. 6–30–70. Cl. 22.
Dart Industries Inc., from Rexall Drug and Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 898,900–1, pub. 6–30–70. Cl. 51.
Dallas Systems Corp., Dallas, Tex. 898,508, pub. 6–30–70. Multiple Class (Classes 2, 31, and 45).
Dawn Creations, Inc., Providence, R.I. 774,114, canc. Cl. 28.
Dayco Corp., Dayton, Ohio. 532,243, ren. 9–15–70. Cl. 23.
De Kalb AgResearch, Inc., De Kalb, Ill. 898,501, pub. 6–30–70. Cl. 1.
De Lavel Separator Co., The, Poughkeepsie, N.Y. 444,162, ren. 9–15–70. Cl. 23.
Del Electronics Corp., Mount Vernon, N.Y. 898,642, pub. 6–30–70. Cl. 21.
De Mott, Richard H., from Beymer-Mann Co., Winter Haven, Fla. 898,858, pub. 6–30–70. Cl. 46.
Denison Mfg. Co., Framingham, Mass. 898,579, pub. 6–30–70. Cl. 13.
Desert Citrus Co., Yuma, Ariz. 898,866, pub. 6–30–70. Cl. 46.
Deutsche Grammophon Gesellschaft m.b.H., Hamburg, Germany. 898,753, pub. 4–28–70. Cl. 36.
Dewied, A., Casing Co., Broderick, Calif. 898,837, pub. 6–30–70. Cl. 46.
Dick, E. Sam, Co., Inc., Seattle, Wash. 898,744, pub. 6–30–70. Cl. 34.
Die Mesh Corp., Pelham, N.Y. 898,577, pub. 6–30–70. Cl. 13.
Digital Systems Corp., Hanover, N.H. 898,772, pub. 6–30–70. Cl. 38.
Disney, Walt, Productions, Burbank, Calif. 898,966, pub. 6–30–70. Cl. 107.
Donoghue, Robert J., Windsor, Conn. 898,710, pub. 6–30–70. Cl. 26.
Dorr-Oliver Inc., Stamford, Conn. 527,189–90, ren. 9–15–70. Cl. 31.
Dorr-Oliver Inc., Stamford, Conn. 529,802–3, ren. 9–15–70. Cl. 31.
Dover Corp., New York, N.Y. 898,575, pub. 6–30–70. Cl. 13.
Draper-King Cole, Inc., Milton, Del. 898,987. Cl. 46.
Dresser Industries, Inc., Dallas, Tex. 898,948, pub. 6–30–70. Cl. 103.
Dun-Rite Leather & Suede Processing, Brooklyn, N.Y. 898,955, pub. 6–30–70. Cl. 106.
Du Pont de Nemours, E. L., & Co., Wilmington, Del. 533,211, ren. 9–15–70. Cl. 6.
Dutchess Lingerie, Inc., New York, N.Y. 523,468, ren. 9–15–70. Cl. 39.
Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. 898,551, pub. 6–30–70. Cl. 9.
Eagle-Picher Co., The, Cincinnati, Ohio. 773,931, canc. Cl. 12.
Eastern Bakeries Ltd., St. John, New Brunswick, Canada. 898,833, pub. 6–30–70. Cl. 46.
Eastern Co., The, Naugatuck, Conn. 898,584, pub. 6–30–70. Cl. 14.
Eaton Yale & Towne Inc., Cleveland, Ohio. 277,903, ren. 9–15–70. Cl. 25.
Eaton Yale & Towne Inc., Cleveland, Ohio. 531,013, ren. 9–15–70. Cl. 23.
Eaton Yale & Towne Inc., Cleveland, Ohio. 533,255, ren. 9–15–70. Cl. 13.
Eaz-Lift Spring Corp., Sun Valley, Calif. 898,620, pub. 6–30–70. Cl. 19.
Edelson, N., Sons Corp., New York, N.Y. 898,796, pub. 6–30–70. Cl. 39.
Editrice Lutetia, S.R.L., Opera Milan, Italy. 898,771, pub. 6–29–70. Cl. 38.
Egyptian Lacquer Mfg. Co., The, Kearny, N.J. 534,661, ren. 9–15–70. Cl. 16.
Electric Storage Battery Co., The, Philadelphia, Pa. 774,103, canc. Cl. 26.
Electrovision, Inc., Fullerton, Calif. 898,720, pub. 6–30–70. Cl. 26.
Escambia Chemical Corp., Pensacola, Fla. 898,539, pub. 6–30–70. Cl. 6.

Essex International, Inc., Fort Wayne, Ind. 898,640, pub. 6–30–70. Cl. 21.
Ethyl Corp., Richmond, Va. 275,408, ren. 9–15–70. Cl. 37.
Ethyl Corp., Richmond, Va. 277,381, ren. 9–15–70. Cl. 37.
Euclid Spiral Paper Tube Corp., Cleveland, Ohio. 898,518, pub. 6–30–70. Cl. 2.
FJM Products, Inc., Buckingham, Pa. 898,977. Cl. 23.
FMC Corp., San Jose, Calif. 898,700, pub. 6–30–70. Cl. 23.
Facsimile Centers Inc., New York, N.Y. 898,951–2, pub. 6–30–70. Cl. 104.
Factor, Max, & Co., Hollywood, Calif. 898,908, pub. 6–30–70. Cl. 51.
Fantic Motor S.r.l. Fabbrica Veicoli Ricreativi, Barzago (Como), Italy. 898,621, pub. 6–30–70. Cl. 19.
Fearn International Inc., Franklin Park, Ill. 898,862, pub. 6–30–70. Cl. 46.
Federal Cartridge Corp., Minneapolis, Minn. 898,553, pub. 6–30–70. Cl. 9.
Federal Screw Works, Detroit, Mich. 898,573, pub. 7–30–70. Cl. 13.
Federal Sign & Signal Corp., Blue Island, Ill. 898,556, pub. 6–30–70. Cl. 9.
Fedtro, Inc., Rockville Centre, N.Y. 898,638, pub. 6–30–70. Cl. 21.
Ferguson Fumigants, Inc., Hazelwood, Mo. 898,534, pub. 6–30–70. Cl. 6.
Field Research Corp., San Francisco, Calif. 898,773, pub. 6–30–70. Multiple Class (Classes 38 and 101).
Film Corporation of America, Philadelphia, Pa. 898,957, pub. 6–30–70. Cl. 106.
Film Corporation of America, Jenkintown, Pa. 898,958, pub. 6–30–70. Cl. 106.
Firearms International Corp., Washington, D.C. 898,552, pub. 6–30–70. Cl. 9.
Fisher Cheese Co., Wapakoneta, Ohio. 526,942, ren. 9–15–70. Cl. 46.
Fisher Controls Co., Inc., Marshalltown, Iowa. 78,698, ren. 9–15–70. Cl. 13.
Fi-Shock, Inc., Knoxville, Tenn. 898,644, pub. 6–30–70. Cl. 21.
Fitzpatrick Co., The, Elmhurst, Ill. 534,027, ren. 9–15–70. Cl. 23.
Flanders Filters, Inc., Washington, N.C. 898,736, pub. 6–30–70. Cl. 31.
Fleer Corp., Philadelphia, Pa. 898,871, pub. 6–30–70. Cl. 46.
Florasynth, Inc., Bronx, N.Y. 898,861, pub. 6–30–70. Cl. 46.
Foley Mfg. Co., Minneapolis, Minn. 774,090, canc. Cl. 26.
Folz, George W., Tulsa, Okla. 898,662, pub. 6–30–70. Cl. 22.
Fort Howard Paper Co., Greenbay, Wis. 898,763, pub. 6–30–70. Cl. 37.
Franklin Stores Corp., d.b.a. Barkers, Bronx, N.Y. 898,636, pub. 6–30–70. Cl. 21.
Freund Baking Co., St. Louis, Mo. 774,246, canc. Cl. 46.
Frito-Lay, Inc., Dallas, Tex. 898,863, pub. 6–30–70. Cl. 46.
Frito-Lay, Inc., Dallas, Tex. 898,887, pub. 6–16–70. Cl. 46.
Frost, George, Co., Shirley, Mass. 79,118, ren. 9–15–70. Cl. 39.
Fun-Tyme Packages, Inc., Brooklyn, N.Y. 898,954, pub. 6–30–70. Cl. 105.
Future Hunting Unlimited Corp., Canton, S. Dak. 774,023, canc. Cl. 22.
GAF Corp., New York, N.Y. 527,728, ren. 9–15–70. Cl. 6.
GAF Corp., New York, N.Y. 530,643, ren. 9–15–70. Cl. 6.
GAF Corp., New York, N.Y. 531,077, ren. 9–15–70. Cl. 6.
GAF Corp., New York, N.Y. 898,510, pub. 6–30–70. Cl. 2.
GMC/Dynacoach, Inc., Los Angeles, Calif. 898,622, pub. 6–30–70. Cl. 19.
Gallo, E. & J., Winery, Modesto, Calif. 898,988. Cl. 47.
Galyean, William D., Jr., d.b.a. W. Galyean Jewelers, Asheville, N.C. 774,121, canc. Cl. 28.
Gamble-Skogmo, Inc., Minneapolis, Minn. 898,797, pub. 6–30–70. Cl. 39.
Garcia y Vega, Inc., New York, N.Y. 774,291, canc. Cl. 17.
Geigy Chemical Corp., Ardsley, N.Y. 773,979–80, canc. Cl. 18.
Gem, Inc., Byhalia, Miss. 898,544, pub. 6–30–70. Multiple Class (Classes 6 and 52).
General Mills, Inc., Minneapolis, Minn. 898,864–65, pub. 6–30–70. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 898,898, pub. 6–30–70. Cl. 50.
General Polyfies, Inc., Harmony, Minn. 898,811, pub. 6–30–70. Cl. 42.
General Wig Manufacturers, Inc., Miami, Fla. 898,503, pub. 6–30–70. Cl. 1.
Genesee Brewing Co., Inc., The, Rochester, N.Y. 773,902, canc. Cl. 2.
Gentex Corp., New York, N.Y. 898,668–69, pub. 6–30–70. Cl. 22.
Geoservices Societe Anonyme, Paris, France. 898,712, pub. 6–30–70. Cl. 26.
Gibbs, Wayne C., d.b.a. Hensley & Gibbs, Murphy, Oreg. 898,560, pub. 6–30–70. Cl. 9.
Giles, Harry M., Lynchburg, Va. 774,301, canc. Cl. 46.
Gillette Co., The, d.b.a. The Paper Mate Co., Chicago, Ill. 898,765, pub. 6–16–70. Cl. 37.
Gilman Paint & Varnish Co., Chattanooga, Tenn. 898,597, pub. 6–30–70. Cl. 16.
Glaser, Crandell Co., Chicago, Ill. 534,872, ren. 9–15–70. Cl. 46.
Glasgo Limited, Inc., Lansdale, Pa. 774,189, canc. Cl. 39.
Glenden Corp., Rego Park, N.Y. 898,617, pub. 6–30–70. Cl. 18.
Golden Fifty Pharmaceutical Co., Inc., Chicago, Ill. 898,616, pub. 6–30–70. Cl. 18.
Goldstein, Julius & Sons Co., Boston, Mass. 530,868, ren. 9–15–70. Cl. 39.
Gonzalez, Alvaro Gonzalez, d.b.a. Fabrica de Tabacos Alvaro, Islas Canarias, Spain. 898,601, pub. 6–30–70. Cl. 17.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 529,992, ren. 9–15–70. Cl. 39.
Grant Engineering Co. Ltd., Monash, South Australia, Australia. 774,045, canc. Cl. 23.
Grant, W. T., Co., New York, N.Y. 774,177, canc. Cl. 39.
Graphic Controls Corp., Buffalo, N.Y. 898,767, pub. 6–30–70. Cl. 37.
Gray, Garnett, d.b.a. Skil-Chek Co., Atlanta, Ga. 774,022, canc. Cl. 22.
Great States Corp., Shelbyville, Ind. 275,205, ren. 9–15–70. Cl. 23.
Greenwood, Lewis, d.b.a. Greenwood Co., North Hollywood, Calif. 898,945, pub. 6-30-70. Cl. 101.
Greiner Scientific Corp., New York, N.Y. 774,067, canc. Cl. 26.
Grinnell Corp., Providence, R.I. 80,118, ren. 9–15–70. Cl. 23.
Grossman Music Corp., Cleveland, Ohio. 898,752, pub. 6–30–70. Cl. 36.
Gruen Industries, Inc., New York, N.Y. 898,725–6, pub. 6–30–70. Cl. 27.
Guardian Export Corp., New York, N.Y. 898,685, pub. 4–14–70. Cl. 23.
Gulf States Paper Corp., Tuscaloosa, Ala. 898,509, pub. 6–30–70. Cl. 2.
Gutfreund, Inc., New York, N.Y. 774,111, canc. Cl. 28.
Habasit, Ltd., Reinach-Basel, Switzerland. 898,748, pub. 6–30–70. Cl. 35.
Hacker, Harold R., d.b.a. Neutron Co., Noblesville, Ind. 898,702, pub. 6–30–70. Cl. 23.
Hackney Bros. Body Co., Wilson, N.C. 898,626, pub. 6–30–70. Cl. 19.
Hallmark Cards, Inc., Kansas City, Mo. 773,923, canc. Cl. 7.
Hammond Corp., Deerfield, Ill. 898,761, pub. 6–30–70. Cl. 36.
Hanes Corp., Winston-Salem, N.C. 898,799, pub. 6–30–70. Cl. 39.
Hapman Corp., Kalamazoo, Mich. 898,689, pub. 6–30–70. Cl. 23.
Harbin, Clyde A., Whitehaven, Tenn. 898,840–1, pub. 6–30–70. Cl. 46.
Hardy Scales Co., Maywood, Calif. 898,643, pub. 6–30–70. Cl. 21.
Harris-Intertype Corp., Cleveland, Ohio. 774,085, canc. Cl. 26.
Hayden Textiles, Inc., New York, N.Y. 898,812, pub. 6–30–70. Cl. 42.
Heating Publishers, Inc., Montclair, N.J. 898,774, pub. 6–30–70. Cl. 38.
Henrite Products Corp., Morristown, Tenn. 774,043, canc. Cl. 23.
Heritage House Products, Inc., Pittsburgh, Pa. 774,053, canc. Cl. 23.
Hi-Fashion Knits, Inc., Green Bay, Wis. 898,978. Multiple Class (Classes 26, 38, 40, 42, and 107).
Highland Distilleries Co. Ltd., The, Glasgow, Scotland. 898,894, pub. 6–30–70. Cl. 49.
Highway Trailer Industries, Inc., Edgerton, Wis., from Windy Point Farms, Wapato, Wash. 898,687, pub. 6–30–70. Cl. 23.
Hi-Life Packing Co., Chicago, Ill. 898,846, pub. 6–30–70. Cl. 46.
Hinton & Co., Inc., New York, N.Y. 774,305, canc. Cl. 46.
Hodges Research & Development Co., New York, N.Y. 774,269, canc. Cl. 52.
Hoffrel Instruments Inc., Norwalk, Conn. 898,819, pub. 6–30–70. Cl. 44.
Hormel, Geo. A., & Co., Austin, Minn. 898,876, pub. 6–30–70. Cl. 46.
Houdaille Industries, Inc., Buffalo, N.Y. 898,641, pub. 6–30–70. Cl. 21.
House of Kitchens, Inc., The, Mechanicville, N.Y. 898,937, pub. 6–30–70. Cl. 101.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 898,859, pub. 6–30–70. Cl. 46.
Hyer Hardware Mfg. Co., Anaheim, Calif. 898,568, pub. 6–30–70. Cl. 13.
Illinois Tool Works Inc., Chicago, Ill. 898,648, pub. 6–30–70. Cl. 21.
Imperial Knife Associated Companies, Inc., Providence, R.I. 898,695–6, pub. 6–30–70. Cl. 23.
Interpace Corp., d.b.a. Castleton China, New Castle, Pa. 898,732, pub. 6–30–70. Cl. 30.
International Playtex Corp., New York, N.Y. 898,800, pub. 6–30–70. Cl. 39.
International Playtex Corp., New York, N.Y. 898,801, pub. 6–30–70. Cl. 39.
International Playtex Corp., New York, N.Y. 898,802, pub. 6–30–70. Cl. 39.
International Food Corp., Chattanooga, Tenn. 898,836, pub. 6–30–70. Cl. 46.
ITT Continental Baking Co., from Continental Baking Co., Rye, N.Y. 898,832, pub. 9–19–67. Cl. 46.
Independent Protection Co., Inc., d.b.a. Independent Products Co., Goshen, Ind. 773,992, canc. Cl. 19.
Indian Head Inc., New York, N.Y. 444,348, ren. 9–15–70. Cl. 43.
Industrial Psychology, Inc., St. Thomas, Virgin Islands. 531,314, ren. 9–15–70. Cl. 38.
Instant-Pay: *See—*
Instant-Pay, Inc.
Instant-Pay, Inc., from Instant-Pay, Montgomery, Ala. 898,766, pub. 6–30–70. Cl. 37.
International Latex Corp., Dover, Del. 773,964, canc. Cl. 18.
International Latex Corp., Dover, Del. 773,967, canc. Cl. 18.
International Multifoods Corp., Minneapolis, Minn. 272,585, ren. 9–15–70. Cl. 46.
International Protective Coatings Corp., Fort Lauderdale, Fla. 773,933, canc. Cl. 12.
Italhair, Inc., New York, N.Y. 898,986. Cl. 40.
Jard Co., Inc., Bennington, Vt. 898,646–7, pub. 6–30–70. Cl. 21.
Jay Dental Products Co., Des Moines, Iowa. 898,550, pub. 6–30–70. Cl. 8.
Jergens, Andrew, Co., The, Cincinnati, Ohio. 533,380, ren. 9–15–70. Cl. 51.

Jerrax Imports, Inc., New York, N.Y. 898,804, pub. 6–30–70. Cl. 40.
Johns-Manville Corp., New York, N.Y. 272,689, ren. 9–15–70. Cl. 12.
Johns-Manville Corp., New York, N.Y. 275,889, ren. 9–15–70. Cl. 85.
Johns-Manville Corp., New York, N.Y. 898,564, pub. 6–30–70. Cl. 12.
Johnson & Johnson, New Brunswick, N.J. 898,818, pub. 6–30–70. Cl. 44.
Jones, Charles W., Jr., Mr., Wilmington, Del. 898,735, pub. 6–30–70. Cl. 31.
Kansas Instruments, Inc., Council Grove, Kans. 898,692, pub. 6–30–70. Cl. 23.
Karnak Chemical Corp., Clark, N.J. 526,251, ren. 9–15–70. Cl. 16.
Kartridg Pak Co., The, Davenport, Iowa. 530,774, ren. 9–15–70. Cl. 23.
Kawecki Berylco Industries, Inc., Reading, Pa. 528,333, ren. 9–15–70. Cl. 6.
Kay Mfg. Corp., Brooklyn, N.Y. 533,152, ren. 9–15–70. Cl. 13.
Kaye, Ellen, Laboratories, Inc. : *See—*
Colgate-Palmolive, Inc.
Kayser-Roth Corp., New York, N.Y. 898,782, pub. 6–30–70. Cl. 39.
Kebow, Dudley, Inc., Los Angeles, Calif. 898,693, pub. 6–30–70. Cl. 23.
Kemoo Farm Foods, Ltd., Wahiama, Oahu, Hawaii. 898,877, pub. 6–30–70. Cl. 46.
Kendall Co., The, Walpole, Mass. 532,838, ren. 9–15–70. Cl. 44.
Kenner Products Co., Cincinnati, Ohio. 898,655, pub. 6–30–70. Cl. 22.
Kenneth Beauty Salons & Products, Inc., New York, N.Y. 898,998. Cl. 52.
Kimtec, Inc., Houston, Tex. 898,715, pub. 6–30–70. Cl. 26.
King Richards, Inc., Compton, Calif. 773,991, canc. Cl. 19.
Kippe Togs Mfg. Corp., New York, N.Y. 774,179, canc. Cl. 39.
Kneissl, Franz, Skifabrik, Kufstein, Kufstein, Tirol, Austria. 898,657, pub. 6–30–70. Cl. 22.
Koehring Co., Milwaukee, Wis. 272,254, ren. 9–15–70. Cl. 19.
Koontz Products, Inc., Houston, Tex. 773,950, canc. Multiple Class (Classes 16 and 52).
Korkele, Inc., Beverly Hills, Calif. 898,683, pub. 6–30–70. Cl. 23.
Kresge, S. S., Co., Detroit, Mich. 898,740–41, pub. 6–30–70. Cl. 32.
LTV Ling Altec, Inc., Richardson, Tex. 898,649, pub. 6–30–70. Cl. 21.
Lab-Aids Inc., Farmingdale, N.Y. 898,980. Cl. 26.
La Flor Records, Inc., New York, N.Y. 898,759–60, pub. 6–30–70. Cl. 36.
La Marquesa Wig Corp., Miami, Fla. 898,808, pub. 6–30–70. Cl. 40.
Lancome S.A., Paris, France. 898,903, pub. 6–30–70. Cl. 51.
Lane Ltd., New York, N.Y. 527,294, ren. 9–15–70. Cl. 17.
Lane Ltd., New York, N.Y. 529,490, ren. 9–15–70. Cl. 17.
Lange Co., The, Dubuque, Iowa. 898,659–60, pub. 6–30–70. Cl. 22.
Lanier Electronic Laboratory, Inc., Atlanta, Ga. 898,757, pub. 6–30–70. Cl. 36.
Lanson Pere & Fils, Societe Anonyme, Reims, Marne, France, 898,889, pub. 6–30–70. Cl. 47.
La Societe Anonyme Revillon Freres, New York, N.Y. 326,867, canc. Cl. 51.
Lear Siegler, Inc., Toledo, Ohio. 898,639, pub. 6–30–70. Cl. 21.
Lebow Bros, Inc., Baltimore, Md. 898,777, pub. 6–30–70. Cl. 39.
Lee Co., The, Westbrook, Conn. 898,572, pub. 6–30–70. Cl. 13.
Lehn & Fink Products, New York, N.Y. 774,266, canc. Cl. 51.
Leisure Dynamics, Inc., Minneapolis, Minn., from Co-5 Co., Inc., Benton Harbor, Mich. 898,658, pub. 6–30–70. Cl. 22.
Leleu, Suzanne, Nee Qhehen, Nice (06), France. 898,982. Cl. 28.
Lenderink, Inc., Grand Rapids, Mich. 898,764, pub. 6–30–70. Multinle Class (Classes 37 and 38).
Lepler Laboratories, Inc., Brookline, Mass. 898,608, pub. 6–30–70. Cl. 18.
Les Usines de Melle, Melle, Deux-Sevres, France. 774,032, canc. Cl. 23.
Lever Brothers Co., New York, N.Y. 535,288, ren. 9–15–70. Cl. 6.
Lever Brothers Co., New York, N.Y. 898,946, pub. 6–30–70. Cl. 101.
Levin, Ralph, d.b.a. Razosharp, Brooklyn, N.Y. 898,690, pub. 6–30–70. Cl. 23.
Lex Computer Systems, Redwood City, Calif. 898,933, pub. 6–30–70. Cl. 101.
Litton Precision Products, Inc., Beverly Hills, Calif. 898,731, pub. 6–30–70. Cl. 28.
Lorain Products Corp., Lorain, Ohio. 522,917, ren. 9–15–70. Cl. 21.
Lorillard Corp., New York, N.Y. 898,602–04, pub. 6–30–70. Cl. 17.
Love, Stanley J., New York, N.Y. 898,787, pub. 6–30–70. Cl. 39.
Lubeco, Inc., Compton, Calif. 898,956, pub. 6–30–70. Cl. 106.
Lucky Breweries, Inc., San Francisco, Calif. 898,892, pub. 6–30–70. Cl. 48.
Lucky Club Co., St. Louis, Mo. 530,908, ren. 9–15–70. Cl. 45.
Lumbermens Mutual Casualty Co., Chicago, Ill. 525,638, ren. 9–15–70. Cl. 38.
Lumbermens Mutual Casualty Co., Chicago, Ill. 527,583, ren. 9–15–70. Cl. 102.
Luscoe Products Ltd., Toronto, Ontario, Canada. 773,957, canc. Cl. 18.
Luzier Inc., Kansas City, Mo. 898,902, pub. 6–30–70. Cl. 51.
Luzier Inc., Kansas City, Mo. 898,912, pub. 6–30–70. Cl. 51.
Lynnfield Fabrics Inc., Boston, Mass. 774,205, canc. Cl. 42.
MDC Systems, Inc., Montgomery, Ala. 898,940, pub. 6–30–70. Cl. 101.
M & T Chemicals Inc., Rahway, N.J. 525,043, ren. 9–15–70. Cl. 6.
Mackie-Clemens Fuel Co., The, Pittsburg, Kans. 272,577, ren. 9–15–70. Cl. 1.
MacTavish Industries Inc., Richmond, Va. 898,824, pub. 6–30–70. Cl. 44.
Madison Square Garden Corp., New York, N.Y. 898,960, pub. 6–30–70. Cl. 107.
Magee Carpet Co., The, Bloomsburg, Pa. 535,133, ren. 9–15–70. Cl. 42.
Mallinckrodt Chemical Works, St. Louis, Mo. 533,844, ren. 9–15–70. Multiple Class (Classes 6, 14, and 16).
Mallinckrodt Chemical Works, St. Louis, Mo. 898,536, pub. 6–30–70. Cl. 6.
Malstrom, Jon C., d.b.a. The Happy Birthday Service, Los Angeles, Calif. 899,000. Cl. 105.
Management Games Institute, Inc., Larchmont, N.Y. 898,964, pub. 6–30–70. Cl. 107.
Manco Products Inc., Melvindale, Mich. 898,580, pub. 6–30–70. Cl. 14.
Mandarin Textiles Ltd., Kawloon, Hong Kong. 898,809, pub. 6–30–70. Cl. 40.
Manson Metal Equipment Co., Reading, Pa. 774,020, canc. Cl. 22.
Markwell Mfg. Co., Inc., New York, N.Y. 898,694, pub. 6–30–70. Cl. 23.
Marsyn Corp., Newton, Mass. 898,707, pub. 6–30–70. Cl. 26.
Marx, Louis, & Co., Inc., New York, N.Y. 774,026, canc. Cl. 22.
Masco Corp., Taylor, Mich. 898,747, pub. 6–30–70. Cl. 34.
Master Chemical Corp., Perrysburg, Ohio. 898,587–9, pub. 6–30–70. Cl. 15.
Mattel, Inc., Hawthorne, Calif. 898,664, pub. 6–30–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 898,678–81, pub. 6–30–70. Cl. 22.
McCall Corp., New York, N.Y. 774,289, canc. Cl. A.
McDonnell Douglas Corp., Santa Monica, Calif. 898,634, pub. 6–30–70. Cl. 21.
McGraw-Hill, Inc., New York, N.Y. 898,755, pub. 6–30–70. Cl. 36.
McKesson & Robbins, Inc., New York, N.Y. 774,250, canc. Cl. 49.
McKinney Mfg. Co., Scranton, Pa. 898,570, pub. 6–30–70. Cl. 13.
Medico-Dental Technical Corp., San Francisco, Calif. 898,822, pub. 6–30–70. Cl. 44.
Melodie Vendor Corp., Appleton, Wis. 898,754, pub. 6–30–70. Cl. 36.
Mercantile Stores Co., Inc., Wilmington, Del. 533,949, ren. 9–15–70. Cl. 21.
Mercer Tackle Co., Inc., Lawton, Okla. 898,671, pub. 6–30–70. Cl. 22.
Merck & Co., Inc., Rahway, N.J. 898,606, pub. 6–30–70. Cl. 18.
Mercury Instruments, Inc., Cincinnati, Ohio. 898,722, pub. 6–30–70. Cl. 26.
Miahati, Inc., New York, N.Y. 774,261, canc. Cl. 51.
Michael, David, & Co., Inc., Philadelphia, Pa. 898,856, pub. 6–30–70. Cl. 46.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 898,541–3, pub. 6–30–70. Cl. 6.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 898,583, pub. 6–30–70. Cl. 14.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 898,672, pub. 6–30–70. Cl. 22.
Miracle Adhesives Corp., Bellmore, N.Y. 527,304, ren. 9–15–70. Cl. 6.
Mister Beefe International, Inc., Pittsburgh, Pa. 898,923, pub. 6–30–70. Cl. 100.
Mr. Boston Seafoods Corp., Boston, Mass. 898,873, pub. 6–30–70. Cl. 46.
Mr. Henry, Inc., New York, N.Y. 898,779, pub. 6–30–70. Cl. 39.
Mita Kogyo Kabushiki Kaisha, Osaka, Japan. 898,713, pub. 6–30–70. Cl. 26.
Monroe Food Machinery, Inc., Portland, Oreg. 774,042, canc. Cl. 23.
Morrell, John, & Co., Chicago, Ill. 898,872, pub. 6–30–70. Cl. 46.
Morrison's, Inc., Atlanta, Ga. 528,576, ren. 9–15–70. Cl. 45.
Motorola, Inc., Franklin Park, Ill. 773,016, canc. Cl. 21.
Muclear-Chicago Corp., Melrose Park, Ill. 774,092, canc. Cl. 26.
Muller, Fritz, Coroplast K.G., Wuppertal-Nachstebreck, Germany. 898,527, pub. 6–30–70. Cl. 5.
Muncie Metal Spinning, Inc., Muncie, Ind. 898,625, pub. 6–30–70. Cl. 19.
Murphy, G. C., Co., McKeesport, Pa. 898,511, pub. 6–30–70. Multiple Class (Classes 2 and 16).
Murphy Products Co., Inc., Burlington, Wis. 898,612, pub. 6–30–70. Multiple Class (Classes 18 and 46).
National Can Corp., Chicago, Ill. 898,515, pub. 6–30–70. Cl. 2.
National Electrical Manufacturers Association, New York, N.Y. 898,969, pub. 6–30–70. Cl. 70.
National Tea Co., Chicago, Ill. 898,914, pub. 6–30–70. Cl. 52.
Neal Pharmacal Co., Inc., St. Louis, Mo. 534,003, ren. 9–15–70. Cl. 18.
Nebraska Consolidated Mills Co., Omaha, Nebr. 533,004, ren. 9–15–70. Cl. 46.
Nesbitt, John J., Inc., Philadelphia, Pa. 774,132, canc. Cl. 34.
New England Confectionery Co., Cambridge, Mass. 275,592, ren. 9–15–70. Cl. 46.
New England Fish Co., Seattle, Wash. 271,354, ren. 9–15–70. Cl. 46.

New Jersey Zinc Co., The, New York, N.Y. 534,629, ren. 9–15–70. Cl. 16.
North America Business Equipment Ltd., Hamilton, Ontario, Canada. 774,274, canc. Cl. 100.
North American Rockwell Corp., Pittsburgh, Pa. 533,474, ren. 9–15–70. Cl. 23.
Northern Laboratories, Manitowoc, Wis. 898,910, pub. 6–30–70. Multiple Class (Classes 51 and 52).
Northwestern Golf Co., Chicago, Ill. 898,656, pub. 6–30–70. Cl. 22.
Nuclear Associates, Inc., Westbury, N.Y. 898,820, pub. 6–30–70. Cl. 44.
Nytronics, Inc., Phillipsburg, N.J. 774,071, canc. Cl. 26.
O'Brien Mfg. Co., Temple, Tex. 774,171, canc. Cl. 39.
Ogden, H. P., Co., Wayne, Pa. 774,198, canc. Cl. 42.
Ogden, H. P., Co., Wayne, Pa.
Olin Mathieson Chemical Corp, New York, N.Y. 773,977, canc. Cl. 18.
Olin Mathieson Chemical Corp., New York, N.Y. 773,985, canc. Cl. 18.
Olmstead, Dwight S., d.b.a. D. S. Olmstead, Billings, Mont. 774,237, canc. Cl. 46.
Oneida Ltd., Oneida, N.Y. 898,691, pub. 6–30–70. Cl. 23.
Oneida Ltd., Oneida, N.Y. 898,780, pub. 6–30–70 Cl. 28.
Operative Plasterers' and Cement Masons' Internat. Assn. of The United States and Canada, Washington, D.C. 774,153, canc. Cl. 38.
Oroweat Baking Co. of San Francisco, d.b.a. Golden Gate Bakery, South San Francisco, Calif. 898,845, pub. 6–30–70. Cl. 46.
Oster, Hubert D., Jr., d.b.a. RDR Mfg. Co., Titusville, Fla. 898,654, pub. 6–30–70. Cl. 22.
Outboard Marine Corp., Waukegan, Ill. 898,682, pub. 6–30–70. Cl. 23.
Ozon Products, Inc., Brooklyn, N.Y. 774,263, canc. Cl. 51.
Pace, John A., Dallas, Tex. 898,926, pub. 6–30–70. Cl. 100.
Pacific Steel Foundry Co., Portland, Oreg. 898,581, pub. 6–30–70. Cl. 14.
Packaging Corp. of America, Evanston, Ill. 898,522, pub. 6–30–70. Cl. 2.
Pak-Well Paper Products Co., North Wales, Pa. 898,519–20, pub. 6–30–70. Cl. 2.
Paramed, Inc., New York, N.Y. 898,920, pub. 6–30–70. Cl. 100.
Paramount Citrus Association, Inc., San Fernando, Calif. 532,885, ren. 9–15–70. Cl. 46.
Parke, Davis, & Co., Detroit, Mich. 898,610, pub. 6–30–70. Cl. 18.
Parker Brothers, Inc., Salem, Mass. 898,674, pub. 6–30–70. Cl. 22.
Parker Pen Co., The, Janesville, Wisc. 774,142, canc. Cl. 37.
Peerless Equipment Co., Inc., Joplin, Mo. 774,294, canc. Cl. 23.
Pelletronics, Inc., Trenton, N.J. 898,524–26, pub. 6–30–70. Cl. 4.
Pendleton Tool Industries, Inc., Los Angeles, Calif. 528,105, ren. 9–15–70. Cl. 23.
Penn Crete Products Co., Inc., Philadelphia, Pa. 773,956, canc. Cl. 16.
Pennwalt Corp., Philadelphia, Pa. 443,928, ren. 9–15–70. Cl. 6.
Penny-Pak, Inc., Danville, Ill. 768,337, canc. Cl. 6.
Penny-Pak, Inc., Danville, Ill. 768,360, canc. Cl. 18.
PepsiCo, Inc., New York, N.Y. 898,829–31, pub. 6–30–70. Cl. 45.
Pet Inc., St. Louis, Mo. 898,854, pub. 6–30–70. Cl. 46.
Peters & Russell, Inc., Springfield, Ohio. 444,097, ren. 9–15–70. Cl. 23.
Peters & Russell, Inc., Springfield, Ohio. 527,202, ren. 9–15–70. Cl. 23.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 898,611, pub. 6–30–70. Cl. 18.
Philadelphia Quartz Co., Philadelphia, Pa. 898,540, pub. 6–30–70. Multiple Class (Classes 6 and 52).
Philadelphia Quartz Co., Philadelphia, Pa. 898,545, pub. 6–30–70. Cl. 6.
Phillips Petroleum Co., Bartlesville, Okla. 898,535, pub. 6–30–70. Cl. 6.
Phone Depots, Inc., New York, N.Y. 898,953, pub. 6–30–70. Cl. 104.
Pillsbury Co., The, Minneapolis, Minn. 774,224, canc. Cl. 46.
Plano Molding Co., Plano, Ill. 898,673, pub. 6–30–70. Cl. 22.
Polyplastex United, Inc., Union, N.J. 898,506, pub. 6–30–70. Cl. 1.
Posner Laboratories, Inc., Corona, N.Y. 898,905, pub. 6–30–70. Cl. 51.
Powers & Eaton Industries, Inc. : *See—*
Star-New Era, Inc.
Pratt & Lambert-Inc., Buffalo, N.Y. 79,446, ren. 9–15–70. Cl. 16.
Pratt & Lambert-Inc., Buffalo, N.Y. 79,520, ren. 9–15–70. Cl. 16.
Pratt & Lambert-Inc., Buffalo, N.Y. 79,522, ren. 9–15–70. Cl. 16.
Printing Industry of the Carolinas, Inc., Charlotte, N.C. 898,921, pub. 6–30–70. Cl. 100.
Proctor, Paul Alton, d.b.a. The Casanovas, Raleigh, N.C. 898,959, pub. 6–30–70. Cl. 107.
Propper Mfg. Co., Inc., Long Island City, N.Y. 898,825, pub. 6–30–70. Cl. 44.
Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 774,122, canc. Cl. 29.
Psychological Associates, Inc., St. Louis, Mo. 898,965, pub. 6–30–70. Cl. 107.
Puna Fruit Packers of Hawaii, Ltd., Hilo, Hawaii. 774,236, canc. Cl. 46.
Puritan Sportswear Corp., The, Altoona, Pa. 898,792, pub. 6–30–70. Cl. 39.
Purity Stores, Inc., Burlingame, Calif. 774,222, canc. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 898,834, pub. 11–14–67. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 898,882, pub. 6–30–70. Cl. 46.
Quality Egg Co., Inc., Brooklyn, N.Y. 898,842, pub. 6–30–70. Cl. 46.
Quarterback Sports Federation, Inc., Bloomington, Minn. 898,848–50 pub. 6–30–70. Cl. 46.
Racke, A., KG, Bingen (Rhine), Germany. 898,888, pub. 6–30–70. Cl. 47.
Rafters, Inc., Olivia, Minn. 898,567, pub. 6–30–70. Cl. 12.
Rainbow Crafts, Inc., Cincinnati, Ohio. 898,677, pub. 6–30–70. Cl. 22.
Redfern Foods Corp., Atlanta, Ga. 898,851, pub. 6–30–70. Cl. 46.
Regal Marine Industries, Inc., Orlando, Fla. 898,627, pub. 6–30–70. Cl. 19.
Regis Corp., Minneapolis, Minn. 898,927, pub. 6–30–70. Cl. 100.
Reichhold Chemicals, Inc., White Plains, N.Y. 528,464, ren. 9–15–70. Cl. 6.
Reid-Provident Laboratories Inc., Atlanta, Ga. 898,613, pub. 6–30–70. Cl. 18.
Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 898,599, pub. 6–30–70. Cl. 17.
Renauld International, Ltd., Fitchburg, Mass. 898,721, pub. 6–30–70. Cl. 26.
Renbo, J., Bogense, Denmark. 898,985. Cl. 39.
Republic Steel Corp., Cleveland, Ohio. 774,290, canc. Cl. 12.
Rexall Drug and Chemical Co. : *See—*
Dart Industries Inc.
Rexall Drug Co. : *See—*
Dart Industries Inc.
Richards, W. C., Co., Blue Island, Ill. 898,595, pub. 6–30–70. Cl. 16.
Richardson-Merrell Inc., New York, N.Y. 773,960, canc. Cl. 18.
Rim Trim Inc., Elmont, N.Y. 774,254, canc. Cl. 50.
Rite-Line Corp., Rockville, Md. 898,546, pub. 6–30–70. Cl. 6.
Riverside Furniture Corp., Fort Smith, Ark. 898,739, pub. 6–30–70. Cl. 82.
Robins, A. H., Co., Inc., Richmond, Va. 898,911, pub. 6–30–70. Cl. 51.
Rogers, Inc., Bridgeport, Conn. 898,974. Cl. 8.
Rudolf, John J., Jr., Excelsior, Minn. 898,704, pub. 6–30–70. Cl. 25.
SCM Corp., New York, N.Y. 773,922, canc. Multiple Class (Classes 6, 11, 26, and 50).
SCM Corp., New York, N.Y. 898,531, pub. 6–30–70. Multiple Class (Classes 6 and 37).
SW Industries, Inc., Newton, Mass. 898,670, pub. 6–30–70. Cl. 22.
Sachs Nut Inc., Hopkins, Minn. 774,242, canc. Cl. 46.
Sackner Products, Inc., Grand Rapids, Mich. 898,502, pub. 6–30–70. Cl. 1.
St. Clair Mfg. Corp., Bellwood, Ill. 898,549, pub. 6–30–70. Cl. 7.
St. Regis Tobacco Corp. Ltd., Zurich, Switzerland. 898,600, pub. 6–30–70. Cl. 17.
Salada Foods Inc., Woburn, Mass. 774,304, canc. Cl. 46.
Sauer, C. F., Co., The, Richmond, Va. 898,852–3, pub. 6–30–70. Cl. 46.
Scheffres, A. W., Corp., New York, N.Y. 774,200–1, canc. Cl. 42.
Schroeder Bros. Corp., McKees Rocks, Pa. 898,733, pub. 6–30–70. Cl. 31.
Schwinn Bicycle Co., Chicago, Ill. 534,778, ren. 9–15–70. Cl. 19.
Scientific Methods, Inc., Austin, Tex. 898,962, pub. 6–30–70. Cl. 107.
Sears, Roebuck & Co., Chicago, Ill. 898,688, pub. 6–30–70. Cl. 23.
Secon Metals Corp., White Plains, N.Y. 530,288, ren. 9–15–70. Cl. 14.
Sectional Structures Inc., Oswego, N.Y. 898,563, pub. 6–30–70. Cl. 12.
Seitz Packing Co., Inc., St. Joseph, Mo. 898,869, pub. 6–30–70. Cl. 46.
Sentry Hardware Corp., Cleveland, Ohio. 898,513, pub. 6–30–70. Cl. 2.
Servisco, Elizabeth, N.J. 898,789, pub. 6–30–70. Cl. 39.
Seward Luggage Mfg. Co., Inc., Petersburg, Va. 898,971. Cl. 3.
Shand Kydd Ltd., Somerford, Christchurch, England. 898,629, pub. 6–30–70. Multiple Class (Classes 20 and 37).
Shell Oil Co., New York, N.Y. 898,505, pub. 6–30–70. Cl. 1.
Siemag Siegener Maschinenbau Gesellschaft mit beschrankter Haftung, Dahlbruch, Westphalia, Germany. 898,697, pub. 6–30–70. Cl. 23.
Sightseer Corp., Newark, Ohio. 898,628, pub. 6–30–70. Cl. 19.
Silver Lake Cookie Co., Inc., Baldwin, N.Y. 898,860, pub. 6–30–70. Cl. 46.
Simon & Sons Shoe Co., Inc., Lowell, Mass. 774,183, canc. Cl. 39.
Simon, William, Brewery, The, Buffalo, N.Y. 898,989. Cl. 48.
Singer Co., The, New York, N.Y. 898,631, pub. 6–30–70. Cl. 21.
Sis-Veiculos Motorizados, Anadia, Portugal. 898,619, pub. 6–30–70. Cl. 19.
Sizzlebord Restaurants, Inc., Needham Heights, Mass. 898,930, pub. 6–30–70. Cl. 100.
Skrmetta, Ray, New Orleans, La. 534,955, ren. 9–15–70. Cl. 46.
Smith, Milton T., d.b.a. Economy Furniture Upholstery, Austin, Tex. 534,726, ren. 9–15–70. Cl. 32.
Snow White Mushroom Co., Avondale, Pa. 898,847, pub. 6–30–70. Cl. 46.
Societe d'Approvisionnement et de Vente France-Uniconserves, Paris, France. 774,220, canc. Cl. 46.
Societe d'Etude des Catalyseurs, Paris, France. 773,966, canc. Cl. 18.

Societe Dite: Eurofinance S.A.R.L., Paris, France. 898,769, pub. 6–30–70. Multiple Class (Classes 38 and 102).
Societe Rhodiaceta, Paris, France. 774,164–6, canc. Cl. 39.
Some Other Place, Inc., Franklin Park, Ill. 898,925, pub. 6–30–70. Cl. 100.
South Suburban Federal Savings and Loan Association, Harvey, Ill. 898,947, pub. 6–30–70. Cl. 102.
Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. 535,118, ren. 9–15–70. Cl. 12.
Space Technology Laboratories, Inc., Los Angeles, Calif. 774,273, canc. Cl. 100.
Spartans Industries, Inc., New York, N.Y. 898,778, pub. 6–30–70. Cl. 39.
Spesco Corp., The, Atlanta, Ga. 898,555, pub. 6–30–70. Cl. 9.
Spiratone, Inc., Flushing, N.Y. 898,706, pub. 6–30–70. Cl. 26.
Spramor Corp. of America, Chicago, Ill. 898,598, pub. 6–30–70. Cl. 16.
Sprayline Mfg. & Supply Co., Fresno, Calif. 774,034, canc. Cl. 23.
Sperry Rand Corp., Troy, Mich. 530,775, ren. 9–15–70. Cl. 23.
Springfoot, Inc., Charleston, W. Va. 898,788, pub. 6–30–70. Cl. 39.
Springfoot, Inc., Charleston, W. Va. 898,798, pub. 6–30–70. Cl. 39.
Stamper, F. M., Co., d.b.a. Banquet Canning Co., St. Louis, Mo. 898,844, pub. 6–30–70. Cl. 46.
Standard Oil Co., The, Cleveland, Ohio. 773,915, canc. Cl. 6.
Standard Wholesale Co. Inc., d.b.a. Danton Hill Distilling Co., Providence, R.I. 774,249, canc. Cl. 49.
Sta-Nu Corp., Chicago, Ill. 774,285, canc. Cl. 103.
Star-New Era, Inc., from Powers & Eaton Industries, Inc., South Hackensack, N.J. 898,708, pub. 6–30–70. Cl. 26.
Steak n Shake, Inc., Bloomington, Ill. 898,867, pub. 6–30–70. Cl. 46.
Steak n Shake, Inc., Bloomington, Ill. 898,928, pub. 6–30–70. Cl. 100.
Stearns Mfg. Co., St. Cloud, Minn. 898,667, pub. 6–30–70. Cl. 22.
Stevens, J. P., & Co., Inc., New York, N.Y. 774,207, canc. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 898,814, pub. 6–30–70. Cl. 42.
Stockham Valves & Fittings, Inc., Birmingham, Ala. 534,236, ren. 9–15–70. Cl. 13.
Stonetree Corp., Chicago, Ill. 898,537, pub. 6–30–70. Cl. 6.
Strader, James W., Fort Lauderdale, Fla. 898,665, pub. 6–30–70. Cl. 22.
Strainsert Co., Bryn Mawr, Pa. 898,979. Cl. 26.
Sturm, Ruger & Co., Inc., Southport, Conn. 898,557–59, pub. 6–30–70. Cl. 9.
Stylon Corp., d.b.a. The Mosaic Tile Co., Florence, Ala. 273,090, ren. 9–15–70. Cl. 12.
Suba, Peter, and Emma Suba, d.b.a. Continental Tress Fashions, Toronto, Ontario, Canada. 898,805, pub. 6–30–70. Cl. 40.
Sunbeam Corp., Chicago, Ill. 526,873, ren. 9–15–70. Cl. 38.
Sunrod Mfg. Corp., New York, N.Y. 774,133, canc. Cl. 34.
Suntemp Industries, Inc., Blackwood, N.J. 774,131, canc. Cl. 34.
SuCrest Corp., New York, N.Y. 277,569, ren. 9–15–70. Cl. 46.
Sukup Mfg. Co., Sheffield, Iowa. 898,699, pub. 6–30–70. Cl. 23.
Summerton, James, Sedona, Ariz. 898,743, pub. 6–30–70. Cl. 32.
Sun Oil Co., Philadelphia, Pa. 898,590–92, pub. 6–30–70. Cl. 15.
Sunshine Biscuits, Inc., New York, N.Y. 898,880, pub. 6–30–70. Cl. 46.
Superintendence Co. Inc., New York, N.Y. 898,922, pub. 6–30–70. Cl. 100.
Superior Continental Corp., Hickory, N.C. 898,650–52, pub. 6–30–70. Cl. 21.
Superscope, Inc., Sun Valley, Calif. 898,758, pub. 6–30–70. Cl. 36.
Supply Mfg. Co., Inc., New York, N.Y. 774,197, canc. Cl. 40.
Swanee Paper Co., Inc., New York, N.Y. 533,689. Cl. 37.
Swank, Inc., Attleboro, Mass. 898,512, pub. 6–30–70. Multiple Class (Classes 2 and 28).
Swiss American Laboratory, Riviera Beach, Fla. 898,593, pub. 6–30–70. Cl. 15.
Sylvan Pools, Inc., Doylestown, Pa. 898,561–62, pub. 6–30–70. Cl. 12.
Symons Mfg. Co., Des Plains, Ill. 898,698, pub. 6–30–70. Cl. 23.
Syracuse Pharmacal Co., Inc., Syracuse, N.Y. 773,978, canc. Cl. 18.
Systems Programming Corp., State College, Pa. 774,151, canc. Cl. 37.
TEAC Corp. of America, Santa Monica, Calif. 898,750, pub. 4–7–70. Cl. 36.
T.G.&Y. Stores Co., Oklahoma City, Okla. 898,538, pub. 6–30–70. Cl. 6.
Tartaglia, Violetta, d.b.a. Nu-Art Advertising, Brooklyn, N.Y. 898,944, pub. 6–30–70. Cl. 101.
Taylor, E. E. Corp., Freeport, Maine. 530,001, ren. 9–15–70. Cl. 39.
Teckton, Inc., Waltham, Mass. 898,711, pub. 6–30–70. Cl. 26.
Telewave Laboratories, Inc., Long Island City, N.Y. 774,082, canc. Cl. 26.
Tendo Mokko Co., Ltd., Yamagata-ken, Japan. 898,737, pub. 6–30–70. Cl. 32.
Tepper, Gene S., d.b.a. Elbo Products, San Francisco, Calif. 898,637, pub. 6–30–70. Cl. 21.
Teufel, Ruth Rose, d.b.a. The Alfred Teufel Nurseries, Portland, Oreg. 528,156, ren. 9–15–70. Cl. 1.
Teufel, Ruth Rose, d.b.a. The Alfred Teufel Nurseries, Portland, Oreg. 532,718, ren. 9–15–70. Cl. 1.
Texize Chemicals, Inc., Greenville, S.C. 898,999. Cl. 52.
Textron Electronics, Inc., Cumberland, Md. 774,086, canc. Cl. 26.
Textron, Inc., Providence, R.I. 530,354, ren. 9–15–70. Cl. 16.
Textron Inc., Providence, R.I. 531,769, ren. 9–15–70. Cl. 21.
Textron Inc., Rochester, N.Y. 898,723–24, pub. 6–30–70. Cl. 26.
Thermwell Products Co., Inc., Paterson, N.J. 529,086, ren. 9–15–70. Cl. 12.
Thierry, Suzanne, Parfums, Inc., Miami, Fla. 774,408, canc. Cl. 51.
Topco Associates, Inc., Skokie, Ill. 898,547, pub. 6–30–70. Cl. 6.
Transitel International Corp., The, Paramus, N.J. 774,066, canc. Cl. 26.
True Temper Corp., Cleveland, Ohio. 898,661, pub. 6–30–70. Cl. 22.
Truly Tubular Fitting Corp., Mount Vernon, N.Y. 898,569, pub. 6–30–70. Cl. 13.
Turtle Wax, Inc., Chicago, Ill. 898,978. Cl. 6.
Tycodyne Industries Corp., Buffalo, N.Y. 898,983. Cl. 32.
Union Carbide Corp., New York, N.Y. 898,734, pub. 6–30–70. Cl. 31.
Uniroyal, Inc., New York, N.Y. 535,264, ren. 9–15–70. Cl. 6.
United Computing Corp., Redondo Beach, Calif. 898,775, pub. 6–30–70. Cl. 38.
United Products Corp., Kansas City, Mo. 898,523, pub. 6–30–70. Cl. 3.
United Seeds, Inc., Ralston, Nebr. 898,504, pub. 6–30–70. Cl. 1.
U.S. Industries, Inc., New York, N.Y. 532,442, ren. 9–15–70. Cl. 21.
U.S. Industries, Inc., New York, N.Y. 898,633, pub. 6–30–70. Multiple Class (Classes 21 and 36).
United States Playing Card Co., The, Cincinnati, Ohio. 898,675, pub. 6–30–70. Cl. 22.
Unitek Corp., Montrovia, Calif. 898,967, pub. 6–30–70. Cl. 107.
Universal Chemicals & Coatings, Inc., Elk Grove Village, Ill. 898,594, pub. 6–30–70. Multiple Class (Classes 16 and 21).
Universal Cigar Corp., New York, N.Y. 444,356, ren. 9–15–70. Cl. 17.
Universal Oil Products Co., Des Plaines, Ill. 898,984. Cl. 34.
Upjohn Co., The, Kalamazoo, Mich. 898,615, pub. 6–30–70. Cl. 18.
Utility Tool Co., Birmingham, Ala. 898,632, pub. 6–30–70. Cl. 21.
V.I.P., Inc., Austin, Tex. 898,943, pub. 6–30–70. Cl. 101.
Varisystems, Corp., Plainview, N.Y. 898,719, pub. 6–30–70. Cl. 26.
Viewer Products Inc., Croton-on-Hudson, N.Y. 774,065, canc. Cl. 26.
Villoro, Dr. Fernando Cuenca, Zaragoza, Spain. 773,965, canc. Cl. 18.
Virtis Co., Inc., The, Gardiner, N.Y. 898,705, pub. 6–30–70. Cl. 26.
Visual Electronics Corp., New York, N.Y. 898,635, pub. 6–30–70. Cl. 21.
Vita-Pakt Citrus Products Co., Covina, Calif. 774,303, canc. Cl. 46.
Vogue Tyre & Rubber Co., Chicago, Ill. 774,136, canc. Cl. 35.
Voumard Montres S.A., Hauterive (Neuchatel), Switzerland. 898,981. Cl. 27.
Wade, R. M., & Co., Portland, Oreg. 530,591, ren. 9–15–70. Cl. 23.
Walsh, Florence, Fashions, Inc., Poughkeepsie, N.Y. 774,191, canc. Cl. 39.
Wann, Richard H., Barrington, Ill. 774,005, canc. Cl. 21.
Weeks, Evert D., Des Moines, Iowa. 277,473, ren. 9–15–70. Cl. 51.
Wellco Enterprises, Inc., Waynesville, N.C. 898,795, pub. 6–30–70. Cl. 39.
West Chemical Products, Inc., Long Island City, N.Y. 774,286, canc. Cl. 103.
West Point-Pepperell, Inc., West Point, Ga. 898,813, pub. 6–30–70. Cl. 42.
Western Chemical Co., St. Joseph, Mo. 533,890, ren. 9–15–70. Cl. 6.
Westfield-Sommers Foods, Inc., Westfield, N.Y. 774,306, canc. Cl. 46.
Wiatt, Norman, Co., Los Angeles, Calif. 898,780, pub. 6–30–70. Cl. 39.
Willems, Peter, Lucerne, Switzerland. 774,040, canc. Cl. 23.
Williamson, Dr. Richard L., d.b.a. Animal Kingdom Pet Supplies, Shenandoah, Iowa. 898,934, pub. 6–30–70. Cl. 101.
Wilson Sporting Goods Co., River Grove, Ill. 898,676, pub. 6–30–70. Cl. 22.
Windy Point Farms: *See*—
  Highway Trailer Industries, Inc.
Winfield Brooks Co., Inc., Woburn, Mass. 898,585, pub. 6–30–70. Cl. 15.
Wise, Stanley A., Jr., Philadelphia, Pa. 774,155, canc. Cl. 38.
Woodall Industries Inc., Detroit, Mich. 528,814, ren. 9–15–70. Cl. 12.
Woolsey Marine Industries, Inc., New York, N.Y. 898,566, pub. 6–30–70. Cl. 12.
Woolworth, F. W., Co., New York, N.Y. 774,212, canc. Cl. 43.
Worthington Foods, Inc., Worthington, Ohio. 898,878–9, pub. 6–30–70. Cl. 46.
Youngstown Sheet & Tube Co., Boardman, Ohio. 530,294, ren. 9–15–70. Cl. 21.
Zappia-Paradiso, S.A., Lugano, Switzerland. 773,899, canc. Cl. 2.
Zayre Corp., Natick, Mass. 898,729, pub. 6–30–70. Cl. 28.
Zimmerman's Cut Rate Liquor Store, Inc., Chicago, Ill. 898,893, pub. 6–30–70. Cl. 49.
Zsa Zsa Ltd., New York, N.Y. 898,990–7. Cl. 51.

U.S. GOVERNMENT PRINTING OFFICE: O—1970

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 22, 1970 Volume 878 Number 4

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of August 1970

Examiner affirmed	116
Examiner affirmed in part	12
Examiner reversed	25
Total	153

Certificates of Correction for the Week of Sept. 22, 1970

Re. 26,864
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Adjudicated Patents

(D.C. Ill.) Briggs Patent No. 2,395,449 (210—204), for FILTER UNIT, *Held* claims 9, 10 and 11 invalid. *Briggs et al.* v. *Wix Corp. et al.*, 308 F. Supp. 162, 163 USPQ 283.

(D.C. Ill.) Caldwell Patent No. 2,670,665 (94—4.5), for OPTICAL SYSTEM FOR PHOTOGRAPHIC COMPOSING APPARATUS, *Held* valid and claim 1 infringed. *Photon, Inc. et al.* v. *Eltra Corporation et al.*, 308 F. Supp. 133, 163 USPQ 165.

(D.C. Wis.) Cota Patent No. 3,200,945 (209—78), for BEAN SEPARATOR, *Held* claims 1–3 invalid. *Chisholm-Ryder Co. et al.* v. *Stokely-Van Camp, Inc.*, 311 F. Supp. 631, 164 USPQ 194.

(D.C. Wis.) Cota Patent No. 3,200,945 (209—78), for BEAN SEPARATOR, *Held* claims 1–3 invalid. *Hughes Co. Inc. et al.* v. *Chisholm-Ryder Co. et al.*, 311 F. Supp. 433, 164 USPQ 183.

(D.C. Ill.) Fredman Patent No. 3,118,151 (5—238), for ONE-PIECE BELT-TYPE BEDDING CARRIER, *Held* claim 3 not infringed and claim 4 invalid. *Fredman* v. *Harris-Hub Co.*, 311 F. Supp. 734, — USPQ —.

(D.C. Ill.) Gregory Patent No. 3,162,329 (222—182), for VALVE PROTECTING CAP FOR AEROSOL-TYPE CONTAINERS, *Held* invalid. *Arnel Industries, Inc.* v. *Aerosol Research Co.*, 311 F. Supp. 924, 164 USPQ 239.

(D.C. Ill.) Higonnet et al. Patent No. 3,332,617 (234—5), for TYPE COMPOSING APPARATUS, *Held* claims 17, 18, 30, 36, 38 and 42 to 45 valid and infringed. *Photon, Inc. et al.* v. *Eltra Corp. et al.*, 308 F. Supp. 133, 163 USPQ 165.

(D.C.N.J.) Mayers Patent No. 3,035,372 (49—81), for METHOD FOR MAKING A GLASS TO METAL SEAL, *Held* claim 1 invalid. *Phillips Electronic & Pharmaceutical Industries Corp.* v. *Thermal & Electronics Industries, Inc.*, 311 F. Supp. 17, — USPQ —.

(D.C. Ill.) Robbins et al. Reissue Patent No. 26,144 (234—7), for JUSTIFICATION INFORMATION COMPUTER AND TAPE PERFORATOR FOR PHOTOCOMPOSING MACHINES, *Held* claim 76 invalid. *Photon, Inc. et al.* v. *Eltra Corp. et al.*, 308 F. Supp. 133, 163 USPQ 165.

(D.C. Ill.) Rossetto et al. Reissue Patent No. 25,354 (95—4.5), for PHOTOCOMPOSING MACHINE, *Held* claim 52 invalid. *Id.*

(C.A. Calif.) Roth et al. Patent No. 2,625,683 (2—6), for CRASH HELMET, *Held* claims 1 and 14 to 18 invalid. *United Tanks, Inc. et al.* v. *Sears, Roebuck & Co. et al.*, 425 F.2d 270, 165 USPQ 486.

(D.C. Ill.) Tompkins Patent No. 2,896,857 (239—185), for WASHING APPARATUS, *Held* claim 5 valid and infringed. *Malsbary Mfg. Co. et al.* v. *Ald, Inc.*, 310 F. Supp. 1112, 165 USPQ 241.

(C.A. Mich.) Umbrecht et al. Patent No. 2,979,062 (134—66), for POWER WASHING APPARATUS, *Held* claims 4 and 16 invalid. *Ajem Laboratories, Inc. et al.* v. *C. M. Ladd Co. Inc. et al.*, 425 F.2d 1124, 165 USPQ 737.

New Applications Received During June 1970

Patents	9,583
Designs	567
Plant Patents	7
Reissues	39
Total	10,196

Issue—September 22, 1970

Patents	1200—No.	3,529,306	to No.	3,530,505, incl.
Designs	68—No.	218,726	to No.	218,793, incl.
Reissues	5—No.	26,950	to No.	26,954, incl.
Plant Patents	2—No.	2,989	to No.	2,990, incl.
Total	1275			

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 8, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	12-09-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-07-68
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	3-17-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-17-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-06-68
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	10-01-69
SECURITY, GROUP 220—C. D. QUARFORTH, Acting Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1-02-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	2-04-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	4-01-69
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	2-13-69
DESIGNS, GROUP 290—C. D. QUARFORTH, Acting Director Industrial Arts; Household, Personal and Fine Arts.	12-04-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	6-06-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	3-07-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-09-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-05-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	7-10-69

Total number of pending applications (excluding Designs)	182, 635
Total number of Design applications pending	2,957

Expiration of patents: The patents within the range of numbers indicated below expire during August 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,650,360 to 2,654,086, inclusive
Plant Patents	Numbers 1,213 to 1,218, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE FRANK E. HALLECK

No. 8280. Decided March 12, 1970

[57 CCPA —; 422 F.2d 911; 164 USPQ 647]

1. CLAIM—BROADER THAN DISCLOSURE—FUNCTIONAL AT POINT OF NOVELTY—WORDS AND PHRASES—"AN EFFECTIVE AMOUNT."

"The claims were * * * rejected by the Examiner as 'too broad and * * * functional at the exact point of alleged novelty' because the claims failed to set out specifics regarding proportions of substances to be used. We have set out above our view that the 'exact point' of novelty lies in the discovery that the agents in question stimulate growth in animals, not in the amount used other than that it be an amount effective to stimulate growth. The functional term 'an effective amount * * * for growth stimulation' is not objectionable where the *amount* as such is not critical and its use has been approved in many cases. * * * Those skilled in the art will be able to determine from the written disclosure and its examples what an effective amount for growth stimulation is. Granted that the proportions may vary for a specific agent and specific animal at a particular stage of growth, it does not appear from the facts of record that determination of such amounts would be beyond the skill of the art nor that it would involve undue experimentation to ascertain them. On the other hand, for appellant to ascertain and recite the numerical limits for each parasympatholytic agent known would very likely require undue research."

2. SAME—SAME—35 U.S.C. 112, FIRST PARAGRAPH.

"The Examiner gave as statutory basis 35 U.S.C. 112, second paragraph; however, his factual analysis as well as the Board's indicates that they considered the fault to be one of 'undue breadth.' In *In re Borkowski* * * * and *In re Wakefield* * * * this court has again pointed out that such rejections are more properly considered under the first paragraph of 35 U.S.C. 112; however, we do not consider the Examiner's error in stating the basis to be fatal to his position since appellant was fully apprised by his factual analysis that the alleged problem was one of lack of correlation between the claims and written disclosure."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"METHOD AND COMPOSITION FOR REGULATING ANIMAL GROWTH."

The refusal of certain claims in an application entitled "Method and Composition for Regulating Animal Growth," as unpatentable under 35 U.S.C. 112 and over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 301,997.

REVERSED.

Ronald E. Lund (*C. Willard Hayes*, of counsel) for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, ALMOND, BALDWIN, LANE, *Associate Judges*, and FORD, *Judge*, United States Customs Court, sitting by designation

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1, 3, 11–13, 17–19, 27–30 and 34 in appellant's application entitled "Method and Composition for Regulating Animal Growth."[1] No claims have been allowed.

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[1] Serial No. 301,997, filed August 14, 1963, and alleged to be a continuation-in-part of Serial No. 149,857, filed November 3, 1961.

The invention, we are told, is based upon the discovery that relatively small amounts of peristalsis-[2] inhibiting drugs, when properly administered with the water or feed of animals or as a separate material, either orally or parenterally, are effective for increasing the growth rate or increasing the feed efficiency of the animals and, in many cases, for improving both of these.

Preferred peristalsis-inhibiting substances are those which are highly specific for the smooth gastrointestinal muscles and which do not materially affect digestive enzymes or possess other deleterious side effects. Specifically disclosed are parasympatholytic agents, also referred to as anticholinergic agents, such as atropine, methantheline bromide, propantheline bromide, piperidolate hydrochloride, pipenzolate methyl bromide, as well as derivatives of some of these.

The invention is said to be applicable to all types of animals and poultry. Illustrative are claims 1 and 19:

> 1. An improved growth stimulating composition for animals which comprises an animal feed and an effective amount of a peristalsis-regulating substance contained therein for growth stimulation.
>
> 19. A method of stimulating animal growth which comprises administering to said animal an effective amount of persitalsis-regulating substance for growth stimulation.

Claim 34 is drawn to a feeding composition as is claim 1 and recites the growth-regulating substance as being "peristalsis inhibiting." Claim 3 is similar and recites additionally that the substance is "specific as to smooth gastro-intestinal muscles." Claims 11–13, 17 and 18 depend from claim 1 and recite the specific substances hereinbefore set out. Claims 27 and 28–30 depend from claim 19 and also set forth the specific agents used. The references are:

Schmidt et al., "Atropine Depression of Food and Water Intake," American Journal of Physiology, vol. 192, pp. 543–45, 1958.

Archdeacon et al., "Effects of Atropine on Dogs," American Journal of Physiology, vol. 157, pp. 149–152, 1949.

Merck Index, 17th ed., pp. 111, 664, 821, 823 and 859, Merck and Co., Inc., Rahway, N.J., 1960.

Goodman et al., "Pharmacological Basis of Therapeutics," 2nd ed., pp. 558, 559, 562 and 563, MacMillan Co., New York, N.Y., 1955.

Journal of American Medical Association, pp. 781–2, July 2, 1949.

Schmidt reports the results of a study on the effect of atropine upon food and water intake in rats that indicated that such intake is depressed by atropine.

Archdeacon reports the findings of a study of the effects of several doses of atropine sulfate on food ingestion and water drinking in dogs, indicating that the atropine exerted a real food ingestion inhibitory effect as well as weight loss.

Merck discloses the specific parasympatholytic agents set out in the appealed claims and indicates that they are generally useful for relaxing the smooth muscles of the gastronintestinal tract. Atropine and atropine sulfate are described as having veterinary utility in relaxing the smooth muscles of certain animals.

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[2] Webster's Third New International Dictionary (1961) defines peristalsis as follows:

> * * * successive waves of involuntary contraction passing along the walls of the intestines or other hollow muscle structure and forcing the contents onward.

Goodman discloses the pharmaceutical properties of atropine and methantheline bromide, stating specifically that atropine sulfate may be serviceable to control excess motor activity such as hyperperistalsis and that atropine has been employed in the treatment of obesity—"it probably reduces appetite by decreasing gastrointestinal activity * * *." Also disclosed is that methantheline bromide "delays gastric emptying, prolongs the intestinal transit time" in laboratory animals and reduces gastric secretion in fed and fasted dogs.

Journal of American Medical Association contains a report on drugs for obesity and states:

> Hurrying the passage of partially digested food through the intestinal tract by means of cathartics at most interferes a little with caloric intake at the level of the intestine instead of at the table.

The Examiner rejected the appealed claims under 35 U.S.C. 112, second paragraph, as "too broad and * * * functional at the exact point of alleged novelty." The Examiner felt that the claims were too broad because the disclosure made clear that to obtain a desired result each specific agent must be employed at specific and different proportions depending on the type of animal. The claim language "an effective amount" was considered to be functional and inadequately defined because of an insufficient number of examples to enable determination of proportions of a given agent. The claims were also considered broad enough to encompass the treatment of growing or mature animals.

The claims were further rejected under 35 U.S.C. 103 as unpatentable over Merck. It was the Examiner's opinion that since the reference disclosed use of the parasympatholytic agents for relaxing smooth muscles, and one is useful in both human and animals, administration of the same with or in feed would be an obvious routine procedure. Since the proportions are similar to those of appellant's examples, the Examiner felt that Merck would inherently obtain the same results of growth promotion or improved feed efficiency.

The appealed claims were also rejected under 35 U.S.C. 103 as unpatentable over Goodman in view of the Journal article and Merck. Alleging that Goodman teaches that one of the claimed active agents orally administered to animals prolong intestinal transit time and that the Journal article suggests increased caloric intake when intestinal time is increased, the Examiner considered it obvious to increase intestinal time in order to improve utilization of the feed and growth. Merck, it was contended, rendered obvious the use of different agents.

A rejection of the claims as unpatentable over Schmidt and Archdeacon was withdrawn in the Examiner's answer after appellant's discussion of those references in his brief before the Board; however, appellant relies on those references for teachings allegedly in support of his position.

The Board affirmed the above rejections for essentially the same reasons as advanced by the Examiner, adding with respect to the 35 U.S.C. 112 rejection that the specification failed to disclose any particulars concerning administration by injection, a mode included within the method claims. The Board additionally felt that the specification, while also contemplating inhibiting animal growth and decreasing feed conversion efficiency, failed to distinguish between substances which would stimulate and those which would inhibit growth.

We are unable to agree with the Patent Office's position with respect to the injection under 35 U.S.C. 103. Appellant's invention is not merely a composition comprising an animal feed and a peristalsis-regulating substance nor a method of administering a peristalsis-regulating substance to animals. Rather, what is alleged to be novel and unobvious is the discovery that a peristalsis-regulating substance will stimulate animal growth. No prior art suggests this. Merck merely identifies the compounds disclosed by appellant and states that they are parasympatholytic agents for relaxation of the gastrointestinal tract. The only veterinary uses disclosed are for atropine and atropine sulfate as respiratory stimulants and smooth muscle relaxants, with no specific mention of effect on peristalsis. Nor is it clear that therapeutic administration of the materials according to the teaching of Merck would inherently result in a feed composition containing an amount of substance effective for growth stimulation or that the animal would be administered such an amount. Moreover, the purpose of growth stimulation is not obvious from Merck.

The references Goodman and Journal also fail to render obvious the claimed invention. Goodman suggests that methantheline bromide delays gastric emptying and prolongs the intestinal transit time. The Journal article states that hurrying the passage of food through the intestinal tract at most interferes a little with caloric intake at the level of the intestine. We are unable to deduce from these teachings that which the Patent Office would have us believe, namely, that delayed gastric emptying and prolonged intestinal transit time necessarily and obviously would result in growth stimulation. With regard to intestinal transit time, the Journal article states that decreasing it "*at most* interferes a *little*" (emphasis added). Moreover, Goodman also discloses that atropine has been employed in the treatment of obesity, hardly a suggestion of growth stimulation. Likewise, Schmidt and Archdeacon suggest that atropine inhibits food ingestion. The prior art of record, considered as a whole, is silent as to stimulating animal growth by administration of peristalsis-regulating substances. The rejections under 35 U.S.C. 103 are, therefore, reversed.

[1] The claims were also rejected by the Examiner as "too broad and * * * functional at the exact point of alleged novelty"[3] because the claims failed to set out specifics regarding proportions of substances to be used. We have set out above our view that the "exact point" of novelty lies in the discovery that the agents in question stimulate growth in animals, not in the amount used other than that it be an amount effective to stimulate growth. The functional term "an effective amount * * * for growth stimulation" is not objectionable where the *amount* as such is not critical and its use has been approved in many cases. See *In re Caldwell*, 50 CCPA 1464, 319 F.2d 254, 138 USPQ 243 (1963). Those skilled in the art will be able to determine from the written disclosure and its examples what an effective amount for growth stimulation is. Granted that the proportions may vary for a specific agent and specific animal at a particular stage of growth, it does not appear from the facts of record that determination of such amounts would be beyond the skill of the art nor that it would involve undue experimentation to ascertain them. On the other hand, for appellant to ascertain and recite the numerical limits for each parasympatholytic agent known would very likely require undue research. We have also considered the Board's concern with the lack of particulars regarding the disclosed administration by injection and the failure of the written disclosure to elaborate on the statement that in some cases inhibition of growth has been observed, but we do not share its view for the above reasons pointing out that the specification is directed to those skilled in the art.

[3] The decision of the Board is, accordingly, reversed.
REVERSED.

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[3] **[2]** The Examiner gave as statutory basis 35 U.S.C. 112, second paragraph; however, his factual analysis as well as the Board's indicates that they considered the fault to be one of "undue breadth." In *In re Borkowski* (No. 8214) and *In re Wakefield* (No. 8192), decided concurrently herewith, this court has again pointed out that such rejections are more properly considered under the first paragraph of 35 U.S.C. 112; however, we do not consider the Examiner's error in stating the basis to be fatal to his position since appellant was fully apprised by his factual analysis that the alleged problem was one of lack of correlation between the claims and written disclosure.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,667,243, H. D. Fenske, CONVEYANCE CONSTRUCTION, **filed** May 24, 1967, D.C., Md. (Baltimore), Doc. 18371, *National Steel Corporation* v. *Baltimore & Ohio Railroad and Armco Steel Corporation.* Judgment for defendants on all claims asserted by plaintiff against defendants, July 6, 1970.

2,673,575, Budzyna and Gouveia, HARNESS MECHANISM, **filed** Feb. 21, 1966, D.C.N.C. (Charlotte), Doc. 2105, *John Donald Marshall and Horace L. Bomar (trustees in an agreement and indenture of trust), known as The Carolina Patent Development Trust* v. *Baxter Textile Machines, Inc. et al.* Stipulation of dismissal, complaint and counterclaim are dismissed with prejudice, July 8, 1970.

2,694,692, Amos, McCurdy, and McIntire, METHOD OF MAKING LINEAR INTERPOLYMERS OF MONOVINYL AROMATIC COMPOUNDS AND A NATURAL OR SYNTHETIC RUBBER, **filed** June 29, 1970. D.C. Del. (Wilmington), Doc. 3921, *The Dow Chemical Company* v. *Monsanto Company.* **Same, filed** May 5, 1965, D.C., S.D. Ohio (Cincinnati), Doc. 5916, *The Dow Chemical Company* v. *Monsanto Company.* Order of dismissal, no infringement of patent. This judicial district has no jurisdiction. Complaint is dismissed, June 16, 1970.

2,814,918, J. R. Erickson, CUT-OFF WHEEL, **filed** July 7, 1970, D.C., E.D. Pa. (Philadelphia), Doc. 70–1838, *Norton Company* v. *Cardinal Engineering Corporation.*

2,879,439, C. H. Townes, PRODUCTION OF ELECTROMAGNETIC ENERGY, **filed** June 25, 1970, D.C., N.D. Calif. (San Francisco), Doc. C70–1346, *Research Corporation* v. *Coherent Radiation Laboratories, Inc.*

2,989,767, V. K. Charvat, ROTARY BRUSH WITH SPECIAL BRISTLE SUPPORT MEANS, **filed** Dec. 14, 1967, D.C., N.D. Ohio (Cleveland), Doc. C67–917, *The Sherwin-Williams Company (substituted as party plaintiff on 3–24–69)* v. *The Manufacturers Brush Co.* Consent judgment, enjoining defendant, July 1, 1970.

3,061,332, L .S. Goulden, CARGO TRANSPORT ASSEMBLY, **filed** July 1, 1970, D.C. Mich. (Grand Rapids), Doc. 6353, *Leo S. Goulden* v. *Fruehauf Corporation.*

3,152,950, Palmquist and Erwin, PROTECTIVE REFLECTIVE FILM, **filed** July 6, 1966, D.C., N.D. Ohio (Cleveland), Doc. No. C66–480, *Avery Products Corporation* v. *Minnesota Mining and Manufacturing Co.* Judgment dismissing case with prejudice, both as to complaint as amended and counterclaim, June 9, 1970.

3,188,490, Hoff and Hutson, POWER CONTROL CIRCUIT UTILIZING A PHASE SHIFT NETWORK FOR CONTROLLING THE CONDUCTION TIME OF THYRATRON TYPE DEVICES, **filed** July 1, 1970, D.C., N.D. Tex. (Dallas), Doc. CA3–3964–C, *Hunt Electronics Company* v. *William Powell, Jr., doing business as Modultronics Corporation.*

3,193,009, Wallace, Pryor, Bradley and Holliday, USE OF LOW-GRADE STEAM CONTAINING DISSOLVED SALTS IN AN OIL PRODUCTION METHOD, **filed** July 1, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1442–F, *Getty Oil Company* v. *Shell Oil Company.*

3,193,300, R. J. McDonald, SKI POLE RINGS, **filed** Feb. 24, 1966, D.C. Idaho (Boise), Doc. C1–66–13, *Ski Pole Specialists, Inc.* v. *Robert J. McDonald.* Case remanded back to District Court for further proceedings. Judgment, plaintiff is not estopped to question validity of defendant's patent. Enforceability of the license agreement has been decided by the State Courts of the State of Idaho which determination is res judicata. Patent is invalid as to claims 1 through 7. Judgment against the defendant, July 7, 1970.

3,205,708, J. H. Andresen, COMBINED AIRSPEED AND MACH INDICATOR; **3,435,675,** E. P. Knapp, MAXIMUM ALLOWABLE AIRSPEED POINTER, **filed** July 4, 1970, D.C.N.J. (Newark), Doc. 891–70, *Lear Siegler, Inc.* v. *Intercontinental Dynamics Corp.*

3,224,553, M. A. Campbell, VIBRATORY WORK FEEDING AND ORIENTING UNIT, **filed** July 2, 1970, D.C., E.D. Mich. (Detroit), Doc. 35075, *Milford A. Campbell* v. *Spectrum Automation Co.*

3,229,083, B. B. George, REPLACEABLE MINIATURE LAMP ASSEMBLY, **filed** July 1, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1443–JWC, *Shelly Associates, Inc.* v. *Chicago Miniature Lamp Company et al.*

3,276,909, A. M. Moos, FUEL CELL ELECTRODES; **3,378,406,** M. G. Rosansky, METAL-OXYGEN-CONTAINING ELECTROCHEMICAL BATTERY; **3,419,900,** Elmore and Tanner, FUEL CELLS WITH ALKALI METAL HYDROXIDE ELECTROLYTE AND ELECTRODE CONTAINING FLUOROCARBON POLYMER; **3,436,270,** Oswin and Chodosh, OXYGEN DEPOLARIZED CELL AND METHOD OF PRODUCING ELECTRICITY THEREWITH; **3,438,815,** J. D. Giner, ELECTROCHEMICAL CELL CONTAINING AN ELECTRODE COMPRISING A CATALYTIC LAYER CONSISTING OF UNIFORMLY DISPERSED CATALYTIC METAL PARTICLES AND A HYDROPHOBIC POLYMER, AND (IN CONTACT WITH THE CELL ELECTROLYTE) A SEPARATE POROUS METAL LAYER, **filed** Apr. 20, 1970, Ct. of Cl., Washington, D.C., Doc. 130–70, *Leesona Corporation* v. *The United States of America.*

3,306,864, Lang, Grazen and Less, PHENOL FORMALDEHYDE-UREA RESIN COMPONENT BINDER, **filed** July 7, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1628, *Hooker Chemical Corporation, etc.* v. *Ashland Oil, Inc., etc.*

3,377,716, A. R. Schmoyer, METHOD OF AND APPARATUS FOR TEACHING THE OPERATION OF A KEYBOARD CONTROLLED MACHINE OR INSTRUMENT, **filed** Nov. 12, 1968, D.C., S.D.N.Y., Doc. 68–C–4447, *Electro-Learner Corporation* v. *Responsive Environments Corporation.* Stipulation and order of dismissal, June 26, 1970.

3,378,406. (See 3,276,909.)

3,381,484. (See 3,417,569.)

3,417,569, W. N. Laughlin, PROTECTIVE COATING AND METHOD; **3,381,484,** same, BUMPER, **filed** July 1, 1970, D.C., W.D. La. (Shreveport), Doc. 15828, *W. N. Laughlin and Mark Tool Co., Inc.* v. *Oreco, Inc. and Orde R. Evans.*

3,419,900. (See 3,276,909.)

3,435,675. (See 3,205,708.)

3,436,270. (See 3,276,909.)

3,438,815. (See 3,276,909.)

3,440,144, H. W. Andersen, METHOD AND APPARATUS FOR CHECKING AND TESTING THE EFFECTIVENESS OF STERILIZATION, **filed** July 6, 1970, D.C., S.D.N.Y., Doc. 70–C–2891, *H. W. Andersen Products, Inc.* v. *3M Company.*

3,444,621, E. C. Pletcher, ORTHODONTIC APPLIANCE, **filed** June 3, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1234–R, *Unitek Corporation* v. *Ormco Corporation.*

3,461,009, Snyder and Snyder, PROCESS OF MOLDING A TANK, **filed** June 29, 1970, D.C. Nebr. (Omaha), Doc. C–1719–L, *Larry L. Snyder et al.* v. *Kerrco, Inc. et al.*

3,506,326, A. V. Tantillo, HINGE MEANS, **filed** July 7, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1629, *General Bathroom Products Corp* v. *Monarch Metal Products Corp.*

3,506,947, T. F. Leskosek, MOUNTING FOR ELECTRICAL TERMINAL BLOCKS AND SOCKETS AND THE LIKE, **filed** July 7, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1652, *Curtis Development & Mfg. Co.* v. *Reed Devices, Inc. et al.*

3,513,478, Kemper and Keller, MULTIPLE PURPOSE REMOVABLE ELECTRICAL MOUNTING BRACKET, **filed** June 3, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1235–EC, *Kustom Kreations, Inc.* v. *Muntz Stereo-Pak, Inc., and L. B. Phillips.*

REISSUES

SEPTEMBER 22, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,950

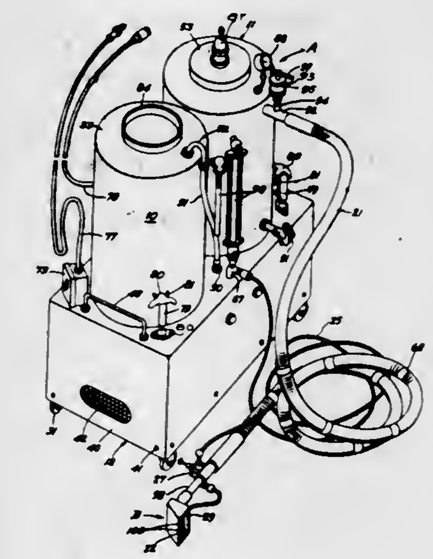
STEAM-VACUUM GENERATOR FOR RUG AND UPHOLSTERY CLEANING

Fred E. Hays, 1137 Los Pueblos Road,
Santa Barbara, Calif. 93103

Original No. 3,262,146, dated July 26, 1966, Ser. No. 394,749, Sept. 8, 1964. Application for reissue July 22, 1968, Ser. No. 754,508

Int. Cl. A47l *11/30*

U.S. Cl. 15—321 **4 Claims**



This invention relates to a cleaning apparatus for applying high pressure steam to one chamber of a two chamber cleaning nozzle and simultaneously creating a vacuum in the other chamber of the cleaning nozzle. The apparatus includes a base having two tanks mounted thereon, one of said tanks holding a cleaning solution, said one tank being connected to a pump which in turn is connected to a steam generating means the other tank having a baffle separating arrangement therein and said second tank being connected to a vacuum producing pump. The outlet from the steam generating means is connected by hose means to one chamber of a two chamber cleaning nozzle the second tank having an inlet connected by a hose to the other chamber of said cleaning nozzle.

26,951

METHOD AND APPARATUS FOR FEEDING AND COATING A WEB

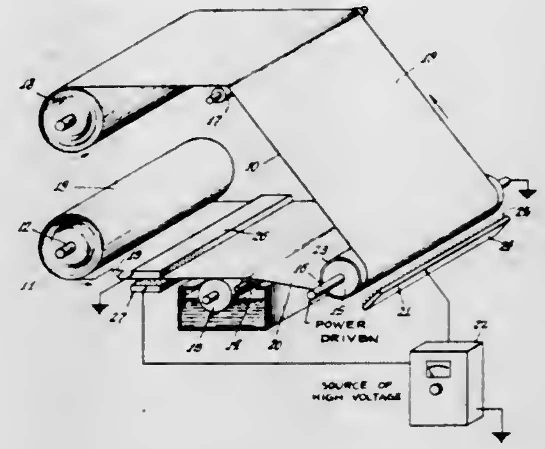
Angelo Vaccaro, Port Washington, N.Y., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

Original No. 3,082,735, dated Mar. 26, 1963, Ser. No. 58,875, Sept. 20, 1960, which is a continuation-in-part of application Ser. No. 631,583, Dec. 31, 1956. Application for reissue Dec. 16, 1963, Ser. No. 339,569

Int. Cl. B05c *11/00;* **B65h** *17/44*

U.S. Cl. 118—6 **14 Claims**

This invention deals with a method and apparatus for coating and conveying a web of plastic. The web is conveyed by establishing a non-uniform electrostatic field gradient between an electrode and said web to deposit on said web an electrostatic charge sufficient to cause said web to adhere to a rotating surface beneath it. The web is removed from said rotating surface by tensioning.



26,952

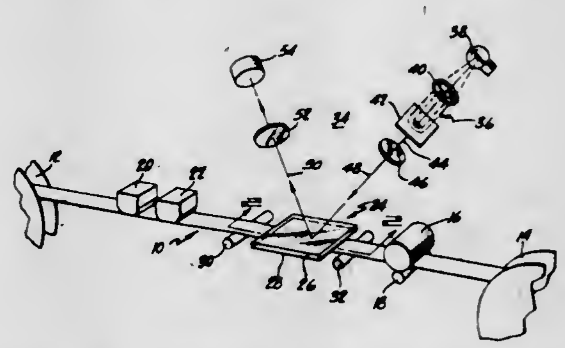
MAGNETIC REPRODUCE SYSTEM AND METHOD

Albert Baaba, San Mateo, and Donald F. Eldridge, Sunnyvale, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Original No. 3,229,273, dated Jan. 11, 1966, Ser. No. 100,079, Apr. 3, 1961. Application for reissue July 19, 1966, Ser. No. 581,405

Int. Cl. G11b *11/10;* **G11c** *11/10, 11/42*

U.S. Cl. 340—174.1 **14 Claims**



A magneto-optic transducer for read-out of a magnetic record using a thin magnetic film enhancement layer into which the pattern to be read is transferred.

26,953

VARIABLE SPEED TRANSMISSION

Robert C. Warren, 26 Salem Ave., and Robert G. Adams, P.O. Box 508, both of Carbondale, Pa. 18407

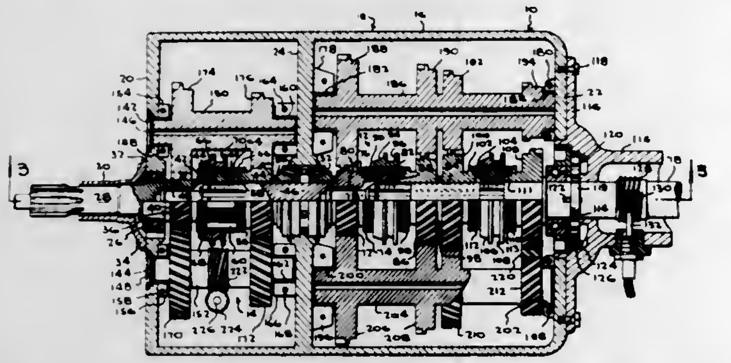
Original No. 3,255,644, dated June 14, 1966, Ser. No. 305,621, Aug. 30, 1963. Application for reissue June 14, 1968, Ser. No. 741,822

Int. Cl. F16h *3/02, 3/08*

U.S. Cl. 74—745 **21 Claims**

1. A power transmission unit comprising a casing, a drive shaft supported for rotation in said casing and having a pair of opposed ends of which one of said ends is

adapted for connection with a power source, a first helical gear fixedly secured to the other end of said drive shaft for rotation therewith, a second shaft rotatably supported in said casing and having a pair of opposed ends of which one of said ends is journalled for rotation within the other end of said drive shaft, a second helical gear fixedly secured to the other end of said second shaft for rotation therewith, a main shaft rotatably supported in said casing and having a pair of opposed ends of which one of said last named ends is journalled for rotation within said other end of said second shaft, a third helical gear loosely mounted on said main shaft adjacent the other end thereof, a fourth helical gear loosely mounted on said second shaft in axially spaced relation relative to said first helical gear, said fourth helical gear being located intermediate said first and second helical gears, [a] fifth and sixth helical gears loosely mounted on said main shaft in axially spaced relation relative to each other, said fifth and sixth helical gears being disposed intermediate said second and third helical gears, a pair of countershafts rotatably supported within said casing on diametrically opposed sides of said drive shaft, a pair of helical gears fixedly mounted on each of said countershafts in axially spaced relation relative to each other, one of each pair of said last named helical gears meshing with said first helical gear, the other of said last named helical gears meshing with said fourth helical gear, synchronizing clutch means interposed between said first and fourth helical gears to effect a selective driving connection directly between said drive shaft and said second shaft or indirectly between said first helical gear and said helical gears on said countershafts and said fourth helical gear, a second pair of countershafts disposed on diametrically opposed sides of said second and main shafts, each of said last named countershafts having fixedly secured thereto for rotation therewith four helical gears of which the first thereof is meshed with said second helical gear, and the second and third thereof mesh with said fifth and sixth helical gears, respectively, synchronizing clutching means interposed between said second and sixth helical gears for effecting, selectively, a direct driving relation between said second helical gear and said main shaft or indirectly between said second helical gear and said sixth helical gear through said first and second helical gears carried on said second pair of countershafts, a pair of helical idler gears supported for rotation within said casing, said idler gears being disposed on diametrically opposed sides of said main shaft and meshing with and interposed between said third helical gear and the fourth of said helical gears on said countershafts, and synchronizing means interposed between said third and fifth helical gears to selectively connect said main shaft with said second shaft through said second helical gear, said first and third countershaft helical gears and said fifth helical gear or to reverse the direction of rotation of said main shaft through said fourth countershaft helical gear.



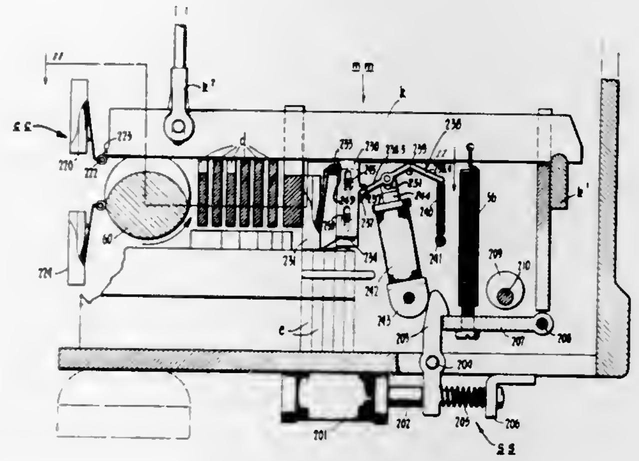
26,954
TYPEWRITER WITH MEANS TO DECREASE RATE OF OPERATION TO PREVENT TYPEBAR MALFUNCTION

George B. Greene, Newport Beach, Calif., assignor of ninety percent to Greene Engineering Company, a corporation, and ten percent to Electronic Engineering Company of California, a corporation

Original No. 3,342,296, dated Sept. 19, 1967, Ser. No. 404,246, Oct. 16, 1964. Application for reissue Sept. 11, 1968, Ser. No. 765,704

Int. Cl. B41j *5/36*

U.S. Cl. 197—20 **13 Claims**



Automatic typewriter operating at speeds at which malfunctions due to adjacent hammer interference or failure to reprint the same character properly, or either of these malfunctions will occur; equipped with means to detect incipient occurrence of such malfunctions and momentarily retard the speed of typewriter operations, thus averting the malfunction.

PLANT PATENTS

GRANTED SEPTEMBER 22, 1970

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing

2,989
ROSE

John W. Patterson, 6518 Kernel,
Houston, Tex. 77017
Filed July 29, 1968, Ser. No. 748,573
Int. Cl. A01h *5/00*

U.S. Cl. Plt.—11 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to the unique combination of good growing and flower producing habits, abundant green foliage, large flowers which are borne singly and often more than one on medium length stems, good flower form at all stages of bloom, moderate flower fragrance, better than average disease resistance, particularly with respect to mildew, a distinctive and attractive general color tonality of the flowers corresponding to Rose Bengal in the newly opened flowers, and to near Magenta with a slight Silver overall cast in three days open flowers.

2,990
PEACH TREE

Frank T. Elliott, Jr., Visalia, Calif., assignor to Reedley Nursery, Inc., Reedley, Calif., a corporation of California

Filed July 22, 1968, Ser. No. 746,728
Int. Cl. A01h *5/03*

U.S. Cl. Plt.—43 **1 Claim**

A variety of peach tree, of medium size and vigorous, spreading and open in growth, which is a regular and productive bearer of large to medium size semifree to clingstone fruit having yellow flesh, and yellow skin substantially overspread with red at maturity.

PATENTS

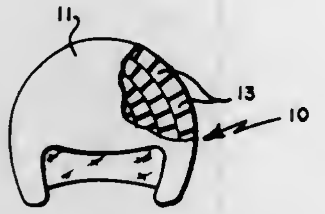
GRANTED SEPTEMBER 22, 1970

GENERAL AND MECHANICAL

3,529,306

EQUALIZER DEVICE

Edward P. Thorne, Rte. 5, Box 176, Dover, Pa. 17315
Filed Dec. 17, 1968, Ser. No. 784,345
Int. Cl. A42b *1/08;* A63b *71/10*
U.S. Cl. 2—3 5 Claims

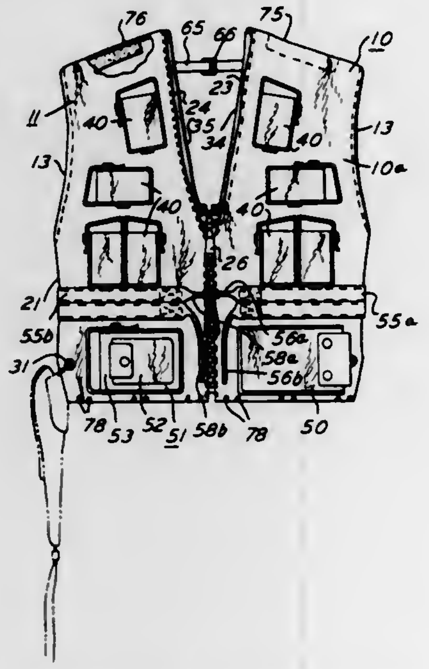


Small round pellets are confined in a given space. A series of closely fitted bars of truncated pyramidal configuration are placed in a pattern with their small ends flush against the pellets. The outer surface of the plungers is exposed and accepts the application of any force or blow applied thereto. Each plunger conveys its own shock to the adjacent area containing the pellets which in turn pass the shock uniformly and instantaneously to all other pellets. Each pellet absorbs an equal amount of shock and any remaining shock not wholly dissipated by the pellets is sent back in an outward force against the unaffected plunger bars.

3,529,307

INFILTRATOR VEST

Gary W. Belson and Norman R. Belson, both of 109 6th Ave., Belmar, N.J. 07719
Filed Oct. 19, 1967, Ser. No. 676,564
Int. Cl. A41d *1/02*
U.S. Cl. 2—94 9 Claims

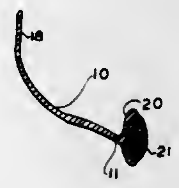


A combat vest having a left and a right section secured adjacent the center of the wearer's back by lacing threaded through longitudinal lines of openings in each section. The front of the vest is separably connected together. An individual half belt is joined to each section for carrying equipment and the half belts form free front and rear straps which may be tied together to provide snug fit. Magazine pouches having side openings are secured to the vest front.

3,529,308

HAIR HOLDING DEVICE

Ellen C. McBride, 203 Maryland St., Winnipeg, Manitoba, Canada
Filed Apr. 21, 1969, Ser. No. 817,768
Int. Cl. A45d *8/00, 19/00*
U.S. Cl. 2—174 1 Claim

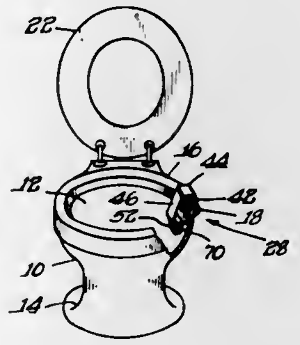


A resilient hair holding member placed around the head adjacent the hair line, cups the hair upwardly and shields it from the skin during the application of face creams or the like or during cleansing of the face and neck. Secondly it provides a separation between the hair and the face and neck area during shampooing, color treatment and the like.

3,529,309

LAVATORY SANITATION BODIES

Seymour Leavitt, Lincolnwood, and Selwyn J. Ancel, River Forest, Ill., assignors to Madison Chemical Corporation, Maywood, Ill., a corporation of Illinois
Original application Dec. 29, 1967, Ser. No. 693,488. Divided and this application Aug. 12, 1968, Ser. No. 751,889
Int. Cl. E03d *9/02*
U.S. Cl. 4—231 12 Claims

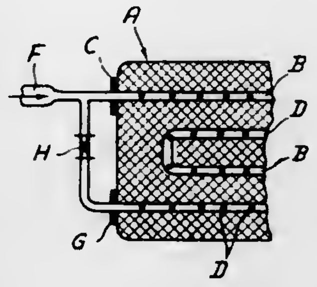


A body for use in a basin of a toilet bowl lavatory, urinal, or the like, said body comprising a flexible holder for attachment to the rim of the basin of a toilet bowl, or urinal, a compartment formed in said holder for holding a quantity of a solid soluble treatment material in said basin and flexible bowl-engaging means on said holder for diverting flush water into said compartment where it makes direct contact with the solid treatment material, thereby to partly dissolve a portion of the material and to enable said dissolved portion to be carried by the flush water into said basin, said flexible bowl-engaging means being capable of conforming to the shape of said basin at its point of contact therewith, thereby enabling said holder to be used in connection with toilet bowls of differing configurations.

3,529,310

PROCESS TO VENTILATE STUFFINGS OF CELLULAR MATERIAL AND STUFFING ACTUATED WITH SAID PROCESS

Giuseppe Olmo, Milan, Italy, assignor to S.p.A. Giuseppe Olmo-Superflexite, Italiana-Milan, Italy, a corporation of Italy
Filed Apr. 4, 1968, Ser. No. 719,827
Int. Cl. A47c *23/00*
U.S. Cl. 5—347 8 Claims

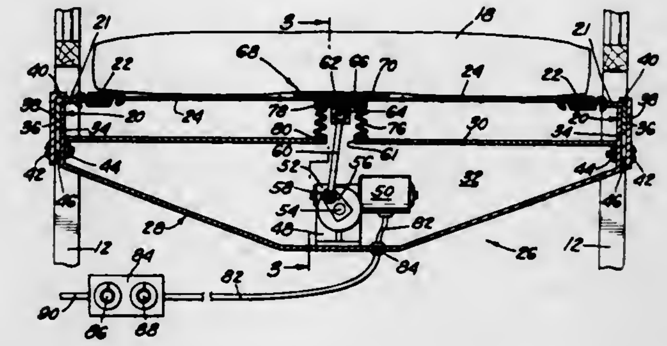


The elastic structure of the stuffing consists, at least in part, of an open cell cellular materiale, the inside of which is provided with ducts that can be connected, at one end thereof, with a compressed air or decompressed air generator and, at the other end thereof, with delivery nozzles, to distribute the air within the stuffing material, so as to ventilate the latter.

3,529,311

CRIB BOUNCER FOR TRANQUILIZING INFANTS

N. B. Crawford, Riverside, Calif.; Carl Crawford, administrator of the estate of N. B. Crawford, deceased
Filed July 1, 1968, Ser. No. 741,510
Int. Cl. A47d *9/02*
U.S. Cl. 5—109 6 Claims



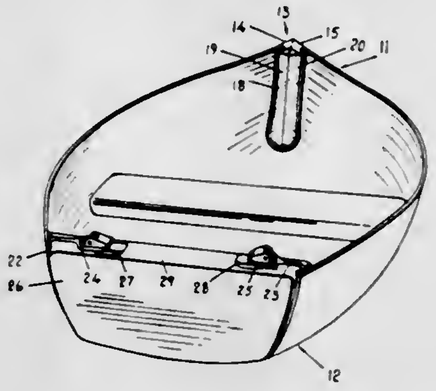
An attachment for a crib, comprising a housing that clamps onto the crib frame under the mattress-supporting springs. Inside the housing, an electric motor with speed-reduction gears turns a crank at about 60–80 r.p.m. A connecting rod connects the crank to a plate, which is inserted between the springs and mattress at the center of the crib. As the crank turns, the plate is moved up and down through a distance of about 1½ inches, pulling the spring and mattress downwardly at the center thereof and then allowing it to return by spring tension to its initial position to produce a gentle bouncing action.

3,529,312

ROLL-UP BOAT

Eli I. Robinsky, 301 Jedburgh Road, Toronto, Ontario, Canada
Filed Jan. 27, 1969, Ser. No. 794,212
Int. Cl. B63b *7/06*
U.S. Cl. 9—2 6 Claims

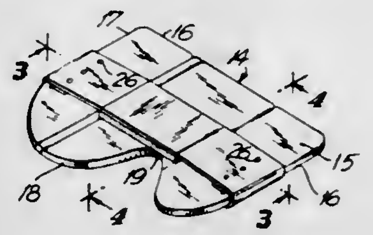
A roll-up boat made of resilient material such as steel or memory type plastic, which can be transported in a rolled-up condition to the place where it is to be used. It is then unrolled and manually formed into a boat by bending the sides to form the top sides of the hull, fastening the bow ends together, in liquid tight bow forming position by a removable bow forming member. The stern end is formed by a removable transom which is fastened, in liquid tight engagement across the stern end by releasable catches, such as a trunk type catch. A seat connected across the hull, about midship, adds to the rigidity of the hull.



3,529,313

PADDLE FOR SWIMMER

Barney Girden, 32 W. 76th St., New York, N.Y. 10023
Filed Oct. 11, 1968, Ser. No. 766,893
Int. Cl. A63b *31/06*
U.S. Cl. 9—303 8 Claims

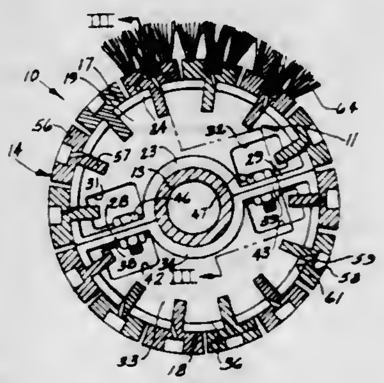


A paddle for a swimmer which attaches to the swimmer's hand for greatly increasing the power applied during each stroke for propelling the swimmer through the water. The paddle is foldable so that it may be compactly and easily stored on or about the body of the swimmer to free the swimmer's hand to perform other functions.

3,529,314

ROTARY BRUSH CONSTRUCTION

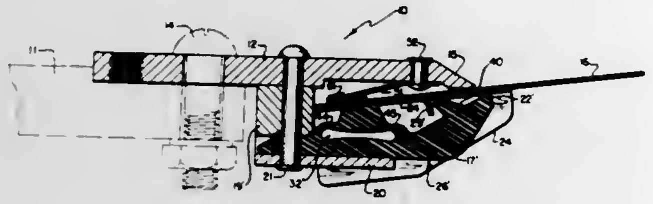
Gaylord J. Clark, P.O. Box 216, Township of Coloma, County of Berrien, Mich. 49038
Filed Mar. 8, 1968, Ser. No. 711,614
Int. Cl. A46b *3/16, 7/10, 13/00*
U.S. Cl. 15—183 12 Claims



A cylindrical brush construction having a pair of spaced end bells mounted upon shaft means and supporting a plurality of elongated and parallel bristle-holding members arranged in a cylindrical pattern concentric with the shaft means.

3,529,315
DOCTOR BLADE HOLDER

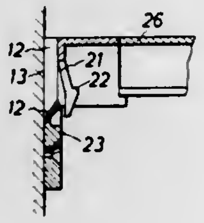
Harold E. Dunlap and Roger E. Bedard, Auburn, Mass., assignors to Lodding Engineering Corporation, Auburn, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 719,413, Apr. 8, 1968. This application Jan. 27, 1969, Ser. No. 793,950
Int. Cl. D21g *3/04*
U.S. Cl. 15—256.51 **10 Claims**



A new support and displacement mechanism is provided for a wiper element such as a doctor blade whereby a uniform and self-compensating positioning of the element is achieved at all locations along its length. The blade is pivotally mounted, and correct spacing or position is provided by a tubular member mounted longitudinally along the rear portion of the blade. The walls of the tubular member are flexible, and largely inelastic, and the tube is filled to partial capacity with a non-compressible fluid such as a liquid or fluidized particles. Air or other compressible fluid is excluded from the tubular member. A complete doctor blade assembly is described.

3,529,316
INTERNAL-RUNNER CURTAIN RAIL FOR ROLLING OR SLIDING CURTAIN CARRIERS

Wilhelm Hachtel, Musberg, Germany
Filed May 18, 1967, Ser. No. 639,443
Claims priority, application Germany, May 18, 1966, St 25,415
Int. Cl. A47h *13/00*
U.S. Cl. 16—87.4 **5 Claims**

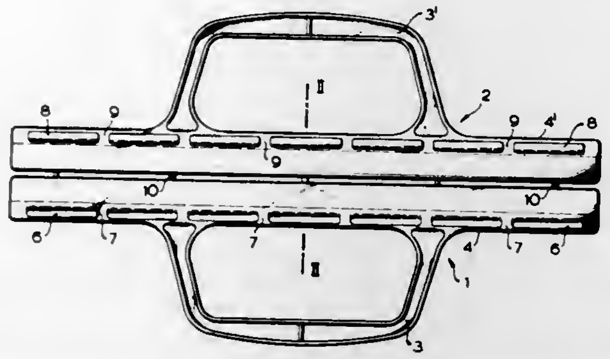


Caps are attached to the ends of a curtain rail provided with track grooves. The caps are provided with openings for the passage of curtain carriers and closure member. The rail may be also provided with a recessed carrier plate.

3,529,317
HANDLE OF SYNTHETIC THERMOPLASTIC MATERIAL FOR CARRYING BAGS

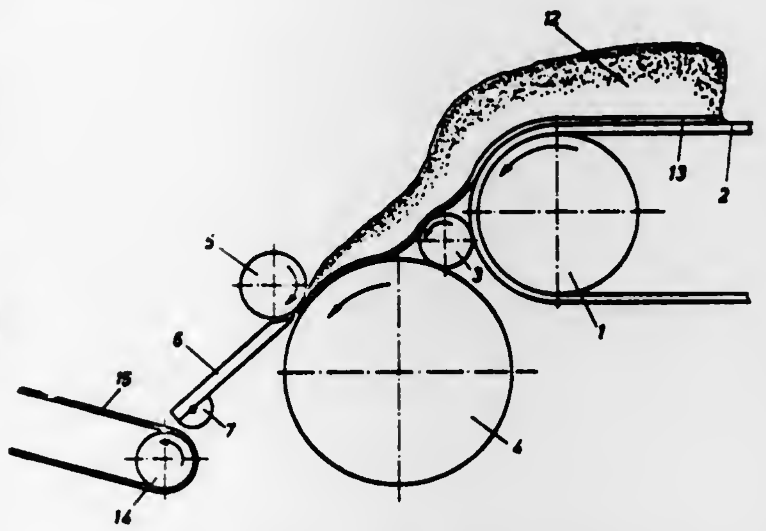
August Schwarzkopf, Lengerich, Westphalia, Germany, assignor to Windmoller & Holscher, Lengerich, Westphalia, Germany
Filed Oct. 30, 1968, Ser. No. 771,910
Claims priority, application Germany, Nov. 3, 1967, 1,632,564
Int. Cl. A45c *13/26;* **B65d** *33/24*
U.S. Cl. 16—110 **1 Claim**

Two handle parts abut in use and comprise each a carrying loop and a joining strip to be joined, preferably by heat sealing, to the associated bag wall. The handle parts are detachably interconnected by a fastening rib, which is formed on one handle part and extends over the length of the joining strip, and a groove which is formed in the other handle part and complementary to the fastening rib. The walls of the groove are interconnected by a plurality of transverse webs. The fastening rib has apertures which correspond to said transverse webs.



3,529,318
SKINNING OF FISH FILLETS

Paul Jobmann, Lubeck, Germany, assignor to Nordischer Maschinenbau Rud. Baader, Lubeck, Germany, a corporation of Germany
Filed Dec. 23, 1968, Ser. No. 785,963
Int. Cl. A22c *25/00*
U.S. Cl. 17—62 **9 Claims**

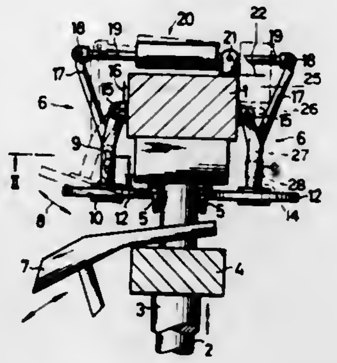


A skinning machine for fish fillets is disclosed which has a pair of cooperating counter-rotating rollers forming a fillet feeding gap. Fillets of fish are supplied to the gap and the leading end of the fillet is met by the cutting edge of an oscillating skinning knife disposed on the outlet side of the gap with the cutting edge at or near the narrowest point of said gap. The cutting edge is fixed very close to (e.g. 0.4 mm. from) the circumference of the skinning roller.

3,529,319
DEVICE FOR UNSCREWING MOULDED SCREW-PARTS FROM DIES

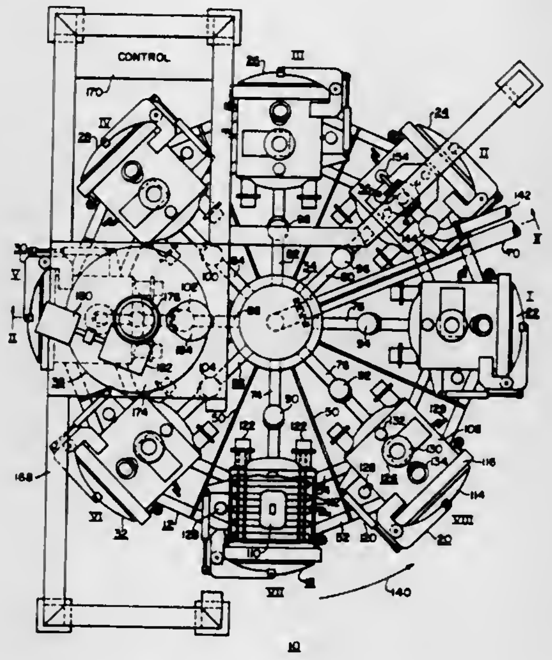
Gunter Rapp and Heinz Blasko, Esslingen, Germany, assignor to Maschinenbau Rapp & Seidt, Esslingen, Germany
Filed Apr. 7, 1967, Ser. No. 629,278
Claims priority, application Germany, Apr. 20, 1966, M 69,204
Int. Cl. B29d *1/00*
U.S. Cl. 18—2 **12 Claims**

The disclosure is of an improved device for simultaneously unscrewing a plurality of moulded screw-parts from screw-threaded moulding dies or cores on a synthetic plastics moulding machine, the device comprising an endless travelling flexible unscrewing element such as a belt which is guided to engage and unscrew the moulded screw-parts arranged in a row.



3,529,320
CASTING APPARATUS FOR ENCAPSULATING ELECTRICAL CONDUCTORS

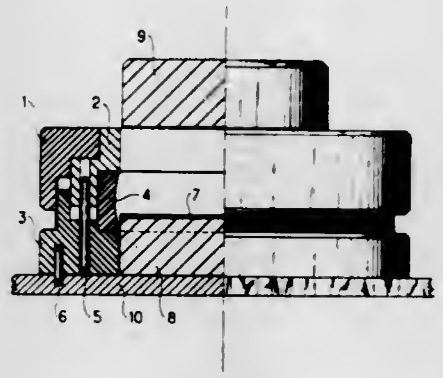
Bernard A. Kerns, Lawrence J. Manning, and Alexander Taleff, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1967, Ser. No. 675,841
Int. Cl. B26c *6/00*
U.S. Cl. 18—5 **15 Claims**



Casting apparatus for at least partially encapsulating electrically conductive means in an insulating resin system. The casting machine or apparatus includes a rotary carriage which supports a plurality of vacuum chambers, and drive means for indexing the carriage. The casting machine includes first and second separate vacuum systems, the first of which is connectable to the vacuum chambers at one of the machine index positions to provide the initial vacuum, and the other of which is permanently connected to each vacuum chamber through a rotary shaft seal, and an individual valve for each vacuum chamber. After the pressure in a vaccum chamber is reduced by the first vacuum system to a magnitude which is substantialy the same as that of the second vacuum system, the first vacuum system is disconected from the vacuum chamber, and the valve is opened to the second vacuum system, thus transferring each vacuum chamber from the first vacuum system to the second vacuum system. Also included is means for sealably introducing a pourable cast resin system into a vacuum chamber and its mold, and valve means for returning each vacuum chamber to atmospheric pressure after the vacuum pouring and degassing steps are completed.

3,529,321
DEFORMABLE MOLD DIE

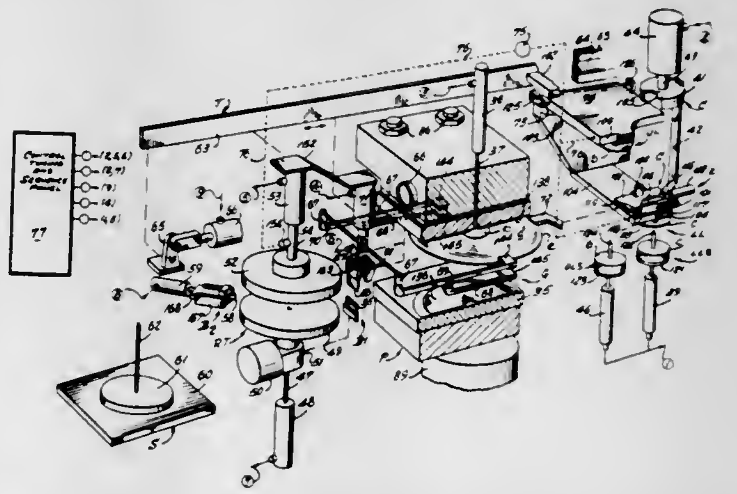
André Culand, Residence d'Orsay, France, assignor to Compagnie Generale d'Electricite, Paris, France
Filed Nov. 9, 1967, Ser. No. 681,874
Claims priority, application France, Nov. 16, 1966, 83,890
Int. Cl. B29c *3/00*
U.S. Cl. 18—5 **5 Claims**



A die alterable in shape, for the manufacture, by compression, of mechanical parts from powdery raw materials, the die comprising a fixed rigid part and a movable rigid part, assembled one against the other and gripping between them an elastic part, the inner surface of which forms the lateral part of the mold intended to contain the object to be manufactured.

3,529,322
APPARATUS FOR MANUFACTURING DISC RECORDS

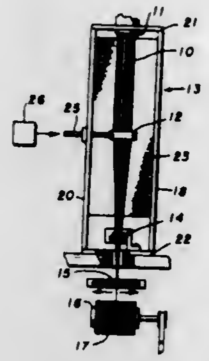
Joseph Flusfeder, 93 Cromwell Court, Berkeley Heights, N.J. 07922, and Leonard Palmer, 22 Lakeview Ave., Florham Park, N.J. 07932
Original application June 23, 1965, Ser. No. 466,167, now Patent No. 3,412,427, dated Nov. 26, 1968. Divided and this application June 27, 1968, Ser. No. 752,090
Int. Cl. B29d *17/00*
U.S. Cl. 18—5.3 **6 Claims**



A disc record manufacturing apparatus having structure for holding the pressed records as they are stripped from the press and transferred to a trimmer. When the record is pressed, the flash at the periphery thereof is received between the widened, radially extending end portions of pairs of gripping fingers where the fingers of each pair are elongated and extend substantially tangentially with respect to the periphery of the record. A fluid pressure device coacts with the gripping fingers to close them onto the flash received between the radially extending wider ends of the tangentially extending gripping fingers, and in this way the pressed record is held while the press opens so as to be stripped from the press and then the thus-held record can be transferred to a trimmer.

3,529,323
APPARATUS FOR PRODUCING YARN HAVING INDIVIDUALLY AND PERMANENTLY TWISTED FILAMENTS

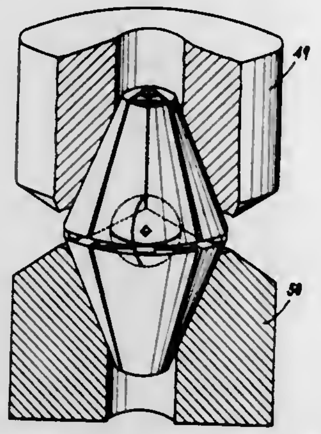
George B. Hughey, Raleigh, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Original application June 23, 1965, Ser. No. 466,237, now Patent No. 3,367,100, dated Feb. 6, 1968. Divided and this application Oct. 10, 1967, Ser. No. 688,288
Int. Cl. D01d *5/22, 13/02*
U.S. Cl. 18—8 **4 Claims**



A melt-spinning apparatus for producing a threadline of permanently and individually twisted filaments from a synthetic thermoplastic resin having a spinneret and a spinning chamber for receiving streams of resin emitted from the spinneret. At least one filament-twisting fluid jet through which a hardened filament passes en route to a collecting means is positioned within the chamber. Fluid moving through each jet at a high velocity exerts a peripheral effort on the filament to cause a twist to back up toward the spinneret beyond the point where the filament becomes hardened; the twist of some of the filaments is opposite in direction to that of the other filaments.

3,529,324
HIGH PRESSURE GENERATING METHOD AND APPARATUS

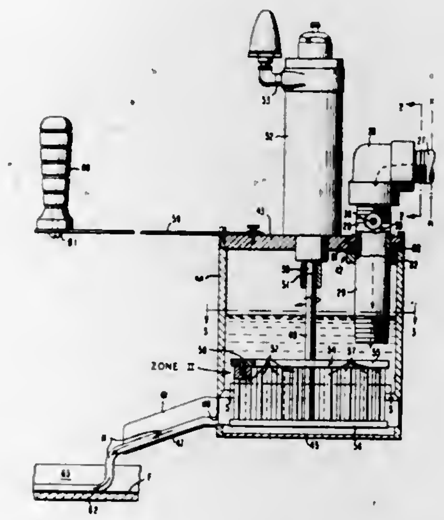
Naoto Kawai, 3–5–1 Sakurai, Mino, Japan
Filed Aug. 14, 1967, Ser. No. 660,409
Claims priority, application Japan, Aug. 13, 1966, 41/53,349; Mar. 14, 1967, 42/16,019, 42/21,385, 42/21,386, 42/21,387, 42/21,388
Int. Cl. B29c *3/00*
U.S. Cl. 18—16 **8 Claims**



An apparatus for generating high pressure including a multi-stage multi-piston assemblage consisting of a first, second and *n*th stage multi-piston assemblages, wherein the first assemblage is formed by cutting a solid body of any shape with planes passing through its center and provided in its center part with a pressurized space by truncating the tip of each piston of said assemblage, the second assemblage is formed by cutting another solid body of any shape with planes passing through its center in such manner as to tightly enclose the first assemblage and *n*th assemblage is formed in this order, the above first to *n*th assemblages are layered through spacers interposed in the adjacent gaps of the pistons of the respective assemblages and between the respective assemblages and a method for generating high pressure by using the above mentioned apparatus.

3,529,325
MOLD FOR CASTING SIMULATED MARBLE BUILDING PRODUCTS

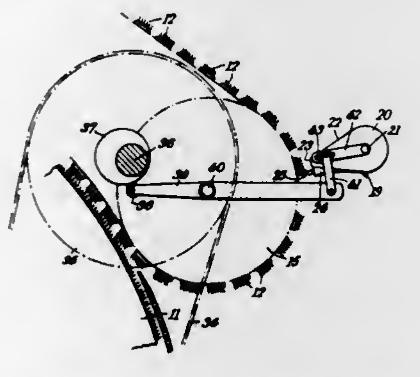
Ray Brown Duggins, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Aug. 31, 1966, Ser. No. 576,303. Divided and this application Dec. 19, 1968, Ser. No. 794,839
Int. Cl. B29c *1/00*
U.S. Cl. 18—34 **3 Claims**



An improved mold assembly for receiving a shrinkable, solidifiable mass of material is provided by the use of a thin, smooth, continuous layer of a non-reactive, organic, polymeric material, with shrinkage properties that match those of said mass of material, between the mold support and said mass of material.

3,529,326
MEANS FOR STRIPPING TEXTILE CARDING FLATS

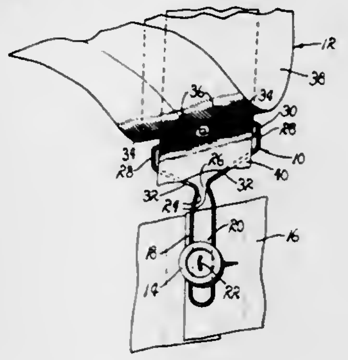
Walter Nutter, Simonstone, near Burnley, Jack Shaw, Read, Burnley, and Brian Judson, Clayton-le-Moors, England, assignors to T.M.M. (Research) Limited, Oldham, Lancashire, England, a British company
Filed Dec. 23, 1968, Ser. No. 786,090
Int. Cl. D01g *15/76*
U.S. Cl. 19—109 **2 Claims**



Apparatus for removing fibres and impurities from the flats of a textile card of the revolving flat type comprising combing means arranged for traversal in one direction through a flat-engaging zone to pick up fibres and impurities carried in the clothing of the flat in the zone and for traversal in a reverse direction to transfer the picked up fibres and impurities back to the surface of the flat clothing, and suction means for applying a suction to the flat to remove the fibres and impurities transferred back on to the flat, the suction means being mounted adjacent the combing means for movement therewith and leading the combing means when the combing means is moving in the one direction through the flat-engaging zone.

3,529,327
TIE HOLDER

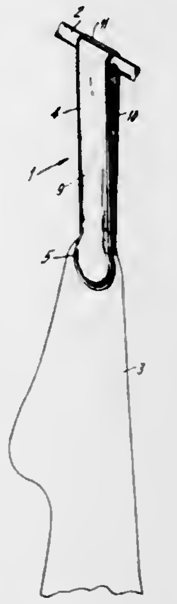
Harold B. Missakian, Selma, Calif. (4130 Army St., Apt. 60, San Francisco, Calif. 94131)
Filed Dec. 5, 1968, Ser. No. 781,380
Int. Cl. A41d *25/10*
U.S. Cl. 24—56 **11 Claims**



A tie holder of one piece resilient wire construction having an elongated loop-like portion engageable with a shirt button and a pair of U-shaped members generally defining a loop. The members have individual legs which are in substantial alignment and provide free ends which overlap. The free ends are bent to form pincers adapted to grip the back of a tie.

3,529,328
MAGNETIC CLOTHESPIN

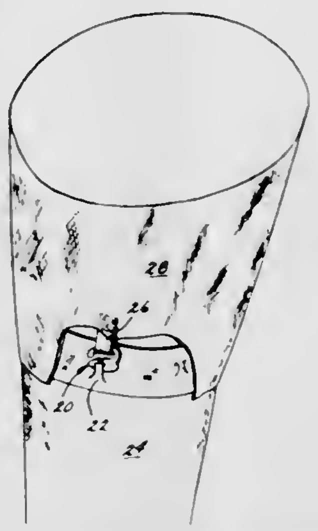
Patrick T. Davison, New York, N.Y., assignor to Hoz-Pin Corporation, New York, N.Y.
Filed May 22, 1969, Ser. No. 826,909
Int. Cl. A47h *13/00;* **D06f** *55/00*
U.S. Cl. 24—137 **3 Claims**



The invention is a magnetically actuated device for supporting ladies' stockings and other light clothing during the drying process. The device is comprised of a strap of flexible material, e.g. plastic, having a magnet at one end and a magnetically attractable plug at the other. In use the strap drapes over a shower rod or the like and the item to be dried is held between the magnet and plug.

3,529,329
FASTENER FOR WELT LOOP HOSE

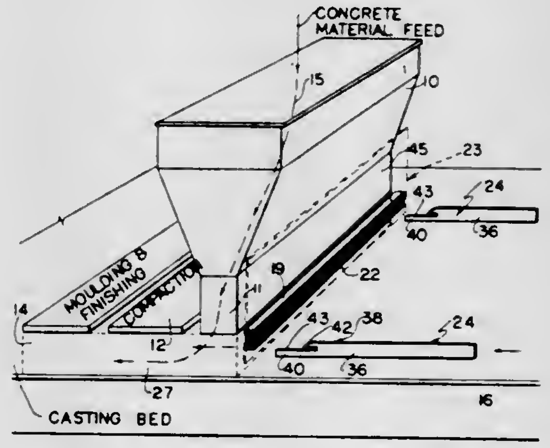
Aaron Burleson, Burlington, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,138
Int. Cl. A44b *11/00;* **A41b** *11/00*
U.S. Cl. 24—200 **4 Claims**



A fastener for coupling hose having integrally knit narrow welt loops thereon to support garments having conventional width elastic or nylon loops comprises a thin plate having upper and lower arms joined at one end and defining therebetween a slot. The upper arm has a hook at its free end and defines a loop retaining portion having the width of a conventional loop presently used on support garments. The lower arm is provided with an inverted substantially T-shaped slot having a narrow loop retaining portion to maintain stocking welt loops in alignment with the vertical center line of the fastener and prevent the cocking or tilting of the fastener which can cause detachment of the fastener from the support garment and having a narrow passageway centrally aligned with respect to the loop retaining portion for allowing the passage of a narrow welt loop into the slot while preventing the loop from accidentally slipping out of the slot when in use.

3,529,330
DEVICE FOR INSERTING TRANSVERSE REINFORCING MEMBERS IN SLABS FORMED BY CONCRETE SLAB EXTRUDING MACHINES

Ernst Martens, 75 Noble Ave., Winnipeg, Manitoba, Canada
Filed Mar. 6, 1968, Ser. No. 710,939
Claims priority, application Great Britain, Mar. 10, 1967, 11,367/67
U.S. Cl. B28b *23/02*
U.S. Cl. 25—41 **15 Claims**

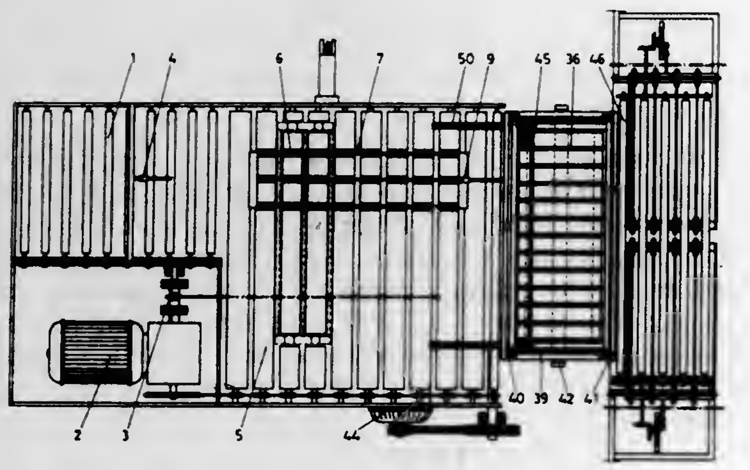


A magazine is situated at the front of the machine carrying a stack of transverse reinforcing members. A pair of plunger arms are mounted for longitudinal movement below the magazine and operate to pick up one reinforcing member at a time and to move it forwardly through the concrete feeding from the hopper, to a position above the augers and behind the hopper. Withdrawing the arms leaves the reinforcing member in position to have concrete compacted around it so that it is incorporated in the extruded slab above the longitudinal apertures or cores.

3,529,331

MACHINE FOR ROTATING AND CUTTING LENGTHS OF CLAY FOR THE PRODUCTION OF BRICKS

Enrico Putin, Via P. Trevisan 2, Villaveria, Vicenza, Italy
Filed Nov. 7, 1967, Ser. No. 681,245
Claims priority, application Italy, Nov. 26, 1966, 66,623/66
Int. Cl. B28b *11/14;* **B65g** *47/24*
U.S. Cl. 25—107 **4 Claims**

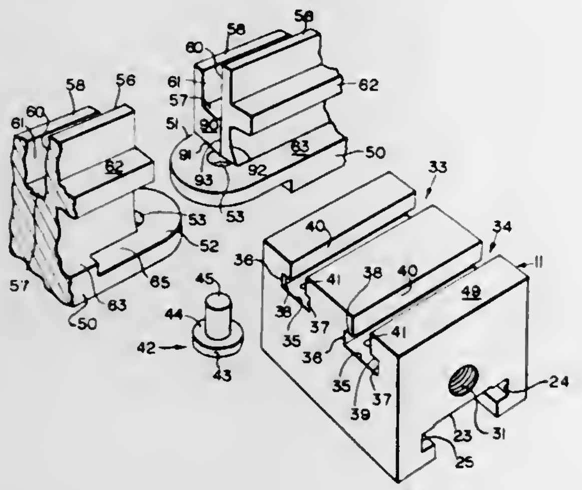


Lengths of clay move in spaced relationship to a device which rotates them to the extent of 90 degrees and moves them to a cutting device provided with cutters which cut them into several pieces which are then removed by rollers provided with spacers.

3,529,332

TENTER FRAME

Frederick Hyatt, Providence, R.I., assignor to Bevis Industries, Inc., Providence, R.I., a corporation of Florida
Filed June 14, 1968, Ser. No. 737,148
Int. Cl. D06c *3/02*
U.S. Cl. 26—61 **2 Claims**

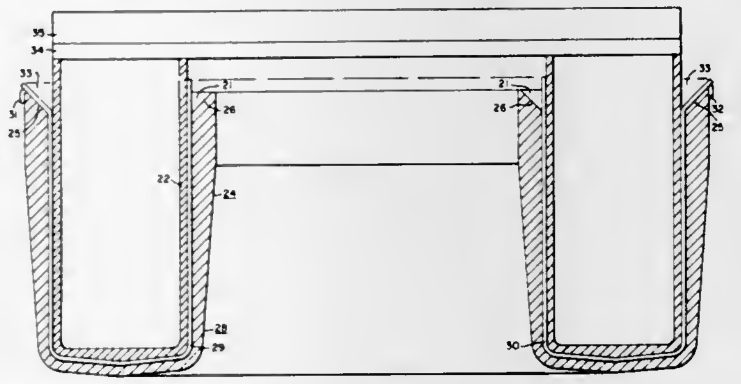


This invention relates to tenter frames and more particularly to a tenter frame provided with a plurality of roller engaging surfaces on the rail, whereby the tenter clip travels in a balanced condition while carrying a very high tensile load, or in a return cycle with no load; and with a minimum gap between adjacent rail sections.

3,529,333

PROCESS FOR PRODUCING AN ELECTRODE TIP

Serafino M. De Corso, Media, George A. Kemeny, Export, and Charles B. Wolf, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 26, 1967, Ser. No. 656,196
Int. Cl. H01j *9/00*
U.S. Cl. 29—25.14 **31 Claims**



The process includes forming a first generally annular shell, generally U-shaped in cross-section, of a material having high thermal conductivity and high electrical conductivity, forming a second generally annular shell generally U-shaped in cross-section, the dimensions of the second shell being such that the second shell may be inserted in the first shell while leaving annular spaces between the side walls of the first shell and the adjacent side walls of the second shell and also leaving an annular space between the bottom of the first shell and the bottom of the second shell, disposing at spaced intervals around the periphery of the first shell and within the first shell a plurality of radially extending generally U-shaped tubes which are to carry cooling fluid, thereafter inserting the second shell within the annular space formed between the axially extending portions of the plurality of tubes with corresponding axially extending portions of all the tubes being between the annular wall of smaller diameter of the second shell and the annular wall of smaller diameter of the first shell, and the other corresponding axially extending portions of all of the tubes being between the annular wall of larger diameter of the second shell and the annular wall of larger diameter of the first shell, thereafter filling the spaces between the tubes and the first and second shell with a molten brazing compound which solidifies and forms with the first and second shells and the tubes a unitary structure in which the first or outer shell and the second or inner shell and the tubes are essentially formed integrally with each other. The process may include the use of spacers to space the tubes at peripherally spaced intervals between adjacent walls of larger diameter of the shells.

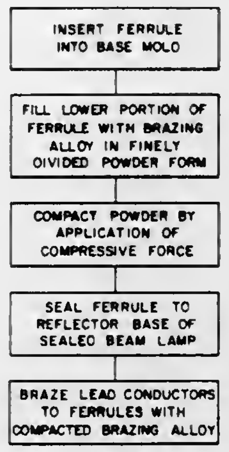
3,529,334

ASSEMBLING AND BRAZING METHOD

Isaac S. Goodman, Livingston, N.J., and Roy A. Nixon, Jr., Greenville, Ohio, assignors of one-half to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania, and one-half to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 11, 1967, Ser. No. 660,102
Int. Cl. H01j *9/32;* **B23k** *37/06*
U.S. Cl. 29—25.16 **4 Claims**

A method for brazing lead-in conductors to ferrules in sealed beam lamps which includes the steps of placing the lamp ferrule in a base mold form; filling a lower portion of the ferrule with a finally divided homogeneous

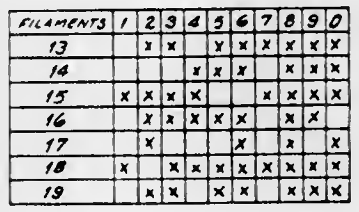
brazing composition; and applying pressure to the powder by means of an upper rod shaped die member to compact the brazing composition within the lower portion of the ferrule. One or more of the ferrules are then sealed about openings in the reflector section of a sealed beam lamp and thereafter the compacted brazing composition melted to braze inserted lead-in conductors to the lower interior portion of each ferrule.


INSERT FERRULE INTO BASE MOLD
FILL LOWER PORTION OF FERRULE WITH BRAZING ALLOY IN FINELY DIVIDED POWDER FORM
COMPACT POWDER BY APPLICATION OF COMPRESSIVE FORCE
SEAL FERRULE TO REFLECTOR BASE OF SEALED BEAM LAMP
BRAZE LEAD CONDUCTORS TO FERRULES WITH COMPACTED BRAZING ALLOY

3,529,335

METHOD OF MAKING A LIGHT BULB WITH A PLURALITY OF INDEPENDENTLY CONNECTED FILAMENTS FOR INDICATING GRAPHIC SYMBOLS

Philip C. Demarest, Pine Brook, N.J., and Karl Karlson, Wappinger Falls, N.Y., assignors, by mesne assignments, to Pinlites Inc., Fairfield, N.J., a corporation of New Jersey
Original application May 6, 1966, Ser. No. 548,193, now Patent No. 3,408,523, dated Oct. 29, 1968. Divided and this application July 16, 1968, Ser. No. 745,145
Int. Cl. H01j *9/36*
U.S. Cl. 29—25.16 **3 Claims**



FILAMENTS	1	2	3	4	5	6	7	8	9	0
13		x	x		x	x	x	x	x	x
14				x	x	x		x	x	x
15	x	x	x	x			x	x	x	x
16		x	x	x	x	x		x	x	
17		x				x		x		x
18	x		x	x	x	x	x	x	x	x
19		x	x		x	x		x	x	x

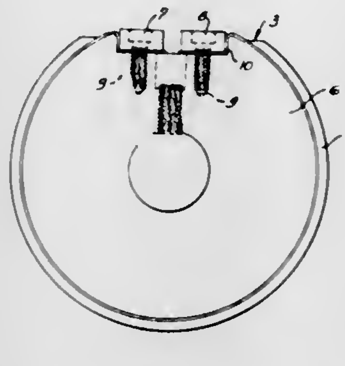
A method of manufacturing a filamentary light having a plurality of filaments, each supported at each end by a metal support post and arranged within an enclosure comprising a rear wall and faceplate, the method comprising sealing pairs of the posts to individual glass beads and, subsequently, sealing the beads in space locations in the rear wall with the post extending therethrough.

3,529,336

APPLICATOR ROLL

Richard Winkler, Burgermeister-Wink Strasse, Rengsdorf, Germany, and Kurt Dunnebier, Am Birkenhang 5451, Gladbach, Germany
Continuation-in-part of application Ser. No. 584,764, Oct. 6, 1966. This application Sept. 19, 1968, Ser. No. 760,820
Int. Cl. B21b *31/08;* **B41n** *7/00*
U.S. Cl. 29—132 **2 Claims**

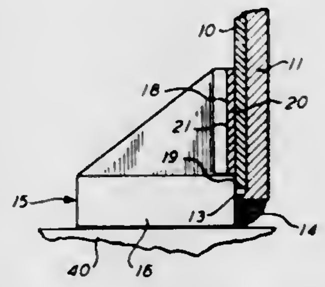
A profiled gum applicator used to apply sections of latex to envelopes, bags and other articles, consists of a plate of soft polyvinyl chloride having raised portions upon one side. A wax cloth or other suitable cloth covers the other side. The applicator is affixed to a cylinder of a gumming machine, rollers being provided to transfer an adhesive from a trough to the raised portions of the applicator, while articles are conveyed past the cylinder in adhesive transferring contact with the applicator. If the applicator is to be affixed to the cylinder by glue, a wax cloth is used to carry the plate. Otherwise a pair of clamps may be used for holding the ends of a cloth upon the cylinder. If the shaft of the cylinder is open on one side, the ends of the cloth can be joined to form a sleeve which can be slid over the cylinder and secured thereto by a clamp.



3,529,337

METHOD OF FORMING A POLE STRUCTURE

Henry C. Pfaff, Jr., Summit, N.J., assignor to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey
Original application Jan. 13, 1966, Ser. No. 520,447, now Patent No. 3,370,868, dated Feb. 27, 1968. Divided and this application Feb. 1, 1968, Ser. No. 702,231
Int. Cl. B21d *39/00;* **B23k** *31/02;* **B23p** *17/00*
U.S. Cl. 29—155 **7 Claims**



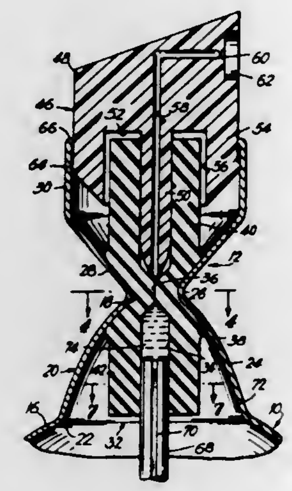
A method of forming a composite pole comprising positioning inner and outer tubes of different materials in concentric nested relationship, rotating thereon on their axes, applying pressure radially inwardly of the assembly to taper or alter the diameter thereof, thereby axially interlocking and deforming the tubes, to define a bimetallic composite pole structure of essentially unitary form, with the characteristics of the constituent tubes.

3,529,338

METHOD OF MAKING A DISPENSING VALVE FOR A PRESSURIZED CONTAINER

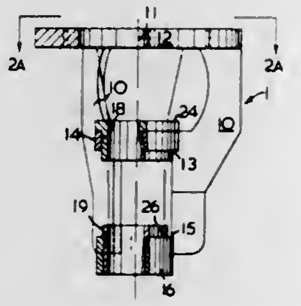
Clarence P. Clapp, Milford, Conn., assignor to Aerosol Techniques Research Center, Incorporated, Milford, Conn., a corporation of New York
Original application Aug. 24, 1967, Ser. No. 663,107, now Patent No. 3,437,246, dated Apr. 8, 1969. Divided and this application Aug. 12, 1968, Ser. No. 772,875
Int. Cl. B21d *53/00;* **B21k** *29/00;* **B23p** *15/26*
U.S. Cl. 29—157.1 **3 Claims**

A dispensing valve for a container with pressurized contents. The valve is composed of a dispenser and an elastomeric tubing. The tubing has a passageway that is open when the tubing is unstressed. The container has an opening through which the tubing extends. The opening is so shaped and dimensioned with respect to the cross-section of the tubing that the opening laterally pinches the tubing to form an intermediate part of the passageway into a sealing slit. The dispenser has a tubular stem within the upper end of the tubing and a shoulder above said end.



When the dispenser is depressed the tip of the stem penetrates the slit to permit discharge of the pressurized contents and the shoulder compresses the upper end of the tubing to establish a force biasing the dispenser to idle position.

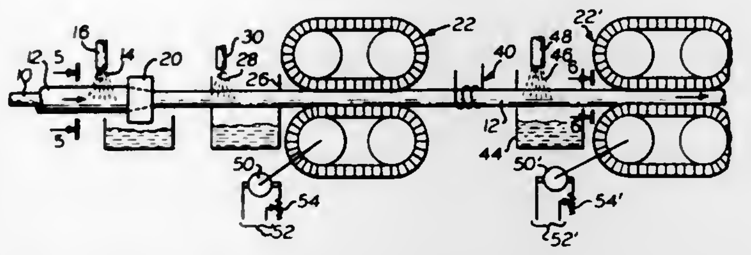
3,529,339
REPAIR JIG
Paul Taurignan, Box 222, Rouyn, Quebec, Canada
Filed Nov. 20, 1967, Ser. No. 684,339
Claims priority, application Canada, July 6, 1967, 994,777
Int. Cl. B23p *7/00, 19/00*
U.S. Cl. 29—200 **5 Claims**



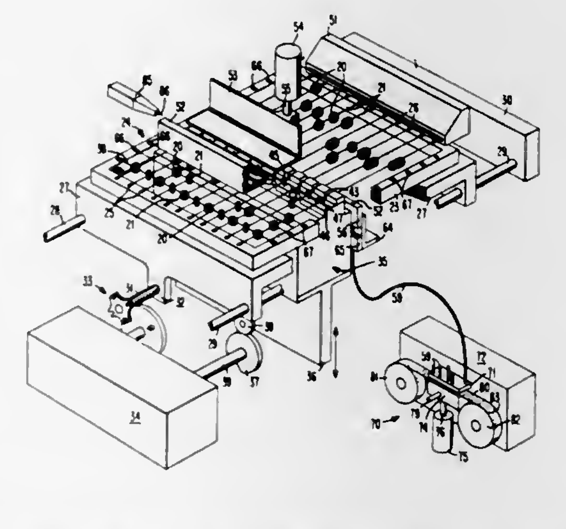
A repair jig is described for repairing in situ a damaged wheel housing on a vehicle. The damaged part is removed and a replacement housing welded in alignment with the undamaged housing. The jig includes a mounting flange which rigidly interconnects a plurality of support members, each member having a bearing surface such that the jig may receive and support the replacement housing.

3,529,340
APPARATUS FOR MAKING METALLIC SHEATHED CABLES WITH FOAM CELLUBAR POLYOLEFIN INSULATION
Fred F. Polizzano, Allendale, and William J. Brorein, Whippany, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed Aug. 13, 1968, Ser. No. 752,211
Int. Cl. H05k *13/00;* **B23p** *19/00*
U.S. Cl. 29—202.5 **13 Claims**

This specification discloses apparatus for making metallic sheathed cables with foam cellular polyolefin insulation by sinking a sheath down into contact with a foam insulated core to which the sheath is applied and then fustion bonding the foam to the sheath by heating the sheath after the sinking operation. The sheath is annealed to improve the flexibility of the cable; and the electrical characteristics of the insulation are improved by flowing the insulation into irregularities of the inner surface of the sheath. This flow is produced by having the insulation under the same compression which causes equalization of the pressure around the circumference of the cable when the insulation is heated to a flowable temperature.



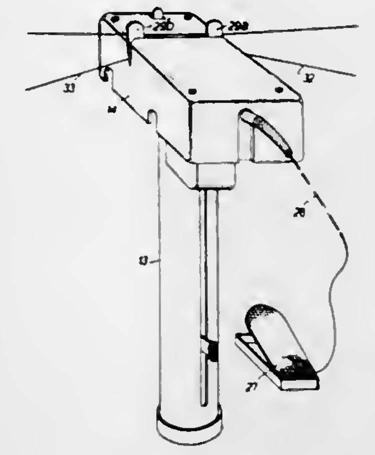
3,529,341
APPARATUS FOR WIRING PERSONALIZED CORE STORAGE ARRAYS
Gerald B. Bardo, R.D. 1, Nichols, N.Y. 13812
Filed May 8, 1968, Ser. No. 727,481
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **12 Claims**



An apparatus for wiring apertured ferrite cores into personalized core storage matrices comprising a reference bar for holding cores at select co-ordinate positions of plural parallel wires pre-strung with movable cores and mounted on a frame to form a core mat. Pneumatic jets under control of a pneumatic punched tape reader control the supply of loose cores to the reference bar for winding with an orthogonal wire.

3,529,342
APPARATUS FOR JOINING WIRES
Reginald Robert Burgess, London, John Patrick Harding, Bushey, Leonard Montague Pusey, Twickenham, and Alfred Edgar Walker, London, England, assignors to Her Majesty's Postmaster General, London, England
Filed Mar. 11, 1968, Ser. No. 716,264
Claims priority, application Great Britain, Mar. 22, 1967, 13,600/67
Int. Cl. H01r *43/04;* **B23g** *7/10*
U.S. Cl. 29—203 **12 Claims**

Machine for joining together the individual insulated wires of first and second cables to form a neat, compact and permanent electrical joint therebetween, said machine utlizing trough-shaped metallic crimping clips each having a plurality of integral tangs and deformable by the machine about the wires to be joined, the tangs piercing the insulation of the wires and making electrical contact with the wires.



3,529,343
METHOD OF PRODUCING METALLIC YARN
Clair A. Gorton, Dearborn, Mich., assignor to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Feb. 6, 1968, Ser. No. 703,279
Int. Cl. B23p *17/00*
U.S. Cl. 29—419 **2 Claims**

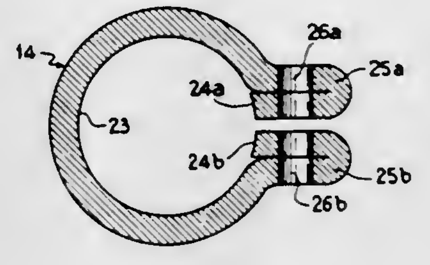
A method for producing a multifilament metallic yarn from high temperature alloys through the utilization of conventional drawing and annealing techniques. High temperature alloy wires or filaments are bundled together in a closely packed relationship and encased within an iron sheath which extends along the length of the contained wires. Simultaneously with the encasing operation, the wires are flooded with a water slurry of a finely divided inert substance selected from the group consisting of aluminum oxide, red iron oxide and boron nitride. The application of the inert substance to the filament yarn results in the coating of the individual filaments, thereby preventing metal to metal contact during a conventional drawing and annealing process. The welding together of the individual filaments during the annealing technique is thereby prevented which results in the production of a multifilament yarn possessing characteristics which make it amenable for use under high temperature conditions.

ERRATUM

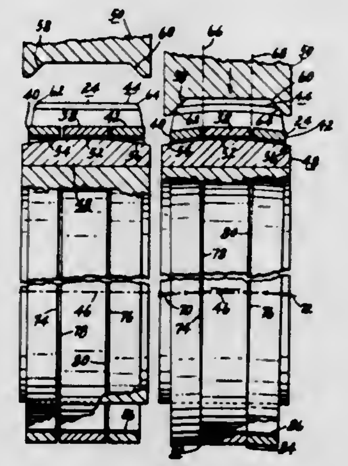
For Class 29—434 see:
Patent No. 3,529,942

3,529,344
METHOD FOR PRODUCING A SHEET METAL UNIVERSAL JOINT FORK
Alfred Pitner, Paris, France, assignor to Nadella S.A., Rueil-Malmaison, France, a French body corporate
Continuation-in-part of application Ser. No. 677,625, Oct. 24, 1967. This application Jan. 22, 1969, Ser. No. 793,090
Claims priority, application France, Jan. 30, 1968, 83,342
Int. Cl. B21d *51/00;* **B23p** *11/00;* **F16d** *3/26*
U.S. Cl. 29—438 **3 Claims**

Method for producing a universal joint fork having a hub portion for mounting on one of the shafts interconnected by the joint. The method comprises producing the fork from a sheet metal blank which is cut to form two tabs from which the two branches of the fork are formed and a portion from which the hub is formed. The branches are so formed that they have a concave face facing the axis of rotation of the fork in the region of the branch corresponding to the bore receiving the trunnion of the cross member.



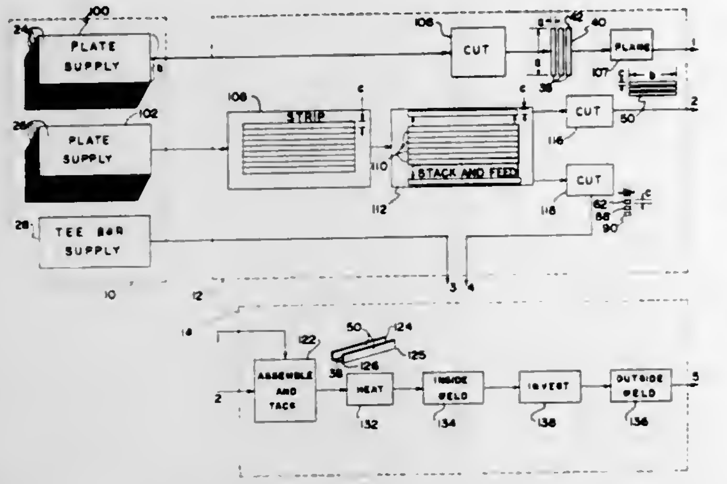
3,529,345
METHOD OF MANUFACTURING A BRAKE BAND
William F. Erickson, Centerville, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application July 11, 1966, Ser. No. 564,324, now Patent No. 3,403,757, dated Oct. 1, 1968. Divided and this application Mar. 7, 1968, Ser. No. 711,366
Int. Cl. B23p *9/00*
U.S. Cl. 29—445 **4 Claims**



The method of manufacturing a brake band of the multiple wrap type in which a tie bar is welded or otherwise connected to a substantially cylindrical metal strap having friction material on the inner surface, the strap is slit or otherwise formed into an inner ribbon and outer ribbons, and the tie bar is formed to axially tilt the outer ribbons in opposite directitons relative to the inner ribbon so that the inner ribbon edge surfaces and the adjacent outer ribbon edge surfaces are in frictional engagement.

3,529,346
METHOD FOR MAKING CHANNEL STRUCTURE
Ranaldo H. Grimoldi, James E. Clarke, Alfred F. Bastian, and Anthony J. Dougherty, Napa, Calif., assignors to Kaiser Steel Corporation, Oakland, Calif., a corporation of Nevada
Filed Mar. 27, 1967, Ser. No. 626,121
Int. Cl. B23k *31/02*
U.S. Cl. 29—475 **19 Claims**

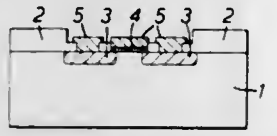
A method for making a channel structure wherein separate flat pieces are secured together to form a straight channel, wherein the straight channel is bent, wherein reinforcing members are inserted in and attached to the bent channel thereby to form a modular unit whereby due to quality control, despite bending of the assembled parts, the final product has sound physical properties throughout. These results are obtained by carefully planning, organizing and controlling the manufacture of the channel structure in a system which takes advantage of



mechanization as opposed to simple manual operations where such quality is impossible, or nearly so.

3,529,347
SEMICONDUCTOR DEVICES

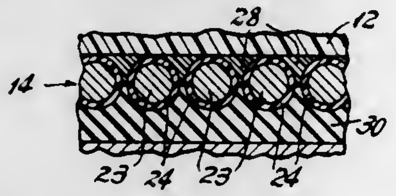
Roy Ingless, Chelmsford, Norman Arthur Beaumont King, Great Waltham, John Cecil Castle, Wokingham, and Neville Charles Barber, Braintree, England, assignors to The Marconi Company Limited, London, England, a British company
Filed Mar. 27, 1968, Ser. No. 716,612
Claims priority, application Great Britain, Mar. 29, 1967, 14,335/67
Int. Cl. H01l *11/14, 7/66*
U.S. Cl. 29—571 **8 Claims**



In silicon semiconductor devices which undergo an oxidising process as part of their manufacture, undesirable electrical instability of the device results due, it is thought, to positive ion impurities. Most of these are removed by applying a thin layer of phosphorus glass over the oxide during manufacture. At high temperatures this layer acts as a "getter" for the positive ions but itself produces some electrical instability. This invention seeks to overcome this defect by removing the layer after a short high temperature "gettering" period and keeping the temperature low enough to avoid recontamination for the rest of the manufacturing process.

3,529,348
METHOD OF MANUFACTURING ADJUSTABLE VOLTAGE AUTOTRANSFORMER

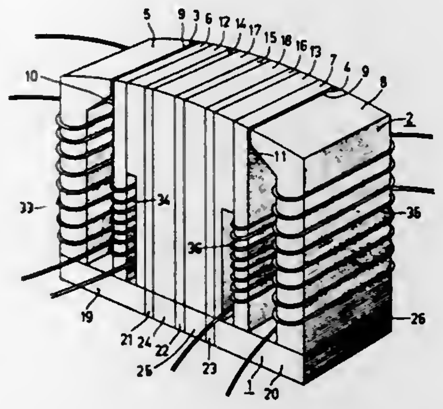
Louis A. Kucharski, Bristol, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Original application July 15, 1966, Ser. No. 565,633, now Patent No. 3,466,585, dated Sept. 9, 1969. Divided and this application Sept. 23, 1968, Ser. No. 798,224
Int. Cl. H01r *43/00*
U.S. Cl. 29—597 **5 Claims**



A method of forming a commutating surface wherein wires are covered with an insulating plastic which is forced between the wires to expose same.

3,529,349
METHOD OF MANUFACTURING MULTIPLE MAGNETIC HEADS

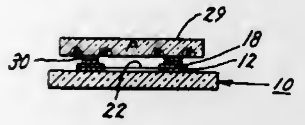
Adrianus Henricus Maria van de Schoot, Matthijs Henricus Maria Vrolijks, and Hans Peter Peloschek, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Original application Oct. 7, 1964, Ser. No. 402,231, now abandoned. This application Jan. 30, 1968, Ser. No. 760,740
Claims priority, application Netherlands, Oct. 9, 1963, 299,035
Int. Cl. H01f *7/00*
U.S. Cl. 29—603 **4 Claims**



A method of forming a multiple head employing a coating of layers of pulverulent enamel suspension on component plates of the head shield for subsequent bonding by heat treatment. The suspension preferably contains material corresponding to the plate coated.

3,529,350
THIN FILM RESISTOR-CONDUCTOR SYSTEM EMPLOYING β-TUNGSTEN RESISTOR FILMS

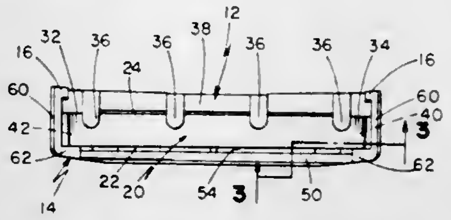
John R. Rairden III, Niskayuna, N.Y., assignor to General Electric Company, a corporation of New York
Continuation-in-part of applications Ser. No. 675,990, Oct. 17, 1967, and Ser. No. 738,563, June 20, 1968. This application Dec. 9, 1968, Ser. No. 782,232
Int. Cl. H05k *3/06, 3/30*
U.S. Cl. 29—626 **11 Claims**



A resistor-conductor system suitable for hybrid microcircuits is formed by the sequential deposition of a β-tungsten resistor film and a metallic film or aluminum, copper, gold, tin or nickel atop a dielectric substrate. Preferably a β-tungsten resistor film is formed by reactive evaporation of tungsten in low pressure, e.g. 5×10^{-4} torr, atmosphere of oxygen, nitrogen, ammonia, methane or argon while the metallic film can be formed by any conventional film forming technique such as vacuum evaporation or plating. Subsequent to the depositions, the metallic film is photoetched, e.g. employing a ferric chloride solution for copper, nickel, and tin films, whereupon the exposed β-tungsten film is subsequently etched with hydrogen peroxide. A semiconductor chip then can be secured to the resistor-conductor network by ultrasonic bonding for aluminum films or by solder reflow techniques for solderable metallic films.

3,529,351
SAFETY RAZOR

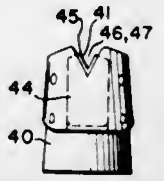
Ben Howes Alexander, Brookline, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 675,945, Oct. 17, 1967. This application June 10, 1968, Ser. No. 735,818
Int. Cl. B26b *21/26*
U.S. Cl. 30—40.1 **11 Claims**



A safety razor magazine that houses a stainless steel razor blade band has a flat shaving platform that terminates at each end in a sharp curve of 0.062 inch radius over which the blade passes. The blade is bent through 165° about these curved end surfaces. A guard bar, secured to and in front of the shaving platform, defines a shaving geometry relative to the sharpened edge of the razor blade. The magazine cover has side walls that define, with the curved end surfaces of the platform, a channel at each end of the shaving platform. Formed integrally with each side walls is a projection that is positioned forwardly of an spaced from the platform and forms an extension of the guard bar. Each projection overlies the channels at each end of the shaving platform. In one embodiment each projection overlies the platform 0.009 inch and extends 0.010 inch above the level of the platform. In another embodiment the vertical inner wall of each projection is aligned with the inner edge of the side wall and extend 0.014 inch above the level of the platform.

3,529,352
THREAD CUTTING APPARATUS

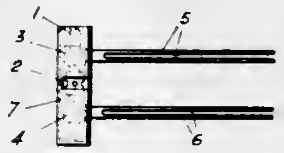
Steven N. Pantages, 228 Audubon Ave., New York, N.Y. 10033
Filed Oct. 24, 1966, Ser. No. 589,057
Int. Cl. B26b *27/00*
U.S. Cl. 30—298 **1 Claim**



A thimble or other finger mount carrying a cutting blade for cutting thread. The cutting edge is shielded by a bracket or by the finger mount itself to prevent injury to a wearer.

3,529,353
ORTHODONTIC DEVICE

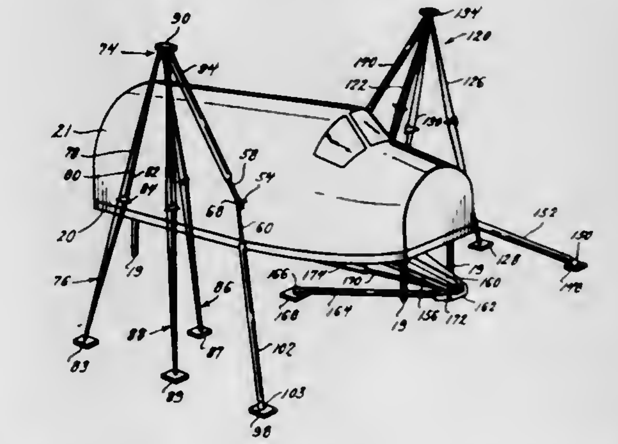
Roberto Schiaroli, Piazza Palermo 9/5, Genoa, Italy
Filed Nov. 19, 1968, Ser. No. 776,889
Claims priority, application Italy, Nov. 23, 1967, 7,448A/67
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **5 Claims**



Orthodontic screw for correction of one or more incisor diastems and other minor dental abnormalities, substantially comprising a rod having a right-hand threaded portion and left-hand threaded opposite portion, each portion having threaded thereon a small slider carrying a radially extending pair of steel wires, said rod and sliders being received (rotatably the former and axially slidably the latter) in a tubular housing having on one side a longitudinal slot through which said pairs of wires project radially; the latter will be suitably shaped to effect an anchorage on the teeth whose position is to be corrected. The assembly is, as usual, embedded in an orthodontic plate and is adjustable by suitable actuation of said rod.

3,529,354
CONTROL SYSTEM FOR PLATFORM HAVING SIX DEGREES OF FREEDOM

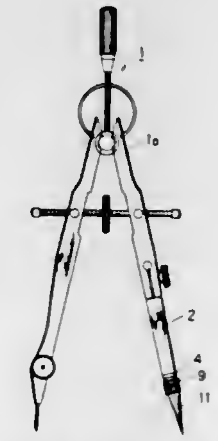
Donzil D. Roberts, Florissant, and Chung L. Feng, St. Louis, Mo., assignors to Conductron Corporation, Charles, Mo., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,252
Int. Cl. G09b *9/08*
U.S. Cl. 35—12 **23 Claims**



The platform of a motion base is supported by three elements which act upon a point adjacent one side of that platform and by three further elements which act upon a second point adjacent the opposite side of that platform; and each of those points can be moved in the X, Y and Z directions, and that platform can be rotated about an axis extending between those points, to provide six degrees of motion for that platform.

3,529,355
COMPASSES

Mitsuo Kishizuka, Urawa, Japan, assignor to Kishizuka Kikai Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Nov. 4, 1968, Ser. No. 773,246
Claims priority, application Japan, Nov. 17, 1967, 42/96,421
Int. Cl. B43l *9/00*
U.S. Cl. 33—27 **3 Claims**



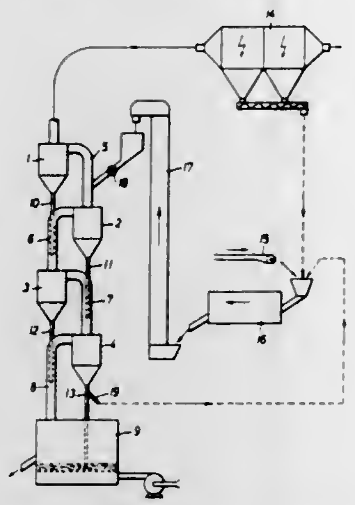
The invention is directed to the structure of a pair of compasses having two spreadable legs joined at their upper ends, with one leg carrying the usual pin point but having the other leg provided with an extensible pencil device which is capable of feeding and adequately retaining therein pencil leads of extremely small diameters.

ERRATUM

For Class 33—174 see:
Patent No. 3,529,361

3,529,356
METHOD OF CONTINUOUSLY DEHYDRATING ALUMINUM OXIDE HYDRATES

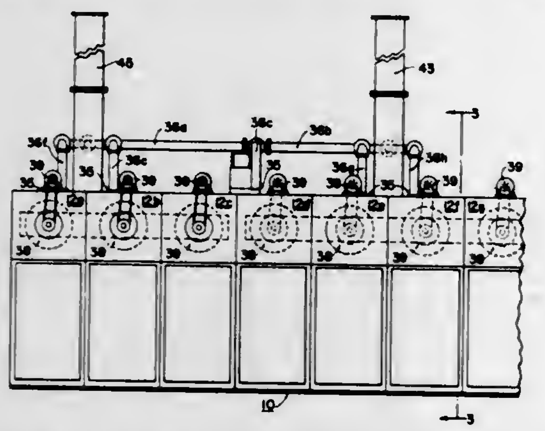
Gunter Diettrich, Cologne-Braunsfeld, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany, a German corporation
Filed Sept. 27, 1968, Ser. No. 763,190
Claims priority, application Germany, Oct. 6, 1967, 1,592,127
Int. Cl. F26b *3/00*
U.S. Cl. 34—9 **2 Claims**



Aluminum oxide hydrates are continuously dehydrated in suspension in a stream of hot gases passing upwardly through a dehydrator comprising a plurality of cyclone separators. A portion of hot alumina is withdrawn from the lowermost cyclone separator, is mixed with the moist raw material and, if desired, also with dust separated from the gases leaving the upper end of the dehydrator, and is again introduced into the upper end of the dehydrator to be subjected to the hot gases therein.

3,529,357
METHOD AND APPARATUS FOR HIGH-SPEED DRYING OF GYPSUM BOARD

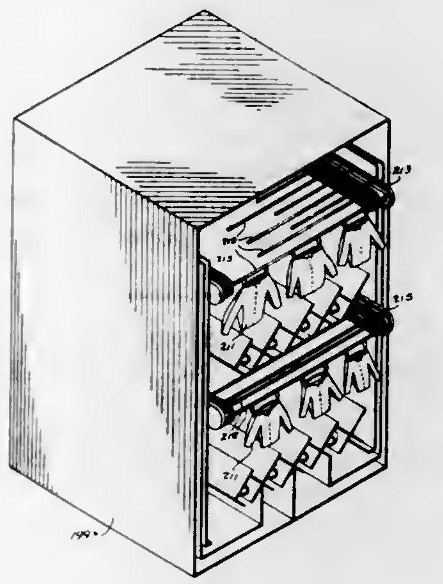
Henry W. Schuette and Richard N. Hune, Portland, Oreg., assignors to Moore Dry Kiln Company of Oregon, North Portland, Oreg., a corporation of Oregon
Filed Sept. 20, 1968, Ser. No. 761,220
Int. Cl. F23b *3/04, 9/00*
U.S. Cl. 34—23 **6 Claims**



A compact, multi-tiered continuous-type gypsum drier comprising an insulated multi-zone drying chamber in which a heated air drying medium is directed through a plurality of staggered jet nozzles at high temperature (300–1,000° F.) and high velocity (2,500–10,000 feet per minute) to impinge normally against the respective major surfaces of a moving gypsum board strip. After impingement on the gypsum strip the drying medium is swept laterally to the direction of the movement of the gypsum material and then recirculated in relatively short closed loops which lie in perpendicular planes relative to the longitudinal direction of strip travel. The jet nozzles, though spaced over the width and length of the gypsum strip passing through the chamber, are clustered towards the center band of the strip so as to prevent overdrying of the edges of the gypsum board. Uniform velocity and temperature at the point of impingement of the drying medium on the gypsum strip is maintained over the width thereof by lateral tapering of the jet nozzle air boxes and by alternating the direction of lateral circulation flow in successive drier zones.

3,529,358
PROCEDURE FOR HEAT TREATMENT OF MATERIALS

Aubrey C. Robinson, La Grange, Ga., assignor to C. Terrot Sohne, Stuttgart-Bad Cannstatt, Germany, a firm
Filed June 19, 1969, Ser. No. 834,727
Int. Cl. F26b *3/24, 3/34*
U.S. Cl. 34—26 **3 Claims**

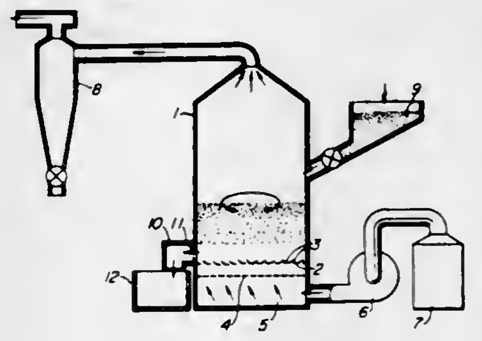


A process for overcoming the erroneous and inefficient heat treatment of materials such as in the deferred curing of textile garments and pieces of goods, metal, wooden, lacquered surfaces, ceramics, and other objects or materials, where it is known that the product head of materials undergoing heat treatment should be brought up to the last level equal to that of the environmental temperature level which is used to impose the head treatment upon said material without uncontrolled underheating and/or overheating said material in the process, and where the application of such product head should be made in a gradual manner in order to hold peak heat levels to the minimum level required for given results.

3,529,359
FLUIDIZED DRYING APPARATUS

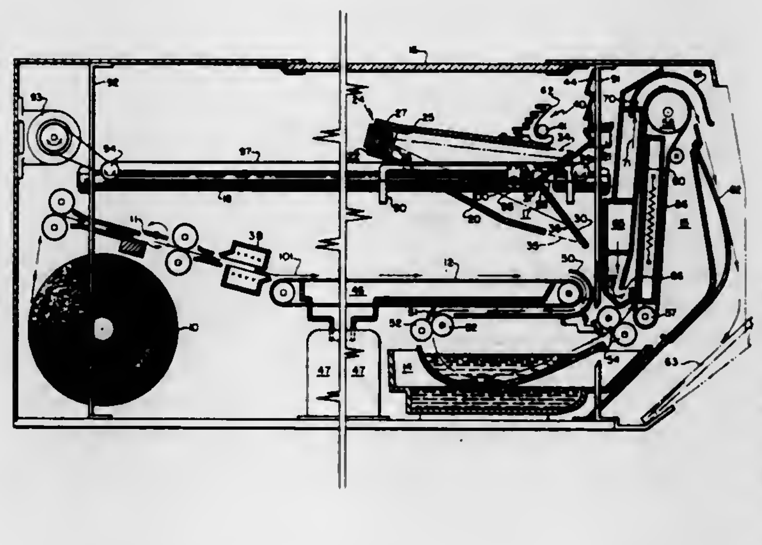
Masaichi Fukuyo, Haibara-gun, Shizuoka-ken, Japan, assignor to Kabushiki Kaisha Okawara Seisakusho, Shizuoka-ken, Japan, a corporation of Japan
Filed Aug. 30, 1968, Ser. No. 756,505
Claims priority, application Japan, May 11, 1968, 43/31,523
Int. Cl. F26b *17/00*
U.S. Cl. 34—57 **1 Claim**

A fluidized drying apparatus which is capable of uniformly drying granular materials evenly in a short period of time and wherein a fluidizing chamber is so shaped as to facilitate ease of swirling of a drier gas therein and a number of gas passage holes are perforated through the bottom wall of said fluidizing chamber at an angle thereto so as to cause an ascending swirl of the drier gas in said chamber.



3,529,360
REPROGRAPHIC OUTPUT FEED SYSTEM

Richard B. Kosten, Bayside, and Sarantos Moustafellos, Forest Hills, N.Y., assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Nov. 4, 1968, Ser. No. 772,916
Int. Cl. F26b *13/08*
U.S. Cl. 34—149 **9 Claims**

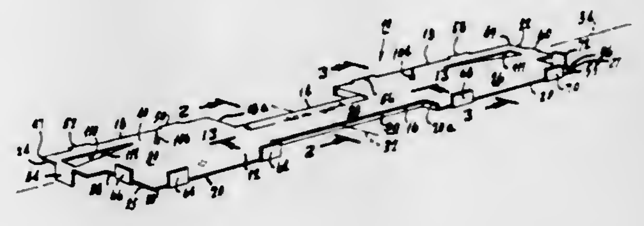


An output copy feed system for reprographic apparatus is described in which air flow is used to control the movement of copy paper over a folded output path to a stacking tray.

3,529,361
TEMPLATE FOR MAKING A CARPENTER'S TRESTLE

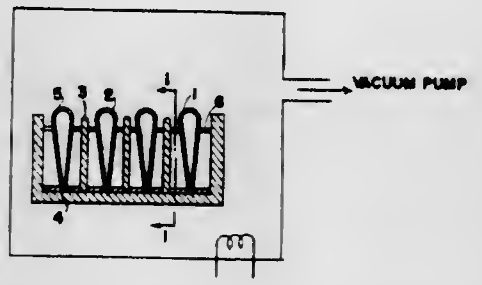
Howard Parsons, Jr., 157 Old New York Road, Port Republic, N.J. 08241
Filed Aug. 2, 1968, Ser. No. 749,756
Int. Cl. G01b *3/14*
U.S. Cl. 33—174 **2 Claims**

A template for marking mortise grooves in a bench beam for receiving leg boards for a carpenter's trestle comprises an elongated plate formed with a pair of rectangular cut-outs of different depths in opposite sides, respectively, of the plate, intermediate opposite ends thereof. Separate guide flanges are associated with each rectangular cut-out for positioning the template on the bench beam. The plate is formed with another cut-out that cooperates with some of the guide flanges for marking the leg boards for a cut to provide a wedge-lock fit for the leg boards in bench beam. A pair of bracket-shaped cutting flanges, defining the rectangular cut-outs, extend from opposite faces, respectively, of the plate to mark the bench beam with initial cuts.



3,529,362
INSERT FOR FREEZE-DRYING APPARATUS

Hanns Ellenberg, Rosrath, Germany, assignor to Leybold-Heraeus-Verwaltung GmbH., Cologne-Bayental, Germany
Filed Mar. 21, 1968, Ser. No. 715,035
Claims priority, application Germany, Mar. 21, 1967, L 56,065
Int. Cl. F26b *13/30, 25/18*
U.S. Cl. 34—237 **7 Claims**



In a container for use in bulk material freeze-drying apparatus, a supporting means having a wedge-shaped cross section is provided for supporting the material to be dried. The supporting means is water-vapor-permeable and extends along the length of the container, thereby forming a channel for drawing off water vapor from the material being dried. The supporting means is so positioned in the container that the narrower end of its wedge-shaped cross section lies along the bottom of the container and the wider end reaches at least to the top of the surface of the material being dried. By this construction water vapor can easily and advantageously be extracted from the material being dried.

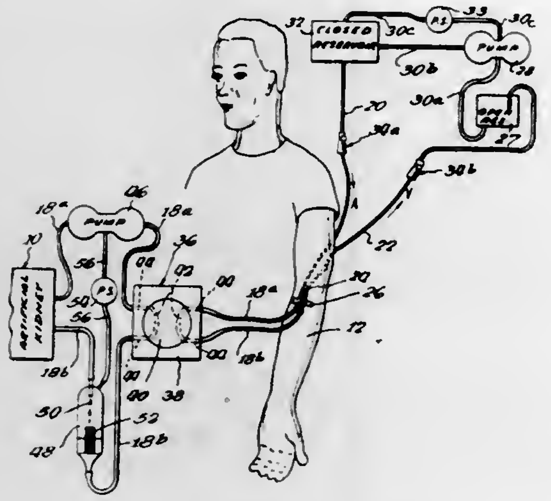
ERRATUM

For Class 35—12 see:
Patent No. 3,529,354

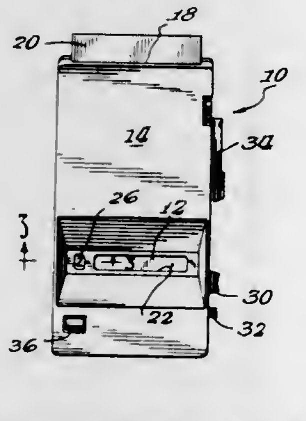
3,529,363
ARTIFICIAL KIDNEY TRAINING DEVICE

Antonio A. Versaci, 25 Wildwood Road, Springfield, Ill. 62704
Filed Nov. 26, 1968, Ser. No. 779,111
Int. Cl. G09b *23/28*
U.S. Cl. 35—17 **12 Claims**

A teaching device for use with an artificial kidney or the like, in which the device includes an artificial body member having conduit means which simulate an artery and a vein for receiving a blood simulating liquid. A pump is connected to the simulated artery and vein for imparting pressure to the liquid to represent arterial and venous flow of the liquid. Connections are made between the artery and vein and the artificial kidney. A throttle valve is connected in each of the artery and the vein conduits to represent malfunctions in the arterial or venous flow of liquid. A shunt means is provided to selectively direct the flow of liquid back toward the body member to disconnect the artificial kidney, and direct the flow of liquid back toward the artificial kidney to permit the artificial kidney to remain operative.



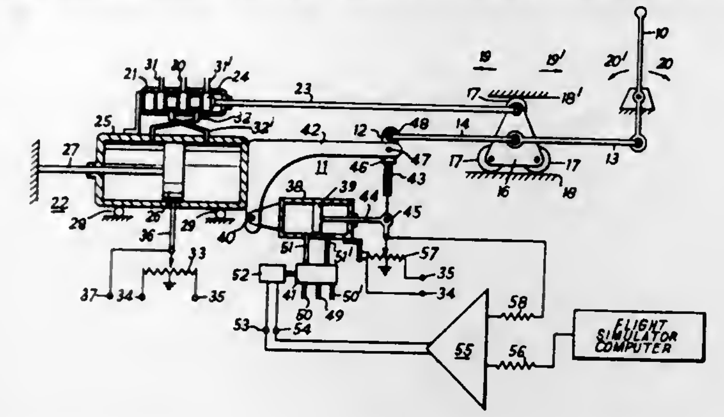
3,529,364
FLASH RECOGNITION TRAINING SYSTEM
Steven A. Warren, 480 Saunders Road,
Lake Forest, Ill. 60045
Filed Jan. 22, 1968, Ser. No. 699,633
Int. Cl. G09b *17/04*
U.S. Cl. 35—35 **4 Claims**



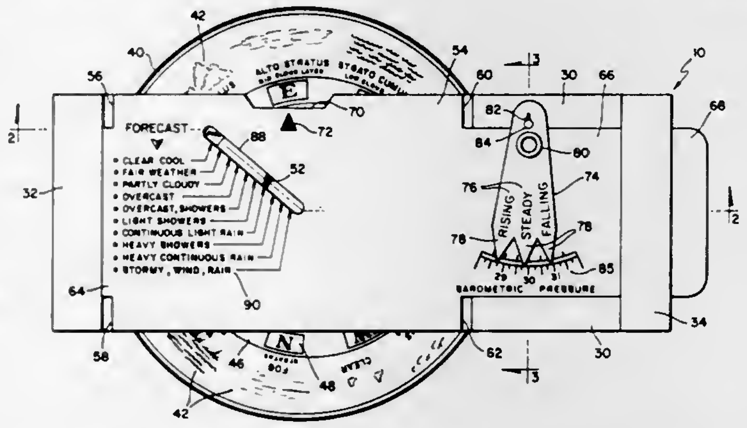
A flash recognition training system including a near-point tachistoscope, viewing sheets with symbols printed thereon and control sheets with corresponding symbols printed thereon. The tachistoscope includes a marking device for marking a viewing sheet in response to a determination by the operator as to whether he believes a symbol on the viewing sheet is identical to a corresponding symbol on the control sheet.

3,529,365
GROUND BASED FLIGHT TRAINING OR SIMULATING APPARATUS
Meville Leslie Shelley, Haywards Heath, England, assignor to Communications Patents Limited
Filed Feb. 13, 1967, Ser. No. 615,777
Claims priority, application Great Britain, Mar. 14, 1966, 11,099/66
Int. Cl. G09b *9/08*
U.S. Cl. 35—12 **10 Claims**

In ground-based flight simulating apparatus, this invention provides means for reproducing the "feel" of the simulated aircraft flight control column by generating a force acting thereon corresponding to the simulated flight conditions. If such force is generated by a single hydraulic jack, which must provide the force in any position of the control column, a large and sluggish force generator results.

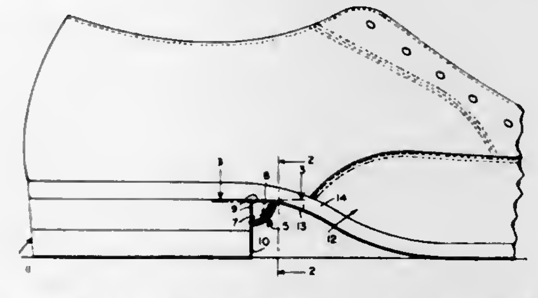


3,529,366
DEVICE FOR CORRELATING THREE INPUT VARIABLES
Le Roy V. Alwin, Box 126, Mound, Minn. 55364
Filed Sept. 5, 1967, Ser. No. 665,468
Int. Cl. G09b *1/22*
U.S. Cl. 35—74 **7 Claims**



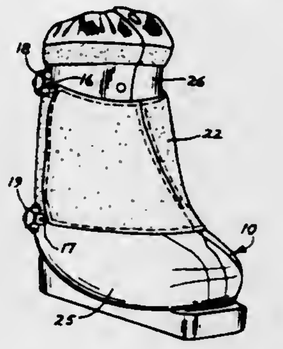
A slidable strip is rectilinearly positioned in accordance with barometric pressure. A relatively small disc is rotatively positioned in accordance with the wind direction, and a larger disc is rotatively positioned in accordance with the existing cloud type. The smaller disc is mounted on the larger disc for rotation about an axis offset from the axis about which the larger disc rotates. A spiral curve on the smaller disc is viewed through an elongated slot in the strip which provides a correlated output indicative of the weather to be expected.

3,529,367
LACE HOLDER FOR SHOE
Theodore G. Brown, 4901 Royal Villa Drive, Sacramento, Calif. 95841
Filed Dec. 26, 1968, Ser. No. 787,153
Int. Cl. A43b
U.S. Cl. 36—1 **6 Claims**



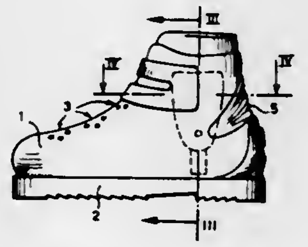
A moisture-proof holder for storing a spare shoe lace and which is detachably secured to an exterior portion of a shoe in a normally concealed position, so that the shoe lace is readily available for use in an emergency, when needed.

3,529,368
RETAINING DEVICE AND PAD FOR SKI BOOTS
Thomas F. Canfield, Minneapolis, Minn., assignor to Sports Technology, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 10, 1969, Ser. No. 805,613
Int. Cl. A43b *5/04, 7/14*
U.S. Cl. 36—2.5 **9 Claims**



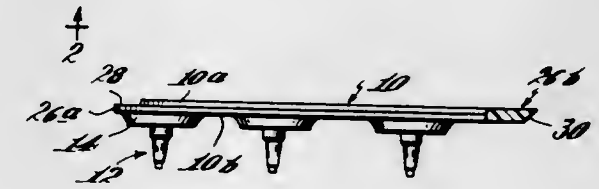
A foot retaining device for use with rigid shell ski boots comprising a pad across the forward portion of the lower leg and the upper instep of the foot, and a strap for acting against the pad to force the foot rearwardly into the boot to retain it in place in the boot.

3,529,369
SPORTS BOOTS SUCH AS SKI BOOTS
Vittorio Drago, Turin, Italy, assignor to Superga S.p.A., Turin, Italy, an Italian joint-stock company
Filed July 24, 1968, Ser. No. 747,214
Claims priority, application Italy, Feb. 21, 1968, 50,608A/68
Int. Cl. A43b
U.S. Cl. 36—2.5 **8 Claims**



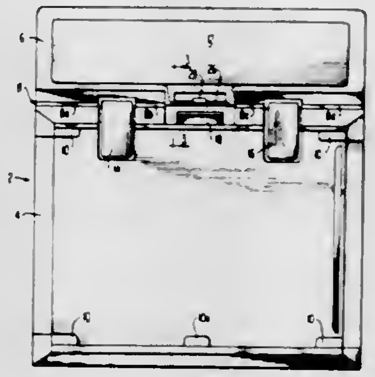
The invention provides a brace which can be fitted removably between the sole of the boot and an inner shoe. The brace has upstanding arms which embraces a wearer's ankles to prevent sideways leg movement while permitting longitudinal leg movement.

3,529,370
CLEATED ANCHOR PLATE
Louis E. Bernier, Rockland, and James P. Giblin, Milton, Mass., assignors to E. T. Wright & Co., Inc., Rockland, Mass., a corporation of Massachusetts
Filed Nov. 8, 1968, Ser. No. 774,286
Int. Cl. A43b *13/26*
U.S. Cl. 36—59 **9 Claims**



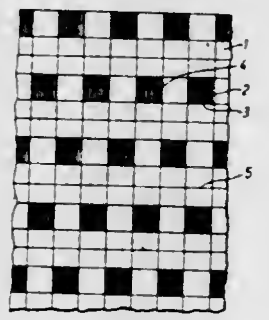
An anchor plate for incorporation into the bottom of a golf shoe, said plate being comprised of a material adapted to be conformed to the contour of the bottom of the lasted upper and having fixed to one surface thereof a plurality of cleats.

3,529,371
LATCHING MECHANISM FOR PLASTIC DESK CALENDAR STAND
Howard L. Moore, Cochranton, Pa. 16314
Filed Oct. 13, 1969, Ser. No. 865,898
Int. Cl. G09d
U.S. Cl. 40—120 **4 Claims**



A desk calendar stand of molded plastic is formed of a base plate and a back plate hinged together and pivotable between a flat condition wherein the plates are generally co-planar to an erected position wherein the plates are disposed at an angle to one another. Latching mechanism snaps into engagement when the back plate is erected.

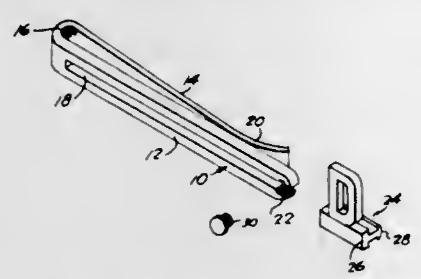
3,529,372
COMPARTMENTED ARTICLE AND METHOD OF MAKING THE SAME
Mathias Kutsch, In der Stesse 4, Attendorn, Westphalia, Germany
Filed Nov. 28, 1967, Ser. No. 686,233
Claims priority, application Germany, Dec. 1, 1966, 1,299,851
Int. Cl. G09f *1/10*
U.S. Cl. 40—124.2 **11 Claims**



A compartmented article is made by folding a web of sheet material in successively opposite direction along a plurality of spaced substantially parallel first lines to thereby provide elongated substantially parallel pockets each of which has an open side and is constituted by overlapping sheet material panels. Thereupon the overlapping panels are secured to one another along a plurality of spaced substantially parallel second lines which are inclined to the first lines and the pockets are thereby subdivided into separate compartments.

3,529,373
MULTI-DESIGN JEWELRY
Helmer Aaskov, 8053 S. Orange Ave., Fresno, Calif. 93725
Filed July 12, 1968, Ser. No. 750,420
Int. Cl. G09f *7/02*
U.S. Cl. 40—140 **8 Claims**

An ornamental article of jewelry comprising a first member having slot means therein for receiving ornamental pieces in the form of initials or decorative design, which pieces form a friction fit with the first member, and locking means for securing the pieces in the slot means, and a second member to which the first member is secured.



3,529,374
CONNECTING AND HINGE MEANS FOR PHOTO FRAMES

Maurice Spertus, Highland Park, Ill., assignor to Intercraft Industries Corporation, a corporation of Delaware
Filed Dec. 27, 1968, Ser. No. 787,541
Int. Cl. G09f *1/12*
U.S. Cl. 40—152 **10 Claims**

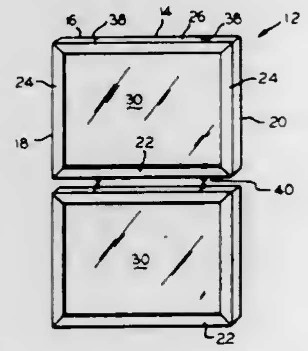
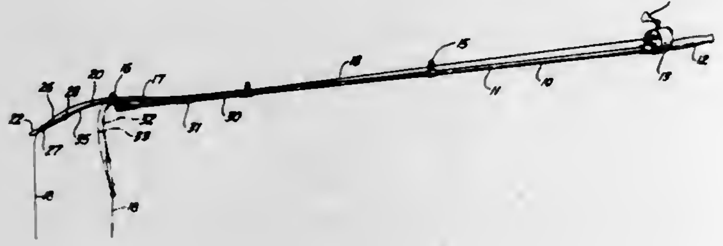


Photo frames made of molding strips of metal or the like are formed with aligned slits or slots in the rear wall segment of parallelly adjoining sides. Connecting members of various types having enlarged end portions with intermediate connecting portions of reduced-diameter are fitted into the slits with the enlarged end portions bearing against the inner closed ends of the slits. The connecting members are retained in position by other members of the framed photos and said connecting members serve to join together a plurality of framed photographs for hanging display purposes or serve as hinge connectors for two or more of said framed photos.

3,529,375
ULTRA-SENSITIVE FISH-BITE INDICATOR

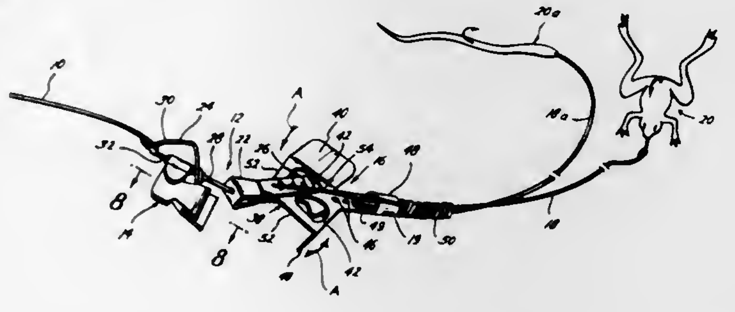
Arthur R. Dey, 652 Lake Angelus Road, Pontiac, Mich. 48055
Filed May 17, 1968, Ser. No. 730,154
Int. Cl. A01k *97/12*
U.S. Cl. 43—17 **2 Claims**



A fish-bite indicator for a fishing rod including a flexible fine drawn spring-tempered rust-proof wire having an annular cross-sectional modulus substantially less than the cross-sectional modulus of the tip of the rod and fastened to the tip end of the rod in cantilever fashion, the wire having an eyelet at its free end for passage of the fishing line therethrough and a brightly colored indicator member fastened to the wire adjacent said eyelet. The cross-sectional modulus and length of the wire is predetermined to support only an ultra lightweight bait and operable to flex in response to the slightest movement of the bait. The wire is also capable of being bent intermediately about its length in inverted U outline again and again from the pull of a fighting fish without breaking or taking a permanent set, the greater sectional modulus of said fishing rod supporting and carrying the weight and pull of the fish for playing and landing purposes.

3,529,376
ACTIVATOR FOR FISHING LURES

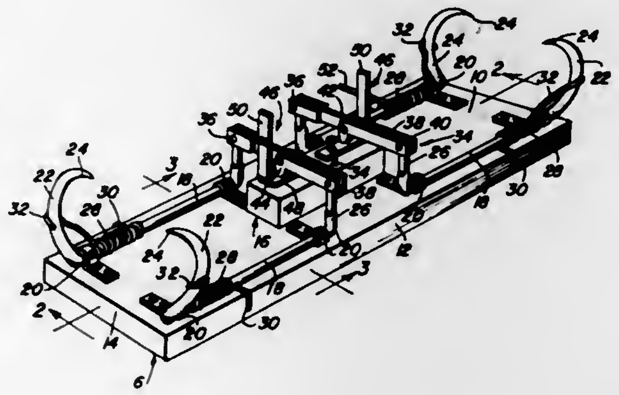
Joseph Parmeson, 4821 Linden, Bellaire, Tex. 77401
Filed July 19, 1968, Ser. No. 746,144
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.06 **16 Claims**



An activator to be utilized by fishermen to give lifelike action to fishing lures as they are moved through the water and is comprised essentially of a turning blade assembly which is attached to one side of a swivel. This assembly imparts movement to the leader attached also to the swivel or to the activator itself, which in turn rotates the lure. A sabilizer blade assembly is connected to the other segment of the swivel to prevent rotation of the line leading to the fishing rod. Various designs and arrangements are employed for the activator and its various parts.

3,529,377
ANIMAL TRAP

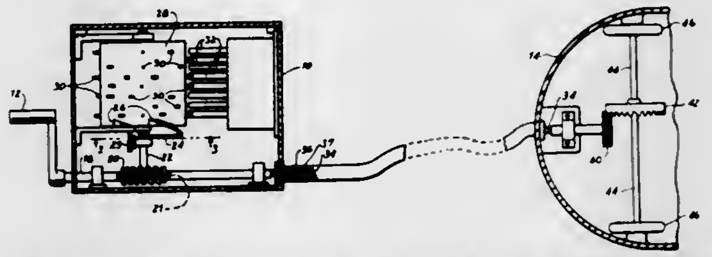
Melvin D. Anderson, Ontario, Oreg. (1547 6th St., NW., Salem, Oreg. 97304)
Filed Dec. 13, 1968, Ser. No. 783,475
Int. Cl. A01m *23/26*
U.S. Cl. 43—91 **8 Claims**



A portable base panel is provided at its ends with spring-loaded jaw traps either one or both of which function to catch gophers and similar burrowing rodents. Both traps are alike and are supported at the respective ends of the panel. Each trap comprises arcuate jaws which grapple the entrapped animal. Sensitive animal actuated triggers carry the bait and are novelly constructed to trip toggle-type linkage means which, in turn, releases the spring-loaded jaws.

3,529,378
REMOTELY DRIVEN TOY

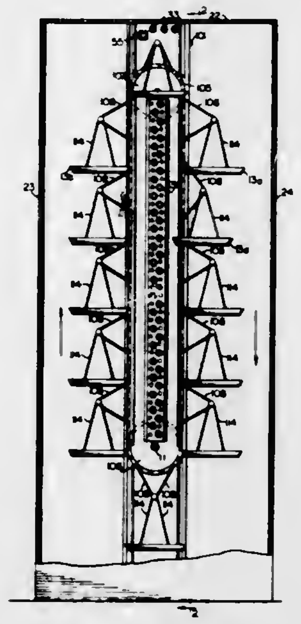
Benjamin Kinberg, 425 Riverside Drive, New York, N.Y. 10025
Filed Jan. 31, 1968, Ser. No. 701,929
Int. Cl. A63h *5/00*
U.S. Cl. 46—118 **3 Claims**



A musical toy consists of a control box within which is positioned a music box. A rotatable drive mechanism drives the music box when the drive mechanism is operating in one direction only. The drive mechanism is coupled through an extended flexible cable to a toy figure energized thereby.

3,529,379
PLANT GROWTH APPARATUS

Richard Louis Ware, 2108 Middlefork Road, Northfield, Ill. 60093
Filed Aug. 8, 1968, Ser. No. 751,207
Int. Cl. A01g *9/14*
U.S. Cl. 47—17 **22 Claims**

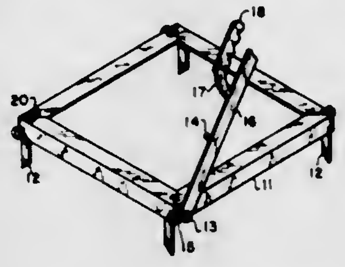


A plant growth apparatus in which plants are transported in a generally vertical direction.

3,529,380
LAWN AND FLOWER BED EDGING DEVICE

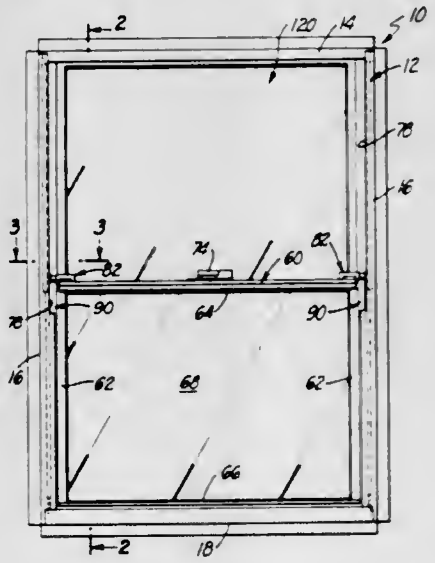
Edward Carmichael, 314 Shrine, San Antonio, Tex. 78221
Filed Feb. 23, 1968, Ser. No. 707,722
Int. Cl. B26d *1/20;* **A01g** *3/06*
U.S. Cl. 47—33 **6 Claims**

A combined edging and trimming device adapted to multiple configurations designed for placing around trees, flower beds, or other areas desired to be kept free of grass. The principal components are a cutting bar to which is attached a multiplicity of cutter blade pivot points, a detachable cutter blade is placed at the selected point and depressed to trim or edge any grass projecting over the cutter bar in the selected area.



3,529,381
FENESTRATION DEVICE INCORPORATING LINEARLY MOVABLE AND TILTABLE SASH

Abraham Grossman, Northridge, Calif., assignor, by direct and mesne assignments, to Panascope, Inc., Santa Monica, Calif., a corporation of California
Filed Nov. 25, 1968, Ser. No. 778,670
Int. Cl. E05d *15/22*
U.S. Cl. 49—183 **8 Claims**

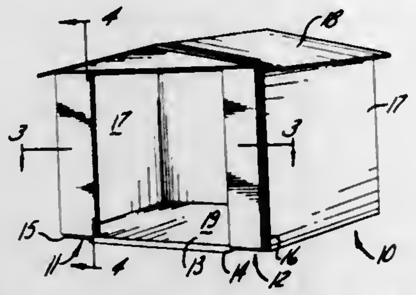


A fenestration device, such as a vertical-hung window, has a perimetrical frame which mounts at least one movable sash and an associated sash for closing the frame opening. The frame provides retention and releasing stations whereby when the movable sash is moved into the releasing station, the movable sash may be pivoted outwardly from the frame. The movable sash is carried by carriage members movable in elongated tracks in the frame and pivot means mutually interconnect adjacent extremities of the carriage means and the movable sash to permit free outward movement of the movable sash when the movable sash is located in the releasing station. However, when the movable sash is located at the retention station, adjacent portions of the frame prevent outward movement of the movable sash.

3,529,382
WIDE OPENING SLIDING DOOR CONSTRUCTION FOR A LAWN BUILDING OR THE LIKE

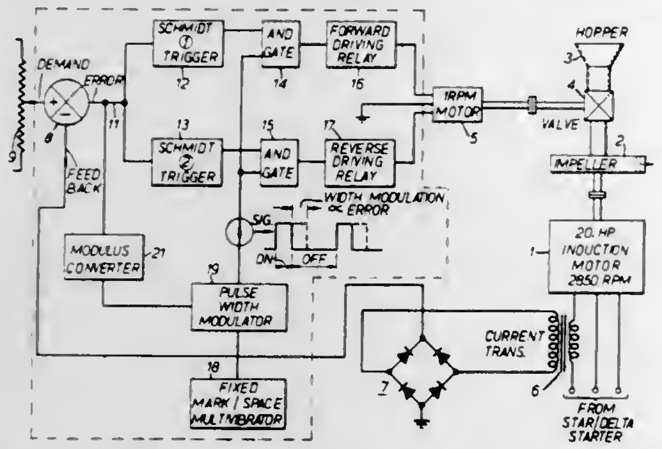
Michael E. Salvarola, Baltimore, Md., assignor to Eastern Products Corporation, Baltimore, Md., a corporation of Maryland
Filed Nov. 15, 1968, Ser. No. 776,019
Int. Cl. E05d *13/02;* **E06b** *3/42*
U.S. Cl. 49—411 **4 Claims**

A door construction for a lawn building housing lawn and garden equipment in which pairs of sliding doors are movable between an enclosing position in which the doors cover the opening and a storage position in which the doors are stacked in pairs on opposite sides of the opening to provide an extra wide access dimension. Special means are provided for holding the doors securely against outward swinging at all points in their path of sliding movement from fully open to fully closed position.



3,529,383
SHOT BLASTING ON/OFF SERVO CONTROL SYSTEM

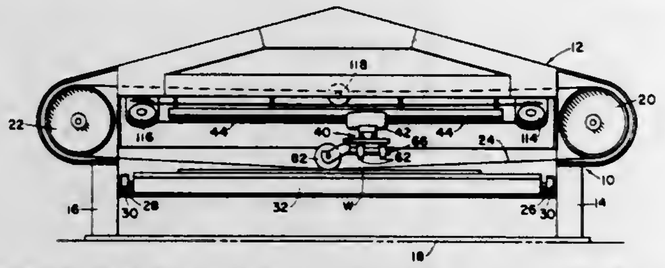
Walter Pascoe Berryman, Bedford, and Ali Anser Shumsheruddin, Glenfield, Leicester, England, assignors to Tilghman Wheelabrator Limited, Broadheath, Altrincham, Cheshire, England
Filed May 22, 1967, Ser. No. 640,141
Claims priority, application Great Britain, May 20, 1966, 22,586/66; Feb. 21, 1967, 8,118/67
Int. Cl. B24c *3/00*
U.S. Cl. 51—9 **8 Claims**



This invention is a central system for controlling equipment such as a shot blaster in which there is some delay between initiation of a control and the result of the control in the operation of the equipment. The control signals are gated by a square-wave error signal in which control is applied during the marks while the spaces provide intervals for the control to take effect. The mark to space ratio can be varied in accordance with the magnitude of the error signal. Also a feature of the invention is an arrangement for using a single controller in a multiplex system for controlling two or more shot blasters in control cycles.

3,529,384
SANDING MACHINE

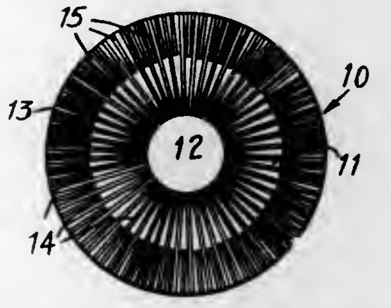
Francis M. Owrey, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Apr. 21, 1967, Ser. No. 632,732
Int. Cl. B24b *21/14*
U.S. Cl. 51—141 **2 Claims**



A stroke sanding machine having a contact roll reciprocable along the length of the active run of an abrasive belt for urging the same against a workpiece. The contact roll is mounted between the arms of a yoke member, the bight portion of the yoke member being connected to a shaft mounted in spaced bearings for free rotation about an axis perpendicular to a vertical plane cut through the axis of rotation of the contact roll.

3,529,385
ABRASIVE BRUSH

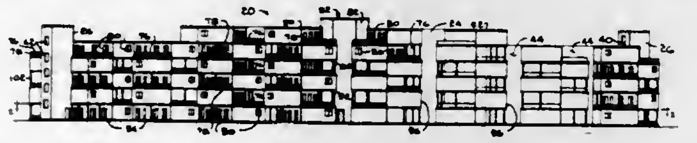
Edgar A. Stein, Troy, N.Y., assignor to Norton Company, Troy, N.Y., a corporation of Massachusetts
Filed Nov. 12, 1968, Ser. No. 774,976
Int. Cl. B24d *11/00*
U.S. Cl. 51—394 **4 Claims**



A polishing brush having a plurality of relatively long edge-mounted strips of a lofty, compressible, resilient nonwoven polishing media secured to and extending from the core to the outer periphery of a backing member and having interspersed near the outer periphery of such member a plurality of shorter length strips of the same material sufficient to produce at least the same density of polishing media at the outer periphery as exists at the core.

3,529,386
MULTI-LEVEL BUILDING

Philip J. Ostendorf, 2503 S. Dixie, Dayton, Ohio 45409
Filed Oct. 31, 1968, Ser. No. 772,107
Int. Cl. E04b *1/04*
U.S. Cl. 52—79 **19 Claims**



Several layers of a building are each formed from modules arranged in a stack, the modules of each level having a wall section which is aligned with corresponding wall sections of all the other modules of the stack. The modules of the odd numbered levels are vertically aligned and horizontally coextensive as are the modules of the even numbered levels. The odd and even numbered level modules are angularly offset in plan configuration, the centerlines thereof which pass through the common wall sections intersecting at the midpoints of the common wall sections at an angle of less than 90°. An efficient column support for the several modules in a stack as well as in adjacent stacks and a building structure having plural stacks of modules are described. The modules may be made from one or more sections of transportable dimensions.

3,529,387
APPARATUS FOR CONSTRUCTING BUILDINGS HAVING SEVERAL STOREYS

Gottlieb Fritz Huber, 3 Rue Denfert-Rochereau, Palaibeau, France
Filed Apr. 25, 1968, Ser. No. 724,014
Claims priority, application France, Apr. 25, 1967, 104,144
Int. Cl. E04b *1/35*
U.S. Cl. 52—126 **3 Claims**

A construction process wherein slabs of concrete forming the floors of the building to be erected are piled at

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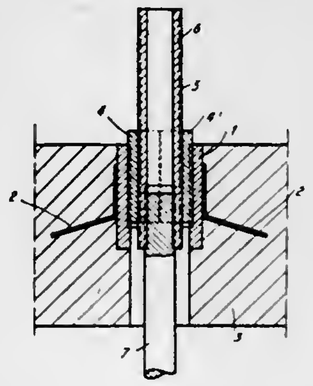
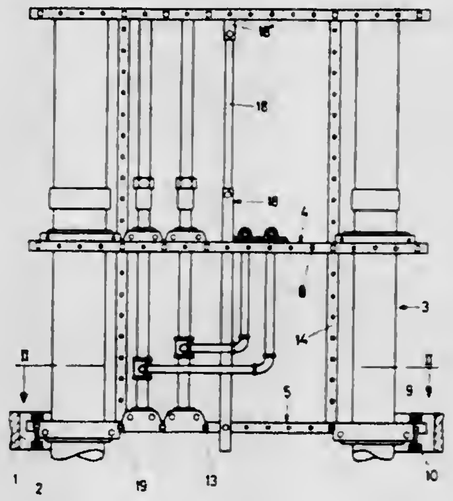
the base of each section formed within a previously provided framework, and are then raised individually to the levels of the different floors to be attached to the framework, beginning with the highest slab. The process is particularly characterized in that several openings (for example, four) are provided in each slab and are adapted to receive a scaffolding part connected to a rising device (such as a jack, puller or the like), by means of which the slab can be raised and lowered at will into a specific enclosure of the framework which has been previously provided. Each slab is raised to a level about two meters above the upper surface of the slab placed on top of a pile of prefabricated slabs or above the ground when it is the last slab of the pile. Suspension parts or slings are fixed to the above-mentioned scaffolding parts under the slab. These suspension elements are fixed to a movable scaffolding which is thus connected to the slab and which will permit operators to work above or below the slab by passing through openings provided during the casting of the slab and supplied with chains, staircases and the like. Then the slab and the scaffolding which is connected therewith are raised to a level located about one meter above the lever at which the slab must be definitely fixed. The elements necessary to support the slab and supported by the framework of the construction are placed in their proper locations or brought to effective condition. Then the slab is lowered to its definite level. All connections and replacements of the slab are carried out. The connecting elements are removed from the slab. Then the scaffolding is moved to a lower level, is dismounted and separated from these connecting elements. The connecting elements are then adapted to an upper slab, whereupon all the operations are repeated until all the slabs are placed in their definitive positions in the specific cells of the framework.



3,529,388
SANITATION INSTALLATION UNIT

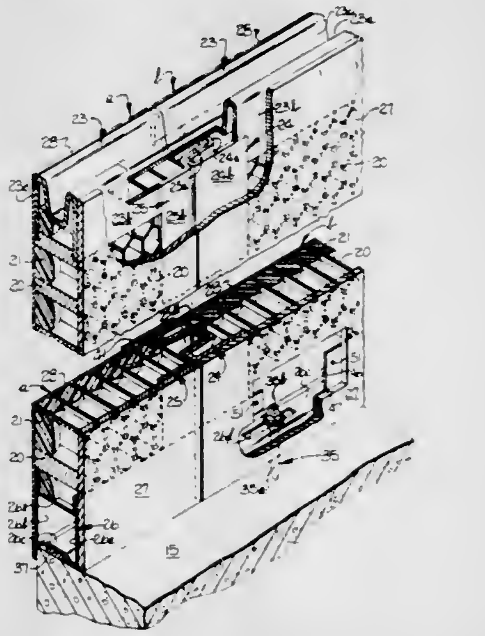
Eugen Wullschleger, Bleichemattstrasse 15, Aarau, Switzerland
Filed Mar. 11, 1969, Ser. No. 806,113
Claims priority, application Switzerland, Mar. 14, 1968, 3,908/68
Int. Cl. A47k *3/16;* **E04c** *2/52*
U.S. Cl. 52—220 **9 Claims**

A sanitation installation unit for mounting riser and distributor conduits, wall elements, sanitation and plumbing elements, and, if desired, air ducts in structures, such as buildings or the like which comprises a substantially box-like frame means. A respective substantially rectangular frame portion formed of individual members and defining the respective top and bottom surfaces of said box-like frame means is adapted to be secured in an opening of the brickwork of the building. Each frame portion is provided with at least two elements forming substantially parallelly extending lengthwise supports provided with positioning means substantially uniformly distributed throughout the length of each lengthwise support, and there are means for supporting said lengthwise supports at the brickwork. Furthermore, a number of structural components define conduit clamp means provided for the frame portions, these conduit clamp means being operably connected at their respective ends with said positioning means of two associated lengthwise supports. The conduit axes defined by the conduit clamp means containing, independently of the diameter of the conduits to be connected, predetermined points of intersection of an imaginary grid system consisting of grid lines extending perpendicular to one another. Additionally, vertically extending connecting support means provided with positioning means operably interconnect the rectangular frame portions with one another.



3,529,389
MODULAR BUILDING WALL STRUCTURE WITH ELECTRICAL RACEWAY MEANS

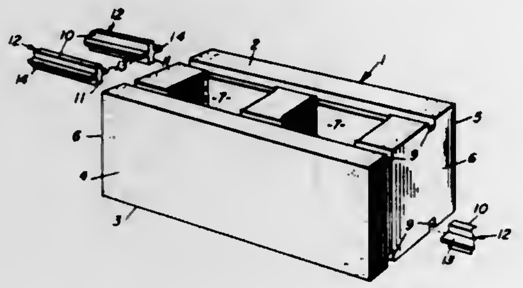
William Burdette Wilkins, Louisburg, N.C., assignor to Comstruct, Inc., Lincolnton, N.C., a corporation of North Carolina
Filed Sept. 30, 1968, Ser. No. 763,508
Int. Cl. E04b *2/18, 2/72*
U.S. Cl. 52—221 **12 Claims**



A wall structure for exterior or interior vertical walls of a building which comprises a series of upright panels securable to a supporting floor, wherein adjacent panels have irregular substantially vertical side edges positioned in mating relationship with each other to interconnect the panels. An elongate hollow raceway member is integral with and defines the bottom edge of each panel, and the raceway members of adjacent panels are disposed in alignment and in substantially abutting relationship so that they collectively define an uninterrupted raceway for accommodating electric wires therein. Bridging means, extending between and connected to laterally spaced side-walls of each raceway member, are penetrated by fastening means to secure the respective panels to the supporting floor.

3,529,390
MASONRY WALL CONSTRUCTION

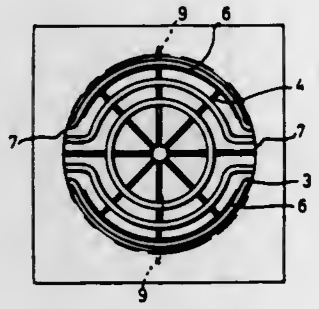
Grant Stetter, Vienna, Va.
(1511 K St. NW., Washington, D.C. 20005)
Filed Aug. 9, 1968, Ser. No. 751,466
Int. Cl. E04b *2/44;* **E04f** *12/04;* **E04c** *1/10*
U.S. Cl. 52—285 **2 Claims**



A corner and wall intersection construction in masonry walls built of blocks or bricks with splines extending horizontally between adjacent horizontal courses, the splines having horizontal flanges spacing the courses apart. Also, a masonry wall construction having blocks or bricks of predetermined size, with the wall construction having vertical spacing between horziontal courses and horizontal spacing between the ends of each block of predetermined width, whereby the tendency of cracking of mortar between adjacent courses is reduced, and the strength of the wall is increased.

3,529,391
GRATED OPENING

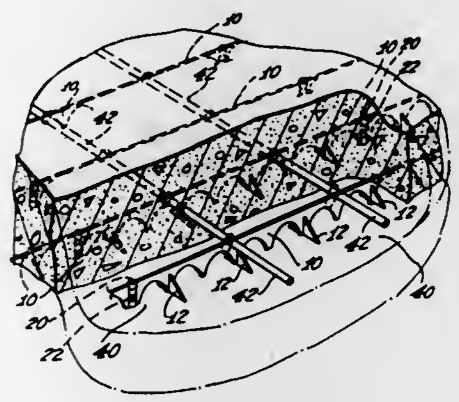
Auguste Van Laethem, Ruisbroek, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC) Societe Anonyme, Charleroi, Belgium
Filed Oct. 11, 1968, Ser. No. 766,678
Claims priority, application Belgium, Oct. 11, 1967, 704,931
Int. Cl. E04c *2/42;* **F16s** *3/00*
U.S. Cl. 52—656 **4 Claims**



A grated enclosure having a front wall formed with a four-sided opening, two opposite sides of which are defined by sharp edges while the remaining two sides are each provided with an inclined lip projecting in the same direction to define terminal bar-applying walls. The grate to be mounted in the said opening is formed of interconnected spaced bars including a pair of terminal bars spaced so as to be applied against the terminal bar-applying walls. These terminal bars are also of a length greater than the distance between the sharp edges so as to be made to lie beneath the said sharp edges to hold the grate in position.

3,529,392
PLASTIC SUPPORT BRIDGE FOR CONCRETE REINFORCING RODS

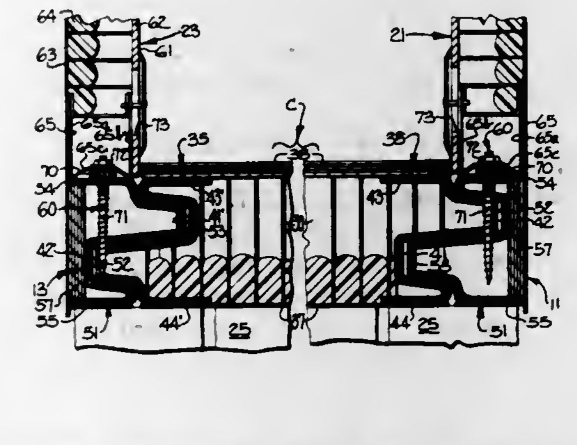
Gerald F. Adams, Redondo Beach, Calif., assignor to Chariot Manufacturing Company doing business as Adams Brothers Plastic, Hawthorne, Calif., a corporation of California
Filed Oct. 11, 1968, Ser. No. 766,904
Int. Cl. E04c *5/16, 2/38*
U.S. Cl. 52—687 **4 Claims**



A plastic support bridge is provided for supporting a multiplicity of concrete reinforcing rods in an elevated position up from a supporting surface as the concrete is being poured, in order that the reinforcing rods may be properly positioned within the concrete when it sets. The bridge to be described is intended to extend transversely across the supporting surface, so that when it, and other like bridges, are spaced along the supporting surface they may support the reinforcing rods in, for example, spaced parallel positions, and in a plane parallel to the supporting surface and displaced up from the supporting surface. The bridge to be described is capable of being attached to other similar bridges in a linear relationship, so that as many bridges as are necessary may be used at each point along the supporting surface to extend across the width of the supporting surface on which the concrete is being poured.

3,529,393
WALL-TO-FLOOR CONNECTOR BEAM

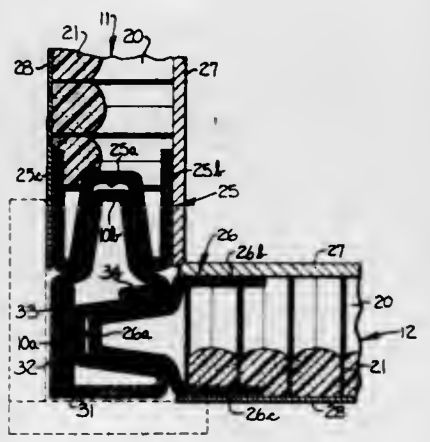
William Burdette Wilkins, Louisburg, N.C., assignor to Comstruct, Inc., Lincolnton, N.C., a corporation of North Carolina
Filed Sept. 30, 1968, Ser. No. 763,507
Int. Cl. E04b *1/12, 1/28, 1/38*
U.S. Cl. 52—731 **7 Claims**



A building construction including a composite floor unit formed of a series of panels joined together and wherein elongate sills surround the floor unit, each sill extending along an outer edge of the floor unit with the proximal edges of the panels and the sills having a mating configuration. The sill is of shell-like construction, and a corresponding upright wall is secured to the sill by fastening means which extends into the sill and also is embedded in mating portions of both the sill and the adjacent outer edge of the floor to thereby secure the sills to the floor and to secure the upright wall structure to the sill.

3,529,394
MODULAR WALL CORNER CONNECTOR

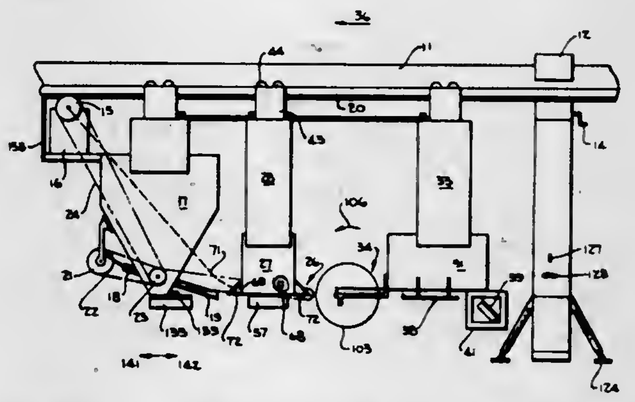
William Burdette Wilkins, Louisburg, N.C., assignor to Comstruct, Inc., Lincolnton, N.C., a corporation of North Carolina
Filed Sept. 30, 1968, Ser. No. 763,534
Int. Cl. E04b *2/18;* **E04c** *1/10, 3/36*
U.S. Cl. 52—731 **9 Claims**



An elongate four-sided, shell-like corner joint member, preferably formed of laminated paper, and having a tongue projecting from one side thereof, and a groove formed in an adjacent side thereof with the tongue and groove extending in substantially right-angular relationship to accommodate and support the proximal respectively grooved and tongued edges of a pair of relatively right-angularly disposed building wall panels. Also, a method of making such a corner joint member in which a tongue component and a groove component are formed separately and then adhesively interconnected with the tongue element and groove element extending in substantially right-angular relationship.

3,529,395
BRICKLAYING MACHINE

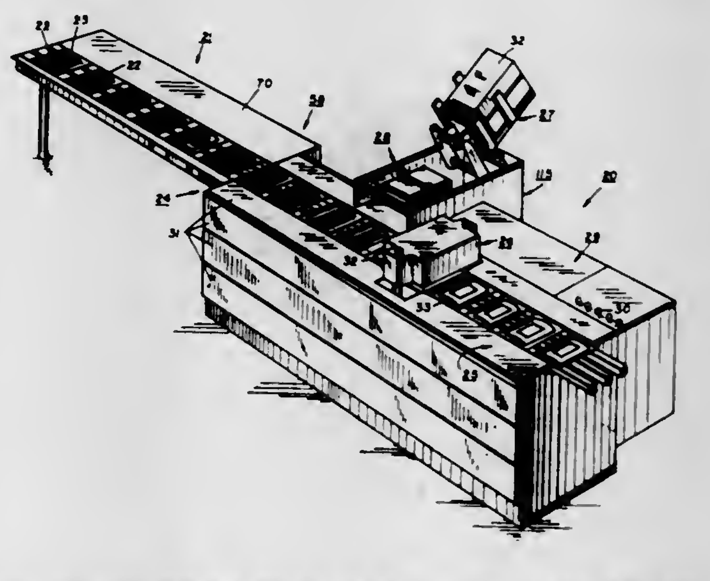
Richard C. Edwards, Jr., 900 Graham St., Franklin, Ind. 46131
Filed June 24, 1968, Ser. No. 739,309
Int. Cl. E04g *21/22*
U.S. Cl. 52—749 **12 Claims**



A plurality of carriages connected together and suspended from a rail supported by stands vertically adjustable and outside a line of a wall to be built. A drive motor for carriage movement in unison along the rail and driving various components including a mortar pump, brick release latch, a brick stack conveyor, and a joint closer.

3,529,396
PACKAGING MACHINE AND METHOD OF FORMING PACKAGES

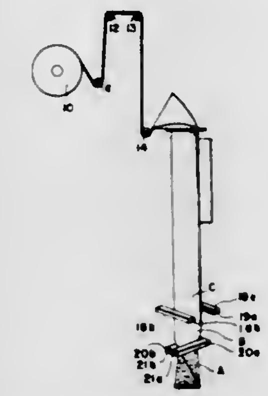
William E. Young, Stamford, Conn., and Robert O. Wolfelsperger, Fairfield, Harry J. Johnson, West Paterson, Patrick J. Pinto, Cedar Grove, and Charles V. Wallace, Glen Rock, N.J., assignors to William E. Young, Stamford, Conn.
Continuation-in-part of application Ser. No. 548,517, May 9, 1966. This application Dec. 22, 1967, Ser. No. 695,825
Int. Cl. B65b *31/02*
U.S. Cl. 53—22 **44 Claims**



The machine seals a series of delivered bottom and top boards together about a foodstuff to form a gas-tight package. The walking beams move the respective boards and packages along the machine in synchronized manner into and out of the sealing unit. The forming section forms the top boards with cup shaped recesses prior to delivery to the sealing unit.

3,529,397
METHOD AND APPARATUS FOR FORMING TETRAHEDRON-SHAPED PACKAGES

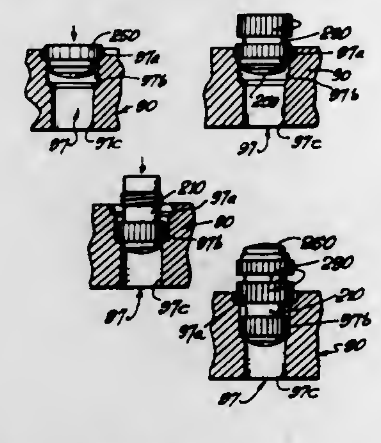
William C. Leasure, Houston, Tex., assignor to Mira-Pak, Inc., Houston, Tex.
Filed Dec. 19, 1967, Ser. No. 691,753
Int. Cl. B65b *9/00*
U.S. Cl. 53—28 **5 Claims**



A procedure for producing tetrahedron-shaped packages from a continuous length of flexible tubular material formed by a former from a continuous strip of flexible sheet material. Seals across the length of material are formed by clamping jaws movable only in planes transverse to the direction of movement of the tubular material and the tubular material is advanced by moving the former. One arrangement includes two sets of mutually perpendicular clamping jaws located in different planes and another arrangement includes a single pair of clamping jaws rotatable in its transverse plane about the tube axis to form two mutually perpendicular seals.

3,529,398
METHOD OF PREPACKAGING DENTAL MATERIALS

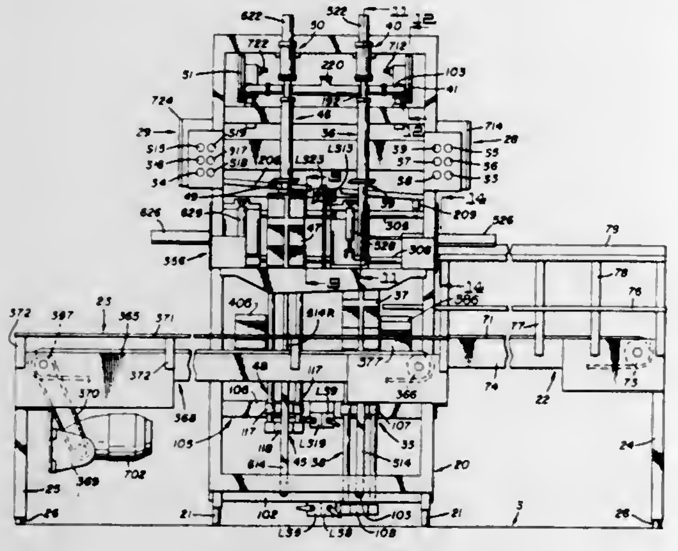
Gerald Kobernick, San Diego, Calif., assignor to Koberloy, Inc., a corporation of California
Original application Nov. 1, 1965, Ser. No. 505,946, now Patent No. 3,357,545. Divided and this application Oct. 12, 1967, Ser. No. 674,830
Int. Cl. B65b *3/04*
U.S. Cl. 53—37 **1 Claim**



This application relates to a method for prepackaging dental materials used for restoring teeth by dentists. The invention comprises the use of three distinct parts in which one part receives one material to be used in the restoration, another part receives a second material, and a third part fastens those two parts together in such manner that the two materials remain separated by means of a constricted neck and stem arrangement to form a two part field container but which may be easily opened to allow intermixing of the two materials.

3,529,399
APPARATUS FOR AUTOMATIC FILLING AND CAPPING OF LIQUID CONTAINERS HAVING SEMI-RIGID WALLS

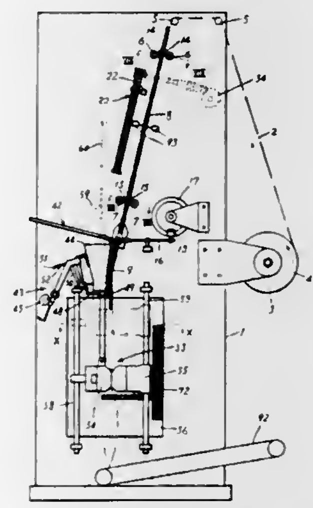
Warren J. Schieser, Columbus, and John P. Conners, Lancaster, Ohio, assignors to The Corrugated Container Company, Columbus, Ohio, a corporation of Ohio
Filed Apr. 1, 1968, Ser. No. 717,704
Int. Cl. B65b *57/00, 3/26*
U.S. Cl. 53—55 **39 Claims**



This container filling apparatus fills containers in an automatically controlled, sequential operation which assures positive over filling of the containers with a desired volumetric quantity of the liquid. Unfilled containers received by the apparatus are sequentially subjected to a filling operation, application of a valve-type sealing cap, and discharge of the filled and capped container. Each container is supported during the filling and capping operation for proper orientation of the fill opening and for support of the container's side walls. Filling is accomplished by insertion of a liquid dispensing nozzle through the fill opening at the initiation of a fill opera- and subsequent relative separating movement of the container and nozzle at a rate which maintains the discharge orifice of the dispensing nozzle immersed in the liquid to prevent foaming of the liquid. The container is filled in accordance with volumetric capacity limits with the volume of liquid dispensed into each container being determined by a flowmeter incorporating an electromagnetic transducer thereby minimizing the possibility of liquid contamination through avoidance of direct physical contact between the liquid and external indicating components of the flowmeter.

3,529,400
PACKAGING APPARATUS

Ichiro Takagaki, Settsu, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha
Filed May 20, 1968, Ser. No. 730,365
Int. Cl. B65b *1/02, 9/10*
U.S. Cl. 53—183 **2 Claims**

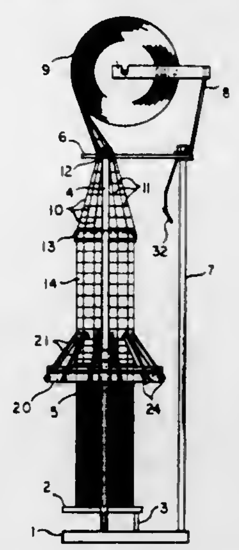


A packaging method and an apparatus therefor comprising means disposed at a position in the transportation path of a flatly folded film tube for providing on one side of said film tube slits or notches at right angles with respect to the longitudinal direction of said film tube and spaced apart from each other by a predetermined distance; means for fusion-welding a portion in the proximity of the preceding slit or notch of said film tube after said film tube has been advanced a predetermined distance and cutting off said film tube to provide the mouth opening of a preceding bag and the bottom of a bag next to said preceding bag; and means for opening the slit or notch of said film tube next to said preceding slit or notch and filling a charge of product or the like into said film tube.

3,529,401
ELASTIC NETTING LOADER

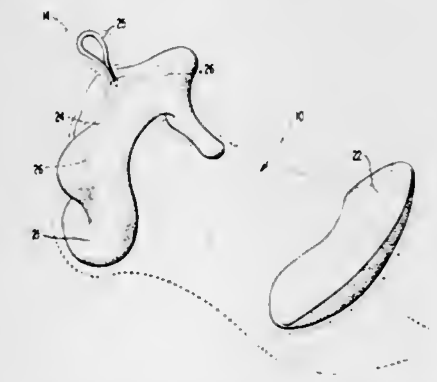
Laurence Sartore and Annita Sartore, Pleasant Hills, Pa. (both of 104 Temona Drive, Pittsburgh, Pa. 15236)
Filed Apr. 29, 1969, Ser. No. 820,209
Int. Cl. A22c *11/02;* **B65b** *67/00*
U.S. Cl. 53—197 **8 Claims**

A loader for tubular elastic netting having a platform with an upstanding base on which a stuffing horn for meat is positioned vertically to receive the netting which is pulled downward onto the horn over a cap on the upwardly disposed end of the horn from a roll of netting rotatably mounted above the horn. A loading head in uniform outwardly spaced relation with the horn is mounted in slidable engagement on vertical guide means which are laterally disposed outside of the horn and loading head and position the loading head in outwardly disposed non-engaging relation to the horn. Net pulling means are mounted on the loading head and are spring loaded to exert an inward pressure against the horn. The inwardly disposed ends of the net pulling means are adapted to engage the circumferential strands of the netting on downward movement of the loading head and to slide over the circumferential strands on upward movement of the loading head.



3,529,402
SADDLETREE

Carl J. Queen, 53 New Peachtree Road, Chamblee, Ga. 30005
Filed Nov. 8, 1968, Ser. No. 774,263
Int. Cl. B68c *1/00*
U.S. Cl. 54—44 **5 Claims**

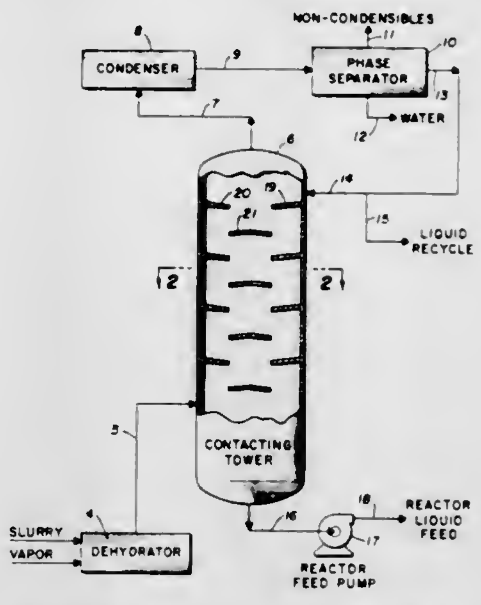


A method and apparatus for molding saddletrees wherein sheets of fibrous glass are saturated with a mixture including polyester and a catalysis and applied to separated mold surfaces and cured. Additional layers of saturated mats are then applied to the edges of the cured mats and the mold sections are connected together and the additional saturated mats are cured, which connects the sections of the saddletree together. A sectional mold is utilized to both form the individual saddletree sections and to connect the sections to each other.

3,529,403
COUNTERCURRENT CONTACTING PROCESS

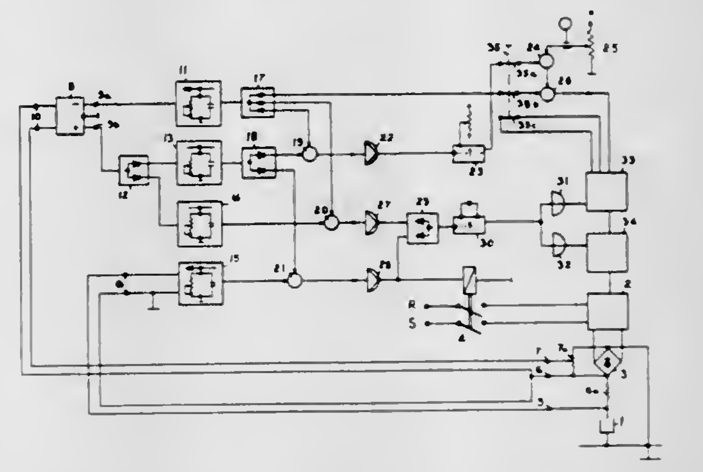
William L. Bolles, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 663,395, Aug. 25, 1967. This application May 7, 1969, Ser. No. 822,618
The portion of the term of the patent subsequent to Aug. 12, 1986, has been disclaimed
Int. Cl. B01d *5/00*
U.S. Cl. 55—82 **7 Claims**

In processes wherein a gaseous mixture containing a sublimed solid is cooled by countercurrent contact with a descending relatively cool liquid in a contacting tower equipped with conventional gas-liquid contacting trays, condensation of the sublimed solid on the trays normally results in serious fouling and plugging problems and eventual flooding of the tower. Those problems can be substantially eliminated by carrying out the countercurrent contact in a series of vertically spaced baffle trays so arranged and adapted that substantially all condensed solids on the trays are washed downwardly therefrom by the descending stream of liquid.



3,529,404
CONTROL DEVICE FOR FEED SYSTEMS OF ELECTRO-FILTERS

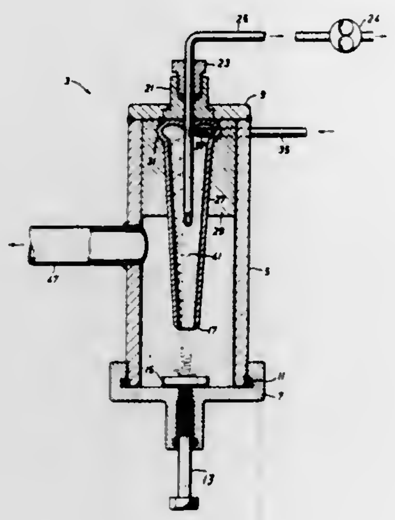
Manfred Quissek, Villigen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden Switzerland, a joint-stock company
Filed Aug. 27, 1968, Ser. No. 755,615
Claims priority, application Switzerland, Aug. 30, 1967, 12,161/67
Int. Cl. B03c *3/68*
U.S. Cl. 55—105 **4 Claims**



An apparatus for regulating the voltage applied to an electrostatic precipitator to maintain the voltage close to the spark-over level, the apparatus having a voltage feed unit of silicon controlled rectifiers interposed between the precipitator and a voltage supply source, a signal generating device producing a first electrical output proportional to the instantaneous valve of the precipitator voltage, a plurality of integrating circuits having different time constants connected to receive the output of the signal generating device, a control device for controlling the firing of the silicon controlled rectifiers connected to said integrating circuits and receiving signals therefrom and controlling the firing of said silicon controlled rectifiers in response to the signals received from said integrating circuits.

3,529,405
SEPARATOR

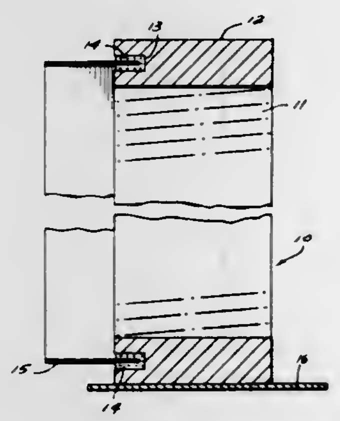
Clifford Logan Ashbrook, 5410 N. Braeswood 916,
Houston, Tex. 77035
Filed July 9, 1968, Ser. No. 743,509
Int. Cl. B01d *19/00*
U.S. Cl. 55—191 7 Claims



The separator consists of a housing having an upper fluid inlet and a lower fluid outlet in the sides of the housing. An inverted conical tube is disposed internally of the housing and is influid communication with the fluid inlet. The upper fluid inlet tangentially intersects the inverted conical tube so as to create a rotating vortex upon introduction of the mixture thereto. Axially disposed within the vortex tube at the upper end is a withdrawal tube for removing lighter mixture components that are drawn toward the center of the tube. At the lower end of the vortex tube is an adjustable impact plate for transmitting a concussion wave through the vortexed body so as to cause cavitation therein. Heavier mixture components gravitate toward the lower fluid outlet and are withdrawn therethrough.

3,529,406
FILTER FRAME SEAL

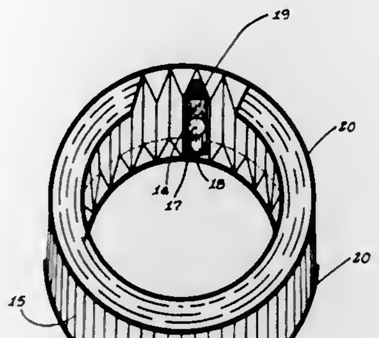
Adrian R. Allan, Jr., and Martin R. Fink, Remsenburg, N.Y., assignors to Flanders Filters, Inc., Riverhead, N.Y., a corporation of New York
Filed Aug. 9, 1968, Ser. No. 751,616
Int. Cl. B01d *46/10*
U.S. Cl. 55—502 1 Claim



An air filter having a channel about its front periphery which is filled with a fluid of relatively high consistency. The channel is adapted to receive a mating retainer when the filter is positioned in its supporting housing, whereby the retainer is frictionally and sealably engaged by the fluid in the filter channel.

3,529,407
CARBURETOR AIR INTAKE FILTERS

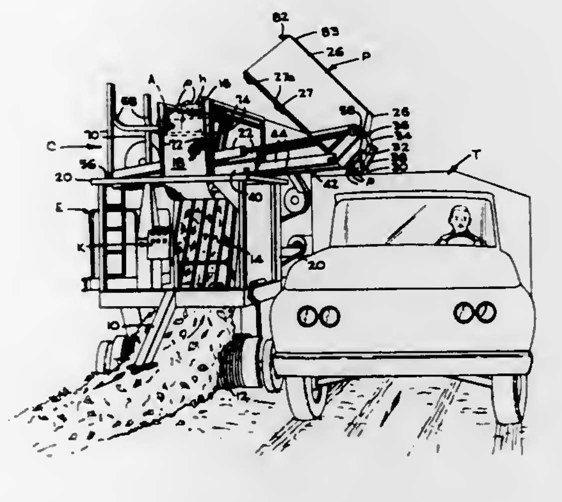
Raymond M. Nowicki, 30 Linn Road,
Nutley, N.J. 07110
Filed May 26, 1969, Ser. No. 827,772
Int. Cl. B01d *35/14*
U.S. Cl. 55—274 1 Claim



An annular pleated filter with a vibrating reed warning device bonded to the end gaskets within a pleat of the filter.

3,529,408
CONTINUOUSLY UNLOADING COMBINE

Robert A. Stark, Columbus, and Floyd E. Keller, Circleville, Ohio, assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 3, 1968, Ser. No. 734,092
Int. Cl. A01d *41/02*
U.S. Cl. 56—21 10 Claims

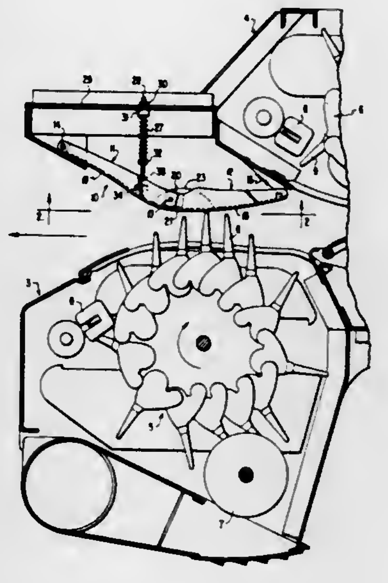


A combine has a primary hopper movable to the side for discharge into a moving vehicle, and an auxiliary hopper is connected to move temporarily under the product conveyor during side discharge. Upon return to the primary hopper to its receiving position, the auxiliary hopper dumps its temporarily accumulated product into the primary conveyor.

3,529,409
COTTON PICKER COMPRESSOR ASSEMBLY

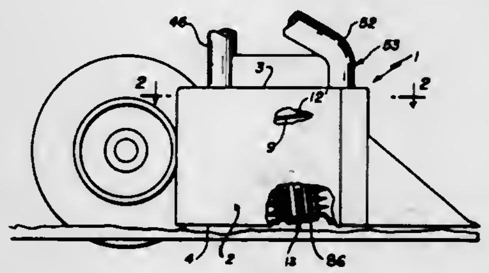
Mack A. West, P.O. Box 101, Paragould, Ark. 72450
Filed Nov. 20, 1968, Ser. No. 777,404
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 7 Claims

A compressor assembly for guiding the foliage of cotton plants between and into engagement with vertical banks of picker spindles in a cotton picker machine is constituted as a series of separate panels arranged in a vertical bank parallel to the bank of spindles with which they are associated. Each panel is separately spring-biased to guide and press the plant foliage horizontally into engagement with the picker spindles at its level; is individually movable to various selective positions of adjustment relative to the spindles; and carries means selectively adjustable to determine the extent to which the plant foliage guided by the panel is forced horizontally into engagement with the spindles.



3,529,410
COTTON HARVESTER

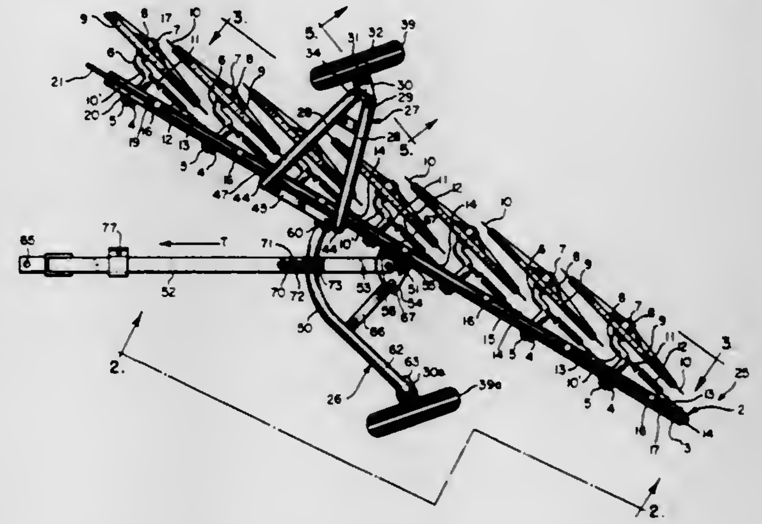
John J. Kowalik, Glenview, Ill., and James M. Francis and James E. Sadler, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 789,846
Int. Cl. A01d *45/18*
U.S. Cl. 56—44 9 Claims



A cotton harvester having a plant passage incorporated in the housing which mounts a rotor having a plurality of banks of spindles which enter the front end of the passage and move within the passage with the plants and then exit from the rear of the passage back into the housing into association with means for doffing the cotton from the spindles and means for moistening the spindles prior to re-entry into the plant passage, the rotor being disposed with its axis inclined to the vertical whereby positioning the banks of spindles so their attitude while they move within the passage is inclined thereto and thus the spindles project endwise horizontally within the plant and concurrently move laterally vertically within the plant and thereby cover a greater area of the plant than when the spindles operate in horizontal planes, thus bringing the spindles into proximity with more cotton and thus improving the picking capability of the harvester.

3,529,411
SIDE DELIVERY RAKE

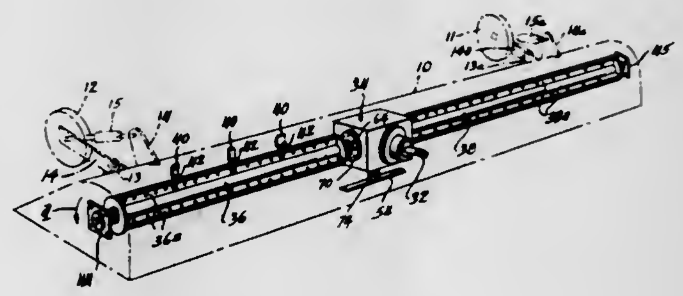
Edward J. Johnston, La Grange, N. Donald Patterson, Downers Grove, and Frank J. Macha, Jr., Lockport, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,601
Int. Cl. A01d *77/06*
U.S. Cl. 56—377 9 Claims



A side delivery rake having a straight main frame member with a plurality of crank supported raking wheels behind the main frame member, a rear frame structure extending from intermediate the ends of the main frame member from its forward side over the raking wheels and to a point therebehind, a front laterally projecting frame member having an intermediate portion formed as a guide and support for a draft tongue which is pivoted at its rear end to an anchor structure connected to the main frame member, the front end of the front frame portion and the rear end of the rear frame portion mounting supporting wheels thereon.

3,529,412
CROP CHOPPER

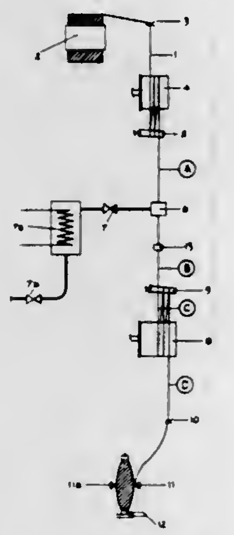
Elmo R. Meiners, Anchor, Ill.
(Rte. 47 S., Gibson City, Ill. 60936)
Continuation-in-part of application Ser. No. 666,572, Sept. 11, 1967. This application Mar. 14, 1969, Ser. No. 807,324
Int. Cl. A01d *49/00*
U.S. Cl. 56—504 14 Claims



An improved crop chopper of the type having freely swinging, chopping blades attached to a rotatable reel to chop and mulch a field crop. The reel is driven by a direct gear drive. Flexible coupling means interconnect the reel to the drive and compensate for flexing or bowing of the rotatable reels. The present invention eliminates the problem in prior art chain or belt drive choppers of clogged or jammed driving means.

3,529,413
DRAWN INTERMINGLED YARN

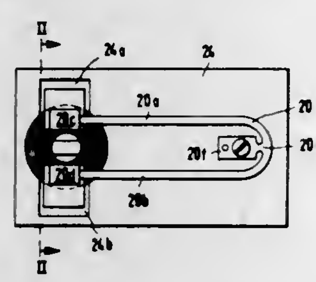
Henry James Marrinan and Nigel John Barnett, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 316,766, Oct. 16, 1963. This application Oct. 18, 1968, Ser. No. 768,934
Claims priority, application Great Britain, Oct. 16, 1962, 39,158/62
Int. Cl. D02g *1/16, 3/02*
U.S. Cl. 57—140 **1 Claim**



A drawn yarn of intermingled filaments of polyethylene terephthalate in which the filaments of the yarn are integrated by random intermingling to give 6–12 intermingled places per meter as a cohesive density when side wound in the absence of twist on a bobbin. The yarn is of such uniformity as to give a zero incidence of dyeflecks.

3,529,414
TUNING FORK DEVICE

Wolfgang Ganter, Heiligenbronnerstrasse 52, Schramberg, Sulgen, Germany, and Friedrich Assmus, Schillerstrasse 6, Schramberg, Wurttemberg, Germany
Original application June 7, 1966, Ser. No. 555,766, now Patent No. 3,456,137, dated July 15, 1969. Divided and this application Apr. 15, 1969, Ser. No. 816,264
Claims priority, application Germany, June 8, 1965, J 28,304
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **1 Claim**

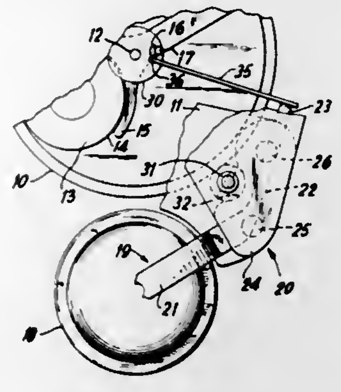


A tuning fork for us as a movement regulating oscillator for time-keeping devices having a coil arrangement of which one is a control coil and the other a driving coil, both coils being coaxially arranged and associated with a housing like magnet arrangement with return elements running parallel to the plane of oscillation.

3,529,415
ELECTRIC WATCH CONTACT ASSEMBLY

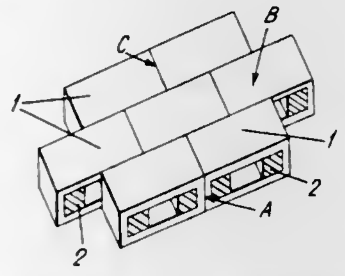
Paul Wuthrich, Woodbury, Conn., assignor to Timex Corporation, a corporation of Connecticut
Filed Sept. 11, 1968, Ser. No. 759,080
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 **6 Claims**

A watch powered by an electric battery cell includes a pivoted oscillatory balance wheel. The balance wheel carries a coil and a contact pin. A contact assembly includes a terminal spring to contact the battery, an insulative body portion, and a contact spring to contact the balance wheel contact pin. The body portion of the contact assembly acts as a locator and a spacer.



3,529,416
TILE LINKAGE FOR FORMING A BRACELET

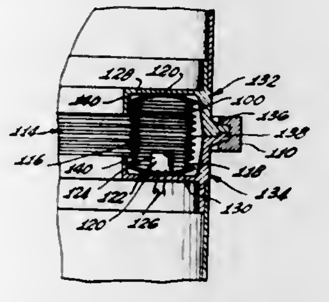
Roger M. King, Watford, England, assignor to Roger King Milner Limited, Hertfordshire, England, a British company
Filed May 20, 1968, Ser. No. 730,251
Claims priority, application Great Britain, May 26, 1967, 24,568/67
Int. Cl. F16g *13/18*
U.S. Cl. 59—80 **6 Claims**



A flexible tile linkage for forming a bracelet is provided which comprises staggered rows of tile links interconnected by cross pins. The side walls of each tile are chamfered towards the bottom and significantly thinner than the walls forming the upper and lower surfaces thereof. The result is that many more tiles can be provided in a bracelet of a given length thus giving enhanced flexibility.

3,529,417
FLUID PRESSURE ACTUATED LINEAR FORCE GENERATING MEANS

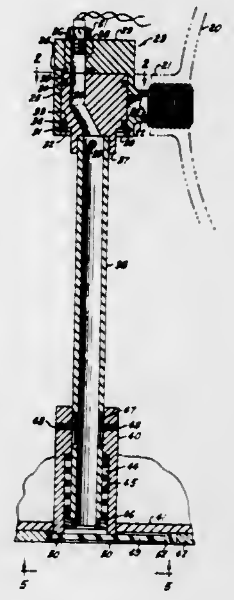
Charles A. Knight, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 16, 1967, Ser. No. 683,635
Int. Cl. F01b *19/00, 29/08*
U.S. Cl. 60—26.1 **5 Claims**



Fluid pressure actuated linear force generating means for separating relatively axially movable members, such as space vehicle components or stages in flight, the force generating means including an axially extendable pressure vessel or bellows disposed between members in the parting plane thereof, and means for selectively internally pressurizing the bellows to exert on the members opposing axial separation forces which are generally uniformly distributed over extended thrust surface areas on the members, whereby separation load concentrations in the members are avoided.

3,529,418
SAFE-ARM DEVICE FOR SOLID PROPELLANT ROCKET MOTORS

William R. Puckett, Trinity, and Thomas R. Loder, Huntsville, Ala., Travis J. Hagler and Robert Bennett, Levittown, Pa., and Samuel Zeman, Huntsville, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed June 21, 1968, Ser. No. 739,019
Int. Cl. F02k *9/04*
U.S. Cl. 60—39.09 **6 Claims**

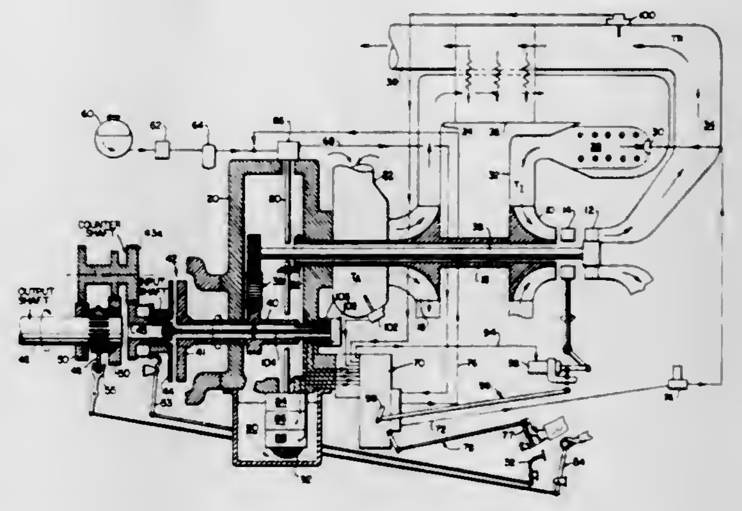


A safe-arm device including a body that is to be connected to a rocket motor case and having therein a movable plug that in one position will prevent accidental or inadvertent ignition of a solid propellant grain in the rocket motor case and will, when moved to another position, permit command ignition of the solid propellant grain.

3,529,419
GAS TURBINE ENGINE AND CONTROL SYSTEM

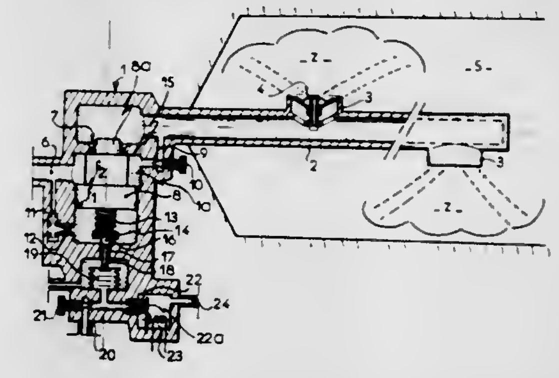
Wendell E. Reed, Chula Vista, Calif., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 23, 1968, Ser. No. 746,922
Int. Cl. F02c *3/10, 9/04, 9/02*
U.S. Cl. 60—39.16 **15 Claims**

A gas turbine engine for highway vehicles including a gas producer turbine, a free power turbine, and a variable positionable nozzle between the turbines, the nozzle being positionable in a forward directional range in which driving power is applied to the power turbine and a reverse direction in which a braking torque is applied. A control system regulates fuel flow and positions the nozzle in response to power turbine outlet temperature, a speed selector, and the speed of the gas producer turbine to maintain and govern the selected speed and temperature and to provide rapid acceleration or decleration while safeguarding against excessive temperature or compressor surge or flameout. The control system also reversely positions the nozzle in response to the speed of the power turbine and the transmission input shaft coupled thereto to apply braking torque to the power turbine to prevent overspeed. The speeds of the lower turbine and transmission are also synchronized prior to clutch engagement, except if this would cause overspeeding of the power turbine, in which case a clutch inhibitor device prevents such engagement. The fuel flow schedule is compensated for variations in ambient air and exhaust gas temperatures and changes in altitude.



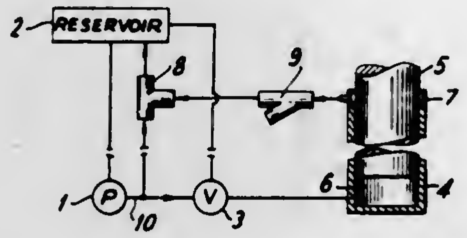
3,529,420
ADJUSTMENT DEVICE FOR THE FLOW OF A LIQUID PROPELLANT INTO A HYPERGOLIC REACTION SYSTEM

Pierre Guyot, L'Hay-les-Roses, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France
Filed Dec. 19, 1968, Ser. No. 785,120
Claims priority, application France, Dec. 22, 1967, 133,639
Int. Cl. F02k *9/02;* **F16k** *31/12*
U.S. Cl. 60—39.74 **10 Claims**



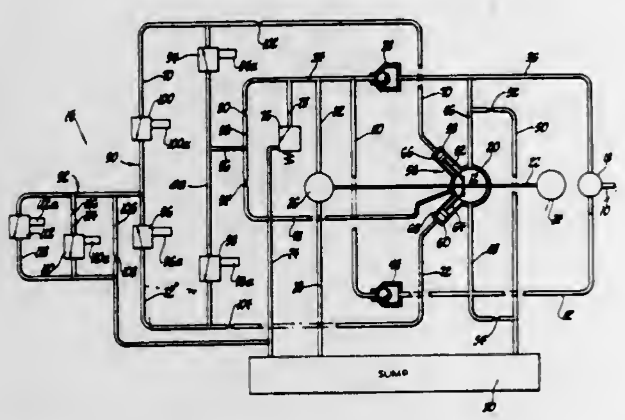
Adjustment device for the flow of a liquid propellant into a hypergolic reaction system having a combustion chamber containing the other propellant necessary for the reaction. It comprises, in combination, liquid propellant distribution duct with at least one injector with incorporated pilot device fixed on said duct in said combustion chamber; a pilot device circuit; a chamber; a piston in said chamber receiving, downstream, the liquid propellant to be distributed and, upstream, a counter-pressure of the liquid propellant under dynamic regime; a means for normally ensuring a reduced leakage of said counter-pressure; a means for increasing said leakage; an opening between the chamber and the distribution duct normally closed by extension of said piston, so that a variable flow of liquid propellant is obtained through said opening according to the proportioning of the leakage of the counter-pressure, the complete closure of said opening corresponding to a standing regime of the injector.

3,529,421
JET-PUMP OIL-RETURN SYSTEM
Keith G. Neeley, Highland Park, Calif., assignor to K. M. White Company, Louisville, Ky., a corporation of Kentucky
Filed Nov. 18, 1968, Ser. No. 776,429
Int. Cl. F15b *15/18, 21/04;* **F04f** *5/02*
U.S. Cl. 60—52 **7 Claims**



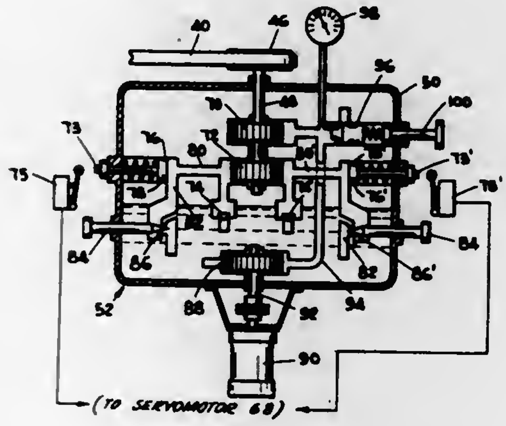
The invention is of an automatic oil scavenging unit for hydraulic elevator systems powered by a jet pump. Oil leaking from around the elevator actuating jack is collected and fed to the low-pressure input side of a jet pump. The jet pump is driven by high-pressure liquid taken from the output side of the main elevator actuating pump. The output of the jet pump is delivered to the hydraulic storage tank for the system.

3,529,422
SPEED CONTROL SYSTEM
Lee R. Herndon, Jr., 5640 Woodward, Birmingham, Mich. 48011
Filed Sept. 23, 1968, Ser. No. 761,591
Int. Cl. F15b *13/16, 15/18;* **F04d** *15/00*
U.S. Cl. 60—53 **58 Claims**



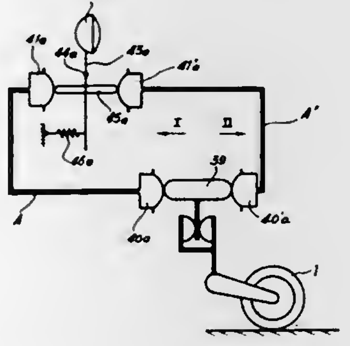
A control system for controlling the speed of the output shaft of a hydrostatic transmission having a movable control member for controlling and adjusting the speed of the shaft. An input signal indicative of the desired speed of the shaft is compared with a feedback system indicative of the actual speed of the shaft, and electronic actuating means actuates fluid adjusting means for the control member in response to a difference between the input and feedback signals. The fluid adjusting means includes a plurality of valves for controlling the rate of supply and exhaust of fluid to and from the control member to thus control the rate of adjustment thereof. The actuating means actuates the valves in accordance with the magnitude of the difference between the input and feedback signals to adjust the control member at a relatively fast rate when the difference is large, and at a relatively slow rate when the difference is small. The actuating means includes a sawtooth generator for causing the system to pulsate between fast and slow rates when the magnitude of the difference decreasingly approaches a predetermined value, and to pulsate on and off between the slow rate and zero when the magnitude of the difference approaches zero.

3,529,423
APPARATUS FOR WINDING AND UNWINDING SHEET MATERIAL OR THE LIKE
Paul Defontenay, 19 Rue Yvonne 91, Bourg-la-Reine, France
Original application Mar. 25, 1968, Ser. No. 715,766, now Patent No. 3,441,233, dated Apr. 29, 1969. Divided and this application Oct. 9, 1968, Ser. No. 800,299
Int. Cl. F16d *31/04*
U.S. Cl. 60—53 **3 Claims**



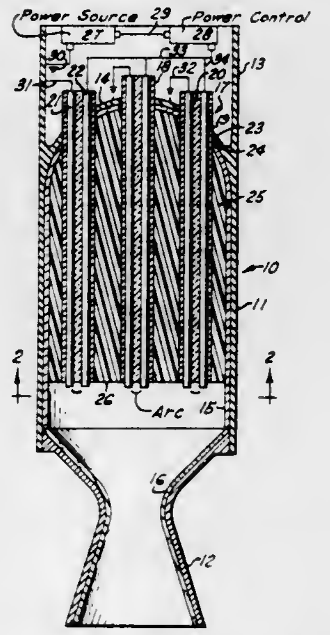
Apparatus for unwinding and winding sheet, strip, wire or filament material under controlled conditions of speed and tension which employs a differential transmission intermediate the respective drive shafts for the shafts upon which the drums are mounted for the material being unwound and wound, and vice versa. Automatic variable transmission means are respectively provided for each pair of drive and drum shafts. Control means responsive to the differential transmission controls a servomotor in circuit with the respective automatically automatic variable transmissions to correlate the rates of rotation of the respective drum shafts and thereby control the speed and tension upon the material running between the drum shafts.

3,529,424
FLUID CONTROL SYSTEMS FOR AUTOMATICALLY CONTROLLING THE ORIENTATION OF MOTOR VEHICLE HEADLAMPS
Pierre Cibie, Bobigny, France, assignor to Projecteurs Cibie, Bobigny, France, a French company
Filed Jan. 14, 1969, Ser. No. 791,111
Claims priority, application France, Jan. 24, 1968, 137,229
Int. Cl. B60q *1/12;* **F15b** *7/00*
U.S. Cl. 60—54.5 **4 Claims**



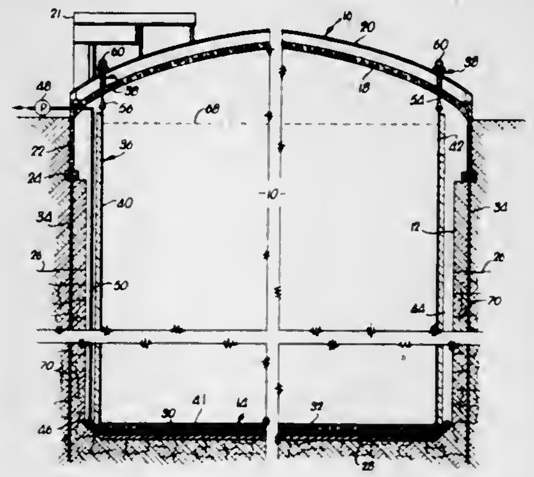
A control member becomes displaced in an amount and a direction correspondingly to orientation of the vehicle's front wheels. A controlled member adjusts the orientation of the vehicle headlamps in response to displacement of the control member. Two identical hydraulic or pneumatic branches transmit movement of control member to controlled member. Each branch is closed by a membrane at one end engaging control member, and is closed at its other end by a membrane engaging controlled member, each pair of membranes engaging opposite ends of their respective members, so that they oppose each other.

3,529,425
PRESSURE CONTROL SYSTEM FOR SOLID PROPELLANT ROCKET MOTORS
John J. De Haye, Huntsville, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 759,881
Int. Cl. F02k *9/04*
U.S. Cl. 60—254 **9 Claims**



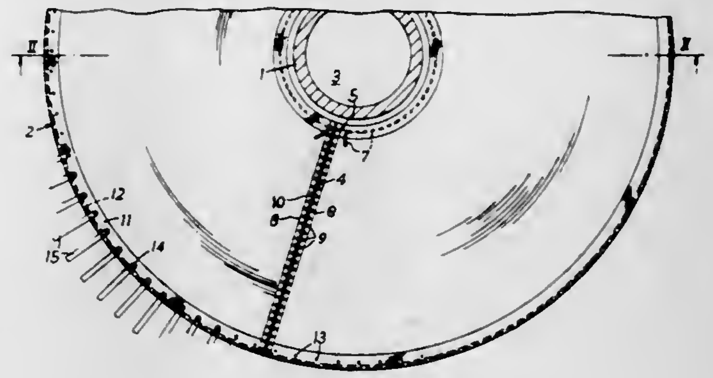
The use of electric resistance heated or arc consumed conductors that are embedded in a solid propellant grain in a solid propellant rocket motor perpendicular to the burning surface of the solid propellant grain and having an electrical power source and a control source connected thereto to provide variable pressure ratios in the solid propellant rocket motor.

3,529,426
LINER FOR IN-GROUND LNG STORAGE FACILITY
Russell C. Proctor, Jr., Leawood, and Henry Weinstein, Prairie Village, Kans., assignors to J. F. Pritchard and Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 2, 1968, Ser. No. 749,755
Int. Cl. B65g *5/00;* **E21f** *17/16*
U.S. Cl. 61—.5 **7 Claims**



An underground storage facility for liquefied natural gas utilizing a storage hole having sides defined by a rock wall has a liner which prevents the storage liquid from contacting the sidewall and bottom of the hole so that fissures in such wall cannot act as individual heat pumps which would be the case if the liquid could flow into such fissures. A base is constructed at the bottom of the hole and has an upper surface presented by a layer of concrete. An open top, cylindrical, upright liner is suspended within the hole with its bottom in contact with the concrete layer to form a receptacle for the LNG. The sidewall of the liner is suspended from structure at the top of the hole so that a thin wall metal plate construction may be used without the necessity for such plate to be sufficiently thick for the sidewall to be self-sustaining. In addition, the sidewall supports are adjustable to compensate for expansion and contraction of the sidewall under temperature variations. A space between the liner and the earth wall permits a part of the boil-off gas to pass in thermal contact with the earth wall to maintain the latter at a cold temperature. A gathering header at the bottom of the space provides a means of removing condensed liquid therefrom.

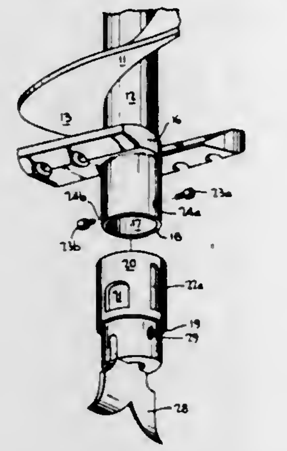
3,529,427
DEVICE FOR PREVENTING OR REDUCING SCOURS AT THE LOWER ENDS OF MEMBERS SUPPORTING MARINE STRUCTURES
Richard T. G. Titman, London, England, assignor to Delta Diving Limited, London, England, a British company
Filed Nov. 5, 1968, Ser. No. 773,548
Int. Cl. E02d *29/00*
U.S. Cl. 61—46 **7 Claims**



This invention provides a device for preventing scours at the lower ends of members supporting a marine structure, for example an oil rig. The device comprises a reticulated or perforated collar which encircles the lower end of each member at the sea bed, the collar being secured to the member and having its outer margin anchored to the sea bed. The arrangement is such that the device prevents sand at the sea bed being washed away from the member by tidal movements, but allows the sea water to pass through the collar.

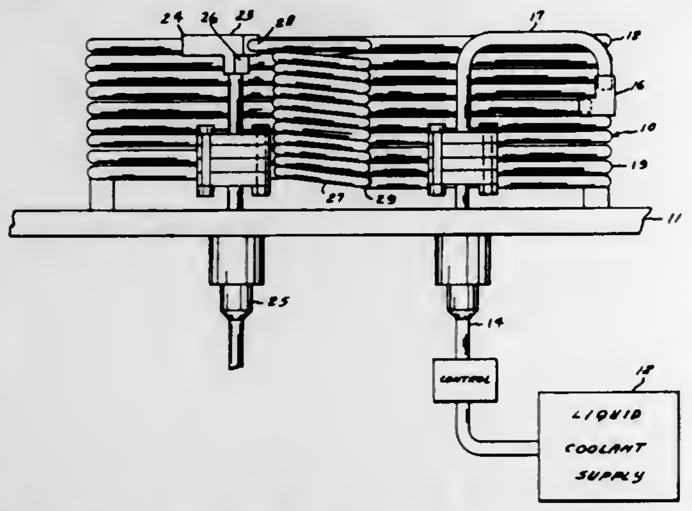
3,529,428
FLOW CONTROL DEVICE FOR HOLLOW-SHAFTED AUGER
John Earl Batten, Orlando, Fla., assignor to Foundation Services, Incorporated, Orlando, Fla., a corporation of Florida
Filed Apr. 17, 1968, Ser. No. 722,091
Int. Cl. E02d *5/36;* **E21b** *9/06*
U.S. Cl. 61—63 **5 Claims**

This invention deals with an improvement in hollow-shafted augers used for drilling and placing cast-in-situ piling. A circumferential cup is slideably attached to the axial extremity of the hollow shaft. When telescoped into the closed position, this cup abuts the axial extremity of the shaft and prevents flow of fluid material out of the opening. When axially extended, a fluid flow path is created from the axial extremity of the shaft through apertures cut in the circumferential surface of the cup. Flow deflectors guide the flowing cementitious grout from the axial extremity of the shaft to these apertures to prevent the formation of a solidified build-up. The device is held closed during drilling by the upward pressure of the medium into which the auger is penetrating. Opening of the device is accomplished by the combined forces of gravity and grout pressure.



3,529,429
TRANSFER SYSTEM FOR CRYOGENIC LIQUIDS

Abraham Harel, Trenton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 16, 1968, Ser. No. 768,147
Int. Cl. B01d *5/00*
U.S. Cl. 62—55.5 **4 Claims**

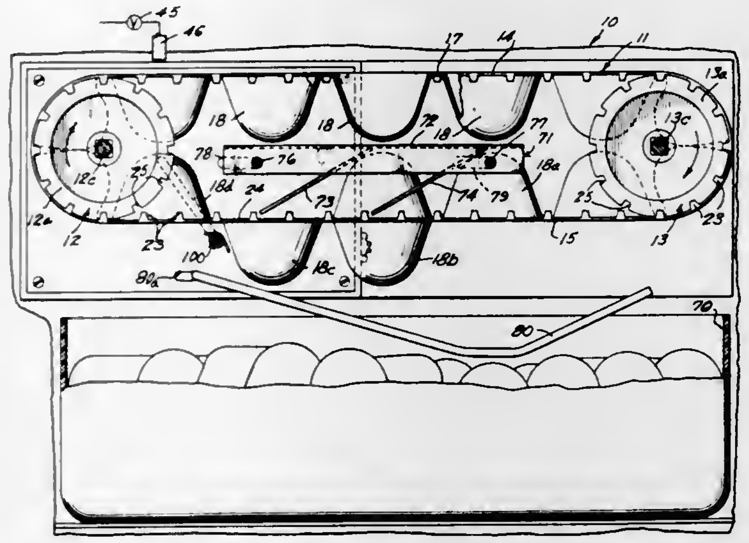


A cooling system has the cooling liquid, for example liquid-nitrogen or liquid helium, from a pressure tank, supplied through a T connector to the center of a helical coil. The axis of the coil is substantially vertical so that the gas formed in the coil will rise to the top turns of the coil. The output is taken off a second T connector at the top of the coil. A second coil providing a high impedance path is connected between the bottom of the cooling coil and the top of the cooling coil through the second T connector.

3,529,430
BELT DRIVEN ICE MAKER

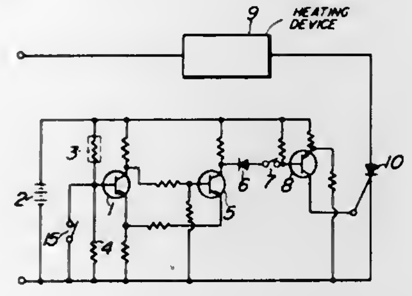
Carl C. Bauerlein, Clearwater, Fla., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Feb. 5, 1968, Ser. No. 702,914
Int. Cl. F25c *1/10*
U.S. Cl. 62—137 **18 Claims**

An automatic ice cube maker including a sprocket-driven endless belt having a plurality of flexible invertible ice cube forming cup-shaped members or cells formed therein. A water-fill station and an ice cube-harvest station are situated respectively adjacent upper and lower horizontal reaches of the belt. A stallable electric motor drives the sprockets through a gear train to move the belt continuously through a looped path of travel and past the water-fill and ice-harvest stations. A water supply mechanism for filling the cells with water comprises a pair of alignable cooperating cams which are connected to different ones of the gears of the gear train for rotation at different speeds. A water control switch controls the operation of the water supply mechanism so that a predetermined amount of water is supplied to each of the cells as each cell passes through the water-fill station in timed relation with the alignment of the cams. Rigid abutment members are provided at the harvest station to invert the cells or cup-shaped members or turn them inside out to remove the frozen cubes therefrom. A spring biased member is provided beyond the harvest station to re-invert or return the cup-shaped members to the original position thereof. The spring bias member includes a stripper for ensuring complete removal of the cubes from the cells. An ice level sensing mechanism is also driven by the gear train to physically stop the rotation of the motor when the ice at the harvest station has attained a predetermined level, but only when the cam members are out of alignment with one another and the water control switch is inoperative to avoid over-flowing of the cup-shaped members at the water-fill station.



3,529,431
DEFROSTING CONTROLLER

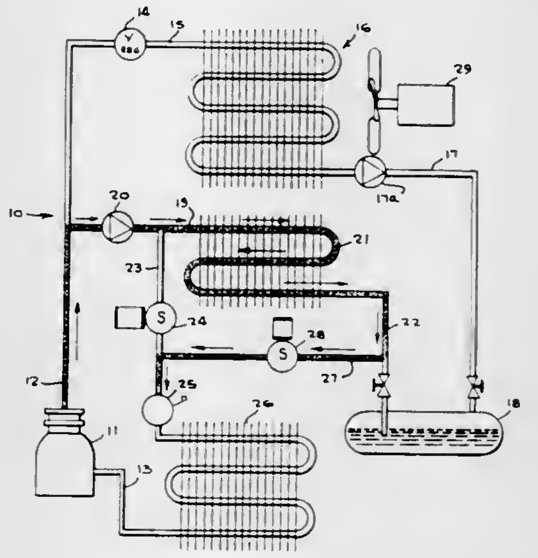
Zenji Kusuda, Ibaragi-shi, and Takeji Kobayashi, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Aug. 27, 1968, Ser. No. 755,667
Claims priority, application Japan, Aug. 31, 1967, 42/56,276
Int. Cl. F25d *21/06*
U.S. Cl. 62—155 **3 Claims**



A defrosting controller for electric refrigerators with freezers which operates under the control of an element for detecting temperature of the freezer during a defrosting operation and causes the defrosting heater to be deenergized regardless of the defrosting time predetermined by a defrosting timer when the temperature of the freezer rises to a predetermined temperature, thereby the frost deposited in the freezing compartment being completely removed without unnecessary heating of the freezer.

3,529,432
REFRIGERATION SYSTEM FOR WIDELY VARYING AMBIENT CONDITIONS

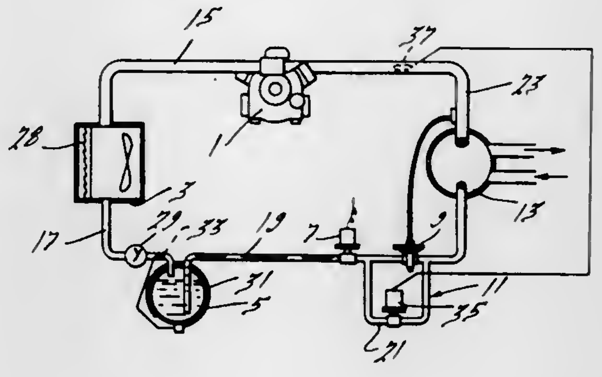
Otto J. Nussbaum, 145 Kelvington Drive, Monroeville, Pa. 15146
Filed Oct. 16, 1968, Ser. No. 768,053
Int. Cl. F25b *41/00*
U.S. Cl. 62—196 **8 Claims**



A refrigeration system having an air-cooled condenser and a sub-cooler and means for interconnecting them with the compressor and evaporator to course refrigerant through both the condenser and through the sub-cooler in a first direction during high ambient temperature conditions and for by-passing the condenser and coursing the refrigerant through the sub-cooler in an opposite direction during low ambient temperatures.

3,529,433
REFRIGERATION APPARATUS WITH MEANS TO INCREASE LIQUID REFRIGERANT PRESSURE

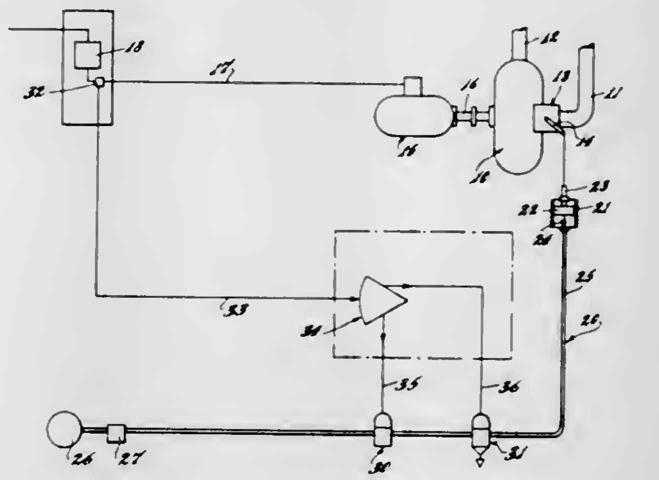
Dale T. Chambers, Dayton, Ohio, assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 17, 1969, Ser. No. 807,693
Int. Cl. F25b *41/00*
U.S. Cl. 62—196 **7 Claims**



Refrigeration apparatus including a compressor, air cooled condenser, reservoir, control valve, expansion device, and cooler connected in series. The reservoir is heated in response to a low pressure condition existing in a line between a check valve and the reservoir. A bypass is provided to permit liquid refrigerant to bypass the expansion device on start-up of the apparatus.

3,529,434
CONTROL MEANS FOR CONTROLLING A PRODUCER IN RESPONSE TO A VARIABLE CONDITION OF THE MOTIVE MEANS DRIVING THE PRODUCER

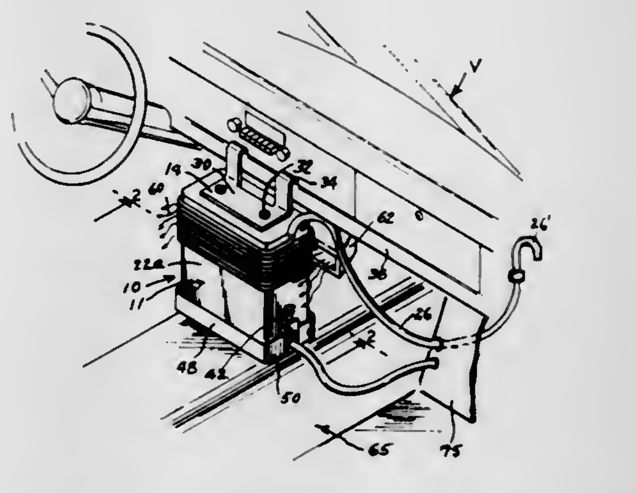
Chauncey E. Haugh, Jr., 106 Pocahontas & Omaha Trails, Medford Lakes, N.J. 08055
Filed Sept. 16, 1968, Ser. No. 759,949
Int. Cl. F25b *1/00*
U.S. Cl. 62—230 **8 Claims**



In conjunction with a producer and motive means driving the producer, means for sensing a variable condition of the motive means, means for loading the producer, a controller for stabilizing the loading means at a predetermined value of the variable condition being sensed, and an additional controller for unloading the producer responsive to an excess of the value being sensed.

3,529,435
AIR COOLER FOR AUTOMOBILE

John J. Becker, Brooklyn, N.Y., assignor to Cheryl Weiner, Los Angeles, Calif.
Filed Aug. 20, 1969, Ser. No. 851,566
Int. Cl. B60h *3/04;* **F25d** *3/12*
U.S. Cl. 62—244 **9 Claims**



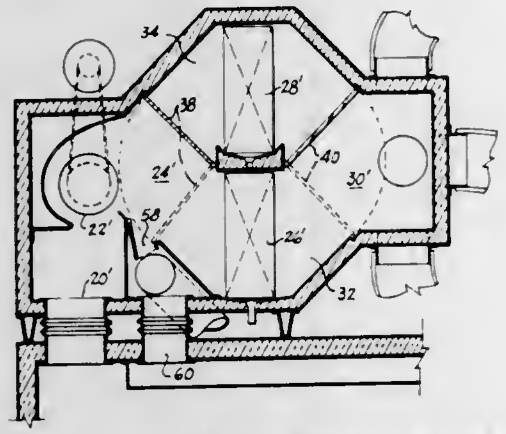
An air cooler for an automotive vehicle includes an inverted container with open bottom disposed in a tray containing frozen carbon dioxide. The tray is detachably engaged with the container. Inner and outer walls of the container have continuous linings of metal foil. A metal tube is helically wound around the container and is seated in grooves in walls of the container. One end of the tube opens inside the container to pass carbon dioxide gas from the container. The other end of the tube is connected to a pipe opening external of the vehicle. A pipe connected to the tray drains water of condensation to the exterior of the vehicle. A bracket connected to the container permits it to be hung on the dashboard of the vehicle.

3,529,436
SYSTEM OF REFRIGERATION

James H. Brennan, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Oct. 8, 1968, Ser. No. 765,951
Int. Cl. F25d *21/00*

U.S. Cl. 62—272 **9 Claims**



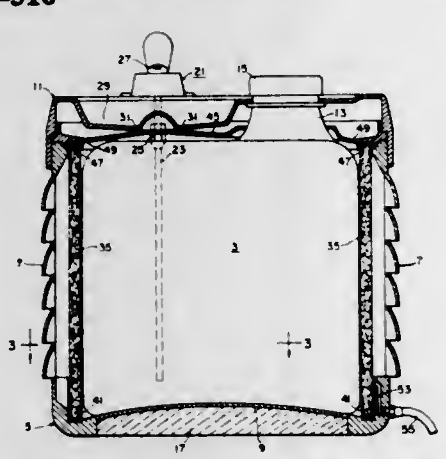
A refrigerating system for continuously maintaining the temperature within one or more refrigerated storage and display cases substantially constant at all times while providing for effective defrosting of evaporator units employed in the system. The system embodies refrigerating means located exteriorly of the cases to be refrigerated and provided with duct means for supplying refrigerated air to the cases. The refrigerating means includes two evaporators each of which is alternately refrigerated and defrosted whereas air is circulated continuously to the duct means and cases from only that evaporator which is being refrigerated. As a result a continuous supply of air for refrigerating the cases is assured while the temperature of the air supplied to the storage and display cases is maintained constant at all times, and does not undergo a rise in temperature by reason of the defrosting of the evaporators.

3,529,437
SELF-COOLING DRINKING FOUNTAIN

Edward J. Bell, 12 West View Place, Berkeley, Calif. 94705

Filed Aug. 5, 1968, Ser. No. 750,337
Int. Cl. F28d *5/00*

U.S. Cl. 62—316 **10 Claims**



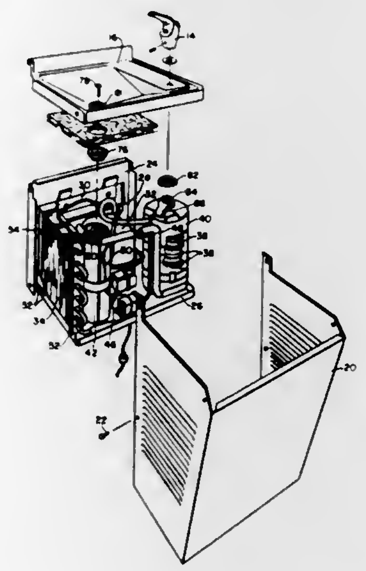
A self-cooling drinking fountain in which waste water is absorbed by absorbent pads installed in surface contact with a self-contained source of supply of drinking water, and any excess waste water collects at the bottom of an enclosing louvered casing, with the absorbent pads dipping therein.

3,529,438
PRESSURE WATER COOLER CONSTRUCTION

Charles F. Ter Bush, Grove City, and Eugene W. Scott, Columbus, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 9, 1969, Ser. No. 790,003
Int. Cl. B67d *5/62*

U.S. Cl. 62—394 **8 Claims**



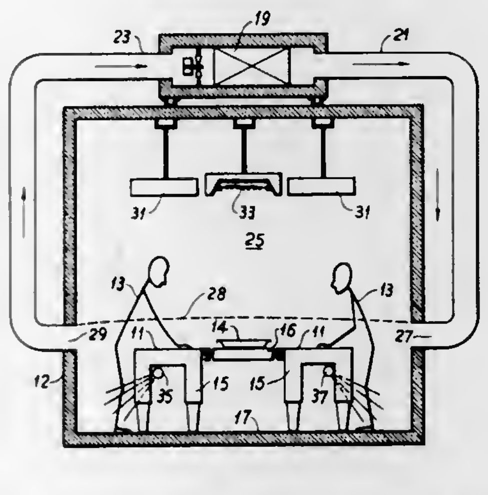
A compact pressure water cooler construction in which the refrigeration system components and water system components are located in a space between a plate-like support floor carried from a back plate and an overlying basin, both the water cooling chamber and waste line assembly being sealed to and rigidly secured to the basin only.

3,529,439
REFRIGERATED CUTTING ROOM

James H. Brennan, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 777,955, Oct. 15, 1968. This application May 20, 1969, Ser. No. 826,097
Int. Cl. F25d *17/06*

U.S. Cl. 62—419 **6 Claims**



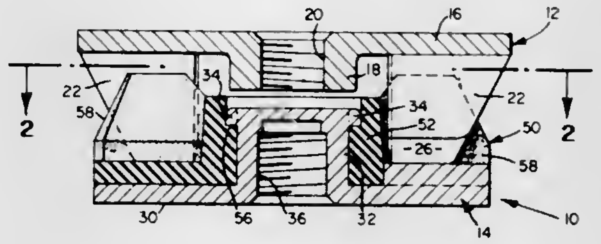
A room or space wherein meat products and the like are cut, wrapped, weighed or otherwise prepared for retail sales is provided with refrigerating means and ducts or passages through which refrigerated air is passed to the room or space in a manner to maintain a stratified layer of refrigerated air at a level to keep the products being prepared at a desired low temperature whereas the upper portion of the room or space is maintained at a temperature which is high enough to be more comfortable to personnel working in the room.

3,529,440
FLEXIBLE COUPLING

Charles L. Bauer, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Jan. 10, 1969, Ser. No. 790,358
Int. Cl. F16d *3/68*

U.S. Cl. 64—14 **2 Claims**



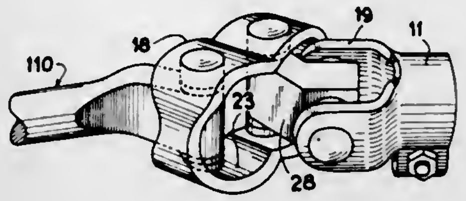
A separable flexible coupling especially for kitchen mixers comprises an upper and lower element. The lower element has a rigid base disc with a central rigid post, and a rubber insert, comprising a hub surrounding the post and spoke-like fingers, fits against the disc with the lower ends of the rubber part engaging in suitable channels in the disc base. In operation, the rubber hub expands outwardly to engage the teeth of the upper member to reduce vibration.

3,529,441
EXTENSIBLE UNIVERSAL JOINT

Alfred Pitner, Paris, France, assignor to Nardella S.A., a French body corporate

Filed Nov. 5, 1968, Ser. No. 773,603
Claims priority, application France, Dec. 18, 1967, 132,684
Int. Cl. F16d *3/08*

U.S. Cl. 64—20 **15 Claims**



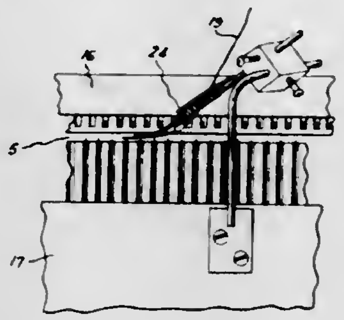
Extensible universal joint having a first and second end element interconnected by a pivotable assembly comprising a coupling and a cross. The first element and the cross are massive pieces respectively comprising a pivot embodying an end axis ZZ' and orthogonal pivots respectively embodying an end pivot axis XX' for the pivotal mounting of, the second end element and an intermediate axis YY' parallel to the axis ZZ' and axially offset from the axis XX' and laterally offset from the axis of rotation of the first end element. The coupling is in the form of an annular member having two pairs of bores respectively pivotably mounted on the pivot having axis ZZ' and the pivot having axis YY'.

3,529,442
RIB KNITTING MACHINE

Harry Harris Gelber and Else Elsa Gelber, both of 11 Bulkara Road, Bellevue Hill, Sydney, New South Wales, Australia; Leslie John Hughes, 21 Dixon St., Waverley, near Sydney, New South Wales, Australia; and George William Gee, 142 Nottinghill Road, Berala, near Sydney, New South Wales, Australia

Original application May 24, 1966, Ser. No. 552,637. Divided and this application July 24, 1967, Ser. No. 662,251
Int. Cl. D04b *9/16*

U.S. Cl. 66—9 **1 Claim**



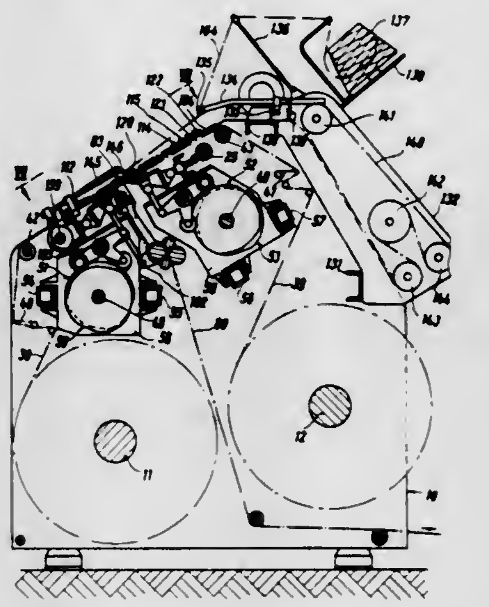
An apparatus for, and method of, knitting a rib knit woolen cloth capable of being stretched substantially in a walewise direction only and of returning substantially to its original shape when the stretching force is removed. An improved means is provided for laying a locking thread of woolen yarn in the coursewise direction progressively between adjacent rows of loops during the interval of time prior to the drawing of successive loops through the previously formed loops on a circular knitting machine. Means are provided for applying sufficient tension to the loops and the locking thread to cause the loops to grip the locking thread sufficiently to impart come-back to the cloth.

3,529,443
PROCESS AND DEVICE FOR SHOOTING IN FILLING YARNS FOR WARP KNITTING MACHINES

Walter Palange, Oisterwijk, North Brabant, Netherlands, assignor to Jean Gusken, Dulken, Germany

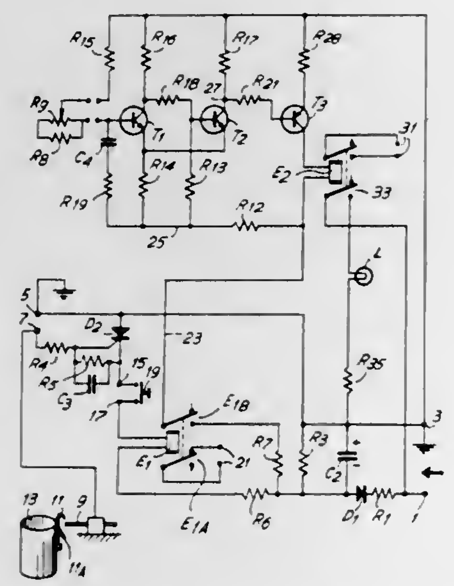
Filed June 7, 1968, Ser. No. 735,459
Claims priority, application Germany, June 7, 1967, 1,635,809
Int. Cl. D04b *23/00*

U.S. Cl. 66—86 **18 Claims**



A process and a device for the shooting in of filling yarns for warp knitting machines of the type wherein two rows of guide needles face each other and form a links-links knitted fabric through reciprocal takeover of stitches. The warp threads run from the needle holes to the fabric and form an open shed alternatingly toward the front end and the rear of the machine. Filling yarns run from a supply bobbin through a feed position located approximately in the middle of the machine to the rows of the needles. A tied up filling yarn at one edge of the fabric is pulled out in the opposite direction to form a loop, the apex of which moves on a path parallel the rows of needles, up to and beyond the longitudinal extent of the rows of needles. The loop strand running from the apex to the tied up loop is then swung into the knitting shed opened at this point.

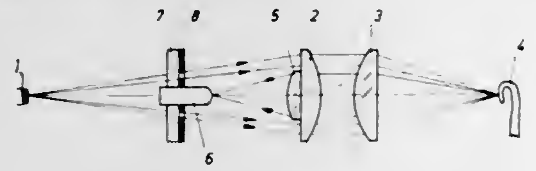
3,529,444
CIRCULAR KNITTING MACHINES
Luciano Romoli, Florence, Italy, assignor to G. Billi & C. S.p.A., Florence, Italy
Filed Mar. 1, 1968, Ser. No. 709,612
Claims priority, application Italy, Mar. 7, 1967, 789,708
Int. Cl. D04b *35/18*
U.S. Cl. 66—157 **8 Claims**



A motor driven circular knitting machine having a plurality of latch needles, includes an electronic circuit for stopping the driving motor in response to breakage of yarn.

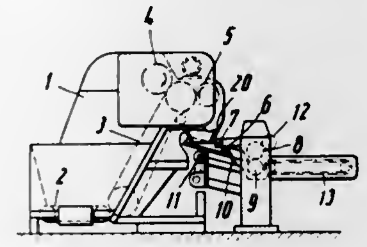
The electronic circuit includes an electrically conductive probe so disposed as to be contacted by a needle latch which has been radially displaced as a result of yarn breakage, the contact between latch and probe energising the electronic circuit to supply a reverse current to the motor to rapidly halt the motor.

3,529,445
APPARATUS FOR CONTROLLING THE OPERATION OF CIRCULAR KNITTING MACHINES
Peter Brose, Wolfratshausen, Germany, assignor to Erwin Sick, Icking, Isartal, Germany
Filed Apr. 1, 1969, Ser. No. 812,136
Claims priority, application Austria, Apr. 8, 1968, A 3,385/68
Int. Cl. D04b *35/10*
U.S. Cl. 66—157 **6 Claims**



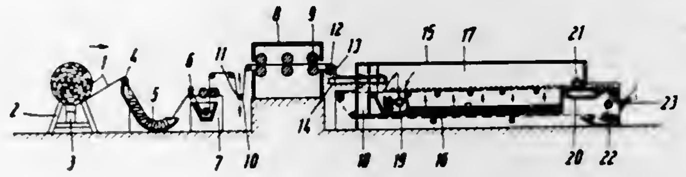
A control apparatus for a circular knitting machine including a photoelectric device for directing a light beam upon the knitting needles passing thereby, the light beam being reflected by the needles back upon a photoelectric receiver producing electrical signals solely as a result of the reflections which normally occur in a predetermined time sequence when the machine is in proper operating condition. When the electrical signals very from said predetermined time sequence due to the needles being damaged or missing, an integrating electrical network produces a perceptible indication that the yarn is not being p.operly knit by the machine.

3,529,446
PROCESS AND APPARATUS FOR THE TREATMENT OF LOOSE FIBROUS MATERIAL
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland
Filed Dec. 27, 1968, Ser. No. 787,436
Claims priority, application Germany, Dec. 27, 1969, 1,685,623
Int. Cl. D21c *9/02;* **D06f** *35/00*
U.S. Cl. 68—3 **15 Claims**



The present disclosure is directed to a process and apparatus for the treatment of loose fibrous material which comprises a flexibly mounted vibration chute, means for introducing the material being treated to the vibration chute, opposing squeeze rollers disposed behind the vibration chute, the discharge end of said vibration chute extending in close proximity to the nip of said squeeze rollers, a liquid distribution means provided above the vibration chute for introducing a liquid into said chute and conveying means disposed behind the squeeze rollers and in close proximity thereto, said conveying means having stripping lips which project beyond the conveying surface.

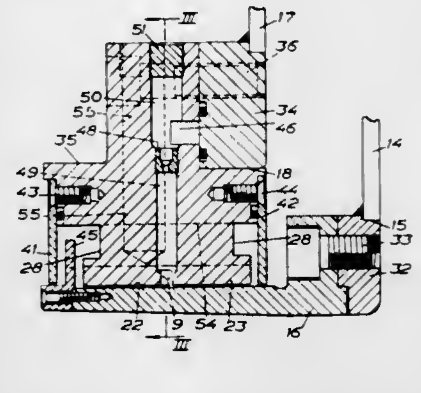
3,529,447
PROCESS AND APPARATUS FOR THE CONTINUOUS TREATMENT OF TEXTILE MATERIALS
Heinz Fleissner and Gerold Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA A.G., Basel, Switzerland
Filed May 15, 1968, Ser. No. 729,178
Claims priority, application Germany, May 24, 1967, V 33,698
Int. Cl. D06f *37/00*
U.S. Cl. 68—5 **19 Claims**



The present disclosure is directed to a continuous process for pad dyeing, printing or bleaching textile materials which comprises impregnating the material to be treated with the treatment liquor, and rapidly and uniformly heating-up and setting the material in a treatment chamber with a gaseous or vaporous treatment medium, said treatment medium penetrating the textile material in an upward direction so that the textile material at least partially rests on a steam of gas cushion thereby ensuring proper material shrinkage.

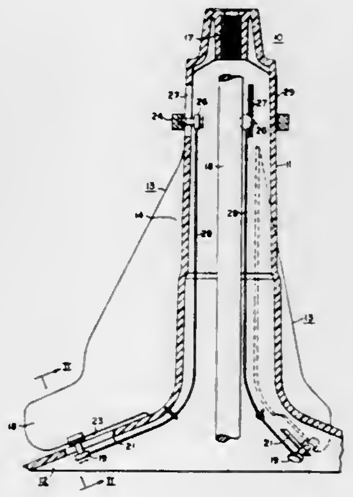
The present disclosure is also directed to an apparatus for performing the above process.

3,529,448
WASHER EXTRACTORS FOR LAUNDRY WORK
Duncan Cameron Ferrier, Almondbury, Huddersfield, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, Yorkshire, England, a British company
Filed Sept. 26, 1968, Ser. No. 762,875
Claims priority, application Great Britain, Oct. 13, 1967, 46,699/67
Int. Cl. D06f *23/02*
U.S. Cl. 68—24 **4 Claims**



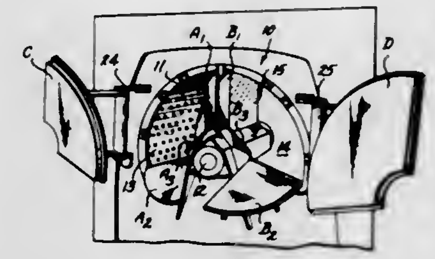
A washer extractor for laundry work has a reticulate cage or basket which is provided at at least one end with a hollow shaft or neck which is of less diameter than the diameter of the basket but large enough to surround a charging opening in that end of the basket and which is rotatably supported in a water bearing designed to enable the load applied thereto by the charged basket to be sustained predominantly by hydrostatic pressure at washing speeds and predominantly by hydrodynamic pressure at extraction speeds. Thus the basket can be rotatably supported at both ends. For example it may be supported at its charging end by a water bearing and at its opposite end by a rolling bearing, that is to say, by a ball or roller bearing. Alternatively the basket may be supported at both ends by a water bearing enabling an opening to be provided at one end for charging and at the other end for discharging as in a so-called barrier washing machine which enables soiled articles of laundry to be well spaced from and in effect isolated from laundered articles.

3,529,449
CLOTHES WASHER STRUCTURE
Edward G. Lipski, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 18, 1967, Ser. No. 691,418
Int. Cl. D06f *13/02*
U.S. Cl. 68—134 **6 Claims**



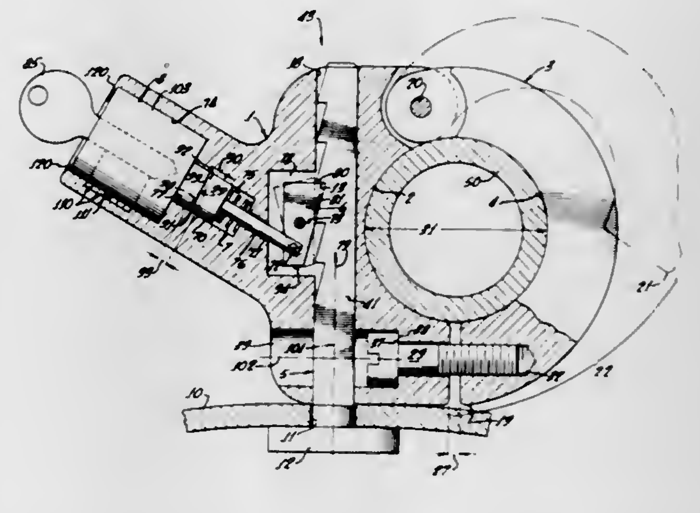
Agitator structure for a clothes washing machine. The structure has a plurality of vanes attached to a hollow post portion and detached from the skirt thereof such that they readily flex at the line of attachment to the post portion. A plurality of pin members slidable in slots in the skirt have grooves provided therein for receiving the lower edges of the vanes at different points therealong and thereby act as variable stops for changing the flexibility of the vanes.

3,529,450
CLEANING MACHINE
Norvin L. Pellerin, 17 Warbler Drive, New Orleans, La. 70124
Filed Oct. 7, 1968, Ser. No. 765,438
Int. Cl. D06f *37/08, 37/10*
U.S. Cl. 68—143 **26 Claims**



An end-loading cleaning machine comprising a cylinder axially divided into two compartments and mounted to rotate about a horizontal axis within a housing. Each compartment is provided with a door at least one end and the housing is provided with corresponding doors. Each door subtends about one third of the circumference of the cylinder, and the doors are so arranged that each cylinder door at a given end can be aligned with either housing door, at that end, or a pair of cylinder doors at one end can be aligned with the corresponding pair of housing doors. Means are provided for ensuring exact alignment of the cylinder and housing doors in any of these positions.

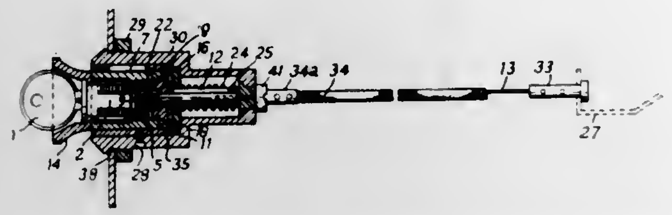
3,529,451
HELMET LOCK
William K. McOsker, 1821 Vallecito Drive, and Bonna J. Jimerson, 1815 Vallecito Drive, both of Eastview, Calif. 90732
Filed Aug. 7, 1968, Ser. No. 750,972
Int. Cl. E05b *69/00;* **A42b** *3/00*
U.S. Cl. 70—59 **12 Claims**



Safety helmets may be locked to an open vehicle to prevent their theft during an owner's temporary absence. The securing of such headgear may be achieved by a locking unit which is attached to the vehicle to preclude removal of both lock and helmet. This combined function may be accomplished with a ratchet shanked pin, the head of which functions to prohibit the helmet removal, and the shank of which acts to prohibit access to the locking unit clamp when inserted in a ratchet cylinder on the locking unit.

3,529,452
KEY OPERATED LOCKING DEVICE FOR LINEAR TRANSMISSION MECHANISMS

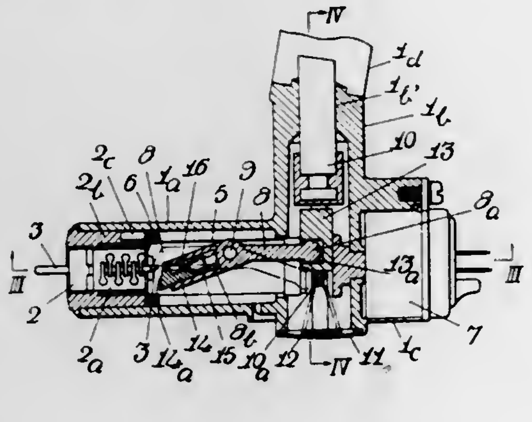
William Rae, 22 Lyndale Ave., London, NW. 2, England
Filed Aug. 14, 1968, Ser. No. 752,675
Claims priority, application Great Britain, June 17, 1968, 28,841/68
Int. Cl. E05b *65/12*
U.S. Cl. 70—240 8 Claims



A key operated locking device for a Bowden cable or rod linkage linear transmission mechanism includes a cylinder lock coupled to a splined shaft within a casing. The Bowden cable or rod is connected to the splined shaft. Wards of the lock project into slots in a non-rotatable sleeve. Axial movement of the sleeve is prevented by the splines of the shaft being out of register with corresponding segmental openings in an end wall of the casing. When the key is inserted in the lock, the wards withdraw from the slots and the lock and splined shaft are then freed to be manually rotated into a position in which the splines register with the segmental openings; having reached such position the lock and splined shaft can be pulled axially forward with respect to the casing and actuate the Bowden cable or rod linkage.

3,529,453
DEVICE FOR LOCKING A STEERING AXLE IN AUTOMOBILES

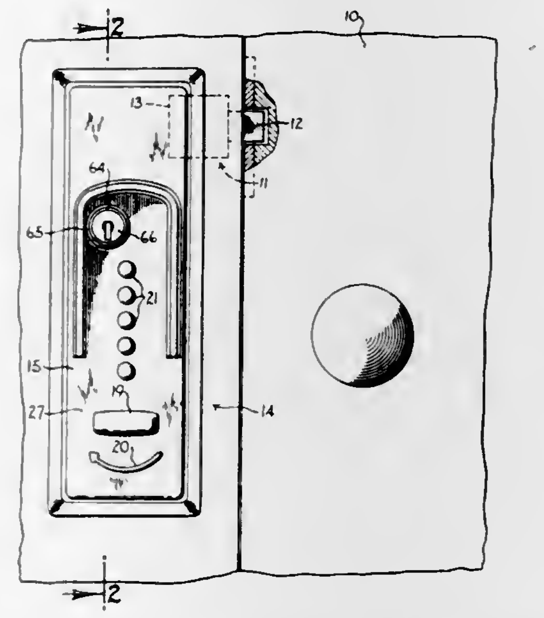
Tadashi Mizuno, Nagoya, Japan, assignor to Kabushiki Kaisha Tokai Rika Denki Seisakusho, Aichi Prefecture, Japan
Filed Aug. 29, 1968, Ser. No. 756,090
Int. Cl. E05b *65/12*
U.S. Cl. 70—252 1 Claim



A device for locking a steering axle in automobiles, in which a locking bolt is partially protruded into the engaging portion of the steering axle or retracted therefrom by the rotation of a cylindrical member of comparatively long length with a rotor at its one end. Said rotation of the cylindrical member also works to set a rotary switch to plural contacting points including a locking position. A key inserted into the rotor and partly protruding from the rotor into the cylindrical member can abut against a plunger provided to one end of a lever mounted swingably inside the cylindrical member in relation to the movement of the locking bolt and prevents the bolt from protruding into the steering axle when the rotary switch is set to the contacting points other than the locking position.

3,529,454
COMBINATION LOCK CONTROLLED ELECTRICAL INSTRUMENTALITY

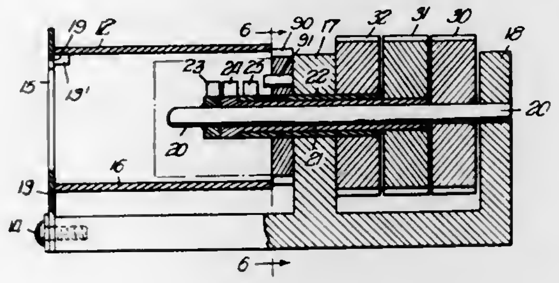
Aaron M. Fish, Montreal, Quebec, Canada, assignor to Unican Security Systems, Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Jan. 31, 1968, Ser. No. 701,893
Int. Cl. E05b *47/00*
U.S. Cl. 70—278 15 Claims



An electrical instrumentality, such as a solenoid operated lock bolt for a door or an electric motor for a machine tool, is controllable from a remote station by actuation of a control member that can be operated only upon decoding of a combination lock by an authorized person.

3,529,455
KEY RECORDING DEVICE

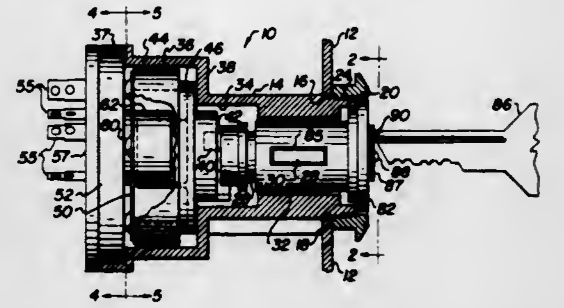
Donald V. Hartzell, Star Rte., Box 11, New Castle, Colo. 81647
Filed June 17, 1968, Ser. No. 737,735
Int. Cl. E05b *9/02, 39/04*
U.S. Cl. 70—355 20 Claims



A key recording device for registering the identity of each of a plurality of operating keys and for controlling access to a selected facility. The device includes a series of abutment members independently rotatable from a first selected position, and may include interlocking means which assures the desired sequence of operations. The operating key usable in the device is insertable in the device and adapted for rotation between a locked and an unlocked position, and has a series of detents engageable with said abutment members to move the members from their first position to preselected second positions as the key rotates to its unlocked position. Indicia registering means are provided to record indicia corresponding to the second positions of the abutment members to thereby identify the operating key. Security locking means may also be provided on the key and recording device to control access to the device.

3,529,456
KEY-OPERATED SAFETY LOCK

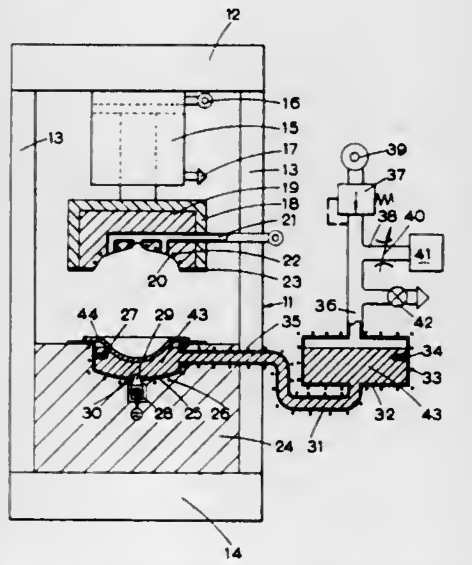
James McWilliams, Oak Hill Road, Baltimore, Md. 21212
Filed May 17, 1968, Ser. No. 730,167
Int. Cl. E05b *15/00*
U.S. Cl. 70—447 9 Claims



A key-operated, rotatable lock which can only be returned from an unlocked position to its locked position by removing the key therefrom. A pawl pivotally connected to the face of the lock is prevented from pivotal movement in one direction by contact with the key. Pivotal movement of the pawl and the lock in the other direction is prevented by contact of the pawl with a spring locking pin extending in front of the face of the lock when the lock has been turned to an unlocked position. When the key is withdrawn, the pawl pivots to a position clear of the spring locking pin and the force of a helical spring returns the lock to its locked position.

3,529,457
METHOD OF FORMING SHEET OR PLATE MATERIAL

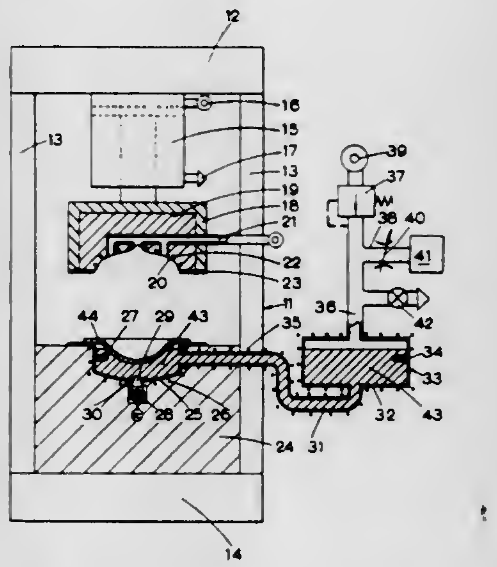
Roger David Butler, Kidlington, Ian Frederick Bowers, Freeland, and Cedric Charles Edward Colley, Wheatley, England, assignors to Pressed Steel Fisher Limited, Cowley, Oxford, England, a British company
Filed Dec. 15, 1967, Ser. No. 690,816
Claims priority, application Great Britain, Dec. 23, 1966 57,753/66; Mar. 8, 1967, 10,802/67; Mar. 15, 1967, 12,067/67
Int. Cl. B21d *26/04*
U.S. Cl. 72—56 4 Claims



A method of forming sheet or plate material that exhibits superplasticity within a limited range of temperatures, wherein a heated liquid is used to heat the material to the required temperature and the liquid is then used to force the sheet material against a forming die; advantageously the sheet is pre-stretched and the fluid is subjected to high frequency vibrations during forming.

3,529,458
METHOD OF FORMING SHEET OR PLATE MATERIAL

Roger David Butler, Kidlington, Ian Frederick Bowers, Freeland, and Cedric Charles Edward Colley, Wheatley, England, assignors to Pressed Steel Fisher Limited, Cowley, Oxford, England, a British company
Filed Dec. 15, 1967, Ser. No. 691,004
Int. Cl. B21d *26/04*
U.S. Cl. 72—60 3 Claims



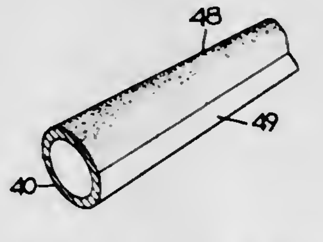
After forming superplastic sheet or plate material by heating the material to within the superplastic temperature range and then forming the material using at least one die, cooling gas is blown through the die to stiffen the formed material and then the gas pressure is increased to strip the formed material from the die; advantageously gas is also passed through the die during forming to produce a gas bearing or cushion on the forming surface of the die.

ERRATA

For Classes 72—181 and 72—237 see:
Patent Nos. 3,529,461 and 3,529,462

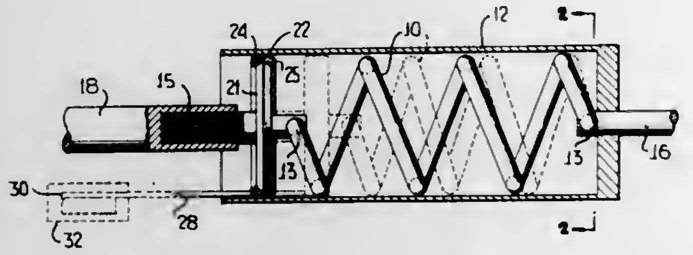
3,529,459
CONTINUOUS READING HYDROGEN METER

Peter Vilinskas, Riverview, Mich., assignor to Atomic Power Development Associates, Inc., Detroit, Mich., a corporation of New York
Original application Aug. 6, 1965, Ser. No. 477,854, now Patent No. 3,452,585, dated July 1, 1969. Divided and this application Mar. 1, 1968, Ser. No. 729,848
Int. Cl. G01n *7/04, 31/06*
U.S. Cl. 73—23 6 Claims



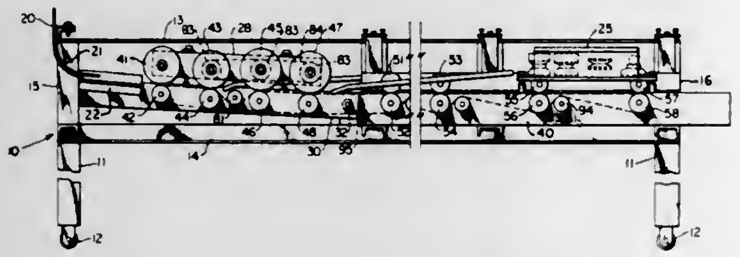
A hydrogen metering device characterized by a coiled hollow tube having a vacuum therein and fabricated from a material having a cell constant which changes responsive to variation in environmental hydrogen concentration, a coating covering substantially the surface of one half of the tube and extending along the length thereof fabricated from a material whose cell constant does not change in response to changes in hydrogen concentration so that a variation in the environmental hydrogen concentration causes anticlastic bending of the tube.

3,529,460
LOAD SENSOR AND CONTROLLER
Ernst Marcus, Casilla 258, La Paz, Bolivia
Filed Feb. 23, 1968, Ser. No. 707,593
Int. Cl. G01l, *3/06*
U.S. Cl. 73—136 **5 Claims**



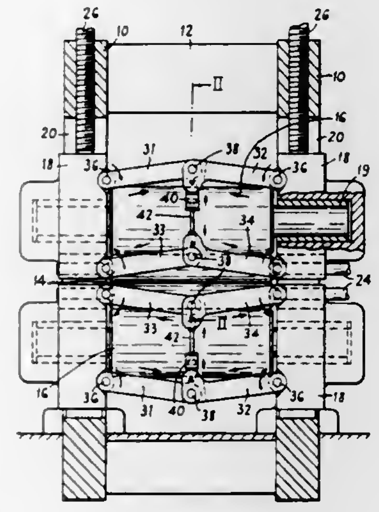
A device for sensing increases or decreases in the magnitude of a rotatable load utilizes a helical spring coiled within a tube, the spring having one of its ends coupled to a shaft for rotation only, and the other of its ends coupled to a further shaft for combined rotation and translation along the axis of the spring. A linkage member or arm is coupled to the latter end of the spring for response to translation by the spring only. As the load increases, the spring responds by winding up in compression, but is restrained from spreading outwardly by confinement within the tube. This compression is accompanied by contraction in the length of the spring, which is followed by the load sensing linkage. The reverse effect is achieved when the load decreases; i.e., the spring unwinds and is extended in length. In the event that the power input is not invariant, a linkage is provided which includes a device for converting rotational motion to translation, and a cam, for representing the variations in power input and for controlling other devices in accordance therewith.

3,529,461
ROLL FORMING METHOD AND MACHINE
Gary A. Knudson, 12820 Willow Lane,
Golden, Colo. 80401
Filed Nov. 15, 1968, Ser. No. 776,131
Int. Cl. B21d *5/08*
U.S. Cl. 72—181 **16 Claims**



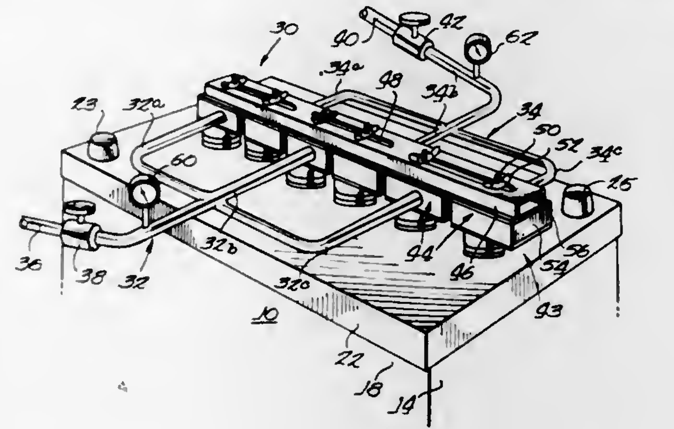
A method and apparatus for forming shaped members such as U-shaped gutters wherein a flat strip of material is moved downwardly along a parabolic curve as it is being formed between contact surfaces of successive sets of shaping rollers to relieve stresses in the material. An upturned concave shape is first formed in an intermediate portion of the material and maintained for a length of the travel by cooperative concave and convex peripheral contact surfaces on a series of sets of shaping rollers. Side portions of the material are sharply turned normal to the intermediate portion to shape the intermediate portion into a flat side and form sides adjacent and generally transverse to the flat side.

3,529,462
ROLLING MILL WITH MEANS FOR ROLL DEFLECTION
John A. Tracy, Bournemouth, England, assignor to The Loewy Engineering Company Limited, Bournemouth, England, a corporation of Great Britain
Filed July 12, 1966, Ser. No. 564,607
Int. Cl. B21b *27/00*
U.S. Cl. 72—237 **4 Claims**



This application relates to a rolling mill having means for roll deflection comprising common power means used simultaneously on both bearing chocks of a roll of said mill at points spaced apart from the axis of said roll and adapted to impart forces to said chocks which are parallel to the roll axis and act in the vertical axial plane of that roll, so that the bearing chocks of said roll tilt in said plane and deflect said roll.

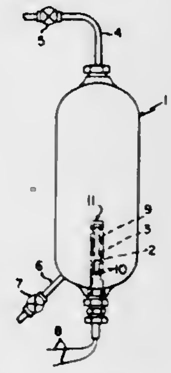
3,529,463
METHOD AND APPARATUS FOR TESTING BATTERY CASINGS FOR LEAKS
Daniel Orlando, Brookfield, and Walter Carl Kirchberger, Menomonee Falls, Wis., assignors to Gilmore Industries, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 14, 1968, Ser. No. 775,644
Int. Cl. G01m *3/04*
U.S. Cl. 73—49.2 **14 Claims**



A method and apparatus for testing the cells of a multicell storage battery simultaneously for peripheral and intercell leaks. In one practice of the method a gas pressure differential from a limited supply is developed between the cells and from each cell of the battery casing to ambient simultaneously with pressure changes in adjacent cells being noted. In one apparatus this is

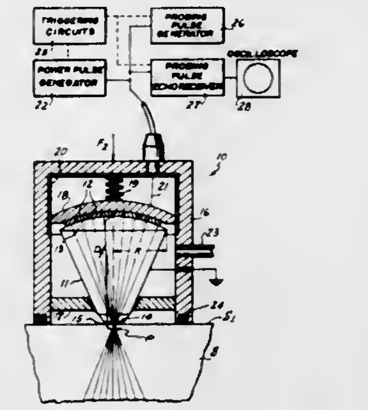
accomplished by a pair of manifolds, each having a pressure gauge. One manifold connects alternate cells to a first fluid source of predetermined pressure through a first valve, and the other connects the remaining cells to a second fluid source of different pressure through a second valve.

3,529,464
APPARATUS AND METHOD FOR MEASURING JET FUEL THERMAL STABILITY
Herbert R. Lander, Jr., and Lawrence A. Wogoman, Dayton, Ohio, assignors to the United States of America as represented by the United States Air Force
Filed Feb. 12, 1969, Ser. No. 798,639
Int. Cl. G01n *33/22*
U.S. Cl. 73—61.2 **2 Claims**



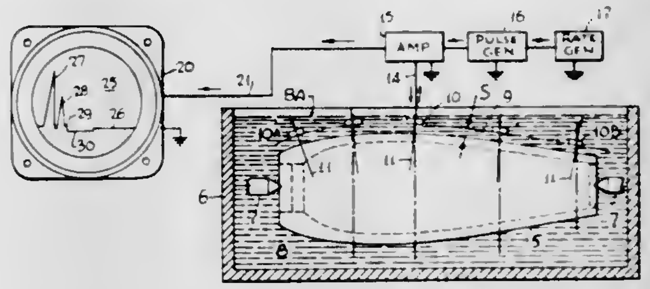
An apparatus and a method for evaluating the ability of jet fuel to withstand high temperatures. The invention comprises placing an amount of jet fuel to be tested in a high pressure cylinder, pressurizing the fuel with an inert gas to prevent it from boiling when heated, heating the fuel to test temperatures for about one hour with a heating element sheathed in a metal sheath, cooling the system, and analyzing the deposits deposited on the metal sheath.

3,529,465
FATIGUE TESTING AND APPARATUS THEREFOR
Claus Kleesattel, 9841 64th Road, Forest Hills, N.Y. 11374, and Wolfgang Eisenmenger, In der Bleiche 30, Gottingen, Germany
Filed Feb. 23, 1968, Ser. No. 707,538
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.3 **20 Claims**



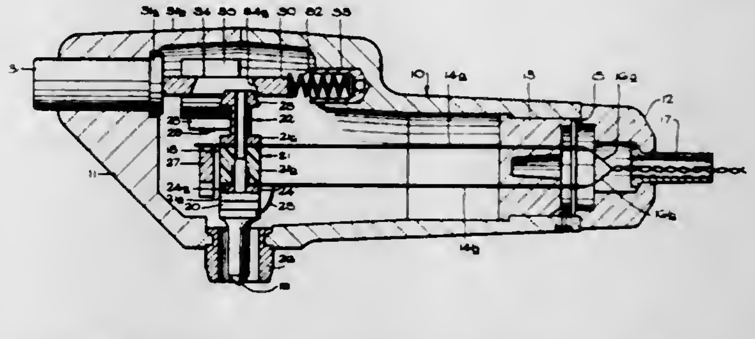
A specimen has a surface acoustically coupled to the small end of a solid, frusto-conical wave guide, and high energy or power pulses of high ultrasonic frequency are intermittently generated by transducer elements on a convexly shaped large end of the wave guide to focus the generated waves at a focal point or zone within the specimen whereby to subject the specimen to a large number of high intensity stress cycles at the focal zone during each power pulse for eventually inducing fatigue damage or failure at such zone, with such fatigue damage or failure at the focal zone being detected, either by the pulse-echo method or other similar measures during the intervals between power pulses, or by sensing the relatively low frequency emissions or noises characteristic of the fatigue damage or failure.

3,529,466
ULTRASONIC INSPECTION APPARATUS FOR ROTATABLE CYLINDRICAL OBJECTS AND BODIES OF ELASTIC MATERIAL
William J. Pryor, Cherry Hill, N.J., Richard A. Meinert, Southampton, Pa., and William C. Truckenmiller, David Murphy, and John Bryce, Albion, Mich., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Apr. 14, 1967, Ser. No. 631,107
Int. Cl. G01n *29/04*
U.S. Cl. 73—67.8 **2 Claims**



An ultrasonic non-destructive testing and inspection system for such elements as artillery shells and the like is provided for ascertaining the presence or absence of metallurgical and mechanical discontinuities appearing therein. Access is only to the outer shell surface, without direct contact therewith, through the use of ultrasonic waves of the traverse or shear type provided by a pulsed transducer positioned at a critical acute angle in a vertical plane at right angles to the longitudinal axis of the shell.

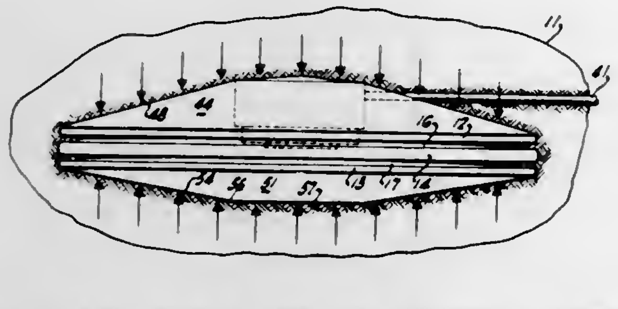
3,529,467
APPARATUS FOR MEASURING THE HARDNESS OF MATERIALS
Gordon Howard Townend, Wolverhampton, England, assignor to G.K.N. Group Services Limited, Smethwick, Warley, England, a British company
Filed Aug. 5, 1968, Ser. No. 750,061
Claims priority, application Great Britain, Aug. 4, 1967, 35,906/67
Int. Cl. G01n *3/42*
U.S. Cl. 73—82 **6 Claims**



Hardness testing apparatus including a testing head wherein an assembly comprising an indenter tip, a mass, and a stress responsive electrical element interposed therebetween, is carried by a pair of parallel blade springs. A lever is arranged to engage one of said blade springs and is operable to move said assembly to stress said springs, latching means being provided to hold said assembly in a position in which the springs are stressed to a predetermined extent. Means are provided for manually releasing said latching means so that said assembly has a predetermined velocity imparted thereto as it moves under the influence and guidance of said blade springs. Impact of said indenter tip on the material under test causes an electrical hardness signal to be generated during the period in which an arresting force is exerted on the tip due to its penetration into the material.

3,529,468
METER FOR MEASURING COMPRESSIVE STRESS IN EARTHEN MASSES AND THE LIKE

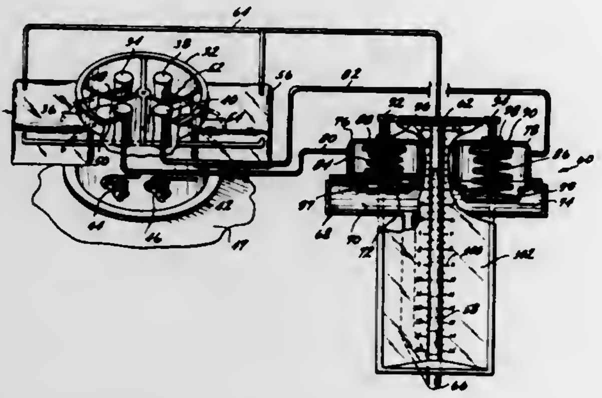
Roy W. Carlson, Berkeley, Calif., assignor to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,615
Int. Cl. G01n *3/00*
U.S. Cl. 73—88.5 **15 Claims**



A remotely reading meter for measuring compressive stress in a mass within which the meter is embedded. The meter is especially suited for use in masses comprised of earthen and other granular materials; and it includes a pair of load-receiving structures movable relative to each other in the direction of the compressive loadings applied thereto and to an amount corresponding to the magnitude of any such loading. Sensor means for determining the extent of any such relative movement produces a response representative thereof and indicative, therefore, of the magnitude of the compressive-stress loading applied to the meter. In profile, the meter is thin along its outer peripheral edges and gradually increases in thickness toward the center portion thereof so that abrupt discontinuities or other disturbances in an encapsulating mass as a consequence of the presence of the meter therein are avoided. In a geometric sense, the profile configuration of each of the two halves of the meter as defined by a center plane therethrough is substantially proportional to the natural deflection curve of a semi-infinite elastic solid having an area like that of the meter and subjected to a substantially uniform load.

3,529,469
FLOWMETER FOR LIQUID FUEL ENGINE

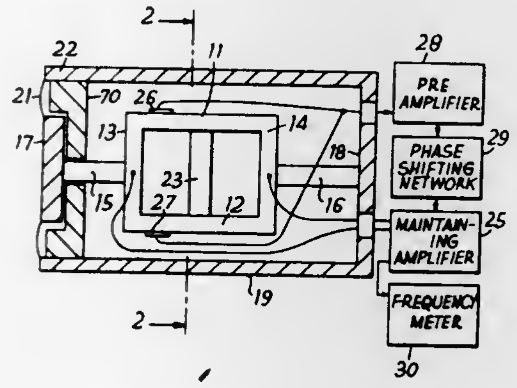
Edward V. Gauthier, 9351 Mokihana Drive, Huntington Beach, Calif. 92646
Continuation-in-part of application Ser. No. 469,494, July 6, 1965. This application Apr. 12, 1968, Ser. No. 727,131
Int. Cl. G01m *15/00*
U.S. Cl. 73—113 **6 Claims**



The flowmeter is disclosed for indicating fuel consumption as by an internal-combustion engine. The system, as disclosed is applied to engines wherein liquid fuel is supplied from a float-chamber fuel reservoir to be atomized as it is drawn through a carburetor throat to the engine combusion chambers. The differential pressure existing between the float-chamber reservoir and the carburetor throat is sensed as an indication of the rate of fuel consumption. The flowmeter is disclosed on power plants having a plurality of carburetor throats or channels, e.g. multi-engine power plants and multi-barrel carburetors. In such systems, individual pressure signals are individually sensed and applied to yieldable members, the total combined displacement of which is sensed by a summing structure to provide a single output to an indicator. The yieldable members are spring biased by spring means incorporating calibration set screws.

3,529,470
FORCE-TRANSDUCERS

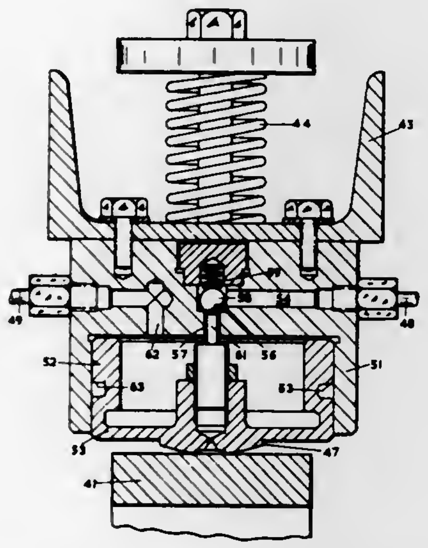
Joram Agar, Farnborough, England, assignor to The Solartron Electronic Group Limited, Farnborough, England, a corporation of the United Kingdom
Filed May 10, 1967, Ser. No. 637,471
Claims priority, application Great Britain, May 18, 1966, 22,146/66
Int. Cl. G01l *1/10*
U.S. Cl. 73—141 **3 Claims**



Force-measuring apparatus having a composite strut with two bars which are to be maintained in transerse vibration at a common resonance frequency by electrical feedback, the frequency of vibration indicating the force applied to the composite strut.

3,529,471
PNEUMATICALLY CONTROLLED LOAD CELLS

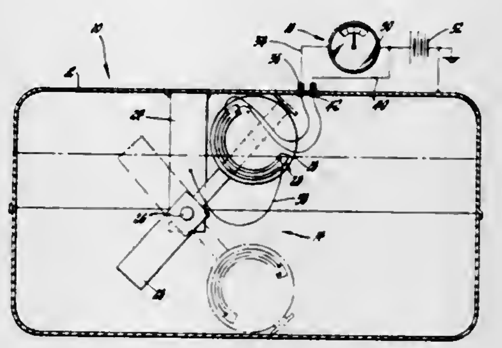
Leslie Ernest Lightowler and Brian Colin Pagdin, Sheffield, England, assignors to Laycock Engineering Limited, Sheffield, England, a British company
Filed Dec. 5, 1967, Ser. No. 688,164
Claims priority, application Great Britain, Dec. 12, 1966, 55,506/66
Int. Cl. G01l *1/02*
U.S. Cl. 73—141 **6 Claims**



A pneumatically controlled load cell substantially independent of temperature and main air pressure variations and capable of responding quickly to variations in magnitude of the applied load is constituted by a cylinder accommodating a piston the head of which is arranged to receive the applied load, the cylinder having an air inlet passage incorporating a ball valve operable by movement of the piston under load and an air outlet passage connected to a device for indicating the pressure developed in the cylinder under the applied load.

3,529,472
FLOAT-OPERATED THERMISTOR TANK LEVEL SENDER

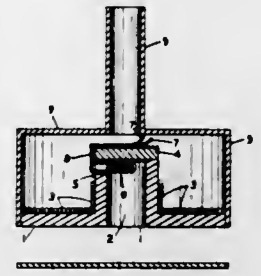
John W. Riddel, Fenton, Mich., assignor to General Motors Corporation, a corporation of Delaware
Filed Dec. 5, 1968, Ser. No. 781,522
Int. Cl. G01f *23/10*
U.S. Cl. 73—295 **12 Claims**



A liquid level indicator having a float positioned in a liquid reservoir, a thermistor positioned on the float so as to be immersed in the liquid in direct proportion to the amount of liquid in the reservoir, and an indicating device which senses the amount of the thermistor immersed in the liquid so as to provide an indication of the quantity of liquid in the reservoir.

3,529,473
NON-CONTACT TEMPERATURE MEASURING DEVICE

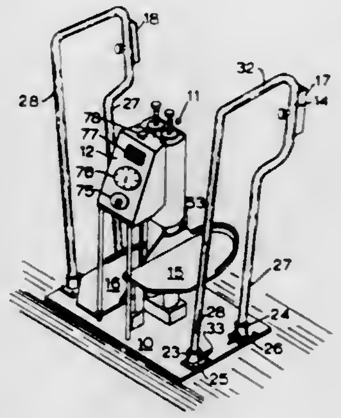
Nathaniel E. Hager, Jr., Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Jan. 6, 1969, Ser. No. 789,342
Int. Cl. G01j *5/04, 5/12*
U.S. Cl. 73—355 **7 Claims**



A non-contact temperature sensing device or probe. The temperature sensor is a quick-response thermocouple of two dissimilar metal foils joined at corresponding edges to form a thermocouple junction. The sensor is positioned at the top of a closed well which is recessed in a bottom plate. The bottom plate has associated therewith means for maintaining the bottom plate at a predetermined temperature. The sensor is electrically insulated from the top of the well. The sensor has electrical leads connecting to a device for sensing potential differences. A supporting body supports the plate, the sensor, the temperature maintaining means, and any other associated hardware, enabling the entire probe to be positioned near the object whose temperature is to be measured.

3,529,474
CARDIAC EXERCISER

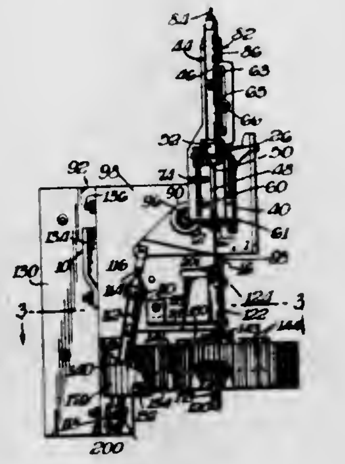
Albert M. Olson, 1040 Sierra Drive, and Everett H. Johnson, 1801 California St., both of Turlock, Calif. 95380
Filed Dec. 5, 1968, Ser. No. 781,492
Int. Cl. A03b *21/00;* **G01l** *5/02*
U.S. Cl. 73—379 **6 Claims**



An exercising ergometer. A pair of handrails and a central column are supported on a base. In the column are a pair of hydraulic cylinders, each having a piston and a connecting rod, and a pedal on each side of the column is connected to one connecting rod. There is means for limiting the stroke of each piston and of the pedal associated therewith. An hydraulic circuit connects the two cylinders and includes (a) load valve means for controlling the pressure transmitted, for causing one pedal to rise when the other is depressed and (b) means for measuring the work expended in moving the pedals.

3,529,475
AUTOMATIC FLUID SAMPLING SYSTEM

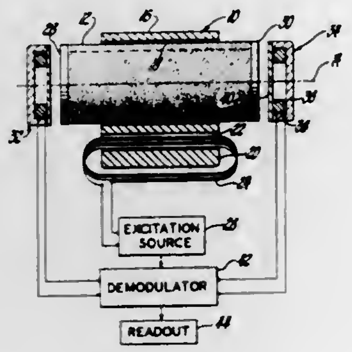
Gene E. Lightner, Kennett Square, Pa., and Howard B. Muhlestein, Wilmington, Del., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Feb. 26, 1969, Ser. No. 802,420
Int. Cl. G01n *1/14*
U.S. Cl. 73—423 **10 Claims**



A syringe needle is introduced into a sample vial at a sample pickup location, filled with sample fluid, removed from the vial, and then shifted relative to the vial to be in alignment with the injection port of an analytical instrument. The needle is then inserted into the injection port, the sample ejected, the needle removed from the injection port and introduced into an additional receptacle used for cleaning or collecting waste, the next sample indexed to the sample pickup location, and the cycle repeated. This complete operation is controlled by a total of five prime movers which may be digitally controlled in any desired sequence.

3,529,476
SQUEEZE-FILM GAS BEARING AND AN ACCELEROMETER USING SAME

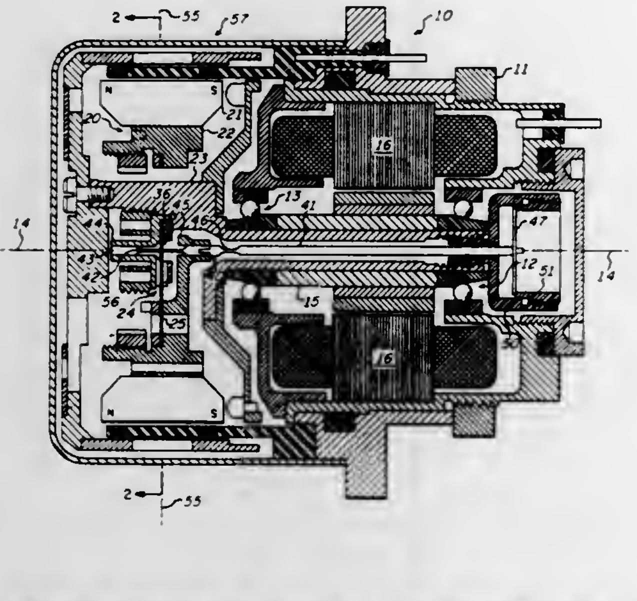
Argyle G. Lautzenhiser, Magnolia, Mass., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 28, 1966, Ser. No. 597,287
Int. Cl. G01p *15/08*
U.S. Cl. 73—516 **8 Claims**



A hydrostatic gas bearing is disclosed which includes a cylinder stator of magnetostrictive material for accommodating a cylindrical mass in spaced relationship therewith. An externally appendant portion integrally formed with the cylinder accommodates a winding which, when energized with time varying current, produces a flux pattern around the bore causing periodic radial constrictions of the cylinder. In another embodiment, the flux pattern produces both radial and axial constrictions of the stator.

3,529,477
GYROSCOPIC ROTOR SUSPENSION

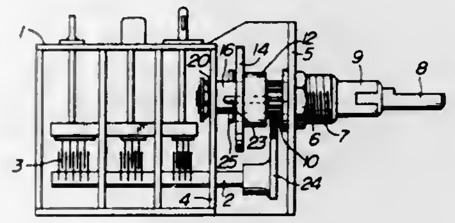
Thomas R. Quermann, Huntington Station, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,127
Int. Cl. G01c *19/02*
U.S. Cl. 74—5 **6 Claims**



Gyroscopic apparatus having a gyroscopic rotor that is freely suspended by a radial flexure support member having a first spring centering gradient characteristic and by an axial flexure support means having first and second portions with second and third spring centering gradient characteristics, respectively, in which the first and second spring centering gradient characteristics tend to be compensated by the third spring centering gradient characteristic to minimize the elastic restraint of the suspension.

3,529,478
TUNING DEVICE

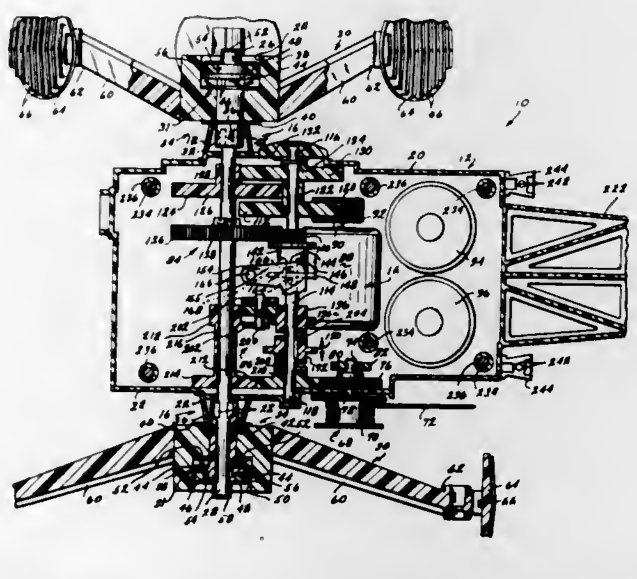
Toshio Hayakawa, Kadoma-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan, a corporation of Japan
Filed July 3, 1968, Ser. No. 742,399
Claims priority, application Japan, July 6, 1967, 42/58,965; Sept. 11, 1967, 42/78,488; Apr. 16, 1968, 43/31,970 (all utility models)
Int. Cl. F16h *35/18*
U.S. Cl. 74—10.54 **4 Claims**



A tuning device, comprising a rotary shaft of adjusting means for performing the tuning operation, said rotary shaft being provided with a gear, a main adjusting shaft on which are mounted a pinion adapted for intermeshing with said gear and a cam member formed with a slot extending in "oblique direction," and a fine-tuning shaft provided integrally with a fine-tuning disk having a spiral guide slot formed therein, said fine-tuning disk being located in close relationship to said cam member, wherein the slot of said cam member and the spiral guide slot of said fine-tuning disk are coupled to each other through an operating pin. The pinion is rotated by the rotation of said main adjusting shaft so that the coarse-tuning operation is directly performed, and the operating pin is rotated by the rotation of the fine-tuning shaft along the guide slot of the fine-tuning disk while rotating the cam member having said operating pin inserted in the slot thereof so that the fine-tuning operation is performed.

3,529,479
GEAR TRAIN AND CLUTCH FOR A SELF-PROPELLED TOY

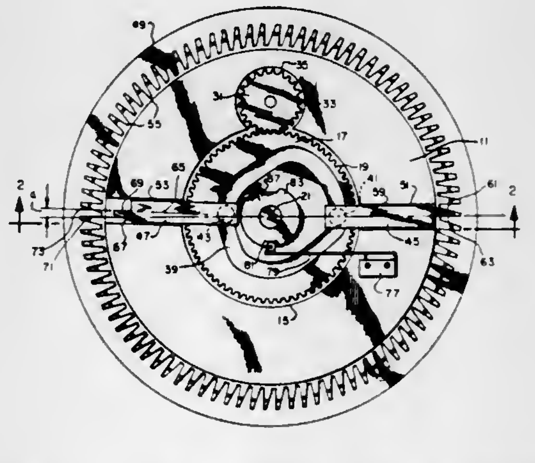
John W. Ryan, Los Angeles, Robert A. MacMeekin, Huntington Beach, and Daniel H. Meggs, Torrance, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Original application Feb. 3, 1967, Ser. No. 613,864, now Patent No. 3,475,854, dated Nov. 4, 1969. Divided and this application Aug. 22, 1969, Ser. No. 852,278
Int. Cl. A63h *17/00, 17/26*
U.S. Cl. 74—15.4 **5 Claims**



A gear train and clutch arrangement may be operated manually to shift the output of a winch-carrying electric toy vehicle having wheel substitutes from the wheel substitutes to the winch. The clutch includes axially slidable members having protuberances which are biased into engagement with matching detents carried by clutch members fixed to the axle. The clutch automatically shifts the output from the winch to the wheel substitutes when the winch encounters a predetermined load.

3,529,480
PRECISION STEPPING DRIVE

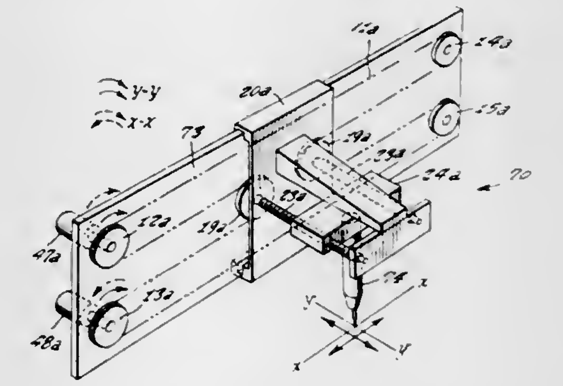
Walter E. Kaspareck, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 7, 1968, Ser. No. 774,151
Int. Cl. F16h *25/06*
U.S. Cl. 74—63 **3 Claims**



A device for driving rotationally and in precise increments a ring gear having internal teeth. A cam disk having a continuous cam groove in the surface thereof is located centrally of the driven gear and two plungers extend from the cam groove toward the internal teeth of the ring gear. A cam following roller is joined to each of the plungers and as the cam disk rotates the plungers are caused to reciprocate alternately into and out of wedging engagement with the ring gear teeth by action of the cam groove against the rollers. Each reciprocating cycle of each plunger rotates the ring gear a precise amount.

3,529,481
CHAIN DRIVE SYSTEM FOR MOBILE LOADING PLATFORM OR FOR TWO- OR THREE-DIMENSIONAL INDEXING

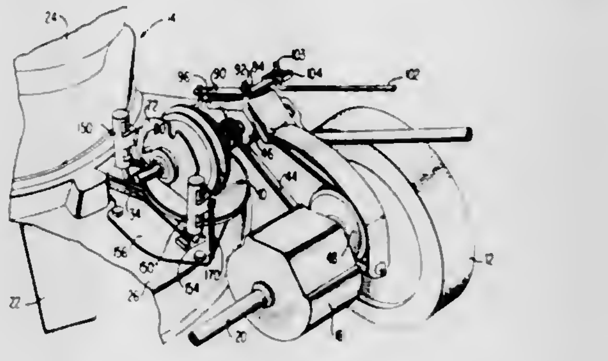
Boleslaw L. Budzyn, 63 Poplar St., Passaic, N.J. 07055
Filed Mar. 27, 1968, Ser. No. 716,480
Int. Cl. F16h *55/00*
U.S. Cl. 74—89.21 **8 Claims**



A simple chain drive requiring a minimum of mechanism for selective horizontal or vertical travel of a platform for picking up freight and transporting the same from one place to another; or for two- or three-dimensional indexing as it could be applied to numerous mechanical systems.

3,529,482
FRICTION DISC TRANSMISSION

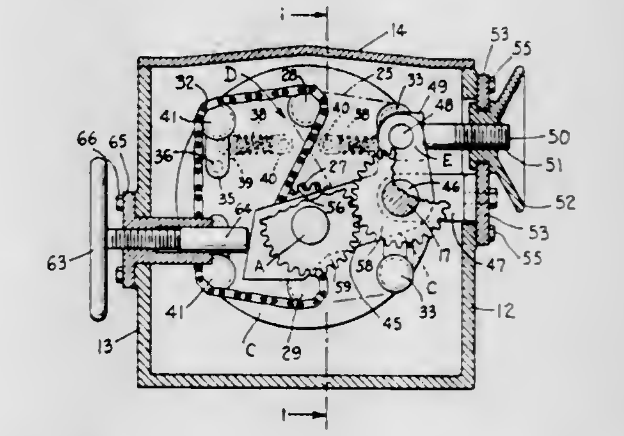
Harold P. Jackson, McDonough, and Wallace A. Hanson, Jr., Riverdale, Ga., assignors to McDonough Power Equipment, Inc., McDonough, Ga.
Filed Nov. 8, 1968, Ser. No. 774,299
Int. Cl. F16c *23/00, 27/06;* **F16h** *13/14, 15/10*
U.S. Cl. 74—197 **22 Claims**



A friction disc transmission including a disc, a wheel driven by the disc and mounted on a shaft to drive the shaft at different speeds depending on the positioning of the wheel on the disc. The shaft is resiliently mounted for movement towards and away from the disc through a ball bearing assembly including a flexible sleeve positioned between the inner race of the bearing and the end of the shaft. The opposite end of the shaft is received through a yoke member connected to the wheel for shifting the wheel along the shaft to obtain different speeds. When the wheel is moved through the center of the disc to obtain a reverse speed, a spring received about the shaft is energized to urge the wheel towards a neutral position overlying the center of the disc, should the wheel be released by the shifting mechanism when the wheel is in the reverse speed position. The shifting mechanism is operatively connected to the yoke to move the same and consequently the wheel along the shaft to obtain the different speeds. The yoke is supported with respect to a stationary element by self-adjusting pivot arms which permit the yoke to move along the shaft for changing speed.

3,529,483
VARIABLE SPEED MECHANISM

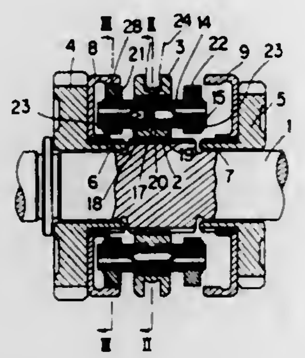
William A. Warnock, Box 156–A, Rte. 1, Lyman, S.C. 29365
Filed July 16, 1968, Ser. No. 745,225
Int. Cl. F16h *9/00, 11/00*
U.S. Cl. 74—217 **7 Claims**



A variable speed mechanism provided with an input shaft and an output shaft, and coupling means interposed therebetween so that when said input and output shafts are shifted eccentrically relative to each other the speed of rotation of the output shaft will vary relative to the driven input shaft.

3,529,484
SYNCHRONIZING DEVICE

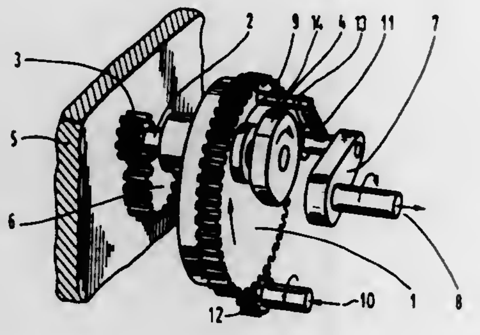
Yukio Tomita and Hideki Morino, Toyota, Japan, assignors to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-cho, Toyota, Aichi Prefecture, Japan
Filed Aug. 8, 1968, Ser. No. 751,093
Claims priority, application Japan, Aug. 12, 1967, 42/51,538; Nov. 4, 1967, 42/70,719
Int. Cl. F16h *3/38*
U.S. Cl. 74—339 **6 Claims**



A synchronizing device to be used in the transmission gear, etc. of an automobile having at least two rotating members coaxially arranged and separately rotatable, and a sliding member like a thrust block provided on one of the rotating members rotatable therewith and axially movable relative thereto is disclosed herein. A synchronizing member is attached to the sliding member opposite to and spaced from the synchronous contact surface of the other rotating member. An elastic means is used to separate the synchronizing member from the synchronous contact surface of the other rotating member, the synchronizing member being biased toward the synchronous contact surface of said other rotating member upon movement of the sliding member relative to the one rotating member.

3,529,485
STEP-BY-STEP FEED GEAR

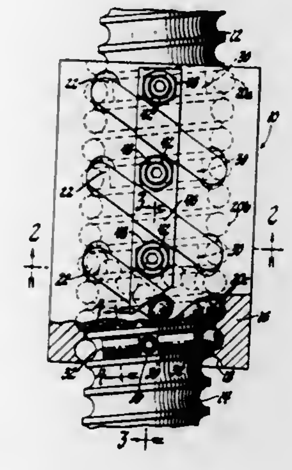
Rainer Köfferlein, Munich-Solln, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Sept. 20, 1968, Ser. No. 761,195
Claims priority, application Germany, Sept. 29, 1967, 1,650,835
Int. Cl. F16h *27/04, 35/02, 37/12*
U.S. Cl. 74—394 **6 Claims**



A step-by-step feed gear such as for feeding cards or tape-recording carriers which allows intermittent movement of a shaft and in which a step-by-step feed gear has very few parts with an output shaft which is driven in a multiplicity of steps in accordance with a desired motion and which is appropriate for high-step frequencies and in which a rocker arm is mounted on the output shaft and guided by a curved disk which rotates around its own shaft and which also rotates with its shaft on a circular track around the axis of the drive shaft.

3,529,486
BALL DEFLECTOR FOR BALL SCREW AND NUT DEVICES

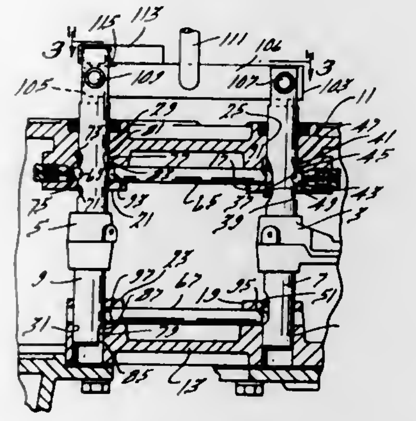
David A. Galonska and Lowell F. Smith, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 4, 1968, Ser. No. 757,400
Int. Cl. F16h *55/18, 55/12*
U.S. Cl. 74—459 **6 Claims**



In a recirculating ball screw and nut device including one or more endless trains of bearing balls circulable through cooperating helical grooves in the screw and nut and a transfer tube in the nut, a ball deflector includes a rod-like deflector element seated firmly in the groove of the screw under the bias of a coil compression spring within a retaining element fixed within the nut and having a key end thereof received within a keyway of the deflector element and operative to restrain the latter against rotation with the screw relative to the nut but permit axial displacement relative thereto with axial endwise movement of the screw arising from axial lash in the recirculating ball connection.

3,529,487
TRANSMISSION CONTROL DEVICE

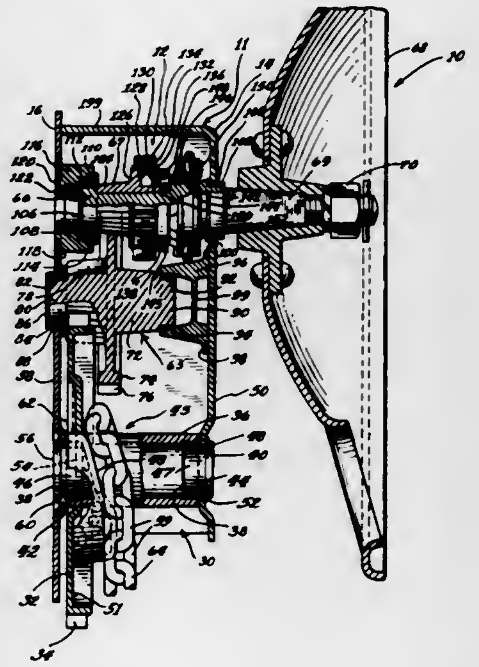
Courtney F. Dolan, Syracuse, N.Y., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,691
Int. Cl. G05g *5/10*
U.S. Cl. 74—477 **12 Claims**



Control device for a transmission mechanism including two parallel rails movable between neutral, high and low range positions. Interlock pins extend between the rails. A link connects the two rails, and an arm on one rail engages the link to prevent pivotal movement of the link in one direction beyond a predetermined position relative to the one rail so that both rails will be moved together into a low range position.

3,529,488
HIGH POWER HAND BRAKE AND RELEASE MECHANISM THEREFOR

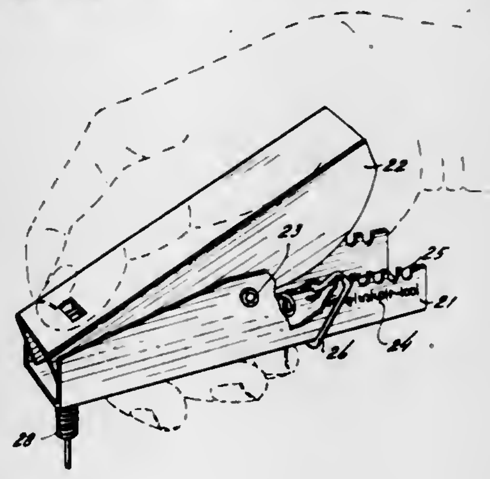
Eldred H. Natschke, Bourbonnias, Ill., assignor to Universal Railway Devices Company, a corporation of Illinois
Filed July 24, 1968, Ser. No. 747,190
Int. Cl. G05g *1/08*
U.S. Cl. 74—505 **2 Claims**



A vertical wheel hand brake which is especially arranged to provide the increased power needed for 125 ton cars and up in weight, and includes a special gear cluster interposed between the brake drum and the brake ratchet wheel pinion for this purpose. The hand brake also includes a ratchet wheel holding pawl improvement involving a spring biased pawl, a revised brake release arrangement providing for improved control over movement of the clutch mechanism involved, and an improved manner of securing the brake chain to the hub so that the chain links will always be presented to the hub at 45 degrees with respect thereto.

3,529,489
REMOTE HAND THROTTLE CONTROL

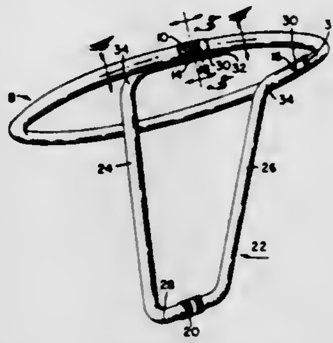
George J. Schaefer, Jr., 1420 S. 3rd St., Beatrice, Nebr. 68310
Filed Feb. 5, 1969, Ser. No. 796,874
Int. Cl. G05g *1/04;* **A01c** *15/00*
U.S. Cl. 74—526 **10 Claims**



A remote hand throttle control of the type used in regulating the flow of fertilizer or the like from a fertilizer distributor and including means for positively setting the control, so as to limit the degree of pulling a throttle control wire.

3,529,490
BICYCLE HANDLEBAR

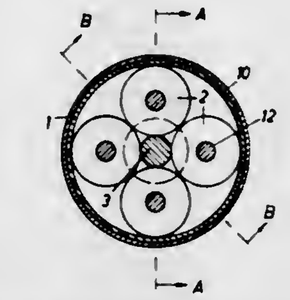
Carlton P. Pawsat and Robert Francis Humlong, Maysville, Ky., assignors to Wald Manufacturing Company, Incorporated, Maysville, Ky., a corporation of Kentucky
Filed Aug. 13, 1968, Ser. No. 752,378
Int. Cl. B62k *21/12*
U.S. Cl. 74—551.1 **10 Claims**



The handlebar is constructed simply and economically of two tubular parts secured to one another by two bolts, one of said tubular parts being a horn member having divergent arms developed to provide end saddles each making a sturdy separable connection with the other tubular part which comprises the hand grip member.

3,529,491
GEARING ARRANGEMENT FOR HIGH REDUCTION GEAR RATIOS

Siegfried Stauber, Huttenkopfstrasse 32, Zurich, Switzerland
Filed July 5, 1968, Ser. No. 742,835
Claims priority, application Switzerland, July 13, 1967, 9,999/67
Int. Cl. F16d *69/00;* **F16h** *13/02, 35/00*
U.S. Cl. 74—640 **7 Claims**

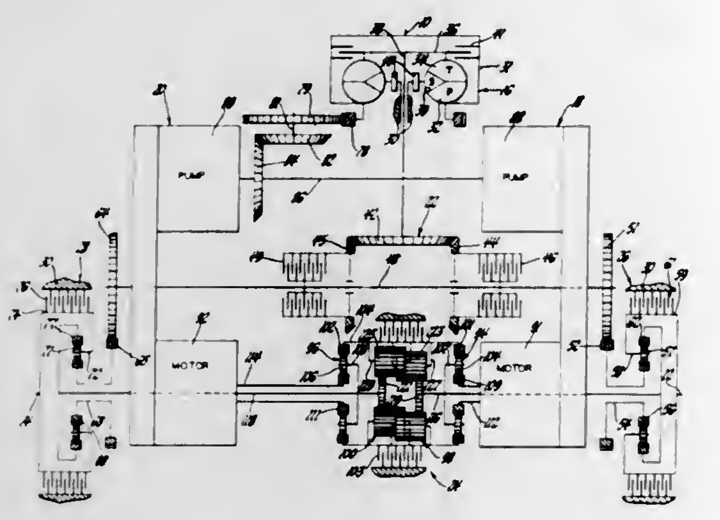


The invention describes a gearing arrangement for high reduction gear ratios which is of the type comprising two concentric interfitting ring members, the inner ring member being radially deformable such that its wall portion at a number of peripheral locations bears against the other deformable ring member and between such points of contact there exists non-bearing peripheral locations. Both of the ring members are axially displaceable relative to one another in order to infinitely vary the transmission ratio, whereby, the ring members contact one another at different diameters along the direction of displacement.

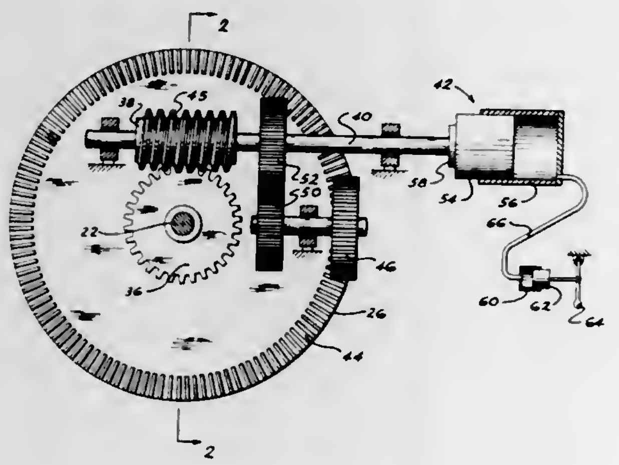
3,529,492
POWER TRAIN HAVING A SINGLE INPUT, DUAL OUTPUT WITH MECHANICAL AND HYDROSTATIC-MECHANICAL DRIVE

Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 783,243
Int. Cl. F16h *37/06*
U.S. Cl. 74—720.5 **3 Claims**

A single input, dual output, vehicular power train having a hydrodynamic torque converter, a pair of variable ratio hydrostatic drive units and three differential gear units combined to provide a low speed range drive with full power transmittal through the converter, a high speed range drive with hydrostatic-mechanical power transmittal and steering in each drive by hydrostatic operation.



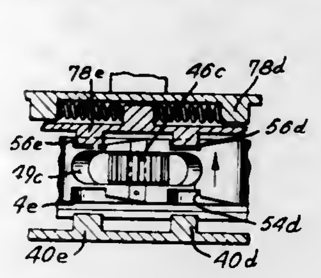
3,529,493
POWER TRANSMISSION
Peter Egli, Weymouth, Mass.
(Continental Lane, Titusville, N.J. 08560)
Filed Oct. 29, 1968, Ser. No. 771,444
Int. Cl. F16h *57/10*
U.S. Cl. 74—785 **9 Claims**



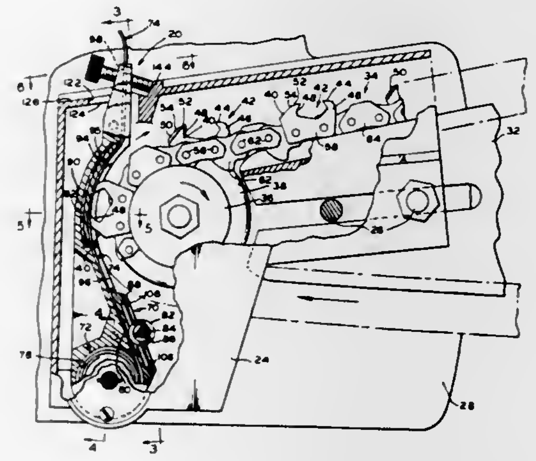
A gear transmission in which the relation between the input and output torque and speed is infinitely variable. The transmission embodies a planetary gear system including means to effectively, controllably regulate the rotational velocity of the ring gear of the system and thereby alter the gear ratio of the transmission. The velocity of the ring gear is regulated by a braking arrangement that includes a worm helix that is synchronously rotatable with a pinion formed integral with the ring gear. The worm is driven by the ring gear through a gear train and means are provided to vary the phase relationship between the worm helix and the pinion thus to increase or retard the rotational velocity of the ring gear and concomitantly the gear ratio of the system.

3,529,494
REVERSE GEARING ASSEMBLY
Gaston Matte, B.P. 462, La Tugue, Quebec, Canada
Filed Dec. 18, 1968, Ser. No. 784,823
Int. Cl. F16h *3/44, 37/10*
U.S. Cl. 74—792 **6 Claims**

A reverse gearing assembly in which is provided a planetary gear system cooperating with a ring gear. The ring gear includes driving lugs cooperating with a drive plate and shock-absorbing springs provided between the driving lugs of the ring gear and the cooperating shoulders on the drive plate.



3,529,495
ABRASIVE STRIP TOP SHARPENERS
Curtis L. Graversen, Milwaukie, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Jan. 30, 1968, Ser. No. 701,674
Int. Cl. B23d *63/00*
U.S. Cl. 76—25 **23 Claims**

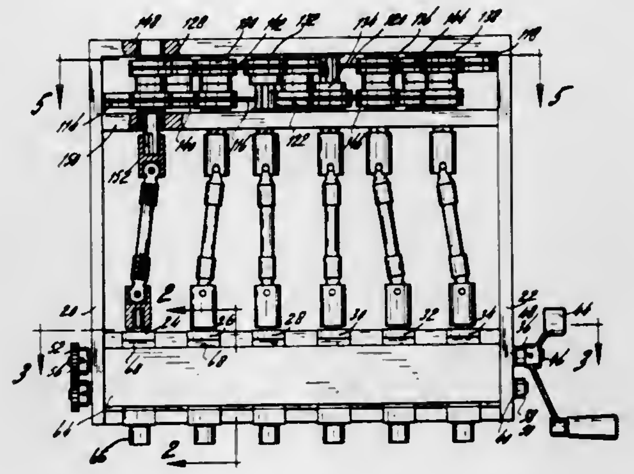


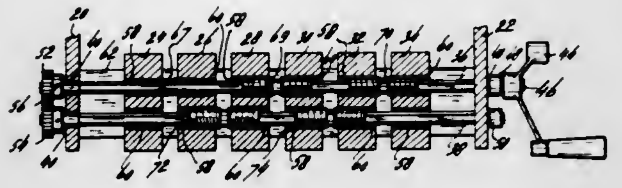
A top sharpener **20** (FIGS. 1–7) includes an arm **70** on a sprocket cover **24**. The arm **70** carries a supply roll of abrasive strip and guides the strip in an arcuate path for top sharpening a saw chain **42**. A braking roll **82** holds the strip against accidental advancement. A resilient pad **92** backs up the strip. An endless belt **262** (FIGS. 8 and 9) of a top sharpener **200** is carried by an arm **206** mounted pivotally on a sprocket cover **220**. A top sharpener **300** (FIGS. 10 and 11) includes a cartridge **302** adapted to be pressed downwardly in a guideway **324** in a sprocket cover **326** and carrying an abrasive strip **320**. A top sharpener **400** (FIGS. 12–14) includes an arm-like cartridge **402** removably and pivotally mounted by a pin **450** between slotted flanges **456** of a sprocket cover **404** and carrying an abrasive belt **444**.

3,529,496
MULTIPLE DRILL SPINDLE SHIFTING MECHANISM
Ernest K. Haley, 134 NW. Parkway,
Louisville, Ky. 40206
Continuation-in-part of application Ser. No. 733,657, May 31, 1968. This application July 30, 1969, Ser. No. 845,964
Int. Cl. B23b *39/18*
U.S. Cl. 77—24 **10 Claims**

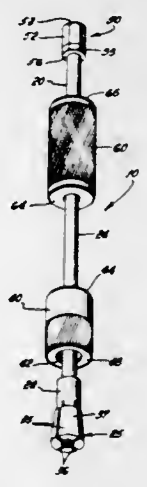
A drill spindle shifting mechanism of the type used in supporting a plurality of drill chucks for driving simultaneously a plurality of holes through a work piece such as a steel beam and including a plurality of spindle blocks

supporting the chucks and movable laterally with respect to each other, so as to vary the distances between holes being drilled. The blocks are supported upon a pair of lateral adjusting rods which, upon being rotated, move the blocks laterally and simultaneously with respect to each other.



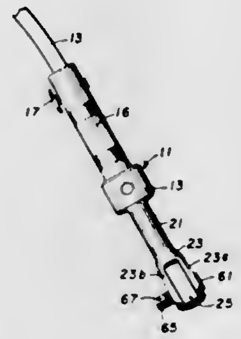


3,529,497
DOWEL REMOVING TOOL
Daryl G. Brooks, 5240 N. Van Ness,
Fresno, Calif. 93721
Filed June 27, 1968, Ser. No. 740,501
Int. Cl. B25b *19/00, 13/50*
U.S. Cl. 81—52.35 **9 Claims**



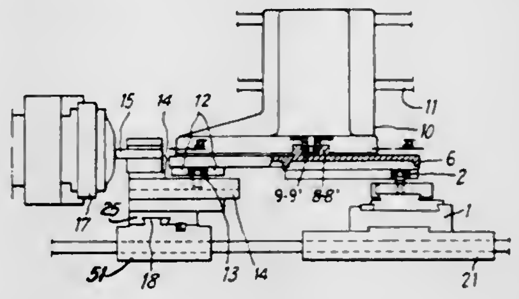
A dowel removing tool providing a dowel gripping member manipulatable between radially contractible dowel gripping and releasing positions which in said latter position is adapted to be freely disposed in circumscribing relation to a dowel prior to its removal from a workpiece including reaction means on the tool in oppositely spaced relation to said gripping member and impact means slidably mounted on the tool between said gripping member and said reaction means for manually actuated reciprocal movement initially against said gripping member to contract the same tightly about such a dowel and subsequently to remove the dowel by engagement of said impact means against said reaction means.

3,529,498
POWER WRENCH
Oren V. Northcutt, Dallas, Tex., assignor of one-half to James E. Northcutt, Dallas, Tex.
Continuation of application Ser. No. 684,556, Nov. 20, 1967, which is a continuation of application Ser. No. 504,670, Oct. 24, 1965. This application Feb. 5, 1969, Ser. No. 800,340
Int. Cl. B25b *21/00*
U.S. Cl. 81—54 **13 Claims**



A wrench including a shaft rotatable by a motor and having a stud at one end thereof parallel but eccentrically disposed with respect to the longitudinal axis of the shaft. A ball is carried by a ratchet head and has an opening eccentric with respect to a diameter of the ball into which the stud rotatably projects. Rotation of the shaft causes oscillation of the ratchet head with a force and stroke dependent upon the load imposed on the ratchet head by a driven wrench member. A resistive force may be provided on the driven wrench member in order to permit ratchet action to occur even when the wrench drive does not carry a substantial load. The direction of the ratchet action may be selectively changed without changing the direction of rotation of the motor.

3,529,499
ARRANGEMENT FOR TRANSFORMING LONGITUDINAL REFERENCE ELEMENTS OBTAINED ON A LATHE INTO CORRESPONDING TRANSVERSE ELEMENTS
Jules Louis Jeanneret, 21 Rue Henry Gelin,
Niort, France
Filed Mar. 11, 1968, Ser. No. 712,047
Claims priority, application France, Mar. 17, 1967, 99,225
Int. Cl. B23b *3/28*
U.S. Cl. 82—14 **2 Claims**



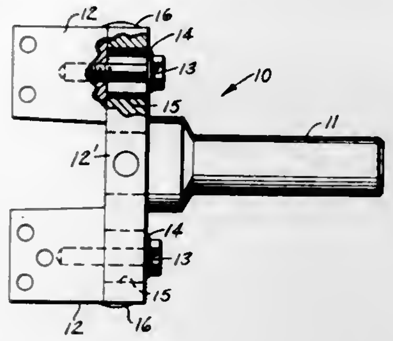
An apparatus to be removably carried by a copying lathe so as to transmit the longitudinal components of the movements of the feeler engaging the template to be copied as longitudinal components for the blank-engaging copying tool along the blank axis lying at an angle, generally 90°, with reference to the template axis and to transmit the transverse components of the feeler as components of the tool transversely of the axis of the workpiece. This is obtained by means of a member sliding along an angle bisecting the workpiece and template axes and carrying slideways parallel with said axes and engaging rollers on the feeler and tool carriages so as to associate the longitudinal components of the two carriages. The transverse components are associated by longitudinally extending racks rigid with said carriages and engaging a common pinion.

3,529,500
MACHINE TOOLHOLDER

Billy Archibald Vicars, 18804 Laxford Road,
Covina, Calif. 91722
Filed June 7, 1968, Ser. No. 735,268
Int. Cl. B23b *29/24*

U.S. Cl. 82—36 **1 Claim**

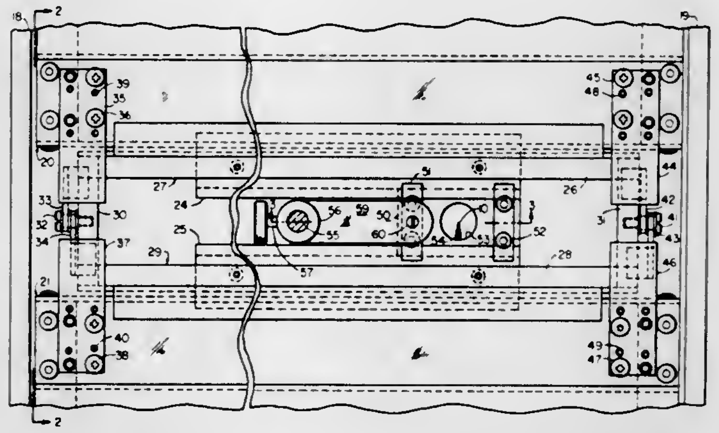
A special toolholder having a shank with a shoulder upon it which bears against an elongated and grooved plate member, the plate member having a tong which is received within a groove of a left-hand and a right-hand member. The left- and right-hand members facilitating the holding of cutting tools are adjustable in position to the plate member by threaded bolts. The threaded bolts are secured within a threaded opening of the left-hand and right-hand members while the upper portion of the bolts are free to move within slots of the plate member until the bolts are tightened down against washers which bear against the plate member.



3,529,501
ROCKABLE CLOSURE DEVICE FOR MATERIAL CUTTING MACHINE

Herman J. Baldwin, Cincinnati, Ohio and George W. Sederberg, Highland Heights, Kentucky, assignors to Cincinnati Milacron Inc., Cincinnati, Ohio a corporation of Ohio
Filed Jan. 8, 1969, Ser. No. 789,879
Int. Cl. B26d *7/02*

U.S. Cl. 83—111 7 Claims

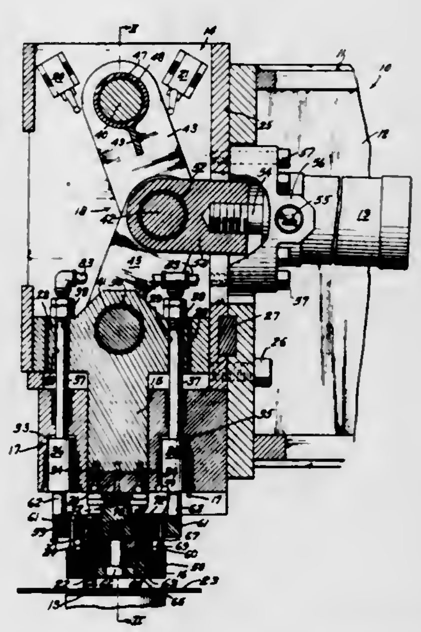


Closure means is disposed between a pair of rockably supported hold down housings, which exert a predetermined force on material being cut by a cutting blade of a material cutting machine. The closure means includes first and second members spaced from each other with the members being supported by the rockably supported housings to allow the members to move with the rockably supported housing when the material has a hump therein. The closure means has a third member slidably supported between the first two members and movable transversely with the cutting blade of the material cutting machine.

3,529,502
PUNCHING MACHINE

Alexander Krynytzky, West Seneca, New York; Arthur K. Schott, Greensboro, North Carolina, and Otto Hoffmann, Tonawanda Township, Erie County, New York, assignors to Houdaille Industries Inc., a corporation of Delaware
Filed Nov. 14, 1966, Ser. No. 596,384
Int. Cl. B26d *7/02, 5/42*

U.S. Cl. 83—137 11 Claims

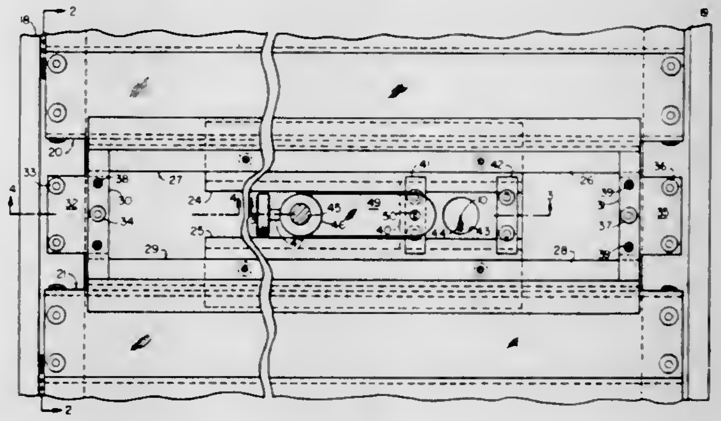


A heavy duty punch press has a C-frame, whose upper arm supports a power-head module including a ram driven by an actuator through a toggle link. A fixed holder slidably supports an annular hold down member which in turn slidably supports a tool assembly which is reciprocated by the ram. A clamping actuator and return springs reciprocate the hold down member but under the control of the ram.

3,529,503
CLOSURE DEVICE FOR MATERIAL CUTTING MACHINE

George W. Sederberg, Highland Heights, Kentucky and James G. Wiatt, Cincinnati, Ohio, assignors to Cincinnati Milacron Inc., Cincinnati, Ohio a corporation of Ohio
Filed Jan. 8, 1969, Ser. No. 789,880
Int. Cl. B26d *7/02*

U.S. Cl. 83—146 8 Claims

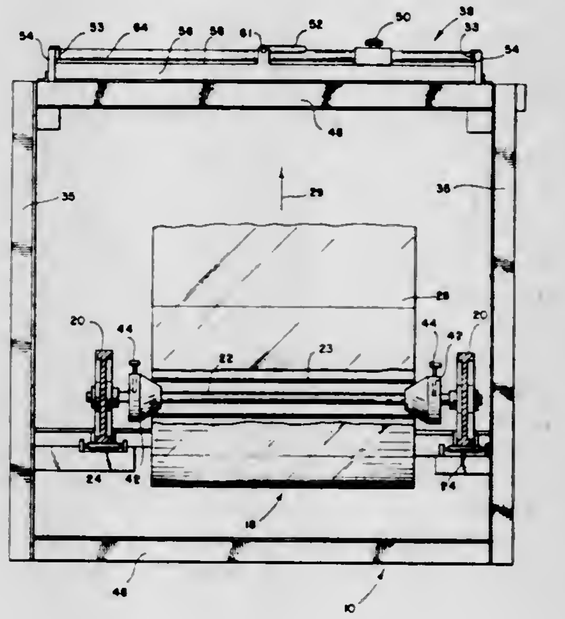


The area between a pair of hold down housings, which exert a force on the material being cut, is reduced by a closure device, which includes a pair of members disposed in spaced relation to each other with an additional member slidable therebetween and movable with the cutting blade in its transverse movement. The closure device, which exerts a hold down force on the material, is movable upwardly and downwardly with the hold down housings.

3,529,504
APPARATUS FOR STORING, SUPPLYING AND SEVERING

Charles Du Bois Hagerty, Philadelphia, Pennsylvania and Gerold Litschi, Lansdale, Pennsylvania, assignors, by mesne assignments, to W. R. Grace & Co., New York, a corporation of Connecticut
Filed Dec. 23, 1968, Ser. No. 786,063
Int. Cl. B26d *7/02*

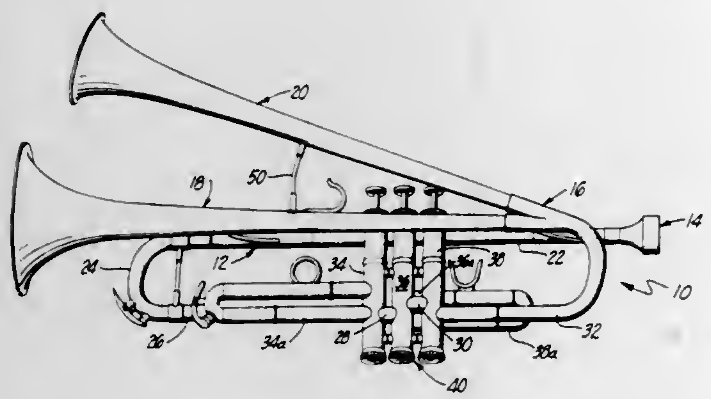
U.S. Cl. 83—464 4 Claims



The invention disclosed is directed to an apparatus including means for storing, supplying and severing plastic film. The apparatus includes elements for storing a supply roll of plastic film from which is received, unidirectionally, a strip of film which may be severed into sheets of a length as desired.

3,529,505
DUAL-BELL TRUMPET OR SIMILAR-TYPE HORN

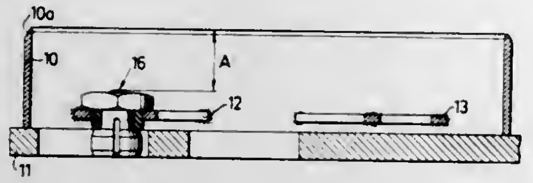
Julius E. Brooks, P.O. Box 19464, Los Angeles, California
Filed July 9, 1969, Ser. No. 840,260
Int. Cl. G10d *7/10*
U.S. Cl. 84—387 **6 Claims**



A trumpet or similar horn including a tubing assembly and two dissimilar bells joined such that like notes of similar volume but of different pitch and brilliance emanate simultaneously from the bells.

3,529,506
FASTENER FOR CUTTING DIES

Eugen Olof Malm, Scandviken, Sweden, and Rune Lennart Gustafsson, Sandviken, Sweden, assignors to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden a corporation of Sweden
Filed July 3, 1967, Ser. No. 650,673
Claims priority, application Sweden, July 27, 1966, 10210/66
Int. Cl. B26f *1/46*
U.S. Cl. 83—698 **5 Claims**



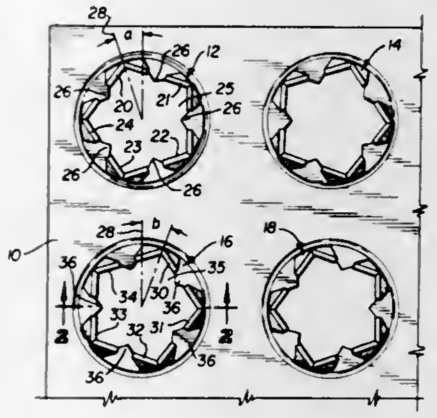
The bottom plate of a "click" cutter is pierced by a plurality of groups of oblong parallelly oriented slots. Each of a plurality of cutting dies comprises a cutting element in the form of a knife-edged "ribbon" describing a closed figure (having the profile of a desired work piece) which die is strengthened and rendered rigid by means of horizontal cross straps or bridging elements extending from one side to the other of the die and disposed in a plane parallel to but remote from the plane of the knife edge, which cross straps preferably are not parallel to each other. Said cross straps are pierced by a plurality of oblong slots whose axes are parallel to the major axes of the cross straps. The cutting dies are secured to the plate of the cutter by expansion bolts inserted in crossings of plate slots and cross strap slots. The expansion bolt used for this purpose comprises a casing or sleeve one end of which is slotted, a screw member within the casing said screw member being conical in that portion thereof adjacent the slotted part of the casing and having screw threads about that end thereof which is remote from said conical part, said threaded end extending outside of said casing, and a nut whose interior threads are complementary to the screw threads on said screw member. An elastic or resilient washer or socket member may be disposed between casing and cross strap slot to provide limited lateral movement of cutting die on the bottom plate of the cutter.

ERRATA

For Classes 84—387 and 85—13 see:
Patent Nos. 3,529,505 and 3,529,918

3,529,507
METAL GUSSET PLATE

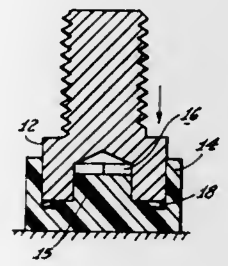
James D. Adams, Colorado Springs, Colorado, assignor to J.D. Adams Co., Colorado Springs, Colorado a corporation of Colorado
Filed March 19, 1969, Ser. No. 808,539
Int. Cl. F16b *15/00*
U.S. Cl. 85—13 **1 Claim**



A metal gusset plate for connecting wooden structural members, includes a section of planar sheet metal having a series of a plurality of punched-out teeth which are arranged to be driven into the wooden members at each joint for holding the wooden members together. The punched-out teeth are arranged with five teeth from each opening, and each tooth includes planar sides intersecting along a center line of the tooth from its base to its point, and each tooth includes a pair of opposed undercuts for securely holding the teeth into the fibers of the wood.

3,529,508
PLASTIC SCREW FASTENER COMBINATION

James D. Cooksey, 4132 Baldwin Ave.,
Culver City, California
Filed March 26; 1969, Ser. No. 813,399
Int. Cl. F16b *15/02, 23/00*
U.S. Cl. 85—53 **7 Claims**

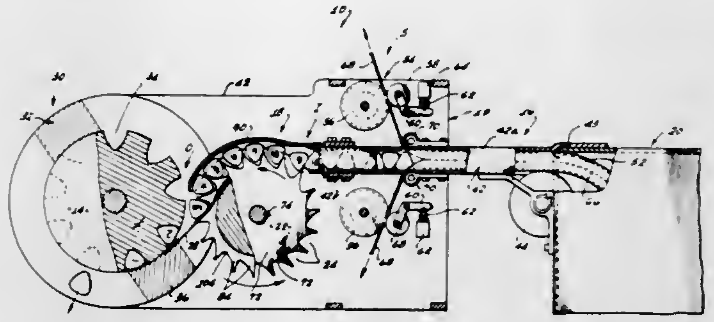


An improved plastic accessory for a socket head cap screw, such as a knurled knob, cover, or the like, which is attached to the head of the cap screw; this being achieved without the requirement for insert molding or adhesives, and without the necessity of any special tools. The plastic accessory is provided with a hub portion which is sheared by the edges of the socket in the screw head to a shape and size corresponding to those of the socket.

3,529,509
AMMUNITION HANDLING SYSTEM FOR DISPENSING DISCRETE ROUNDS AND GUN SYSTEM EMBODYING SAME

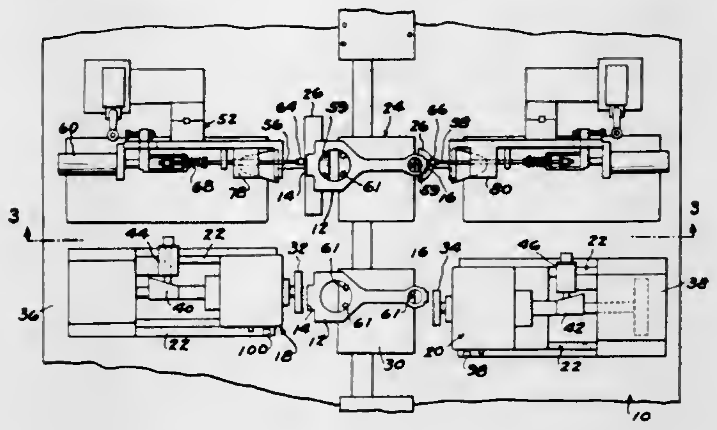
Ivan N. Vuceta, Los Angeles, California, assignor to TRW Inc., Redondo Beach, California a corporation of Ohio
Filed June 12, 1968, Ser. No. 736,509
Int. Cl. F41d *9/06*
U.S. Cl. 89—33 **2 Claims**

An ammunition handling system having ammunition infeed means, a gun with a rotary ammunition receiver, and transfer means for receiving ammuition in succession from the infeed means and transferring or dispensing the rounds in succession to the receiver in accurately timed relation to the receiver movement with the rounds disposed in a predetermined attitude relative to the direction line of receiver movement.



3,529,510
WORKPIECE FINDER AND BALANCE MECHANISM

Frank E. Albright, Detroit, Michigan, and William W. Bucey, Detroit, Michigan, assignors to Snyder Corporation, Detroit, Michigan a corporation of Michigan
Filed June 27, 1968, Ser. No. 740,760
Int. Cl. B23c *3/00*
U.S. Cl. 90—14 **25 Claims**

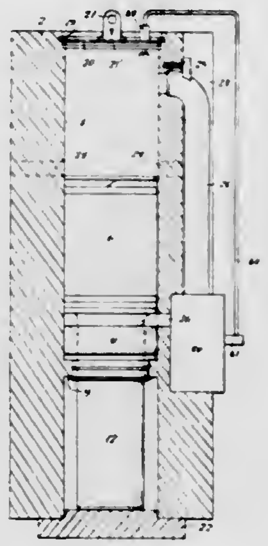


A device for weighing and balancing elongated workpieces such as connecting rods in which a first workpiece is weighed and probed for location to obtain information on material removal while material is removed from another workpiece to balance it in a subsequent station.

3,529,511
PERCUSSIVE TOOLS UTILIZING A RECIPROCATING DIFFERENTIAL AREA PISTON

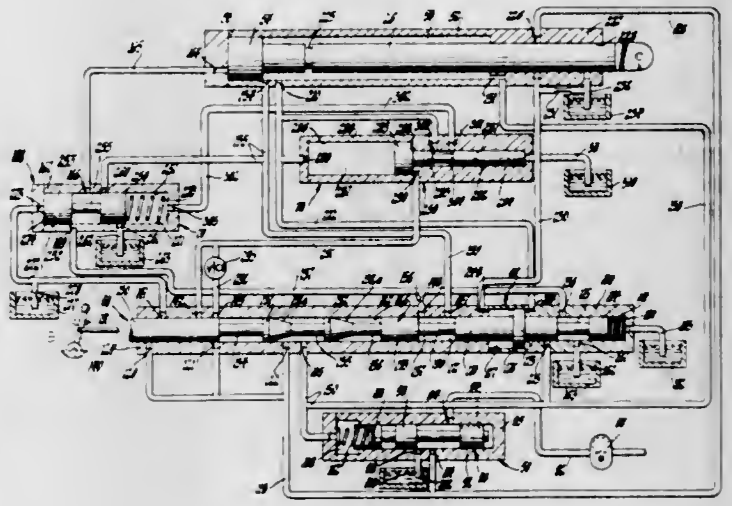
Anthony Edward Walter Last, Ipswich, Suffolk, England, assignor to The British Steel Piling Company Limited, Claydon, Ipswich, Suffolk, England, a company of Great Britain and Northern Ireland
Filed Jan. 17, 1968, Ser. No. 698,624
Claims priority, application Great Britain, Jan. 19, 1967, 2,831/67
Int. Cl. F01l *25/04;* **F15b** *15/17*
U.S. Cl. 91—299 **10 Claims**

In the specification there is described a percussive tool using a compressible fluid as its energy source and having a ram piston with differential area end faces reciprocating in a cylinder. A valve controls the supply of fluid to the cylinder such that the lower, smaller end area of the piston is subjected to fluid pressure to lift the piston and the valve then allows pressure fluid to reach the other end of the piston during its upward stroke by putting both ends of the piston into communication with each other. As the piston approaches the end of its upward stroke, said other end enters a sealed space whereby the pressure acting on it builds up rapidly causing an accelerated reversal into the impact stroke of the piston. Near the end of the impact stroke, exhaust ports are uncovered to release pressure fluid acting on said other side of the piston. The specification further describes how the tool can be adapted for extraction operations, the ram piston first being lifted to a raised position in the inverted cylinder by the application of pressure fluid to said other end of the piston.



3,529,512
HYDRAULIC WIPING SYSTEM

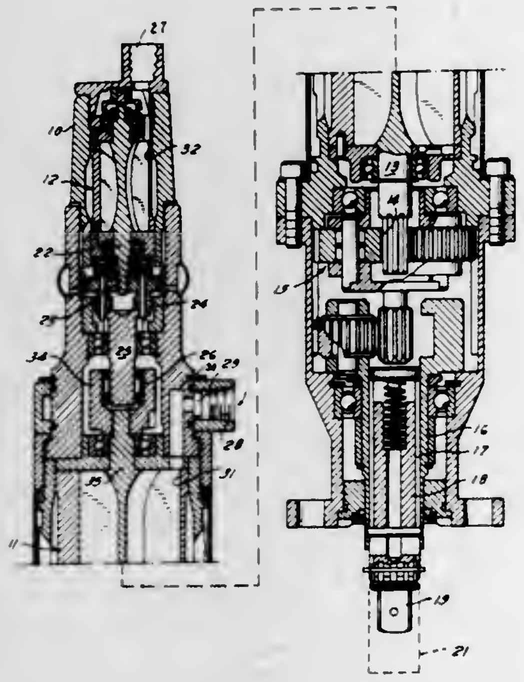
David L. Jones, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Michigan a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,188
Int. Cl. F01l *31/00, 25/06;* **F01b** *7/18*
U.S. Cl. 91—219 **3 Claims**



In a preferred form, an hydraulically operated windshield wiper system which is operable to either effect continuous operation of a windshield wiper or to effect intermittent cyclic operation of the windshield wiper with intervening dwell periods is disclosed. The wiper system includes a wiper motor having a cylinder and a reciprocable piston in the cylinder and which divides the cylinder into opposed chambers and has unequal areas exposed to the chambers, a manual control valve means movable between an "off" position, a first range of "on" positions in which it effects continuous operation of the windshield wiper and a second range of "on" positions in which it effects intermittent cyclic operation of the windshield wiper, and with the manual control valve means being operable to continuously communicate a source of hydraulic fluid under pressure to the motor chamber exposed to the smaller piston area to continuously pressurize the same.

3,529,513
TWO-SPEED NUT-RUNNING TOOL WITH TANDEM MOTORS

Lester A. Amtsberg, Utica, New York, assignor to Chicago Pneumatic Tool Company, New York, New York a corporation of New Jersey
Filed Nov. 19, 1968, Ser. No. 777,125
Int. Cl. F15b *11/16*; **B23q** *5/06*
U.S. Cl. 91—411 8 Claims

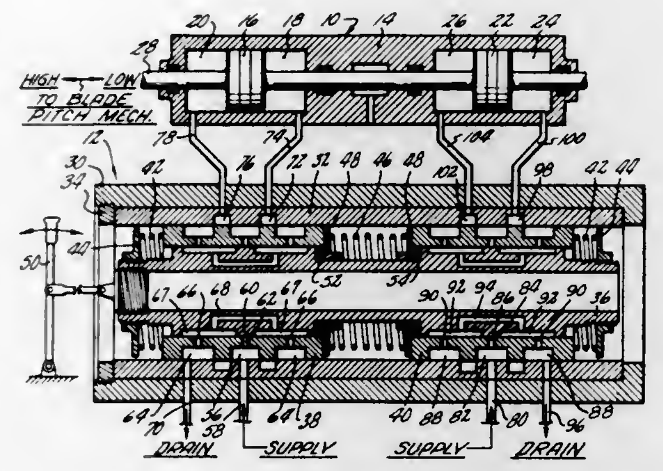


A two-speed pneumatic nut-running tool having a main motor connectible to the work and coupled in tandem relation to an auxiliary motor by means of an overrunning one-way clutch. Passage means is arranged to conduct live source air separately to both motors so as to cause them to run concurrently in the same direction. The main motor, which is designed to operate faster than the auxiliary motor, is initially permitted by the clutch to overrun the auxiliary motor to deliver an initial torque, less than final torque, to the work until its speed is slowed by the initially produced torque to the speed of the auxiliary motor. The clutch then engages, and the auxiliary motor transmits through the main motor increased torque to the work until a final torque is reached, at which time both motors stall.

3,529,514
REDUNDANT SERVOMECHANISM WITH BYPASS PROVISIONS

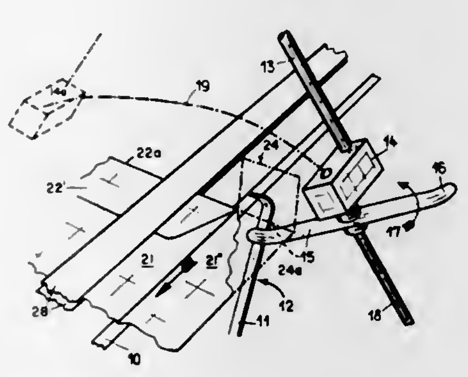
Millard G. Mayo, Wethersfield, Connecticut and Raymond N. Quenneville, Suffield, Connecticut, assignors to United Aircraft Corporation, East Hartford, Connecticut a corporation of Delaware
Filed March 25, 1969, Ser. No. 810,271
Int. Cl. F15b *11/06*
U.S. Cl. 91—411 7 Claims

A distributor valve is disclosed wherein hydraulic fluid is distributed to a blade angle change actuator in two separate and hydraulically isolated systems for VTOL aircraft propeller applications. The distributor valve consists of two separate spools which meter the hydraulic fluid supplied by the separate pumping systems. Motion of the spools forward of a null position meters hydraulic fluid to the high pitch side of the dual actuator pistons causing blade motion to high pitch. Conversely, motion of the valves aft of the null position moves the blades toward low pitch. A constant blade angle is maintained when the valve is positioned near the null position. The dual valve spools are mounted on a rod and are spring preloaded in position. During normal operation, the two valve spools and rod move as a single unit. Should one valve seize, the spring override permits the remaining valve to function normally. In addition, the supply of actuator fluid in the inoperative system is drained off by uncovering a bypass in the inoperative spool valve.



3,529,515
FOLDING APPARATUS FOR A CARDBOARD BLANK

Pierre Lang, Ecublens, Switzerland, assignor to J. Bobst et Fils S.A., Prilly near Lausanne, Switzerland
Filed May 13, 1968, Ser. No. 728,557
Claims priority, application Switzerland, May 24, 1967, 7416/67
Int. Cl. B31b *1/54, 1/56, 5/26*
U.S. Cl. 93—49 13 Claims

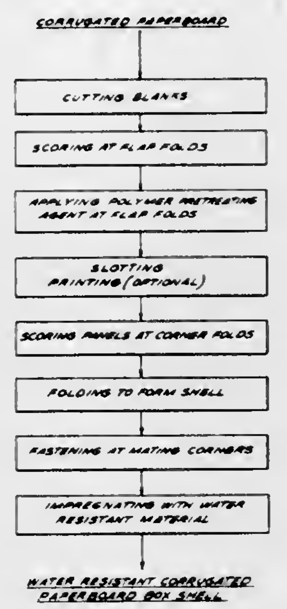


A device for folding a rearwardly extending flap at an edge of a blank onto the blank as the blank is being advanced, wherein there is provided a member which engages another portion of the blank as the flap is being folded to hold the edge of the blank in position while the flap is being folded.

3,529,516
METHOD AND COMPOSITIONS FOR IMPROVING THE BENDING QUALITY OF WATER RESISTANT CORRUGATED PAPERBOARD

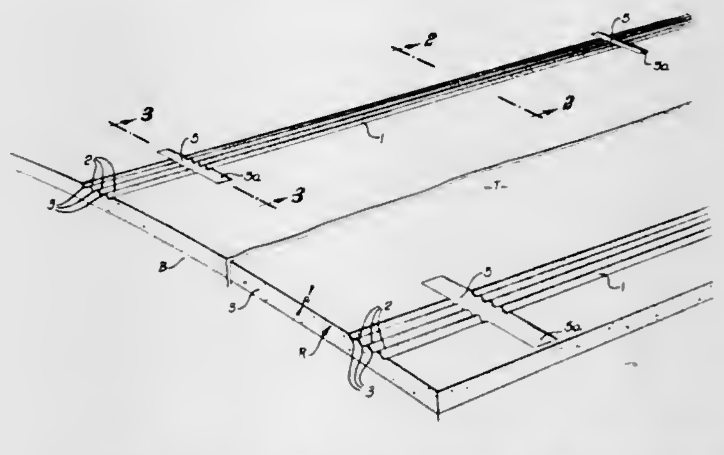
William Smith Dorsey, Fullerton, California; Thomas Hallis, Jr., Brea, California; and Edward A. Pullen, Fullerton, California, assignors to Union Oil Company of California, Los Angeles, California a corporation of California
Filed April 4, 1966, Ser. No. 539,749
Int. Cl. B31b *5/14*; **B31f** *7/00*; **D21h** *3/04*
U.S. Cl. 93—49 13 Claims

A method for forming a flexible fold in corrugated paperboard rendered water resistant by impregnation with a solidifiable water proofing agent that imparts rigidity to the paperboard in which the fold is first treated with a non-rigid polymer pretreating agent prior to impregnation so as to improve the flexibility of the impregnated paperboard at the fold.


CORRUGATED PAPERBOARD
CUTTING BLANKS
SCORING AT FLAP FOLDS
APPLYING POLYMER PRETREATING AGENT AT FLAP FOLDS
SLOTTING PRINTING (OPTIONAL)
SCORING PANELS AT CORNER FOLDS
FOLDING TO FORM SHELL
FASTENING AT MATING CORNERS
IMPREGNATING WITH WATER RESISTANT MATERIAL
WATER RESISTANT CORRUGATED PAPERBOARD BOX SHELL

3,529,517
MARKED ROADWAY AND METHOD OF MAKING THE SAME

Gordon M. Liddle, Murray, Utah, and Frank L. Christensen, Salt Lake City, Utah, assignors to Christensen Diamond Products Company, Salt Lake City, Utah a corporation of Utah
Filed July 25, 1968, Ser. No. 747,692
Int. Cl. E01c *23/16*
U.S. Cl. 94—1.5 13 Claims

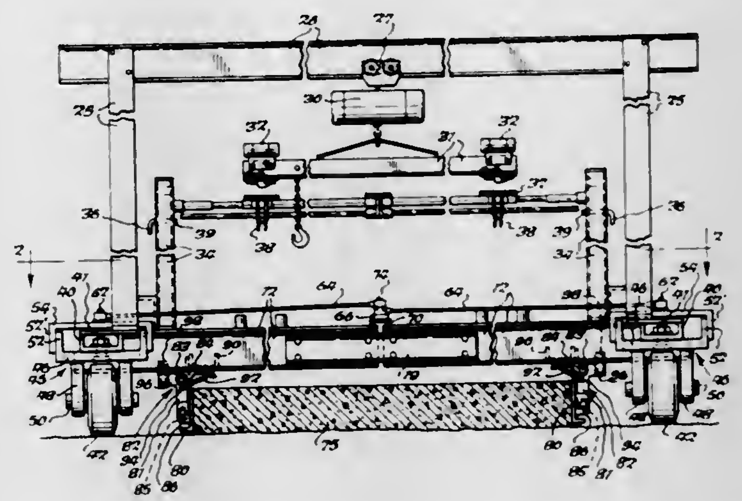


A roadway and a method of making the same wherein stripes or other markings are provided on a roadway, by milling grooves and ridges in the surface of the roadway and applying paint or other reflective coating to the grooved region, the paint or other coating on the ridges being predominantly recessed below the roadway surface and protected from wear. Such a roadway and method in which drain channels are formed in the roadway intersecting the grooves and ridges of the stripes or other markings and leading to the low side of the roadway for facilitating drainage during inclement weather.

3,529,518
POSITIONING HIGHWAY JOINT SUPPORTS AND SHEAR PLATES IN PAVING MATERIAL

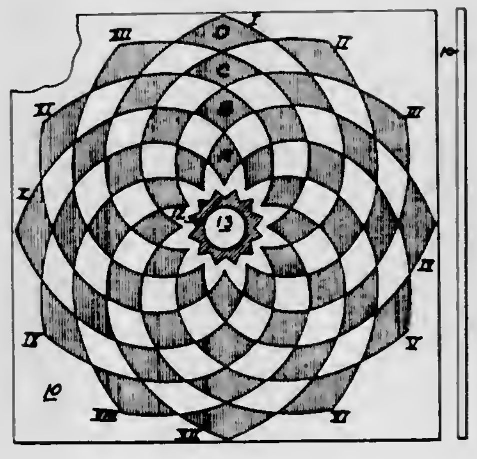
Alfred F. Crone, Williamsville, New York, assignor to Acme Highway Products Corporation, Buffalo, New York
Filed April 17, 1968, Ser. No. 722,127
Int. Cl. E01c *19/00*
U.S. Cl. 94—39 5 Claims

The herein described invention discloses the positioning of joint support assemblies or other structural parts in paving material formed of low slump concrete in which no stationary forms to define the edges of the road are employed. The forms are employed on the machines for pouring the concrete on the road bed and these forms are moved with the machine after the concrete has been placed and finished between the moving forms. When joint support assemblies or other structural parts are pressed into this type of concrete while still in plastic condition, the lowering of the joint support assemblies or other parts causes a softening of the concrete in the vicinities and short forms positioned at the sides of the concrete prevents this softening of the concrete from deforming the road bed.



3,529,519
METHOD AND APPARATUS FOR COLOR ADJUSTING IN PHOTOGRAPHIC PRINTING

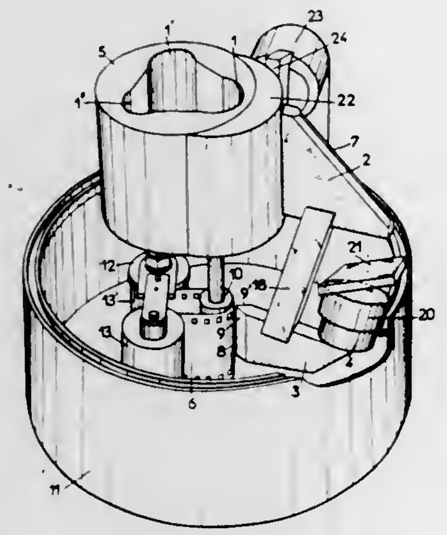
Robert W. Mitchell, St. Joseph, Michigan, assignor to Heath Company, Benton Harbor, Michigan a corporation of Delaware
Continuation-in-part of application Ser. No. 529,982, Feb. 21, 1966. This application Apr 11, 1968, Ser. No. 720,705
Int. Cl. G03b *27/00*
U.S. Cl. 95—1 15 Claims



Apparatus and methods for producing optimum color reproduction in color photography. The apparatus includes a color-balancing standard card having a small central aperture through which a limited area of a photographic display may be observed. A background surface of neutral gray is provided for comparison purposes and a plurality of color cast areas which are primarily neutral but have small amounts of particular hues surround the aperture to facilitate the determination of corrective filters or the like. Methods of producing color prints photographically are also described which can utilize the apparatus disclosed and permit accurate and efficient determination of the correct filter media to produce a properly balanced color print.

3,529,520
APPARATUS FOR PHOTOGRAPHING FINGERPRINTS

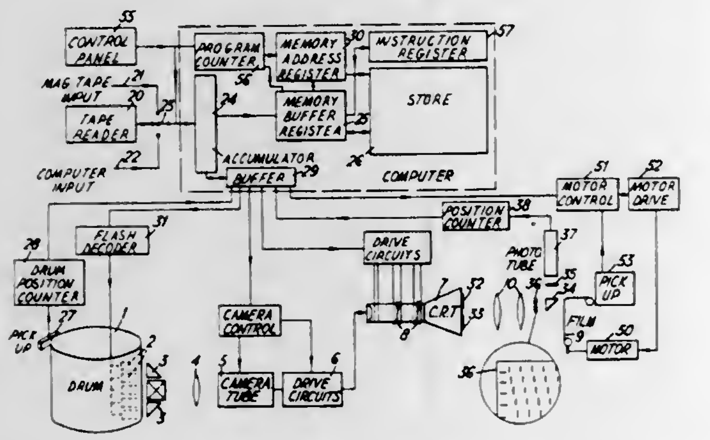
Robert Leon Thiebault, Paris, France, assignor to La Ville de Paris, Paris, France
Filed Dec. 26, 1967, Ser. No. 693,239
Claims priority, application France, Dec. 30, 1966, 89442
Int. Cl. G03b *27/70*
U.S. Cl. 95—1.1 **8 Claims**



In an apparatus for photographing fingerprints, the finger to be photographed is placed against a part-cylindrical surface in the interior of a transparent finger support having a part-cylindrical outer surface. An optical system mounted for rotation about the axis of the finger support successively explores the generatrices of the finger support and focuses a line image of each said generatrix onto a photographic film wrapped around a corresponding part-cylindrical photographic film support.

3,529,521
PHOTOGRAPHIC TYPE COMPOSING

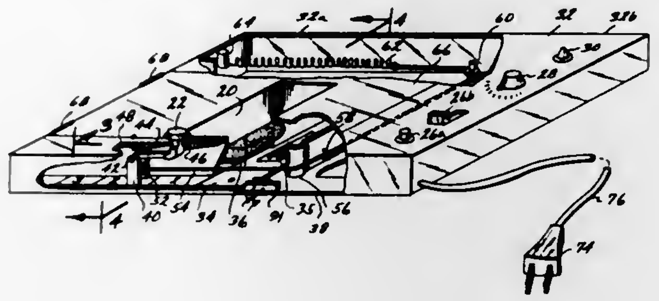
Edward T. Astley, London, England, assignor to Crosfield Electronics Limited, a British company
Filed June 30, 1967, Ser. No. 650,418
Claims priority, application Great Britain, July 6, 1966, 30,375/66
Int. Cl. B41b *19/00*
U.S. Cl. 95—4.5 **8 Claims**



In a photocomposing system, when a required character on a continuously rotating character matrix reaches an exposure position, a flash tube projects the character onto the storage screen of a camera tube. The storage screen is scanned to provide a video signal representing the required character and simultaneously scanning deflection potentials are applied to a cathode ray display tube which receives the video signal. The raster formed on the screen of the display tube occupies a part of this screen, the part being so selected by biasing deflection potentials that the displayed character will be imaged onto a light-sensitive surface at the required text position.

3,529,522
PHOTOGRAPHIC ENLARGER EXPOSURE COMPARATOR USING TEST STRIPS

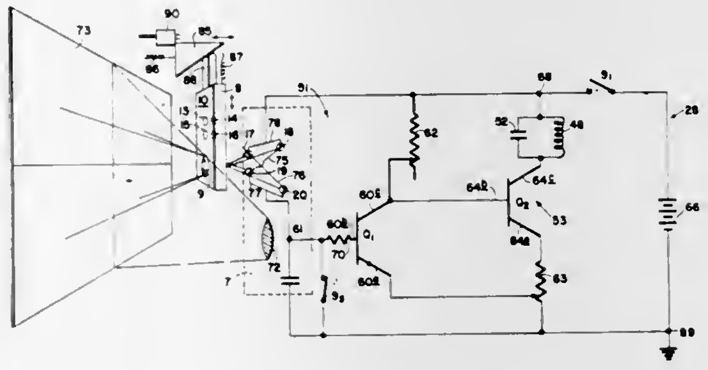
Gerald R. Dunn, 4513 Ethel Ave., Studio City, California
Filed March 22, 1966, Ser. No. 541,908
Int. Cl. G01j *1/52*
U.S. Cl. 95—10 **3 Claims**



An apparatus is disclosed for testing photographic images by producing a strip of exposures for different time intervals. The structure incorporates a timing circuit for manifesting discrete time intervals and mechanism for moving a test sheet of photosensitive paper under an exposure window to provide different intervals of exposure.

3,529,523
EXPOSURE CONTROL SYSTEM

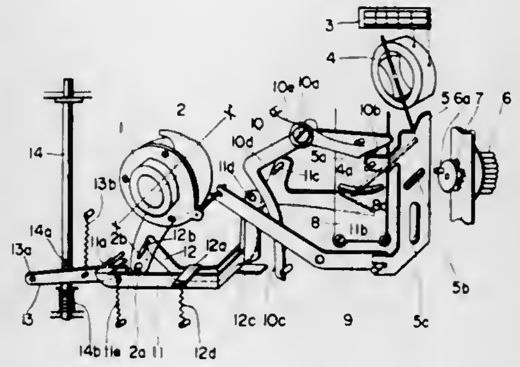
Stanley W. Haskell, Arlington, Massachusetts, assignor to Polaroid Corporation, Cambridge, Massachusetts a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,715
Int. Cl. G01j *1/00*
U.S. Cl. 95—10 **9 Claims**



An optical conversion unit for use with an electrically powered exposure control system of a variety incorporating an array of photocells. The unit comprises a molded transparent element, one face of which is configured having a relatively long focal length lens for imaging scene light over the entire array of photocells. The unit is positioned for imaging through this lens during daylight operation of the system. For flash operation, the opposite side of the optical conversion unit incorporates an array of relatively short focal length lenses corresponding to the array of photocells. The latter lenses serve to image the entire scene being photographed upon each photocell individually.

3,529,524
CAMERA CAPABLE OF AUTOMATIC SWITCHING BETWEEN BUILT-IN EXPOSURE CONTROLS FOR DAYLIGHT AND FLASH PHOTOGRAPHING

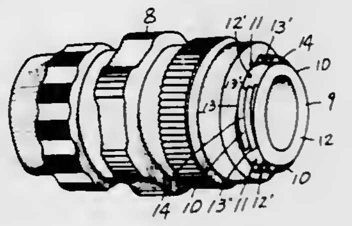
Hiroshi Ueda, Nara, Japan, assignor to Minolta Camera Kabushiki Kaisha, Osaka, Japan a corporation of Japan
Filed March 15, 1968, Ser. No. 713,393
Claims priority, application Japan, March 17, 1967, 42/16,771
Int. Cl. G03b *7/12*
U.S. Cl. 95—10 **4 Claims**



A camera capable of automatic selection between built-in exposure controls for daylight and flash photographing, depending on the brightness of the photographic object, by using a scanning member of the pointer of a built-in exposure meter. The scanning member is connected to a lens aperture control means at one end thereof. The opposite end of the scanning member selectively engages with said exposure meter pointer or a distance detecting means depending on the brightness of the photographic object.

3,529,525
EXCHANGE LENS MOUNTING MECHANISM FOR CAMERAS

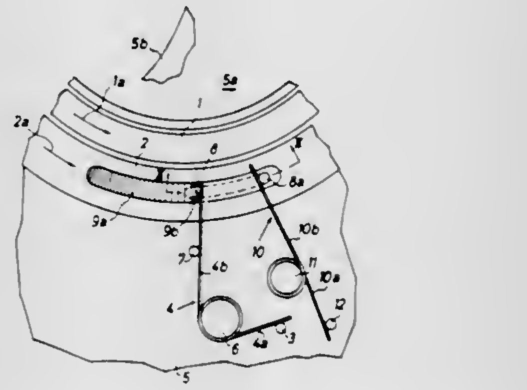
Kan Yamashita, 331-4 Yomogawa-cho, Amagasaki-shi, Hyogo-ken, Japan
Filed Mar. 11, 1968, Ser. No. 712,286
Claims priority, application Japan, Oct. 7, 1967, 42/85 860
Int. Cl. G03b *19/00*
U.S. Cl. 95—11 **4 Claims**



For mounting interchangeable lenses easily, quickly and firmly in cameras, the threaded barrel members of the interchangeable lenses and the matingly threaded barrel mounting member of the camera body are each provided with longitudinally extending channels dividing their threaded portions into spaced threaded sections alternating with the longitudinally extending channels. The channels of each member align with, and are of slightly greater width and depth than, the threaded sections of the mating member. Mounting is effected by aligning the threaded sections of each member with the channels of the other, relatively moving the parts axially substantially to mounted position, followed by a slight relatively turning movement to interengage the threaded sections of the members and tighten down the mounting. The threaded sections of each member are preferably equally spaced and of equal arcuate extent. Dismounting is effected by reversing the mounting movements.

3,529,526
SYNCHRONIZING SWITCH FOR FLASH UNITS OF PHOTOGRAPHIC CAMERAS

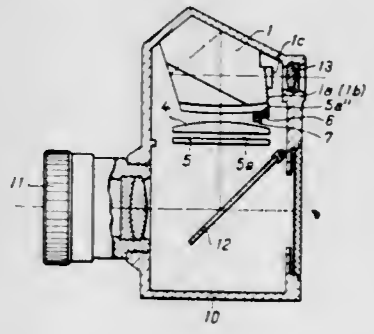
Richard Wick, Grunwald, near Munich, Germany; Reinhard von Sybel, Krailling, Germany; and Rainer Vesper, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 3, 1967, Ser. No. 680,381
Claims priority, application Germany, Nov. 19, 1966, A26,720
Int. Cl. G03b *9/70*
U.S. Cl. 95—11.5 **30 Claims**



A combined shutter and diaphragm assembly wherein the leading setting ring moves from cocked position ahead of the trailing setting ring and wherein the blades of the shutter define an aperture whose size depends on the extent of delay with which the trailing ring moves from cocked position subsequent to movement of the leading ring. The synchronizing switch of the camera which embodies the assembly comprises two contacts one of which includes a contact element mounted on the trailing ring and the other of which includes a portion or extension which projects into the path of movement of the contact element but is slightly spaced from the latter in cocked position of the trailing ring so that the switch closes with a slight delay following movement of the trailing ring from fully cocked position. The resulting delay being sufficient to insure that the switch closes to fire an electronic flash unit at the exact moment when the aperture defined by the blades of the shutter attain a maximum size for a given intensity of scene light.

3,529,527
RANGE FINDER DEVICE HAVING LONG BASE LINE FOR SINGLE LENS REFLEX CAMERAS WITH PENTA PRISM

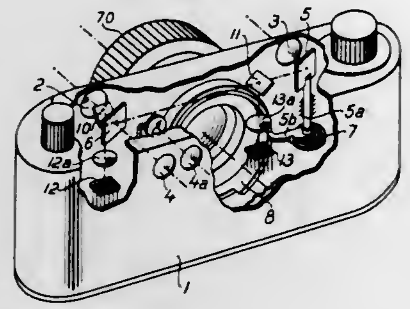
Ludwig Leitz, Wetzlar, Germany, assignor to Ernst Leitz GmbH, Wetzlar, Germany
Filed Nov. 29, 1967, Ser. No. 686,569
Claims priority, application Germany, July 7, 1967, L56946
Int. Cl. G03b *3/00*
U.S. Cl. 95—44 **5 Claims**



A split-image rangefinder for a single lens reflex camera where the measured portion of the image is a large aperture portion for more accurate range finding. The pentaprism of the camera has two inclined mirror surfaces located adjacent to its central emerging surface so as to reflect a large aperture portion of the intermediate image from the focusing screen onto a pair of elongated split-image mirrors arranged vertically between the prism and the field lens and laterally outside the image boundary. The split mirror image reflected back into the ocular appears inverted and immediately below the large aperture image portion, thus allowing measurement on an extended base line. A concave mirror may be used in the place of one of the elongated mirrors to erect that image portion, or the mirrors may be replaced by prisms.

3,529,528
PHOTOELECTRIC PRECISION CAMERA RANGE FINDER WITH OPTICAL VERIFICATION

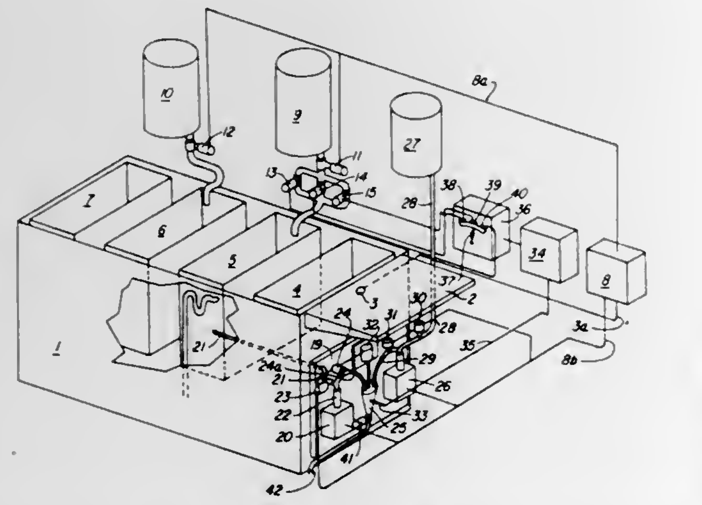
Ludwig Leitz, Wetzlar, Germany, assignor to Ernst Leitz GmbH, Wetzlar, Germany
Filed Dec. 4, 1967, Ser. No. 687,650
Claims priority, application Germany, Dec. 6, 1966, L55,208
Int. Cl. G03b *3/00*
U.S. Cl. 95—44 **6 Claims**



A range finder device for cameras comprising an optical range finder for coarse visual control of the camera range setting as well as a photoelectric range finder for a precise reading of the range setting, the optimal setting being indicated when both readings simultaneously indicate their optimal value. The optical range finder is either of the triangulation type, split image type, or of the ground glass type, while the photoelectric range finder uses two photo-resistors in a differential balance type circuit supplied by an AC-current. The arrangement is suitable for adaptation to "range finder" cameras as well as to single lens reflex cameras.

3,529,529
METHOD AND MEANS FOR CONTROLLING THE ADDITION OF REPLENISHER TO AUTOMATIC PHOTOGRAPHIC FILM PROCESSORS

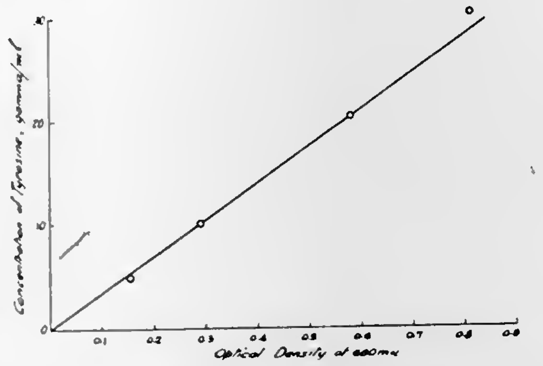
Ernst E. Schumacher, 3113 Postfach, 6 Frankfurt am Main, Germany
Filed Nov. 29, 1967, Ser. No. 686,561
Claims priority, application Germany, Dec. 3, 1966, K60,857
Int. Cl. G03d *3/06;* **G01n** *31/00*
U.S. Cl. 95—89 **4 Claims**



A method for automatically and continuously replenishing a chemical composition constituent which is being consumed during a process in which the said composition is being used and in which the said constituent is consumed to form a particular compound, which comprises periodically analyzing a sample of the said composition during its use to determine the quantity of the said compound in the sample and then adjusting the rate of supply of the replenishing material in direct relation with the variation of the quantity of the compound in the analyzed samples relative to a predetermined norm.

3,529,530
EDIBLE WATER SOLUBLE COLLAGEN FILM

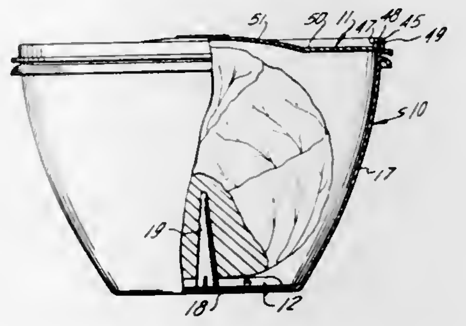
Toshio Tsuzuki, Somerville, New Hersey, assignor, by mesne assignments, to Devro, Inc., Somerville, New Jersey a corporation of New Jersey
Continuation-in-part of application Ser. No. 654,405, July 19, 1967, which is a continuation-in-part of application Ser. No. 566,587, July 20, 1966. This application Dec. 11, 1968, Ser. No. 782,953
Int. Cl. A23j *1/10;* **C09h** *11/04*
U.S. Cl. 99—18 **13 Claims**



An edible water soluble film characterized by instantaneous distintegration in boiling water is prepared by forming and drying a sheet of acid-swollen collagen treated with a proteolytic enzyme.

3,529,531
CONTAINER FOR HEAD LETTUCE HAVING INTERNAL SUPPORT

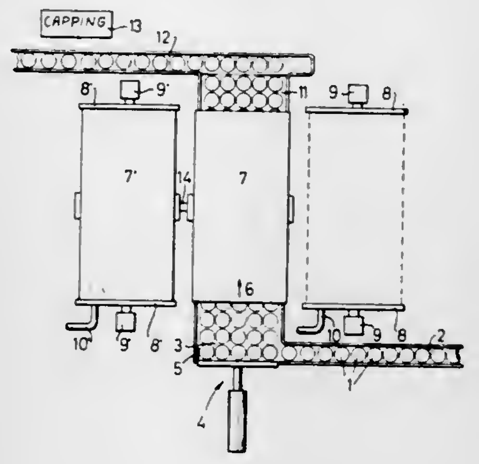
James B. Swett, Barrington, Rhode Island, assignor to Dart Industries Inc., Los Angeles, California a corporation of Delaware
Continuation-in-part of application Ser. No. 566,628, July 20, 1966, now Patent No. 3,451,328. This application April 23, 1968, Ser. No. 723,513
Int. Cl. A47j *47/02;* **A23l** *1/02*
U.S. Cl. 99—269 **5 Claims**



A container particularly suited for the storage of head lettuce in a refrigerator, said container having a support formed in the bottom thereof, said support being adapted to position a head of lettuce in a centered symmetrical relationship with the container walls and in fixed spaced relationship above the container base. A moisture collection zone is formed below and outwardly of the lettuce contacting surfaces of the support whereby water draining from the lettuce will be maintained separately therefrom. Drainage is facilitated by the presence of drainage openings on the upper surface of the support. A tight sealing cover for the container maintains an evenly moist atmosphere around the stored lettuce.

3,529,532
APPARATUS FOR EXHAUSTING AIR FROM FOOD CONTAINERS

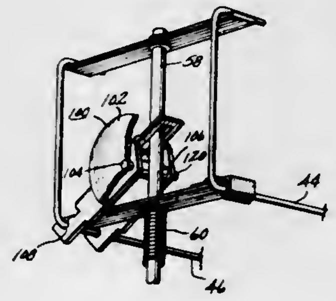
David Reznik, Rechov Kabirim 10, Haifa, Israel; Eliahu Dembo, Dekalim St. 14, Kiryat Bialik, Israel; and Gershon Eckstein, Hasport St. 11, Haifa, Israel
Filed Aug. 6, 1968, Ser. No. 750,649
Claims priority, application Israel, Aug. 8, 1967, 28,467
Int. Cl. B65b *31/00*
U.S. Cl. 99—272 **6 Claims**



Apparatus for exhausting air from food containers comprises a vacuum tank open at opposite ends, a shifter for shifting the vacuum tank from a loading-unloading station to a vacuum-applying station and then back again, feeding means for feeding a plurality of the food containers into the vacuum tank through one open end when it is at the loading-unloading station, means at the vacuum-applying station for temporarily closing the open ends of the tank when located therein and for applying a vacuum to the tank, and a conveyor for conveying away the food containers leaving the vacuum tank through the other open end when the tank has been returned to the loading-unloading station.

3,529,533
ELECTRIC TOASTER CARRIAGE DAMPING CONSTRUCTION

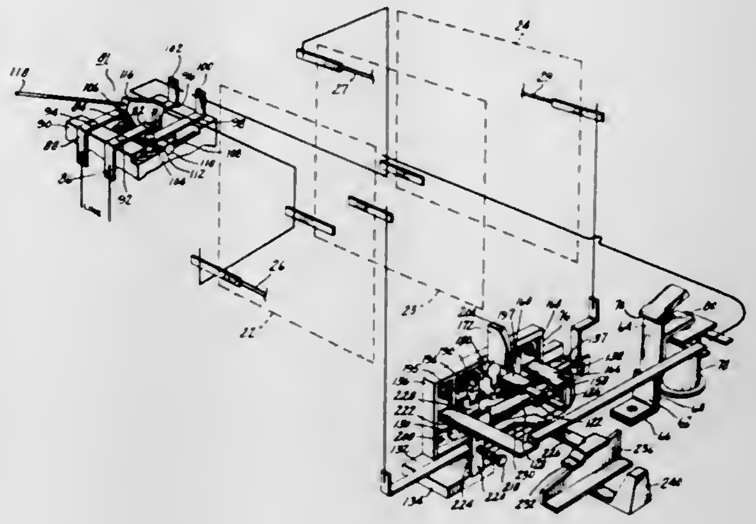
Harold A. De Remer, Allentown, Pennsylvania, assignor to General Electric Company, a corporation of New York
Filed March 28, 1969, Ser. No. 811,327
Int. Cl. A47j *37/08*
U.S. Cl. 99—327 **4 Claims**



An electric toaster construction wherein a flywheel member is arranged to damp acceleration of a toaster bread carriage so that bread or other food being toasted will not be thrown out of the toaster at the end of the toasting cycle.

3,529,534
ELECTRIC TOASTER WITH HEAT UP COOL DOWN BIMETAL TIMER

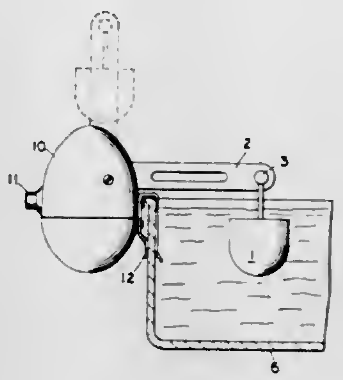
Paul V. Snyder, Whitehall, Pennsylvania, assignor to General Electric Company, a corporation of New York
Filed April 3, 1969, Ser. No. 813,141
Int. Cl. A47j *37/08*
U.S. Cl. 99—329 **10 Claims**



An electric toaster with a heat up cool down bimetal timer wherein a switch blade is directly connected to a bimetal for controlling operation of the toaster.

3,529,535
DEVICE FOR THE REMOVING OF EGGS FROM A PAN AFTER BOILING

Richard Andrey, 43 Grey, 1004 Lausanne, Switzerland
Filed June 21, 1968, Ser. No. 739,026
Int. Cl. A47j *29/04*
U.S. Cl. 99—336 **1 Claim**

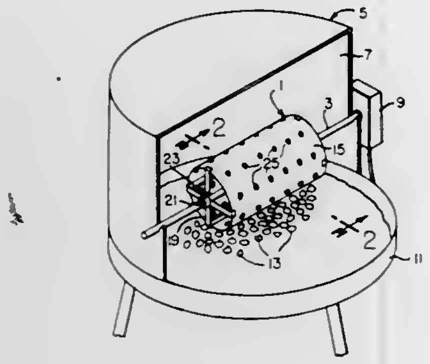


This invention relates to a device which automatically removes eggs from a receptacle in which they have been immersed in boiling water for a predetermined period of time.

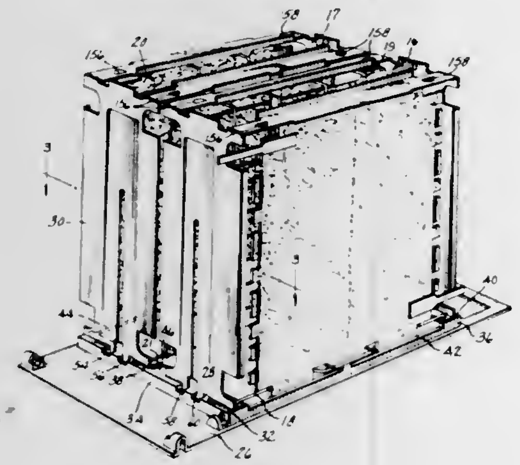
3,529,536
BASTING BARREL

Richard J. Milhem, 1732 Brys Drive, Grosse Pointe Woods, Michigan
Filed Nov. 16, 1967, Ser. No. 683,697
Int. Cl. Aj47 *37/10*
U.S. Cl. 99—346 **23 Claims**

A basting and/or tumbling barrel for cooking food. The rotatable barrel has elongated internal basting or tumbling ribs which cyclically raise and baste liquids onto the food. The barrel has a plurality of apertures which are surrounded, at least partly, on the inner surface of the barrel with a ridge or embossment.

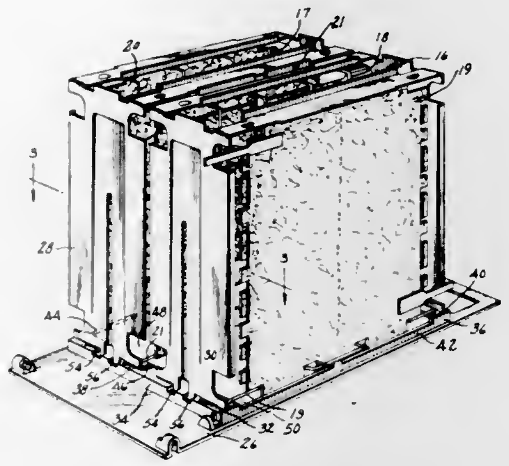


3,529,537
ELECTRIC TOASTER CONSTRUCTION
Paul V. Snyder, Fullerton, Pennsylvania, assignor to General Electric Company, a corporation of New York
Filed Jan. 6, 1969, Ser. No. 789,245
Int. Cl. A47j *37/08;* **H05b** *3/06*
U.S. Cl. 99—389 **5 Claims**



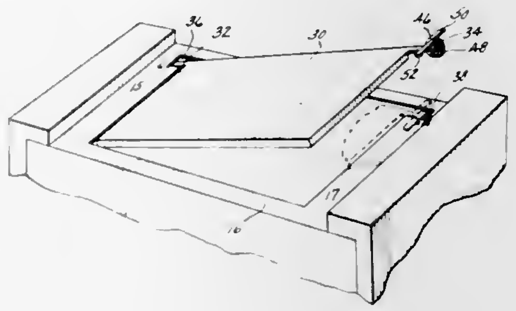
An electric toaster construction wherein a rigid base plate is provided with a plurality of slots and a relatively flexible heater frame is provided with a plurality of downwardly extending latch tabs so that the heater frame may be quickly and securely connected to the base plate by snapping the tabs on the heater frame into the slots on the base plate. A unique arrangement is also provided for connecting a bread guard to the heater frame.

3,529,538
ELECTRIC TOASTER CONSTRUCTION
James A. Ottinger, Allentown, Pennsylvania, assignor to General Electric Company, a corporation of New York
Filed Jan. 6, 1969, Ser. No. 789,246
Int. Cl. A47j *37/08;* **H05b** *3/06*
U.S. Cl. 99—389 **4 Claims**



An electric toaster construction wherein a heater card having an electric resistance wire wound thereon is provided with a plurality of notches and tabs so that the heater card may be attached to a wire bread guard without the use of separate fastening hardware.

3,529,539
ELECTRIC TOASTER WITH CRUMB TRAY
Willard F. Schultz, Bethlehem, Pennsylvania, assignor to General Electric Company, a corporation of New York
Filed Feb. 25, 1969, Ser. No. 802,120
Int. Cl. A47j *37/08*
U.S. Cl. 99—400 **2 Claims**

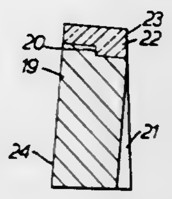


An electric toaster construction wherein a unique spring clip is provided for connecting a crumb tray hinge to a base plate.

3,529,540
PROCESS OF PRODUCING CELLULOSE ACETATE FLAKE BALES
Charles R. Ferris, H450 48 Ave., Edmonton, Alberta, Canada
No Drawing. Filed Aug. 15, 1967, Ser. No. 660,603
Int. Cl. B30b *13/00*
U.S. Cl. 100—35 **2 Claims**

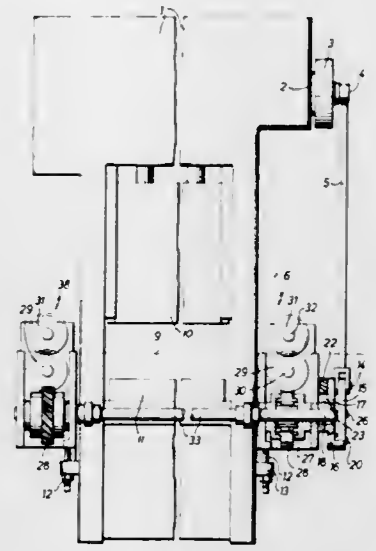
Process for producing a bale of cellulose acetate flake having a density of 30 to 40 pounds/cubic foot which is stable to mechanical stress and in which flake properties are unimpaired including the steps of feeding a predetermined mass of cellulose acetate having a moisture content of at least four percent into a zone, compressing said mass under a pressure between about 1200 and 2500 psi in said zone into a bale and maintaining said compression for at least 5 seconds.

3,529,541
PRESSES
Joseph Allan Ward, 4 Croft View, Woodland Drive, Anlaby, East Yorkshire, England
Filed March 11, 1968, Ser. No. 712,159
Claims priority, application Great Britain, March 15, 1967, 12,051/67
Int. Cl. B30b *9/06*
U.S. Cl. 100—129 **9 Claims**



The invention is concerned with a lining bar of a press for removing liquid from liquid-containing solid materials by pressing action. The lining bar is of composite construction having a metal body carrying a facing of a hard, wear-resisting, non-metallic material, preferably a ceramic. The metal body provides the bar with the requisite strength, while the facing, which comes in contact with the material being pressed, has the requisite resistance to erosion.

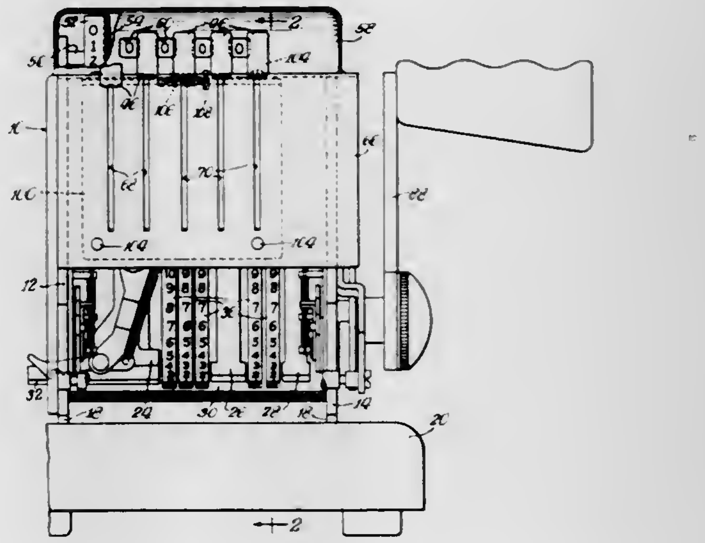
3,529,542
FEED APPARATUS FOR PRESSES OR THE LIKE
Otto Rasenberger, Goppingen, Germany, assignor to Die L. Schuler GmbH, Goppingen, Germany
Filed June 7, 1968, Ser. No. 735,359
Claims priority, application Germany, June 15, 1967, Sch 40,889
Int. Cl. B30b *15/30*
U.S. Cl. 100—215 **7 Claims**



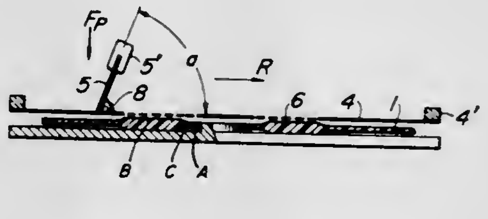
Feed mechanism for step-by-step feed of metal strip or sheet to a press or like machine comprises means for varying the effective length of the step-by-step feed by introducing between the crank drive and the drive shaft for the feed rollers a four-point linkage, including a series of levers, one which is fast on the drive shaft, another lever being anchored to a fixed position, which is adjustable so that by adjusting the same the angular displacement of the drive shaft for each stroke of the crank can be increased or decreased.

3,529,543
SHIFTABLE PLATE MEANS FOR LIMITING MOVEMENT OF ACTUATING LEVERS IN CHECK WRITERS
Ardath A. Gopperton, Mount Prospect, Illinois, assignor to Theodore B. Hirschberg, Chicago, Illinois
Filed Dec. 9, 1968, Ser. No. 782,279
Int. Cl. B41j *7/04*
U.S. Cl. 101—20 **12 Claims**

A device for selectively limiting movement of a plurality of actuating levers associated with individually adjustable printing members having printing characters thereon as in check writing and money order printing machines, including a plate supported for movement between first and second positions and having a plurality of slots therein each adapted to receive one of the actuating levers therethrough. Certain of the slots have configurations to allow movement of the corresponding levers to position printing characters in printing position when the plate is in the first position, with these slots being adapted to prevent movement of the plate to the second position until the corresponding actuating levers are moved to zero printing positions. At least one of the remaining slots has a configuration preventing movement of its corresponding actuating lever when the plate is in the first position and is adapted to allow movement of the corresponding actuating lever to a selected printing position upon movement of the plate to the second position.



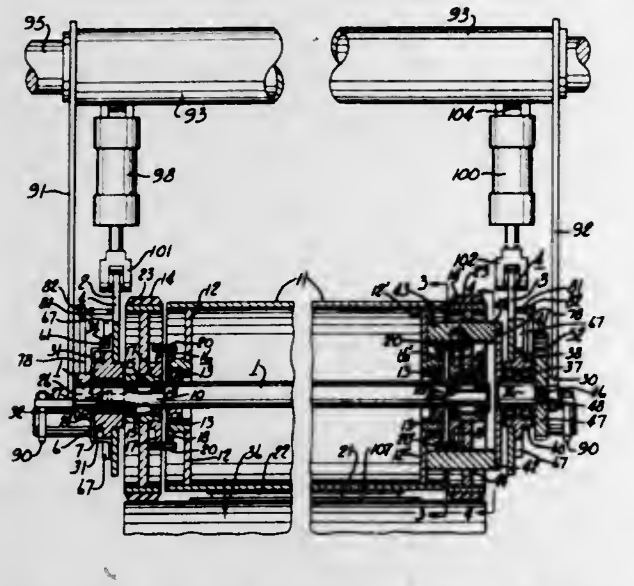
3,529,544
METHOD OF SCREEN PRINTING A LABEL ON A DISK RECORD BLANK
Masamitsu Oki, Musashino-shi, Japan, assignor to Shigeru Inoue, Toyko, Japan, and Masamitsu Oki, Musashino-shi, Japan
Filed Oct. 3, 1967, Ser. No. 672,517
Claims priority, application Japan, Oct. 7, 1966, 41/65,672; 41/93,343
Int. Cl. B41m *1/12;* **B41l** *27/2*
U.S. Cl. 101—129 **1 Claim**



A method of printing a label, according to the screen printing process, on the label section of a 7 inch–45 r.p.m. disk record blank which incorporates a concentric, sloping annular ring surface by using a squeegee. Records produced by such a process can readily be washed with water. The squeegee, being made of elastic material of substantially uniform thickness, is adapted to slide over the surface of a screen form; its lower end is arcuately laterally displaced from the longitudinal plane of the section thereof. The label section of the record processed by the method of the printing operation has uniform finish in the density of ink applied thereover.

3,529,545
ROTARY PRINTER WITH PRINTING CYLINDER DRIVE WHEELS

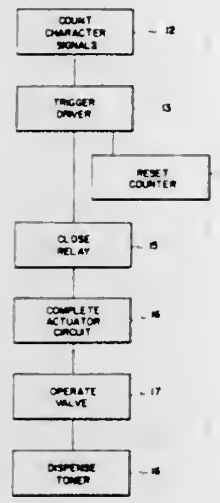
Roger H. Gartside, Shaler Township, Allegheny County, Pennsylvania, assignor to The Pannier Corporation, a corporation of Pennsylvania
Filed Nov. 21, 1967, Ser. No. 684,748
Int. Cl. B41f *5/04, 13/40*
U.S. Cl. 101—219 **5 Claims**



A rotary printer having built-in means to adjust the printing clearance for the marking of materials of different thicknesses while maintaining the printing surface velocity of the printing die equal to the line speed. The printing drum with its applied die is mounted for rotation on a first shaft and adjacent a rotary coupled drive wheel mounted for rotation on a second shaft portion fixed in parallel with the first shaft and in driving engagement with a printing back-up surface. The driven wheel is provided with an outside engagement diameter equal to the outside printing diameter of the drum with its applied die. The shafts are supported from a frame and are provided with means to permit the axis of the shaft portion supporting the drive wheel to be rotated relative to the shaft supporting the printing drum until the desired printing clearance from the back-up surface is obtained and to then fix them against further surface is obtained and to then fix them against further rotation of one about the other.

3,529,546
PRINTING SUBSTANCE CONTROL

Ernest P. Kollar, Broomfield, Colorado, assignor to International Business Machines Corporation, Armonk, New York a corporation of New York
Filed July 12, 1967, Ser. No. 652,846
Int. Cl. B41c *3/00;* **B05b** *5/02;* **B67d** *5/08*
U.S. Cl. 101—426 **4 Claims**



Sensing and counting character print signals of a high speed electric printing apparatus, and replenishing a supply of printing substance in relation to the number of print signals sensed; and interconnected counters, drivers, relays, actuators and metering means for counting character print signals and for metering a printing substance from a container in response to a print signal count are described herein.

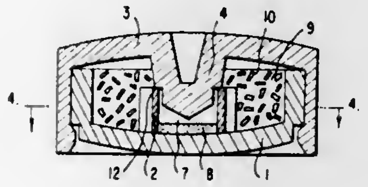
3,529,547
ERROR CORRECTION PROCESS AND COMPOSITION

Wesley R. Starkey, La Grange Park, Illinois, assignor to Starkey Chemical Process Company, a corporation of Illinois
No Drawing. Filed May 8, 1967, Ser. No. 636,626
Int. Cl. B41m *5/00*
U.S. Cl. 101—468 **13 Claims**

A spirit duplicating master eradication process and composition. The composition is a solution of pyridine borane in a mutual solvent for the pyridine borane and the dye vehicle in the master ink and is used in the process by applying it to an error until the error bleaches out. The pyridine borane can be used alone or in combination with another tertiary amine borane or a primary (*e.g.* t-butyl) or secondary (*e.g.* dimethyl) amine borane but in the case of primary or secondary amine boranes, it is preferable in the complete absence of aminoborane.

3,529,548
CARTRIDGE

Heinz Gawlick, Furth, Germany, and Hans Umbach, Stadeln, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed May 1, 1967, Ser. No. 635,206
Claims priority, application Germany, April 28, 1966, D49970
Int. Cl. F42b *5/26*
U.S. Cl. 102—45 **10 Claims**

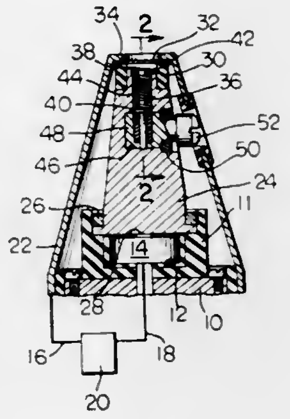


The present disclosure relates to a cartridge for driving the working piston of commercial explosive actuated devices, particularly rivet guns wherein a powder charge is contained within a cartridge case along with a primer composition that is very sensitive to impacts. The cartridge has an external configuration of a flat cylindrical capsule having a cup-shaped lower piece subdivided into a central primer charge receiving chamber and an annular propellant charge receiving chamber by a centrally placed relatively small diameter tubular projection. The cartridge case is constructed of a synthetic polymer and has an axial dimension substantially smaller than its diameter. It is provided with either a weakened central portion or a firing pin projection closely adjacent to the primer chamber so that an axial impact from either side will ignite the charge. Predetermined weakened breaking zones are provided for conducting the primer and propellant combustion gases out of the case without distintegrating the case.

3,529,549
ADJUSTABLE INERTIAL SWITCH FOR A PROJECTILE

Gerald L. Haxelet, Urbana, Illinois, and Donald A. Bednar, Champaign, Illinois, assignors to The Magnavox Company, Fort Wayne, Indiana a corporation of Delaware
Filed May 15, 1968, Ser. No. 729,313
Int. Cl. F42c *15/24, 11/00, 15/04*
U.S. Cl. 102—70.2 **10 Claims**

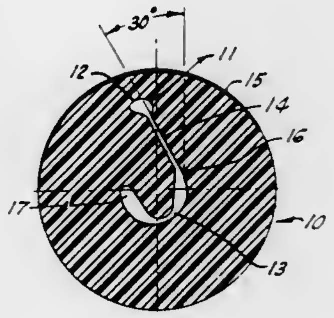
Inertial switch particularly for artillery shells on which the switch is normally open and closes in response to deceleration of the projectile and wherein the amount of deceleration required to close the switch is adjustable varying at least one of the inertial mass acting upon the switch and the distance the contact elements of the switch must travel relatively from open to closed position.



The inertial switch includes an arrangement for adjusting the switch immediately before firing thereof to compensate for any particular environmental conditions, such as target and tactical conditions, and the like.

3,529,550
ONE POINT STAR GRAIN CONFIGURATION FOR SOLID PROPELLANT ROCKET MOTORS

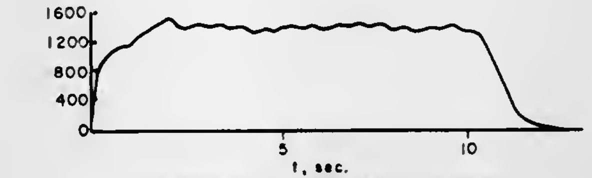
Ralph W. Snowden, Gurley, Alabama, assignor to Thiokol Chemical Corporation, Bristol, Pennsylvania a corporation of Delaware
Filed March 1, 1968, Ser. No. 709,646
Int. Cl. F42b *1/02*
U.S. Cl. 102—99 **5 Claims**



A solid propellant grain having a one point box hook-shaped configuration therein, that by the shape of the configuration within the solid propellant grain will control the trace shape, increase the loading density and reduce the strains encountered by the solid propellant grain, during temperature changes.

3,529,551
ROCKET PROPELLANT

Ricardi J. Barbero, Cumberland, Maryland and William Robert Lowstuter, La Vale, Maryland, assignors to Hercules Incorporated, a corporation of Delaware
Filed April 21, 1960, Ser. No. 023,850
Int. Cl. F42b *1/04*
U.S. Cl. 102—101 **5 Claims**

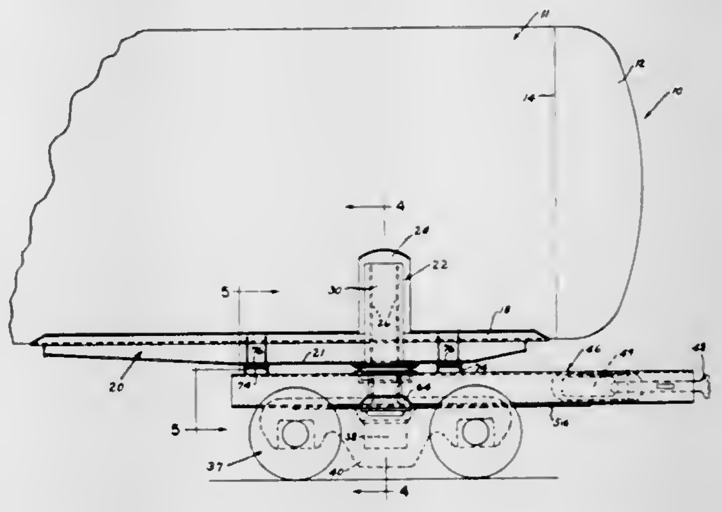


PRESSURE VS. TIME TRACE OF GRAIN A

1. An end burning solid propellant especially adapted for use in a rocket motor essentially comprising a cast solid, longitudinal, cylindrical body of propellant containing a longitudinal, preformed rod disposed along the longitudinal axis thereof, said rod comprising a plurality of alternate sections of predetermined and accurately dimensioned solid and single perforated propellant to attain predetermined burning characteristics.

3,529,552
RAILWAY CAR HAVING INCREASED COUPLER SWING FOR CURVE NEGOTIABILITY

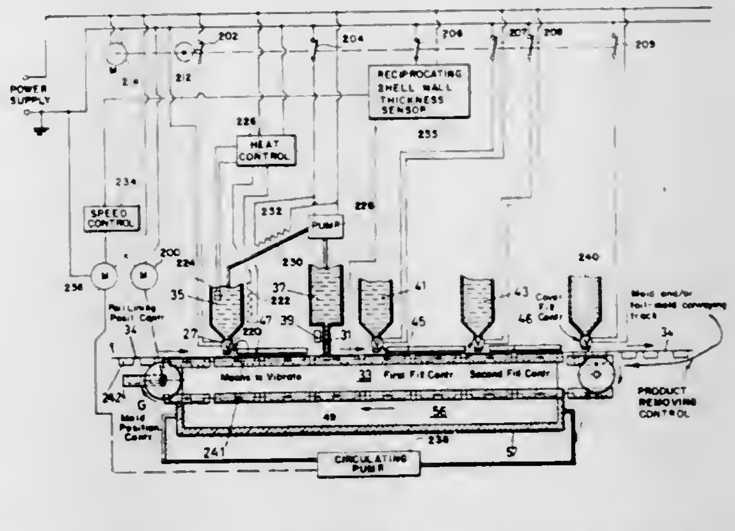
Ronald P. Bolte, St. Louis, Missouri, and Eugene L. Kunz, Florissant, Missouri, assignors to ACF Industries Incorporated, New York, New York a corporation of New Jersey
Filed Sept. 10, 1968, Ser. No. 758,790
Int. Cl. B61f *5/04;* **B61g** *7/10*
U.S. Cl. 105—362 **8 Claims**



A railway car having a stub center sill structure at each end mounted for relative swinging movement between the underframe and truck of the car. A coupler carried by each stub center sill structure swings in a horizontal plane with the associated center sill structure relative to the body or underframe of the railway car thereby to permit any desired coupler swing. The stub center sill structure pivots between vertically spaced bearing members carried by the superjacent underframe and subjacent truck.

3,529,553
PROCESS AND APPARATUS FOR THE PREPARATION OF HOLLOW AND CONVEX SHAPED THERMOPLASTIC MASSES SUCH AS CHOCOLATE AND CANDY

Hansjöerg G. L. Rutter, 25 Glanzinggasse, 1190 Vienna, Austria
Filed May 9, 1967, Ser. No. 637,221
Claims priority, application Austria, May 9, 1966, A 4,383/66
Int. Cl. A23g *3/12*
U.S. Cl. 107—4 **24 Claims**



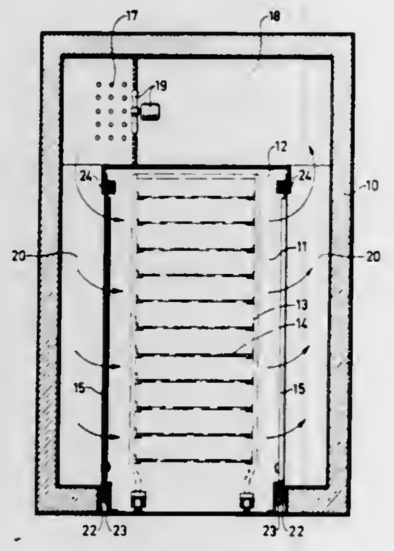
An apparatus for the simultaneous production and packaging of hollow and convexly shaped products having shells made from thermoplastic materials, such as chocolate, sugar and the like comprising a material container equipped with dispensing means and means to control said dispensing means; a source of heat to plasticize said materials in said container into a fluid melt; means to removably position in sequence and support foil linings under said material container for filling said linings; means to fill said foil lining with said melt from said container; cooling means to cool at least a portion of said foil linings and the fill, maintaining a temperature below 0°C. to solidify a shell from the fill adjacent the inner surface of said lining, leaving the core of said fill fluid; and suction means to evacuate the still fluid core from said shells.

3,529,554

DISCONTINUOUS BAKING OVEN

Magnus Emamuel Tillander Vallingby, Sweden; Ake Berhard Persson, Vallingby, Sweden; and Leif A. T. Johansson, Huddinge, Sweden, assignors to Ti-Pe Elmeko, Tillander & Persson, Stockholm, Sweden a partnership of Sweden
Filed June 27, 1968, Ser. No. 740,642
Claims priority, application Sweden, June 30, 1967, 10,118/67
Int. Cl. A21b *1/26*

U.S. Cl. 107—55 **3 Claims**



A discontinuous convection baking oven comprising a normally closed baking chamber through which in operation heated air is forced to flow horizontally between two opposed side walls having a plurality of passages for the air. Means are provided for sweeping the separate jets of air entering the baking chamber through the passages back and forth in the baking chamber so that a uniform baking of the stationary goods in the baking chamber is effected.

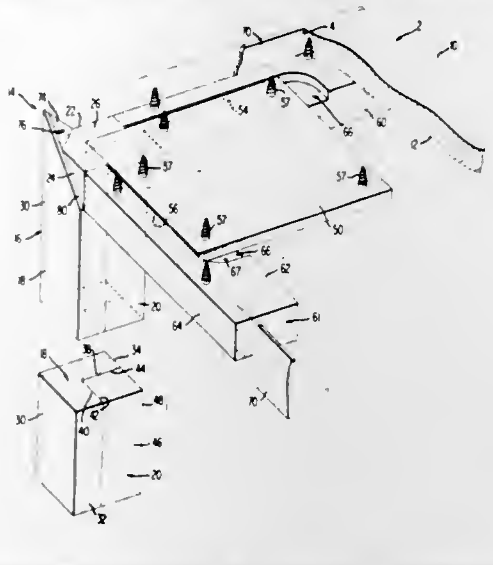
3,529,555

REINFORCED CONSTRUCTION FOR LEG SUPPORTED FURNITURE

Ruth A. Dean, Wellesley, Massachusetts, assignor to The Taylor Chair Company, Bedford, Ohio
Filed May 7, 1968, Ser. No. 727,193
Int. Cl. A47b *5/06*

U.S. Cl. 108—156 **10 Claims**

An article of furniture which includes a supported member having a surface bounded by a peripheral edge. An outer leg is positioned at a predetermined location on the peripheral edge and includes outer surfaces facing outwardly of the supported member and inner surfaces facing inwardly of the supported member. An inner leg contiguously abutting the inner surface portions of the outer leg is coextensive therewith. The inner leg also has exposed surface portions blending peripherally with the adjacent outer surface portions of the outer leg. A generally horizontal plate member fixedly secured to the upper end of the inner leg extends inwardly of the support member and is fixedly secured in abutting contact to the lower surface thereof by connecting means.

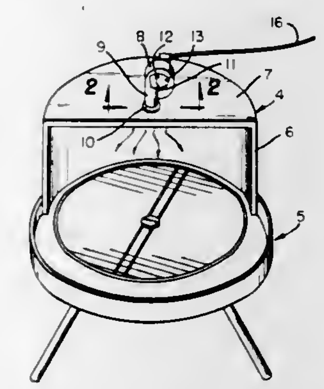


3,529,556

BARBECUE FORGE

Jack E. Barnes, 2315 Greenwood St., Pueblo, Colorado
Filed Nov. 20, 1968, Ser. No. 777,391
Int. Cl. A47j *37/07*

U.S. Cl. 110—1 **1 Claim**



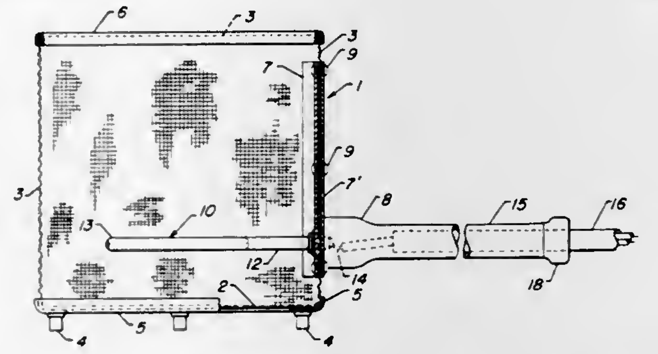
This invention consists of a typical barbecue grill having a hood embodying a flat top in the center of which is located an opening over which is suitably secured an electrically activated air blower adapted to blow air down on the aforesaid barbecue grill when it is used in the usual manner by those experienced in the cooking art. The aforesaid air blower has an air inlet that is provided with a triangularly shaped cover plate that controls the amount of air entering the air blower.

3,529,557

PORTABLE FIRE BASKET

Richard C. Treanor, Rte. 2, Box 103, Long Grove, Illinois
Filed May 26, 1969, Ser. No. 827,774
Int. Cl. F23b *1/*

U.S. Cl. 110—1 **2 Claims**



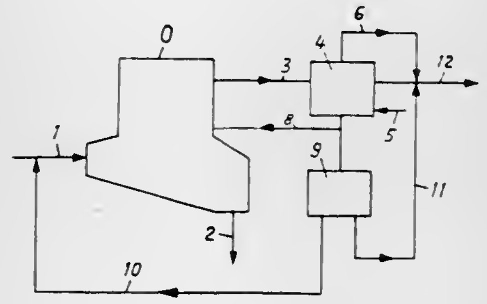
A fire basket device for solid fuels such as charcoal briquets, etc. which contains in combination therewith an electrical igniter device, said fire basket being portable in nature.

3,529,558

PROCESS AND MECHANICAL EQUIPMENT FOR THE CONCOMITANT INCINERATION OF SOLID REFUSE AND AQUEOUS SEWAGE SLUDGE

Richard Tanner, Zurich, Switzerland, assignor to Von Roll AG, Gerlafingen, Switzerland a corporation of Switzerland
Filed Nov. 22, 1968, Ser. No. 778,061
Claims priority, application Switzerland, July 15, 1968, 10525/68
Int. Cl. F23g *5/04*

U.S. Cl. 110—8 **5 Claims**



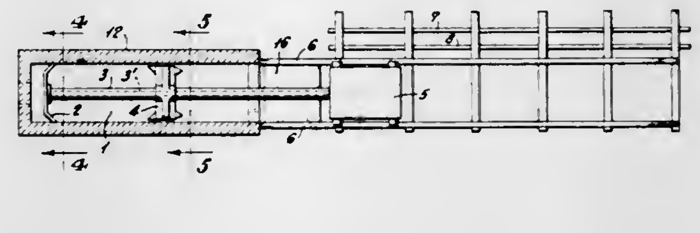
A novel process is disclosed for the concomitant incineration of solid refuse and aqueous sewage sludge. The solid refuse is burnt in a conventional incinerator whereas the aqueous sewage sludge undergoes a partial thermal dewatering by partially vaporizing the sludge water in a pressurized vaporizer. The vaporizer is heated by hot combustion gases effluent from the incinerator. The resulting sludge slurry is thereupon introduced in an atomized state into the combustion chamber of the incinerator or, alternatively, undergoes a further mechanical dewatering step to be brought into a semi-solid consistency and is then added to and mixed with the solid refuse prior to its incineration to be burnt together. A novel apparatus for carrying out the inventive process is also disclosed in schematic format.

3,529,559

DEVICE FOR REMOVAL OF ASH AND SLAG FROM A FURNACE FOR THE BURNING OF WASTE OR THE LIKE

Wolfgang A. Schumann, Weidenstieg 22b, Hannoversch-Munden, Germany
Filed June 27, 1968, Ser. No. 740,657
Claims priority, application Germany, June 27, 1967, 1,551,852
Int. Cl. F23j *1/04*

U.S. Cl. 110—165 **9 Claims**



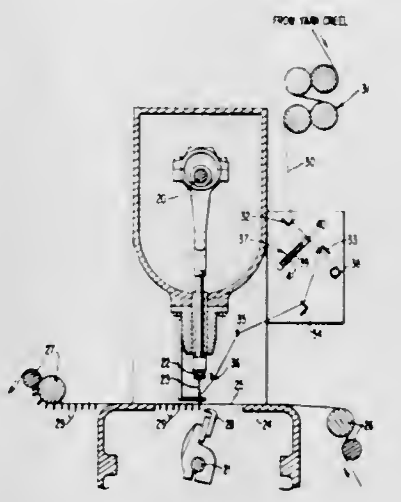
An apparatus for the removal of ash and slag from a furnace having a flat hearth characterized by the provision of tool means which can be moved into and out of the furnace in the horizontal direction. The tool means is rotatable about its longitudinal axis and has a plate-shaped head on the end introduced into the furnace. The head is substantially perpendicular to the direction of movement and has a straight scraping edge on one side and a tined edge on the opposite side.

3,529,560

AUTOMATIC STOP MOTION FOR CARPET TUFTING MACHINES

Wilbur Jackson, P.O. Box 239, Chatsworth, Georgia
Filed Jan. 9, 1969, Ser. No. 790,017
Int. Cl. D05c *15/00*

U.S. Cl. 112—79 **10 Claims**



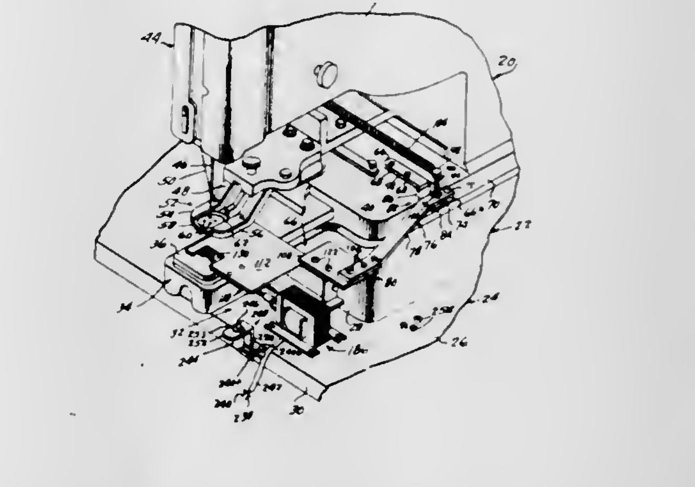
A completely automatic stop motion for a carpet tufting machine which substantially eliminates "stop marks" in the tufted carpet, commonly caused on loop pile machines where loops remain on the loopers when the machine stops, resulting in a pulling back or robbing of yarn from the next previous loops so that the previous loops are short and therefore cause a stop mark across the full width of the carpet. The invention stop motion senses a broken carpet yarn and through control circuitry and a responsive transmission system stops the tufting machine with the tufting needles above the carpet backing and with the loopers positioned to throw off completely the pile loops, thus relieving yarn tension and avoiding the objectionable stop marks.

3,529,561

METHOD OF SLEEVING A BUTTON SHANK

Eugene F. Hofe, Shepherdstown, West Virginia, assignor to The Londontown Manufacturing Company, Baltimore, Maryland a corporation of Maryland
Original application March 3, 1967, Ser. No. 620,463, now Patent No. 3,440,984, dated April 29, 1969. Divided and this application Nov. 26, 1968, Ser. No. 797,299
Int. Cl. D05b *3/14*

U.S. Cl. 112—265 **1 Claim**

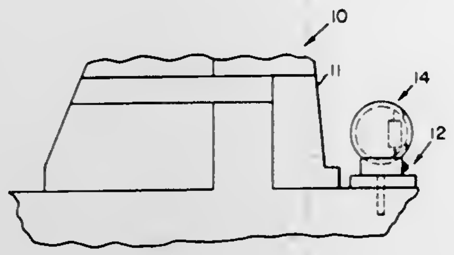


A method for circumscribing a hollow flexible and elastic sleeve (shank) around the threaded connection between a conventional button and a fabric material to which the button is secured.

3,529,562

SUBMARINE DISTRESS FLOAT

Richard H. McLaren, 385 Los Altos Drive, Pocatello, Idaho
Filed Jan. 22, 1969, Ser. No. 793,046
Int. Cl. B63g *8/00*
U.S. Cl. 114—16.5 **13 Claims**



An annular tower is fastened to the deck of a submarine just rearwardly of the sub's conning tower, and its bore is connected to a vacuum supply line. A hollow, buoyant, spherical float of aluminum alloy is releasably held by suction on the upper end of the tower, and contains a transmitter which immediately begins to transmit a distress signal, when the float is released from the tower, either by impact or by venting the tower bore. An adjustable valve in the side of the tower can be set to open and vent the tower automatically by water pressure, when the submarine dives beneath a preselected safe depth. Also, an electrically and/or manually-operated relief valve can be actuated at any time from within the sub to vent the tower and release the float. The transmitter antenna is connected to the float, which operates as an omnidirectional antenna.

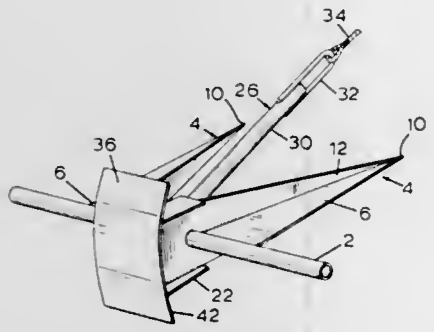
ERRATUM

For Class 114—206 see:
Patent No. 3,529,919

3,529,563

ANCHOR HAVING PIVOTABLE FLUKES

Henry Fast, R.R. 3, Leamington, Ontario, Canada
Filed March 11, 1969, Ser. No. 806,065
Claims priority, application Canada, Aug. 10, 1968, 27,086
Int. Cl. B63b *21/44*
U.S. Cl. 114—208 **8 Claims**

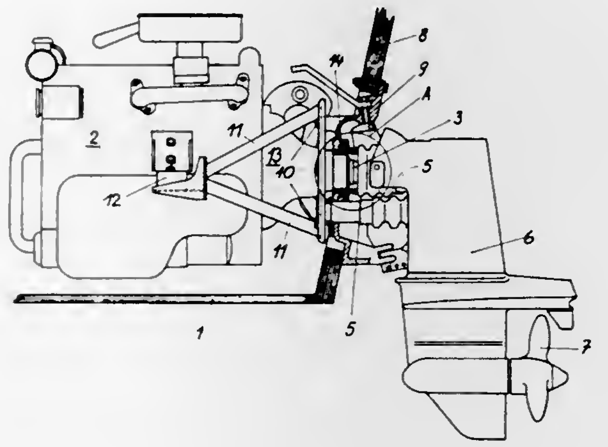


An anchor having a stock and a pair of planar flukes diverging from the stock. The inner opposing edges of the flukes bear digging plates which widen towards the base of the anchor and are connected together at the anchor base by slide plates to form a box structure through which the stock passes. The bottom of this box is closed by a jack plate which extends laterally beyond the digging plates. When the anchor drags along a soft bottom, dirt fills the box base, and also accumulates in the exterior angle between the lower digging plate and jack plate, tilting the flukes down to bury the anchor.

3,529,564

BOAT DRIVE

Bernhard Osswald, Munich, Germany, and Josef Wilka, Munich, Germany, assignors to Bayerische Motoren Werke Aktiengesellschaft, Munich, Germany
Filed Sept. 16, 1968, Ser. No. 762,303
Claims priority, application Germany, Sept. 16, 1967, 1,531,723
Int. Cl. B63h *1/14, 5/06*
U.S. Cl. 115—34 **20 Claims**

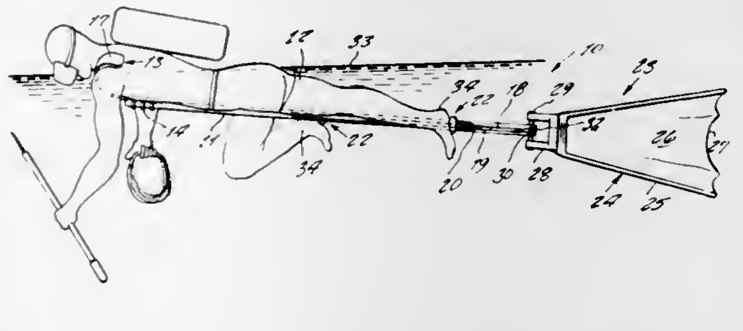


A boat drive which includes an inboard engine and an outboard drive for a ship's screw which are connected with each other by a drive transmission extending through the stern of the boat and sealed with respect to the sea water; the inboard engine as well as the outboard drive are secured on a support plate absorbing the weight of the entire drive and arranged at the stern of the boat whereby the engine is supported at and centered in the support plate by means of a frame within an axis extending transversely of the boat through or approximately through the engine's center of gravity and by an elastic element cooperating with a centering neck portion of the engine that surrounds the output shaft thereof.

3,529,565

DYNAFIN

Plinio A. Iglesias, New York, New York (2612 Newkirk Ave., Apt. A. North Bergen, New Jersey)
Filed July 10, 1969, Ser. No. 840,643
Int. Cl. B63h *16/02;* **A63b** *31/10*
U.S. Cl. 115—22.2 **5 Claims**

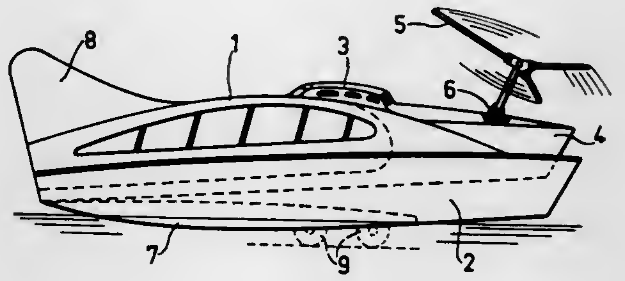


A scuba diving accessory for the purpose of improving the sport of scuba diving, the device comprising a shoulder support made of plastic or other rigid material, a transmission bar with two pedals running along side of slots in the bar so to transmit movement to a fin, the fin comprising a rubber member so to produce displacement of water.

3,529,566

BOAT HAVING ROTOR ABOVE A WING

Ivan Troeng, 5 Ekbacksvagen, Danderyd, Sweden
Continuation of application Ser. No. 718,815, April 4, 1968
This application May 27, 1969, Ser No. 828,935
Claims priority, application Sweden, Apr. 5, 1967, 4,708/67
Int. Cl. B63h *7/00;* **B63b** *1/34*
U.S. Cl. 115—35 **1 Claim**

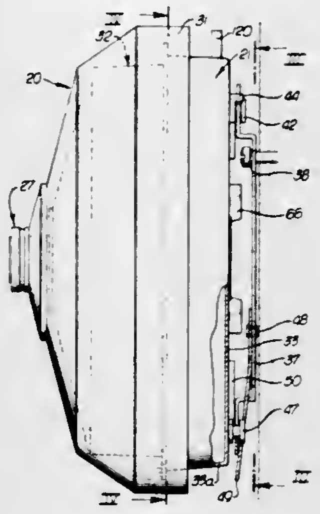


Cataraman-type vehicle embodies (1) an airplane-type wing-like member connecting, and at right angles to, plural pontoons and (2) an inclined helicopter rotor forward of the wing-like member and adapted to blow an air stream under said connecting wing-like member. The rotor shaft is mounted for inclination laterally as well as forward and backward.

3,529,567

MECHANICAL FIRE DETECTION ALARM DEVICE

Frederick K. Storm, Jr., Glendale, California, and Eldridge H. Smiley, Rosemead, California, assignors to Detection, Ltd., a partnership
Filed Sept. 6, 1968, Ser. No. 757,884
Int. Cl. G08b *17/00*
U.S. Cl. 116—102 **8 Claims**

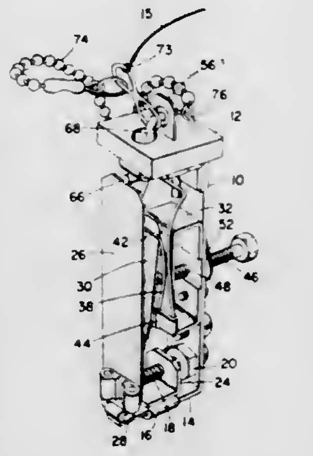


A fire detection alarm device having a biased pivotally mounted hammer actuating member movable to strike a sound or hammer pin to drive the sound pin against a cover, the sound pin being freely slidable along its long axis. The hammer actuating member carries an inertia member limitedly movable relative thereto for continued movement of the inertia member after the pin has been struck to disengage a latch member from a gear drive system. The gear drive system returns the hammer actuator member to its start position of a hammer actuating stroke, the gear means including an escapement wheel normally restrained against rotation and releasable by trigger means either manually or thermo-responsibly actuated. A visible signaling device is positively displayed when unwinding commences of a spring motor which drives the escapement wheel.

3,529,568

UNDERWATER TEMPERATURE DETECTING DEVICE

Frank S. Quin, 308 Melrose Ave., Toronto 12, Ontario, Canada
Filed July 7, 1969, Ser. No. 839,213
Int. Cl. G01k *1/14*
U.S. Cl. 116—114.5 **6 Claims**

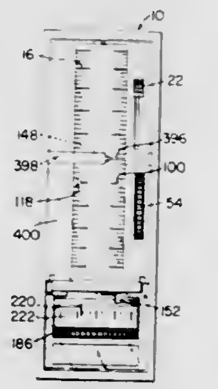


A device which signals a fisherman when it is suspended in water of a preselected temperature. The device has a dial, an indicator needle, a hook, a bimetallic strip and a short length of chain. A first end of the chain is fixed to the device and a second end is connected to a fishing line and releasably connected to the hook. The bimetallic strip, according to its position, either maintains the hook in an engaging position with the second end of the chain or releases the hook so that it in turn releases the second end of the chain. The needle is manually turned so that it points to the temperature reading on the dial which corresponds to the temperature of the water in which the fisherman wishes his lure to be suspended. When the device reaches water of the desired temperature, the bimetallic strip releases the hook and the second end of the chain separates therefrom. The fishing line jerks upon release of the chain and the jerk serves as a signal to the fisherman that water of the desired temperature has been reached.

3,529,569

INDICATING APPARATUS

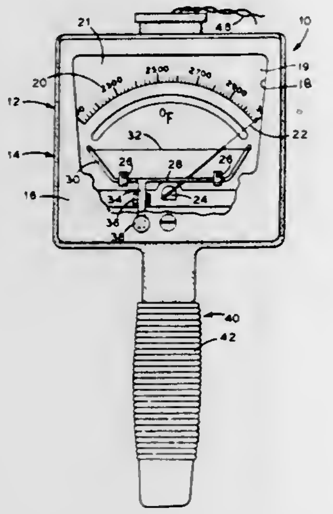
William F. Stahl, Warminster, Pennsylvania, assignor to Honeywell Inc., Minneapolis, Minnesota, a corporation of Delaware
Original application Oct. 11, 1965, Ser. No. 494,670, now Pat. No. 3,390,697, dated July 2, 1968. Divided and this application Nov. 8, 1967, Ser. No. 698,082
Int. Cl. G01d *13/00*
U.S. Cl. 116—129 **1 Claim**



An indicating apparatus that has (a) a scale; (b) a transparent cover spaced outwardly of the scale and having a stationary opaque index necked band portion which extends across the scale; (c) a pointer that is adapted to move along a path that is between the cover and the scale and which has a first elongated opaque portion that is substantially the same width as the widest portion of the opaque band so that it can be brought into hidden alignment therewith; and (d) a part of an opaque triangular shaped part forming a pointed end of the pointer which can be aligned with and obscured by the necked portion of the index band while a remaining portion of this pointed end remains visible to thereby indicate the existance of the pointer behind the indexing band.

3,529,570
METER CONSTRUCTION

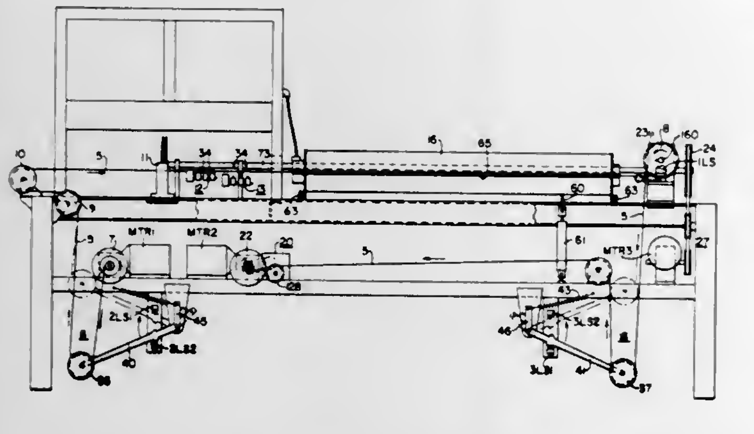
William E. Engelhard, Apalachin, New York, assignor to Pyro-Serv Instruments, Inc., North Arlington, New Jersey a corporation of New Jersey
Filed May 7, 1968, Ser. No. 727,260
Int. Cl. G12b *3/02*
U.S. Cl. 116—129 **4 Claims**



A meter having a needle movable over a scale and a needle retaining device to prevent movement of the needle. The needle retaining device includes a wire which may be moved into intimate engagement with the needle to press the needle against the meter face. The wire is connected to a rotatable shaft which is biased so that the needle is normally immobilized. The meter further includes a lever for rotating said shaft to release the needle to take a reading.

3,529,571
WIRE MARKING MACHINE

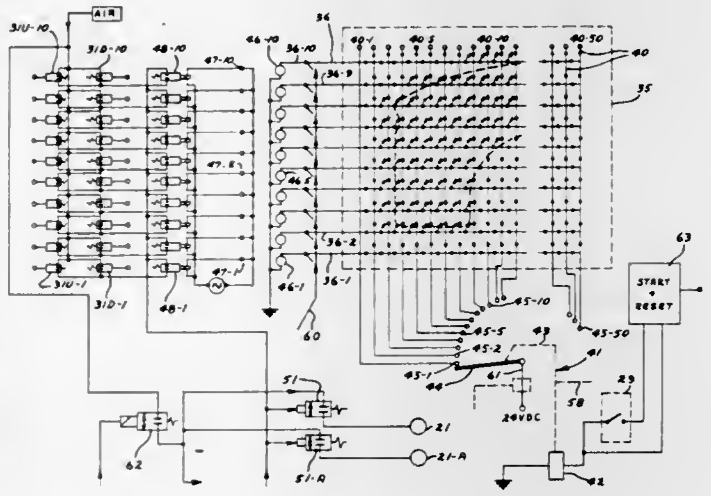
Paul F. Good, Lutherville, Maryland, and Robert W. Oshman, Baltimore, Maryland, assignors to Westinghouse Electric Corporation, Pittsburgh, Pennsylvania a corporation of Pennsylvania
Filed Oct. 8, 1968, Ser. No. 765,833
Int. Cl. B05c *11/12*
U.S. Cl. 118—6 **5 Claims**



An improved wire marking machine in which use of two sets of adjacent inking rolls for making circumferential code color markings at intervals on intermittently advanced sections of plastic coated wire from a motorized payout reel is automatically transferred from one ink roll set to the other according to completion of color marking of respective preselective lengths of wire, without interruption in operation of the wire advancing means. A retractable in-line temperature regulated electric resistance heater oven bakes on the color markings. A reel-size-adjustable level wind mechanism directs wind-up of the color marked wire evenly onto a selected size motorized take-up reel. Spring-biased wire looping means control operations of the two motorized reels to maintain limited tension experienced by the wire during its intermittent advancement to the inking rolls and through the heating oven.

3,529,572
PNEUMATIC PAINTING PROGRAMMER

Glenn R. Rose, St. Paul, Minnesota, assignor to Programmed & Remote Systems Corporation, St. Paul, Minnesota a corporation of Minnesota
Filed Aug. 7, 1968, Ser. No. 750,988
Int. Cl. B05c *11/00*
U.S. Cl. 118—7 **11 Claims**

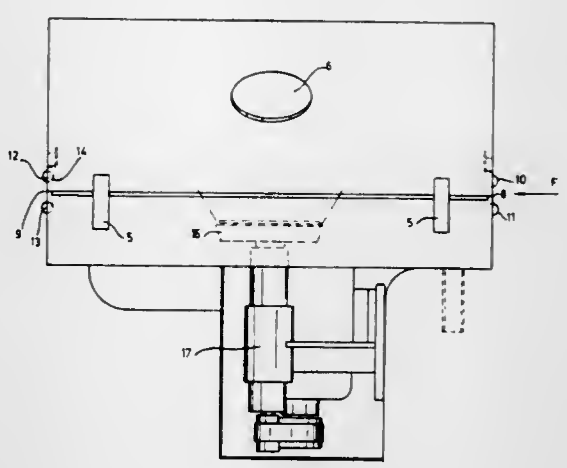


A pneumatic painting programmer for automatically programming the spray painting of automobile sides utilizing in combination switching arrangements which give a grid type control circuit layout and which can be connected in a manner to insure that the paint spray head is turned on and turned off at the proper times to paint an automobile. By having the circuit energized at the proper point in the grid, the points of energization are determined by placing a scale drawing of the automobile over a scale layout of the electrical circuit and then making the indicated connections on the grid circuit.

3,529,573
PULVERIZING UNIT FOR AUTOMATIC MACHINE FOR CONTINUOUS FABRICATION OF CIGARETTE FILTERS

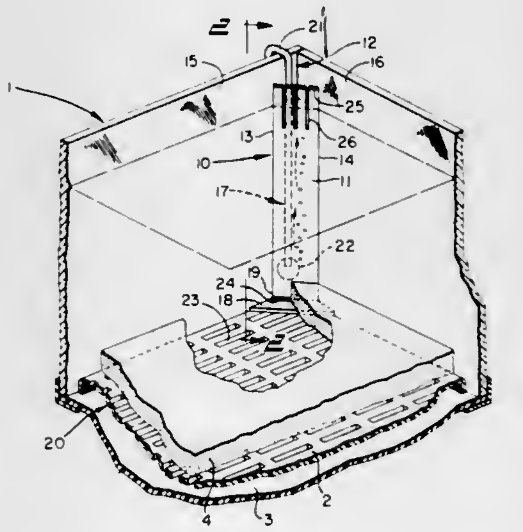
Josef Baeni, Echandens, Switzerland; Jacques F. Bonnet, Lausanne, Switzerland; and Max K. Sandmeier, Les Tuileries de Grandson, Switzerland, assignors to Baumgartner Papiers S. A., Renens, Switzerland a company of Switzerland
Filed Feb. 8, 1968, Ser. No. 704,007
Claims priority, application Switzerland, Feb. 14, 1967, 2155/67
Int. Cl. B05b *7/14*
U.S. Cl. 118—308 **1 Claim**

In apparatus for treating cellulosic material with a pulverized plasticizing agent, the material is passed in sheet form through a closed chamber. A pulverizing unit located below the sheet comprises a hollow disc rotating on a vertical axis and having a bottom, a top and a sloping peripheral wall having circumferentially distributed orifices. The plasticizing agent and air are introduced at the center of the hollow disc and are ejected through the orifices by centrifugal force. Spaced radial grooves in the bottom and spaced downwardly projecting radial ribs on the top have the effect of increasing the efficiency of the pulverizing disc.



3,529,574
CORNER AIR LIFT FOR AQUARIUMS

William E. Kelley, Euclid, Ohio, and Robert J. De Fasselle, Gates Mills, Ohio, assignors to Aquarium Systems, Inc., Wickliffe, Ohio a corporation of Ohio
Filed Dec. 31, 1968, Ser. No. 788,146
Int. Cl. A01k *63/00*
U.S. Cl. 119—5 **8 Claims**

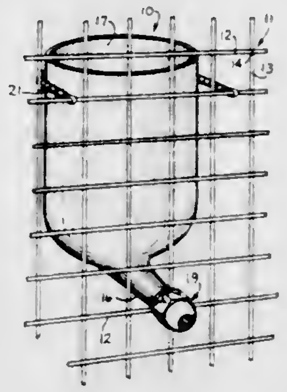


A corner air lift in the form of a plate disposed across one or more corners of an aquarium to form with the adjacent sides of the aquarium tank a water lift chamber. The top of the plate desirably extends above the normal water level within the aquarium so that animals cannot swim into the water lift chamber. Narrow slots or other apertures in the plate adjacent the upper edge permit circulation of water without the need of lifting the water up over the upper edge.

3,529,575
ANIMAL DRINKING BOTTLE

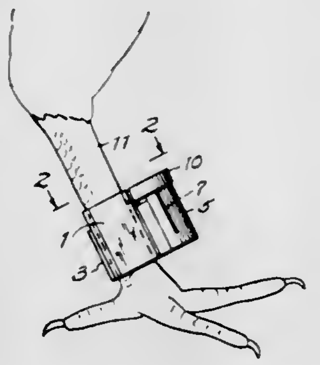
Thomas G. Schalk, Kalamazoo, Michigan, assignor to The Upjohn Company, Kalamazoo, Michigan a corporation of Delaware
Filed March 22, 1968, Ser. No. 715,361
Int. Cl. A01k *7/00*
U.S. Cl. 119—72.5 **7 Claims**

An upwardly opening container having a downwardly and sidewardly extending pouring spout connected to an animal-actuable valve which projectes substantially beyond the side surface of the container. Mounting means are engageable with the container for fastening same to the sidewall of an animal cage or the like.



3,529,576
POULTRY BAND AND CONTAINER

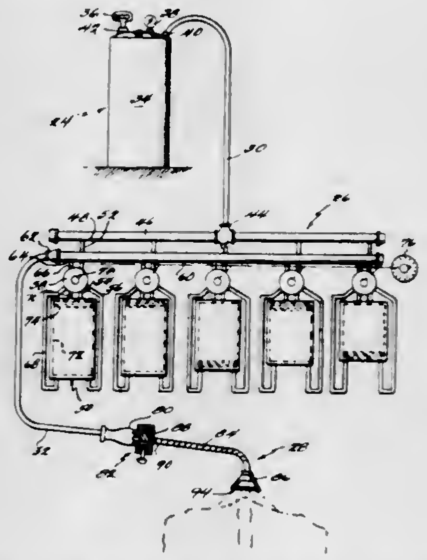
Gordon M. Candee, High St., Canaan, Connecticut
Filed April 2, 1968, Ser. No. 718,154
Int. Cl. A01k *29/00*
U.S. Cl. 119—156 **3 Claims**



A poultry band and a refillable slit or perforated container, the band being adapted to be clamped to the leg of fowl and the container being adapted to hold a disinfestant in a position most effective for destroying lice or other vermin with which fowl are sometimes infested.

3,529,577
LIVESTOCK INSECTICIDE DISPENSER

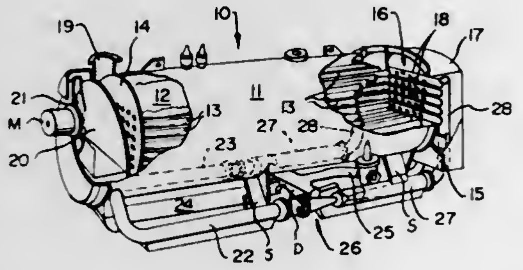
Harry L. McMenemy, Jr., Richardson, Texas, assignor to Chemagro Corporation, Kansas City, Missouri a corporation of New York
Filed Jan. 22, 1969, Ser. No. 793,058
Int. Cl. A01k *13/00*
U.S. Cl. 119—159 **9 Claims**



The solution pour-on or spot-on device for applying solution to livestock comprises a solution reservoir with means for pressurizing the solution within the device; a solution applicator with an on-off control valve and a nozzle; and a solution metering assembly having cylinders with two-way floating pistons which are interconnected to the solution reservoir and the solution applicator through flow control valves whereby upon selective adjustment of the flow control valves and the actuation of the on-off control valve in the solution applicator, solution flows into the cylinders from the reservoir on one side of the pistons and the solution on the other side of the pistons is expelled from the cylinders out through the solution applicator and onto the livestock.

3,529,578
FIRE TUBE BOILER WITH SPIRAL RIBBON BURNER

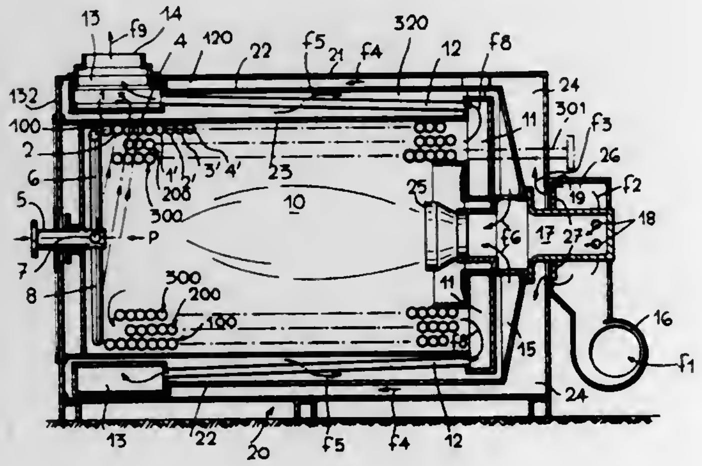
Frank Gething, Milwaukee, Wisconsin, assignor to Aqua-Chem, Inc., Waukesha, Wisconsin a corporation of Wisconsin
Original application Oct. 19, 1966, Ser. No. 587,840, now Patent No. 3,438,719, dated April 15, 1969. Divided and this application Aug. 19, 1968, Ser. No. 753,420
Int. Cl. F22b *9/04*
U.S. Cl. 122—45 **5 Claims**



A fire tube boiler having a heat exchange chamber defined on each end by tube sheets with a plurality of fire tubes extending between said sheets. The boiler has a burner assembly mounted outwardly of one of the tube sheets with burner elements uniformly spaced from the tube sheet and having a burner element in alignment with each fire tube. The burner assembly has a plurality of headers for feeding a combustible mixture to the burner elements. A means is provided for igniting adjacent burner elements from a lighted element and deflector means are provided for preventing flame from said means from directly engaging said tube sheet.

3,529,579
MULTITUBULAR BOILER

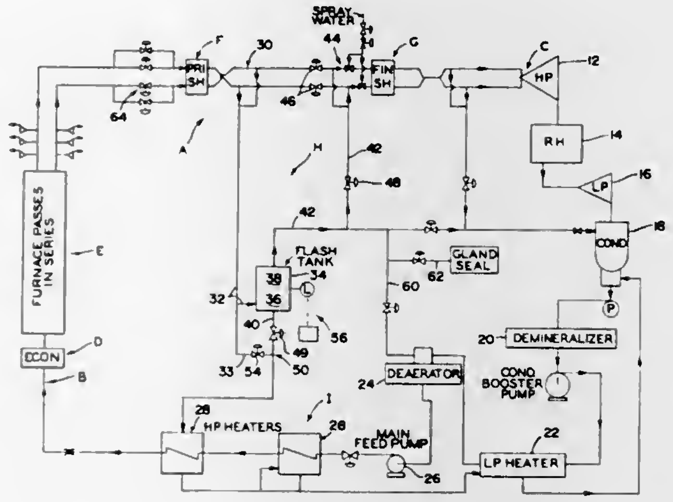
Léon Jacques Wanson, 118 Avenue Isidore Gheyskens, Auderghem, Belgium
Filed April 24, 1969, Ser. No. 819,054
Int. Cl. F22b *21/28*
U.S. Cl. 122—248 **1 Claim**



A multitubular boiler including several layers of coiled tubes wherein two adjacent coils pertain to two different tubes in the same layer is provided with a double jacket wherein at least a fraction of the air admitted to the burner is circulated for preheating it.

3,529,580
START-UP SYSTEM

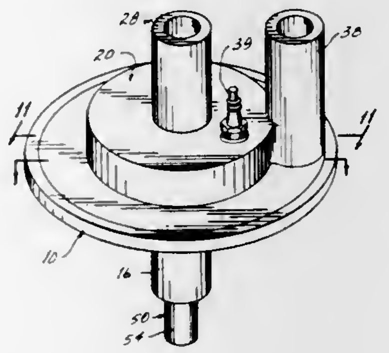
William D. Stevens, North Caldwell, New Jersey, assignor to Foster Wheeler Corporation, Livingston, New Jersey a corporation of New York
Filed Oct. 23, 1968, Ser. No. 769,782
Int. Cl. F22b *29/06*
U.S. Cl. 122—406 **9 Claims**



A once-through vapor generator which comprises a main flow path including inlet and outlet ends and heating surfaces between said ends. Heat recovery surfaces are positioned upstream of the main flow path inlet end, the generator further comprising a start-up bypass system which leads from the main flow path to the heat recovery surfaces. The bypass system includes first and second conduit means in parallel, the first of said conduit means including a flash tank, the second of said conduit means leading directly to said heat recovery surfaces and being valved so that the bypass flow from said main flow path is apportioned during start-up between said flash tank and said second conduit means.

3,529,581
ROTARY COMBUSTION MACHINE

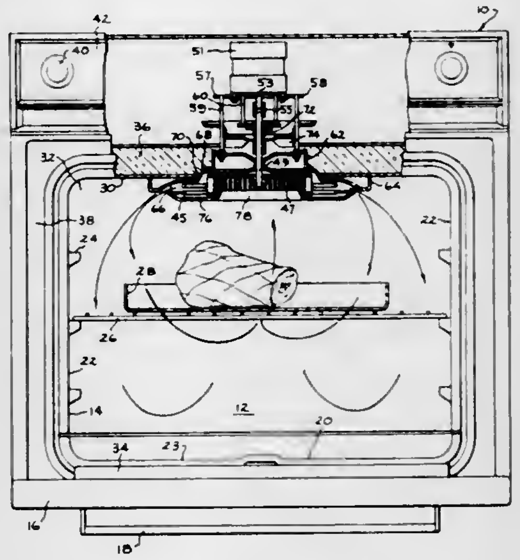
Arthur R. Braun, 508 N. Cary Algonquin Road, Cary, Illinois
Filed Dec. 4, 1968, Ser. No. 781,042
Int. Cl. F02b *53/00*
U.S. Cl. 123—18 **9 Claims**



A rotary combustion machine having a housing comprising a ported cylindrical outer wall, a ported concentric inner wall forming an exhaust chamber and a partition extending between the walls; and featuring an annular piston slidably received on the partition while eccentrically oscillating between and about the walls of the housing. As the piston oscillates, an air/fuel mixture is received and compressed in chambers formed about the exterior surface of the piston and ignited, and exhausted in chambers formed about the interior surface of the piston. When the mixture is ignited, expanding gases oscillate the piston which in turn rotates a drive shaft.

3,529,582
SELF-CLEANING FORCED CONVECTION OVEN

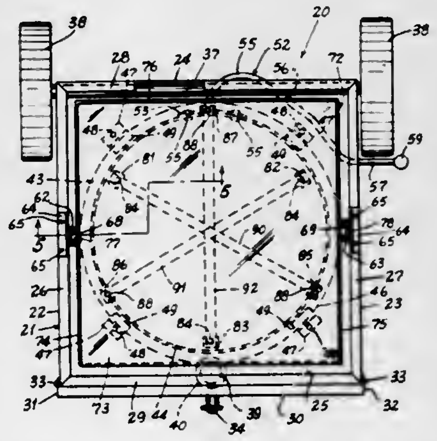
Bohdan Hurko, Louisville, Kentucky, and A. Melcher Anderson, Louisville, Kentucky, assignors to General Electric Company, a corporation of New York
Filed Dec. 9, 1968, Ser. No. 782,067
Int. Cl. A21b *1/00*
U.S. Cl. 126—21 **11 Claims**



This invention relates to a baking and broiling oven for the preparation of food, and particularly to an electric oven with but a single source of heat located in the top of the oven for both baking and broiling. During the normal baking operations, a blower wheel located adjacent the top heating element is energized to create a strong upward draft in the center of the oven and to discharge the air over the heating means. An air diffusion plate cooperates with the heating means as a source of radiant heat, and also provides an air intake opening for the blower wheel as well as directing the air in a downward direction over the vertical walls forming the oven cavity. The discharge air forms a protective curtain to entrap any food soil and grease spatterings which might become separated from the food while being cooked in the oven before the food soil and grease spatterings are allowed to strike the vertical walls. The strong upward draft of air in the center of the oven carries the food soil and grease spatterings through the heating means where they are degraded into gaseous degradation products before being exhausted to the kitchen atmosphere through a standard oven exhaust vent. This single top source of heat delivers enough radiant heat by virtue of the fact that it heats the air diffusion plate to a high temperature and this provides satisfactory top browning of the food.

3,529,583
FIRE BOX ADJUSTOR FOR CHARCOAL BROILER

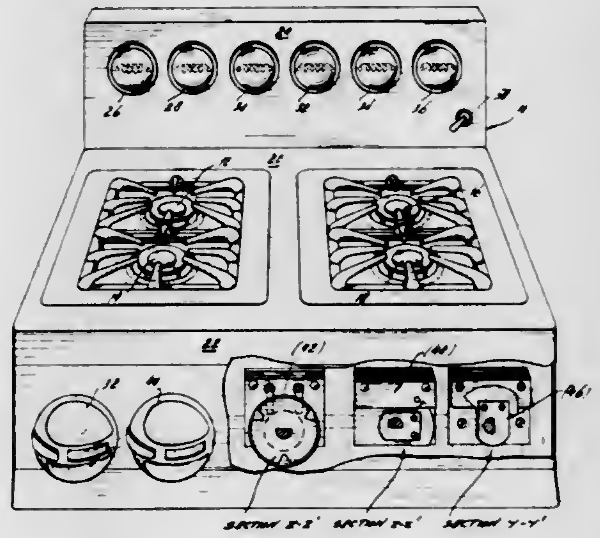
William Robert Voges, Belleville, Illinois, assignor to Roesch Enamel & Manufacturing Company, Belleville, Illinois a corporation of Illinois
Filed March 5, 1969, Ser. No. 804,497
Int. Cl. A47j *37/00;* **F24b** *3/00*
U.S. Cl. 126—25 **7 Claims**



A fire box adjustor for a charcoal broiler wherein a plurality of struts are connected by swivels to a fire box support and to a lower pan. The fire box support is guided for vertical non-rotational movement. The pan is rotatably mounted in a housing. A rod having a handle is connected to the pan for rotating the pan. Rotation of the pan orients the struts to raise and lower the fire box.

3,529,584
GAS BURNER CONTROL SYSTEM

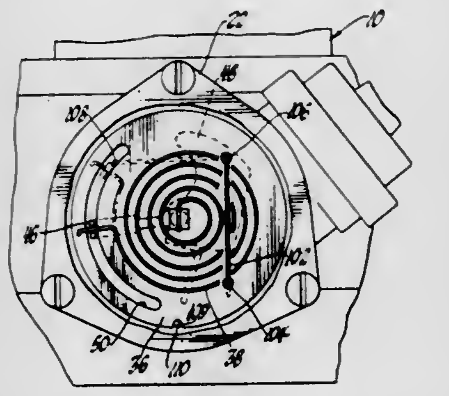
Alfonso Trueba Celaya, Circuito Novelistas 54, Ciudad Satelite, Edo, Mexico
Filed March 1, 1968, Ser. No. 709,610
Int. Cl. F24c *3/00*
U.S. Cl. 126—39 **8 Claims**



Burner control valve system of the type having a plurality of pilot and individual burner valves, together with visual indicator control lamps.

3,529,585
INTERNAL COMBUSTION ENGINE FUEL SYSTEM

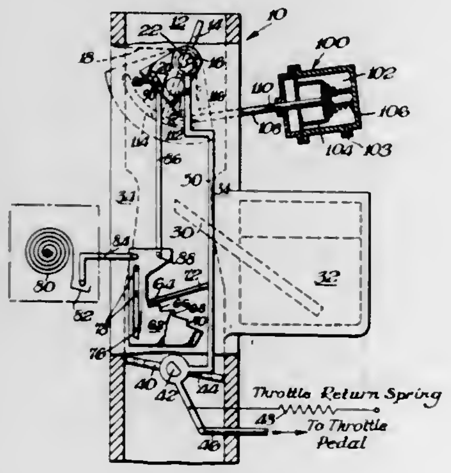
Donald D. Stoltman, Henrietta, New York, assignor to General Motors Corporation, Detroit, Michigan a corporation of Delaware
Continuation of application Ser. No. 450,038, April 22, 1965. This application Jan. 29, 1968, Ser. No. 701,482
Int. Cl. F02m *1/10, 11/06*
U.S. Cl. 123—119 **2 Claims**



In a multiple-stage carburetor, air flow past the primary stage choke is controlled by a thermostat only over a first range of temperatures, the primary stage fast idle cam and the secondary stage throttle lockout member are controlled by the thermostat over a range of temperatures including temperatures higher than the first range, and a spring opposes the thermostat at the higher temperatures to extend the fast idle period and to delay release of the secondary stage throttle from the lockout member. A throttle valve is rotatably disposed in the air inlet to control air flow therethrough. A lever arm is connected to the throttle valve for rotation therewith in a certain path. A throttle control mechanism having a member with a cam surface disposed in the path for contact with the lever arm. The cam surface variably limits closing movement of the lever arm and the throttle valve to establish a range of minimum throttle openings. A choke valve is disposed in the air-inlet and a thermostatic member responsive to engine operating temperatures is connected to the choke valve to control air flow past the choke valve only over a first range of temperatures. The throttle control mechanism has a linkage moved by the thermostatic member for moving and controlling the position of the cam surfaced member over a range of temperatures including a second range of temperatures higher than those of the first range. The thermostatic member and the linkage provide a control for the cam surfaced member to permit a decreased minimum throttle opening upon an increase in temperature. The linkage includes a lever disposed for movement in an arcuate path. In one embodiment a baffle is located adjacent the lever and the baffle has an arcuate slot adjacent the arcuate path. The baffle has first and second apertures with an elongated spring member having one end received and substantially immobilized in the first aperture. The spring member has an intermediate portion received and supported in a second aperture. The spring member having the end opposite the one end supported by the intermediate portion in a cantilevered manner and extending through the arcuate slot into the arcuate path of movement of the lever for contact therewith. The opposite end of the spring member is disposed to contact the lever only as the mechanism is moved by the thermostatic member within the second range of temperatures. Contact of the opposite end of the spring member with the lever providing a force opposing movement of the throttle control mechanism by the thermostatic member for delaying movement of the mechanism and thereby delaying a decrease in the minimum throttle opening. In another embodiment the linkage includes a lever disposed for movement in an arcuate path and a shaft connected to the lever. An elongated spring member is substantially immobilized at one end and having an intermediate portion coiled about and supported by the shaft. The spring member having the end opposite one end supported by the intermediate portion in a cantilevered manner and extending into the arcuate path of movement of the lever for contact therewith. The opposite end of the spring is disposed to contact the lever only as the mechanism is moved by the thermostatic member within the second range of temperatures. Contact of the opposite end of the spring member with the lever providing a force opposing movement of the throttle control mechanism by the thermostatic member for delaying movement of the mechanism and thereby delaying a decrease in the minimum throttle opening.

3,529,586
CARBURETOR

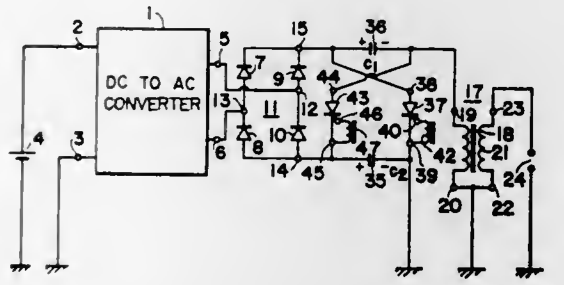
Edward F. Fort, Naperville, Illinois, assignor to Ethyl Corporation, New York, New York a corporation of Virginia
Continuation-in-part of application Ser. No. 565,910, July 18, 1966. This application April 3, 1968, Ser. No. 722,524
Int. Cl. F02m *1/10; 23/04;* **F02d** *11/08*
U.S. Cl. 123—119 **13 Claims**



Carburetor has choking connection arranged to apply partial choke at idle even when the engine is hot, to cause the carburetted fuel mixture to be richer at idle than at off-idle. Off-idle fuel mixture can be quite lean. Choke can be in a throat that has venturi-metered fuel supply elements providing all fuel for idle operation as well as fuel for off-idle operation. An additional throat can be used to supply richer mixture for maximum power operation.

3,529,587
IGNITION SYSTEM FOR INTERNAL COMBUSTION ENGINE

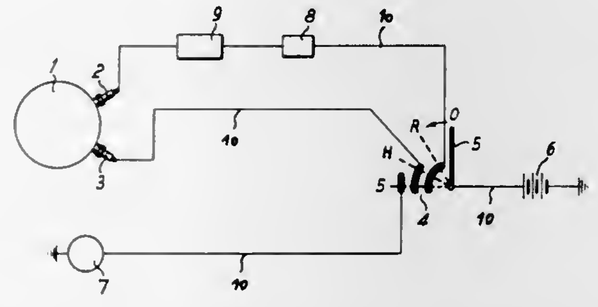
Takao Sasayama, Hitachi, Japan, assignor to Hitachi, Ltd., Chiyoda-ku, Tokyo-to, Japan
Filed May 10, 1968, Ser. No. 728,271
Int. Cl. F02p *3/06*
U.S. Cl. 123—148 **10 Claims**



An ignition system of an internal combustion engine comprises a D.C. source; an ignition coil having a primary winding; and a bridge circuit having a pair of thyristors and a pair of capacitors in its four branches and connected in such a manner that one pair of opposing branches include the respective thyristors and the other pair of opposing branches include the respective capacitors, wherein said D.C. source is operably connected between one pair of opposing connections between the branches with such polarity as to supply a current to the respective capacitor through the respective thyristor in its forward direction, the primary winding is operably connected between the other pair of opposing connections, and said pair of the thyristors are made conductive alternately by an ignition timing device so that discharge currents from the pair of discharge capacitors alternately energizes the primary winding of the ignition coil.

3,529,588
IGNITION ARRANGEMENT

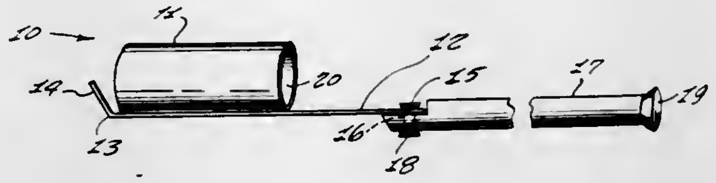
Otto Beesch, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed Oct. 9, 1968, Ser. No. 766,180
Claims priority, application Germany, Oct. 11, 1967, 1,551,998
Int. Cl. F02p *19/02*
U.S. Cl. 123—169 **4 Claims**



An ignition arrangement for rotary piston engines includes a spark plug arranged to ignite the fuel-air mixture of the engine. A glow plug located proximal to the spark plug for preheating the latter and the circumambient region thereof when energized. A source of electrical energy and operative connections between the latter and the spark plug and glow plugs, including a switch permitting selective energization of the glow plug alone and of the spark plug alone, both of them together or neither of them when the engine is not to be operated.

3,529,589
MANUALLY OPERATED TARGET PROJECTOR

Nicholas A. Esser, 5105-A Jamieson, St. Louis, Missouri
Filed Aug. 16, 1968, Ser. No. 753,249
Int. Cl. F41b *3/04*
U.S. Cl. 124—5 **1 Claim**



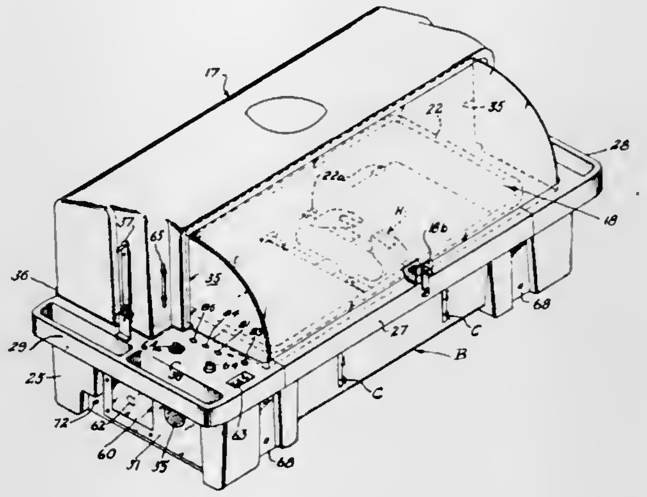
A propelling device for empty tin cans which are to be used as air borne targets in skeet shooting comprising a tubular barrel upon a flexible metal spring having a flexible stop at one end of the barrel, the flexible spring being secured pivotally to one end of a long handle.

ERRATA

For classes 126—21 thru 126—39 see:
Patent Nos. 3,529,582 thru 3,529,584

3,529,590
PORTABLE INCUBATOR FOR INFANTS

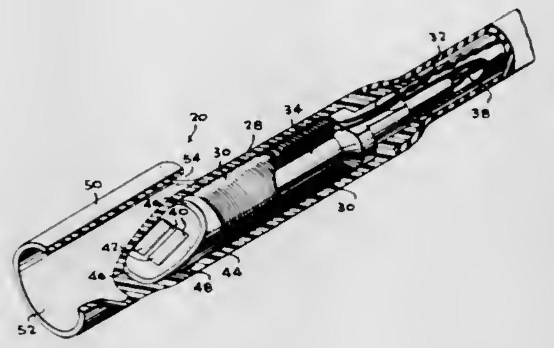
James R. Grosholz, Strafford, Pennsylvania, assignor to Air-Shields, Inc., Hatboro, Pennsylvania a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,581
Int. Cl. A61b *19/00*
U.S. Cl. 128—1 **21 Claims**



An incubator especially adapted for portable use and having a base and a hood having front and rear portions both of which are openable for access to a removable bassinet, the base walls and a portion of the hood being heat insulated and provided with extended surface heater elements, and one portion of the hood being transparent, the incubator further having temperature control, air circulation and humidification systems; and an optionally usable accessory frame adapted to carry a battery, a battery charger and an oxygen bottle.

3,529,591
CATHETER TIP BLOOD VELOCITY SENSOR

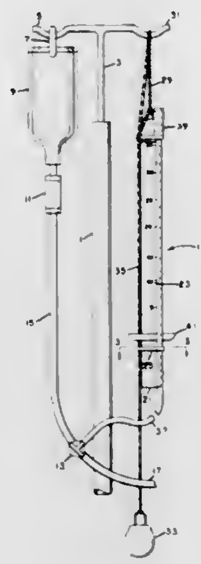
William H. Schuette, McLean, Virginia, assignor to Biotronex Laboratory, Incorporated, Silver Spring, Maryland a corporation of Maryland
Filed May 16, 1968, Ser. No. 729,640
Int. Cl. A61b *5/05*
U.S. Cl. 128—2.05 **16 Claims**



A catheter tip blood velocity sensor having an axially wound magnetic coil with a pair of aligned electrodes mounted forwardly of the coil within the confines of an axially extending tubular shield having a forward opening and a rearward opening through which blood flow respectively enters and exits the tube to flow past the electrodes to create an electromotive force across the electrodes indicative of flow velocity.

3,529,592
MANOMETER DEVICE

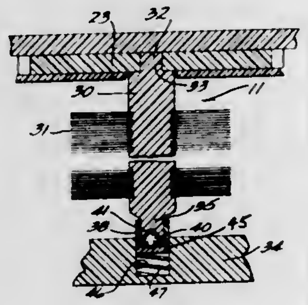
Paul E. Rockwell, 38 Belle Ave., Troy, New York
Filed Dec. 7, 1967, Ser. No. 688,852
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **5 Claims**



A manometer device for use in the measurement of central venous pressure and peripheral venous pressure comprising a flat, longitudinal member having centimeter indicia thereon and two upstanding guides each having two holes formed therethrough. One hole of each guide mounts tubing to register centimeters of water reading with reference to the centimeter indicia, and the other hole of each guide vertically mounts the manometer device on cord or other tubing. A hole and its associated guide function as a clamp for adjustable vertical mounting of the manometer device.

3,529,593
MASSAGING APPARATUS

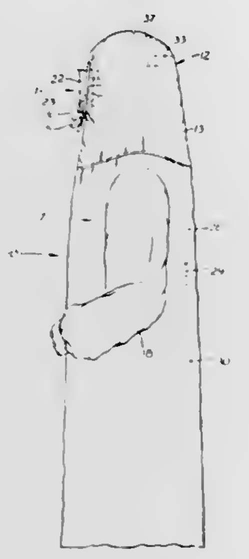
Walter J. Perry, Brookfield, Wisconsin (1315 S. 124th St., West Allis, Wisconsin)
Original application June 28, 1966, Ser. No. 561,169, now Patent No. 3,372,604, dated Mar. 12, 1968. Divided and this application Jan. 22, 1968, Ser. No. 699,709
Int. Cl. A61h *7/00*
U.S. Cl. 128—56 **4 Claims**



A massaging and scrubbing apparatus having a plurality of brushes that are supported in a frame and rotated by power for producing the massaging and scrubbing action. Each of the several brushes is supported by a separate anti-friction bearing but is retained in operating position by a spring. The brush is slidable relative to the frame and may be slid axially against the pressure of the spring to disengage its driving connection with the power drive and enable it to be withdrawn from the frame. The brushes may thus be readily removed individually from the apparatus for servicing or replacement.

3,529,594
CLOTHING TO PROTECT THE ENVIRONMENT FROM CONTAMINATION

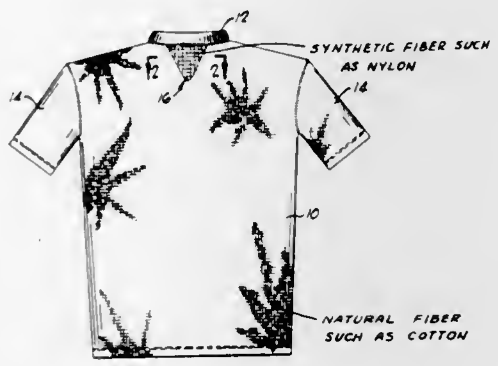
John Charnley, Naemoor, South Road, Hale, Cheshire, England
Filed July 22, 1968, Ser. No. 746,426
Int. Cl. A62b *7/02*
U.S. Cl. 128—139 **12 Claims**



An article of protective clothing for protecting, for example, an environment from contamination by a wearer. The clothing comprises a gown cooperating with a face mask which has a suction line connected thereto to enable contaminated air to be drawn out through such suction pipe instead of escaping into the environment.

3,529,595
PROSTHETIC ARTICLE OF APPAREL FOR TRACHEOTOMY PATIENTS

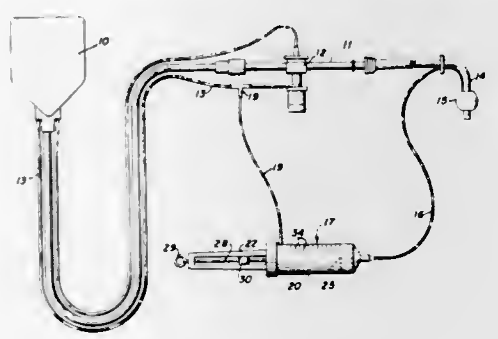
David F. Weeden, 213 SW. 41st St. Oklahoma City, Oklahoma
Filed May 1, 1967, Ser. No. 635,019
Int. Cl. A62b *23/00*
U.S. Cl. 128—140 **4 Claims**



An article of apparel for tracheotomy patients which includes an undershirt type garment having an elastic neckband, and having disposed in juxtaposition to the neckband, a filter section of interwoven hydrophobic synthetic fibers. The filter section of synthetic fibers which is positioned adjacent the neckband is centered in the garment so as to occupy a position directly over the surgical opening in the neck of the tracheotomy patient when the garment is worn. The hydrophobic fibers which are used in the filter section of the garment are preferably constructed of a synthetic resin which is at least as hydrophobic as nylon, and thus does not undergo any substantial swelling or entrapment of moisture so as to obstruct or impair the inhalation and exhalation of air from the lungs of the tracheotomy patient through the filter section of the garment.

3,529,596
AUTOMATIC INTERMITTENT TRACHEOTOMY TUBE CUFF INFLATOR-DEFLATOR

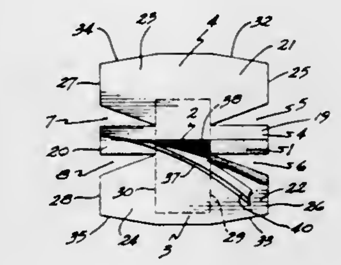
Charles G. Garner, Fort Worth, Texas, assignor to Lynn E. Bennett, Fort Worth, Texas
Filed April 3, 1968, Ser. No. 718,404
Int. Cl. A61m *16/00, 25/00*
U.S. Cl. 128—145.6 **3 Claims**



An automatic tracheotomy cuff inflator-deflator for use in conjunction with a cycling respirator that insures against damage to the trachea and aspiration of foreign matter into the lungs. Generally, the invention is comprised of a pneumatic cylinder with a piston operated by the control line from the respirator which inflates and deflates the tracheotomy cuff in response to the cycle of the respirator.

3,529,597
FINGERTIP BANDAGE

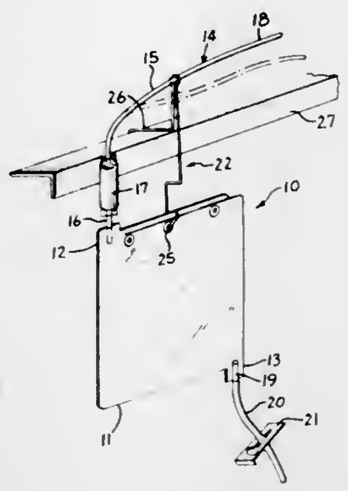
George T. Fuzak, 1217 Delaware Ave., Apt. 1001, Buffalo, New York
Filed April 19, 1968, Ser. No. 729,481
Int. Cl. A61f
U.S. Cl. 128—157 **5 Claims**



A fingertip bandage of the type having a plurality of oppositely disposed wing-like segments is provided with adhesive releasable facing sheets disposed on opposite sides of the centermost wing segments.

3,529,598
URINE COLLECTING ASSEMBLY AND HANGER FOR SAME

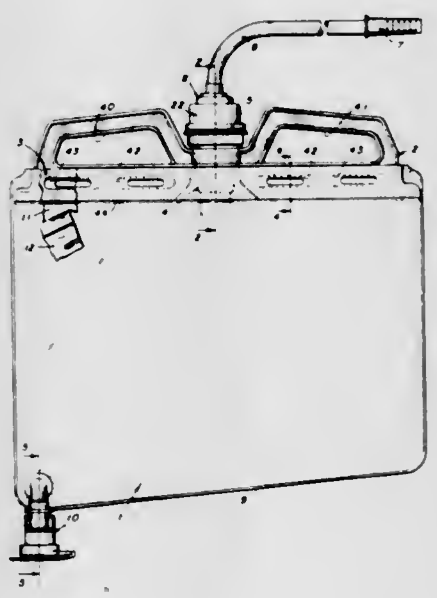
Leonard F. Waldman, Jr., Niles, Illinois; David G. Quinn, Libertyville, Illinois; and Joseph T. Wood, Northbrook, Illinois, assignors to Baxter Laboratories, Inc., Morton Grove, Illinois, a corporation of Delaware
Filed Sept. 18, 1967, Ser. No. 668,473
Int. Cl. A61f *5/44*
U.S. Cl. 128—275 **10 Claims**



A single bent wire has a vertical body with an upper forward section at the top of which a urine drainage tubing is releasably secured in adjusted positions longitudinally thereof to hold a drip chamber, which is upstream of a urinary drainage bag, in an erect position. An arm extending rearwardly from said upper forward section engages a support member to suspend said hanger. A hook at the lower end of a lower and rearward section of said body suspends a urine collecting bag in a plane transversely and substantially midway between the front and rear ends of said arm.

3,529,599
COLLECTION CONTAINER FOR MEDICAL LIQUIDS

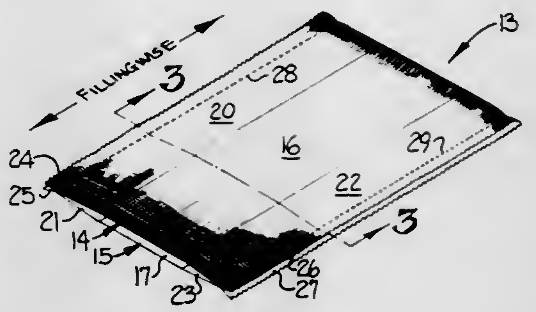
Bern D. Folkman, Van Nuys, California, and Cole C. Williams, Burbank, California, assignors to American Hospital Supply Corporation, Evanston, Illinois, a corporation of Illinois
Filed May 8, 1968, Ser. No. 727,574
Int. Cl. A61f *5/44*
U.S. Cl. 128—275 **23 Claims**



For collecting urine from a patient a container with a drip housing fitting within its tubular neck. This drip housing has a one-way disk valve at its outlet and includes a double vent system to protect the patient. The drip housing provides an air break in the urine column from the patient and prevents urine from backing up into the patient's bladder from the container. When the container is full, it can be emptied through a sliding valve at its bottom while the container is still attached to a flexible collection tube leading from the patient.

3,529,600
HYDROPHOBIC-HYDROPHILIC DIAPER AND TEXTILE FABRIC FOR FORMING THE SAME

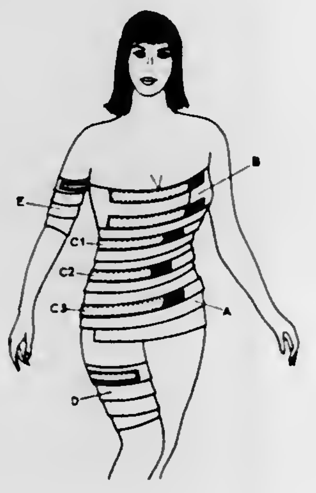
Norman L. Seltzer, Lexington, Massachusetts, assignor to The Kendall Company, Boston, Massachusetts a corporation of Massachusetts
Filed Feb. 3, 1967, Ser. No. 613,895
Int. Cl. A61f *13/16*
U.S. Cl. 128—284 **12 Claims**



A textile fabric having core-spun yarns formed of hydrophilic core fibers and hydrophobic sheath fibers, for use as a diaper to wick moisture away from the wearer's skin.

3,529,601
THERAPEUTIC BANDAGE

Jim W. Kirkland, 38 Rue de la Tour, Paris XVI, France
Filed Oct. 27, 1967, Ser. No. 679,296
Claims priority, application France, Oct. 29, 1966, 82,107
Int. Cl. A61f *13/00;* **A61h** *36/00*
U.S. Cl. 128—293 **3 Claims**



An air-tight and elastic therapeutic bandage is applied to the human body and the resultant perspiration is prevented thereby from evaporating. The bandage consists of a plurality of helical windings of a bandaging member covering the naked part of the body, fastening means holding the bandaging member in position, and strapping bands placed over the fastened bandaging member where its helical windings overlap. The method of applying the bandage in the above described manner is also disclosed.

3,529,602
TOBACCO SUBSTITUTE SHEET MATERIAL

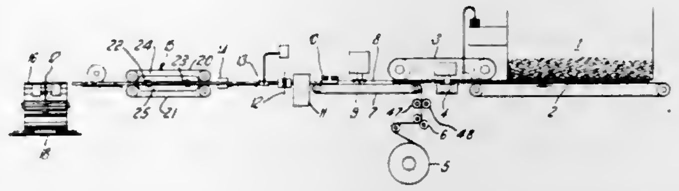
John D. Hind and William C. Hopkins, Richmond, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Continuation of abandoned application Ser. No. 557,878, June 16, 1966. This application Feb. 27, 1969, Ser. No. 804,380
Int. Cl. A24b *15/00, 3/14*
U.S. Cl. 131—2 **2 Claims**

In accordance with the present disclosure a smoking product, which is a substitute for tobacco, and which contains substantially no tobacco, per se, which product is prepared from ingredients which include: (1) a film-forming ingredient comprising a pectinaceous material derived from tobacco plant parts and having an acid value in excess of 30 milligrams of KOH per gram and (2) a mineral ingredient comprising an alkali metal salt, an alkaline earth metal salt or a clay.

3,529,603
CIGAR-MAKING MACHINES

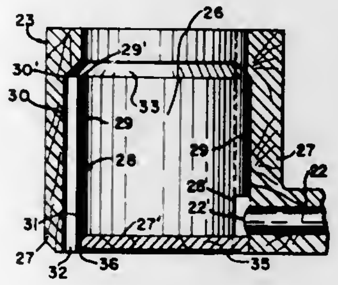
Hector C. B. Mackenzie, Noble Tree Cross House, Hildenborough, Kent, England; Robert S. L. Berkeley, 131 Abbotsbury Road, London, W. 14, England; and John M. W. North, 37 Great Cumberland Place, London, W. 1, England
Filed Jan. 16, 1967, Ser. No. 609,432
Int. Cl. A24c *1/02, 1/04, 1/32*
U.S. Cl. 131—20 **12 Claims**

A continuous rod machine for the high speed manufacture of cigars is provided wherein tobacco is formed into a continuous filler stream and wrapped with reconstituted tobacco sheet to form a rod after which the rod is cut into appropriate lengths. Means is provided for compressing regularly spaced portions of the tobacco rod to reduce the cross-section thereof such that each individual cigar is formed with a tapered end. Means may be provided for reducing the amount of tobacco in the filler at those portions where the rod is compressed. Curved V slits having the appearance of a wide-V when viewed transversely of the wrapper are cut in the wrapper prior to forming the rod to facilitate wrapping the wrapper about the reduced section portion of the cigar rod without creasing. The curved V slits alternately face in opposite directions across the width of the wrapper.



3,529,604
PIPE DEVICE

Stuart L. Neset, Mayville, N. Dak. 58257
Continuation-in-part of application Ser. No. 484,238, Sept. 1, 1965. This application July 22, 1968, Ser. No. 751,670
Int. Cl. A24f *1/22, 5/04*
U.S. Cl. 131—195 **3 Claims**

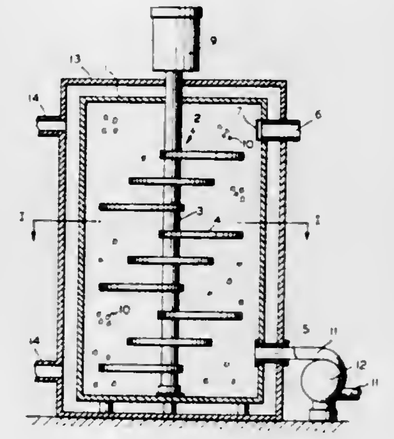


A pipe device having a bowl with a stem projecting from one end of the bowl, said bowl having an outer annular wall and an inner annular wall spaced inwardly from the said outer wall, deflecting flange elements on the upper end of said inner annular wall providing openings for communicating with the interior of said annular space between said inner and outer walls, said outer annular wall having a bottom wall with a plurality of openings arranged in a circle about the bottom of the wall and communicating with the annular space between the inner and outer wall, whereby air from the atmosphere may pass through the openings in the bottom wall into the annular space through the openings provided by the deflecting flange elements into the interior of the inner wall.

3,529,605
PROCESS AND APPARATUS FOR PRODUCING SHAPED TOBACCO MATERIALS

Monique Beringer, St.-Louis, France, and Paul Buchmann, Basel, Switzerland, assignors to Tamag Basel A.G.
Filed Mar. 14, 1967, Ser. No. 623,046
Claims priority, application Switzerland, Mar. 16, 1966, 3,774/66; Mar. 10, 1967, 3,534/67
Int. Cl. A24b *3/14*
U.S. Cl. 131—133 **15 Claims**

A method and apparatus for producing shaped tobacco materials, such as sheet-like, filamentous or strand-like tobacco materials, comprising mixing and finely grinding a tobacco material together with a liquid in a preferably continuously working mill and shaping the ground material in a conventional manner. The grinding mill contains a stirrer which comprises a shaft having rings arranged in spaced manner therealong in staggered relationship and which on being set into motion, coact with grinding balls within the mill housing to secure homogenization of the tobacco. The temperature required for obtaining the desired adhesiveness of the mixture is adjusted by means of the frictional heat developed in the mill. A liquid is used having a determined pH value.



3,529,606
PROCESS FOR PUFFING TOBACCO STEMS

Roger Z. de la Burde, Ikeja, Nigeria, and James E. Jarrell, Jr., Fredericksburg, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
No Drawing. Continuation-in-part of abandoned application Ser. No. 516,112, Dec. 23, 1965. This application Apr. 10, 1969, Ser. No. 815,174
Int. Cl. A24b *3/14, 9/00*
U.S. Cl. 131—140 **11 Claims**

A method for puffing tobacco stems is disclosed, which comprises placing the stems in a heated gas directed from a plurality of sources to effect a fluidized suspension of the stems in the gas.

3,529,607
METHOD OF INFLUENCING THE FLAVOR OF TOBACCO

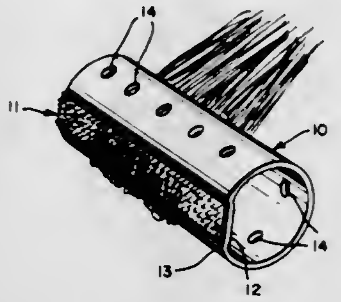
Werner Richard Gotthard Luttich, Willersweg 34F, Hamburg-Langenhorn, Germany
No Drawing. Original application Feb. 27, 1967, Ser. No. 619,058. Divided and this application Sept. 5, 1968, Ser. No. 757,797
Int. Cl. A24b *3/12, 15/04*
U.S. Cl. 131—144 **3 Claims**

A method of influencing the smoke flavour or aroma of tobacco by adding to the unsmoked tobacco a flavouring material which occurs in the smoke of natural tobacco, in which the flavouring material is a 3,4-substituted maleimide in which the substituents are selected from the group comprising: hydrogen, methyl-, and ethyl-, the quantity of the material added being between 10 and 500 p.p.m.

3,529,608
HAIR CURLER

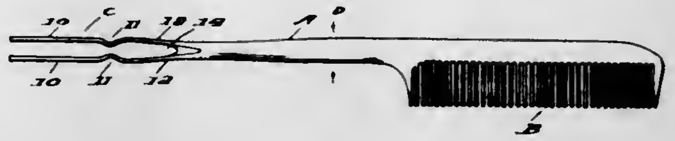
Jack K. Mates, Scarsdale, N.Y., assignor to American Velcro, Inc., Manchester, N.H., a corporation of New Hampshire
Filed July 19, 1968, Ser. No. 746,074
Int. Cl. A01d *2/14*
U.S. Cl. 132—40 **4 Claims**

A hair curler having a cylindrical body member with a smooth contoured outer surface along its major circumferential surface area of the type intended to be rolled into hair so that the hair is retained wound around the outer surface of the curler. A tape member is secured in longitudinal relationship on the outer surface of the body member and has numerous closely spaced upstanding hooking elements on its outer surface which are configured to engage the ends of hairs upon starting to roll the curler into the hair.



3,529,609
HAIR DRESSING COMB

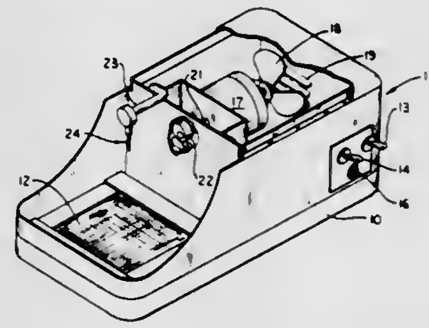
Ela Gonzalez Rodriguez, now by change of name Ela Keen, 740 SW. 10th Ave., Miami, Fla. 33130
Miami, Fla. 33130
Filed Feb. 9, 1968, Ser. No. 704,395
Int. Cl. A45d *24/00*
U.S. Cl. 132—148 **9 Claims**



An improved multi-purpose comb is provided comprising a handle having a hair teasing and smoothing comb body at one end an a special form of two pronged fork at the other particularly adapted for lifting and shaping particular groups of hairs or locks of hair and aligning the same for styling and shaping the desired coiffure. The fork is made up of knock-kneed tines with substantially parallel rigid thin rectangular shanks and an open-eyed crotch, and the outer surfaces of the shanks are indented at the knees thereof, for controlling relative longitudinal motion of the tines and hair. Other advantages and details of the construction are disclosed.

3,529,610
STEAM CLEANING APPARATUS

Howard J. Leichner, Champaign, and Samuel R. Shambaugh, Danville, Ill., assignors to Leichner Manufacturing Company, Champaign, Ill., a sole proprietorship
Filed July 26, 1968, Ser. No. 748,024
Int. Cl. B08b *3/02*
U.S. Cl. 134—104 **1 Claim**

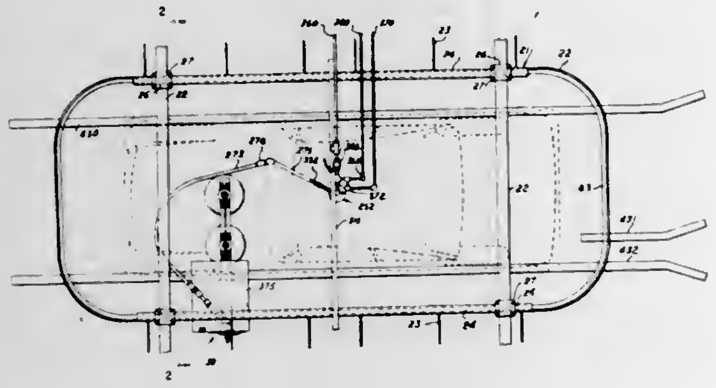


An electrically operated assembly including a reservoir, heat exchanger, pump, nozzle and temperature controls which produces a steam jet of the desired quality at the nozzle, that is, at the cleaning area which overlies the sump through which the vaporized cleaning solution is returned to the reservoir.

3,529,611

VEHICLE WASHING APPARATUS

John L. Daum and Ray B. Spurgin, Dallas, Tex., assignors to Delta Manufacturing and Engineering Corporation, Dallas, Tex., a corporation of Texas
Continuation-in-part of applications Ser. No. 545,496, Apr. 26, 1966, and Ser. No. 667,780, Sept. 14, 1967. This application Mar. 15, 1968, Ser. No. 713,417
Int. Cl. B60s *3/04*
U.S. Cl. 134—112 **4 Claims**

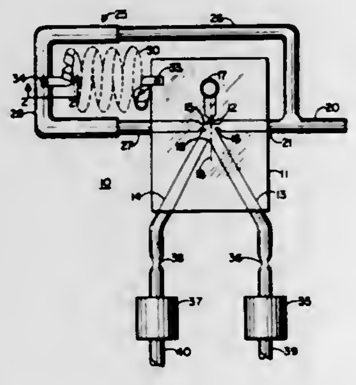


A vehicle washing apparatus having a carriage movable on a track about a vehicle and having a plurality of rotatable nozzle assemblies for directing sprays of liquid on the external surfaces of the vehicle.

3,529,612

PULSE FREQUENCY CONVERTER

Roger A. Rausch, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 23, 1968, Ser. No. 707,790
Int. Cl. F15c *1/08, 3/00*
U.S. Cl. 137—81.5 **7 Claims**



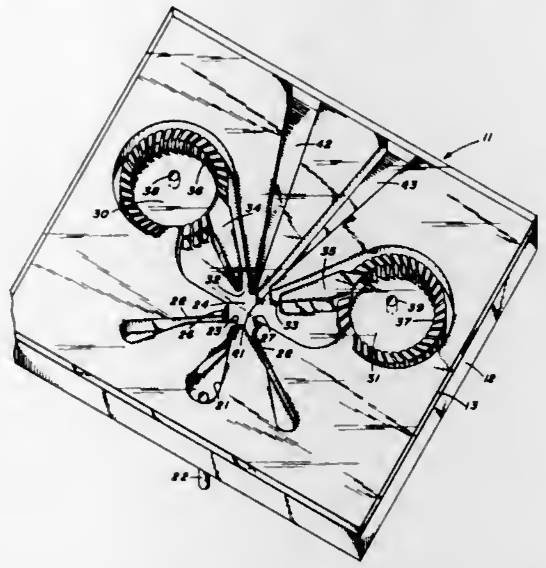
A fluid pulse frequency converter comprising a fluid amplifier, a pair of passages of unequal lengths connected to supply a train of pulses to opposing control ports of the amplifier and integration means connected to the amplifier output. The length of the longer passage is variable and is temperature dependent such that a temperature independent signal delay time is provided thereby. The output of the converter is an analog signal dependent only on the repetition rate of the input pulse train.

3,529,613

AC VORTEX RATE SENSOR

Vincent F. Neradka, Rockville, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 27, 1968, Ser. No. 740,607
Int. Cl. F15c *1/08, 1/16*
U.S. Cl. 137—81.5 **9 Claims**

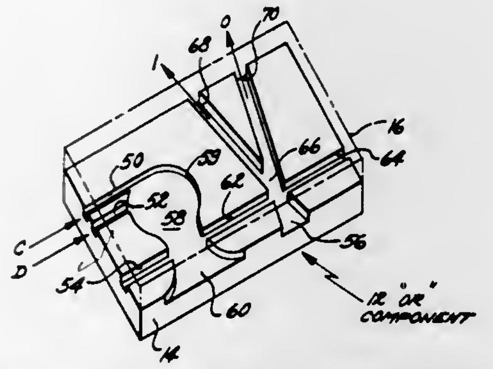
The invention is directed to a fluid amplifier whose output is a function of the angular rate applied to it. The amplifier operates as an oscillator. Vortex chambers are located on either side of the main flow path. When an angular rate is applied to the amplifier, the circulation in one vortex chamber increases while the other decreases. This in turn will cause a difference in the output pulses from the amplifier. This difference is a function of the rate applied.



3,529,614

FLUID LOGIC COMPONENTS

Desmond J. Nelson, Gardena, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 3, 1968, Ser. No. 695,385
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 **4 Claims**



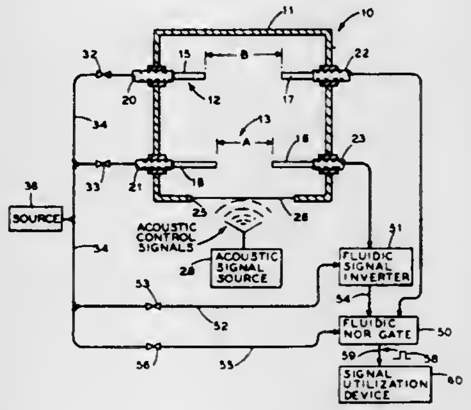
A fluid logic component having a fluid interaction chamber, a main fluid power nozzle for issuing a well-defined stream into one end of the chamber, a pair of output passages having entrances located downstream of the main nozzle, the entrances defining the other end of the chamber, at least one fluid control passage entering one side of the chamber and a fluid bias passage entering the other side of the chamber. There are at least two fluid signal passages entering a vortex chamber which is operably associated with at least one power input passage and the control passage. By means of the above arrangement of fluid signal or lack of a fluid signal regulates through which output passage the stream issuing from the main nozzle will exit.

3,529,615

FLUID APPARATUS FOR DETECTING ACOUSTIC SIGNALS

Joseph F. Kishel, Clarks Summit, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed June 12, 1968, Ser. No. 736,358
Int. Cl. F15c *1/18*
U.S. Cl. 137—81.5 **12 Claims**

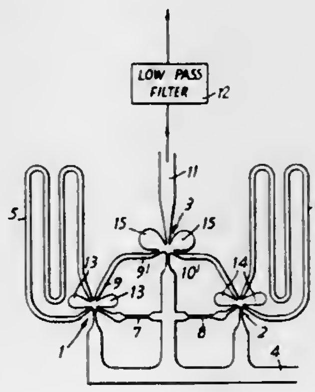
A fluidic apparatus utilizes two fluid amplifiers of the turbulence type which are made differently responsive, that is respectively turbulent and laminar, to a control signal frequency or band of control signal frequencies of interest. The control signal may be an acoustic energy signal at ultrasonic frequency. To make the amplifiers thusly responsive, the gap which is characteristically provided between fluid supply and fluid collector tubes of each amplifier to permit energy interactions between each unbounded fluid power stream issuing from the supply tube and the control signal is of a different dimension considered along the path of normal laminar power stream flow between said tubes. Each gap dimension is determined by a different one of the control signal frequencies which respectively define the high and low cutoff frequencies for the frequency of interest; the collector tubes receiving different valued logical outputs when this frequency is within the thusly established frequency band.



3,529,616

FLUID OSCILLATORS

John Christopher Hammond Davis, Taplow, England, assignor to British Telecommunications Research Limited, Taplow, England, a British company
Filed Jan. 3, 1969, Ser. No. 788,798
Int. Cl. F15c *1/06, 1/14*
U.S. Cl. 137—81.5 **4 Claims**



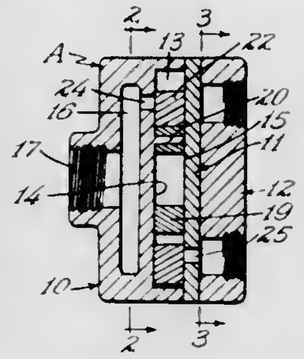
The outputs of two fluid delay line oscillators made from materials having different coefficients of expansion are combined to produce a beat frequency output. The materials of which the delay lines are made are chosen so that the output beat frequency is substantially invariant with temperature over a wide range of temperatures.

3,529,617

FLUID FLOW PROPORTIONER

Mortimer J. Huber, 5901 W. Bald Eagle Blvd., St. Paul, Minn. 55110
Filed July 19, 1968, Ser. No. 746,200
Int. Cl. G05d *11/00*
U.S. Cl. 137—98 **4 Claims**

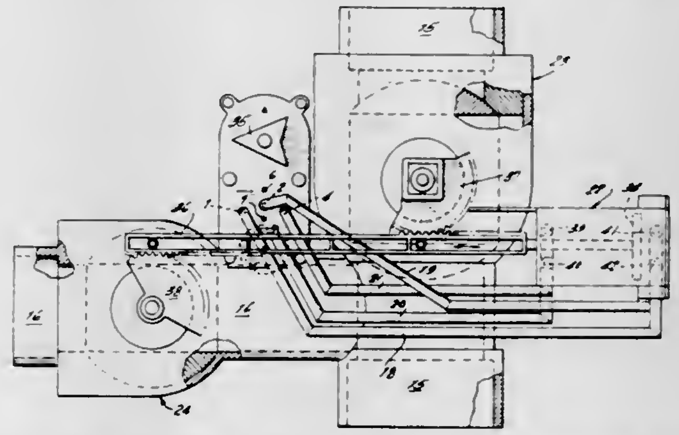
The flow proportioner comprises a gerotor device. A housing is provided having an inlet, an inlet manifold, a gerotor cavity, a porting plate, a discharge manifold and a plurality of outlet ports. An externally lobed center member is fixed in the gerotor cavity and an internally lobed gerotor rotates in an orbital path about the center member. Inlet valving holes communicate with the inlet manifold and are sequentially opened and closed by the gerotor during its rotation. The porting plate includes discharge valving holes which are also sequentially opened and closed by the gerotor during its movement. The discharge valving holes are connected to a plurality of discharge manifolds each connected to an outlet port. The fluid flowing through each outlet depends upon the number of discharge valving holes to which it is connected, as compared to the total number of discharge valving holes.



3,529,618

IRRIGATION SYSTEM

Isaac Rinkewich, New York, N.Y., assignor to Rinko Irrigation Systems, Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 744,781, July 15, 1968. This application Sept. 30, 1968, Ser. No. 766,671
Int. Cl. A01g *25/00*
U.S. Cl. 137—119 **6 Claims**



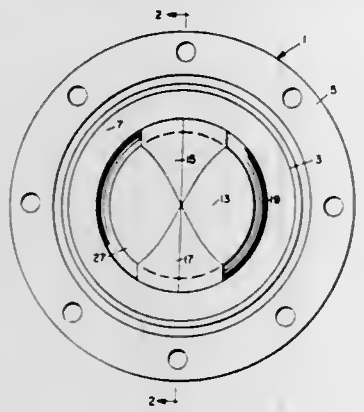
An irrigation system including a main pipe and at least one branch connected thereto at a junction, a meter in the branch for measuring the volume of water passing therein, at least one outlet on the branch for dispensing water in the area adjacent thereto, a main valve in the pipe downstream of the junction, a branch valve in the branch between the junction and the outlet and means actuated by water flowing in the branch to cause the main valve to open and simultaneously the branch valve to close.

3,529,619

VALVE DEVICE

David G. Drewry, Cumberland, Md., and Ralph M. Newman, Jr., Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 468,675, June 28, 1965. This application July 9, 1969, Ser. No. 840,197
Int. Cl. F16k *1/12, 27/00*
U.S. Cl. 137—219 **6 Claims**

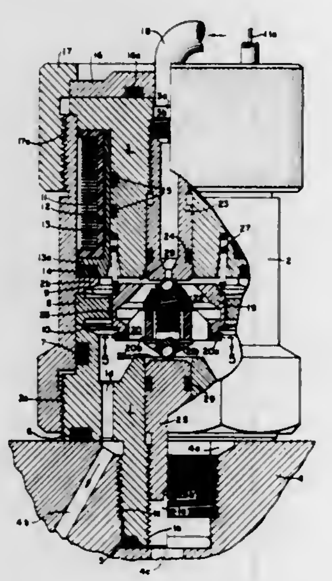
This invention relates to a valve device for high temperature fluids having in combination an outer casing having a fluid passageway extending therethrough, an inner casing having opposed streamlined struts supporting and spacing said inner casing within the outer casing, a slidable valve member disposed within the inner casing having its valve head protruding from the egress end thereof, a valve seat for the valve head supported within the outer casing at its egress end in axial alignment with said valve head, and an hydraulic cylinder completely housed within the slidable valve member to axially move the slidable valve member in each direction relative to the valve seat to control the flow of high temperature fluid through the valve device.



3,529,620

ELECTROMAGNETICALLY ACTUATED STROKE ADJUSTABLE VALVE

Heinz Leiber, Leimen, Germany, assignor to Teldix Gesellschaft mit beschrankter Haftung, Heidelberg, Germany
Filed Nov. 3, 1967, Ser. No. 680,366
Claims priority, application Germany, Nov. 4, 1966, 1,272,665
Int. Cl. F16k *11/02, 31/04*
U.S. Cl. 137—269 **9 Claims**

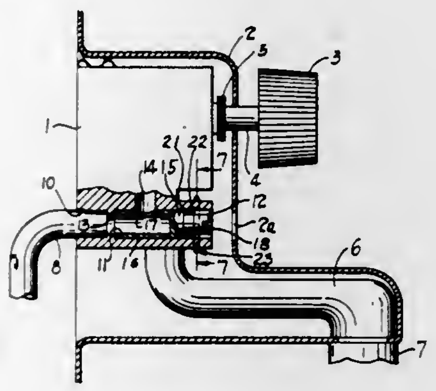


An electromagnetically actuated valve having means for adjusting the stroke of the valve element. The valve includes a valve element arranged to move in two directions, and two means for limiting the movement of the valve element in both the directions; one of the means limiting the movement in one direction and the other means in the other direction. Either one or both of the limiting means can include a valve seat which may be closed, as desired, by the valve element; both of the limiting means are interchangeable. Both limiting means may additionally be selectively positionable with respect to the valve element, so that the stroke of the valve element may be adjusted.

3,529,621

INTEGRAL STOP CONSTRUCTION FOR PLUMBING FITTING

Gerald E. Christiansen, Flora, Ind., assignor to Stephen A. Young, Monticello, Ind.
Filed Oct. 4, 1967, Ser. No. 672,751
Int. Cl. F16k *5/18, 19/00*
U.S. Cl. 137—315 **1 Claim**

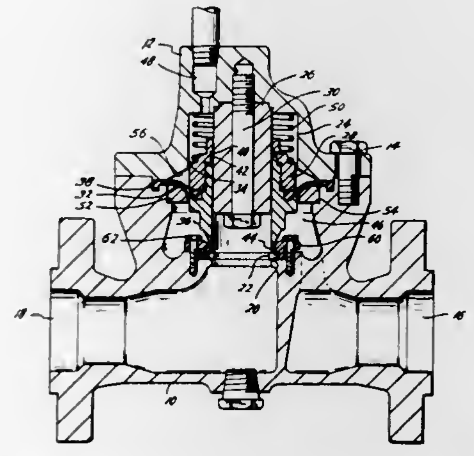


This invention relates to plumbing fixtures or fittings and particularly to valves and construction thereof which includes an integral stop or stops to obviate the necessity of providing separate wall mounted stops or none at all except a main shut-off valve for an entire system. Further, the invention involves the provision of novel stop construction, availing of certain characteristics of materials from which elements are formed and structure which facilitates access and operation as well as eliminating leakage in the stop.

3,529,622

BALANCED PRESSURE RESPONSIVE VALVE

Irvin B. Weise, Bellaire, and Jone Yen Ligh, Houston, Tex., assignors to Anderson, Greenwood & Co., Houston, Tex., a corporation of Texas
Filed Apr. 22, 1968, Ser. No. 723,128
Int. Cl. F16k *17/02*
U.S. Cl. 137—329.02 **10 Claims**



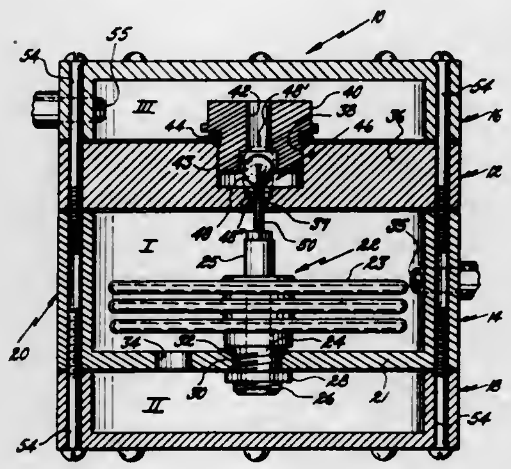
A diaphragm actuated valve in which the effective area of the diaphragm decreases as the valve opens, the diaphragm is completely supported in both full open and closed positions and the valve member is substantially balanced.

3,529,623

AUTOMATIC FLOW CONTROL VALVE ASSEMBLY

Ralph Johnson, Kaysville, Utah, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 6, 1968, Ser. No. 750,730
Int. Cl. F16k *17/34*
U.S. Cl. 137—497 **6 Claims**

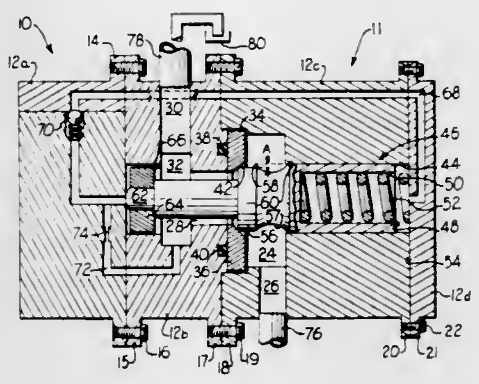
An automatic flow control valve assembly which limits the air flow in instrument lines to a predetermined rate. The pressure changes in the instrument lines produce a flow through a metering orifice which results in differential pressure on a bellows assembly. As the bellows assembly responds to the pressure changes, a valve opens and closes.



3,529,624

RELIEF VALVE

John R. Cryder, Joliet, Ill., and Kirby L. Stone, Cincinnati, Ohio, assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 638,358, May 15, 1967. This application Sept. 3, 1969, Ser. No. 856,895
Int. Cl. F16k *21/10*
U.S. Cl. 137—514.5 **3 Claims**



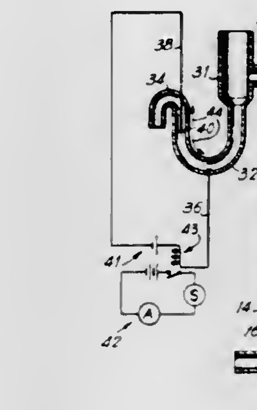
A direct-acting relief valve constructed of a valve housing, which defines a valve chamber. Mounted within the housing is a removable valve seating member, which provides a beveled valve seat facing upon the valve chamber. Reciprocatable within the housing is a valve spool of the poppet type, which spool provides a cylindrical seating portion cooperative with the valve seat. The spool is spring-biased in the direction of the valve seat and is movable away from the valve seat under pressure exerted by fluid in the valve chamber. Damping of the movement of the spool is provided by directing a portion of the fluid in the valve chamber into contact with a piston mounted on the spool.

3,529,625

PRESSURE RELIEF VALVE AND ALARM

Andres Ferrari, Scarsdale, N.Y., assignor to Technicon Corporation, Ardsley, N.Y., a corporation of New York
Filed Oct. 25, 1967, Ser. No. 678,105
Int. Cl. F16k *15/04, 37/00*
U.S. Cl. 137—554 **4 Claims**

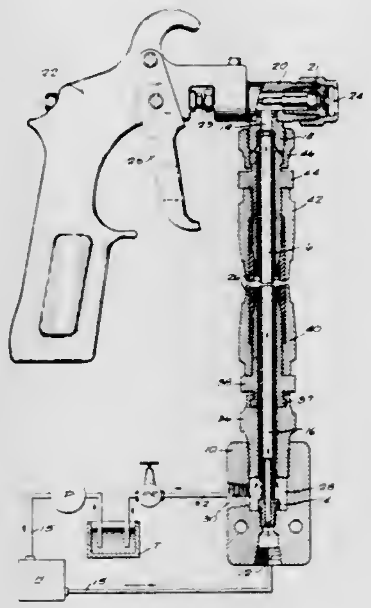
A conduit, which is part of an analytic system, carrying a liquid, has an open topped vertical tube coupled thereto by a bottom inlet. A valve seat is formed on the inlet, and receives a check ball, which may be loaded by weights, all slidable in the tube. A U-shaped tube has one leg thereof coupled to said vertical tube below the top thereof and the other leg thereof coupled to an inverted U-shaped tube. An electrode is disposed in the bottom of the U-shaped tube, and another electrode is adjustably disposed in said other leg of said U-shaped tube.



3,529,626

RECIRCULATING HOSE ASSEMBLY

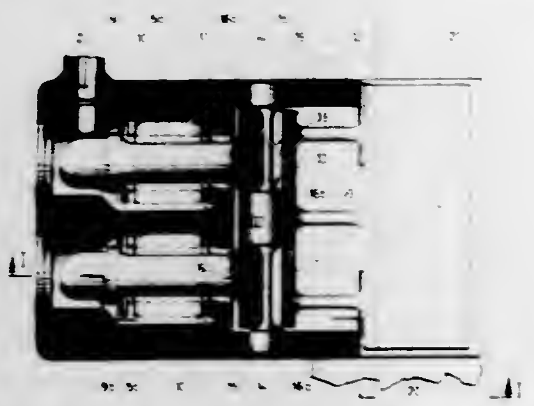
Dale F. German, Bryan, Ohio, assignor to The Aro Corporation, Bryan, Ohio, a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,623
Int. Cl. B05b *9/00*
U.S. Cl. 137—563 **3 Claims**



A host assembly requiring but a single hose connection from a source of supply of fluid under pressure to a fluid using device, and which is so constructed and arranged that recirculation of the fluid under pressure through the hose assembly is accomplished by reason of an inner hose within an outer hose, the inner hose having a smaller external diameter than the internal diameter of the outer hose and terminating adjacent the fluid using device in such manner that fluid under pressure supplied to one hose returns through the other, thus providing for constant recirculation for the purpose of continuous mixing, prevention of sedimentation of pigments, maintenance of the fluid under pressure in a heated condition or the like, in addition to supplying fluid under pressure to the fluid using device.

3,529,627
VALVE LEVER ARRANGEMENT FOR ROCKET ENGINES

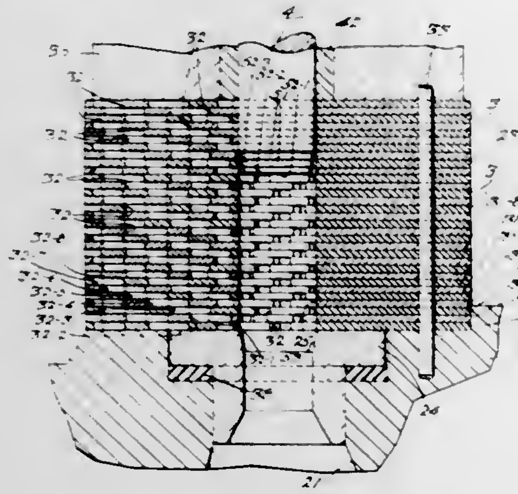
Helmut Fränkle, Konigsbach, and Manfred Bierbricher, Erlenbach, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed June 4, 1968, Ser. No. 734,352
Claims priority, application Germany, June 6, 1967, B 92,879
Int. Cl. F16k *31/04, 11/16*
U.S. Cl. 137—595 5 Claims



A value lever arrangement for a rocket engine is comprised of a valve lever mounted within an engine housing. A torsion bar is integrally secured at its opposite ends to the engine housing and passes through a bore formed in the valve lever. A center portion of the torsion bar is integrally secured to the valve lever within the bore. Positioned between the ends of the torsion bar and its center portion are torsion sections of rectangular cross section shaped to prevent any surface contact between the torsion section and the surface of the valve lever within the bore. The torsion bar provides a spring action for returning the valve lever to the closed position within the engine housing.

3,529,628
VARIABLE FLUID RESTRICTOR

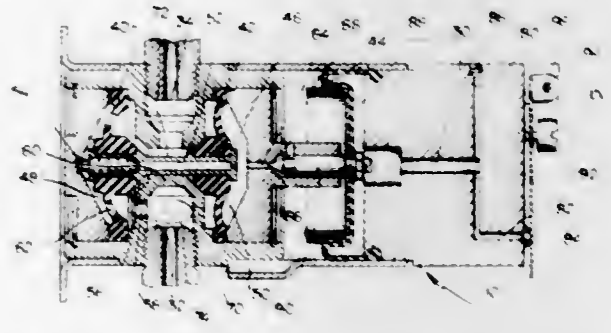
Samuel A. Cummins, 235 Colket Lane, Wayne, Pa. 19087
Filed May 10, 1968, Ser. No. 728,229
Int. Cl. F16k *47/04*
U.S. Cl. 137—625.3 15 Claims



A variable fluid restrictor for reducing the pressure of a flowing fluid comprising a stack of superposed annular plates forming a central bore open to an inlet for the fluid. The perimeter of the stack communicates with an outlet for the fluid. The plates each have a series of openings therethrough that partially overlap similar openings in a plate above and below forming flow passages through the stack in a generally diagonal direction axially and radially therethrough. The flow passages provided by the openings in the plates throttle the fluid flow, reducing the pressure by confining the flow to a path which includes a large number of angular turns arranged in series. The flow paths provided by the openings may be of substantially constant cross section, or may be of gradually enlarging cross section, as desired. The amount of pressure loss provided by the device is adjusted by controlling the number of flow paths exposed to the inlet through the medium of a plug axially displaceable in the central bore.

3,529,629
FLUID VALVE WITH PILOT VALVE CONTROL

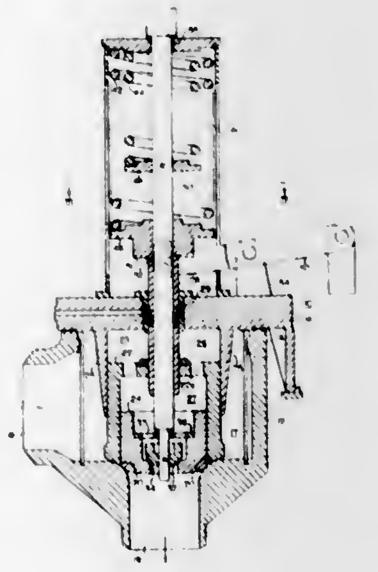
Larry C. Cowan, Jamestown, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Apr. 26, 1968, Ser. No. 724,496
Int. Cl. F16k *11/02, 31/65*
U.S. Cl. 137—625.6 14 Claims



A fluid control valve having a pilot valve control. The valve incorporates means for applying pilot air to an actuating piston which is disposed to control the passage of fluid between inlet and outlet ports. Conduit means are provided for bleeding off the pilot air to maintain the piston in a normally closed position where the fluid is prevented from flowing between the inlet and outlet ports. A cover is operable under biasing force to close off the passage of pilot air, thereby creating a back pressure in the valve. This back pressure is communicated to the piston, shifting the piston to an open position, the fluid then being free to pass between the inlet and outlet ports.

3,529,630
COMBINED STOP AND CONTROL VALVE

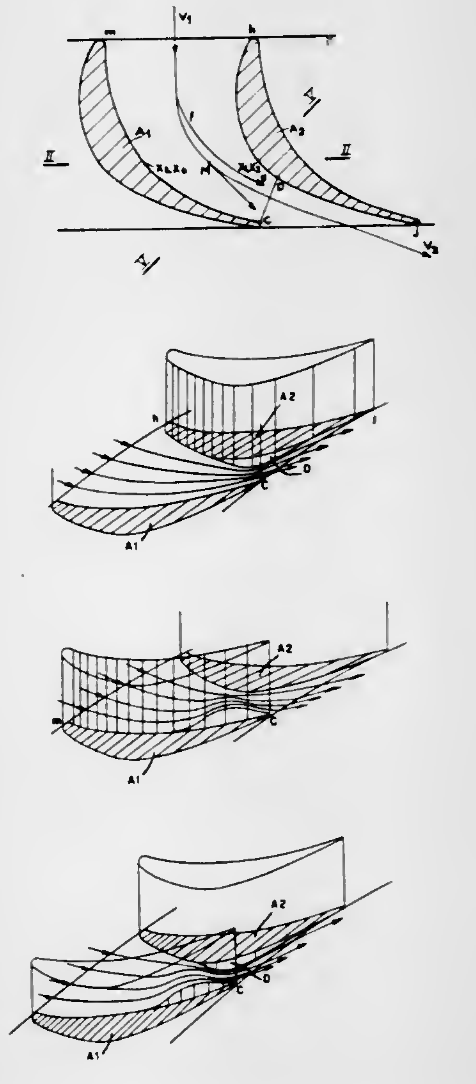
Leaman B. Podolsky, Wilmington, Del., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 11, 1968, Ser. No. 720,664
Int. Cl. F16k *11/20*
U.S. Cl. 137—630.13 6 Claims



The invention comprises a valve structure for controlling the flow of pressurized fluid in which the movable stop and control valve members are concentrically disposed and cooperate with a common valve seat to block fluid flow. The two valve members are independently movable along the center axis of a valve housing by concentrically disposed shaft members extending through the same end wall of the housing.

3,529,631
CURVED CHANNELS THROUGH WHICH A GAS OR VAPOUR FLOWS

Gilbert Riollet, 17 Rue du Moulin-de-Beurre, Paris, France
Continuation of application Ser. No. 540,680, Apr. 6, 1966. This application June 4, 1969, Ser. No. 833,871
Claims priority, application France, May 7, 1965, 16,264
Int. Cl. F15d *1/06*
U.S. Cl. 138—39 4 Claims

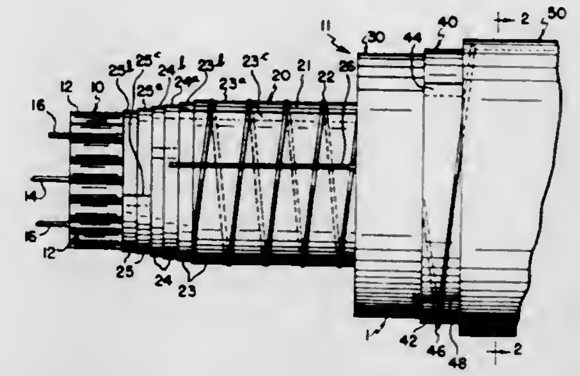


Secondary flows in a curved channel of rectangular cross-section are reduced by deformations in the floor and ceiling surfaces of the channel changing the local fluid velocities and opposing the pressure gradient created by the curvature of the channel.

3,529,632
COMPOSITE TUBING

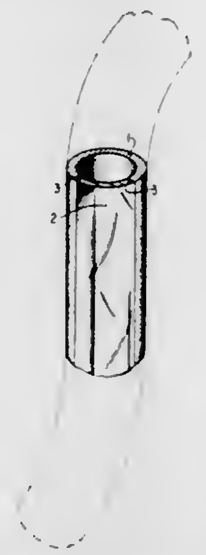
Edward C. Johns, Streetsboro, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio
Filed Nov. 21, 1968, Ser. No. 777,720
Int. Cl. F16l *9/18*
U.S. Cl. 138—111 16 Claims

A flexible composite tubing and method for making the same including a polymeric core tube bundle and an outer insulating and protective jacket disposed around the bundle and providing a thermal control gradient therefor. The jacket includes an inner thermo-barrier layer of a substantially heat infusible material applied longitudinally in radially wrapped relation around the core tube bundle, an intermediate thermo-shock barrier layer of a substantially heat fusible material, an outer thermo-barrier layer of a substantially heat refractory material applied longitudinally in radially wrapped relation around the inner thermo-barrier layer, and an outer polymeric sheath disposed around the outer thermo-barrier layer and providing a protective cover for the tubing.



3,529,633
X-RAY OPAQUE TUBING HAVING A TRANSPARENT STRIPE

Vincent L. Vaillancourt, Livingston, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,242
Int. Cl. F16l *11/04, 11/06*
U.S. Cl. 138—118 7 Claims



X-ray opaque catheter tubing for intravenous use or analogous uses composed of polytetrafluoroethylene or polyfluorinated ethylene-propylene ("Teflon," "TFE" or "FEP") with a suitable filler and having a transparent non-radiopaque window or stripe disposed longitudinally of the tube and occupying a minor portion of its circumference.

3,529,634
CURTAIN HEADING TAPE

Mary Griffiths, Heywood, and John Sellers, Chorley, England, assignors to Thomas French and Sons Limited, a corporation of Great Britain
Continuation-in-part of application Ser. No. 612,889, Jan. 31, 1967. This application Sept. 19, 1968, Ser. No. 760,929
Int. Cl. D03d *35/00*
U.S. Cl. 139—22 9 Claims

A method of weaving a heading tape by incorporating as a stiffening, a synthetic yarn laid supplied a warpwise

3,529,627
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Helmut Fränkle, Konigsbach, and Manfred Bierbricher, Erlenbach, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
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Claims priority, application Germany, June 6, 1967, B 92,879
Int. Cl. F16k *31/04, 11/16*
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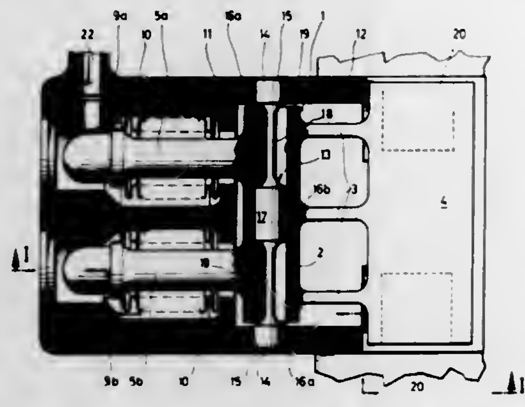

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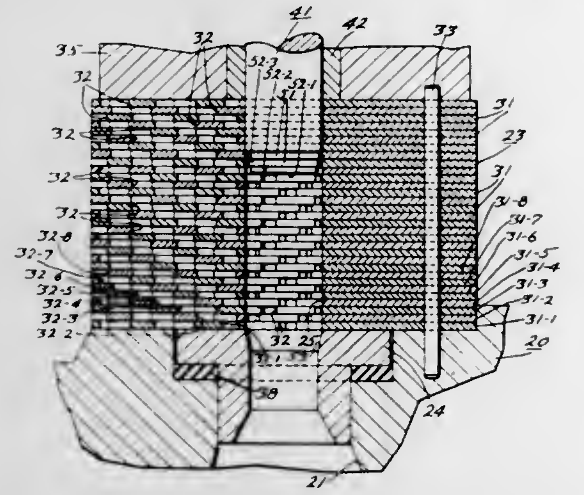
U.S. Cl. 137—625.3 15 Claims



A variable fluid restrictor for reducing the pressure of a flowing fluid comprising a stack of superposed annular plates forming a central bore open to an inlet for the fluid. The perimeter of the stack communicates with an outlet for the fluid. The plates each have a series of openings therethrough that partially overlap similar openings in a plate above and below forming flow passages through the stack in a generally diagonal direction axially and radially therethrough. The flow passages provided by the openings in the plates throttle the fluid flow, reducing the pressure by confining the flow to a path which includes a large number of angular turns arranged in series. The flow paths provided by the openings may be of substantially constant cross section, or may be of gradually enlarging cross section, as desired. The amount of pressure loss provided by the device is adjusted by controlling the number of flow paths exposed to the inlet through the medium of a plug axially displaceable in the central bore.

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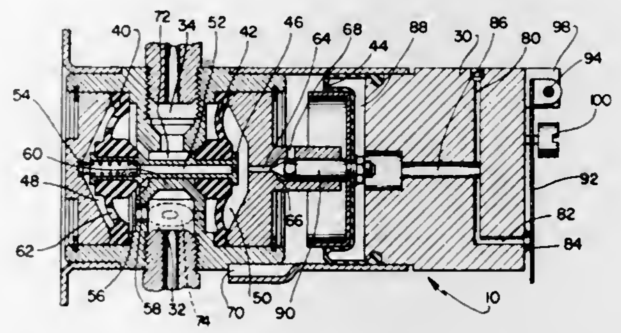
Int. Cl. F16k *11/02, 31/65*
U.S. Cl. 137—625.6 14 Claims



A fluid control valve having a pilot valve control. The valve incorporates means for applying pilot air to an actuating piston which is disposed to control the passage of fluid between inlet and outlet ports. Conduit means are provided for bleeding off the pilot air to maintain the piston in a normally closed position where the fluid is prevented from flowing between the inlet and outlet ports. A cover is operable under biasing force to close off the passage of pilot air, thereby creating a back pressure in the valve. This back pressure is communicated to the piston, shifting the piston to an open position, the fluid then being free to pass between the inlet and outlet ports.

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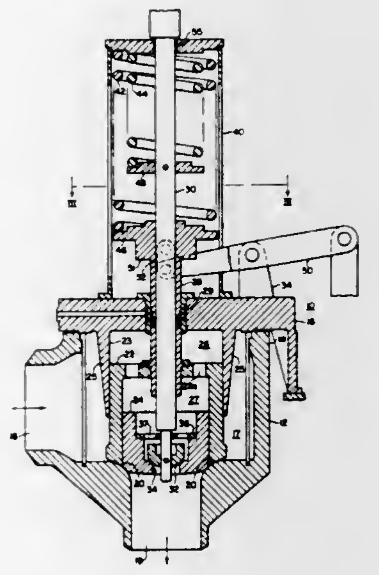

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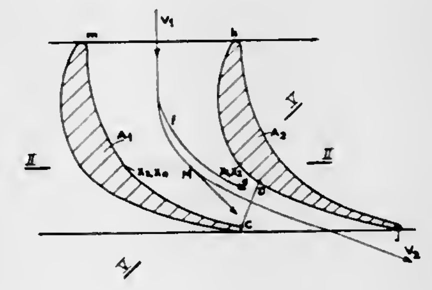
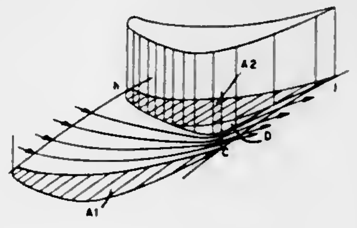
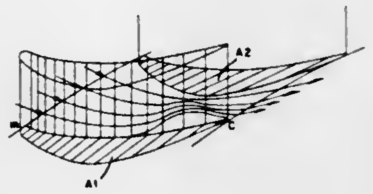
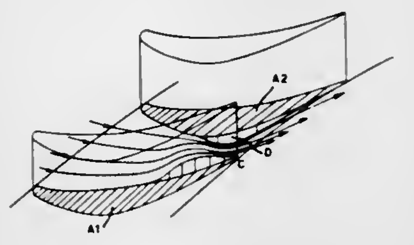
U.S. Cl. 138—39 4 Claims









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Int. Cl. F16l *9/18*
U.S. Cl. 138—111 16 Claims

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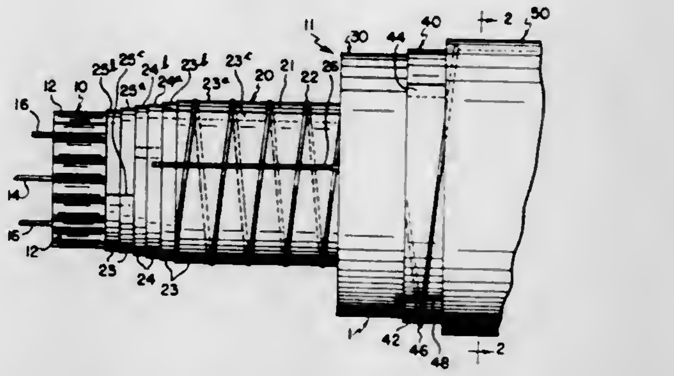
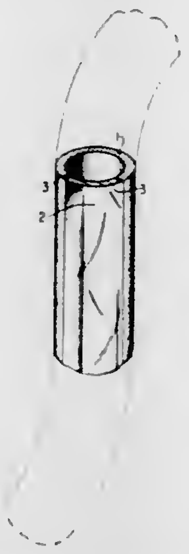


3,529,633
X-RAY OPAQUE TUBING HAVING A TRANSPARENT STRIPE

Vincent L. Vaillancourt, Livingston, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Oct. 23, 1967, Ser. No. 677,242
Int. Cl. F16l *11/04, 11/06*
U.S. Cl. 138—118 7 Claims

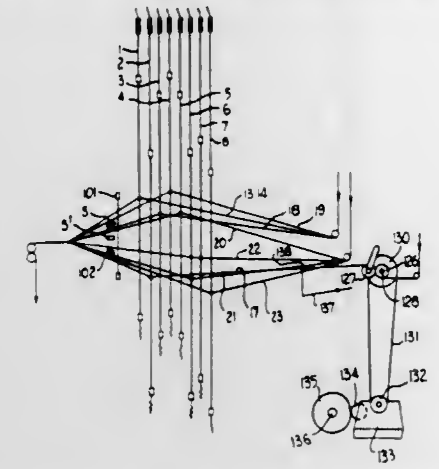


X-ray opaque catheter tubing for intravenous use or analogous uses composed of polytetrafluoroethylene or polyfluorinated ethylene-propylene ("Teflon," "TFE" or "FEP") with a suitable filler and having a transparent non-radiopaque window or stripe disposed longitudinally of the tube and occupying a minor portion of its circumference.

3,529,634
CURTAIN HEADING TAPE

Mary Griffiths, Heywood, and John Sellers, Chorley, England, assignors to Thomas French and Sons Limited, a corporation of Great Britain
Continuation-in-part of application Ser. No. 612,889, Jan. 31, 1967. This application Sept. 19, 1968, Ser. No. 760,929
Int. Cl. D03d *35/00*
U.S. Cl. 139—22 9 Claims

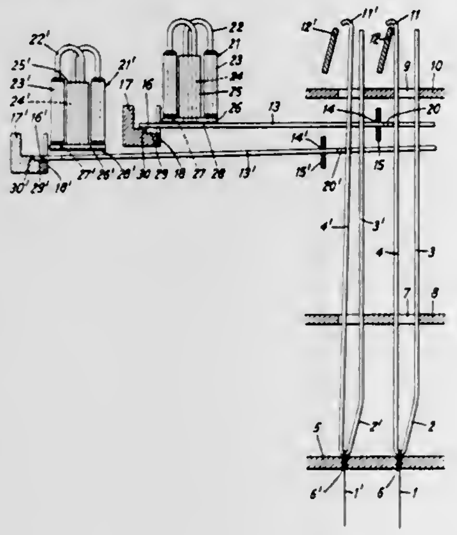
A method of weaving a heading tape by incorporating as a stiffening, a synthetic yarn laid supplied a warpwise supply and by drawing it, using a catch inserted yarn, in a weftwise direction, the weftwise laid yarn then becoming located at one edge of the fabric substantially wholly in the warpwise direction.



3,529,635

METHOD AND APPARATUS FOR ACTUATING DISPLACEABLE ELEMENTS OF A MACHINE UTILIZING THE JACQUARD PRINCIPLE OF OPERATION SUCH AS THE LIFTING WIRES OF JACQUARD MACHINES OR THE PUNCHING NEEDLES OF JACQUARD CARD CUTTERS

Heinz Horak, Huttwil, Switzerland, assignor to Apparatefabrik A.G. Huttwil, Huttwil, Switzerland
Filed Apr. 15, 1968, Ser. No. 721,451
Claims priority, application Switzerland, Apr. 21, 1967, 5,690/67
Int. Cl. D03c *3/16, 17/04*
U.S. Cl. 139—59 **21 Claims**



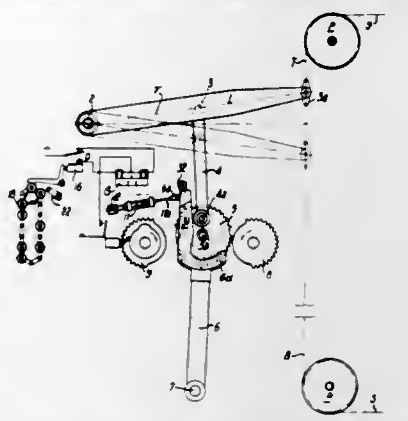
The needles for the displaceable elements of a machine utilizing the Jacquard principle of operation are raised against the poles of their electromagnets. The energized magnets hold their needles in a raised position while the other needles, comprising the selected group, are subsequently lowered and pushed against their displaceable elements.

3,529,636

LOOM DOBBIES

Thomas Hindle, Blackburn, England, assignor to Hindle, Son & Company Limited, Blackburn, England
Filed Sept. 13, 1968, Ser. No. 759,550
Claims priority, application Great Britain, Oct. 3, 1967, 44,855/67
Int. Cl. D03d *1/12*
U.S. Cl. 139—77 **9 Claims**

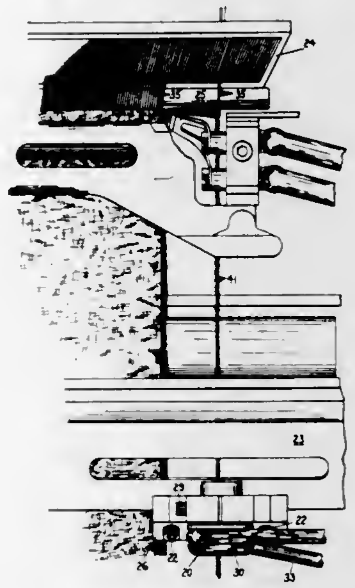
The lever of a vibrator lever assembly for a "Knowles-type" loom head motion or dobby is provided with a disc-like part upon which the vibrator wheel is rotatably mounted. A cover plate secures the wheel in position upon an axle pin extending from the said part, the cover plate being offset relative to the axle pin and being of generally L-shape to permit of the free movement of a crank pin extending outwardly from the surface of the vibrator wheel through the plane of the cover plate during repeated oscillating movement of the vibrator wheel between predetermined limits and a connector mounted on the crank pin for oscillation therewith.



3,529,637

CATCH CORD TWISTER FOR SHUTTLELESS LOOMS

John H. Nydam, Whitinsville, Mass., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Nov. 1, 1968, Ser. No. 772,687
Int. Cl. D03d *47/40*
U.S. Cl. 139—194 **1 Claim**



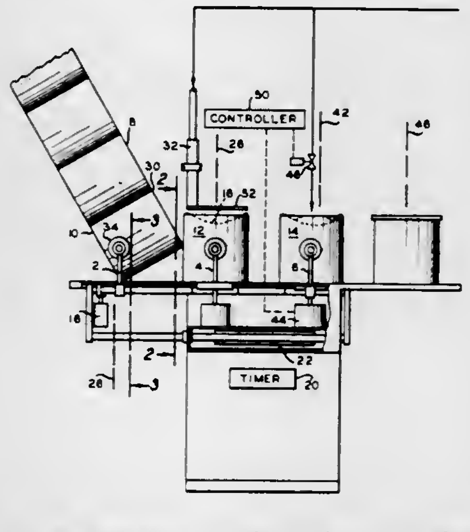
A rotatable hollow cylinder having an inwardly extending axial arm fixed thereto for providing a mutual twisting force upon a plurality of cords threaded therethrough.

3,529,638

METHOD AND APPARATUS FOR SIMULTANEOUSLY ROTATING AND FILLING A CONTAINER

George Z. Angell and Herman Pesch, Fulton, N.Y., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,387
Int. Cl. B65b *1/04, 3/04*
U.S. Cl. 141—9 **11 Claims**

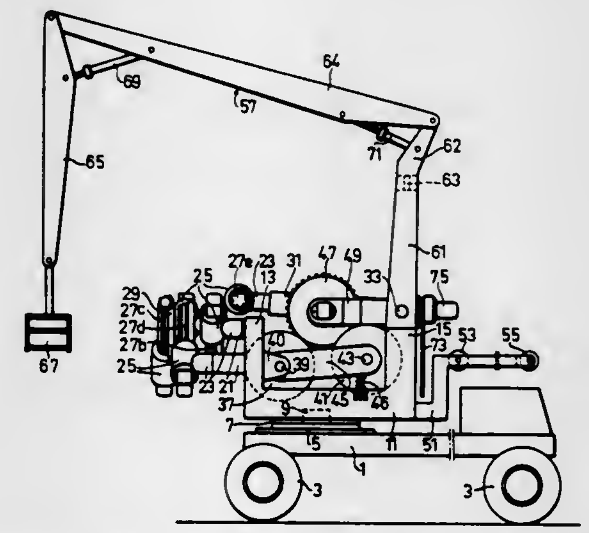
Method and apparatus for filling a container; a method comprising stepwise moving a container from a supply source to filling station, there supporting and rotating container while lowering filling spout thereinto in one modification to a peripheral point therein, and raising filling spout during filling of container while it is being rotated, thus providing a depressed area in the surface of the material which can be a fluid or semifluid, particle or other physical nature, in container, then moving container to combination weighing and adding station at which additional material is added into depression and then moving container to an inspection and/or closing station. The apparatus in one embodiment comprising in combination a hydraulic piston operated reciprocable conveying rack having clamping arms in one extreme position of said rack corresponding to each of said supply source, filling station, and said weighing and adding station in the other extreme portion of said rack respectively to said filling station weighing and adding station and said inspection and closing station, said apparatus also comprising suitable hydraulic controls and operation mechanism for actuating said clamping arms and moving said rack by way of said piston, there being positioned at said filling station a reciprocable filling spout adapted to be lowered into a container to be filled and to be withdrawn from said container while it is being filled and a guide plate attached to the filling end of said spout adapted to be lowered therewith into said container for maintaining said container in said position while it is being filled; and a rotating table at said filling station to rotate said container while it is being filled.



3,529,639

DELIMBING MACHINE

Kjell Olof Gunnar Herolf, Sundsbruk, Sundsvall, Sweden, assignor, by mesne assignments, to Kochum Soderhamn Aktiebolag, Soderhamn, Sweden, a corporation of Sweden
Filed Apr. 26, 1968, Ser. No. 724,387
Claims priority, application Sweden, Apr. 27, 1967, 5,938/67
Int. Cl. A01g *23/08*
U.S. Cl. 144—2 **11 Claims**

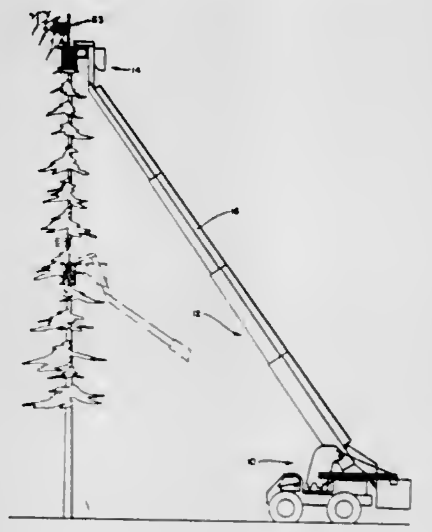


A portable delimbing machine is characterized by a frame on which is mounted an array of delimbing members arranged to form a closed polygon, the delimbing members being swingably mounted on shafts having a large angle with respect to the longitudinal direction of the delimbing members. The frame is turnably mounted on a vertical shaft extending from a suitable supporting structure.

3,529,640

TREE HARVESTING AND PROCESSING DEVICES

Haim J. Kamner, Chicago, Ill., assignor to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 6, 1968, Ser. No. 750,701
Int. Cl. A01g *23/02*
U.S. Cl. 144—3 **7 Claims**

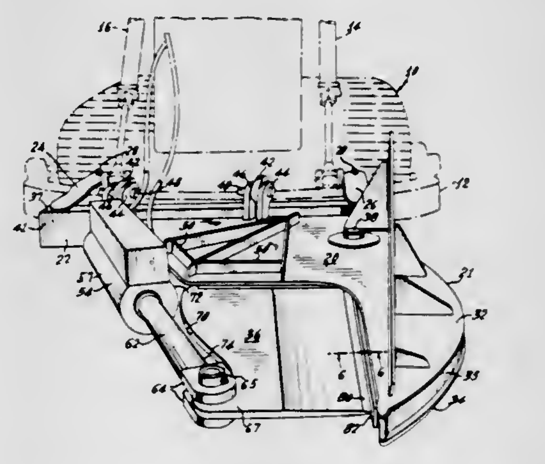


A movement equalizing means for a double-bladed tree harvesting shear wherein parallel linkage means are pivotally connected to one of the blades and the shear frame to assure equalized movements of both blades by single hydraulic cylinder connected therebetween.

3,529,641

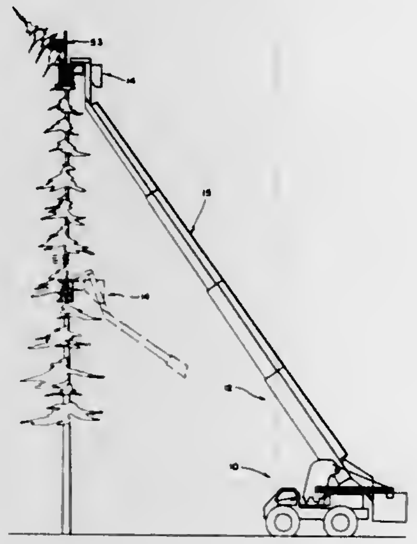
TREE SHEAR ASSEMBLY

Edward V. Frankenberg and Norman N. Griffith, Jacksonville, Fla., assignors to Fleco Corporation, Jacksonville, Fla., a corporation of Florida
Filed May 9, 1968, Ser. No. 727,853
Int. Cl. A01g *23/02*
U.S. Cl. 144—34 **15 Claims**



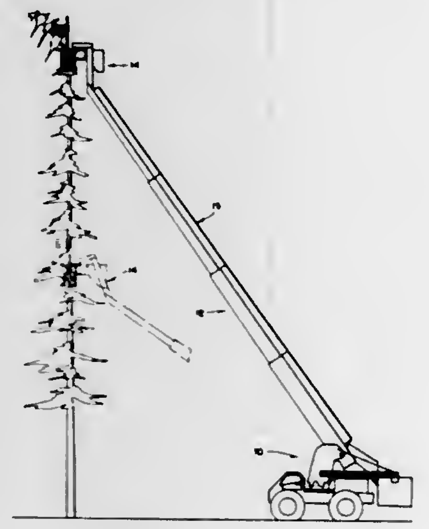
Stop means in the form of a pair of upright plates are respectively attached to the elongated beam and pivotally mounted shear head with the plates contacting each other to limit the head with respect to the beam. The stop means also includes another pair of similarly disposed plates spaced from the first pair of plates. A yieldable rubber member is associated with each pair of plates with one plate of each pair being movably disposed to compress the rubber member against another plate. Specific details as to the manner of attaching the rubber member and the movable plate are set forth herein. The rearward edge of the cutting blade is designed to minimize the space between such edge and the cylinder and piston disposed adjacent thereto for moving the blade during its entire travel between its open and closed positions. The anvil is removably attached to the shear head so that the anvil can be properly shimmed to meet the cutting edge of the blade.

3,529,642
TREE HARVESTING
Haim J. Kamner, Chicago, and Roy D. Brownell, Aurora, Ill., assignors to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 6, 1968, Ser. No. 750,529
Int. Cl. A01g *23/02*
U.S. Cl. 144—34 **6 Claims**



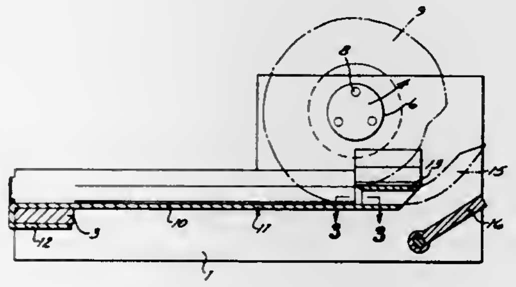
A tree harvesting and processing device including a shear freely pivotally suspended on a vertically swingable telescopic boom, the pivotal connection between the shear and the boom being directly vertically above the center of gravity of the shear whereby the shear is automatically maintained in a horizontal condition in any vertical angle of the boom.

3,529,643
TREE HARVESTING AND PROCESSING DEVICES
Haim J. Kamner, Chicago, Ill., assignor to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 6, 1968, Ser. No. 750,702
Int. Cl. A01g *23/02*
U.S. Cl. 144—309 **9 Claims**



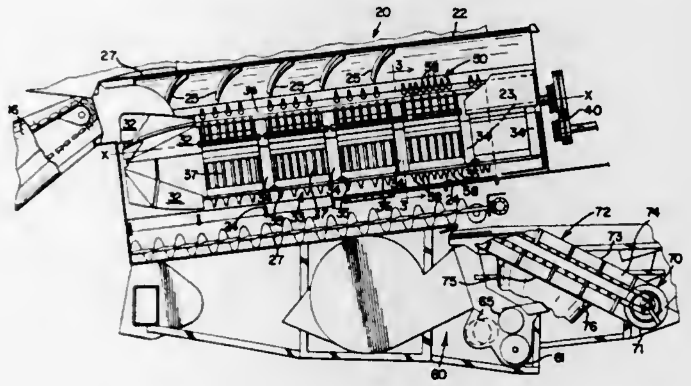
A tree harvesting and processing device for harvesting standing trees, the device including upper and lower sections moveable toward and away from each other. Each section includes a double-bladed tree shear and clamp assembly to top, delimb, score and buck a standing tree into pulpwood lengths in an automatic step-by-step manner as the device is sequentially moved down a standing tree. To reduce cycle time, control means are provided which are operatively connected between the upper shear and the upper clamp to limit the extent to which the shear blades are opened after a severing operation in accordance with the diameter of the portion of a tree being harvested whereby the blades are opened only to an extent necessary to clear the tree for subsequent downward movement of the upper section.

3,529,644
LEMON PEELER
George B. Douglas, 550 40th St., San Pedro, Calif. 90731
Filed Mar. 25, 1968, Ser. No. 715,878
Int. Cl. A47j *17/04, 43/28*
U.S. Cl. 146—3 **4 Claims**



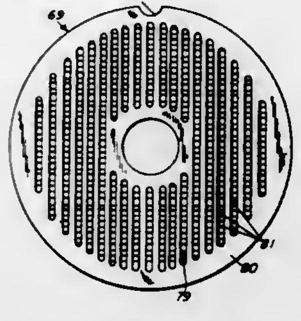
A novel lemon peeler in which the lemon can be easily mounted adjacent to a cutter, and the lemon can then be manually rotated for the purpose of cutting lemon peel strips from the lemon.

3,529,645
AXIAL-FLOW SHELLER AND GRINDER COMBINE
Donald A. Murray, Bettendorf, and William H. Knapp, Davenport, Iowa, and Richard A. De Pauw, East Moline, Ill., assignors to International Harvester Company, Chicago, Ill.
Filed Sept. 24, 1968, Ser. No. 762,000
Int. Cl. A01f *12/22, 11/06*
U.S. Cl. 146—71 **10 Claims**



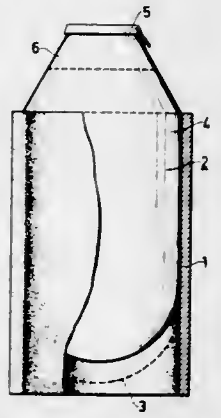
An axial flow combine having a grain cracking device and a cob grinding mill arranged such that after the grain has been threshed and cleaned, it is then cracked to a desired size and after the grain has been removed from the cobs, the cobs are processed through the mill and a classified portion of the ground cobs are then mixed with the cracked grain. The cob grinding mill and the grain cracking device are independently adjustable so that numerous combinations of aggregate can be selected.

3,529,646
FOOD COMMINUTING MECHANISM
Charles Pavia, R.F.D. 1, Box 244–A, Luray, Va. 22835
Continuation-in-part of application Ser. No. 499,144, Oct. 21, 1965. This application June 30, 1967, Ser. No. 650,522
Int. Cl. B02c *18/36*
U.S. Cl. 146—189 **9 Claims**



A rotary food comminuting device may include a series of stationary plates of decreasing size. The stationary plates may be radially slotted to cooperate with knives whose cutting edges are radially angularly offset to provide a shearing action, or the openings in the stationary plates may be made by milling chordally disposed recesses from opposite sides of the plate which intersect to provide rectangular openings.

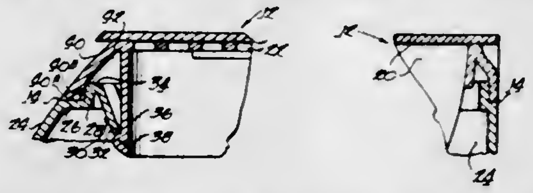
3,529,647
CONTAINER
Rolf Lennart Ignell, Lund, Sweden, assignor to Sobrefina S.A., Fribourg, Switzerland, a Swiss corporation
Filed Sept. 10, 1968, Ser. No. 758,832
Claims priority, application Sweden, Sept. 25, 1967, 13,128/67
Int. Cl. B65d *23/08*
U.S. Cl. 150—.5 **3 Claims**



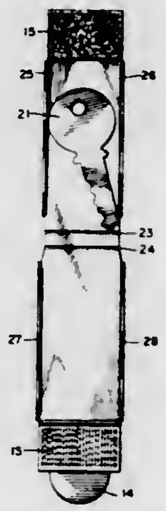
A container for liquids containing pressurized gas is provided in which the container is made of a flexible, elastic plastic material surrounded by a substantially inflexible sleeve extending beyond the bottom of said container whereby expansion due to the pressurized gas will take place longitudinally while remaining protected by the sleeve.

3,529,648
TOP-TO-CONTAINER SNAP LOCK
Benjamin M. Bartilson, Columbus, Ohio, assignor to Morton International, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 25, 1968, Ser. No. 778,391
Int. Cl. B65d *39/04, 41/18*
U.S. Cl. 150—.5 **5 Claims**

A plastic top closure is nonremovably and sealingly snap fitted to the registering open end of a plastic container by cooperating structures on the two components. The open end of the container has an inwardly-directed peripheral collar, upstanding lip and a plurality of discrete tabs integrally formed thereon. The top closure has an integrally-formed depending inner flange with an outwardly directed rim or shoulder adjacent the lower extremity which interfits in snap locking engagement with the tabs of the container. An integrally-formed depending outer flange registers with the upper wall of the container and engages the collar and the lip thereof whereby the tabs of the container and the shoulder of the inner flange are exteriorly inaccessible.

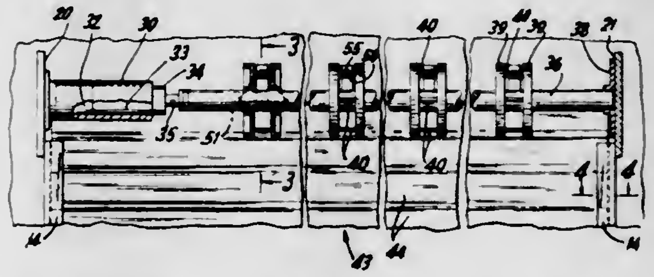


3,529,649
KEY RETAINING RECEPTACLE
Robert A. Bennett, 387 Falmouth Drive, Shelton, Conn. 06484
Filed Jan. 17, 1968, Ser. No. 698,469
Int. Cl. A45c *11/00*
U.S. Cl. 150—40 **6 Claims**



A key retaining receptacle capable of being secreted in a house or automobile and adapted for secure yet ready access thereto. The closure means of the receptacle is also capable to attaching the receptacle to a wire or other structural member. The closure means is comprised of a nylon pile surface pad on the interior face of the upper portion of one wall of the receptacle and a nylon looped pad on the opposing wall of the receptacle. In operation pressure applied against the exterior face of both walls compresses and bonds the receptacle to a support member while simultaneously closing the receptacle itself.

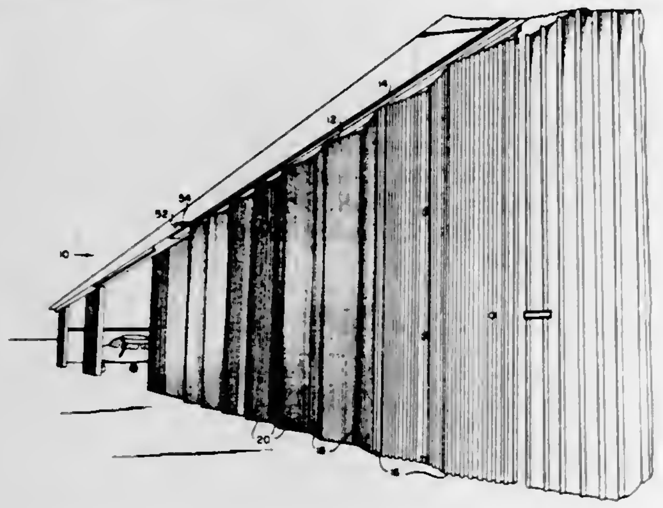
3,529,650
ROLL UP GATE
Joseph Brancato, Jamaica, N.Y., assignor to Brancato Iron Works, Inc., Jamaica, N.Y.
Filed Aug. 28, 1968, Ser. No. 756,028
Int. Cl. E06b *9/08*
U.S. Cl. 160—133 **10 Claims**



The roll up gate comprises a pair of opposing brackets. On one bracket is fixed a horizontal tube in which a combination motor, brake and reduction gearing is mounted. The output shaft of the reduction gearing is fixed to one end of a horizontal shaft. The other end of the shaft is journalled in the other bracket. On the shaft are a plurality of similar circular discs. A roll up curtain has its upper end attached to the discs, and its side edges are received in vertical fixed side guides. When the motor operates, the curtain is rolled up on the discs and covers the motor, supporting tube and the discs.

3,529,651
HIP AND VALLEY PARTITION

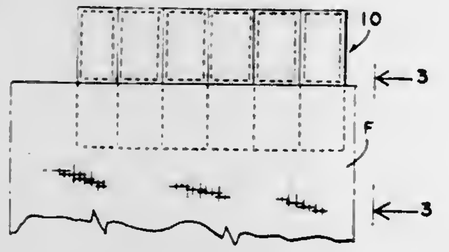
Emil A. Bender, P.O. Box 52, Bakersfield, Calif. 93307
Filed July 1, 1968, Ser. No. 741,571
Int. Cl. E05d *15/26*
U.S. Cl. 160—183 8 Claims



The invention comprises a multi-section hip and valley partition or door, the sections hingedly connected to each other in accordion-fold relationship and foldable into a face to face relationship when the door is open, an upper horizontal track for suspending the door, a ground track cooperating with the top track and door to assure integrity of the door when it is closed, and a deflecting roller depending from the upper track, outwardly thereof, arranged to sequentially strike each panel section as the door is unfolded.

3,529,652
FABRIC PLEATING GUIDE

Philip D. Warner, 15 Bristol Lane,
Kings Park, N.Y. 11754
Filed Sept. 19, 1968, Ser. No. 760,824
Int. Cl. A47h *13/14*
U.S. Cl. 160—348 3 Claims

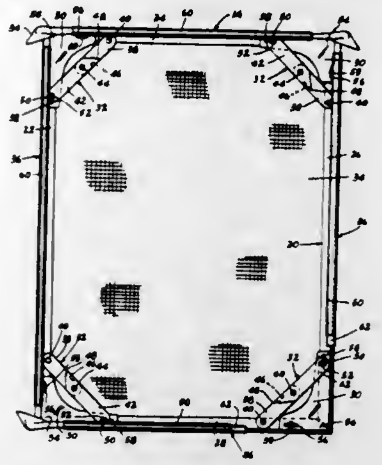


A device to facilitate the pleating of fabric which, in a flat unfolded condition, is positionable about the fabric and folded in unison therewith into an accordion-type configuration and, as a consequence, produces pleats in the fabric.

3,529,653
EXPANDABLE FRAME FOR PAINTING CANVAS

Edward C. Fey, Jr., 40 Tower Hill Court,
St. Louis, Mo. 63132
Filed Oct. 14, 1968, Ser. No. 767,422
Int. Cl. B44d *3/18*
U.S. Cl. 160—374.1 6 Claims

An expendable frame for fabrics such as artists' canvas. The frame comprises four side sections which may be broken down into individual pieces for easy transport. The side sections are adapted to be connected to tensioning braces to provide a rigid frame structure. Through the use of channel rails for the side sections, together with a U-shaped retainer channel, the canvas can be tightly stretched to the frame and when tensioning braces are tensioned there is provided a taut canvas upon the frame.



3,529,654
IMPROVING THE SURFACE OF FERROUS ARTICLES BY COMPLEXING AGENTS

Jerome J. Kanter, Palos Park, Ill., assignor to Crane Co., Chicago, Ill., a corporation of Illinois
No Drawing. Filed Feb. 15, 1968, Ser. No. 705,614
Int. Cl. B22c *3/00;* **B22d** *27/18*
U.S. Cl. 164—58 3 Claims

A process for forming a hard, durable, corrosion resistant coating on a cast ferrous article by applying a wash comprising an aqueous solution of sodium chromate, sodium aluminate, aluminum hydrate, or the rare earth metal hydrates to the surface of a mold cavity. During casting, a mineral oxide complex of the spinel type is formed on the surface of the cast ferrous article.

3,529,655
METHOD OF MAKING COMPOSITES OF MAGNESIUM AND SILICON CARBIDE WHISKERS

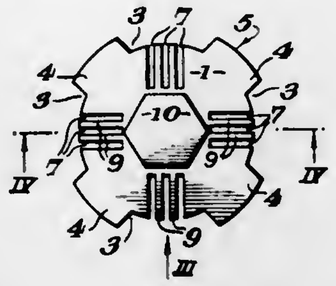
Garth D. Lawrence, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 3, 1966, Ser. No. 583,946
Int. Cl. B22d *23/00*
U.S. Cl. 164—97 4 Claims

1. A process for the preparation of composites of magnesium and silicon carbide whiskers which comprises providing a mold having at least one opening to the atmosphere and containing silicon carbide whiskers in an amount of from about 1 to about 90 volume percent of the interior volume of the mold, said silicon carbide whiskers and the interior of said mold being substantially anhydrous, immersing said whisker-containing mold into a bath of molten magnesium such that all openings in said mold are below the surface of the molten magnesium for a time sufficient for the magnesium to fill the remaining volume of the mold cavity, removing the filled mold from the molten magnesium bath and allowing the magnesium in the mold to solidify.

3,529,656
VENTING MEMBERS FOR CORE BOXES AND OTHER MOULDS

Barnett Levy, 1–5 Osbert St., Vauxhall Bridge Road, Westminster, London, SW. 1, England
Filed Feb. 27, 1968, Ser. No. 708,583
Claims priority, application Great Britain, Aug. 16, 1967, 37,712/67
Int. Cl. B22c *23/00*
U.S. Cl. 164—234 3 Claims

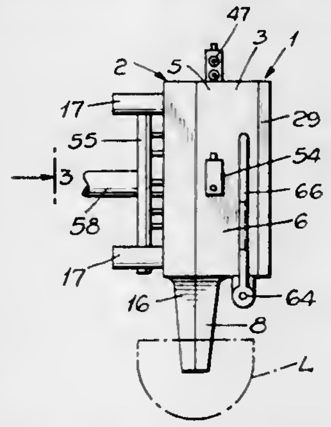
A venting member for mounting in a circular aperture in the wall of a mould to be invested with sand or other moulding material, comprises a circular block with flat end faces normal to its axis and alternate arcuate peripheral recesses and projections; the projections may be of progressively decreasing radius with interrupted screw threads on their peripheries; the bases of the recesses may be inclined the axis with slots extending outwards to the bases and opening to the end faces.



3,529,657
VACUUM FILLED MOLD

Harry R. Bucy, 625 S. Glenwood Place,
Burbank, Calif. 91506
Filed Oct. 17, 1967, Ser. No. 675,969
Int. Cl. B22d *27/16*
U.S. Cl. 164—257 19 Claims

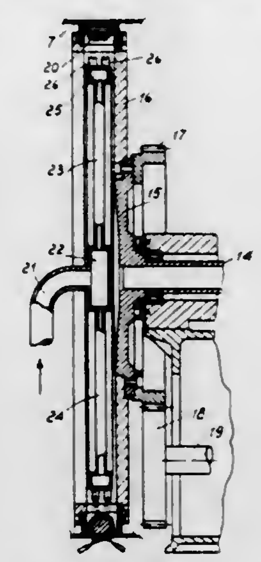
A separable mold for forming castings from congealable material in which the mold includes a filler runner upwardly into the mold cavity means. The cavity means is provided with evacuating means and a stop member is operable to institute or interrupt communication between the runner and the cavity. When the mold is closed, the cavity is evacuated sufficiently to cause the flow of congealable material through the runner to the cavity means, the stop member being moved out of the runner, and atmospheric pressure on the surface of a body of metal into which the lower end of the mold extends causes the congealable material to enter the mold cavity means through the runner. Means is provided to regulate the degree of vacuum so that the rate of filling of the mold cavity means is such as to reduce the initial flow rate of the entering material sufficiently to prevent the initial entry thereof in the form of an air entraining jet into cavity means.



3,529,658
CONTINUOUS CASTING WHEEL WITH IMPROVED COOLING ARRANGEMENT

Ilario Properzi, % Continuus, Via Cosimo del Fante 10, Milan, Italy
Filed Jan. 8, 1968, Ser. No. 696,312
Claims priority, application Italy, Oct. 21, 1967, 21,875/67
Int. Cl. B22d *11/06*
U.S. Cl. 164—278 2 Claims

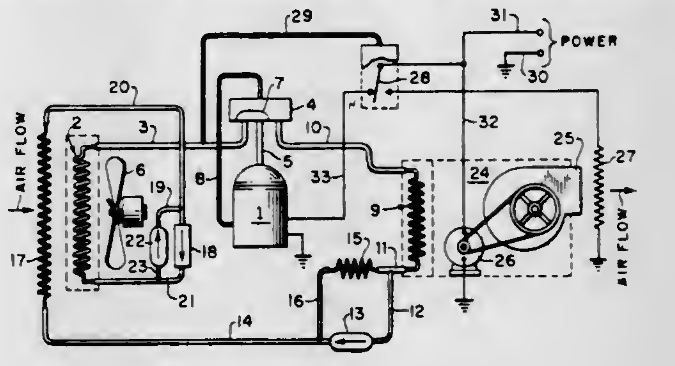
This disclosure relates to a continuous casting wheel for producing metal ingots. The casting wheel is a turning wheel provided with a flexibly mounted grooved periphery or mould, with a metal tape arrange to cover an arc portion of said groove and cooperating with a water jet cooling system designed to cool the walls of said groove and said tape. Molten metal is loaded into said groove at the beginning of the portion covered by said tape and leaves the latter in solid ingot or bar form.



3,529,659
DEFROSTING SYSTEM FOR HEAT PUMPS

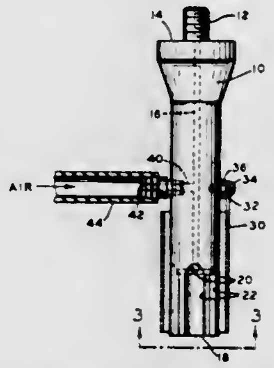
Allen Trask, 288 Genesee St., Utica, N.Y. 13502
Filed Apr. 17, 1968, Ser. No. 722,093
Int. Cl. F25b *29/00*
U.S. Cl. 165—29 5 Claims

An air-to-air heat pump having air moving means downstream of its outdoor heat exchanger coil, and radiant heating means upstream of the outdoor coil to inhibit the accumulation of frost thereon by maintaining water vapor in the outdoor air as a supercooled vapor as it passes through the outdoor coil at temperatures below 32 degrees, during heating cycles.



3,529,660
SOLID HORN WITH COOLING MEANS

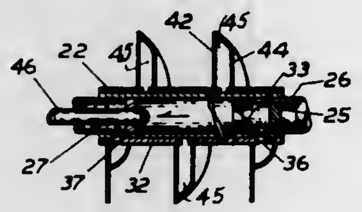
Edward G. Obeda, Brookfield, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Nov. 20, 1968, Ser. No. 777,223
Int. Cl. F24h *3/00*
U.S. Cl. 165—47 4 Claims



A solid horn as used for sonic or ultrasonic processing, such as welding, is provided with gas cooling means which include a central longitudinal bore, a plurality of radial gas escape holes, and a shroud for directing the gas flow along the horn.

3,529,661
ROTARY MATERIAL PROCESSOR WITH HOLLOW MATERIAL CONTACTING ELEMENTS

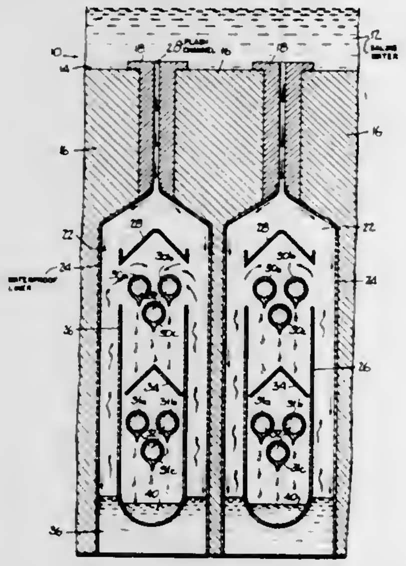
Thomas Yousch, 16258 Vintage St.,
Granada Hills, Calif. 96038
Filed Apr. 29, 1968, Ser. No. 725,033
Int. Cl. F28f *5/06*
U.S. Cl. 165—87 **10 Claims**



A rotary material processor having rotatable elements wherein each such element comprises an elongated stem tube, pad means mounted on the stem tube with end portions rigidly secured to said stem tube and intermediate spaced portions slidably mounted on the stem tube, hollow material contacting elements rigidly secured to the pad means in fluid tight relationship thereto to bridge the gaps between said spaced portions with the interior of said contacting elements in fluid communication with the interior of the stem tube.

3,529,662
HORIZONTAL TUBE CONDENSER

Ralph C. Roe, Tenafly, N.J., assignor to Saline Water Conversion Corporation, Oradell, N.J., a corporation of New York
Filed Nov. 13, 1967, Ser. No. 682,362
Int. Cl. B01d *5/100;* **C02b** *1/06*
U.S. Cl. 165—111 **6 Claims**

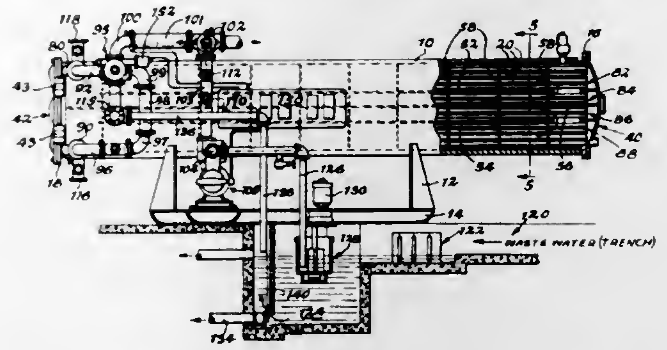


A surface condenser with condenser tubes having fins depending in the direction of condensate flow to provide an edge whereby the effective or working surface of the condenser tubes is increased.

3,529,663
WASTE WATER HEAT RECLAIMER

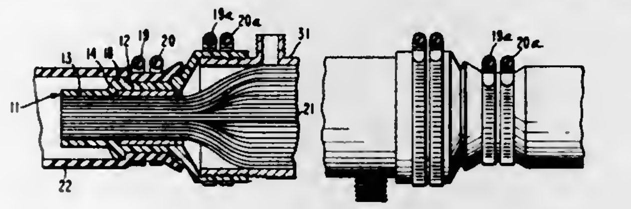
James J. Coleman, 538 Barry St.,
Stroudsburg, Pa. 18360
Continuation-in-part of application Ser. No. 686,006, Nov. 28, 1967. This application June 30, 1969, Ser. No. 842,792
Int. Cl. F28f *9/02*
U.S. Cl. 165—158 **3 Claims**

A heat reclaimer for recovering heat from the hot waste waters from commercial laundries, textile plants, etc., in which the waste water is conveyed through the reclaimer in such fashion as avoids the accumulation of lint, fibres or other solid materials within the passageways of the reclaimer. This is accomplished by maintaining the waste water flow velocity constant throughout the reclaimer. The ends of the reclaimer are mounted and arranged not only for simplifying the plumbing connections, but also to enable the interior to be exposed easily for cleaning.



3,529,664
END STRUCTURE FOR THERMOPLASTIC TUBING

Thomas B. Baker, Kit P. Carson, and Harry W. Sandberg, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 23, 1969, Ser. No. 818,492
Int. Cl. F16l *39/00;* **F28f** *9/04*
U.S. Cl. 165—178 **10 Claims**



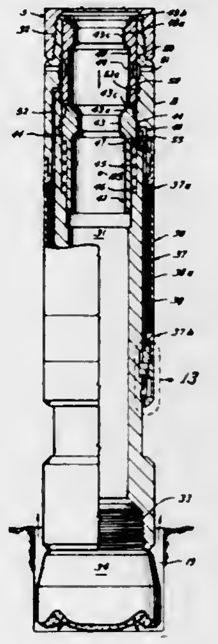
An article of manufacture designed to be secured to radially deformable hosing by means of hose clamps, which comprises at least one thermoplastic sleeve, a bundle of parallel flexible thermoplastic tubes, and a rigid collar. The sleeve consists of a least two cylindrical portions, of different diameter, and a short connecting portion, connecting the two cylindrical portions. The flexible tubes are bonded to one another at the end of the bundle and bonded to the wall of the small diameter portion of the sleeve in a leak-tight arrangement. The rigid collar is disposed within the sleeve in the region of the large diameter portion, and acts as an unyielding surface to which the hose clamps secure the hose and the large diameter portion of the sleeve. A depression, with a sharp cornered shoulder, wide enough to accommodate the hose clamps, is provided in the outer surface of the large diameter portion of the sleeve in substantially the same region of the sleeve as the collar. When a radially deformable hose is secured to the sleeve in the region of the depression by hose clamps, the collar and the shoulder of the depression cooperate with the hose clamps to provide a burst tight-seal.

3,529,665
METHOD OF TESTING, TREATING AND ISOLATING FORMATIONS DURING DRILLING

Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Dec. 13, 1968, Ser. No. 790,501
Int. Cl. E21b *33/12, 47/00*
U.S. Cl. 166—264 **32 Claims**

A method of using a well tool incorporating a reinforced inflatable element which is carried by the drill string in the well bore and remains deflated during rotary drilling operations, which can be inflated to seal off the well bore

to enable various operations to be performed in the well bore and the element thereafter deflated and rotary drilling operations resumed. This operation may be repeated as often as desired.



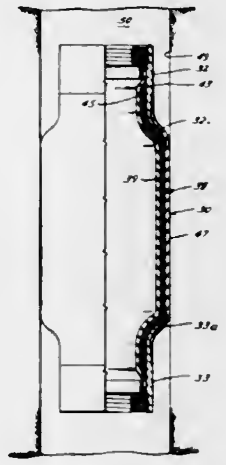
3,529,666
METHOD OF IMPROVING PERMEABILITY OF GEOLOGIC FORMATIONS BY REMOVAL OF ORGANIC MATERIAL THEREFROM

Curtis Wendell Crowe, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 30, 1968, Ser. No. 748,649
Int. Cl. E21b *43/27*
U.S. Cl. 166—300 **7 Claims**

In the treatment of a geologic formation penetrated by a wellbore wherein the porosity of the formation has been impaired by deposition of organic material, especially bacterial deposits, the improvement consisting essentially of: admixing and injecting an aqueous solution of a peroxide selected from the class consisting of hydrogen peroxide, an alkali metal peroxide, or mixture thereof into the formation; following the peroxide solution with a spacer; and thereafter injecting an aqueous acid solution, preferably followed by a water, brine, or inert gas flushing fluid into the formation.

3,529,667
INFLATABLE, PERMANENTLY SET, DRILLABLE ELEMENT

Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas
Filed Jan. 10, 1969, Ser. No. 790,367
Int. Cl. E21b *33/12*
U.S. Cl. 166—315 **35 Claims**



A reinforced, inflatable element, having annular end members and a reinforcing sheath extending therebetween and secured thereto, which, upon inflation of the element, deforms to form a permanent seal in an opening.

3,529,668
FOAM DRIVE OIL RECOVERY PROCESS

George G. Bernard, La Mirada, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed July 24, 1968, Ser. No. 747,240
Int. Cl. E21b *43/20, 43/22*
U.S. Cl. 166—273 **11 Claims**

A process for recovering oil from porous subterranean reservoirs in which a bank of foam is established in the reservoir and displaced through the reservoir toward a spaced production well by the injection of a combination of gaseous and aqueous liquid drive fluids injected in the proportion of about 5 to 15 volumes of gas per volume of aqueous liquid as measured at reservoir conditions of temperature and pressure. Oil and other produced fluids are recovered from the production well. The drive fluid can be injected in the form of successive alternate slugs of gas and liquid, or the gas and aqueous liquid can be simultaneously injected into the reservoir. The gas remains in the gaseous state under reservoir conditions.

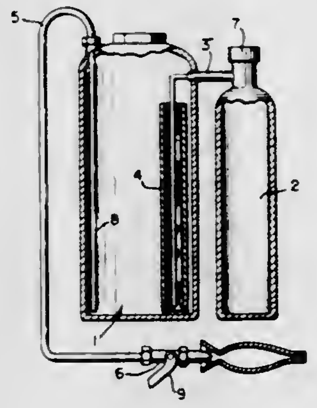
3,529,669
PROCESS FOR CLEANING POROUS MEDIA

Warren E. Tietz, Englewood, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 6, 1969, Ser. No. 789,356
Int. Cl. E21b *43/25, 43/27*
U.S. Cl. 166—307 **12 Claims**

The permeability of porous media which have become plugged by polymer solutions is restored by washing the porous media, in sequence, with: sodium hypochlorite solution; brine or water to remove the sodium hypochlorite solution; brine or water to remove the sodium hypochlorite solution; a lower aliphatic alcohol or ketone; an oil-soluble solvent; a lower aliphatic alcohol or ketone; and then with brine or water.

3,529,670
METHOD AND MEANS FOR EXTINGUISHING FIRES

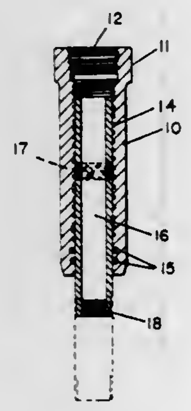
Celestin Herbline, 332 Rue Lecourbe, Paris, France
Continuation-in-part of application Ser. No. 620,894, Mar. 6, 1967. This application Mar. 3, 1969, Ser. No. 803,842
Claims priority, application France, Mar. 10, 1966, 52,932; Feb. 24, 1967, 96,446
Int. Cl. A62c *5/16*
U.S. Cl. 169—2 **8 Claims**



A method and means for extinguishing fires by forming or providing a heavy product in the form of creamy snow in the course of changing into ice and which has a halogenous body contained therein that forms the extinguishing product itself, and wherein when the product contacts a hot surface the gases or materials contained therein are liberated.

3,529,671
ADJUSTABLE DROP NIPPLE FOR SPRINKLERS BELOW HUNG CEILINGS

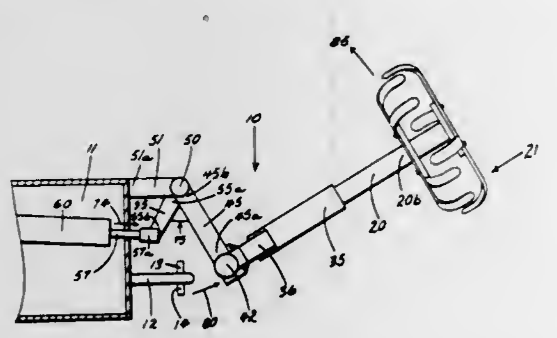
Charles Adams, Jr., 9 Lexington Drive,
Croton-on-Hudson, N.Y. 10520
Filed Oct. 22, 1968, Ser. No. 769,616
Int. Cl. A62c *39/00*
U.S. Cl. 169—41 **6 Claims**



This invention consists of a pipe nipple having an enlarged head in which is located a plurality of internal pipe threads. A plurality of internal acme threads are also located within the aforesaid pipe nipple, the acme threads extending downward from the bottom of the aforesaid pipe threads to the top one of two vertically disposed and spaced O-rings that are located just above the opening in the bottom of the aforesaid pipe nipple. An adjustable pipe nipple having a plurality of external acme threads on the upper end thereof is screwed into the aforesaid adjustable pipe nipple, the lower portion of the aforesaid adjustable nipple extending down out the bottom of the already mentioned pipe nipple. The lower end of the adjustable nipple being provided with a plurality of internal pipe threads into which is screwed the upper end of a sprinkler head.

3,529,672
ROW MARKER APPARATUS

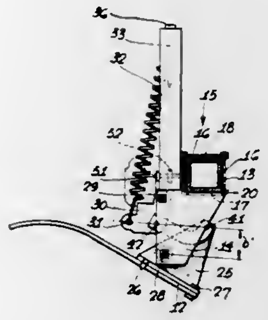
John H. Smith, Jonesville, La., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,754
Int. Cl. A01b *33/02*
U.S. Cl. 172—123 **1 Claim**



A row marker apparatus for use with a tiller for shaping earthen rows of cultivated or farmed land or other suitable apparatus for marking the rows traversed by the tiller to enable the operator to determine which earthen rows have been traversed.

3,529,673
TRIP ATTACHMENT FOR MOUNTING CULTIVATING TOOLS

George H. Morris, Yorkton, Saskatchewan, Canada, assignor to Morris Rod-Weeder Co. Ltd., Yorkton, Saskatchewan, Canada
Filed July 5, 1968, Ser. No. 742,893
Claims priority, application Canada, July 14, 1967, 995,474
Int. Cl. A01b *35/24, 61/00*
U.S. Cl. 172—266 **4 Claims**



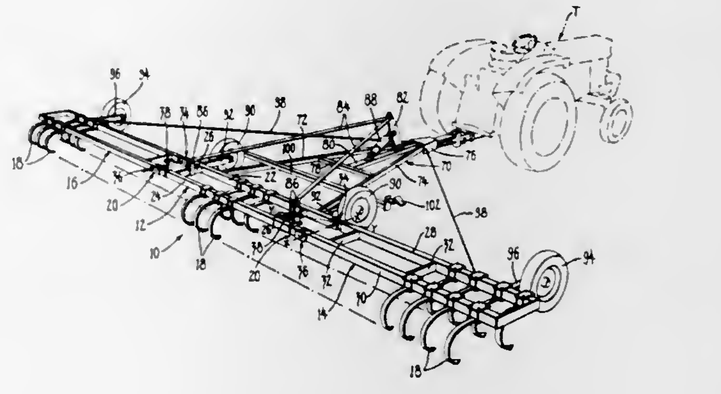
A trip mechanism for attachment of earth working tools to the tool bar of agricultural and horticultural machines, the mechanism allowing the tool to deflect upwards on meeting an obstruction to pass over the obstruction, the tool being resiliently biased into a downward, operative position, the mechanism arranged so that, at the most, only a slight increase in loading occurs, on the tool, when the mechanism trips.

It is necessary that the mounting mechanism is compact, as it is often desirable to mount several tools in close proximity. The mounting should be applicable to various types of tools and be readily used on various types of machines.

It is also a desirable feature that the trip mechanism be capable of being proportioned that the load on the tool does not increase, to any substantial amount, on deflection of the tool, and it is often desirable that the load on the tool be decreased on deflection. The present invention also provides for such loading arrangements to be achieved.

3,529,674
FOLDABLE MULTIPLE SECTION EARTHWORKING IMPLEMENT

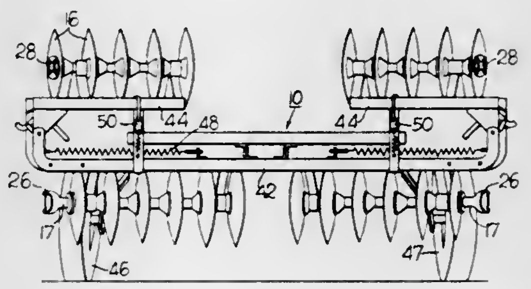
Everett W. Todd and Guy F. Gardner, Dearborn, Mich., assignors to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland
Filed Apr. 1, 1968, Ser. No. 717,818
Int. Cl. A01b *73/00*
U.S. Cl. 172—311 **6 Claims**



A foldable, multiple section earthworking implement including a main center section and a pair of side sections connected with the ends of the center section for pivotal movement between a coplanar working position and a forwardly folded transport position relative to the center section. In the transport position, the side sections lie in a substantially fore and aft vertical plane and the center section lies in a transverse plane tilted from the horizontal to an angle of substantially less than 90 degrees.

3,529,675
DISK GANG COUPLING

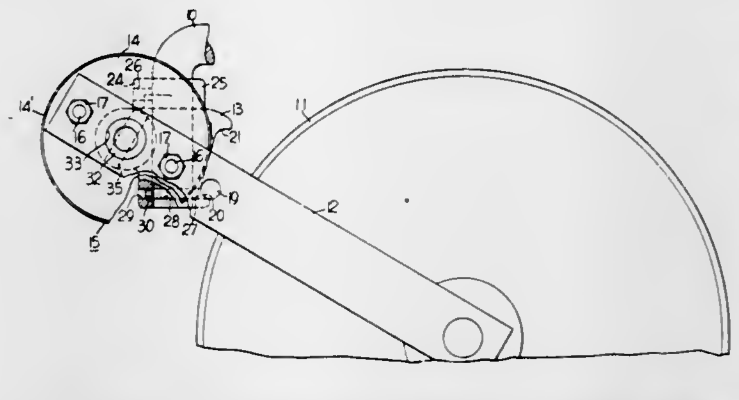
Keith A. Wheeler, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 13, 1967, Ser. No. 667,604
Int. Cl. A01b *21/08;* **F16d** *1/00*
U.S. Cl. 172—568 **5 Claims**



An improved disk harrow having an extension including coupling means for providing a driving connection between the extension and disk harrow.

3,529,676
SPRING LOADED COULTER

Richard G. Moe, New Berlin, and Maynard E. Walberg, Waukesha, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 20, 1967, Ser. No. 676,796
Int. Cl. A01b *35/28;* **B60g** *11/22*
U.S. Cl. 172—572 **4 Claims**



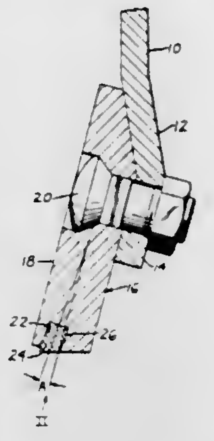
To provide a rubber biasing spring for a rolling coulter assembly and wherein such spring will provide a high degree of ground penetration under adverse soil conditions, will occupy a minimum space thus affording good clearance and eliminating obstructions for trash to hang on. In addition, this construction is economical to manufacture.

3,529,677
GRADER BLADE

Earle W. Stephenson, Latrobe, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania
Filed May 15, 1968, Ser. No. 729,363
Int. Cl. A01b *35/26*
U.S. Cl. 172—767 **8 Claims**

A replaceable steel edge for the blade of a grader or the like is grooved along the working edge and has blocks of a cemented hard metal carbide mounted therein, preferably, by brazing. The bladge edge is divided into sections shorter than the blade and the sections are mounted on the blade in end to end relation.

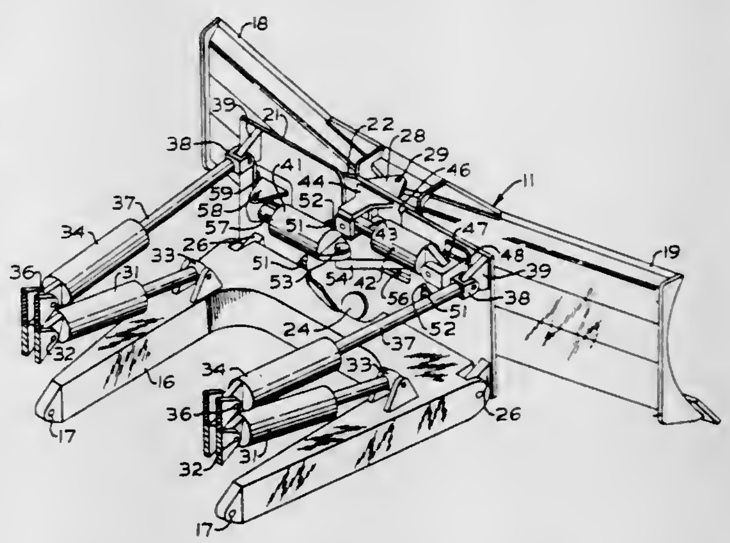
The high wear resistance of the carbide block permits the blade edge to be made thicker in the fore and aft direction and narrower in the top to bottom direction for greater stiffness of the sections.



The carbide blocks are set at an angle to the vertical axis of the sections to provide for improved wearing characteristics of the blade section.

3,529,678
MOUNTING FOR BULLDOZER BLADES

Max J. Teasdale, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 14, 1968, Ser. No. 752,716
Int. Cl. E02f *3/76*
U.S. Cl. 172—804 **3 Claims**

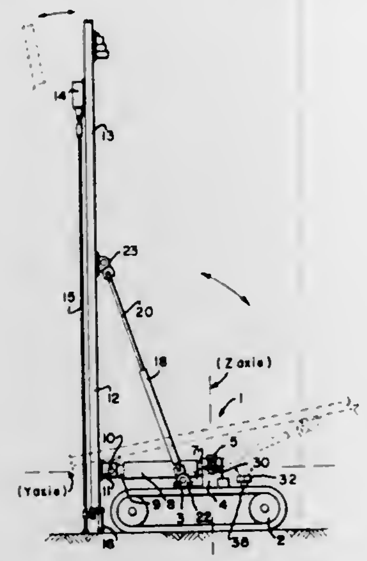


A mounting for supporting a bulldozer blade on a tractor including motors for raising and lowering, tilting, angling and varying pitch of the blade. A pair of support plates are pivoted to each other for relative rotation about a common axis, one of the plates being pivoted to a frame mounted on the vehicle with the blade being pivoted to the other plate with the three pivot axes each being perpendicular to the other two.

3,529,679
DRILLING APPARATUS

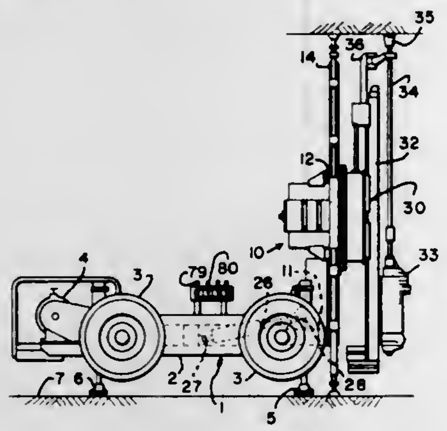
Samuel Leven, Bridgeport, W. Va., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 29, 1968, Ser. No. 780,110
Int. Cl. E21c *11/02*
U.S. Cl. 173—28 **8 Claims**

A mobile drilling apparatus with a base-mounted tower movable about X, Y, and Z axes relative said base and having a tramming control console removable to a plurality of spaced-apart operating positions. The tower is mounted on a rotatable platform; this provides for movement of the tower about a vertical Z axis. A pair of extensible legs are coupled between the tower and the platform to provide for tower movement about a horizontal X axis, and the tower is also coupled to the platform by means of a rotatable shaft which accommodates movement of the tower about a further horizontal axis Y to facilitate a lateral tilting of the tower.



3,529,680
ROCK DRILL WITH RING SUPPORT

Samuel J. Nardone, Alpha, N.J., and Hans P. Jaeggi, Lausanne, Switzerland, assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 15, 1968, Ser. No. 808,714
Int. Cl. E21c *11/02*
U.S. Cl. 173—35 **15 Claims**

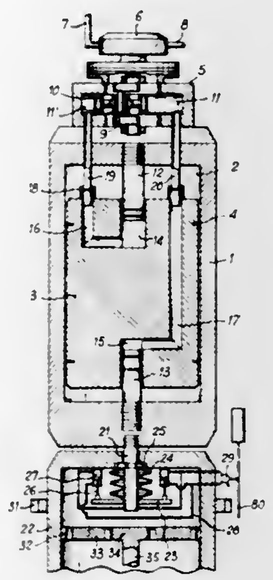


A mobile rock drilling unit for use in drilling a fan of holes in underground mine workings such as a mining drift. The rock drill itself is mounted on a support and may be rotated 360°. The support may be tilted and slued relative to a mobile frame. A spring applied, fluid pressure released brake controls rotation of the drill. Clutch and safety arrangements aid in preventing inadvertent rotation of the drill.

3,529,681
HYDRAULICALLY CONTROLLED VIBRO-HAMMER

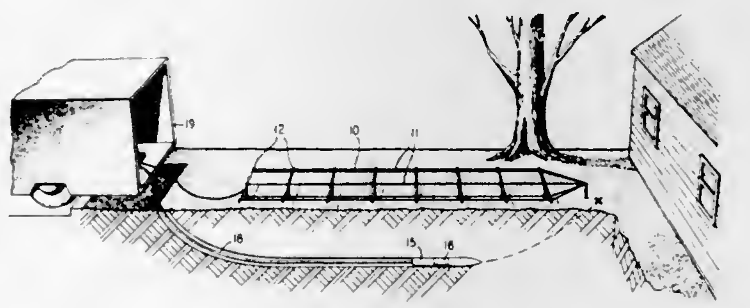
Emile Georges Berrié, 61 Rue Dominique Clos, Saint-Martin-du-Touch, Toulouse, Haute-Garonne, France
Filed Jan. 2, 1969, Ser. No. 788,485
Claims priority, application France, Jan. 3, 1968, 134,775
Int. Cl. E02d *7/02;* **E21b** *1/02*
U.S. Cl. 173—116 **14 Claims**

Vibro-hammer comprising a hollow weight serving as an inertia mass and a ram serving as a striking mass, the ram being reciprocated within the hollow weight by fluid pressure applied interiorly of two axial cylindrical members or cylinders at the ends of the ram and engaging two opposed pistons secured to respective ends of the hollow weight. The weight and ram drive various working tools through an auxiliary terminal element preferably including coupling means enabling a selected degree of elasticity between the ram and the tool so the tool can be driven either by percussion or in a vibratory condition at controlled intensity. The selected tool can be driven in rotation as well as longitudinally, if desired, as when the apparatus is for drilling boreholes.



3,529,682
LOCATION DETECTION AND GUIDANCE SYSTEMS FOR BURROWING DEVICE

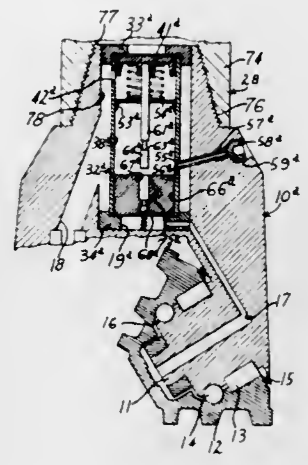
James C. Coyne, New Providence, and Frederick J. Elia, Berkeley Heights, N.J., and Hamilton Southworth, Jr., New York, N.Y., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 3, 1968, Ser. No. 764,750
Int. Cl. E21b *47/24;* **F16l** *1/00*
U.S. Cl. 175—45 **10 Claims**



Dipole and quadrupole antenna loops laid over the intended route of a burrowing device are respectively energized with two currents differing by a time, frequency or phase factor. The magnetic fields under the loops thus also differ by such factor. Three coils fixed in the device body in known mutually orthogonal orientation detect and measure the spatial components of each of the magnetic fields produced by the respective loops. From the six magnetic field readings, the device's position within the plane perpendicular to the antenna loop plane, and the device's roll and heading, are calculated and translated into guidance commands.

3,529,683
DRILL BIT LUBRICATOR

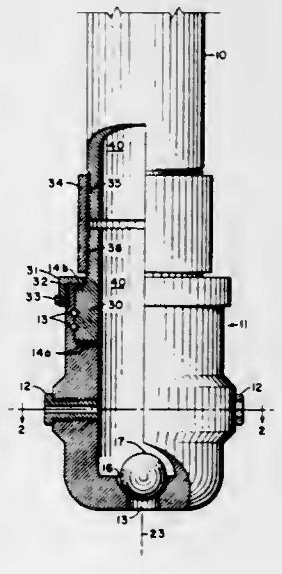
Gordon E. Mays, 245 27th Court NW., Birmingham, Ala. 35215
Filed July 8, 1969, Ser. No. 839,817
Int. Cl. E21b *9/08*
U.S. Cl. 175—228 **10 Claims**



Bit lubricator embodying first chamber communicating at upper end with circulation fluid passageway with first piston mounted therein and movable by circulation fluid until first piston moves past fluid by-pass opening in first chamber. Upon release of pressure of circulation fluid first piston returns to original position. Second piston in first chamber forces subjacent lubricant in first chamber into second chamber carried by lower portion of first chamber. Third piston in second chamber forces lubricant from second chamber each time first piston moved by pressure of circulation fluid. Discharge end of second chamber communicates with space between rotary cutter and its support.

3,529,684
HORIZONTAL NOTCHING TOOL

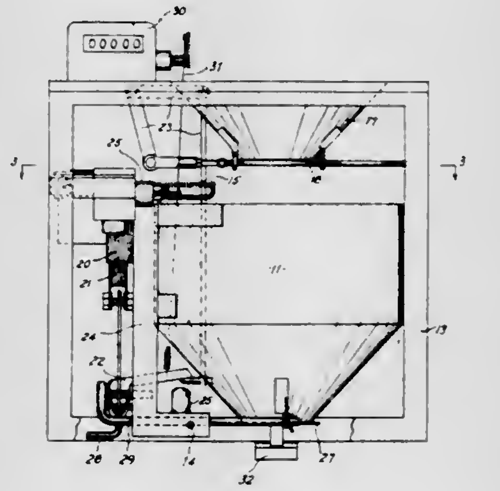
William L. Hill, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,142
Int. Cl. E21b *7/18*
U.S. Cl. 175—422 **1 Claim**



A perforating apparatus rotatably attached to the terminus of a well string and comprising a plurality of jets mounted at an angle so that when the perforating fluid is forced down the well string and out the jets, the perforating apparatus will rotate, cutting a disc-shaped perforation normal to the axis of the well bore.

3,529,685
AUTOMATIC WEIGHING MACHINE

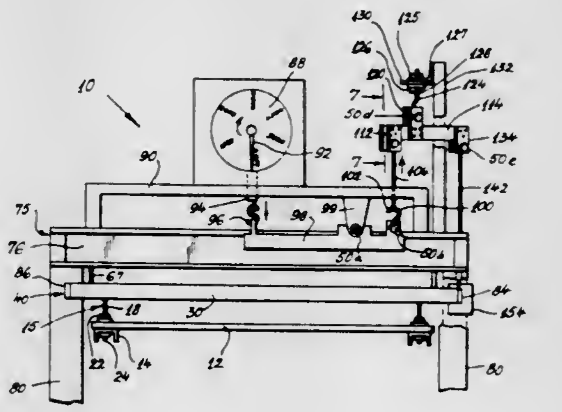
Geoffrey Lloyd Bell, 240 Grand Promenade, Dianella, Western Australia, Australia
Filed Aug. 6, 1968, Ser. No. 750,739
Claims priority, application Australia, Aug. 11, 1967, 25,840/67
Int. Cl. G01g *13/24*
U.S. Cl. 177—107 **10 Claims**



An automatic weighing machine for repeatedly weighing a predetermined amount of flowable material such as poultry feed having a hopper into which the flowable material is fed, said hopper being pivotally mounted for rotation about a substantially horizontal axis adjacent the lower end of the hopper and remote from the centre of gravity thereof. The flow of material into and out of the hopper is controlled by electrically operated elements.

3,529,686
SCALE EMPLOYING ROLLER BEARINGS

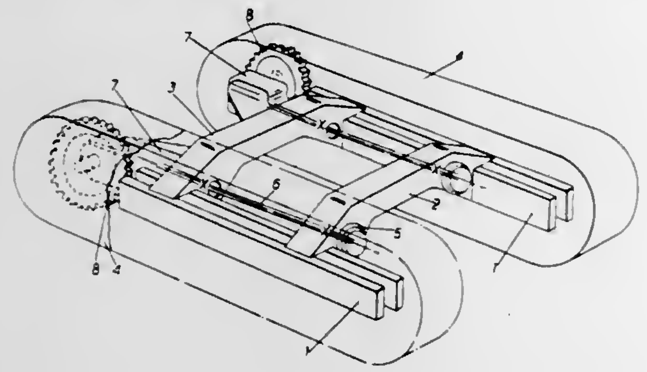
Paul E. Smith, East Peoria, Ill. (% Capitol Scale Co., 927 SW. Washington St., Peoria, Ill. 61602)
Filed Oct. 10, 1968, Ser. No. 766,541
Int. Cl. G01g *21/08*
U.S. Cl. 177—201 **9 Claims**



A platform scale for weighing heavy loads has replaceable roller bearing assemblies at critical pivot points. A dial scale is operatively connected to the platform by a leverage system. Knife edge pivot points and square bearing of prior scales are avoided.

3,529,687
DRIVE ARRANGEMENT FOR TRACKED VEHICLES

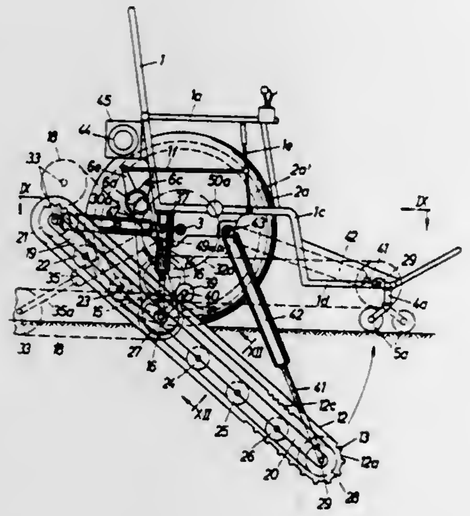
Pietro Pensa, Esino Lario, Como, Italy, assignor to Massey-Ferguson Services N.V., Caracao, Netherlands Antilles, a corporation of the Netherlands Antilles
Filed June 26, 1968, Ser. No. 740,110
Claims priority, application Italy, July 3, 1967, 17,937/67
Int. Cl. B62d *11/04*
U.S. Cl. 180—6.48 **8 Claims**



A tracked vehicle has a pair of tracks mounted on spaced support frames that are interconnected by a pair of spaced hollow cross-members. Hydraulic motors are mounted within the front cross-member at either side and include forwardly mounted brakes. A drive shaft extends rearwardly from each motor through the rear cross-member to a gearbox partially mounted within the rear cross-member. Each gearbox mounts a drive wheel for one of the tracks.

3,529,688
WHEELCHAIR

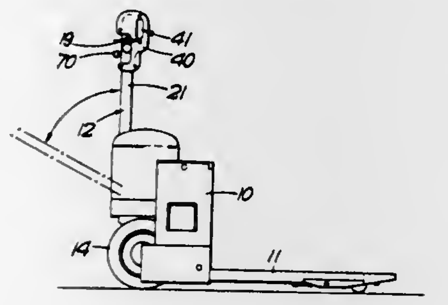
John W. Bruce, 3853 Red Fox Drive NW., Roanoke, Va. 24017
Filed Nov. 7, 1968, Ser. No. 774,090
Int. Cl. B62d *55/04;* **B62b** *9/02*
U.S. Cl. 180—9.24 **16 Claims**



A wheelchair has a seat frame which has mounted thereon ground-contacting wheels located at opposite sides and turnable about a first axis extending transversely to the direction of movement of the wheelchair. A pair of endless-belt traction assemblies are connected with the frame located below the same and projecting in mutually opposite directions. The assemblies have respective first ends which are mounted for tilting movement about a second axis common to them both and paralleling the first axis, and each having a second end remote from the respective first end. First actuating means is associated with the assemblies and serves for moving the first ends in unison between a raised position in which they are out of contact with the ground and the frame is supported on the wheels, and a lowered position in which the wheels are out of contact with the ground and the frame is supported on the assemblies. Second actuating means is associated with the respective second ends and serves for tilting the assemblies individually about the second axis in a plane normal to the same. Drive means is alternatively operative for driving the wheel means when the chair is to be propelled on substantially level ground, and for driving the traction assemblies when the chair is to be propelled over inclines and obstacles.

3,529,689
PEDESTRIAN OPERATED INDUSTRIAL TRUCKS

Cecil Goodacre and Brian Thomas Croft, Basingstoke, England, assignors to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed July 8, 1968, Ser. No. 743,093
Claims priority, application Great Britain, July 6, 1967, 31,150/67
Int. Cl. B62d *51/04*
U.S. Cl. 180—19 **10 Claims**

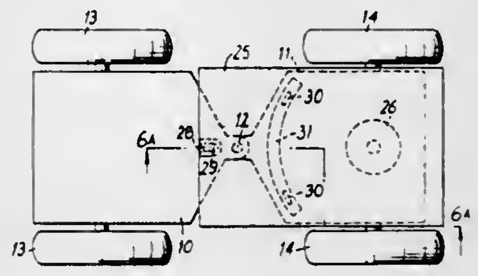


A pedestrian operated industrial truck comprises a body portion, a combined steering and control arm mounted on one end of the body portion, and direction and speed control means connected by a mechanical linkage to operator control means mounted on the control arm. The control arm comprises a first part which is mounted on the body portion and a second part which extends beyond the first part and which is in sliding relation therewith, the second part being spring-urged into an extended position but being movable from said extended position along the first part of the control arm towards the body portion. Also the said linkage has a member which lies in the path of the second part of the control arm when it is slid along the first part towards the body portion whereby when the truck is moving in the direction in which the control arm leads, the said second part of the control arm may be caused to slide along the first part towards the body portion so that the said second part engages the said member of the linkage and operates the linkage to effect a reversal of the direction of movement of the truck.

3,529,690
FOUR-WHEEL DRIVE LOAD CARRYING VEHICLE

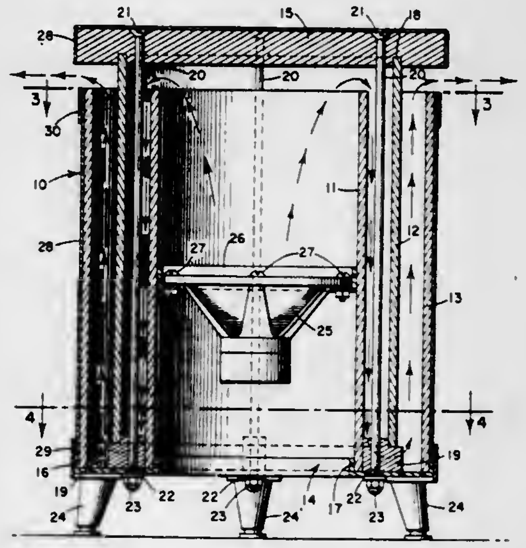
Leonard Stanley Mathew, Kingswood, Surrey, England, assignor to Matbro Limited, Horley, Surrey, England, a British company
Filed Apr. 25, 1968, Ser. No. 724,116
Claims priority, application Great Britain, May 2, 1967, 20,384/67
Int. Cl. B62d *15/00*
U.S. Cl. 180—51 **9 Claims**

A load carrying vehicle comprises a chassis including a front chassis frame carried on driven front wheels, and a rear chassis frame mounted on driven rear wheels and connected to the front chassis frame for swivelling relative to the front chassis frame about a vertical axis disposed approximately mid-way between the front and rear wheels, steering means connected to adjust the angle of the front and rear chassis frames relative to each other about said vertical axis, a body for carrying the load which body has at or adjacent the rear end thereof a pivot mounting on the rear chassis frame enabling the body to swivel about a vertical axis, support means on the chassis for the forward end of the body and control means adapted, in dependence on the operation of the steering means to steer the vehicle round a curve, to move the forward end of the body laterally towards the inside of the curve relative to the rear chassis frame.



3,529,691
TWIN EQUILATERAL SOUND SPEAKER ENCLOSURE

Fred A. Wesemann, 1801 S. Dixie Highway, 90 Holiday Village, Pompano Beach, Fla. 33060
Filed May 27, 1969, Ser. No. 828,275
Int. Cl. G10k *13/00*
U.S. Cl. 181—31 **7 Claims**

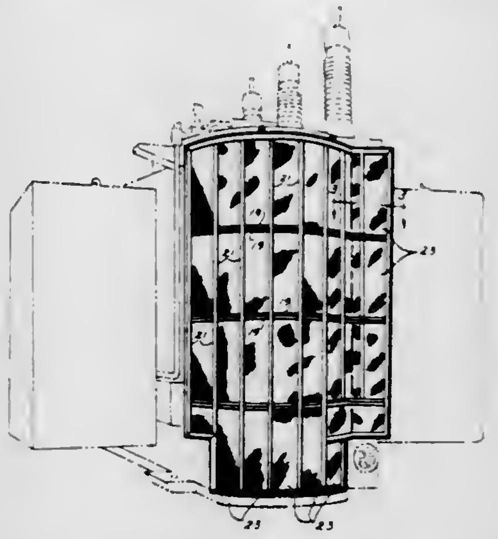


A speaker enclosure formed by at least three concentrically mounted tubes forming a tortuous path therebetween and with a speaker mounted in the innermost of the tubes. A solid top covers the enclosure and contacts the intermediate of the tubes. A donut-shaped bottom covers the bottom of the enclosure contacting the innermost and outermost of the tubes.

3,529,692
SOUND BARRIER

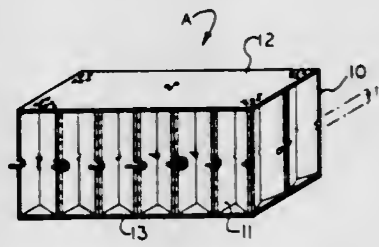
Walter A. Meier, Bridgeton, Mo., assignor to Central Transformer, Inc., Pine Bluff, Ark., a corporation of Delaware
Filed Feb. 26, 1969, Ser. No. 802,608
Int. Cl. E04b *1/86, 1/99*
U.S. Cl. 181—33 **23 Claims**

A sound barrier is disclosed for use with apparatus that generates undesirable sound. The barrier includes a main frame of spaced members and an auxiliary frame formed by a grid of support members which are secured to the main frame. A plurality of relatively thin panels of lead are mounted in edge-to-edge relationship by the support members, the support members holding marginal portions of the lead panels so that they are mounted within the auxiliary frame by their edges.



3,529,693
ACOUSTICAL SANDWICH PANEL HAVING HONEYCOMB CORE WITH CRUSHED INTERMEDIATE ZONE AND METHOD OF MAKING SAME

James R. Woodward, El Cajon, Calif., Billy G. Cook, Booneville, Ark., and Wallie P. Gray, Chula Vista, and Edwin C. Kamps, San Diego, Calif., assignors to Rohr Corporation, Chula Vista, Calif., a corporation of Delaware
Filed Nov. 3, 1969, Ser. No. 873,203
Int. Cl. B29d *27/00;* **B32b** *3/12;* **E04b** *1/86*
U.S. Cl. 181—33 **9 Claims**

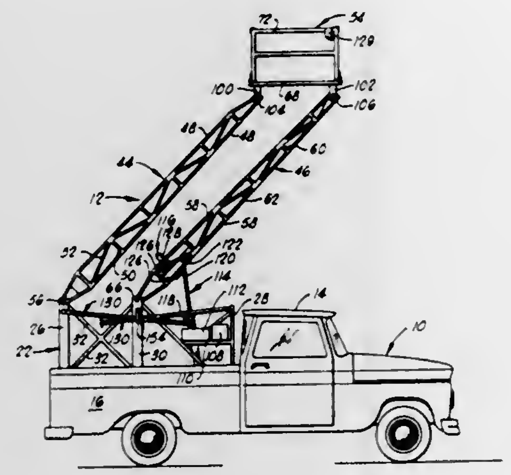


Honeycomb core for use in making honeycomb sandwich panels has a selected zone of its cell wall structure intermediately of the ends thereof collapsed or crushed to form a sound obstructive barrier within the core, the localized crushing being accomplished either by weakening the cell walls of the core within the zone to be crushed, or by supporting the cell walls endwise beyond said zone, and then subjecting the core to a limited, endwise crushing force. By filling the portions of the cells beyond said zone within a solid substance the folds of the cell walls formed by the crushing can be flattened.

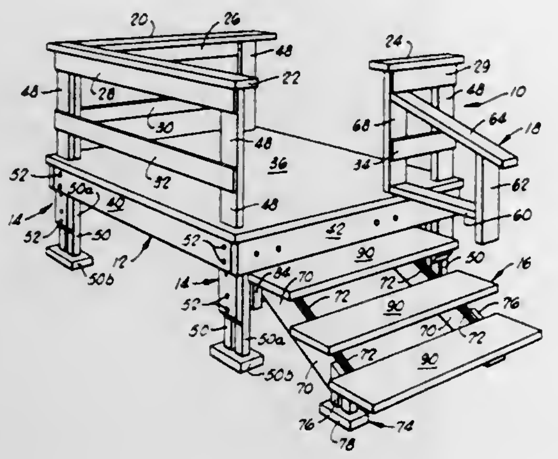
3,529,694
PORTABLE COLLAPSIBLE SCAFFOLD

George L. Atchey, 3715 Bella Vista, Midwest City, Okla. 73112
Continuation-in-part of application Ser. No. 678,734, Oct. 27, 1967. This application Mar. 10, 1969, Ser. No. 805,773
Int. Cl. A01g *19/04;* **E04g** *1/00;* **E06c** *5/06*
U.S. Cl. 182—2 **17 Claims**

A scaffold apparatus mountable in the bed of a truck and expandible to an elevated status, or similarly expandible when demounted and rested on the ground. The structure includes a base structure and a pair of parallel boom elements, each pivotally secured at one end to the base structure and at their opposite ends to a work platform. The work platform includes a floor, side fences pivotally secured on opposite ends of the floor, and a plurality of gate members. Each gate member is pivotally secured to one side fence in such a manner that it can be pivoted to a position adjacent such fence. Each side fence can then be pivoted with the adjacent gate members to a position parallel to the floor of the work platform. A piston and cylinder structure is interconnected between the base structure and booms for elevating the booms. Transverse members on the base structure slidingly and rotatingly receive portions of a plurality of outrigger jacks. The jacks can be rotated to an out-of-the-way position for storage, or to a ground contacting position wherein they extend to the outside of a truck carrying the scaffold apparatus. The jacks can then be used for off-loading the scaffold from the truck.

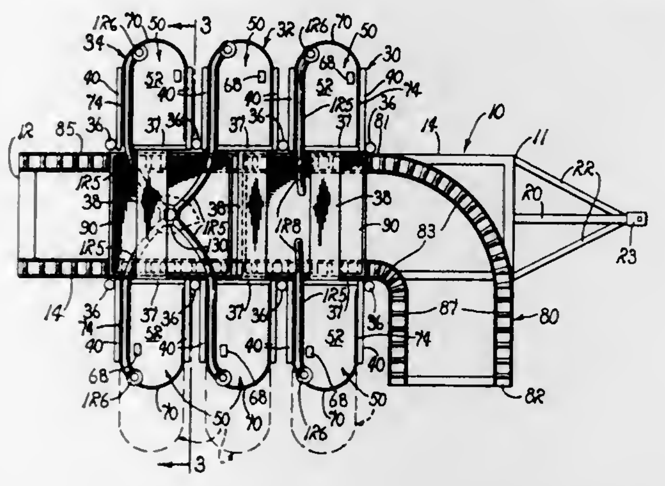


3,529,695
PORTABLE, ADJUSTABLE PORCH
Max L. Rowley, 10842 SE. 29th St.,
Oklahoma City, Okla. 73129
Filed July 2, 1968, Ser. No. 742,053
Int. Cl. E04g *1/30*
U.S. Cl. 182—115 **17 Claims**



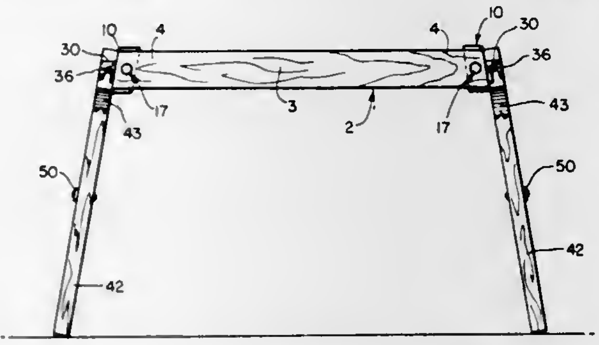
A porch which can be dismantled to provide a plurality of compact sections for portability, and which can be quickly adjusted in height and accommodated to varying abnormalities in the terrain upon which it rests. The porch includes a plurality of adjustable leg assemblies which support a deck frame, which in turn supports a deck or flooring in a horizontal position. A plurality of step stringers which are adjustable in their distance of extension from the deck frame are secured to the deck frame by means of vice grip stringer support blocks which facilitate the quick detachment of the stringers from the deck frame, and permit the stringer effective length to be quickly varied as desired. The construction of the step stringers is such that a plurality of step treads can be quickly mounted on the stringers in substantially any position desired. Hand railings are provided above the floor or decking, and a hand rail is also extended over one side of the step stringers and the step treads supported by the stringers.

3,529,696
ORCHARD SCAFFOLD
Edward R. Jacobsen, P.O. Box 447,
Tehachapi, Calif. 93561
Filed Oct. 14, 1968, Ser. No. 767,131
Int. Cl. E04g *1/20*
U.S. Cl. 182—129 **8 Claims**



An orchard scaffold providing a mobile frame adapted for earth traversing movement in a predetermined forward direction of travel between adjacent rows of trees in an orchard, said scaffold having a plurality of elevationally stepped picking and pruning stations individually disposable adjacent to progressively upwardly spaced portions of the trees during said movement of the frame between the rows and a plurality of worker support platforms individually mounted on the frame at said picking and pruning stations for selective reciprocal movement relative to the frame laterally of said direction of frame travel inwardly and outwardly of the trees to reach the innermost portions thereof and to avoid striking obstructive portions of the trees so as to minimize fruit droppage and limb breakage.

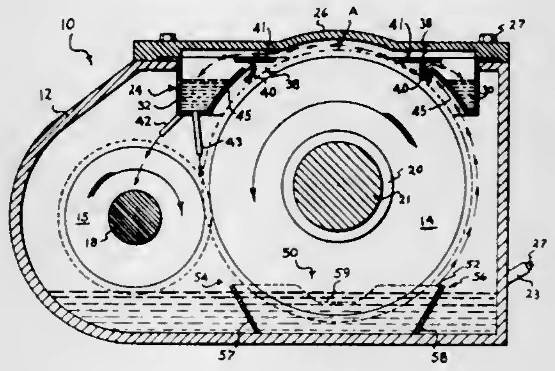
3,529,697
COLLAPSIBLE SAW HORSE
Ernest F. Kossian, 5442 N. Normandy 60656, and Frank White, 620 Surf St. 60657, both of Chicago, Ill.
Filed May 26, 1969, Ser. No. 827,593
Int. Cl. E04g *1/32*
U.S. Cl. 182—186 **10 Claims**



A saw horse having pairs of upwardly converging foldable legs at each end, a beam extending therebetween, a bracket plate fitted into a kerf at each end of the beam

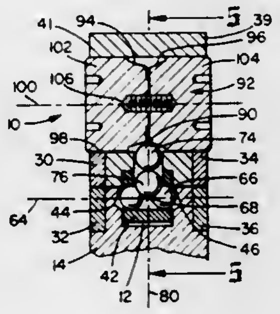
and having upper and lower reaction flanges, the upper flange engaging the top of one furcation and the other flange engaging the underside of the other furcation, the bracket having an extension with a downwardly extending tang presenting an outwardly and downwardly sloping wedge surface converging upwardly with an adjacent end face of the beam for wedging therebetween part of the upper portions of the legs and a portion of a bolt which extends through and draws the upper portions of the legs into tight clamping relation with the extension to develop a tight assembly.

3,529,698
SELF-OPERATING LUBRICATION SYSTEM FOR GEAR DRIVE UNITS
James A. Nelson, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed May 5, 1967, Ser. No. 636,363
Int. Cl. B61f *17/02;* **F16n** *7/26*
U.S. Cl. 184—6 **6 Claims**



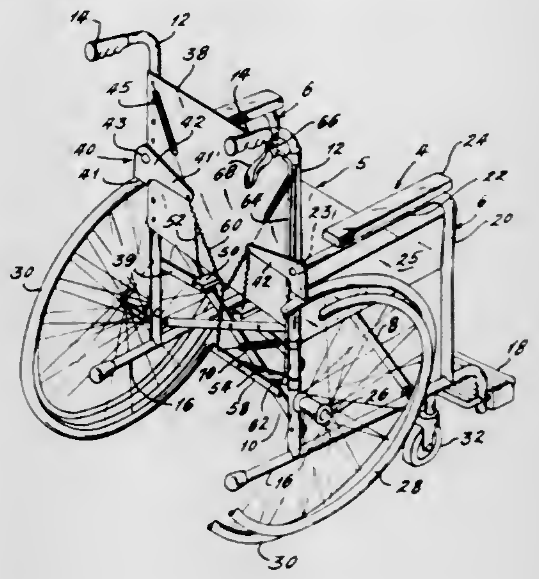
A lubrication system for a gear drive unit wherein lubricant is delivered by gravity from a storage reservoir to selected locations to be lubricated and wherein the reservoir is supplied with lubricant by splash action of a main gear rotating through a channel-like baffle means located in the bottom of the housing of the gear unit and provided with a passage transversely therethrough to deposit lubricant on the inside rim surface of the main gear. The system also utilizes lubricant directing scoops to direct the splashed lubricant into the reservoir for both directions of rotation of the main gear.

3,529,699
MEANS FOR LOCKING A SLIDER IN A CHANNEL
Henry Smith, 23394 Schoolcraft St.,
Canoga Park, Calif. 91304
Filed Aug. 26, 1968, Ser. No. 755,327
Int. Cl. B65h *59/10;* **G01b** *3/20*
U.S. Cl. 188—67 **22 Claims**



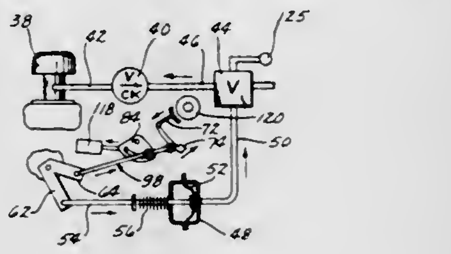
A means for locking a slider in position in a channel, particularly adapted to lock the slider of a universal variable gauge block in position in its channel. A plurality of gripping balls are wedged into a groove in the side of the channel, the balls being forced by a unique linkage from a finger-actuated push rod.

3,529,700
BRAKE ASSEMBLY FOR WHEELCHAIRS
Harold E. Marshall, 2600 Spies Drive,
Arnold, Mo. 63010
Filed Oct. 28, 1968, Ser. No. 770,975
Int. Cl. B60t *1/04, 13/04;* **F16d** *65/30*
U.S. Cl. 188—109 **13 Claims**



A wheelchair brake assembly including spring loaded brake elements mounted on the main frame of a wheelchair and biased toward wheel engagement. The elements are disengaged from the wheels in response to a seat controlled linkage or manually operable means.

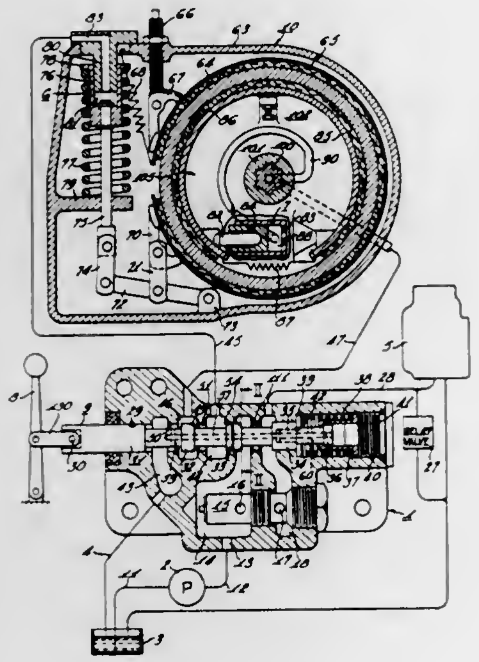
3,529,701
SPRING, VACUUM AND MANUAL BRAKE CONTROL FOR BACKHOE
Kenneth W. Gethmann and Russell J. Dye, Gladbrook, Iowa, assignors to Gethmann Construction Company, Inc., Gladbrook, Iowa, a corporation of Ohio
Filed July 15, 1968, Ser. No. 744,797
Int. Cl. F16d *65/24*
U.S. Cl. 188—170 **4 Claims**



A clutch and brake control means for a backhoe adapted to permit the operator to disengage the clutch while simultaneously applying the backhoe brakes. The backhoe intake manifold is connected to a vacuum operated control means by means of a vacuum line in which is interposed a valve means. The vacuum operated control means includes a vacuum chamber having a diaphragm movably mounted therein which is connected to a rod extending therefrom. The rod has a spring means connected thereto which resists the movement of the rod in one direction when the valve is operated to apply a vacuum on the diaphragm. The rod is connected to a linkage which is connected to the clutch-brake pedal so that when a vacuum is applied to the diaphragm, the clutch is engaged while the brake is disengaged. When the vacuum is removed from the diaphragm, the spring means on the rod causes the rod to move the linkage so that the pedal is depressed thereby disengaging the clutch and applying the brakes on the backhoe.

3,529,702
WINCH CLUTCH AND BRAKE WITH MODULATING SELECTOR VALVE

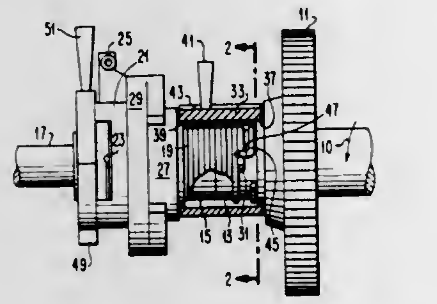
Richard W. Eckstein, Jr., New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Apr. 29, 1968, Ser. No. 725,054
Int. Cl. F16d *67/04*
U.S. Cl. 192—17 **6 Claims**



A hydraulic system including a control valve for actuating a tractor winch brake and clutch. The system includes a source of pressurized fluid capable of providing a variable pressure and a valve to control engagement of a clutch and disengagement of a normally engaged brake, or provide a variable pressure for disengagement of the brake which in turn controls cable tension on the winch drum.

3,529,703
CLOSED LOOP SPRING CLUTCH

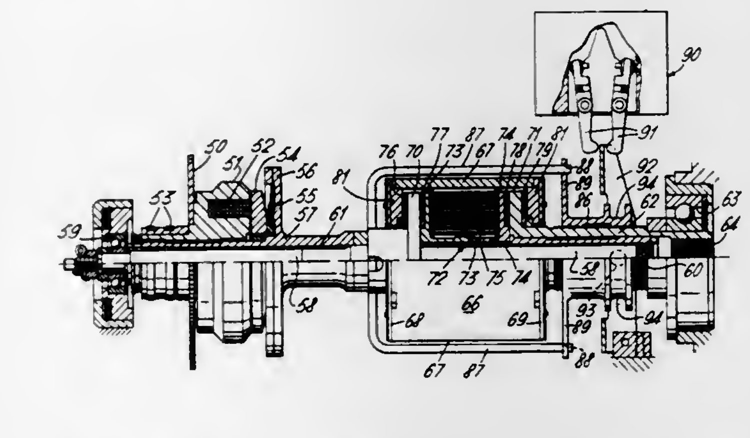
Elmer Leroy Bob Kroeker, Austin, Tex., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 14, 1968, Ser. No. 737,133
Int. Cl. F16d *41/34*
U.S. Cl. 192—26 **7 Claims**



A closed loop spring clutch mechanism having a first spring winding arranged for intermittent drive of a rotary load from a continuously rotating drive shaft and having a second spring winding located on the drive shaft which is operative on the free end of the first spring winding when the first spring winding slips with respect to the rotating shaft and load. The second spring winding forces the first spring winding to wrap down tighter thereby stabilizing the wrap down or engagement time of the clutch.

3,529,704
LOST-MOTION COUPLING DEVICES

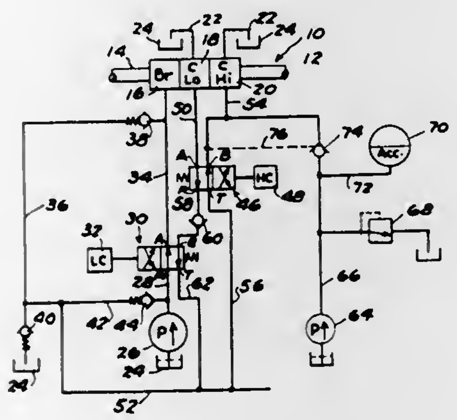
Ronald Francis Winstone, 11 Priory Terrace, Gloucestershire; Derek Wilkinson, 88 Station Road, Bishops Cleeve; William Theodore Scarr, 34 Greenway, Woodmancote; Colin Bartley Dymock, Eastfield, Noverton Lane, Prestbury; and Roger Ivan Bishop, Bryher, 28 Meadoway, Bishops Cleeve, all of Cheltenham, England
Filed Oct. 9, 1968, Ser. No. 766,150
Claims priority, application Great Britain, Oct. 10, 1967, 46,336/67
Int. Cl. F16d *7/00;* **B64c** *17/06*
U.S. Cl. 192—55 **20 Claims**



A lost-motion coupling device has input and output shafts intercoupled through coaxial spool and barrel members that are urged to rotate oppositely by a preloaded spiral-spring. Catch-plates engaging between each shaft and member arrest rotation of each member relative to both shafts so that relative shaft-rotation occurs only when input torque overcomes the spring-preloading. Extended relative shaft-rotation actuates a switch to break energization of an electromagnetic clutch that is coupled in series with the lost-motion device in an aircraft flight-control system.

3,529,705
HYDRAULIC CLUTCH ACTUATING MECHANISM

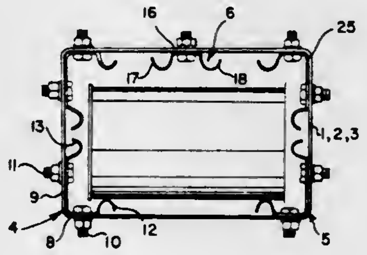
Sylvester R. Cudnohufsky, 1290 Lake Angelus Shore Drive, Pontiac, Mich. 48055
Filed Mar. 21, 1969, Ser. No. 809,145
Int. Cl. F16d *25/10*
U.S. Cl. 192—87.18 **17 Claims**



A lathe having a work-supporting spindle adapted to be operated at high speed by coupling the spindle to the motor driven shaft by a first hydraulic clutch and at low speed by coupling the spindle to the motor driven shaft by a second hydraulic clutch. The clutches are selectively connected to a low pressure supply source by a shiftable valve mechanism. An accumulator is charged by a high pressure source to a value substantially higher than the supply pressure. A valve is arranged to discharge the accumulator to the high speed clutch whenever the shiftable valve mechanism is actuated to operate the high speed clutch.

3,529,706
FRAMES FOR ROLLER CHUTES

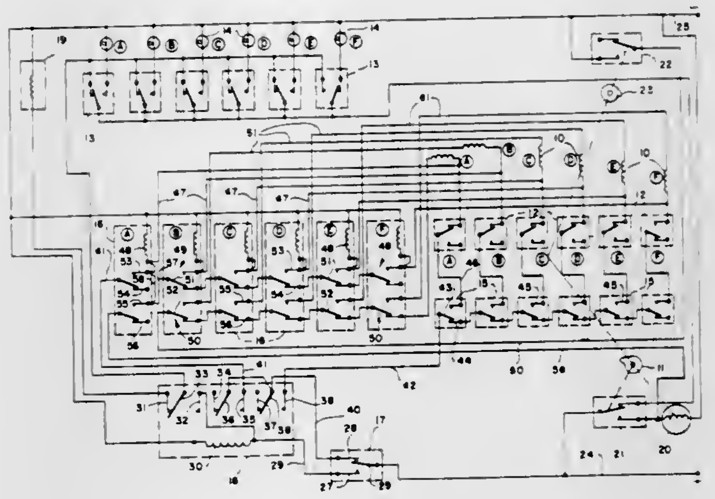
Michel Robert Bru, Chatenay-Malabry, France, assignor to Ets. J. J. Carnaud & Forges de Basse-Indre, Paris, France, a French company
Filed July 19, 1968, Ser. No. 746,204
Claims priority, application France, Sept. 8, 1967, 120,437
Int. Cl. B65g *11/00*
U.S. Cl. 193—3 **4 Claims**



A roller chute for rolling elements having frames spaced intermittently along it and rolling and guiding rails of a certain shape made of stainless-steel and attached to the frames.

3,529,707
VENDING CYCLE CONTROL CIRCUIT

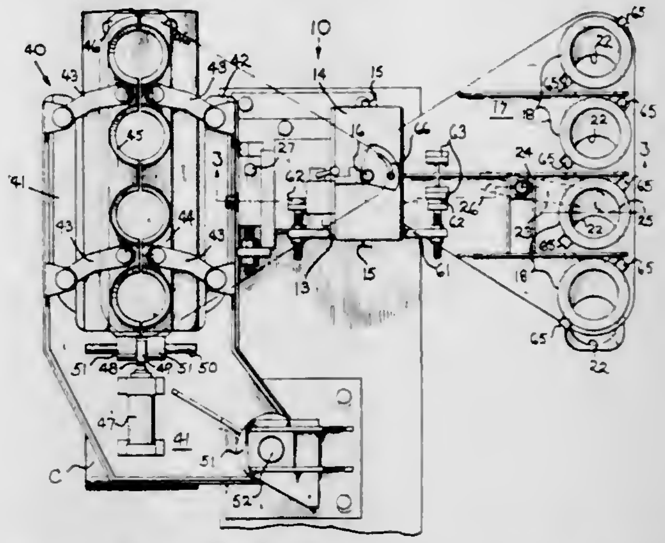
Raymond D. Bowman, Ringgold, Ga., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 25, 1968, Ser. No. 778,474
Int. Cl. G07f *11/00*
U.S. Cl. 194—10 **9 Claims**



A control circuit for the vend cycle of a multi-selection, coin operated vending machine is provided wherein dispensing from a plurality of columns is controlled by a separate solenoid for each column and a vend motor common to all columns. A selector relay is provided for each selection, with one of the selector relays being arranged to establish the power circuit to the vend motor.

3,529,708
ARTICLE HANDLING METHOD AND APPARATUS

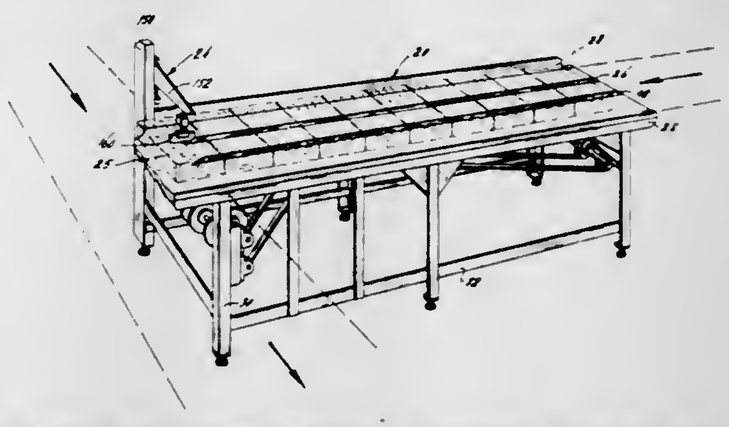
Ambrose B. Dybala, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 5, 1967, Ser. No. 688,233
Int. Cl. B65g *47/00*
U.S. Cl. 198—20 **11 Claims**



Apparatus is provided for removing articles from a work station and transferring them to a position overlying a moving conveyor. Means are provided for placing the articles onto the conveyor in an upright position.

3,529,709
METHOD OF REGISTER FEEDING

Lamar T. Atwood, Cumberland Center, Maine, assignor to Southworth Machine Company, Portland, Maine, a corporation of Maine
Filed Mar. 20, 1969, Ser. No. 808,764
Int. Cl. B65g *47/00*
U.S. Cl. 198—26 **7 Claims**

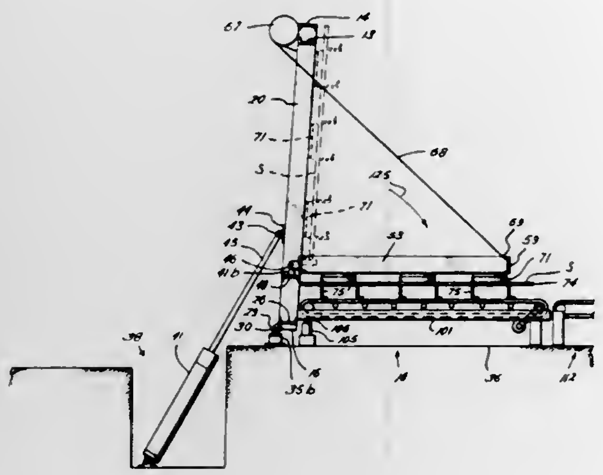


Method of register feeding a plurality of objects, such as longitudinally aligned reams of paper, including longitudinally surging the reams within a collecting area having a receiving end and a feeding end, by engaging the objects from beneath and between said ends and pushing vertically downwardly on a leading ream, at the feeding end, so as to force said reams into stopped abutment, then releasing said leading ream, as it is desired to surge the lead ream through the feeding end.

3,529,710
APPARATUS FOR OVERTURNING AND/OR TRANSVERSELY CONVEYING STRUCTURAL SHAPES

Harry J. Fiegel, Jr., Galveston, Tex., assignor to Kelso Marine, Inc., a corporation of Texas
Filed Sept. 26, 1968, Ser. No. 762,744
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **7 Claims**

A panel is moved by a conveyor onto a plurality of panel holder arms by a plurality of rollers adapted to rotate longitudinally relative to the panel. If it is desired to move the panel laterally, a plurality of sets of the linked rollers is simultaneously moved transversely and laterally relative to the panel to thereby move the panel off the panel holder arms. If it is desired to overturn or flip the panel, a plurality of panel holders is actuated to retain the panel in position. Thereafter, the panel holders are rotated to a vertical position and lowered in an inverted horizontal position for overturning of the panel.



3,529,711

DEVICE FOR TRANSFERRING FLAT ARTICLES OF GENERAL RECTANGULAR SHAPE FROM ONE LINEAL CONVEYOR TO A SECOND ONE

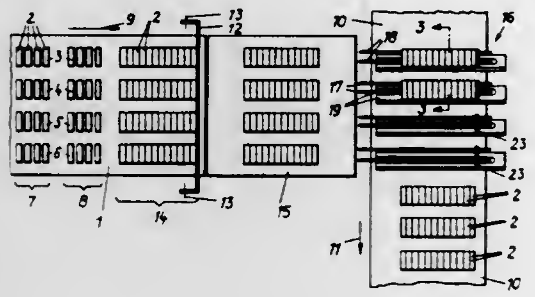
Kurt Moeller, Renens, Switzerland, assignor to "Sapal" Societe Anonyme des Plieuses Automatiques, Ecublens, Switzerland, a Swiss company

Filed Nov. 1, 1968, Ser. No. 772,772

Claims priority, application Switzerland, Nov. 10, 1967, 15,702/67

Int. Cl. B65b *35/30;* **B65g** *47/26*

U.S. Cl. 198—34 **4 Claims**



This invention refers to a device for transferring flat articles of general rectangular shape, from a first linear conveyor on to a second one, where, on the first, these articles are spaced apart and placed parallel to each other in the form of several longitudinal rows with their small sides parallel to the direction of movement, whereas on the second conveyor, these articles have their long sides parallel to the direction of movement of said second conveyor.

3,529,712

BALE DRIVE WHEEL

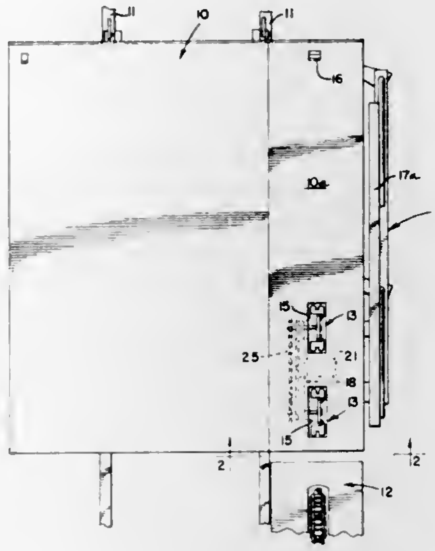
Robert M. Fachini and Monroe C. Barrett, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Nov. 5, 1968, Ser. No. 773,552

Int. Cl. B65g *43/00*

U.S. Cl. 198—40 **9 Claims**

A bale conveying apparatus comprising a wheel rotatable about a fixed axis and a plurality of bale-engaging elements pivotally mounted on said wheel. The elements are yieldable axially relative to said wheel from a radial, bale-engaging position to an axial, retracted position so that bales accommodated on said conveyor may be moved therefrom in a direction transverse the plane of rotation of said wheel.



3,529,713

METHOD AND DEVICE FOR CONVEYING ROD-SHAPED OBJECTS, AND ESPECIALLY CIGARETTES, BETWEEN TWO LEVELS

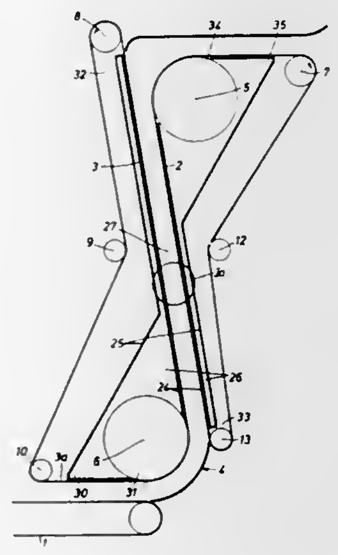
Raymond Poupin, Fleury-les-Aubrais, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment

Filed Oct. 3, 1967, Ser. No. 672,642

Claims priority, application France, Oct. 5, 1966, 78,792

Int. Cl. B65g *15/14*

U.S. Cl. 198—165 **19 Claims**



Device for conveying between two levels objects and especially rod-shaped objects such as cigarettes, of the type comprising at least two endless conveyors such as belts between which a mass of the said objects is introduced, said belts forming therebetween at least part of a passageway of which at least one well is subjected to pressure means provided by a fluid and is at least partially permeable to said fluid, thereby exerting the action of a fluid in the direction of the said conveyor belt and essentially on the objects of the outer layers.

3,529,714

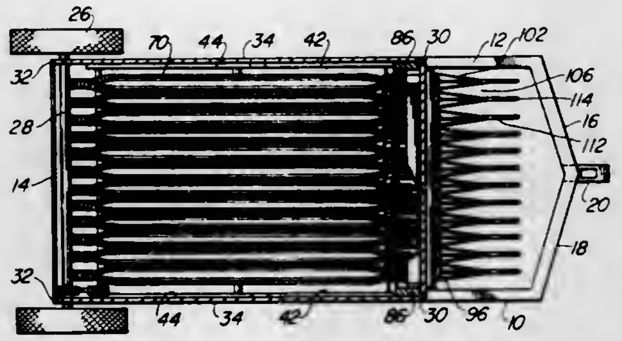
CONVEYOR BELT AND MACHINE EMPLOYING SAME

Joseph H. Mayhew, Excelsior, and John O. Converse, Minnneapolis, Minn., assignors to Hart-Carter Company, Chicago, Ill., a corporation of Delaware

Filed Oct. 6, 1967, Ser. No. 673,316

Int. Cl. A01d *45/00;* **B65g** *15/14*

U.S. Cl. 198—165 **16 Claims**



The disclosure describes a folding conveyor belt adapted for use with a flanged pulley, the belt having outwardly extending resilient means such as an offset siped flange, spaced teeth or digital members which are progressively folded, closed or interdigitated as the belt passes between the flanges onto the pulley and are progressively unfolded, opened or extended as the belt passes from the pulley. By providing remotely spaced pairs of pulleys carrying parallel sections of the folding belts in the same direction with their outwardly extending resilient means opposed in coplanar contiguous or spaced relationship, the progressively unfolding resilient means are adapted to engage an object therebetween and the progressively folding resilient means are adapted to disengage the object. In one embodiment a plurality of pairs of the folding conveyor belts is used in an above-ground harvesting machine further characterized by self-cleaning belts and pulleys, improved form of dragging counter-weighted knives and additional features such as a pivoted guide and selector assembly and improved bayonet mounting for the knife assembly. Other embodiments are disclosed.

3,529,715

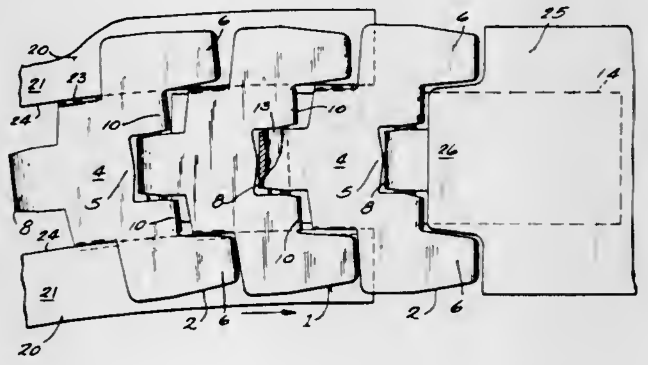
STAMPED SIDE-FLEX CONVEYOR CHAIN

Clair W. Mueller, Wauwatosa, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 2, 1968, Ser. No. 726,186

Int. Cl. B65g *17/06*

U.S. Cl. 198—189 **5 Claims**



Each link of a laterally flexible flat top conveyor chain is formed from a single sheet metal stamping. The stamping includes laterally and longitudinally extending tongues which are, respectively, bent downwardly to form chain guide members and curled downwardly to form spaced interfitting knuckles for receiving link-connecting pins.

3,529,716

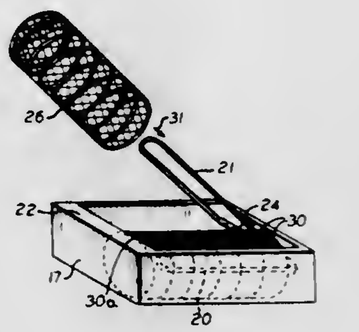
CLIP FOR PACKAGING OF, FOR EXAMPLE, HAIR CURLERS

Paula A. O'Connell, 206 E. 25th St., and Frances L. Silenzi, 137 E. 26th St., both of New York, N.Y. 10010

Continuation of application Ser. No. 656,424, July 27, 1967. This application Oct. 12, 1967, Ser. No. 715,453

Int. Cl. B65d *71/00, 85/08, 85/62*

U.S. Cl. 206—65 **8 Claims**



A package of hair curlers. The curlers are axially compressible, for example, coil springs having sides covered with a netting. In the package the curlers are held in axially compressed condition. The invention also provides a clip for holding the curlers.

3,529,717

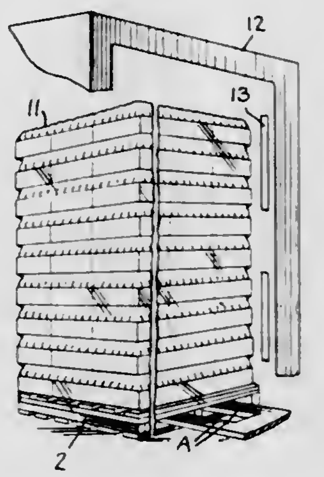
PALLETIZED LOAD OF FILM-ENCLOSED ARTICLES

Douglas A. McDougal, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware

Continuation of application Ser. No. 608,625, Jan. 11, 1967. This application June 12, 1969, Ser. No. 834,234

Int. Cl. B65d *57/00, 71/00;* **B65g** *1/14*

U.S. Cl. 206—65 **2 Claims**



A palletized package comprising a pallet and stacked load enclosed in heat shrinkable film shrunk tightly about the load and pallet to prevent shifting movement.

3,529,718

PACKAGE FOR BAR LIKE ARTICLES

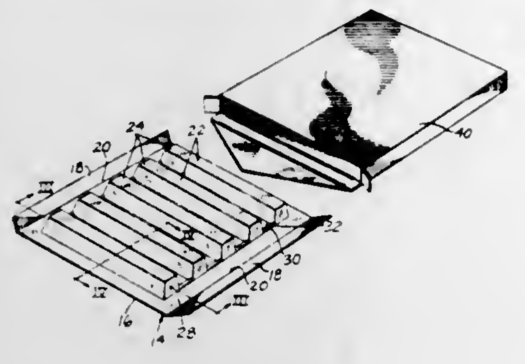
Leonard A. Zaremski, Pittsburgh, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania

Filed Oct. 23, 1968, Ser. No. 770,022

Int. Cl. B65d *1/36*

U.S. Cl. 206—78 **5 Claims**

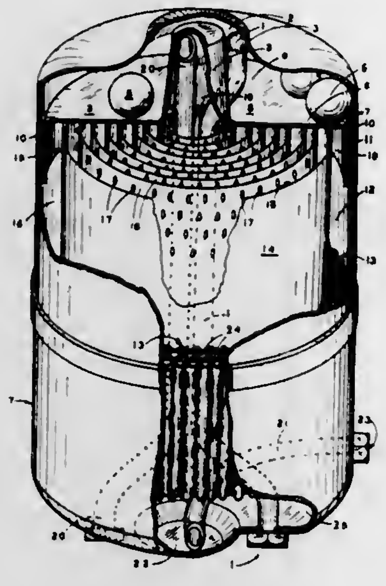
The invention discloses a package of the blister type in which bar like articles can be packaged and wherein the package can be opened so as to remove one article at a time and wherein, furthermore, filler members are provided which can be placed in the blister of the package



to reduce the dimensions thereof to permit packaging articles of different sizes in one and the same basic package.

3,529,719
OIL RECTIFIER APPARATUS AND PROCESS

Paul J. Graybill, 61 Sunset Hill Drive,
Pine Orchard, Conn. 06405
Filed June 18, 1969, Ser. No. 834,340
Int. Cl. B01d *17/00*
U.S. Cl. 210—73 16 Claims

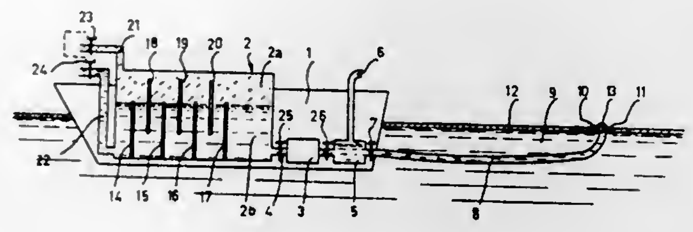


A rectifier with process for treating contaminated liquid emulsions, including lubricating oil, in use in motors, employing several physical functiosn and chemical processes in one environment, using various metals and alloys as fixtures to neutralize acid and molecular water, catalyze gums, resins, sulphur, and various carbonaceous contaminants, electrostatically ionize and attract adsorbent colloids, separate solid contaminants and globular water by sedimentation, centrifugal and inertial forces, in laminar, parabolic and jet flow streams, to agglomerate submicronic contaminants by the Van der Waals effect, the Brownian movement and gravitation, thus separating the dispersed phase from the continuous phase thereof.

3,529,720
INSTALLATION FOR RECOVERY OF A LIQUID FLOATING ON A WATER SURFACE

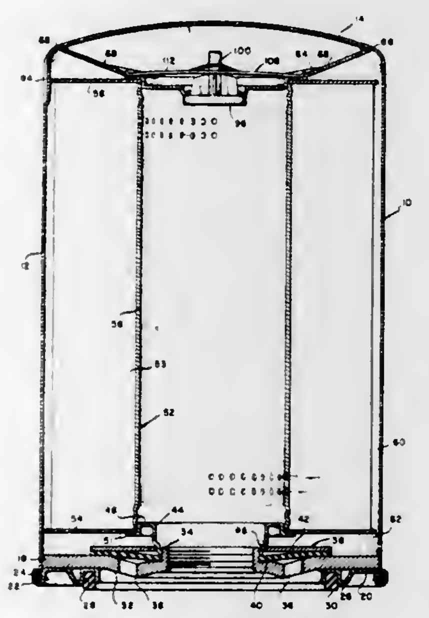
Daniel Chablaix, 17 Route de Chavanne,
1007 Lausanne, Switzerland
Filed Apr. 8, 1968, Ser. No. 719,368
Claims priority, application Switzerland, Apr. 7, 1967, 4,972/67; Nov. 2, 1967, 15,390/67
Int. Cl. B01d *21/10*
U.S. Cl. 210—123 8 Claims

This disclosure concerns an installation for the recovery of a liquid floating on the surface of a body of water, for example petroleum, characterized by the fact that it comprises a chamber for separating the liquid, and pumping means having a conduit connected thereto, the other end of the conduit being immersed and supported near the surface of the water. The chamber is divided into several compartments by transverse walls extending along a part of the height of the chamber and has a liquid entry in its lower part connected to the pump, an outlet for the water located at the bottom of the chamber, and an outlet conduit for the floating liquid leaving from the top of the chamber. The installation can be mounted in a boat, and a plurality of immersed conduits can be connected together by a belt of oil-impervious material positioned around an oil slick (for example), the surface area of which can be reduced to facilitate intake by the conduits, by reducing the perimeter of the belt.



3,529,721
FILTER UNIT WITH BY-PASS VALVE MEANS

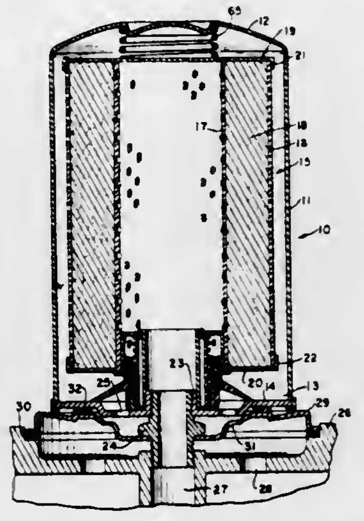
Janos J. Papp, Toronto, Ontario, Canada, assignor to Purolator, Inc., Rahway, N.J., a corporation of Delaware
Filed Aug. 5, 1968, Ser. No. 750,178
Int. Cl. B01d *27/10, 35/14*
U.S. Cl. 210—130 12 Claims



A filter unit comprising a housing in which is disposed an annular filter cartridge with the housing having oil inlet and oil outlet means adjacent one end thereof, provided with a by-pass or a relief valve means therein, so that the filter cartridge can be by-passed when the cartridge becomes unduly clogged due to the removal of contaminants, and the by-pass valve means comprises a resilient, elongated member and a single, movable part consisting of a piston valve which parts are secured together and are also secured to a retainer member which properly maintains the filter cartridge in its position within the housing.

3,529,722
COMBINED ANTI-DRAIN BACK VALVE AND BY-PASS VALVE

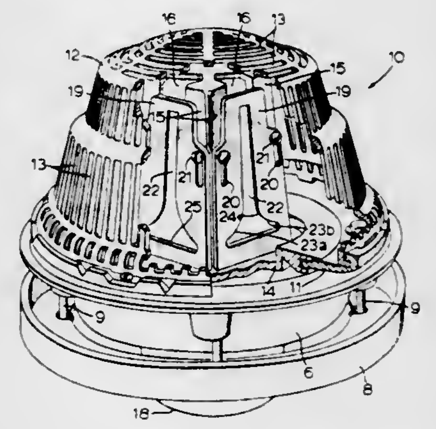
Kingsley E. Humbert, Jr., Gastonia, N.C., assignor to Wix Corporation, Gastonia, N.C., a corporation of North Carolina
Filed May 22, 1969, Ser. No. 826,987
Int. Cl. B01d *35/14*
U.S. Cl. 210—130 7 Claims



A spin-on throw-away filter cartridge having a combined anti-drain back and by-pass valve therein, the valve being openable by a low pressure to allow fluid to enter the cartridge and be filtered by the filter media and further openable by higher pressure to allow fluid to bypass the filter media and be returned directly to point of use.

3,529,723
ROOF DRAIN

Charles L. Hagedorn, % Wade International Limited, 73 Railside Road, Don Mills, Ontario, Canada
Filed Nov. 7, 1968, Ser. No. 774,083
Int. Cl. E03f *5/14*
U.S. Cl. 210—163 3 Claims

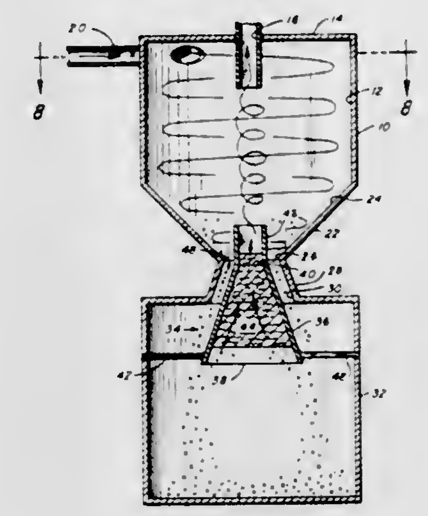


A roof drain provided with a weir plate having a flow metering aperture, the weir plate being vertically adjustable to adjust the size of the aperture.

3,529,724
HYDROCYCLONE FILTER

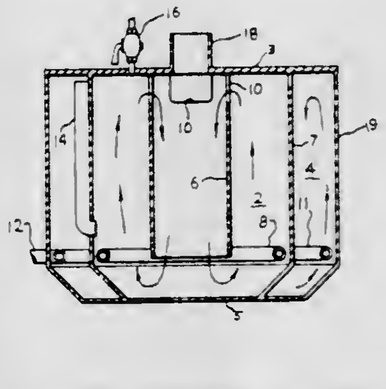
L. Andrew Maciula and Robert E. Reed, Stillwater, Okla., assignors to Oklahoma State University, Stillwater, Okla., a corporation of Oklahoma
Filed Sept. 10, 1969, Ser. No. 856,771
Int. Cl. B01d *50/00;* **B04c** *9/00*
U.S. Cl. 210—197 13 Claims

This invention relates to a Hydroclone filter for the improved effectiveness of Hydroclone separating devices. More particularly, the invention relates to a Hydroclone for separation of solid contaminate particles from fluid medium including a cylindrical portion having an axial clean fluid outlet opening and a tangential fluid inlet opening, a conical portion coaxial with the cylindrical portion tapering to a reduced diameter vortical opening, an enlarged diameter collection chamber communicating with the conical portion through the vortical opening, a barrier filter means, and means of flowing fluid from the interior of the collection chamber through the barrier filter and returning the fluid from the barrier filter to the interior of the conical portion.



3,529,725
APPARATUS FOR ACTIVATED SLUDGE TREATMENT OF OXYGEN DEMANDING WASTES

Rolland L. Fifer, 6211 Glen Hill Road,
Louisville, Ky. 40222
Filed June 30, 1969, Ser. No. 837,402
Int. Cl. C02c *1/12*
U.S. Cl. 210—220 10 Claims

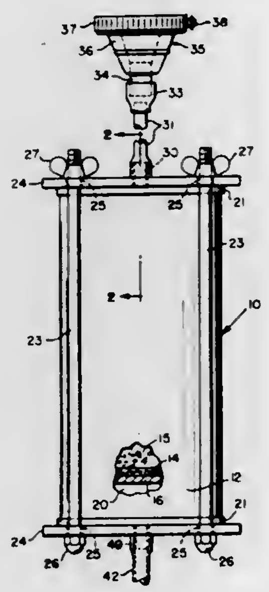


The activated sludge treatment of oxygen demanding wastes involves the use of a tank in which the wastes are mixed with previously activated sludge and subjected to the action of bacteria, oxygen being necessary for bacterial action. Operation requires that activated sludge treatment aeration tanks be higher than they are wide or long. Hence these tanks have not been used on boats, buses and the like. The unit herein overcomes the requirement by chute means dividing the tank into concentric aeration zones.

3,529,726
PORTABLE WATER FILTER UNIT

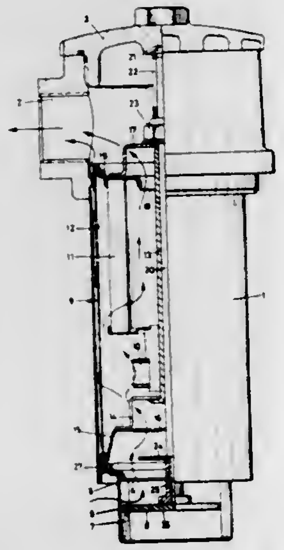
Gordon J. Keenan, 579 Hurstbourne Road,
Rochester, N.Y. 14609
Filed Sept. 15, 1969, Ser. No. 857,937
Int. Cl. B01d *27/02*
U.S. Cl. 210—232 1 Claim

A supply of activated, granular charcoal is secured in the bore of a cylindrical filter cartridge between axially spaced porous filter elements, which are secured transversely across the bore at points equi-spaced inwardly from opposite ends of the cartridge. The cartridge is removably fastened between two, spaced, rectangular end plates by four tie bolts, which extend along the outside of the cartridge between the plates. In its center each plate has a nipple communicating with one end of the bore in the cartridge. Flexible tubing connects one nipple to a conventional rubber coupling, which is releasably fastenable to a water faucet to supply water to one end of the cartridge bore, and the other nipple is adapted to be connected by tubing to a refrigerator bottle, or the like, for storing filtered water. The cartridge is symmetrically constructed so that water may be passed therethrough in either direction.



3,529,727
SUCTION FILTER

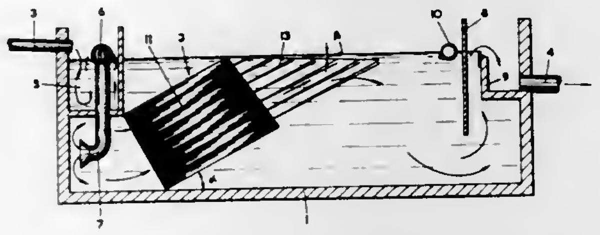
Hermann Bernhard, Ostringen, Germany, assignor to "Argo" Gesellschaft mit beschrankter Haftung fur Feinmechanik, Menzingen, Baden, Germany, a corporation of Germany
Filed Sept. 9, 1968, Ser. No. 758,370
Claims priority, application Germany, Sept. 9, 1967, 1,611,040
Int. Cl. B01d *35/16*
U.S. Cl. 210—234 **7 Claims**



An elongated housing for a removable liquid filter cartridge is closed at one end by a removable lid which, in turn, is connected with a valve which automatically closes the intake to the filter when the lid is removed to prevent dirt entering the clean oil side of the filter when the cartridge is removed.

3,529,728
OIL SEPARATING DEVICE

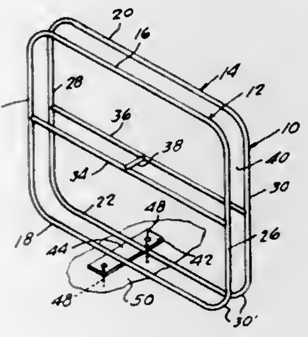
Cornelis Gerardus Middelbeek, Nootdorp, and Willem Johannes de Jonge, The Hague, Netherlands, assignors to Frederic R. Harris (Holland) N.V., The Hague, Netherlands
Filed Feb. 3, 1969, Ser. No. 796,102
Claims priority, application Netherlands, Feb. 5, 1968, 6801614
Int. Cl. B01d *21/10*
U.S. Cl. 210—522 **7 Claims**



This invention relates to a device which is useful in separating an oil fraction from a mixture of oil and a liquid heavier than the oil comprising a basin divided into three successive stages through which the mixture is passed; the first stage receiving and filtering the mixture to be separated, the second stage containing upwardly inclined multiple flow channels spaced vertically from each other with a plurality of tapered fingers at the upper ends thereof, which channels and fingers act to separate the heavy from the light fractions; and the third stage containing a skimmer with which the oil fraction is removed and a baffled exit which the heavy liquid fraction passes.

3,529,729
STAND FOR BICYCLES AND THE LIKE

Robert G. Gappa, 2628 St. Anthony, Colorado Springs, Colo. 80904
Filed July 19, 1968, Ser. No. 746,068
Int. Cl. B62h *3/04*
U.S. Cl. 211—20 **2 Claims**

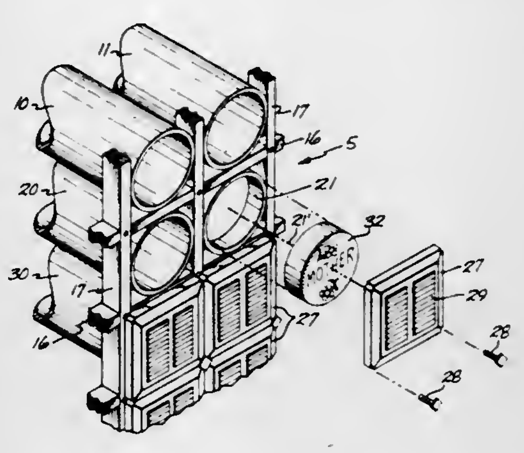


Apparatus for maintaining bicycles in an upright position including tubular members forming a substantially rectangular frame and spaced apart and having openings in the opposite sides thereof for receiving the wheels of bicycles between the spaced apart tubular members.

3,529,730
REPOSITORY FOR CREMATED REMAINS

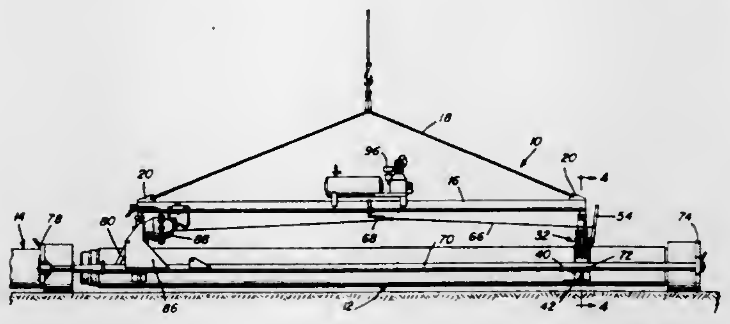
Jence F. Thompson, Danville, Calif. (9821 Davies Road, Lake Stevens, Wash. 98258)
Filed Aug. 5, 1968, Ser. No. 750,198
Int. Cl. A47g *29/00*
U.S. Cl. 211—71 **6 Claims**

An urn and storage construction for interment of cremated remains including a frame structure supporting a plurality of storage tube members in generally parallel side-by-side and top-to-bottom relationship. Each of the storage tubes slidably receive a plurality of individual urn containers, and the ends of the tubes are provided with closure means.



3,529,731
PIPE HANDLING APPARATUS

Charles Penny, 108 Indian Hill Drive, Belleville, Ill. 62223
Filed Sept. 27, 1968, Ser. No. 763,085
Int. Cl. B23p *19/04*
U.S. Cl. 214—1 **11 Claims**

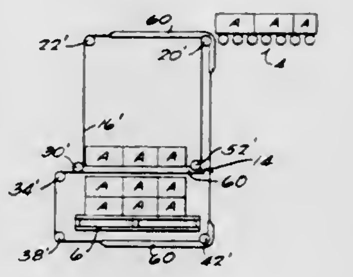


Apparatus for positioning pipe including a spreader bar mounting a pair of longitudinally spaced pipe cradles operative to selectively grasp the pipe upon the release of latch means and an upward movement of the spreader bar, and automatically release the pipe upon an engagement of the pipe on a supporting surface such as a trench bottom or the like. The apparatus also includes a pair of power actuated arms which mount a pulling shoe engageable with the bell end of a previously installed pipe for a drawing of the support pipe thereto.

3,529,732
ARTICLE TRANSFER APPARATUS

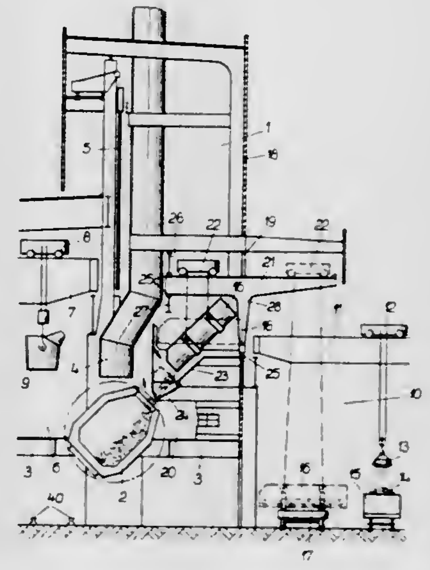
Ronald E. Wayne, Butler, Wis., assignor to "Automatic" Sprinkler Corporation of America, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 24, 1968, Ser. No. 723,774
Int. Cl. B65g *57/24*
U.S. Cl. 214—6 **6 Claims**

A continuous, vertical conveyor mechanism for transferring articles from one elevation to another where one elevation is fixed and the other is variable, comprising independent pairs of endless, flexible chains supporting a number of one-way flexible support aprons for movement in closed paths of travel and movable at times in vertical, parallel planes with one another with the aprons in a horizontal, rigid or load-carrying position between the chains and at other times in coincident planes with the aprons in a non-load carrying, folded position between and in the same plane as the chains, and a vertically movable carriage mechanism disposed in the vertical travel path of the chains for varying the elevational position at which the chains commence or terminate travel in vertical, parallel planes, depending upon the direction of movement of the chains through the carriage, whereby to correspondingly vary the vertical position at which the aprons move into or out of a rigid, load carrying position relative to the chains during movement through the closed travel paths. The articles which are to be handled in the conveyor are loaded onto the aprons as the latter are moved by the chains into a rigid, horizontal position between the chains and, following vertical movement to the desired elevation, are removed from the aprons concurrently as the latter move into a non-load carrying, folded position between the chains.



3,529,733
STEEL MAKING PLANT

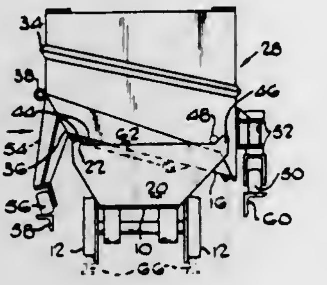
Leopold Walzel, Duisburg, Germany, assignor to Demag Aktiengesellschaft, Duisburg, Germany
Filed Aug. 8, 1968, Ser. No. 751,257
Claims priority, application Germany, Sept. 1, 1967, 1,583,236
Int. Cl. C21c *5/28, 5/44*
U.S. Cl. 214—18 **6 Claims**



A steel making plant includes a furnace hall separated by a wall from a scrap depot. A row of furnaces extends along the wall with the charging sides of the furnaces facing toward the scrap depot. The wall is formed with an opening therethrough substantially coextensive in length with a row of furnaces. A crane is mounted on rails to move longitudinally of this opening and extends into both the furnace hall and the scrap depot. Trolleys are movable along the crane to pick up charging boxes, filled with scrap, from the scrap depot, and to move the boxes through the opening in the wall to discharge the scrap into respective furnaces. The crane may mount two or more trolleys with the scrap charging boxes being movable through openings in the crane.

3,529,734
SIDE DISCHARGE HOPPER

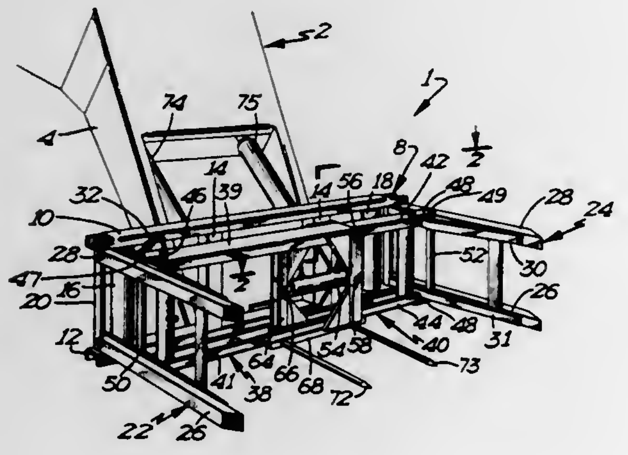
Corrie Frederick Marais, Potchefstroom, Transvaal, Republic of South Africa, assignor to Rotaque (Proprietary) Limited, Potchindustria, Potchefstroom, Transvaal, Republic of South Africa
Filed Oct. 23, 1968, Ser. No. 770,031
Int. Cl. B65g *67/24*
U.S. Cl. 214—62 **7 Claims**



The invention is for a side discharge hopper car having a container composed of a wall forming structure and a bottom and which are connected by hinge means along one side of the container. The bottom is pivotally mounted about an axis parallel spaced from the hinge axis on a support frame which also provides support means for retaining the bottom in a load carrying position and to limit the extent of downward swing of the wall forming structure. On the container devices are provided for engagement by lift means to cause simultaneous tilting of the bottom and lifting of the wall structure for load discharge from one side of the hopper car.

3,529,735
BALE LIFTING APPARATUS

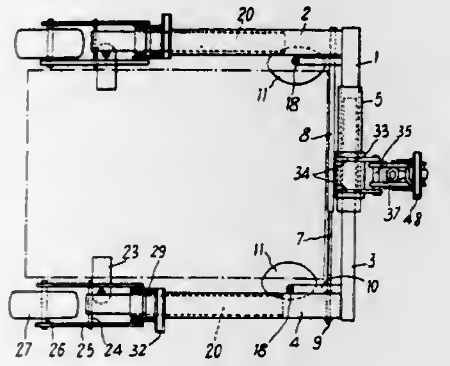
James F. Wehde, Garretson, S. Dak. 57030
Continuation-in-part of application Ser. No. 572,391, Aug. 15, 1966. This application Aug. 26, 1968, Ser. No. 755,071
Int. Cl. B66c *1/58*
U.S. Cl. 214—147 **5 Claims**



Apparatus for lifting and stacking hay bales comprising a main frame and a pair of spaced apart, bale engaging clamps projecting forwardly therefrom and pivotally attached thereto for swinging movement about vertical axes; telescoping frame assemblies pivotally connected to said clamps swing them towards and away from each other. A hydraulic cylinder and piston unit serves to move the telescoping frame assemblies towards and away from each other so as to actuate said bale clamps between open and bale engaging positions. The aforesaid main frame is secured to the lift forks of a hydraulically-powered end loader boom of a vehicle, such as a farm tractor.

3,529,736
DEVICES FOR RAISING LOADS TO PERMIT THE HANDLING THEREOF

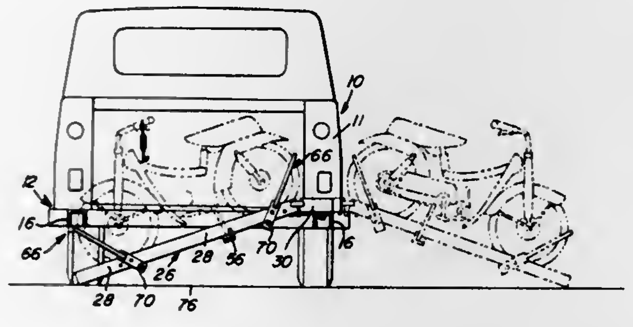
Charles Jean Pierre Lèbre, 16 bis Boulevard Fleury, 91 Viry-Chatillon, France
Filed Dec. 31, 1968, Ser. No. 788,236
Claims priority, application France, Jan. 2, 1968, 134,541; Feb. 28, 1968, 141,618
Int. Cl. B60p *1/00*
U.S. Cl. 214—390 **8 Claims**



A device for raising and handling loads comprises a U-shaped wheel frame for surrounding one portion of the load to be lifted, the side-members of the frame being provided with bevelled members pivoting on vertical pins for being inserted under the load. The frame is extensible laterally and longitudinally and its side members carry adjustable bearing plates to be engaged under the load when said load has been lifted by said bevelled members.

3,529,737
MOTORCYCLE CARRIER FOR VEHICLES

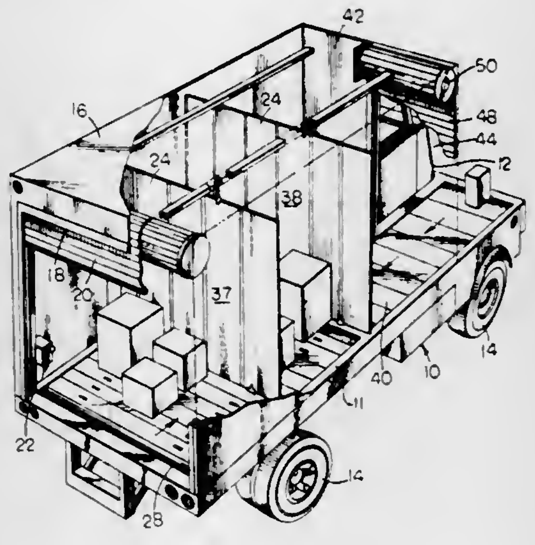
Melwyn Daugherty, 374-A Academy, Bishop, Calif. 93514
Filed June 27, 1967, Ser. No. 649,278
Int. Cl. B60r *9/00*
U.S. Cl. 214—450 **4 Claims**



An elongated ramp structure having one end portion pivotally supported from one end portion of a transversely extending vehicle bumper assembly for swinging movement about an upstanding axis as well as a horizontal axis extending transversely of the ramp and the other end portion of the ramp being adapted for removable support from the other end of the transversely extending bumper assembly, whereby the free swinging end of the ramp may be removed from supporting engagement with the bumper assembly, swung laterally away from the bumper assembly and then downward toward engagement with the ground and a two wheeled vehicle such as a motorcycle may be rolled from the ground upwardly along the ramp before the ramp is returned to a position fully supported from the bumper assembly with the free swinging end of the ramp elevated, and swung toward and removably secured to the corresponding end of the associated bumper assembly.

3,529,738
VEHICLE HAVING IMPROVED UNLOADER MECHANISM

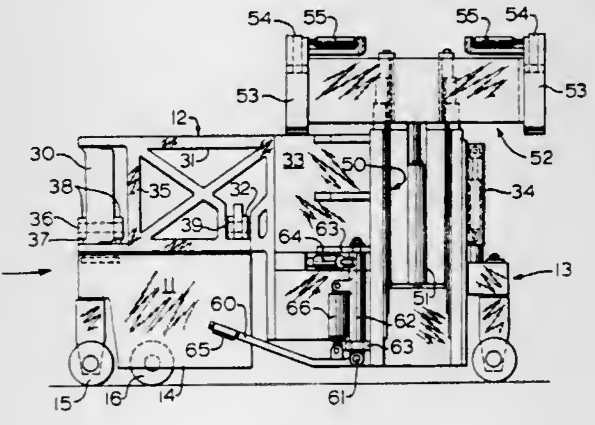
Charles L. Hunt, 1721 Shamrock Road, Fort Wayne, Ind. 46807
Filed July 29, 1968, Ser. No. 748,556
Int. Cl. B60p *1/38*
U.S. Cl. 214—519 **5 Claims**



This invention relates to a vehicle having a bed with an unloader mechanism which vertically supports the cargo and permits unloading of the cargo by power actuated means which vertically supports the cargo and is adapted to move the cargo from any portion of the van to the discharge end thereof.

3,529,739
LIFT TRUCK WITH A MAST MOUNTED ON A WHEELED HORIZONTAL AND VERTICALLY PIVOTED SUPPORT

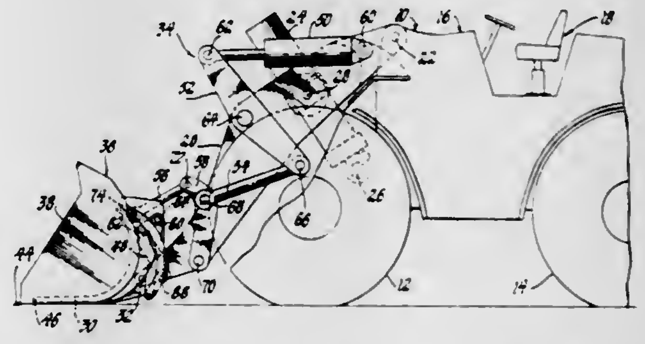
Walter M. Shaffer, Geauga County, Ohio, assignor to Towmotor Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 12, 1968, Ser. No. 720,954
Int. Cl. B65g *47/00*
U.S. Cl. 214—672 **4 Claims**



Stacks or bundles of elongated materials, such as pipe or lumber, in lengths in excess of eight feet are very difficult to handle with an ordinary lift truck in confined dunnage spaces. A lift truck capable of handling such materials in confined dunnage areas includes a steerable truck unit having individually powered wheels and a narrow, long boom assembly pivoted at one end on the truck unit and supported at its opposite end by an outtrigger wheel unit, said boom assembly being swingable about its pivot relative to the truck unit about a generally vertical axis and having a conventional mast, hoist cylinder, carriage and lift forks centrally disposed on the boom assembly with the forks projecting normally from the boom assembly. This arrangement allows such elongated stacks of material to be handled with their longitudinal axis parallel to the boom assembly and further allows the boom assembly to be oriented so that it can be generally aligned with the direction of travel for movement through confined aisles and the like.

3,529,740
TRACTOR LOADER

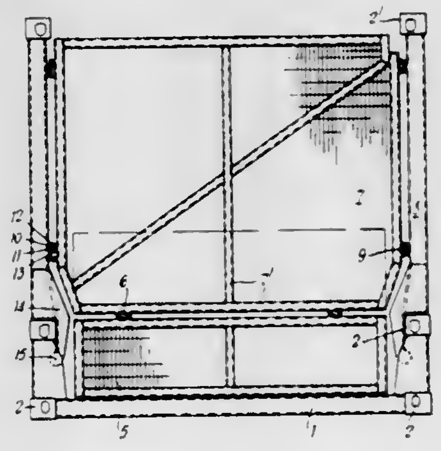
Leonard H. Chant, Euclid, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,424
Int. Cl. E02f *3/28*
U.S. Cl. 214—774 **10 Claims**



A tractor loader having a material handling bucket pivotally supported at its lower forward end by a bucket carrier. Lift arm means extend between the tractor frame and the bucket carrier and support a primary tilt linkage for tilting the bucket and carrier as a unit relative to the boom. The carrier is provided with a secondary tilt linkage which serves to move the bucket relative to the carrier about a second pivot connection so that selective pivotal movement of the bucket can be obtained about two pivotal connections to thereby provide an increase in dumping height when required.

3,529,741
CONTAINER HAVING COLLAPSIBLE SIDE WALLS

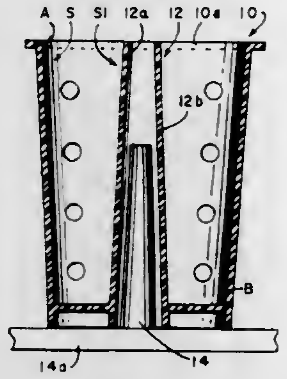
Roy Dixon Walker and John Tabron, Barrow-in-Furness, England, assignors to Vickers Limited, London, England, a British company
Filed Nov. 18, 1968, Ser. No. 776,545
Claims priority, application Great Britain, Nov. 17, 1967, 52,531/67
Int. Cl. B65d *7/28, 7/32*
U.S. Cl. 220—7 **15 Claims**



A goods container suitable for carrying timber has longer sides connected to a base for pivoting inwardly towards, and outwardly away from, the base to collapse and erect the container. Its shorter sides are connected to one of its longer sides for pivoting inwardly about vertical axes to positions against the inside of that longer side. In corner posts of the base are twist-locks operable to lock the longer sides erect, and also operable to lock the collapsed container to an identical collapsed container placed thereon, so that the two containers form a unit liftable by lifting the upper of the two.

3,529,742
SILVERWARE CONTAINER

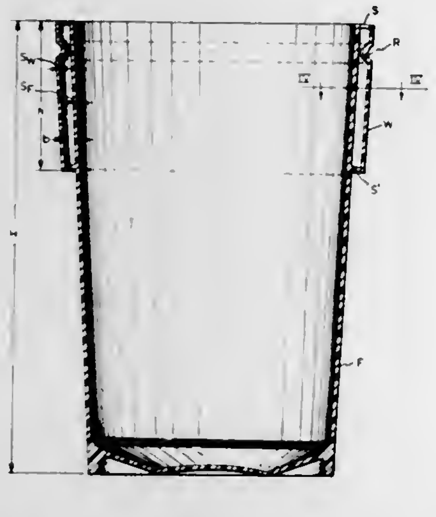
John Cumming, Kingston, Pa., assignor to Metropolitan Wire Goods Corporation, Wilkes-Barre, Pa., a corporation of New York
Filed Sept. 4, 1968, Ser. No. 757,275
Int. Cl. B65d *7/42*
U.S. Cl. 220—69 **4 Claims**



A utensil-holding container, having appropriate drainage holes therein, and of the type used preparatory to, during, and after the machine washing of utensils or silverware wherein an operative member is located within the container in the area coextensive with the medial portion of the maximum theoretical volume bounded by the container and thus removes this medial portion for possible use, but in so doing the operative member prevents crossing of the utensils in their stored position within the container and thereby actually increases the effective capacity of the container. The operative member or post is hollow and additionally accommodates an upstanding support post of an appropriate bulk storage and/or transporting device.

3,529,743
CONTAINER OF THERMOPLASTIC SYNTHETIC MATERIAL

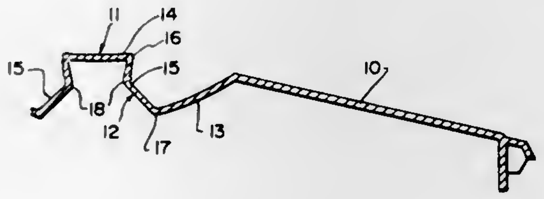
Jakob Ehrbar, Allschwil, and Ernst Schlaefli, Muttenz, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
Filed Aug. 21, 1968, Ser. No. 754,261
Claims priority, application Switzerland, Aug. 22, 1967, 11,774/67
Int. Cl. B65d *7/42*
U.S. Cl. 220—74 **12 Claims**



A strong but lightweight, stackable, rollable transport and storage container of thermoplastic synthetic material having a generally frusto-conical shape with an external wall surrounding and spaced from that part of the wall of said container adjacent its largest and upper end to provide a cavity between the external surrounding wall and the container wall. Preferably the container embodies reenforcing ribs angularly and unitarily joining the external wall to the container wall, and the relatively thin wall thickness is substantially the same throughout the entire container, including that of the external wall. The material from which the container is fabricated is satisfactorily stable to external and internal attack by many of the products held therein, is resistant to buckling under impact, shock, and in combination with its overall design imparts substantial rigidity both in the radial and axial directions thereto.

3,529,744
CLOSURE HAVING AN INTEGRAL PLASTIC HANDLE

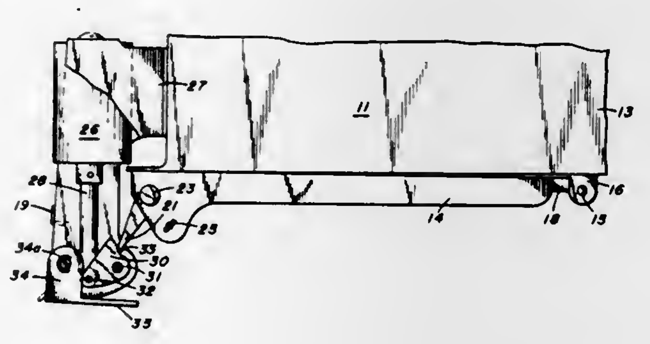
Philip P. Johnson, St. Joseph, and William J. Edwards, Benton Harbor, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,672
Int. Cl. B65d *25/28, 23/10*
U.S. Cl. 220—94 **5 Claims**



A handle comprising a base with a hand engageable part projecting outwardly from the base and undercut sides on this projecting part in which each side has a width greater than the corresponding distance between the top of the hand engageable part and the base and distortable inwardly under pressure from an outwardly projecting position between the top portion and base, past dead center to an undercut position so that when the handle is grasped by a hand the fingers and thumb can enter the open undercut portions beneath the top portion of the handle.

3,529,745
SONOBUOY DISPENSER

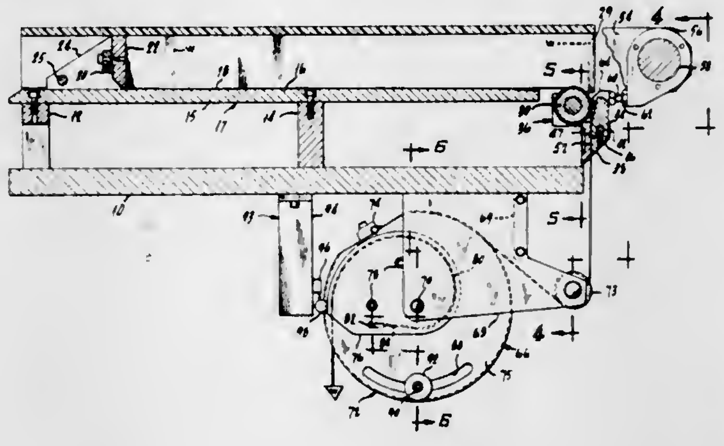
Clifford L. Freeman, Alexandria, Va., and William R. Edwards, California, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 25, 1968, Ser. No. 750,425
Int. Cl. B64d *1/06*
U.S. Cl. 221—90 **1 Claim**



A dispenser for sonobuoys, or the like, having a number of parallel, vertically extending slots, or channels, each slot to house a sonobuoy. At the bottom of each slot is an electrically operated latch which opens a bottom door thereby permitting the sonobuoy to slide out of the slot by gravity.

3,529,746
PRESSURE ADJUSTING FEED ASSEMBLY FOR WORK LOADERS OF THE MAGAZINE TYPE

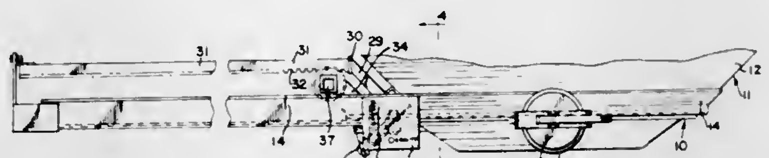
William M. Mendez, Princeton, N.J., assignor to Precision Systems Company, Inc., Somerville, N.J., a corporation of New Jersey
Filed Aug. 7, 1968, Ser. No. 757,192
Int. Cl. B65h *1/08*
U.S. Cl. 221—226 **4 Claims**



A follower exerts pressure against a supply of workpieces, to feed them from a magazine. A flexible web secured to the follower supports the workpieces. A rewind wheel for the web rotates under the pull of a weight suspended from the wheel by a cord trained about a cam. Due to a continuously changing radius on the cam, the feed pressure on the workpieces is continuously adjusted in compensation for the constant reduction in the number of workpieces. The web is released in timed relation to operation of a workpiece transfer mechanism with which the invention is normally used.

3,529,747
MATERIAL DISCHARGE ARRANGEMENT FOR HOPPER STRUCTURES

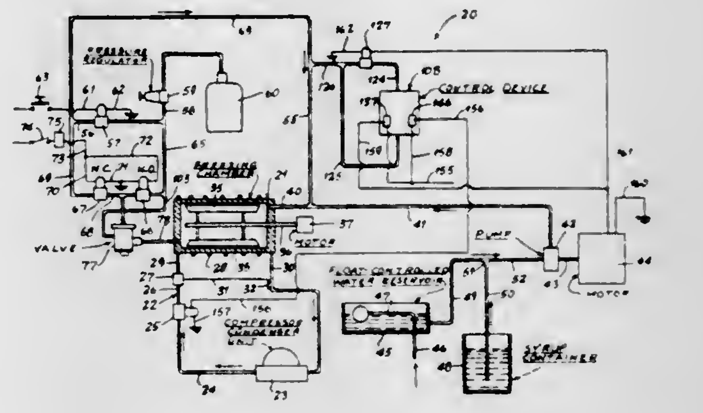
William D. Mundinger, Highland, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Sept. 30, 1968, Ser. No. 763,746
Int. Cl. B67d *5/12;* **B61d** *3/00*
U.S. Cl. 222—41 **6 Claims**



A discharge arrangement for a hopper structure which includes a sliding gravity gate positionable underneath the hopper for for gravity discharge and a pneumatic discharge pan positioned underneath the gate and which upon opening of the gate permits pneumatic discharge. A manually selectable indexing arrangement includes a rotating shaft which upon rotation to a certain position interconnects the pneumatic gate with the gravity gate for movement therewith to open and closed positions. The indexing arrangement includes a locking arrangement which is connected to the shaft and which may be moved into a locking position whereby both the gate and the discharge pan are locked in the closed position.

3,529,748
DISPENSER FOR PARTIALLY FROZEN CONFECTIONS

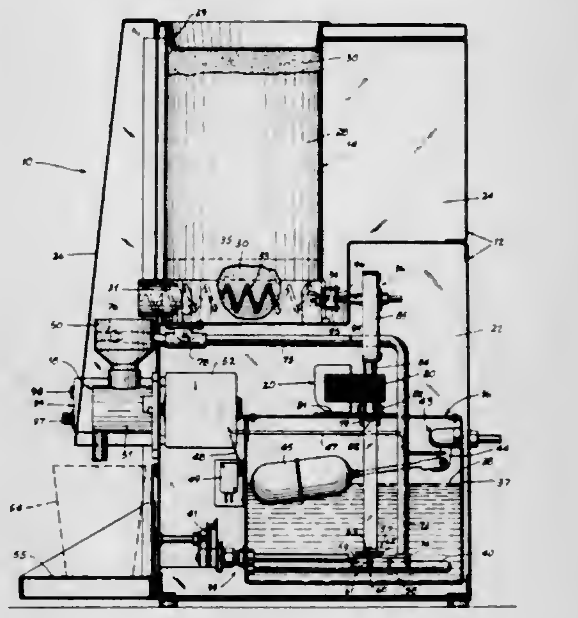
Orville Mitchell, Richard L. Roden, William P. Freeman, Jr., John D. Harris, and Dudley C. Smith, Dallas, Tex., assignors to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Apr. 29, 1968, Ser. No. 724,730
Int. Cl. B67d *5/08*
U.S. Cl. 222—54 **14 Claims**



A control system for a confection dispenser. A control device regulates refrigeration of the confection in response to variations of pressure within a confection container, and regulates the supply of confection ingredients to the container in response to variations in pressure within the confection container. Operation of a dispensing valve is controlled by sensing the difference in the pressure within the confection ingredients. The dispensing valve can meter the proper replenishment volume of the ingredient which controls the valve.

3,529,749
MOTOR OPERATED DISPENSER

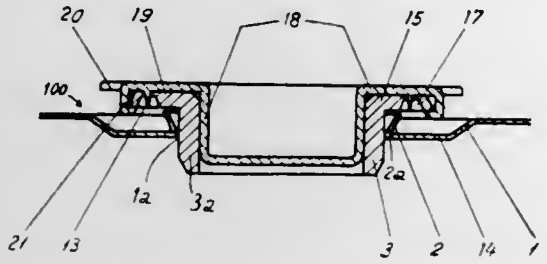
George C. Lehmann, St. Louis, and Frank A. Slade, Bridgeton, Mo., assignors to Hercules Gallon Products, Inc., Galion, Ohio, a corporation of Delaware
Filed Mar. 27, 1968, Ser. No. 721,546
Int. Cl. B67d *5/56*
U.S. Cl. 222—66 **12 Claims**



A mixed drink dispensing machine comprising a casing, a mixing chamber, a dry materials container and an auger therein for metering the same, a liquid material container and a pump therein for moving measured liquid therefrom, a single electric motor operatively connected to the auger and to the pump for simultaneously rotating the auger and actuating the pump to discharge liquid and dry materials in predetermined proportions into the mixing chamber for transient mixing and discharge into a provided cup, and a normally open manually operated momentary contact control switch for the motor.

3,529,750
SECURITY CLOSURE MECHANISM WITH KNIFE MEANS FOR RELEASING CLOSURE

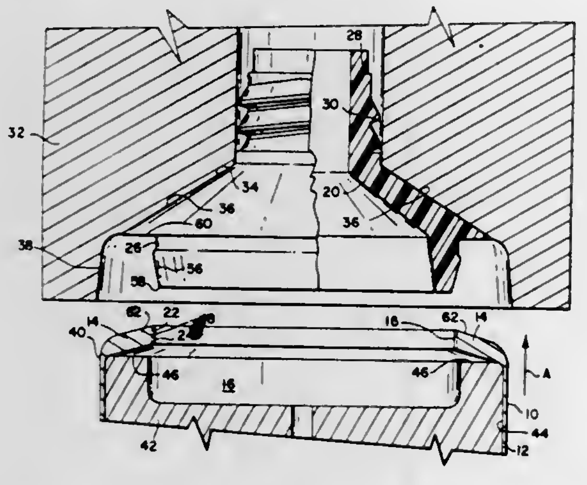
Manfred Baumann, Heerbrugg, and Alois Stähli, Diepoldsau, Switzerland, assignors to Baumann AG, Diepoldsau, Switzerland, a corporation of Switzerland
Filed Oct. 9, 1968, Ser. No. 766,146
Claims priority, application Switzerland, Oct. 11, 1967, 14,225/67, 14,226/67
Int. Cl. B67b *7/12*
U.S. Cl. 222—80 21 Claims



There is disclosed a security or safety closure mechanism for the material discharge opening of a container or the like. Such security closure mechanism comprises an insert member adapted to be secured to the wall of the container, and a closure cover member secured to the insert member. The insert member and the closure cover member are arranged in such a way that the closure cover member is rotatably anchored at the insert member. One of these members is provided with at least one knife means and, furthermore, one of such members possesses a weakened portion penetrated by such knife means in such a way that upon rotation of the closure cover member the weakened portion can be severed, whereby the closure cover member is detached from the insert member.

3,529,751
METHOD OF CONSTRUCTING CONTAINERS AND PRODUCT THEREOF

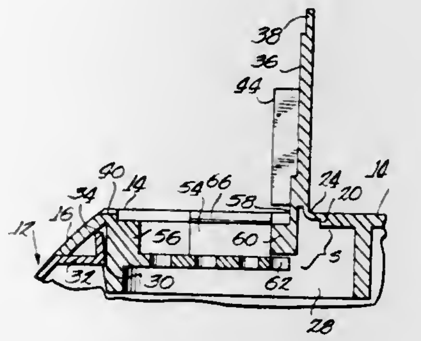
Paul A. Marchant, Kansas City, Mo., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Aug. 4, 1967, Ser. No. 658,482
Int. Cl. B65d *35/12, 35/38*
U.S. Cl. 222—92 1 Claim



A container having a hollow body provided with an end wall in which an opening extends therethrough; a neck structure disposed in said opening; said end wall compressed inwardly toward said opening and indented into the perimeter of said neck structure to secure the neck structure axially and to resist rotation relative to the container body; the invention also comprising a method for inserting said neck structure into said opening in said end wall and compressing the end wall inwardly so as to cause structure surrounding said opening in the end wall to become indented into the perimeter of the neck structure.

3,529,752
PLASTIC CONTAINER TOP WITH COMBINATION CLOSURE AND SPRINKLER

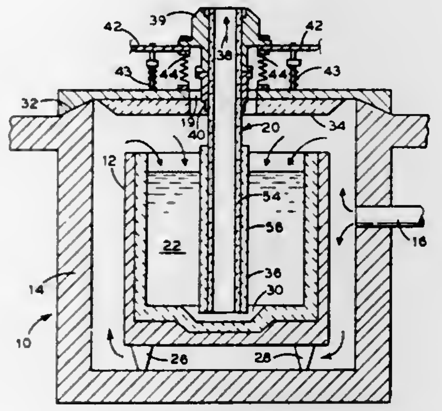
Maynard E. Nyquist, Chicago, Ill., assignor to Morton International, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 25, 1968, Ser. No. 778,390
Int. Cl. B67d *3/00*
U.S. Cl. 222—480 8 Claims



This low-cost, one-piece integrally molded plastic container top for containers of particulate substances such as salt features a wall member having an opening with a hingedly-attached cover and a recessed perforated sprinkler plate across the opening. Access opening for mold parts adjacent the sprinkler plate are effectively sealed against undesired leakage by a series of spaced projections on the cover adjacent the hinge portion, which projections register with a series of edgewise slots in the sprinkler plate.

3,529,753
PRESSURE POURING TUBE

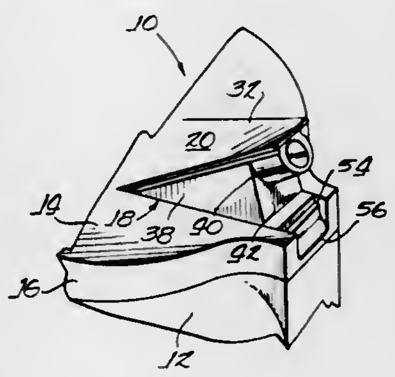
Royce K. Mack, Phillipsburg, N.J., assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Continuation-in-part of application Ser. No. 506,095, Nov. 2, 1965. This application Jan. 13, 1969, Ser. No. 790,712
Int. Cl. B67d *5/60*
U.S. Cl. 222—464 11 Claims



A refractory pouring tube of the type employed in pressure casting molten steel from a melt thereof by applying a superatmospheric pressure to the surface of the melt to force it upwardly through the tube for discharge into a mold. The tube comprises a fired inner tubular member of refractory composition, a fired outer tubular member of refractory composition within which the inner member is receivable so as to form an annular space between them, and a refractory mortar in the annular space to join the members together. The outer member extends longitudinally of the length of the inner member for at least the length of the tube which is to be immersed in molten steel.

3,529,754
APPARATUS FOR DISPENSING GRANULAR SUBSTANCES

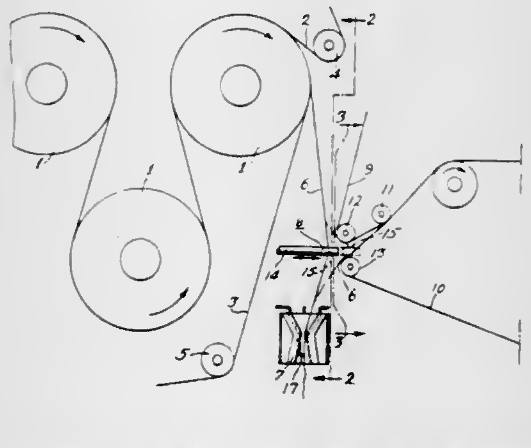
Albert Yochim, Villa Park, Ill., assignor to Morton International, Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 766,720
Int. Cl. B67d *3/00*
U.S. Cl. 222—531 13 Claims



This low-cost, one-piece plastic container top features an integrally-molded spout and closure combination which is configured to minimize spillage problems when dispensing particulate materials such as table salt from a container into another vessel such as a salt shaker or spoon. Specific embodiments exemplifying the present invention feature a spout and closure combination which is hingedly movable and comprises a flat web with depending spaced walls and an intermediate portion having both a tubular section, preferably adjacent the flat web, and a closed section adapted to permit the tubular section to be hooked over the edge of the receiving vessel.

3,529,755
METHOD AND A DEVICE FOR THREADING

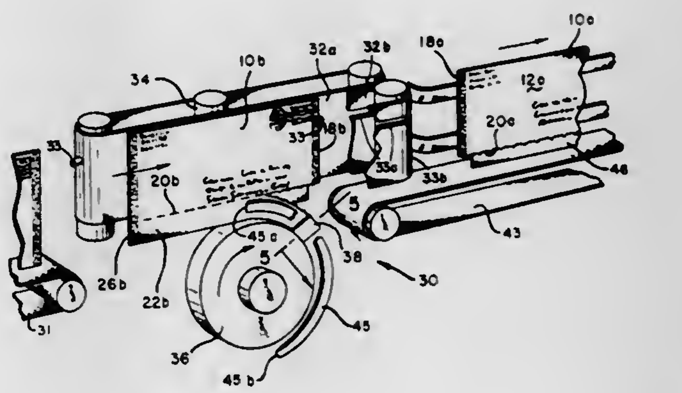
Sven Spangenberg, Gavle, and Ingemar Karlsson, Aryd, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed May 29, 1968, Ser. No. 733,105
Claims priority, application Sweden, May 30, 1967, 7,532/67
Int. Cl. G03b *1/56*
U.S. Cl. 225—4 5 Claims



For transferring a leading strip of web material from a leading strip conveyor of a cylinder dryer to the leading strip conveyor of a fan dryer, comprising a suction device underlying the discharge from the first leading strip conveyor to slightly tension the leading strip which falls from the discharge, a deflector guide to displace the leading strip into registry with the inlet of the second conveyor, said guide including blowing means to blow a portion of the strip into the inlet of the second conveyor, and a severing device to cut off the leading end of the strip which is beyond the portion caught by the second conveyor.

3,529,756
ENVELOPE AND APPARATUS FOR OPENING SAME

William W. Smith, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 2, 1968, Ser. No. 726,176
Int. Cl. B26f *3/02;* **B65h** *35/10*
U.S. Cl. 225—99 5 Claims

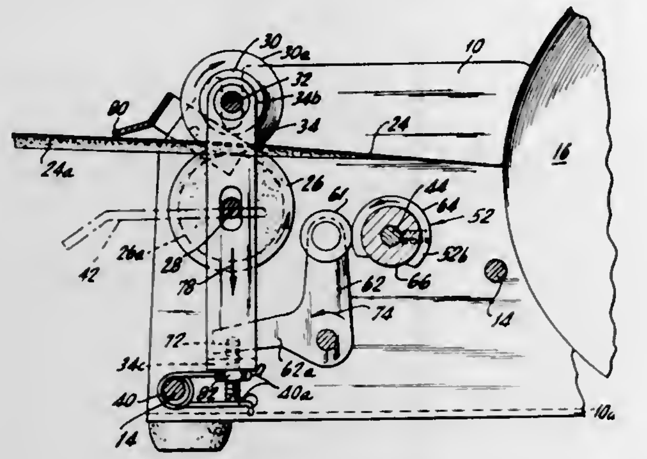


An envelope perforated through both panels along the bottom edge to form a tear strip with the panels being adhered together along the side edges to prevent intrusion of the contents into an area at each side of sufficient width to grasp. Hence, the tear strip may be grasped and severed without damage to the contents. The apparatus includes a conveyor which holds the envelope firmly in the area outside of the tear strip and carries it along a fixed path. A stripping wheel is rotated to carry a small clamp across the path traversed by the tear strip at the speed of the conveyor so that the clamp embraces the tear strip within the adhered area. Cam means cause the stripping clamp to grasp the tear strip and, as it rotates away from the conveyor, it severs the tear strip. A modified form of the apparatus includes a pair of flexible discs that take the place of the stripping wheel and clamp. These discs are mounted for rotation on opposite sides of the fixed path traversed by the tear strip and are adapted to grasp the tear strip between adjacent circumferential margins of the discs. Upon rotation of the discs, the gripped tear strip is severed from the envelope.

3,529,757
PRESSURE SENSITIVE ADHESIVE TAPE DISPENSER

Everett E. Sharpe, Shelton, Conn., assignor to Better Packages, Inc., Shelton, Conn.
Filed Oct. 1, 1968, Ser. No. 764,193
Int. Cl. B65h *23/04*
U.S. Cl. 226—88 10 Claims

A device for feeding strip material, particularly a tape having a pressure sensitive adhesive coating on one side, comprises a frame in which is rotatably mounted a lower feed roller having a surface of a material such as a silicon rubber which has good release characteristics in respect to pressure sensitive adhesive. The frame rotatably mounts a reel supply of pressure sensitive tape which is directed with its adhesive side engaging over the lower feed roller. An upper feed roller is mounted on a yoke member for movement toward and away from the lower feed roller and, it includes a V-shaped projection, which may be engaged in a V-shaped groove defined around the periphery of the lower feed roller. A drive mechanism comprises a hand-operated crank which drives the lower feed roller through gearings and which also drives a cam mechanism. The cam mechanism effects the shifting of the yoke member carrying the upper feed roller in a downward direction to cause feeding engagement of the upper and lower feed rollers and the feeding of tape therebetween. The downward movement of the yoke member and the engagement of the upper feed roller with the lower feed roller is not effected until after the lower feed roller has moved by a certain amount in order to break any adherence of the tape to the lower feed roller.



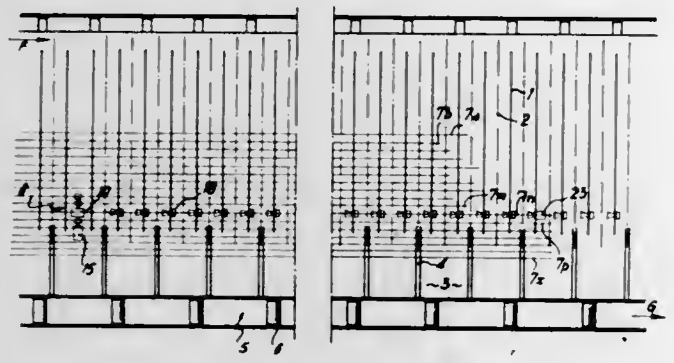
3,529,758

DEVICE FOR ALIGNING PRODUCTS OF CONSIDERABLE LENGTH, MORE PARTICULARLY HOT-ROLLED PRODUCTS

René Berny, Maubeuge, Jacques Coppe, Grande-Synthe, and Georges Tavernier, Maubeuge, France, assignors to Société dite: Usinor, Paris, France, a company of France

Filed Oct. 2, 1967, Ser. No. 672,183
Claims priority, application France, Sept. 30, 1966, 78,436
Int. Cl. B65h *17/22*

U.S. Cl. 226—93 **2 Claims**



Device for the longitudinal conveyance of elongated products made of ferromagnetic material, such as steel bars, sections and the like, said device comprising a roller made of ferromagnetic material, a motor for driving said roller in rotational movement, a coil carried by said roller, and means for supplying said coil with electrical direct current, whereby the said roller behaves like a rotary electromagnet. An installation for aligning products of considerable length and, more particularly, hot-rolled products, when the latter are cooled being sheared comprising the said device with idler wheels aligned longitudinally to support the said product driven in translational movement by the said roller.

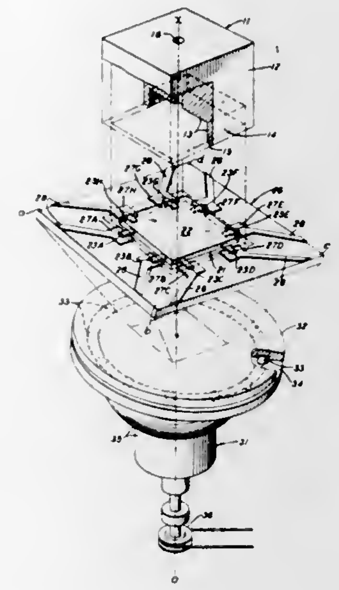
3,529,759

APPARATUS FOR BONDING A BEAM-LEAD DEVICE TO A SUBSTRATE

James E. Clark, Coopersburg, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed June 15, 1967, Ser. No. 646,251
Int. Cl. B23k *1/00*

U.S. Cl. 228—6 **8 Claims**



A process and an apparatus are disclosed for the thermocompression bonding of beam-lead integrated circuits to a series of conductor patterns located on a substrate.

The flat tip of a hollow rectangular rod comprises the heating unit. The beam-lead device is positioned on a substrate; and, illustratively the substrate is mounted on a carrier; and, illustratively the carrier is located on a wobble table. When appropriate means undulate the wobble table, the beam leads are rocked into successive contact with the heating unit and thereby are bonded to the substrate.

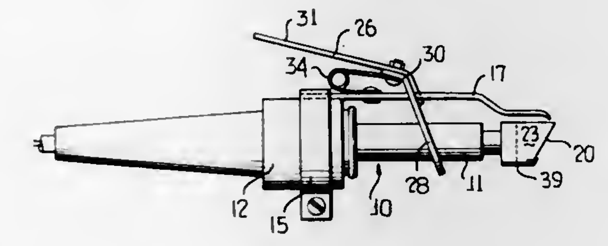
3,529,760

FLATPACK INSTALLATION AND REMOVAL TOOL

Charles D. Hickman and Robert O. Munger, Jr., Eau Gallie, Fla., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida

Filed Jan. 24, 1968, Ser. No. 700,270
Int. Cl. B23k *3/02*

U.S. Cl. 228—51 **7 Claims**



A tool for rapidly installing and/or removing integrated circuits packaged in the so-called flat-package or "flappack" configuration relative to a printed circuit board or other supporting or connecting member or substrate. The tool combines the function of a heat applicator with that of a gripping device, and is specifically provided in the form of a soldering iron having a pair of gripping members which when actuated firmly hold the flatpack while the soldering iron tip applies heat to simultaneously solder or desolder all leads connecting the flatpack to the printed circuit board.

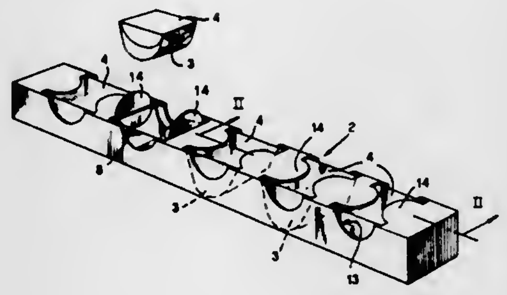
3,529,761

CONTAINER FOR PACKAGING ITEMS FOR INDIVIDUAL REMOVAL

Amilcare Dogliotti, Alba, Italy, assignor to P. Ferrero & C. S.p.A., an Italian joint-stock company, Alba, Italy

Filed Nov. 13, 1968, Ser. No. 775,237
Claims priority, application Italy, July 8, 1968, 52,361/68
Int. Cl. B65d *5/48*

U.S. Cl. 229—28 **9 Claims**



A packaging container has a casing with a number of individual compartments for receiving items such as sweets for individual withdrawal. The selected item is gripped and withdrawn by the fingers, the flanks of the casing being adapted for this purpose, and at least the gripped part of each item being protected by a removable covering.

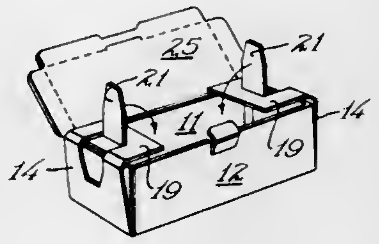
3,529,762

CONTAINER WALL LOCK CONSTRUCTION

Ronald V. Johnson, Port Washington, Wis., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed Sept. 16, 1968, Ser. No. 759,897
Int. Cl. B65d *5/22*

U.S. Cl. 229—34 **8 Claims**



A container end structure includes a bottom panel, side walls connected to opposite side edges and an end wall hinged to the intermediate end edge. The side walls are provided with end flaps folded inwardly along the end of the bottom panel. The end wall is folded upwardly outwardly of the end wall flaps. An end wall flap is folded over the upper edges of the end flaps and downwardly along the inner surfaces of said end flaps to terminate in spaced relation to the bottom panel. Extension tabs are hinged to the end wall and are folded down to engage in slots in the bottom panel.

3,529,763

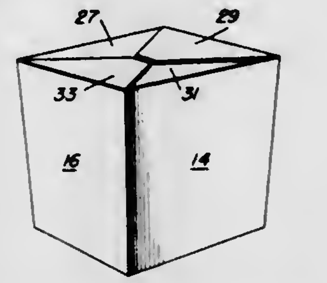
SELF-LOCKING CANISTER OR BOX

Franklin J. Wagner, Overland Park, Kans., assignor to Westvaco Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 17, 1968, Ser. No. 768,290
Int. Cl. B65d *5/02*

U.S. Cl. 229—37 **2 Claims**

The canister or box-like container of this invention is formed from a one-piece blank of corrugated paperboard having a novel self-locking top closure. The top closure comprises a pair of straight cover flaps and a pair of oppositely disposed spout shaped flaps which operate to form a self-locking top when one or the other of the spout shaped flaps is pushed to closed position. Similarly the container may be opened by manipulating only one of the spout shaped flaps.



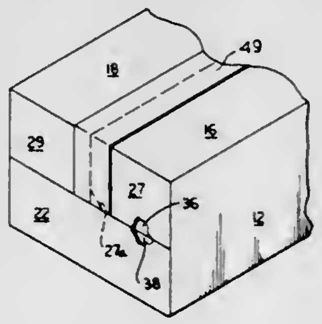
3,529,764

EASY-OPENING CONTAINER

Robert E. Reeves, Indianapolis, Ind., and John D. Ridgeway, Jr., Milwaukee, Wis., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Oct. 2, 1968, Ser. No. 764,520
Int. Cl. B65d *5/54*

U.S. Cl. 229—51 **1 Claim**



Disclosed is a corrugated board container of a type adapted for display of its contents with a flap portion, underlying the closing and sealing tape, cut away to facilitate initial grasping of the tape prior to peeling it from the container.

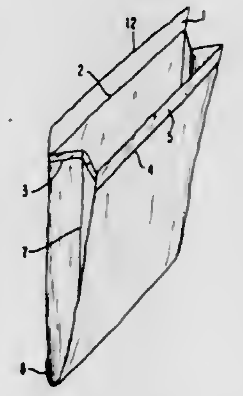
3,529,765

HEAT-SEALABLE GUSSETED BAG

Vincent J. Wemlinger, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 18, 1968, Ser. No. 768,712
Int. Cl. B65d *33/22*

U.S. Cl. 229—62 **5 Claims**



An improved gusseted, step-down, heat-sealable, laminated bag which has an improved heat-seal can be produced by altering the construction of a normal heat-sealable step-down bag by continuing the step-down to one ply through the gusseted portion of the bag to eliminate the excessive thickness of the gusseted area and improve the heat-seal at the inner end of the gusset.

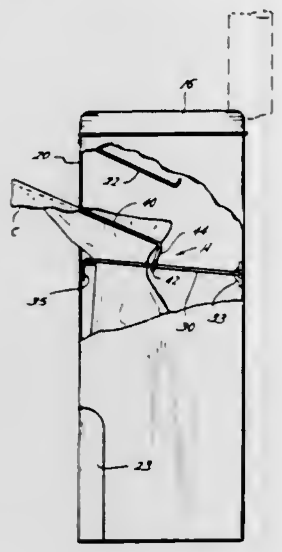
3,529,766
WASTE RECEPTACLE WITH DISPOSABLE CONTAINER

Ralph B. Mott, Sr., Ralph B. Mott, Jr., Robert L. Woods, and Richard C. Cantella, Houston, Tex., assignors to Reserv-A-Roll Co., a partnership

Filed May 21, 1968, Ser. No. 730,715

Int. Cl. B65f *1/00*

U.S. Cl. 232—43.2 **2 Claims**



A closed waste receptacle comprising an upper inlet opening and a lower discharge opening and having a disposable inner liner or container for receiving and containing trash deposited in the receptacle and also to facilitate subsequent removal and disposal of the contents of the receptacle. The waste receptacle includes a hanger assembly for supporting the disposable container with its open end positioned adjacent the upper inlet opening to receive trash, waster, paper, or other refuse deposited in the waste receptacle.

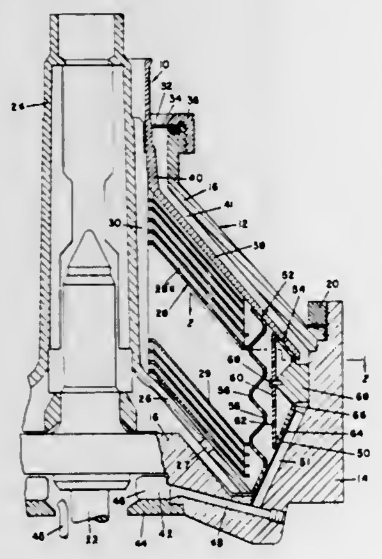
3,529,767
CENTRIFUGE FOR SEPARATING SOLIDS FROM LIQUID

Frederick W. Keith, Jr., Gladwyne, and Andre C. Lavanchy, Devon, Pa., assignors, by mesne assignments, to Pennwalt Corporation, a corporation of Pennsylvania

Original application Feb. 28, 1962, Ser. No. 176,355, now Patent No. 3,328,282, dated June 27, 1967. Divided and this application Sept. 26, 1966, Ser. No. 598,133

Int. Cl. B04b *11/00*

U.S. Cl. 233—14 **9 Claims**



A centrifuge comprising a rotor with a disc stack therein is provided with a perforated baffle means about the stack. The main feed supplies the stack with a liquid bearing solids. The solids being heavier tend to flow outwardly through the stack and through the baffle while the lighter liquid moves inwardly. A wash liquid heavier than the feed is led between the rotor wall and the baffle to entrain the solids flowing through the baffles and to carry the mixture out of the centrifuge separately from the purified feed.

3,529,768
DIGIT WHEELS AND PRESET COUNTERS UTILIZING THE SAME

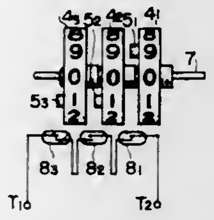
Tsunemoto Nakanishi and Masahiro Maeta, Tokyo, Japan, assignors to Tamura Electric Works Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 17, 1968, Ser. No. 768,485

Claims priority, application Japan, Oct. 23, 1967, 42/67,813, 42/67,814

Int. Cl. G06f *15/18*

U.S. Cl. 235—132 **5 Claims**



A digit wheel is provided with a magnet at a position corresponding to a digit to be preset and a preset counter is comprised by a plurality of such digit wheels and one or more reed switches operated by the magnets on respective digit wheel.

3,529,769
COUNTING DEVICES

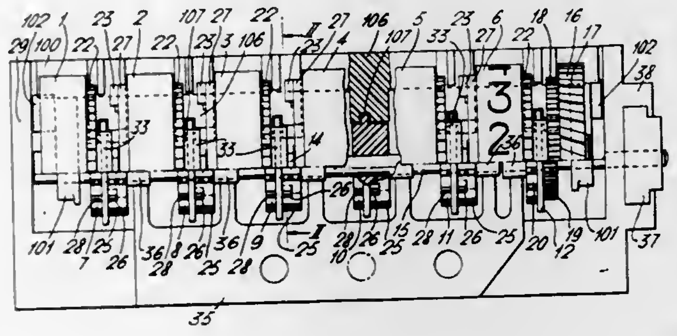
George A. Howard, Enfield, England, assignor to English Numbering Machines Limited, Enfield, Middlesex, England, a British company

Filed Aug. 6, 1968, Ser. No. 750,625

Claims priority, application Great Britain, Aug. 16, 1967, 37,591/67

Int. Cl. G06c *15/42*

U.S. Cl. 235—144 **10 Claims**



The invention relates to a counting device including a plurality of number wheels and associated transfer pinions for providing transfer from one number wheel to the next higher number wheel when said one number wheel passes through a predetermined position. A locating means is provided comprising a number of slotted lugs whose slots receive marginal edge portions of the pinions. The spacing between the lugs locate the associated number wheels. Resetting arms may be provided which are associated with the lugs for resetting the number wheels by means of resetting cams thereon.

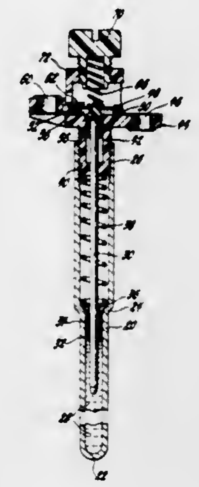
3,529,770
ADJUSTABLE HYDRAULIC THERMOSTATIC CONTROL WITH RELIEF

Floyd O. Moody, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 2, 1968, Ser. No. 749,877

Int. Cl. G01k *5/32*

U.S. Cl. 236—100 **5 Claims**



In the preferred form, an enclosure containing a hydraulic fluid in a closed end has a rod responsive to the expansion of the fluid for operating a double throw switch or damper. An O-ring seal seals the space between the rod and the enclosure and confines the hydraulic fluid therein. This seal is normally held in place by a flanged spring retainer, normally pressed against a stop shoulder within the enclosure by a coil spring. The switch or damper is supported and adjusted by a mounting adjustably threaded to the enclosure.

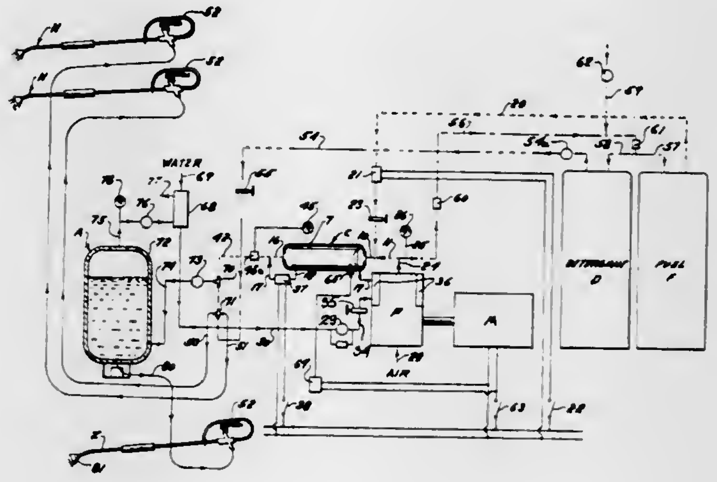
3,529,771
STEAM SUPPLY EQUIPMENT

Robert B. Black, 2925 Denver St., Corpus Christi, Tex. 78404

Continuation-in-part of application Ser. No. 632,141, Apr. 6, 1967. This application Sept. 8, 1969, Ser. No. 856,138

Int. Cl. B05b *1/24*

U.S. Cl. 239—129 **6 Claims**



Pressurized steam supply equipment especially for use in industrial steam cleaning systems in which fuel is continuously burned under pressure, in which water is introduced into the hot gaseous products of combustion for flash steam generation, and in which the admixture of hot gaseous products and steam are alternatively delivered either to an accumulator or through a discharge orifice or nozzle, provision also being made for separation of water from the gaseous products in the accumulator and for separate delivery of the gaseous products and of water from the accumulator.

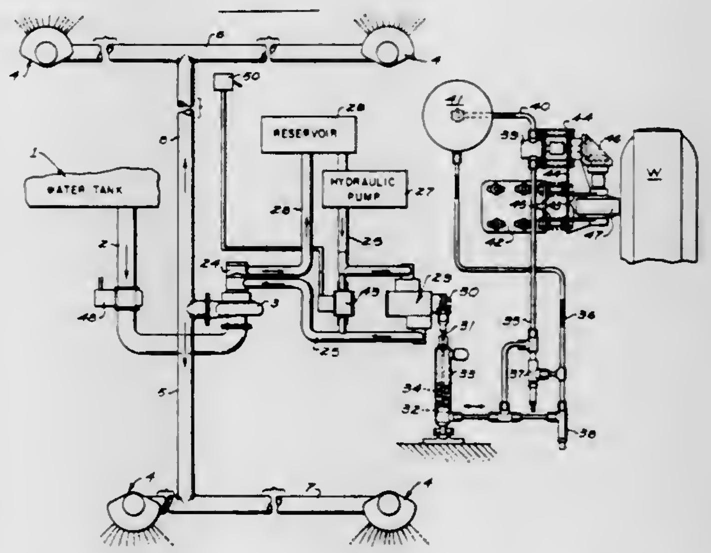
3,529,772
SPEED COMPENSATED SPRINKLER APPARATUS FOR WATER TANK VEHICLES

Edward M. Brodersen, Monterey Park, Calif., assignor to Southwest Welding & Manufacturing Co., Alhambra, Calif., a corporation of California

Filed Sept. 27, 1968, Ser. No. 763,166

Int. Cl. B05b *9/06*

U.S. Cl. 239—157 **10 Claims**



An apparatus which controls the discharge of water from the tank of a sprinkler vehicle by use of a vehicle wheel driven pump control, so that the water supply varies with vehicle speed; and, the water being discharged through horizontally directed sprinkler heads in which the discharge orifices vary with water supply so as to maintain a spray pattern of essentially uniform area and essentially constant volume of water per unit area irrespective of vehicle speed.

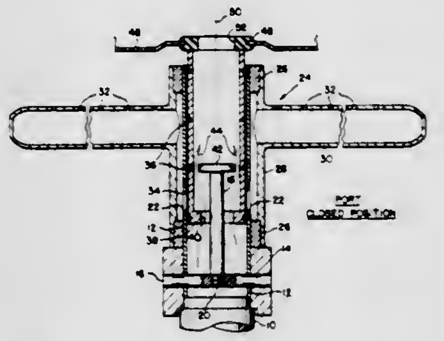
3,529,773
WASHING MACHINE TRANSFER VALVE

John J. Barnum, Niagara Falls, N.Y., assignor to Sybron Corporation, a corporation of New York

Filed July 28, 1967, Ser. No. 656,908

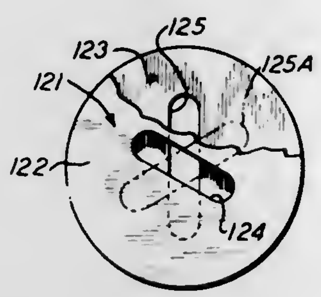
Int. Cl. B05b *15/10*

U.S. Cl. 239—204 **14 Claims**



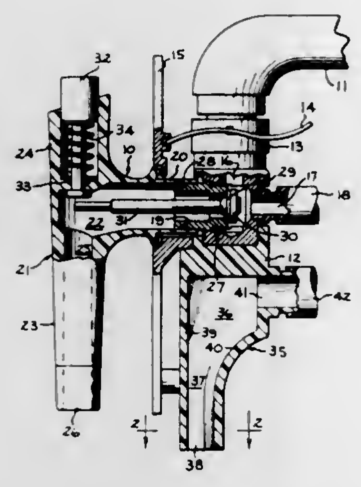
A transfer valve for a washing machine including a tubular valve body **12** with a tubular valve member **34** telescopically slidable therein between a port closed position (FIG. 1) in which water flows through the valve member **34** to a conduit system of a dolly supported above the transfer valve. When the transfer valve is in a port open position (FIG. 2) water is diverted to a sprayhead **24** rotatably mounted on the valve body **12**.

3,529,774
ADJUSTABLE LIQUID SPRAY APPARATUS
Edward W. Apri, 998 Lehigh St.,
Altadena, Calif. 91001
Original application July 26, 1966, Ser. No. 567,975, now Patent No. 3,437,274. Divided and this application Mar. 3, 1969, Ser. No. 803,733
Int. Cl. B05b *1/30*
U.S. Cl. 239—579 **8 Claims**



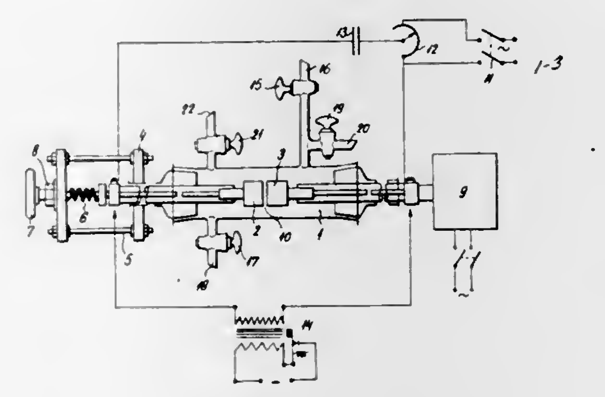
A spray nozzle having a hollow body fitted with apertured discharge inserts movable with respect to the stream flow through the body to present discharge apertures of varied configurations to the stream to change the nozzle discharge pattern. The discharge insert may be a single insert with a plurality of varied apertures or a pair of apertured inserts movable with respect to one another to present varied combinations of aperture shapes.

3,529,775
DISCHARGE DEVICE FOR AN AUTOMATIC WASHING MACHINE
William A. Eckerle, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Mar. 12, 1969, Ser. No. 806,524
Int. Cl. B05b *1/22*
U.S. Cl. 239—601 **2 Claims**



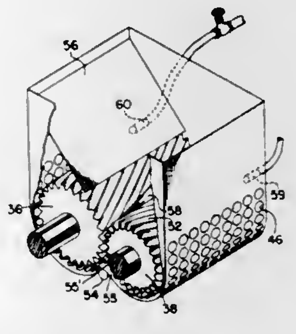
A fluid discharge device is provided having a housing wherein a chamber is defined having an enlarged upper portion and a funnel-shaped lower portion terminating in a downwardly directed discharge passageway having an outlet opening at the lower end thereof. One of the housing walls which define the chamber comprises an impact surface, perpendicularly toward which is directed a stream of fluid entering through an inlet opening in an opposite wall adjacent the upper portion of the chamber. A portion of the discharge passageway extending upwardly from the outlet opening is of constant cross-sectional area, and the cross-sectional area of the outlet opening is substantially larger than the cross-sectional area of the inlet opening. By this arrangement, fluid entering the chamber through the inlet opening strikes the impact surface and reflects toward the opposite wall, which action it is formed into a columnar stream by the discharge passageway and is then discharged at a relatively low velocity through the outlet opening.

3,529,776
METHOD AND APPARATUS FOR COMMINUTING METALS IN AN ELECTRIC ARC
Lajos Mészáros, Szeged, Hungary, assignor to Gepipari Fovalialkozo Kisipari Szovetkezet, Budapest, Hungary, a firm
Filed Apr. 15, 1968, Ser. No. 721,311
Int. Cl. B02c *19/18*
U.S. Cl. 241—1 **4 Claims**



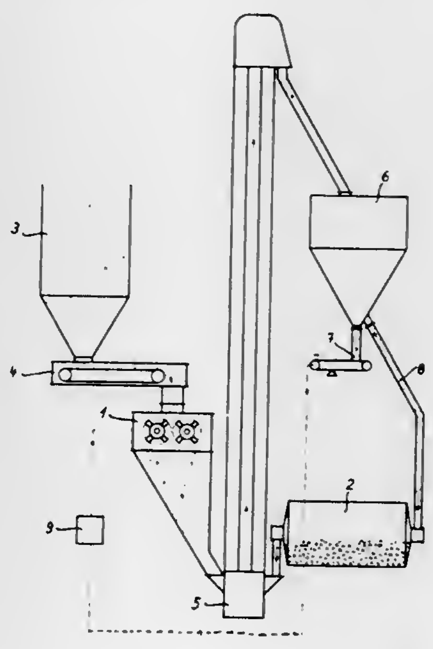
Metal powder is formed by sparking between two electrodes at least one of which is of the metal to be comminuted. The removed metal can be replaced by advancing the metal electrode, or sparking can be achieved by agitating an aggregation of metal particles while passing electric current through them. In either case, the process can be carried out with the electrodes bathed in an inert fluid such as an inert gas or a dielectric liquid. The produced powder can be collected and removed, continuously or batchwise, for example by admixture with a liquid. If the electrodes are two different metals, a bimetallic powder mixture can be produced.

3,529,777
PROCESS FOR GRANULATING SHEET-LIKE MATERIAL
Marshall A. Dodson, Marengo, and Henry J. Flair, Franklin Park, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Apr. 29, 1968, Ser. No. 724,833
Int. Cl. B02c *21/00*
U.S. Cl. 241—18 **5 Claims**



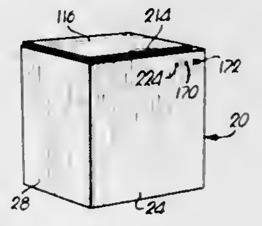
Granulator device and method for quietly shearing brittle or stretchy materials such as various types of plastics as well as thin metal into small pieces which can be easily handled. A pair of meshing cutters used in the device comprise helical toothed members such as gears which have each had their tooth shapes modified from a standard form so as to exert a scissors-type cutting action on work material fed to them as a continuous web, as individual pieces, or a combination of the two.

3,529,778
GRINDING METHOD AND SYSTEM
Karl Willmann, Wulfrath, Germany, assignor to Rheinische Kalksteinwerke G.m.b.H., Wulfrath, Germany
Filed May 5, 1966, Ser. No. 547,938
Claims priority, application Germany, May 12, 1965, R 40,613
Int. Cl. B02c *13/13, 21/00, 25/00*
U.S. Cl. 241—24 **6 Claims**



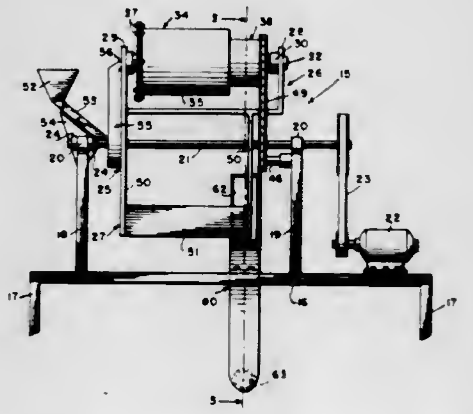
In a method and apparatus for grinding a constant feed of materials of different grindability to a constant fines output in a hammer mill and a subsequent tube mill, the entire output of the hammer mill is passed into a classifier which recirculates the tailings through the tube mill and passes the fines into a control means adjusting the efficiency of the hammer mill so as to maintain also the fines output constant; when the fines output decreases, said control means increases the efficiency of the hammer mill, and when the fines output increases, said efficiency is decreased accordingly.

3,529,779
SANITARY DISPOSAL UNIT
William J. Gorman, Raytown, Mo., and John G. Markert, Overland Park, and James S. Reed, Lawrence, Kans., assignors to GMR, Inc., Lawrence, Kans., a corporation of Kansas
Filed Oct. 18, 1967, Ser. No. 676,267
Int. Cl. B02c *13/22*
U.S. Cl. 241—38 **7 Claims**



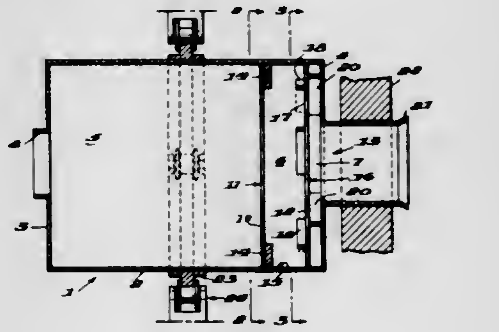
A conditioner for waste material having a substantial paper content comprising a receiver having a pair of parallel, rotatable shafts extending across the receiver and provided with knives for comminuting the paper. Water at high pressure is introduced into the receiver through nozzles to direct the water downwardly and in a direction to urge the paper material into engagement with the knives. Some of the knives are angled to advance the material toward an outlet opening for discharge into a waste disposer and subsequent passage to a sewer line or the like. An injector is provided to intermittently introduce a treating agent such as a detergent and disinfectant into the water supply. Electrical circuitry provided with a timer operate the components in timed sequence and a cabinet cover latch and switch insure that the apparatus operates only when the cover is closed.

3,529,780
PLANETARY GRINDING MILL
Cecil H. Wilkinson, Jr., 1969 East 21st St. South,
Salt Lake City, Utah 84106
Filed May 8, 1968, Ser. No. 727,549
Int. Cl. B02c *19/00*
U.S. Cl. 241—134 **4 Claims**



A continuously fed planetary grinding mill which is capable of operating at a high rate of speed due to the fact that the grinding action is accomplished by centrifugal force and is not dependent upon gravity. The grinding chamber of the mill has an attached discharge compartment, which chamber and compartment revolve about a main axis of the mill but do not revolve about an axis common thereto, so that intermittent discharge from an outlet port of the discharge compartment can be controlled.

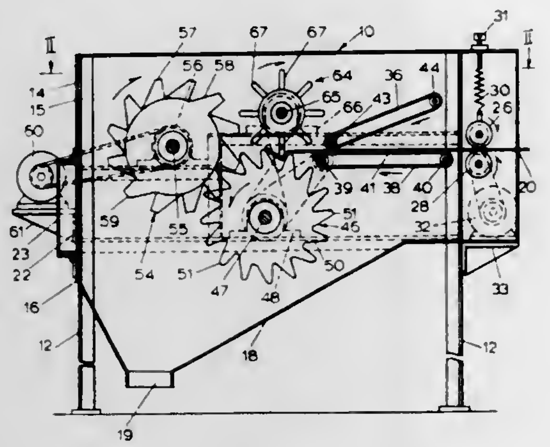
3,529,781
ROTARY GRINDING MILL
Niels E. Hastrup, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed June 19, 1967, Ser. No. 647,152
Claims priority, application Great Britain, June 23, 1966, 28,084/66
Int. Cl. B02c *17/06, 17/18*
U.S. Cl. 241—181 **12 Claims**



A grinding mill for grinding material with grinding media, i.e. grinding bodies having associated with a grinding chamber a discharge chamber which is provided with lifters for continuously returning the grinding media from the discharge chamber to the grinding chamber substantially at the same rate at which the bodies enter the discharge chamber.

3,529,782
DISINTEGRATING MACHINE

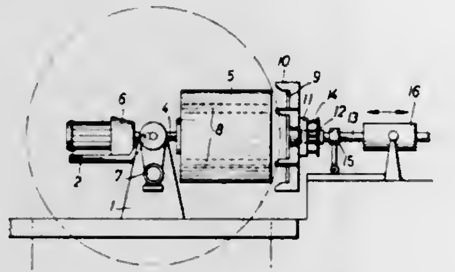
Arno J. Liebman, Ross Township, Allegheny County, Pa.
(142 McKnight Circle, Pittsburgh, Pa. 15251)
Filed Feb. 13, 1967, Ser. No. 615,488
Int. Cl. B02c *18/06*
U.S. Cl. 241—190 **4 Claims**



A disintegrating machine of the type having overlapping, cooperating primary feed and disintegrating rotors and an auxiliary feed roll rotatable counter to the primary feed rotor for biasing material into support engagement with the feed rotor.

3,529,783
ROTARY BREAKER DRUM

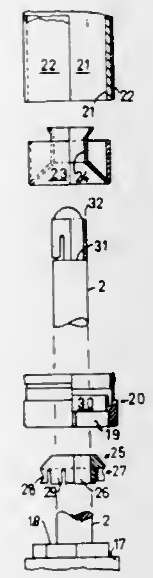
Friedrich Alsbach, Cologne, and Johannes Steyer, Bensberg-Frankenforst, Germany, assignors to Klockner-Humboldt-Deutz AG, Cologne-Deutz, Germany, a corporation of Germany
Filed Feb. 26, 1968, Ser. No. 708,162
Claims priority, application Germany, Mar. 3, 1967, K 61,576
Int. Cl. B02c *17/04, 17/18*
U.S. Cl. 241—284 **3 Claims**



A rotary drum used in an arrangement for testing the breaking strength and abrasion resistance of comminuted material, such as blast furnace coke, ore pellets and other granulated matter. The drum is permanently closed at one end and open at its other end which is closable, however, by a removable cover shiftable along the axis of rotation of the drum and rotatable with the drum when closing the open end of the drum. A drive shaft is attached to the permanently closed end of the drum for rotating the latter when its axis of rotation is horizontally disposed. The drive shaft is rotatably mounted in a frame which itself is rotatably adjustable about an axis extending at right angles to the axis of rotation of the drive shaft and drum so that upon rotation of the frame the drum is either tilted vertically with its open end facing upwardly to receive the material to be tested or is tilted vertically into the other direction with its open end facing downwardly for discharging the material from the drum which only is rotated about its axis when the latter is in a horizontal position.

3,529,784
ANTIVIBRATION SPINDLE

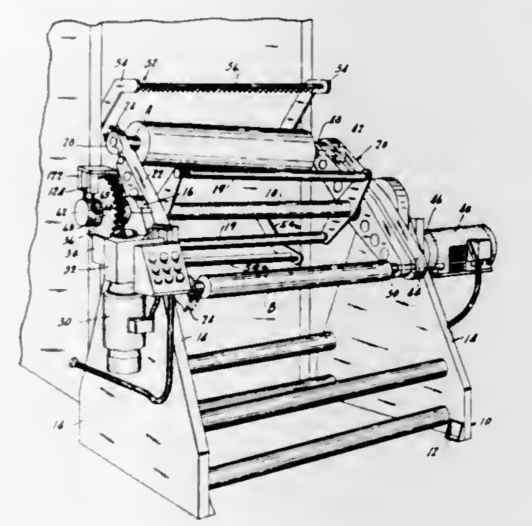
Charles C. L'Allemand, Murray Hill, N.J., assignor, by mesne assignments, to Baldt Corporation, a corporation of Delaware
Filed Jan. 5, 1968, Ser. No. 651,805
Int. Cl. B65h *75/30*
U.S. Cl. 242—46.21 **8 Claims**



A draw twister spindle is provided with resilient elements for engaging in the drive cap and/or upper bearing of a pirn, minimizing the effects of clearance and cushioning and damping vibration.

3,529,785
ELECTRICAL CONTROL SYSTEM FOR TURNOVER WEB REWIND STAND

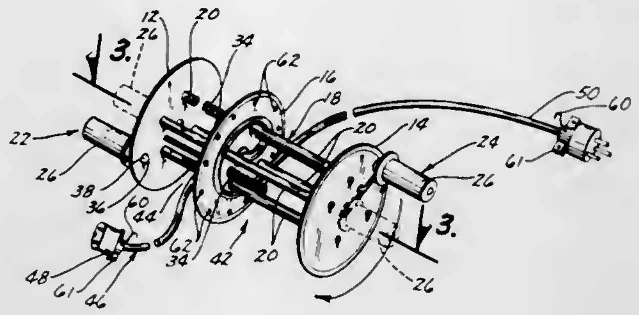
Victor J. Mistele, Colgate, Wis., assignor to Faustel, Inc., Butler, Wis., a corporation of Wisconsin
Filed Sept. 12, 1968, Ser. No. 759,474
Int. Cl. B65h *19/20*
U.S. Cl. 242—56 **4 Claims**



A control system for a turnover rewind stand for effecting the transfer of a moving web material from a fully wound roll to an empty spindle includes a signal means operatively associated with the spindle for determining when the spindle is in a predetermined position and for actuating a cutoff means for severing the web material from the fully wound roll and for applying the web material to the empty spindle. The control system also includes means for matching the peripheral speed of the fully wound roll and the empty spindle to insure the transfer is completed without tearing or looping the web.

3,529,786
CORD STORAGE REEL

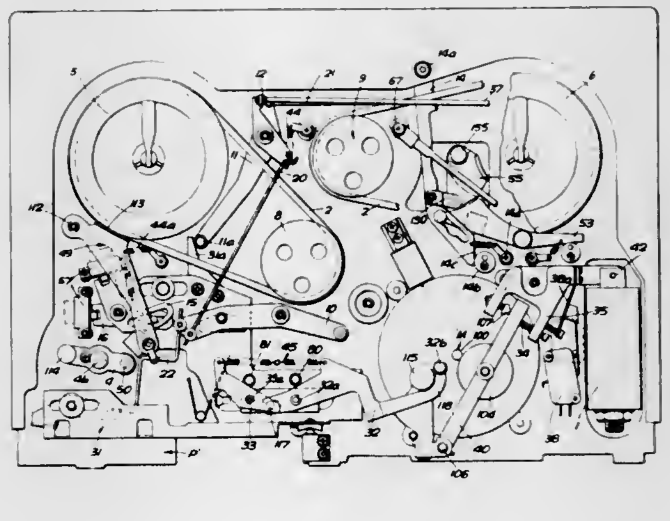
Lenhard Holden, Ottosen, Iowa 50570
Filed Oct. 14, 1968, Ser. No. 767,192
Int. Cl. B65h *75/38*
U.S. Cl. 242—100.1 **7 Claims**



A hub formed by a plurality of spaced apart tubes are interconnected at opposite ends by end walls and intermediate thereof, by a dividing wall to provide two cord storage chambers. The cord extends through the dividing wall for one end of the cord to be wrapped around the hub in one chamber while the other end is wrapped around the hub in the other chamber. The hub is formed by a plurality of radially spaced apart tubes. A handle means is provided on each end and is pivotal from a first position on the longitudinal axis of the hub to a second position remote therefrom about an axis intermediate the first and second positions.

3,529,787
TAPE TRANSPORT

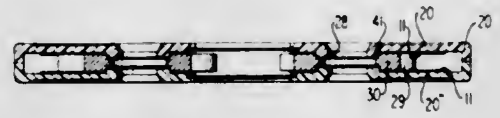
Ronald James Bowman, Beechfield, and Alexander Edward Hine, Bracknell, England, assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed July 29, 1968, Ser. No. 748,438
Claims priority, application Great Britain, Sept. 19, 1967, 42,643/67
Int. Cl. B65h *59/38, 63/02;* **G03b** *1/04*
U.S. Cl. 242—189 **10 Claims**



A magnetic tape transport having a tape drive capstan arranged to drive a tape between two reels with a reel supplying tape rotated by the tape and a take-up reel receiving tape rotated by a drive motor coupled thereto through a slipping clutch mechanism. A locking means is operated to lock the clutch drive and driven members relative to each other and provide direct drive between the drive motor and take-up reel.

3,529,788
MAGNETIC TAPE CARTRIDGE

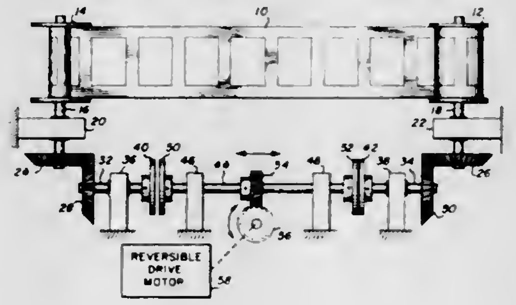
Minoru Sasaki and Masayoshi Morita, both % Hitachi Maxwell, Ltd., 200 Oaza-Ushitora, Ibaraki-shi, Japan
Filed June 28, 1968, Ser. No. 740,878
Int. Cl. G03b *1/04;* **G11b** *15/32, 23/04*
U.S. Cl. 242—199 **4 Claims**



A magnetic tape cartridge wherein there is provided separate lubricating sheets between the sides of the magnetic tape reels and the inner surfaces of the cartridge casing, the lubricating sheets having a base formed of kraft or art paper and at least a covering of silicone oil.

3,529,789
REVERSIBLE DRIVE MEANS

Robert A. Morgan, Menlo Park, Calif., assignor to R. A. Morgan Co., Inc., Palo Alto, Calif., a corporation of California
Filed Aug. 1, 1968, Ser. No. 749,377
Int. Cl. B11b *15/32*
U.S. Cl. 242—201 **6 Claims**

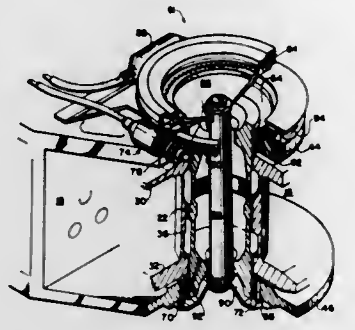


A reversible drive for a film strip or the like wherein the strip may be unwound onto a take-up spool in response to a rotary input in one direction and may then be rewound back onto the storage spool in response to a rotary input in the other direction. The force transmission characteristics of a right angle spiral or helical gear drive means is employed to simultaneously apply an actuating force to a clutch means, for frictionally coupling the spool means to the drive means, and rotary energy to the appropriate spool means through the clutch means.

3,529,790
MEANS FOR CHANGING WING INCIDENCE FOR VARYING ANGLES OF ATTACK

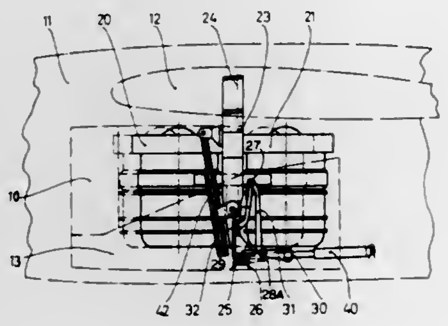
Erwin H. Buch, Fort Worth, Tex., assignor to General Dynamics Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Feb. 18, 1969, Ser. No. 800,052
Int. Cl. B64c *3/48*
U.S. Cl. 244—48 **4 Claims**

An aerodynamic surface pivot pin or attach point mounted to a fuselage structure, the aerodynamic surface supported by upper and lower lugs on each side of the support structure, each lug having a spherical bearing where the surface bending moment is reacted as a couple between upper and lower lugs, the spherical bearing race being eccentrically rotatable in the lug, the inclination of the pivot pin being variable by rotation of the eccentrics to alter angle of incidence and/or dihedral of the aerodynamic surface.



3,529,791
APPARATUS FOR POSITIONING THE ENGINES OF SHORT AND VERTICAL TAKE-OFF AIRCRAFT

Erich W. Weigmann, Munich, Germany, assignor to Entwicklungsring Sud G.m.b.H., Munich, Germany
Filed Sept. 16, 1968, Ser. No. 759,956
Claims priority, application Germany, Sept. 26, 1967, 1,531,398
Int. Cl. B64d *27/20*
U.S. Cl. 244—54 **4 Claims**

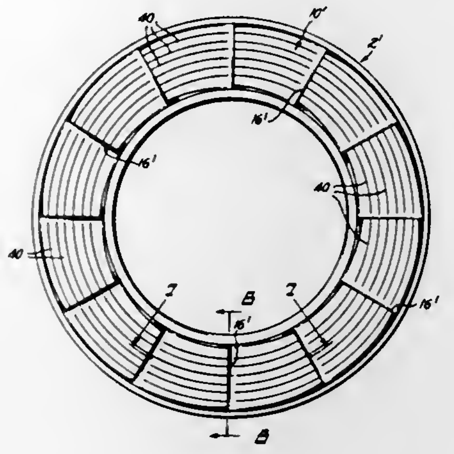


An apparatus for positioning the lift engines of a short or vertical take-off aircraft. The illustrated apparatus includes a linkage mechanism, the driving axis of which lies in a plane which is nonparallel to the driven axis. The linkage mechanism is hingedly secured to a mounted support provided upon the engines and is actuated by a hydraulic cylinder. Actuation of the hydraulic cylinder correspondingly causes the engines to move along a guide track which is supported upon the engine compartment door. The engines are thus moved through an arcuate angle of more than 160 degrees.

3,529,792
PRE-ROTATABLE TIRE

Paul H. MacMahon, Arlington, Va., assignor of forty-nine percent to Gadsden E. Shand, Washington, D.C.
Continuation-in-part of application Ser. No. 573,544, Aug. 19, 1966. This application May 1, 1968, Ser. No. 725,721
Int. Cl. B64c *25/40*
U.S. Cl. 244—103 **6 Claims**

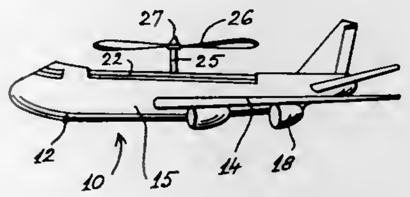
An aircraft tire provided with wedge-shaped bar structures on the sidewalls thereof, the front face of each structure being flat and lying on a diameter of the tire and facing the flow of air moving over the tire during the aircraft's landing approach. Impingement of the air flow on the front bar faces at the bottom of the tire sets the wheel to rotating prior to touchdown of the aircraft, whereby tire safety is increased and tire life is prolonged.



In one embodiment the wedge-shaped bar structures are grooved longitudinally to provide a tire sidewall that can be more easily flexed, whereby the possibility of tire failure during an aircraft landing is minimized.

3,529,793
AIRPLANE WITH EMERGENCY PROPELLER AND DETACHABLE WINGS

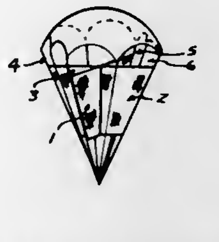
Zaharias Krongos, 128 Sherman Ave., New York, N.Y. 10034
Filed Mar. 27, 1969, Ser. No. 811,019
Int. Cl. B64d *19/02*
U.S. Cl. 244—139 **9 Claims**



An airplane has a retracted axially vertical propeller normally concealed in its fuselage. The propeller is extended in an emergency in the event one or more engines of the airplane fails. The propeller is driven by an auxiliary motor. If the emergency is critical the wings of the airplane can be separated from the fuselage. The emergency propeller will sustain the fuselage and will enable a safe emergency landing.

3,529,794
RADAR RESPONSIVE PARACHUTE

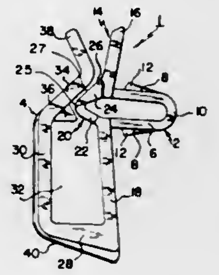
Ylo E. Stahler, 3605 Stoneview Court 45429, and Edward O. Valentine, 2105 Merilline Ave. 45420, both of Dayton, Ohio
Filed Nov. 6, 1968, Ser. No. 773,838
Int. Cl. B64d *17/00*
U.S. Cl. 244—142 **3 Claims**



The auxiliary chute of a parachute assembly is equipped with panels of wire mesh that form themselves into corner reflectors when the parachute opens. The reflectors function to send back radar echo signals to a signal-transmitting device carried by a rescue craft. The intervening distance between the open chute and the rescue craft thereupon becomes known to rescue personnel.

3,529,795
FASTENING DEVICE

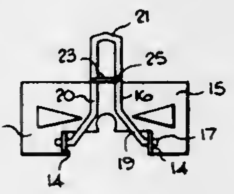
Clarence R. Van Niel, North Olmsted, Ohio, assignor, by mesne assignments, to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 3, 1968, Ser. No. 734,049
Int. Cl. F16l *3/14;* **F16b** *21/08*
U.S. Cl. 248—71 **19 Claims**



A fastening device including a resilient base having a deformable loop-like plug member adapted for insertion through an apertured panel and a resilient strap-like clamp member defining with the base a retainer opening for mounting articles on the panel. A resilient bridge-like member having fulcrum portions coacts with the base for deformation of the plug member upon application of pressure to the fulcrum portions, and in one form, the clamp member has a locking member for interlocking engagement with a retainer member on the bridge-like member for holding the clamping member in clamped relation around the articles.

3,529,796
WIRE CABLE HOLDERS

Grant MacDonald, 8 Frost Ave., Winnipeg 22, Manitoba, Canada
Filed June 14, 1968, Ser. No. 737,202
Claims priority, application Great Britain, June 19, 1967, 28,260/67
Int. Cl. F16b *15/02;* **F16l** *3/00*
U.S. Cl. 248—71 **1 Claim**

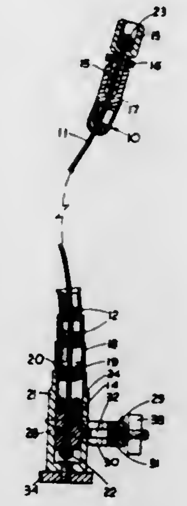


A flat plate having nailing portions stamped out and extending upon the rear side. A wire bail is pivoted to lugs on the plate and engages over the wires of decorative lights and clips over an extending lug thus holding the wires firmly in place.

3,529,797
SUPPORTING STANDS FOR INSTRUMENTS

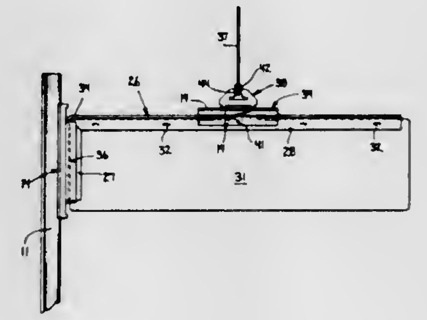
Arthur Street, Tamworth, England, assignor to Polar Hydraulics Limited, Stafford, England
Filed Apr. 15, 1968, Ser. No. 721,390
Claims priority, application Great Britain, Apr. 14, 1967, 17,148/67
Int. Cl. F16m *13/00*
U.S. Cl. 248—160 **1 Claim**

A supporting stand including a flexible support element extending upwardly from a base, the flexible support element being arranged to be locked rigid upon movement of a wedge member into engagement with cam faces provided on an end member of the flexible element upon operation of a fastener associated with the wedge.



3,529,798
SIGN ASSEMBLY

Donald C. Williams, 4105 Roselawn Ave., Indianapolis, Ind. 46226, and Richard G. Growe, Indianapolis, Ind.; said Growe assignor to said Williams
Filed Aug. 30, 1967, Ser. No. 664,559
Int. Cl. G09f *7/18*
U.S. Cl. 248—469 **7 Claims**

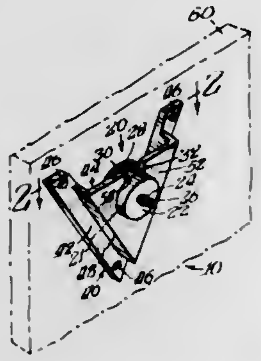


A sign assembly including a group of bars cut from two extrusions, one having a T-shaped cross section with grooved web, and the other having a T-slotted cross section. One T-slotted bar is mounted to a post with lag screws received in registering apertures thereof. One T-shaped bar is bent L-shaped to form a bracket member, with the short leg received in the slot of the T-slotted bar and the long leg extending horizontally therefrom and receiving a sign plate in the web groove. A cross mount consists of two T-slotted bars affixed together, the first being received on the horizontal leg of the bracket member and the other receiving another T-shaped bar with a second sign plate in the web groove thereof.

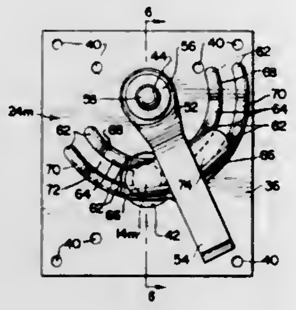
3,529,799
LOCKING HANGER ASSEMBLY

Robert G. Schaefer, 2544 Golf Road, Glenview, Ill. 60025
Filed Oct. 30, 1968, Ser. No. 771,812
Int. Cl. A47g *1/16*
U.S. Cl. 248—496 **6 Claims**

An assembly for hanging objects such as pictures and the like in a predetermined fixed position on a wall or other supporting surface comprising the combination of hanger means adapted to be secured to the object and having a rearwardly extending locking head provided with gripping means about its periphery; abutment means on the hanger means adjacent the forward end of the head; supporting means adapted for attachment to the supporting surface and having a forward portion provided with a pair of transversely spaced and downwardly extending locking members including interior surfaces defining a channel adapted to receive said locking head; gripping means provided on opposed portions of said interior surfaces of the spaced locking means and adapted for locking engagement with said gripping means on said locking head to create a jam-tight fit between said head and locking means and prevent rotation of said head within said channel; and stop means engageable with said abutment means to prevent substantial forward and downward movement of the hanger means with respect to the supporting means when said gripping means are in locking engagement.

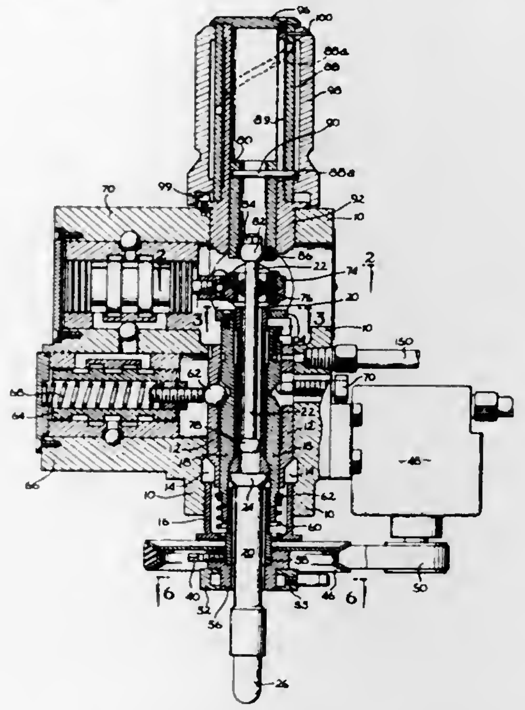


3,529,800
CONCRETE FORM TIE END LATCH
Harris Gordon Gates, Englewood, Colo., assignor to Gates & Sons, Inc., Denver, Colo., a corporation of Colorado
Continuation of application Ser. No. 583,248, Sept. 30, 1966. This application Dec. 11, 1969, Ser. No. 880,502
Int. Cl. E04g *17/06*
U.S. Cl. 249—219 **3 Claims**



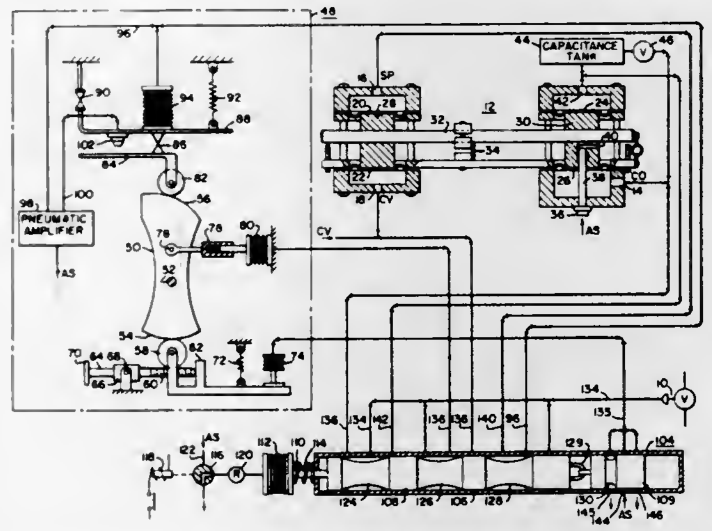
This disclosure relates to a tie end latch subassembly of the type forming the subject matter of my U.S. Pat. No. 3,141,224, which has been modified to include a flat apertured mounting plate adapted to be nailed to a pair of wooden 2 x 4 reinforcing timbers in bridging relation across a gap left therebetween sized to pass the projecting form tie ends. The plate mounts either the single or double-fingered versions of the tie-end latch element, the latter version having been improved to include a stop overhanging the tie end. The plate includes a socket for recessing the head of the tie end latch pivot on the inside and a friction fastener adapted to hold the latter element in selected rotary position.

3,529,801
FEED RATE CONTROL FOR AUTOMATIC TRACER MECHANISM
Kaiji Negoro, Montebello, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Sept. 19, 1968, Ser. No. 760,909
Int. Cl. B23q *35/16*
U.S. Cl. 251—3 **7 Claims**



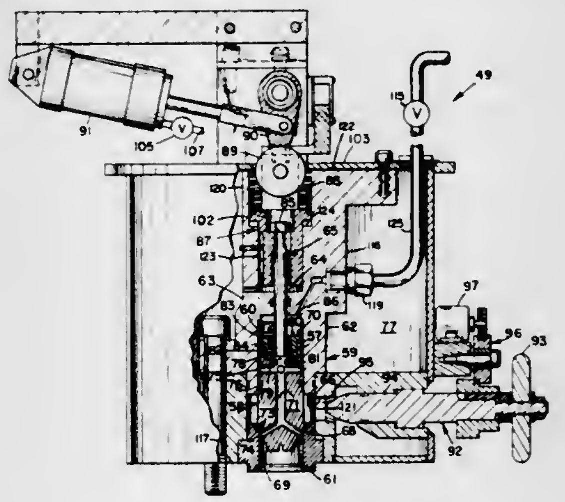
A feed rate adjustment control is provided for a spindle-type machine tool tracer valve mechanism; the tracer valve mechanism being of the type which is characteristically used as a control for a machine tool, in which the workpiece and the cutting tool are shifted relative to one another for the purpose of duplicating the countour of a template which is engaged by the spindle in the workpiece. The feed rate adjustment control of the invention permits the operator to set the tracter valve mechanism at different feed rates for a given deflection of the spindle, and it is particularly adapted to the automatic type of tracer valve mechanism.

3,529,802
MANUAL-AUTOMATIC TRANSFER DEVICE FOR PNEUMATIC CONTROL SYSTEMS
George A. Hall, Jr., Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 30, 1967, Ser. No. 686,989
Int. Cl. F16k *31/12*
U.S. Cl. 251—26 **9 Claims**



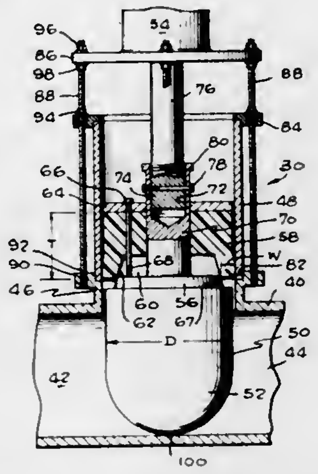
A device provides smooth and "bumpless" transfer between automatic and manual control of a pneumatic regulating or control system. This is accomplished by means of a manual controller incorporating a bellows or the like responsive to the pressure applied to a control valve and arranged to match the applied incoming pressure with that in the control valve whenever a transfer is made from automatic to manual control or vice versa.

3,529,803
QUICK-ACTING PILOT VALVE
Gene P. Schell, Irving, and Charles J. Stalmach, Jr., Grand Prairie, Tex., assignors to LTV Aerospace Corporation, Dallas, Tex., a corporation of Delaware
Original application Apr. 7, 1965, Ser. No. 446,190, now Patent No. 3,418,445. Divided and this application Sept. 6, 1968, Ser. No. 757,970
Int. Cl. F16k *39/02*
U.S. Cl. 251—58 **1 Claim**



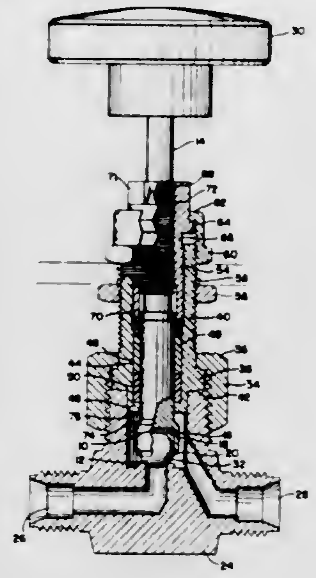
A quick-acting, high-pressure valve which is movable from a closed position to an open position as a result of movement of a pilot element from a position where it does not bear against a main valve stem to a position where it does bear against the stem, with the pilot element being continuously immersed in and subject to the pressures of a fluid being contained by action of the valve.

3,529,804
PISTON TYPE VALVE WITH EXPANDABLE SEAL
Duane O. Perrin, 3205 Merrill Drive, Torrance, Calif. 90503
Filed May 3, 1968, Ser. No. 726,448
Int. Cl. F16k *31/12*
U.S. Cl. 251—63.5 **7 Claims**



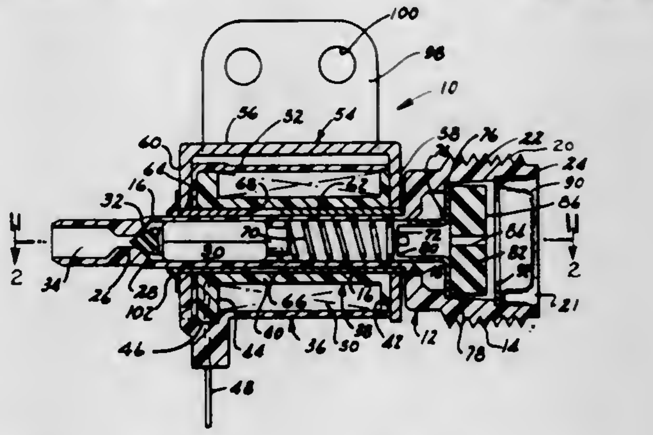
A valve for a concrete pump comprising a valve piston having a front valve-closing portion, a tapered expander member behind the valve closing portion, a thick cup-shaped seal with its hollowed portion disposed over the expander member, and a pressure plate positioned behind the seal. After some wear on the periphery of the seal, the pressure plate is tightened to press the seal against the expander which expands the seal and provides a new peripheral sealing area.

3,529,805
BALL VALVE
Francis J. Callahan, Jr., Chagrin Falls, Ohio, and Stephen Matousek, Moraga, Calif., assignors to Whitey Research Tool Co., Emeryville, Calif., a corporation of California
Filed Oct. 11, 1968, Ser. No. 766,792
Int. Cl. F16k *31/50*
U.S. Cl. 251—88 **12 Claims**



This invention includes a valve body with a valve stem extending therein incorporating a rotatable ball in its tip for sealing against a valve seat within the body. The ball is held to the stem in a way which permits the ball to rotate freely within the stem end, but only about an axis substantially perpendicular to the plane of the valve seat; there being no relative rotation between the ball and seat when they are in contact. Packing around the stem is located both inside the valve body and inwardly of the threads on the stem, which packing structure will act as a fluid dam to prevent contact of the stem threads by corrosive fluids passing through the valve. A packing nut circumscribing the stem is threaded both internally to engage the position locating stem on the stem, and externally to engage an annular bonnet; both internal and external packing nut threads have the same pitch which allows the packing nut to be turned without causing any longitudinal movement of the valve stem relative to the valve seat.

3,529,806
SOLENOID VALVE
James A. Kozel, 32540 Romsey, Franklin, Mich. 48025
Filed Sept. 1, 1967, Ser. No. 665,079
Int. Cl. F16k *31/02*
U.S. Cl. 251—139 **4 Claims**



This invention relates to a solenoid valve characterized by a single molded plastic body element configured to form a threaded inlet connection, a housing for a flow rate control member, a guide tube for the solenoid armature, a valve seat, and a tubular outlet.

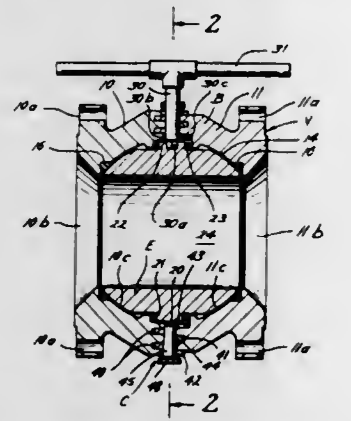
A secondary feature of the valve is a metal insert which serves both as a seat for a resilient flow rate control member and as a seat for an armature-biasing spring.

A further feature of the valve is a low cost key-type antirotation mechanism between the solenoid frame and valve body, said mechanism being operable to prevent rotation of the valve body while a turning torque is being applied thereto incident to coupling the valve to a liquid supply line.

3,529,807

VALVES HAVING RELEASABLE COUPLINGS FOR PARTS SUBJECTED TO DIFFERENTIAL PRESSURE

Raymond E. Pechacek and Eugene J. Clay, Houston, Tex., assignors to Hahn & Clay, a corporation of Texas
Continuation-in-part of application Ser. No. 458,333, May 24, 1965. This application Dec. 28, 1967, Ser. No. 694,300
The portion of the term of the patent subsequent to Mar. 12, 1985, has been disclaimed
Int. Cl. F16k *27/00*
U.S. Cl. 251—218 **9 Claims**

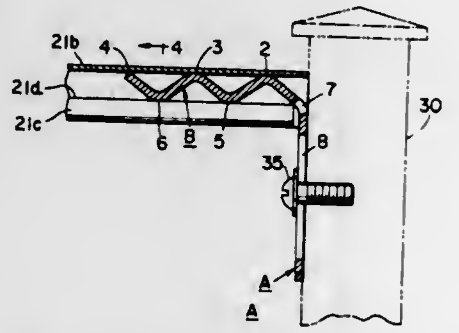


Valves having releasable couplings for parts subjected to differential pressure, and wherein each of the mating sections of the coupling has a plurality of annular concentric rings or layers forming fingers which interfit with annular concentric rings or layers forming fingers on the other coupling section to provide a wall thickness formed by said rings capable of withstanding the differential pressure, and which fingers are retained together by a plurality of pins extending thereinto; the interfitting fingers being either integral with or welded to the parts which they couple together for providing strength to withstand high pressures acting thereon.

3,529,808

ADJUSTABLE RAILING ASSEMBLY

Emmett A. Siebers, Kaukauna, Wis., assignor to Kools Brothers, Inc., Appleton, Wis., a corporation of Wisconsin
Filed June 30, 1969, Ser. No. 837,508
Int. Cl. E04h *17/14*
U.S. Cl. 256—65 **5 Claims**

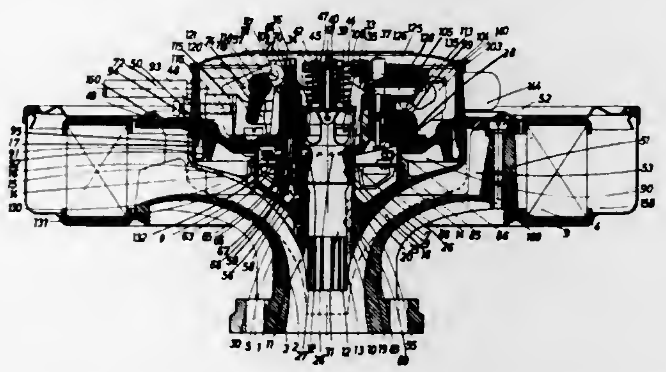


The railing assembly consists of metal railing sections having top and bottom U-shaped elongate rails spaced apart in parallel relation by upright spindles. The rail sections are connected to spaced upright newel posts or other suitable supports by connector fittings which are adapted to be manually inserted in the free ends of the U-shaped railings. The leg portions of the U-shaped railings are infolded within the channel to provide longitudinally extending internal supporting shoulders which support and frictionally retain a clamping portion of the fittings. The clamping portion is corrugated in contour and is slightly expandable so as to bring the peaks of the corrugations into frictional engagement with the internal shoulder portions of the channel. The fitting is also provided with an extension which can be bent at any desired angle and attached to supporting newel posts by bolts.

3,529,809

CARBURETTOR WITH AUTOMATIC EXCESS AIR ADJUSTMENT

Hans A. Freiherr von Seld, Frankfurt am Main, Germany, assignor of one-half to Paul Garthe K.G., Ennepetal, Westphalia, Germany
Filed Sept. 5, 1968, Ser. No. 757,643
Claims priority, application Germany, Sept. 6, 1967, 1,626,546
Int. Cl. F02m *7/22, 9/14*
U.S. Cl. 261—44 **28 Claims**



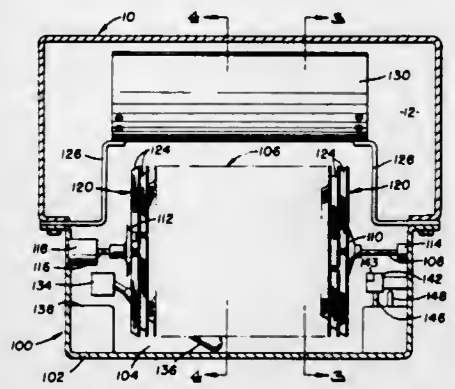
A carburettor for producing a fuel-air mixture for internal combustion engines with a suction duct formed by a substantially trumpet-shaped venturi tube, a throttle member coaxially displaceable in the tube, and a fuel chamber arranged above the throttle member with a feed regulator and a regulating needle which engages into a jet area and which is adjustable depending on the movement of the throttle member, to regulate the fuel feed to an atomizer which is in communication with the suction duct in such a manner so as to ensure uniform distribution and laminar flow of the air in the suction duct as well as uniform distribution and complete evaporation of the fuel in the air flow, even with a minimum of excess air, and without condensation of fuel on the walls of the suction duct.

3,529,810

SCREEN DISC HUMIDIFIER

Kermit E. Chilcoat, North Olmsted, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed July 29, 1968, Ser. No. 748,541
Int. Cl. B01d *1/14*
U.S. Cl. 261—92 **15 Claims**

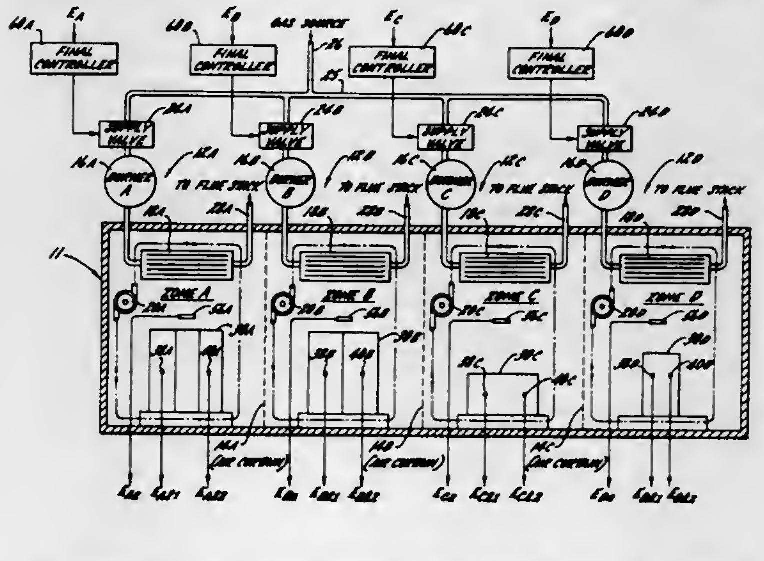
A humidifier for adding liquid vapor to a moving fluid stream having a rotating screen disc media for transferring liquid from a liquid reservoir to the moving fluid stream for vaporization thereby. The humidifier including a stacked disc media pack with spacing between individual discs being provided by raised portions of an adjacent disc. Also included in the humidifier is a disc drive assembly having a configured drive shaft and resilient mating cooperation of the discs with the drive shaft to provide a coupling therebetween. The disc pack and drive assembly including the drive shaft are coupled to a rotary power source through a flexible drive and liquid shield coupling member. A damper is provided for use with the humidifier to provide fluid stream diversion, the damper being unitary while positionally adjustable with respect to the humidifier. The humidifier is further provided with means for preventing scaling due to precipitation of dissolved minerals.



3,529,811

METHOD AND APPARATUS FOR REGULATING BATCH-TYPE HEAT TREATING UNITS

Newell Clark Grove, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 19, 1968, Ser. No. 777,106
Int. Cl. F27b *19/00*
U.S. Cl. 263—10 **27 Claims**



A method for regulating the rate at which heat is supplied to each of the several furnace zones of a batch-type heating unit to obtain heating of the loads disposed in such zones at the maximum rate consistent with preventing the temperature of any one of them from overshooting a predetermined set point and with maintaining the difference between the temperatures of the hottest and coolest of the loads within an acceptable range. The method involves employing, for each of the zones, respective weighted phantom set points, which can be generally expressed as:

$$T_{pw}=T_s+K_1\Delta-K_2\theta$$

where

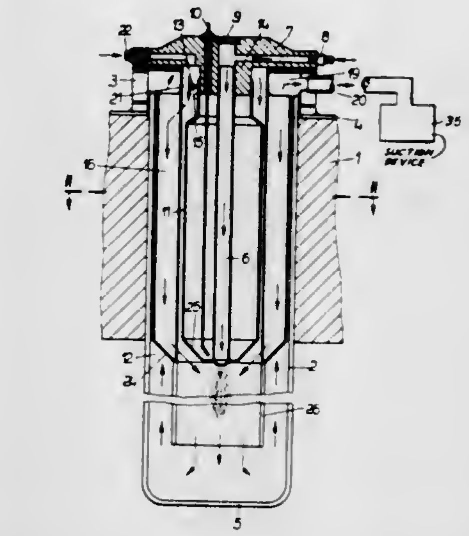
T_{pw}=the weighted phantom set point for a particular furnace zone,
T_s=a predetermined set point,
K_1=a predetermined proportionality constant,
Δ=the difference between the set point and the temperature of the zone's load,
K_2=a predetermined proportionality constant, and
θ=the difference between the temperature of the zone's load and a reference load temperature.

Also, there is an analog control circuit disclosed for automatically carrying out the regulating method.

3,529,812

BURNER WITH AIR-PREHEATED RECOVERY

Joachim Wunning, Warmbronn, Germany, assignor to Firma J. Aichelin, Korntal, Germany, a firm of Germany
Filed Aug. 15, 1968, Ser. No. 784,963
Claims priority, application Germany, Aug. 17, 1967, 1,551,761
Int. Cl. F23l *9/00*
U.S. Cl. 263—19 **13 Claims**

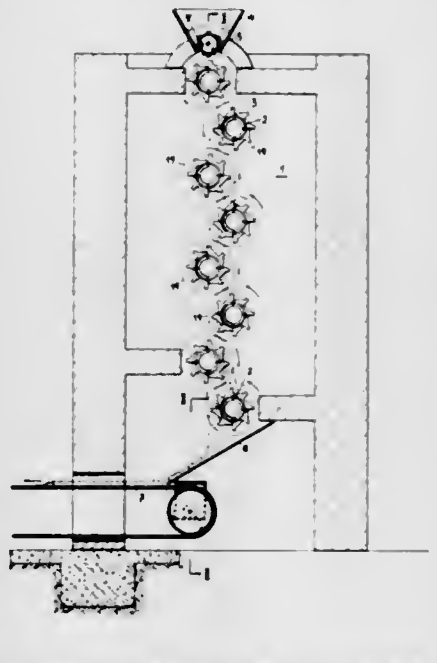


An industrial burner having a recuperative air preheating device including an air duct cylinder mounted around the burner and forming an annular gap between the air duct cylinder and a jacket tube. Means, such as an accordion-type folded body, is mounted in the annular gap to provide a plurality of radially extending partitions which form a plurality of axial canals in said annular gap. Air flowing in alternate canals is preheated by heat transferred thereto from the hot flue gases flowing in the remaining alternate canals.

3,529,813

MATERIAL HEAT-TREATING APPARATUS WITH CONVEYOR

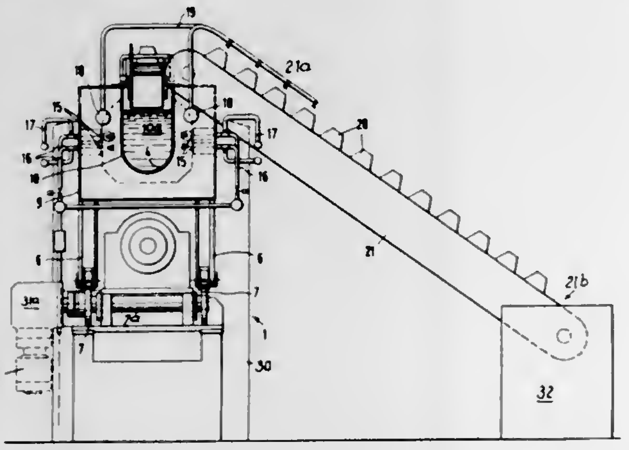
Baruch Portnov, 54 Hazorea St., Kfar Shmaryahu, Israel
Filed July 5, 1968, Ser. No. 742,725
Claims priority, application Israel, July 12, 1967, 28,302
Int. Cl. F27b *1/10*
U.S. Cl. 263—31 **9 Claims**



Material heat-treating apparatus comprises a heated chamber and a conveyor for conveying therethrough the material being heated, the conveyor comprising a plurality of rotary bodies each made up of a plurality of elements bearing one against the other all disposed within the chamber, the elements being held together by compressional forces exerted thereon by pressure members rotatably mounted on bearings disposed outside the chamber. The rotary bodies are vertically spaced and coupled to rotate together, the bearings and couplings for the rotary bodies, and the means for applying pressure to the pressure members to hold the elements together, also being disposed ouside the chamber.

3,529,814
APPARATUS FOR FEEDING METAL INGOTS INTO A CRUCIBLE

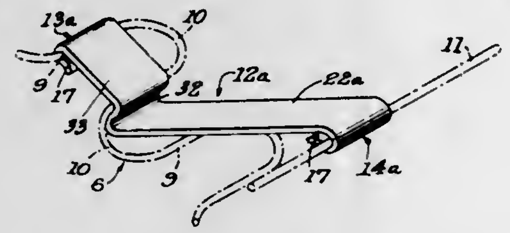
Josef Werner, Franziusweg 10, Hannover, Germany
Filed Feb. 2, 1967, Ser. No. 613,635
Claims priority, application Germany, Feb. 3, 1966, V 30,289
Int. Cl. F27d *3/12*
U.S. Cl. 266—33 **3 Claims**



An apparatus and method for feeding metal ingots to a melting crucible with pre-heating of the ingots on a feed belt and heating at the outlet end of the crucible. The temperature of the metal in the crucible can be held at a lower temperature than the temperature of the metal at the outlet spout of the crucible. A structure for periodically tipping the crucible is provided.

3,529,815
EDGE-WIRE SUPPORT UNIT

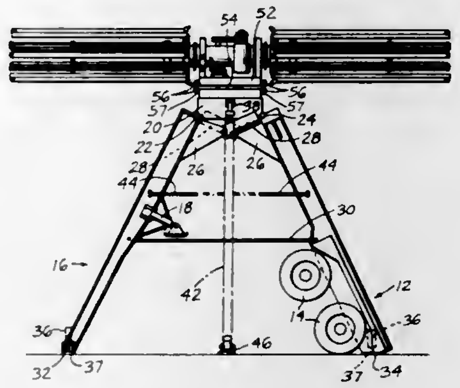
John Garrison, 1840 S. San Antonio, Ontario, Calif. 91762
Original application Oct. 10, 1966, Ser. No. 585,612, now Patent No. 3,425,680, dated Feb. 4, 1969. Divided and this application Nov. 21, 1968, Ser. No. 777,721
Int. Cl. F16f *3/00*
U.S. Cl. 267—102 **4 Claims**



This invention is characterized by the provision, on the opposite ends of a flat steel support spring, of snap-in portions that have non-displaceable connection by one end with one of the cross bars of a sinuous or corrugated spring, and similar connection by the other end with an edge-wire that is resiliently supported in spaced relation to a frame across which a plurality of such sinuous springs spans. The snap-in engagement of one end of the support spring with the sinuous spring holds the former in steady operative position, making it a simple matter to apply the edge-wire by snap-in engagement with the opposite end of the support spring, thereby reducing the assembly time of items of upholstered furniture.

3,529,816
VEHICLE, ESPECIALLY FOR AN AMUSEMENT RIDE OR THE LIKE

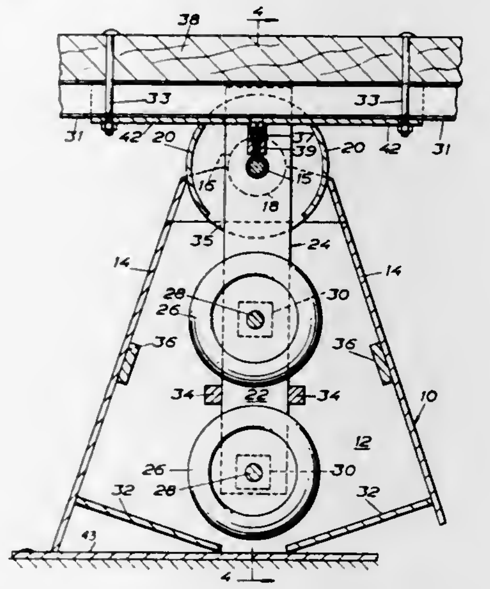
Gerald L. Barber, 232 E. Bigelow, Findlay, Ohio 45840
Original application Jan. 23, 1968, Ser. No. 699,938, now Patent No. 3,176,983. Divided and this application Aug. 5, 1969, Ser. No. 847,620
Int. Cl. A63g *1/00*
U.S. Cl. 272—29 **17 Claims**



Jointed trailer vehicle having a center section and end sections pivoted to the center section and hydraulic motors connected between the center section and end sections to convert the vehicle from a flat collapsed position to a buckled A shape position. The trailer is adapted to form the conveying means for an amusement ride when the ride and trailer are collapsed and for supporting the ride in elevated position when the trailer is buckled to substantially an A shape.

3,529,817
SEESAW WITH RESILIENT RING BUFFER DEVICE

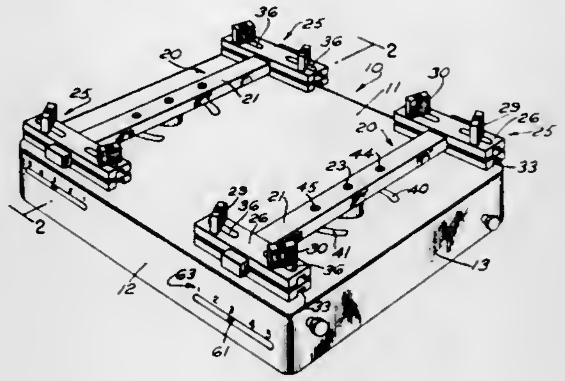
Clement Hirst, Lightcliffe, near Halifax, England, assignor to B. Hirst & Sons Ltd., Halifax, England, a corporation of Great Britain
Filed Mar. 5, 1968, Ser. No. 710,463
Claims priority, application Great Britain, Mar. 15, 1967, 12,113/67, Patent 1,152,074
Int. Cl. A63g *11/00*
U.S. Cl. 272—54 **9 Claims**



A non-bump seesaw has a plank **38** pivoted on a hollow support column **10**. A pendulum arm **24** depends from the plank and within the support column said pendulum arm **24** carrying a buffer device. This buffer device comprises two rubber tires **26**, each rotatable, mounted on spindles **28** secured to the pendulum arm **24**. The buffer devices engage with either of two opposed side walls of the column to cushion rocking movement of the plank.

3,529,818
SKI TRAINING DEVICE

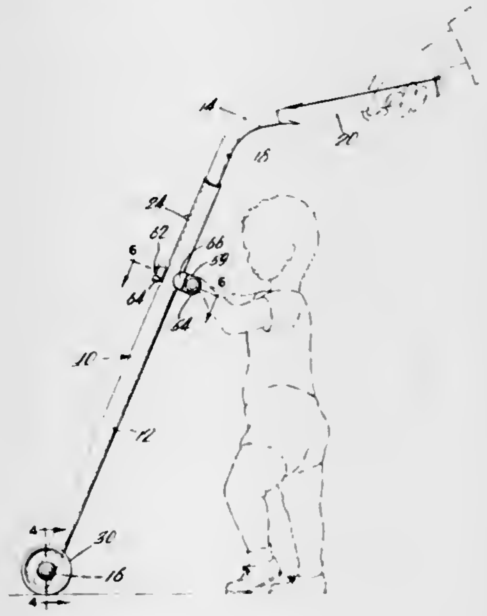
Sulo A. Aijala, Attleboro, Mass., assignor to Intricate Machine & Engineering Inc., a corporation of Massachusetts
Filed Aug. 6, 1968, Ser. No. 750,609
Int. Cl. A63b *21/04, 23/04*
U.S. Cl. 272—57 **5 Claims**



A ski training device having a foot supporting carriage for each foot of the user. Attached to the underside of the carriage are downwardly extending pins which pass through arcuate slots in the deck of the base and said pins bear against arms rotatably mounted in the base. The carriages are rotatably mounted on spindles extending upwardly through the deck of the base and enable the feet to be relatively moved from a position parallel to each other to position with the toes turned out or toes turned in or swung together from a parallel position either to the right or left with all the relative movements of the pins attached to the bottom of the carriages directed against said rotatable arms and said movements being resisted by springs attached to the arms.

3,529,819
TRAINING DEVICE FOR AIDING INFANTS TO WALK

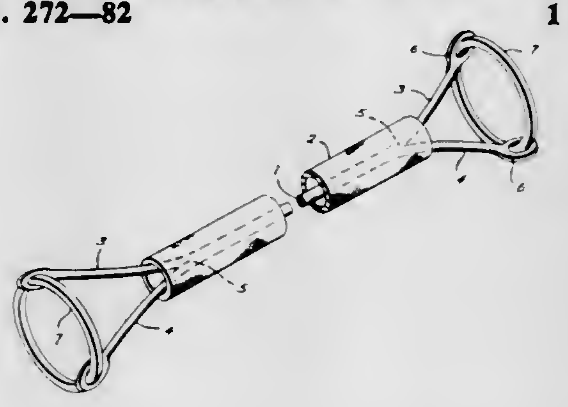
John L. Blank, 402 S. State Road, Upper Darby, Pa. 19082
Filed May 6, 1968, Ser. No. 726,924
Int. Cl. A61h *3/00*
U.S. Cl. 272—70 **5 Claims**



A training device for use by adults in aiding infants to walk consisting of an elongated body member having an axle supporting wheels at one end so that the device may be actuated along a walking surface, a hand grip member for gripping by the adult to support the device and a hand rail within easy reach of an average sized infant. The body member is connected to the axle in such a manner to allow limited pivotal movement so that it may be selectively positioned at an angle offset from a plane perpendicular to the walking surface.

3,529,820
EXERCISING DEVICE

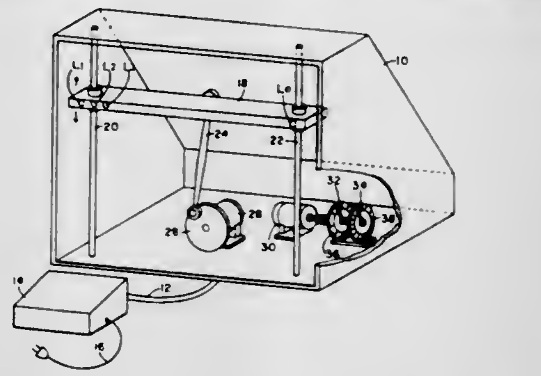
Ouita P. Templeton, 3627 Zephyr, Houston, Tex. 77021
Filed Jan. 13, 1969, Ser. No. 790,614
Int. Cl. A63b *21/02, 21/12*
U.S. Cl. 272—82 **1 Claim**



An exercising device for bust development through forced use of the muscles of the back, shouders and chest, consisting of an elastic cord having a sleeve loosely mounted thereon, and having an elbow harness at each end to receive the elbows of the user.

3,529,821
SPACECRAFT ORBIT TRACKING TOY

Frank D. Piazza, 3329 Almar Drive, Vestal, N.Y. 13850
Filed June 10, 1968, Ser. No. 735,671
Int. Cl. A63f *9/00*
U.S. Cl. 273—1 **10 Claims**

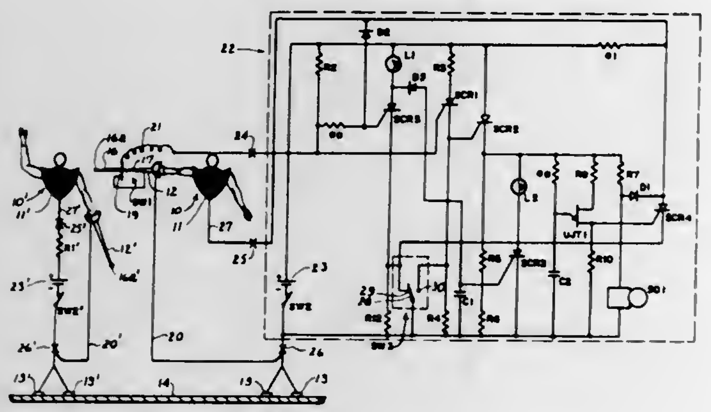


A toy or game which simulates a realistic trace of a spacecraft orbit around the earth by means of a moving array of sequentially blinking lights mounted behind a map. The lights are mounted in a line on a vertically reciprocal element, which is driven by a motor. Various controls may be provided for changing the trajectory of the trace of the simulated craft, by changing the rate of sequential blinking of the lights and the speed of the motor thereby enabling the device to simulate the performance of deorbit and splashdown maneuvers and other simulated "mission" procedures just as in real spacecraft.

3,529,822
ELECTRICAL APPARATUS FOR SCORING FENCING MATCHES

Leonard R. Rubin, 459 Wheaton Road, Union, N.J. 07083
Filed July 17, 1968, Ser. No. 745,490
Int. Cl. A63b *69/02*
U.S. Cl. 273—1 **10 Claims**

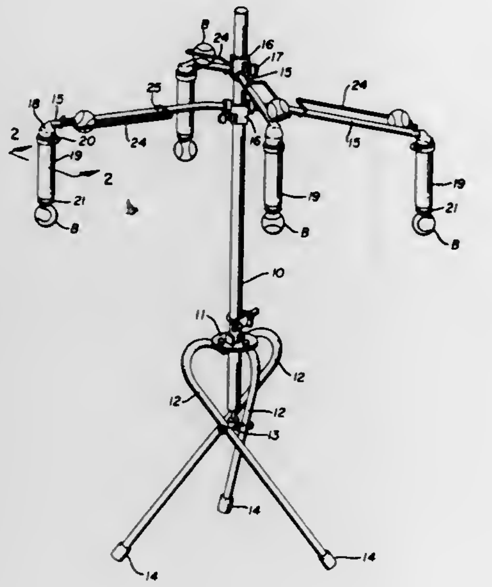
Electrical apparatus for scoring a fencing match includes an electrically conductive floor surface, electrically conductive footgear worn by the fencers for making electrical contact with the floor surface, and a weapon, an exposed electrically conductive surface and a scoring assembly carried by each fencer. Each scoring assembly has a battery connected to the fencer's footgear, to signal devices and actuating means therefor in the scoring assembly, and to a switch on his weapon. The switch on each weapon has an exposed movable contact at the tip connected to actuating means for the signal devices in the scoring assembly of the fencer carrying the weapon so that when both fencers are on the conductive floor surface and one presses the tip of his weapon against the exposed conductive surface of the other, the battery in the other's scoring assembly is connected, through the weapon switch and through the floor surface, to actuate a fair hit signal in the scoring assembly of the one fencer. If one of the fencers presses the tip of his weapon against a nonconductive surface, the switch of his weapon completes a circuit in his scoring assembly which actuates a foul signal.



3,529,823

BASEBALL BATTING PRACTICE DEVICE

John P. Garver, 9450 Sharrott Road,
Youngstown, Ohio 44514
Filed Mar. 28, 1968, Ser. No. 716,914
Int. Cl. A63b *69/40*
U.S. Cl. 273—26 **2 Claims**

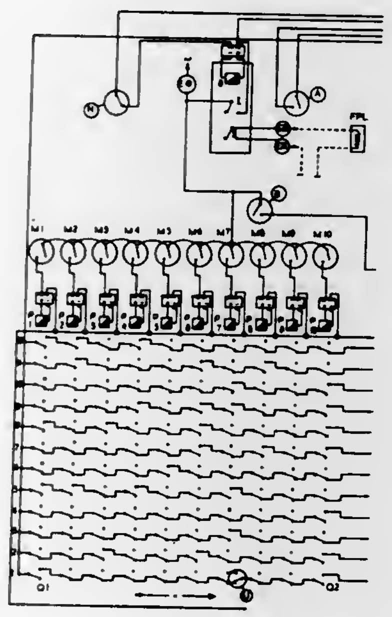


A baseball batting practice device in the form of a stand holding rotatable cross arms, the ends of each of which suspend shock absorbent members having curly pile fabric to which baseballs having patches of hook fabric are releasably secured.

3,529,824

TEN PIN BOWLING GAMES

Rolf Walch, 671 Lane St., Broken Hill,
New South Wales, Australia
Filed Aug. 23, 1968, Ser. No. 754,853
Claims priority, application Australia, Aug. 28, 1967,
26,467/67
Int. Cl. A63d *5/00*
U.S. Cl. 273—54 **9 Claims**



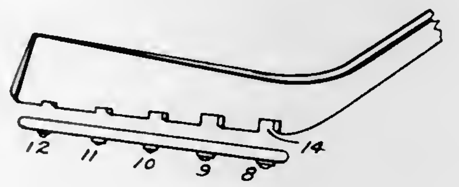
A ten pin bowling alley including a pin setter is equipped with a coin-operated and coin-dispensing arrangement set into motion by tendering of a coin, and including electrical circuits, relays, counters and switches.

The relays are operated in accordance with the number and position of the pins left standing after a ball has been played and the contacts of the relays are so connected that for certain predetermined combinations of pins left standing electric circuits are closed for the counters which are set to make a predetermined number of steps in accordance with each of said combinations and thereby control the dispensing of a corresponding number of coins.

3,529,825

HOCKEY STICK ROAD ADAPTER

Thomas Paul White, Sr., 109 Gilbert St.,
Saint John, New Brunswick, Canada
Filed May 22, 1967, Ser. No. 641,748
Int. Cl. A63b *59/00*
U.S. Cl. 273—67 **7 Claims**

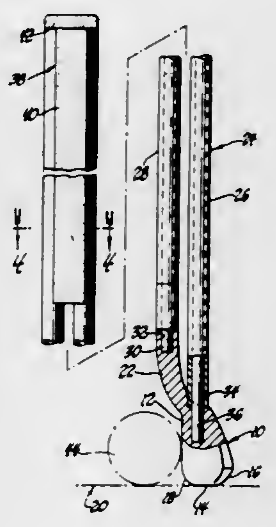


A friction reducing means for a hockey stick blade is described in which a number of balls are placed in a spaced relationship along the lower edge of the hockey stick blade by means of retainers which hold said balls in an attached relationship to a blade-like attachment member. The attachment member is fixedly attached to one of the faces of the hockey stick blade. The retainers allow the balls to rotate, and the balls extend below the blade sufficiently that they are caused to rotate when they come into contact with an adjacent surface.

3,529,826

GOLF CLUB WITH TWIN SHAFTS

Myron Hulyk, 20037 Edmunton, St. Clair Shores,
Mich. 48080
Filed Aug. 3, 1967, Ser. No. 658,127
Int. Cl. A63b *53/00, 53/02, 53/14*
U.S. Cl. 273—80 **5 Claims**

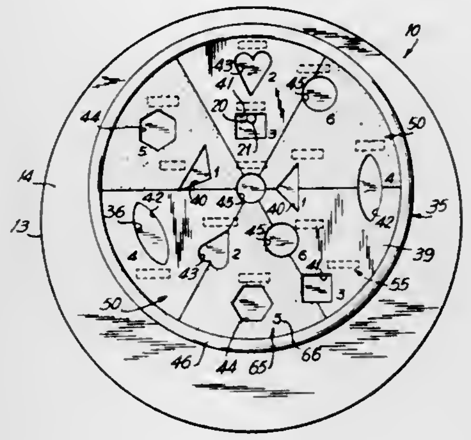


A golf club having a head with a ball contacting face and a pair of twin shafts extending upwardly from the head. An enlarged grip assembly maintains the shafts in spaced relation, and with the shaft mounting at the club head, tends to prevent twisting of the club face in the swing arc. Vibration damping material is placed between the shafts.

3,529,827

RING TOSS GAME APPARATUS

Mildred E. Berger, 37—31 73rd St.,
Jackson Heights, N.Y. 11372
Filed Apr. 1, 1968, Ser. No. 717,644
Int. Cl. A63b *67/06*
U.S. Cl. 273—100 **4 Claims**

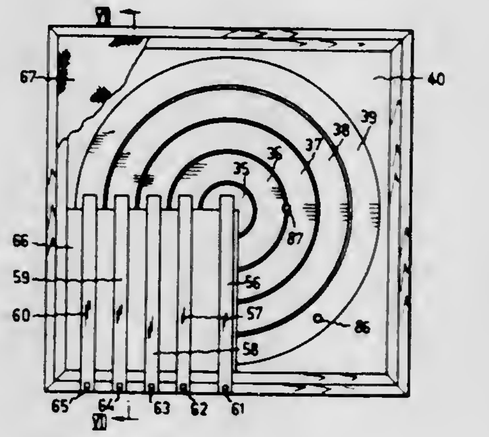


The invention relates to a game having a support portion with a retaining rod extending therefrom and a throwing portion containing a number of openings of various configurations and sizes, the aim of which is to hook the rod through an opening so that it retains the throwing portion in place. The openings vary in difficulty by their shapes and cross-sectional areas, with information in the form of messages and numerals associated with each opening in relation to its degree of difficulty.

3,529,828

TARGET AND MEANS FOR AUTOMATICALLY INDICATING THE POSITION AT WHICH A PROJECTILE SHOT FROM A WEAPON HITS THE TARGET

Claude B. Thalmann, Egg, near Zurich, Switzerland, assignor to Polytronic Ltd., Saint-Aubin, Neuchatel, Switzerland
Filed May 2, 1967, Ser. No. 638,692
Claims priority, application Switzerland, May 3, 1966,
6,371/66
Int. Cl. F41j *5/04*
U.S. Cl. 273—102.2 **10 Claims**

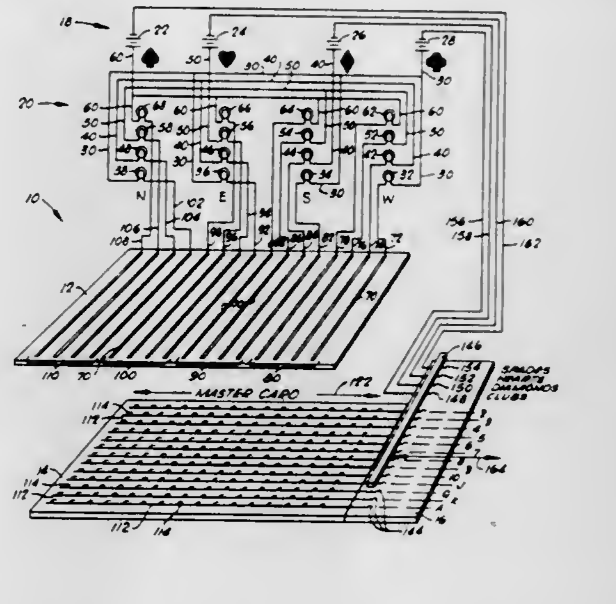


A shooting target having at least two electrically conductive sheets, which are connected to circuits for automatically indicating position and point value of hit scored, the projectile fired simultaneously contacting the two sheets to close the circuit.

3,529,829

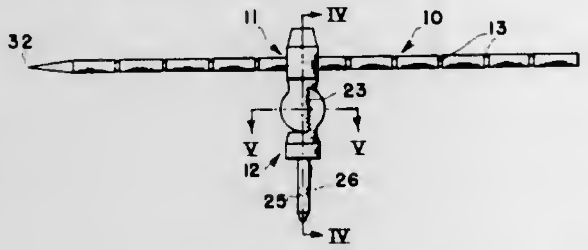
PLAYING CARD DISTRIBUTION DEVICE

Thomas G. Seifert, 833 NW. 33rd,
Oklahoma City, Okla. 73118
Continuation-in-part of application Ser. No. 614,065,
Feb. 7, 1967. This application Aug. 26, 1968, Ser.
No. 767,017
Int. Cl. B07c *5/344;* **A63f** *1/14*
U.S. Cl. 273—149 **11 Claims**



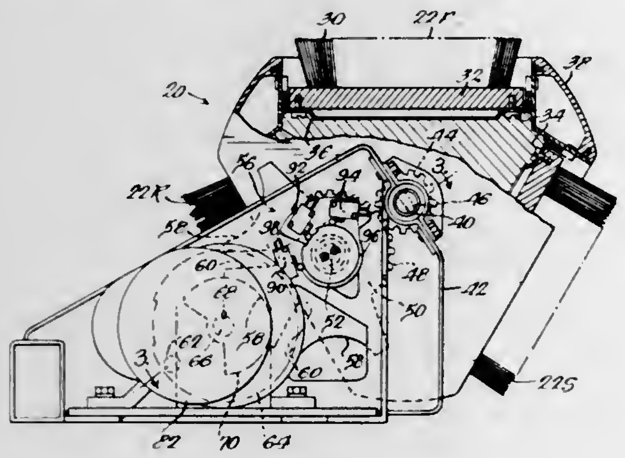
A playing card sorting apparatus which employs a master card indicative of particular hand distribution and individually coded playing cards, the apparatus consisting of electric circuitry which is preconditioned by the master card to enable selected card hand distribution indications for each playing card. The circuitry includes a separate power source for each card suit, each suit circuit being routed to parallel indicators each denoting a card suit and the master card enables a particular suit and hand indicator for a given card rank as determined from sensing of coded indicia on the particular playing card.

3,529,830
PUTTER ALIGNING DEVICE
John J. Palotsee, P.O. Box 1225,
Youngstown, Ohio 44501
Filed June 19, 1967, Ser. No. 647,032
Int. Cl. A63b *53/00*
U.S. Cl. 273—163 **3 Claims**



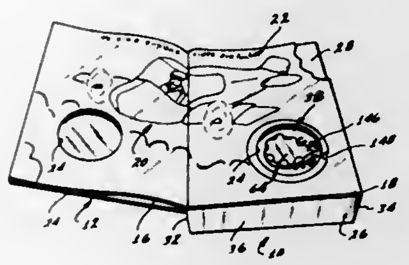
A device for assisting a golfer in correctly aligning a putter with a golf ball so as to drive the ball into the hole or cup. A long rod is mounted on a holder inserted into a hole in the head of the putter. The rod extends normal to the plane of the ball striking face of the putter and intersects the line from the golfer's eye to the ball striking point of the putter face. The rod indicates when the putter is correctly positioned relative to the ball and correctly aligned relative to the desired path of travel of the ball. The rod may also be slid forward or rearward to indicate the distance to move the putter rearwardly to hit the ball a desired distance. The rod is attached to the club head by a holder having a prong of non symmetrical cross-sectional configuration to preclude attachment in any position except normal to the plane of the striking face.

3,529,831
INDEXIBLE TEE FOR GOLF GAMES
Albert P. Rogers, Spring Lake, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 775,990
Int. Cl. A63b *69/36*
U.S. Cl. 273—195 **8 Claims**



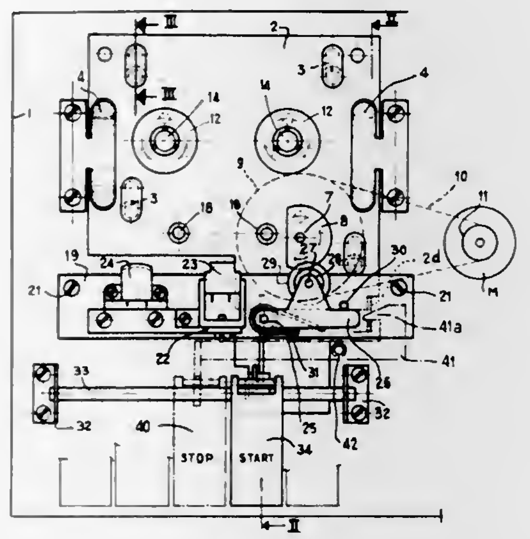
An improved indexible tee construction for use in golf games including a rotatable turret having three different mats from which a golfer may effect a sand shot, a shot from the rough, and a shot from the fairway spaced about its periphery, means for rotating the turret, control means for the rotating means so that a selected one of the mats may be disposed in a position whereat the golfer may hit a ball therefrom, and an improved drive train between the rotating means and the turret that insures that the selected mat will be solidly held in position by locking the turret against rotation.

3,529,832
SOUND ILLUSTRATED BOOK
John H. Goetz, Sherman Oaks, Michael E. Golden and Adolphus L. Lee, Los Angeles, and Willard L. Zeigner, Fountain Valley, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California
Filed Feb. 8, 1968, Ser. No. 704,045
Int. Cl. G11b *3/00*
U.S. Cl. 274—1 **7 Claims**



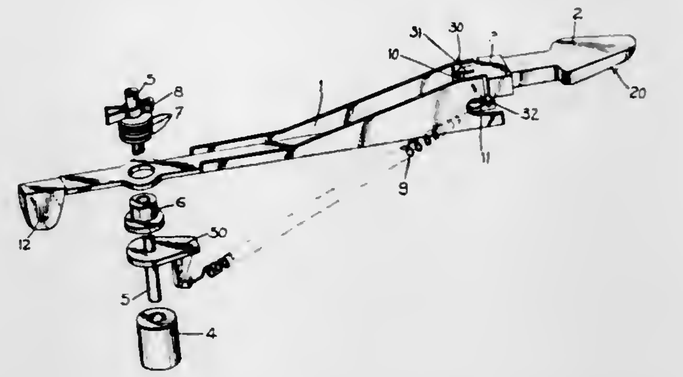
Indicator means for preconditioning sound reproducing to play recorded messages corresponding to printed matter on each page is rotatably mounted in juxtaposed page-apertures bearing indicia with which indicator means may be aligned to indicate that sound reproducing means is preconditioned to reproduce recorded message corresponding to printed matter on a particular page.

3,529,833
SOUND RECORDING AND REPRODUCING MAGNETOPHONES
Maurice Bardon, Lyon, France, assignor to Teppaz S.A., Lyon, Rhone, France, a French joint-stock company
Filed June 14, 1968, Ser. No. 737,012
Claims priority, application France, June 21, 1967, 48,821
Int. Cl. G11b *5/00*
U.S. Cl. 274—4 **6 Claims**



The sound recording and reproducing apparatus operates with a removable cassette of the kind including a pair of juxtaposed rotatable spools supporting a magnetic tape and guiding rollers for that portion of said tape disposed between the spools, which spools have drilled hubs. The apparatus comprises a stationary support; a carriage to receive the cassette, same being movable on the stationary support between a first and a second position. Two parallel toothed spindles are rotatably supported by the carriage to receive the drilled hubs of the spools of the removable cassette when same is mounted on the carriage. A capstan is also rotatably carried by the carriage to frictionally drive the portion of the tape of said removable cassette which is disposed between the spools thereof when the cassette is mounted on the carriage. A magnetic sound recording and reproducing head is carried by the stationary support to cooperate with the said portion of the tape when carriage is at its second position on said support with the removable cassette mounted on the carriage. A resiliently mounted pressure roller is mounted on the stationary support to press the said portion of the tape against the capstan when the carriage is at its second position on the support with the removable cassette mounted on the carriage. Manually actuated means are provided on the stationary support to displace the carriage on the support between the first and second positions, and vice versa. A driving motor is carried by the stationary support to drive the capstan. A resilient belt connects the motor with the capstan, the motor being so disposed on the stationary support that the belt is effective at least when the carriage is at its second position on the support.

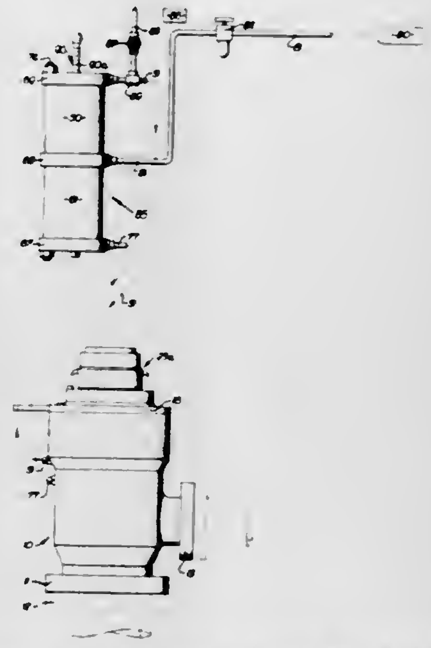
3,529,834
PICK-UP ARM FOR MINIATURE RECORD PLAYERS
Robert R. A. R. Renoux, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 30, 1968, Ser. No. 748,790
Claims priority, application France, Mar. 18, 1968, 144,237
Int. Cl. G11b *3/10*
U.S. Cl. 274—23 **4 Claims**



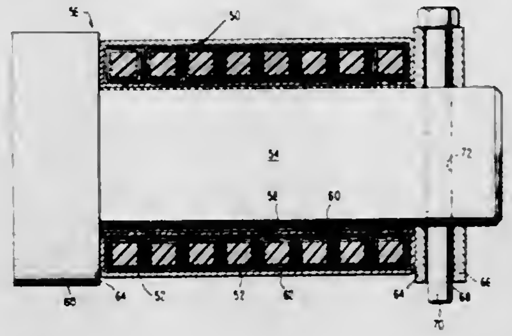
A pick-up arm comprising an elongated member elastically mounted on a pivoting shaft perpendicular to this member and a pick-up supported by a mounting member mounted on one end of the elongated member by means of a spindle for allowing limited rotation of this mounting member about an axis perpendicular to the pivoting shaft and to the elongated member. A counterweight balances said arm about its point of support on the pivoting shaft and a preloaded draw-spring is fixed, obliquely with respect to the elongated member, between the mounting member and a fixing point near the pivoting shaft.

3,529,835
KELLY PACKER AND LUBRICATOR
George E. Lewis, Arcadia, Calif., assignor to Hydril Company, Los Angeles, Calif., a corporation of Ohio
Continuation of application Ser. No. 674,807, Oct. 12, 1967. This application May 15, 1969, Ser. No. 835,862
Int. Cl. F16j *15/32, 15/54*
U.S. Cl. 277—2 **8 Claims**

Means is provided to effect displacement of sealing liquid from a supply cylinder into a leaking sealing chamber for maintaining the latter filled. The sealing chamber includes a first piston through which pressure from a main source is transmissible to the sealing liquid; and the referred to means includes piston structure having a primary piston surface to receive pressure application from the main source and a secondary piston surface to receive pressure application from an auxiliary source; one of the primary and secondary piston surfaces being movable in the supply cylinder.



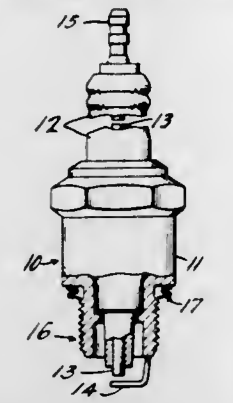
3,529,836
OIL WELL PACKING
Walter E. Hyde, ℅ Halliburton Company, Drawer 1431, Duncan, Okla. 73533
Continuation of application Ser. No. 436,457, Mar. 2, 1965. This application June 13, 1967, Ser. No. 654,296
Int. Cl. F16j *15/02*
U.S. Cl. 277—9.5 **3 Claims**



A method, system and apparatus for positioning and setting a squeeze-type well packer in a well bore wherein high temperatures, high pressures and caustic fluids exist to circumvent premature setting of the packer. A packer comprising a plurality of rings or a helix is mounted on a mandrel and portions of the rings or helix are longitudinally interconnected by selectably vitiable, movement retaining means such as a sleeve or wires to circumvent relative movement and premature setting as by encountering obstructions such as casing joints when the packer is moved in a well bore to a desired setting location.

3,529,837
GASKET
Carl J. Eaton and James F. Hoffman, Toledo, Ohio, assignors to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware
Filed Dec. 2, 1968, Ser. No. 780,405
Int. Cl. F16j *9/00;* **F02f** *5/00*
U.S. Cl. 227—26 **4 Claims**

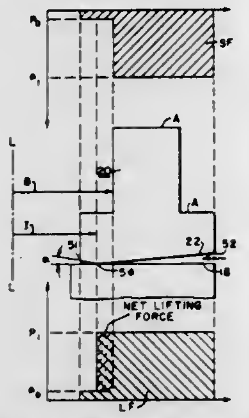
Spark plug with a gasket shaped to have a plurality of facing surfaces so interconnected that, when the gasket is compressed, the facing surfaces are resiliently urged apart. The facing surfaces are coated with a material which, at temperatures not higher than about 200° F., are thermally decomposable or thermoplastic. As a consequence of the coating on the facing surfaces of the gasket, removal of the spark plug from threaded engagement with



an internal combustion engine, after normal operation of the engine, is facilitated.

3,529,838
SHAFT SEAL LIFT-OFF ARRANGEMENT

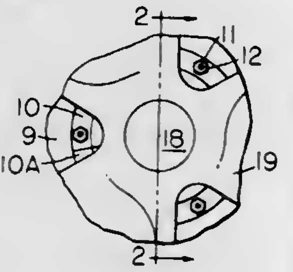
Norman R. Singleton, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 15, 1968, Ser. No. 697,726
Int. Cl. F16j *15/16, 15/34*
U.S. Cl. 277—27 10 Claims



In a controlled leakage face type shaft seal in which the operation depends on the balance of hydrostatic pressure forces acting in the axial direction on a non-rotating floating seal ring, the flow passage between the seal ring and a rotating member (runner) is constructed to provide a zero net axial force on the seal ring only at the operating clearance. Before pressurization, the seal faces contact each other under the influence of gravity and of light compression springs. In order to assure that the seal ring will rise to the equilibrium position when pressure is applied to the seal, the configuration of the seal face is made such that a net hydraulic force is provided which is sufficient to lift the seal ring to the equilibrium position.

3,529,839
SHAFT SEAL

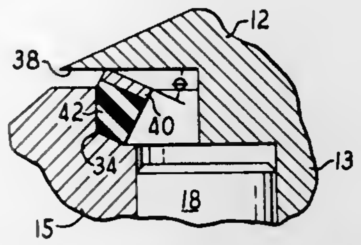
Harold Frederic Greiner and Walter William Meyer, Warwick, R.I., assignors to Sealol, Inc., Warwick, R.I., a corporation of Delaware
Filed Dec. 5, 1967, Ser. No. 688,140
Int. Cl. F16j *15/54;* **B63n** *1/00*
U.S. Cl. 277—91 6 Claims



This invention relates to split type face seals for use with oil lubricated surface vessel stern tube bearings.

3,529,840
BEARING SEAL

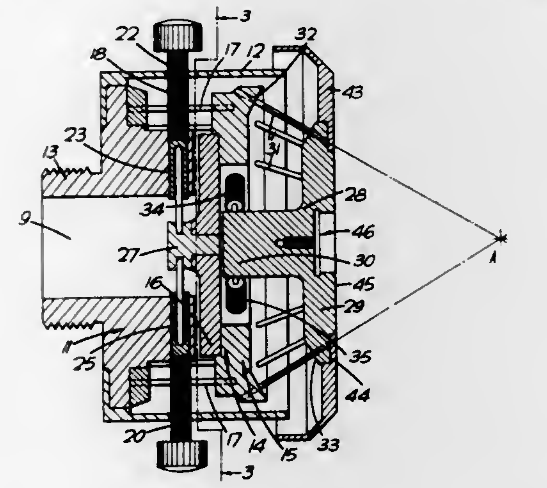
Donald F. Durham and Bernard F. Knpfert, Peoria, and Donald D. Necessary, Morton, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 598,396, Dec. 1, 1966. This application Oct. 23, 1969, Ser. No. 868,942
Int. Cl. F16j *15/38*
U.S. Cl. 277—92 5 Claims



An annular seal assembly comprises a thin, hardened, metal frusto-conical, flexible spring washer seal for performing the dual function of a combined seal and thrust means and has a resilient backing member engaged therewith for compressably forcing the radially outermost portion of the thin metal seal into face-to-face engagement with an annular metal surface.

3,529,841
ALIGNMENT DEVICES

Kenneth Frank Hall, Barnet, England, assignor to W. Watson & Sons Limited, Barnet, England, a British company
Filed Aug. 30, 1968, Ser. No. 756,537
Claims priority, application Great Britain, Sept. 7, 1967, 41,015/67
Int. Cl. B23b *31/36*
U.S. Cl. 279—6 4 Claims

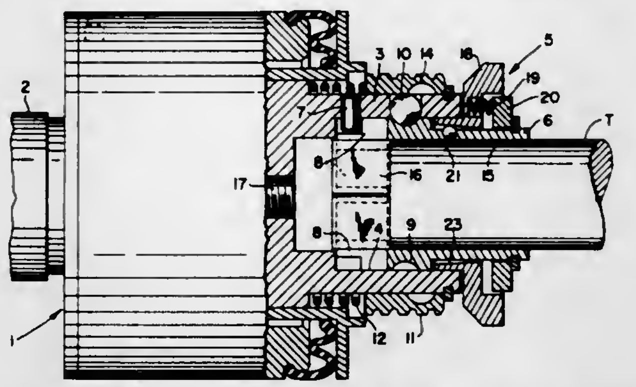


A chuck device comprises a rotatable body, an intermediate ring and a holding member for holding a lens cell. The ring is connected to the body by flexible rods parallel to the axis of the chuck, and to the holding member by flexible rods inclined to the axis. A first set of adjusting rods may move the ring transverse to said axis and a second set of adjusting rods may tilt the holding member, so that the optical axis of a lens in said cell may be aligned with said axis.

3,529,842
QUICK RELEASE TOOL HOLDER

Milton L. Benjamin, David D. Walker, and Wilbur N. Miles, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Nov. 26, 1968, Ser. No. 779,070
Int. Cl. B23b *31/22*
U.S. Cl. 279—30 3 Claims

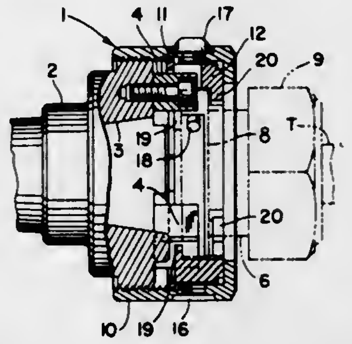
A quick release tool holder which provides quick release connections between a tool supporting cartridge and a holder and between the cartridge and a tool thus to provide for quick replacement in the holder of one



cartridge-tool assembly by another or for quick replacement in the cartridge of a broken or dull tool by a new or resharpened tool.

3,529,843
QUICK CHANGE CHUCK

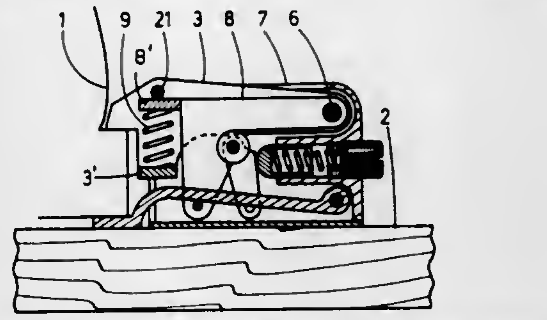
Milton L. Benjamin and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio
Filed Nov. 26, 1968, Ser. No. 779,056
Int. Cl. B23b *31/10*
U.S. Cl. 279—91 18 Claims



A quick change chuck wherein a slotted flange, tapered shank tool mounting member is clamped to and released from a holder by part turn rotation of a clamping and releasing nut assembly which includes a nut member having threaded engagement with the holder, and a clamping and releasing ring having clamping and releasing lugs to engage opposite sides of the flange of the tool mounting member thus to clamp the tool mounting member to the holder and to release the tool mounting member from the holder upon turning of the nut assembly in opposite directions.

3,529,844
SAFETY BOOT BINDING FOR SKIS

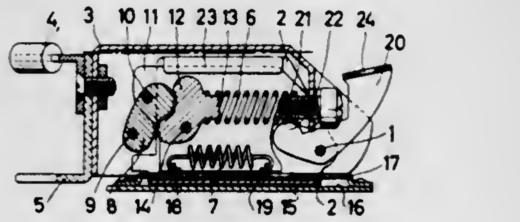
Georges P. J. Salomon, 34 de Loverchy Ave., Annecy, Haute-Savoie, France
Filed Feb. 14, 1968, Ser. No. 705,554
Claims priority, application France, Sept. 5, 1967, 120,065
Int. Cl. A63c *9/084*
U.S. Cl. 280—11.35 6 Claims



The present invention concerns a safety binding for securing a boot on a ski, in which an elastic element is made part of the kinematic transmission chain between the safety locking mechanism and the boot retaining element, whereby the latter is capable of a certain elastic play before release under the action of abnormal forces exerted by the boot on the boot retaining element.

3,529,845
SAFETY BINDING METAL FOR HEEL OF SKI BOOTS

Hiroaki Kanno, 4–17 3-chome, Machiya Arakawa-ku, Tokyo, Japan
Filed Nov. 4, 1968, Ser. No. 773,009
Claims priority, application Japan, Nov. 10, 1967, 42/94,351
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 8 Claims

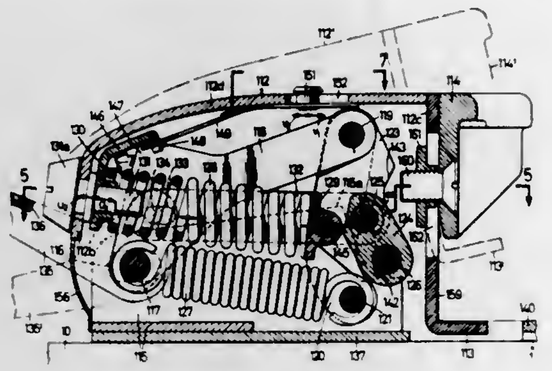


A binding for the heels of ski boots includes a base plate and a cover plate secured together in spaced relation to provide guide means for the base of a channel-shaped slidable member whose upper edges are provided with downwardly turned flanges. An exterior casing is pivoted at its rear end to a first pivot on this member and its forward end carries a heel bracket and an angle for engagement by the heel of a ski boot. A pair of slidable plates are mounted against the flanges of the channel-shaped member, being retained by the down turn upper edges. An operating lever is pivoted to the first pivot and has a convex end engaged in concave recesses in the two slides. A convex cam is pivoted, at a second pivot, to the exertior casing and, at a third pivot, to the two slides. This cam engages a concave cam pivoted at a fourth pivot to the two slides and having a projection engaged in a compression spring whose other end is engaged with a rear portion of the exterior casing. A second spring is secured between the cover plate of the guide means and the base of the channel-shaped member to exert a tension stress moving the channel-shaped member forwardly. The convex cam and the concave cam, together with the first-mentioned spring, operate in the nature of a toggle mechanism.

3,529,846
HEEL SUPPORTING DEVICE FOR A SKI SAFETY BINDING

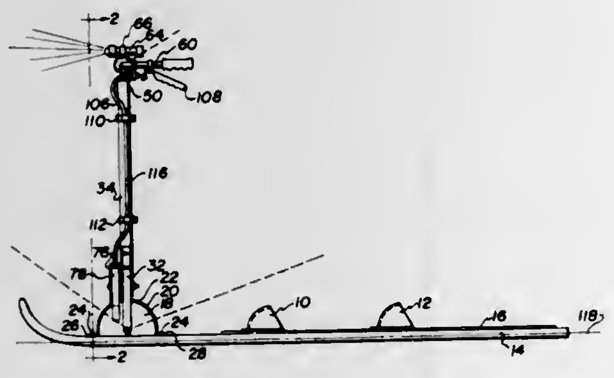
Reinhold Vöster, Stuttgart-Degerloch, and Eugen Schnell, Leonberg, near Stuttgart, Germany, assignors to Vereinigte Baubeschlagfabriken Gretsch & Co. G.m.b.H., Leonberg, near Stuttgart, Germany, a corporation of Germany
Continuation of application Ser. No. 603,273, Dec. 20, 1966. This application Dec. 24, 1968, Ser. No. 788,686
Claims priority, application Germany, Feb. 2, 1966, V 30,274
Int. Cl. A63c *9/08*
U.S. Cl. 280—11.35 45 Claims

A heel-supporting device which forms a part of a ski safety binding that automatically opens when the skier falls forwardly. The heel-supporting device includes a heel-holding element depressing the heel of a ski boot upon the ski while the heel-holding element is pivotal about an axis extending transversely to the ski and is longitudinally movable to a limited extent; **a first resilient** spring presses the heel-holding element in the forward direction while bracing means are connected thereto which are movable with the heel-holding element in the longitudinal direction. The heel-holding element is also under the influence of a toggle mechanism, itself under the influence of a second resilient means in such a manner that only in the presence of a pre-determined upward lifting force, the toggle mechanism is displaced beyond its dead-center position so that the second resilient means, previously opposing lifting of the heel-holding element, now acts to assist the opening of the heel-holding element.



3,529,847
MONO-SKI

Ray F. Shores, Baltimore, Md. (3 Brookebury Drive,
Reisterstown, Md. 21136)
Filed May 14, 1968, Ser. No. 728,936
Int. Cl. B62b *17/06*
U.S. Cl. 280—12 **9 Claims**

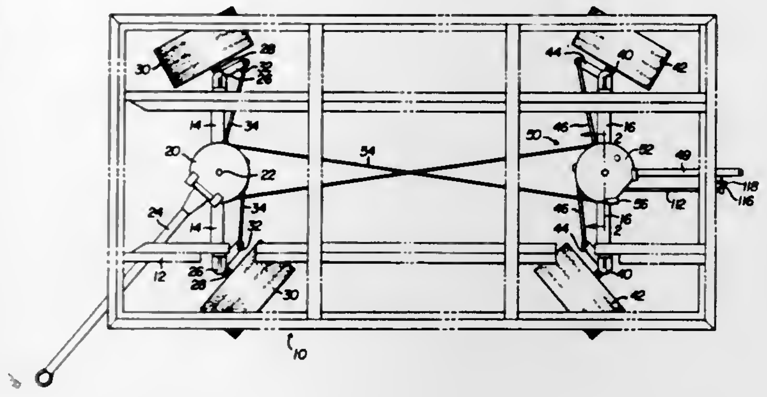


A single ski having an upwardly extending rod pivotally connected thereto and terminating in a handle bar. A braking system operable from the handle bar permits the position of the rod to be adjusted during use and a light connected to the rod can be oriented in various directions by the skier without affecting the direction of the ski's motion.

3,529,848
TRACKING TRAILERS

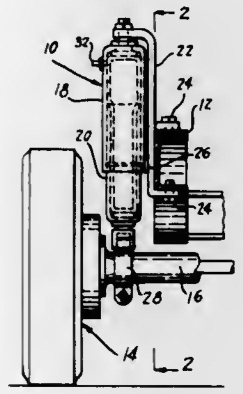
John P. Harvey, Grand Haven, Mich., assignor to Harvey Harvesters, Inc., Grand Haven, Mich., a corporation of Michigan
Filed Mar. 7, 1968, Ser. No. 711,258
Int. Cl. B62d *13/06*
U.S. Cl. 280—99 **12 Claims**

A tracking trailer in which all four wheels are steered to follow a common path without skidding of any of the wheels and designed so as to have subsequent trailers likewise track in the same tracks defined by the first trailer. A specific mechanism is incorporated within the rear steering plate of each trailer and the associated rear wheels so as to be capable of having steering of the rear wheels in response to steering of the front wheels and alternatively locking of the rear wheels in parallel condition for backing the trailer or for highway travel.



3,529,849
AIR CUSHION SHOCK ABSORBER FOR VEHICLES

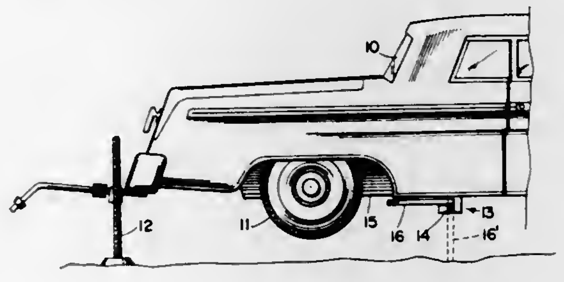
Guyton Ellis Hornsby, Annandale, Va.
(P.O. Box 869, Washington, D.C. 20044)
Filed June 26, 1967, Ser. No. 648,608
Int. Cl. B60g *15/08*
U.S. Cl. 280—124 **5 Claims**



A shock absorbing suspension for vehicles, especially motor vehicles, with air being employed as the cushioning component with the air being retained in an inflatable flexible bag disposed within a telescopic cylinder assembly.

3,529,850
SAFETY LEG SUPPORT FOR VEHICLES

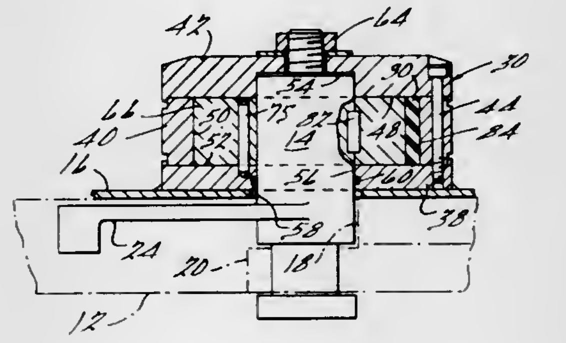
William S. Montalto, 11746 Exposition Blvd., Los Angeles, Calif. 90064
Filed Mar. 6, 1969, Ser. No. 804,809
Int. Cl. B60s *9/02*
U.S. Cl. 280—150.5 **5 Claims**



An elongated rigid bar is coupled to an integral block member adapted to be secured to the under frame of a vehicle adjacent to a wheel. The integral block includes horizontal and vertical channels intercepting each other to define an inverted L shaped channel structure. The arrangement is such that the bar may be stored in the horizontal channel when not in use. When used, the bar is received in the vertical channel after the vehicle has been jacked up to thereby provide an auxiliary safety support leg for the vehicle.

3,529,851
CONTROL DEVICE

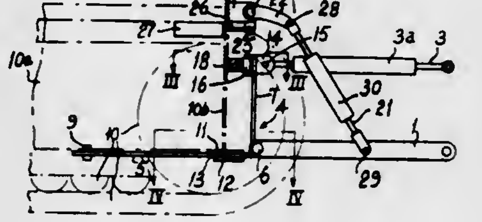
Eugene W. Hines, 5650 Saline-Ann Arbor Road, Saline, Mich. 48176
Filed Oct. 7, 1968, Ser. No. 765,401
Int. Cl. B62d *53/08*
U.S. Cl. 280—432 **10 Claims**



There is herein disclosed a control device for resisting the sudden transmission of large forces through a coupling between relatively movable members comprising a solid relatively incompressible resilient elastic flowable natural or synthetic rubber or rubber-like material.

3,529,852
TRACTOR HITCH

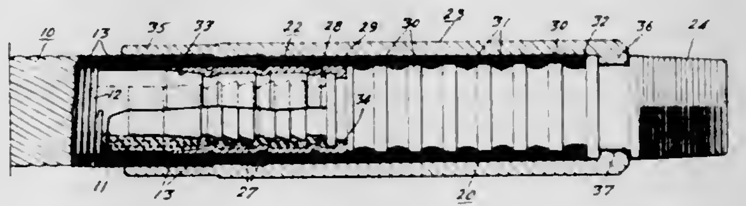
Maurice W. Kellington, Gainsborough, England, assignor to Marshall Sons & Company Limited, Gainsborough, England, a British company
Filed Nov. 21, 1968, Ser. No. 777,741
Claims priority, application Great Britain, Dec. 1, 1967, 54,713/67
Int. Cl. B62d *53/00*
U.S. Cl. 280—461 **11 Claims**



In a tractor hitch of the kind comprising two lower laterally spaced tension links connected to the tractor and a third upper compression link which is also connected to the tractor and is disposed substantially centrally relative to the lower links, all three links being pivotable relative to the tractor in substantially vertical planes, the three links are pivotally connected to a sub-frame and the sub-frame is pivotally connected to the tractor for swinging movement in a substantially horizontal plane. Power-operated means may be provided for adjusting the height of the rear ends of at least one of the lower links.

3,529,853
CABLE HOSE COUPLING

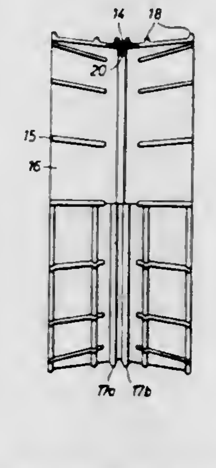
Willard G. Triest, Annapolis, Md., and William D. Meals, Lancaster, Pa., assignors of one-half to Hydrasearch Co., Inc., Annapolis, Md., a corporation of Maryland, and one-half to Lift-All Company, Inc., Manheim, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 623,920, Mar. 17, 1967. This application May 20, 1969, Ser. No. 826,230
Int. Cl. F16l *33/20*
U.S. Cl. 285—149 **6 Claims**



Apparatus for effecting a coupling to cable hose of the type comprising an inner hose body, an intermediate flat ribbon-like spring wire portion wound about the hose body and an outer covering of wires wound preferably in opposite directions about the intermediate flat wire portion. The coupling comprises a nipple, an intermediate sleeve and an outer ferrule connected at one end with the nipple. The nipple in turn has a forward pressure-sealing section and a rearward tensile section. The central hose body portion is positioned about the forward pressure-sealing section of the nipple and the intermediate sleeve is swedged or otherwise contacted about the hose body portion to form a sealing contact between the hose body portion and the pressure-sealing portion of the nipple. The intermediate flat wire portion is terminated at the forward end of the intermediate sleeve while the outer rows of wires continue externally of the intermediate sleeve for the full length of the rearward tensile section of the nipple. The outer ferrule overlies both the tensile and pressure-sealing sections of the nipple and is swedged or otherwise compressed about the outer wires to securely lock the wires between the rearward tensile section of the nipple and the outer ferrule.

3,529,854
PIPE-JOINTING SLEEVE

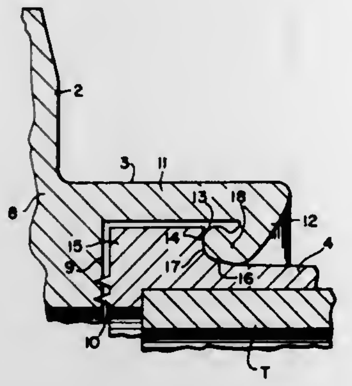
Carl A. Thomas, Hamburg, Germany, assignor to Jurid Werke GmbH, Glinde, near Hamburg, Germany
Filed Jan. 21, 1969, Ser. No. 792,526
Int. Cl. F16l *21/06*
U.S. Cl. 285—322 **6 Claims**



A pipe-jointing sleeve for clamping over sealing tubes by means of hose clips for connecting socketless pipes to one another, wherein a circumferential groove is arranged on the outside around the center of the sleeve and a circumferential flange is arranged at the center inside the sleeve and axial slots extend from the rims of the sleeve towards the groove. Two concentric strengthening ribs may be provided adjacent the groove.

3,529,855
COUPLING FOR TUBES

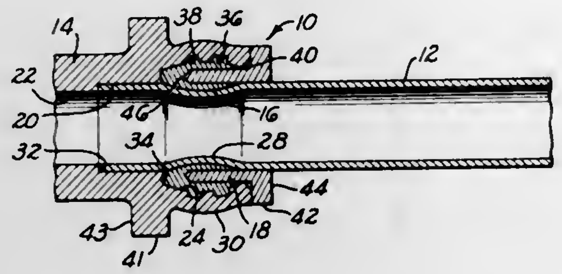
Kenneth R. Bragg, Redondo Beach, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 192,137, May 3, 1962. This application Sept. 21, 1966, Ser. No. 581,037
Int. Cl. F16l *13/14, 19/08*
U.S. Cl. 285—331 **6 Claims**



A tube coupling including an angular lip having inner and outer lip portions which in the undeformed condition are in the shape of a toggle mechanism and in the deformed condition, the inner lip portion is cylindrical and extends beyond a radial enlargement on the end of a tube, and the outer lip portion extends radially and axially inwardly into engagement with the radial enlargement, the relative length of such inner and outer lip portions with respect to the length of the radial enlargement being such that when the lip is deformed, the radial squeezing forces are transformed into axial coupling forces so that the inner lip portion is under tension and the outer lip portion is under compression, thereby firmly engaging the radial enlargement despite springback of the lip.

3,529,856
COUPLING AND METHOD OF FORMING SAME

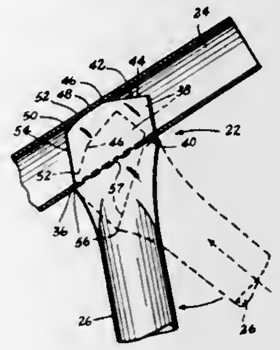
Jack Edward Smith, Whittier, and Philip Owen Garner, La Puente, Calif., assignors to Dumont Aviation Associates, Lakewood, Calif., a corporation of California
Filed Jan. 8, 1969, Ser. No. 789,745
Int. Cl. F16l *13/14*
U.S. Cl. 285—343 **4 Claims**



A coupling for tubing and fittings and a method of forming same, including a length of tubing or the like and a fitting member with a recessed portion to receive an end of the tubing, a ring member slidably mounted around said tubing and movable to a position abutting the fitting within said recessed portion, and an annular ferrule member slidably mounted around said tubing adjacent said ring member and movable into cutting engagement with said ring member within said recessed portion, a portion of said ring member being deformed radially outwardly about said ferrule member and against the surface of said recessed portion, and a portion of said ring member being deformed radially inwardly about said ferrule member and against the outer surface of said tubing to form a bonded joint therewith. An annular portion of the tubing may be depressed inwardly and a portion of the fitting member may be deformed outwardly during deformation of said ring member. Heat may be applied to said ring member prior to its movement into position abutting said fitting member.

3,529,857
LOCK JOINT CONNECTION FOR TUBING

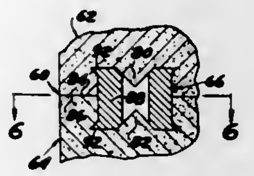
Dewey W. Dalton and Thomas M. O'Sullivan, Lamar, Mo., assignors, by mesne assignments, to O'Sullivan Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed May 14, 1968, Ser. No. 728,941
Int. Cl. E04g *7/22*
U.S. Cl. 287—20.5 **1 Claim**



A lock joint for connecting two pieces of tubing for general use and TV stands in particular. The lock joint comprises an elongated longitudinal slot in a first piece of tubing and a mating flattened end lock joint connection on a second piece of tubing. The second piece of tubing having the lock joint connection is comprised of a flattened end provided with a notch engaging the wall of the first tubing in fulcruming relation to engage a cam surface on the end of the flattened piece of tubing to press fit the second piece of tubing into locking engagement against the inner wall surface of the first tubing.

3,529,858
COMPOSITE SINTERED POWDERED MATERIAL WORKPIECE

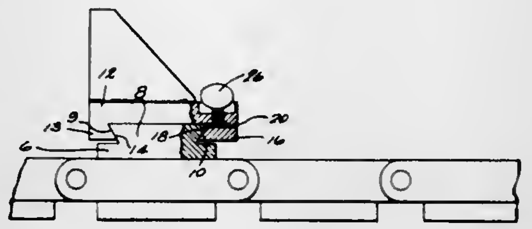
John Haller, Northville, Mich., assignor to Haller Incorporated, Northville, Mich., a corporation of Michigan
Original application Jan. 6, 1967, Ser. No. 607,825, now Patent No. 3,415,555, dated Dec. 10, 1968. Divided and this application Nov. 13, 1968, Ser. No. 775,306
Int. Cl. F16b *5/00*
U.S. Cl. 287—20.92 **6 Claims**



Two sintered powdered material components to be united are provided with cylindrical sockets in their facing surfaces, these sockets having central cylindrical protuberances projecting toward one another. Into the sockets are inserted the sharp-toothed outwardly and inwardly-projecting opposite ends of a tubular coupling member. When the components are pressed into engagement with one another along their facing surfaces, the oppositely-projecting teeth on the opposite ends of the tubular coupling member are forced by their engagement with the bottom walls of the sockets into penetrating engagement with the cylindrical outer and inner side walls of the sockets and cylindrical protuberances respectively.

3,529,859
QUICKLY RELEASABLE DOVETAIL CLAMP

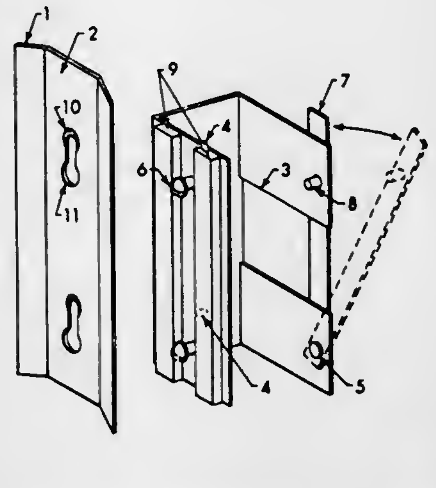
Edward Garczynski, Sheboygan Falls, Wis., assignor to Kohler General, Inc., Sheboygan Falls, Wis., a corporation of Wisconsin
Filed Aug. 6, 1968, Ser. No. 750,645
Int. Cl. F16b *2/02*
U.S. Cl. 287—189.36 **10 Claims**



A slide reciprocable along a dovetail way has one fixed margin complementary to the way, an opposing bar with a beveled surface being biased by Belleville spring means into clamping engagement with the way. The Belleville spring washers require little movement between way-engaging and way-releasing positions. They are mounted and guided on pressure adjusting screws. When spring adjustment is correct, a very slight movement of a thrust element acting on the bar in opposition to the Belleville spring means will lock or release the slide.

3,529,860
INVERTIBLE SHEETING CLIP

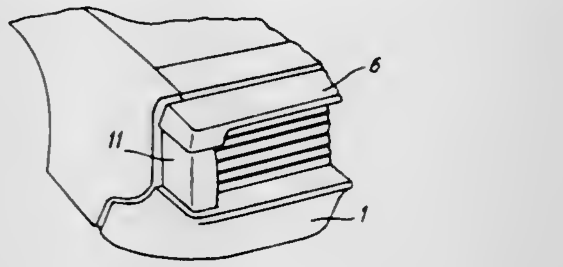
Brian Lionel Jelley, 54 Garden Crescent, St. Albert, Alberta, Canada
Filed Dec. 26, 1968, Ser. No. 791,534
Claims priority, application Canada, July 6, 1968, 024,482
Int. Cl. F16b *5/00*
U.S. Cl. 287—189.36 **5 Claims**



A two-piece clip for removably attaching sheeting to a scaffold. One component of the clip is U-shaped for placement laterally on a scaffold member, and includes inner and outer walls with a connecting sidewall. The inner wall is formed with an open-sided recess to receive another scaffold member extending laterally from the first member and the open side of the recess is closed by a swingable keeper bar. The second clip component is a plate formed with a keyhole slot to receive a headed stud on the outer wall of the first component, so that sheeting may be releasably clamped between the two components of the clip.

3,529,861
RESILIENT BUMPER

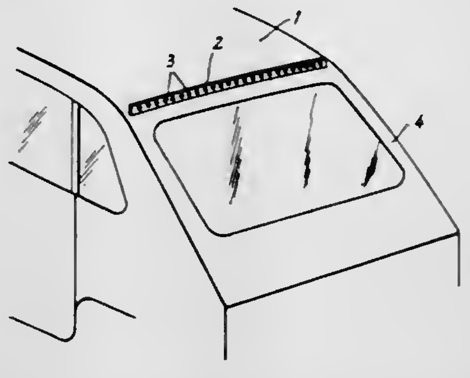
Jacques Deroubaix, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, and Automobiles Peugeot, Paris, France
Filed Dec. 22, 1967, Ser. No. 692,978
Claims priority, application France, Dec. 30, 1966, 89,458
Int. Cl. B60r *19/08;* **B61f** *19/04*
U.S. Cl. 293—63 **6 Claims**



Bumper for motor vehicles, characterised in that it comprises four main elements, i.e. an upper element, a lower element and a pair of lateral elements consisting of yielding material and disposed between and at the ends of said upper and lower elements. The lower elements are made of a suitably shaped sheet-metal and are pivotally mounted on, for frictional engagement with, a pair of arms adapted to be distorted and to slide on the frame of the vehicle in case of shock. The lower element is connected to the vehicle frame by means of flexible and deformable members or only deformable members. The upper element is also made of a suitably shaped sheet-metal secured to a deformable cross member reinforced by flexible and deformable members or only by deformable members.

3,529,862
DEVICES FOR REDUCING THE AERODYNAMIC DRAG OF AUTOMOTIVE VEHICLES

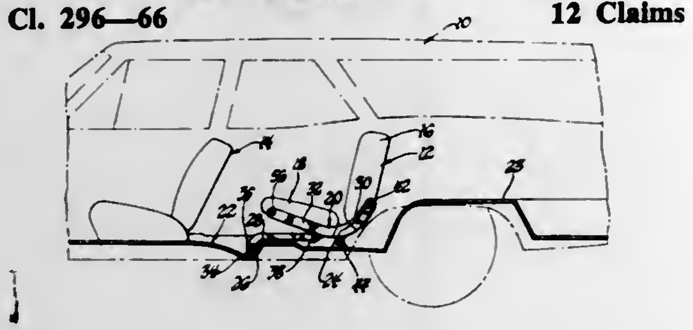
Pierre E. Jousserandot, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, and Automobiles Peugeot, Paris, France
Filed Dec. 5, 1967, Ser. No. 688,224
Claims priority, application France, Dec. 29, 1966, 89,393
Int. Cl. B62d *35/00*
U.S. Cl. 296—1 **1 Claim**



This device comprises static and aerodynamic means associated with the vehicle body, at the rear end of the roof, and adapted to deflect the air flow away from the near surface of the vehicle to reduce its lift.

3,529,863
MULTI-POSITION VEHICLE SEAT

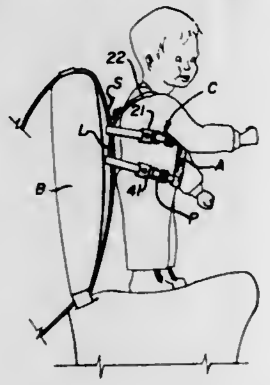
William A. Belfry, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 28, 1968, Ser. No. 740,954
Int. Cl. B60n *1/10*
U.S. Cl. 296—66 12 Claims



A multi-position seat for a vehicle including a seat back and a seat cushion supported by a linkage which provides a first position wherein in the seat unit faces forwardly, a second position wherein the seat unit faces rearwardly, and a third position wherein the seat back and seat cushion are rotated to positions wherein they are axially aligned to provide a cargo area.

3,529,864
CHILD'S SAFETY BELT

Clarence W. Rose and Jonathan E. Sharp, Denver, Colo., assignors, by mesne assignments, to Rose Manufacturing Company, Kansas City, Mo., a corporation of Delaware
Filed June 5, 1968, Ser. No. 734,588
Int. Cl. A47c *31/00;* A47d *15/00;* B60r *21/10*
U.S. Cl. 297—387 7 Claims

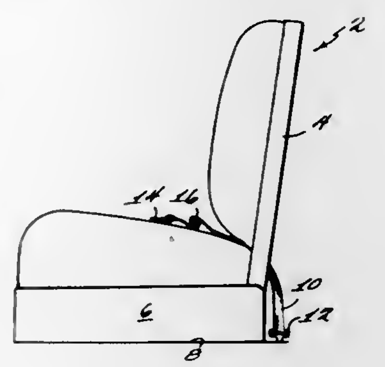


A child's safety belt for automobiles and like purposes, which combines a chest harness and a pelvic harness with a linkage at the back of the belt and an abdominal shield at the front of the belt. The linkage will normally be secured to a vertical strap extended about an automobile seat. The top of the abdominal shield is secured to the body pad of the shoulder harness and the bottom of the shield is secured to the bottom of the pelvic harness in an arrangement which permits the weight of a child to be better distributed over the harness in the event of an accident where the child is thrown forwardly from the automobile seat and into the harness.

3,529,865
FABRIC AND METHOD OF PRODUCING SAME

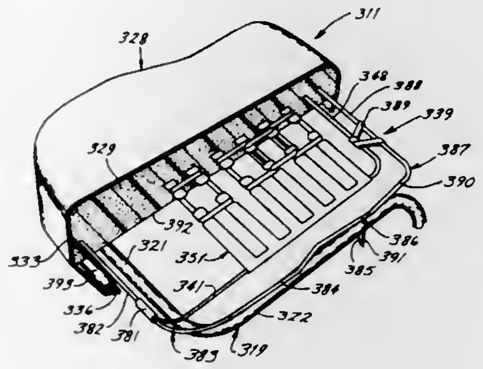
Everett C. Atwell, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Original application Feb. 12, 1965, Ser. No. 432,340. Divided and this application Oct. 2, 1967, Ser. No. 721,534
Int. Cl. A62b *35/00;* B60r *21/10*
U.S. Cl. 297—388 4 Claims

A self-retracting fabric comprising a woven web having a retracting coil therein, the woven web being composed of nylon and being impregnated with a material which is a thermoplastic resin, or thermosetting resin or a resin-forming agent which is fused and solidified, set or reacted to form resin within the web in the coiled form so that the coil is caused to retract by the action of the material after the web is extended and released.



3,529,866
SUPPORT STRUCTURE

Edward T. Getz, Cleveland Heights, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 12, 1968, Ser. No. 774,839
Int. Cl. A47c *27/14, 27/22*
U.S. Cl. 297—452 21 Claims



A cushion structure particularly suitable for use as a vehicle seat and adapted to be mounted on an independent main frame. The cushion structure includes an internal support assembly embedded within a layer of resilient material. The internal support assembly includes load transfer means which extend toward the center portion of the cushion, which portion is subjected to the greatest loads. The cushion structure is further provided with locating means fixedly secured thereto for permitting the cushion structure to be properly positioned on the main frame. An upholstery cover at least partially surrounds the cushion structure and the main frame to connect same together.

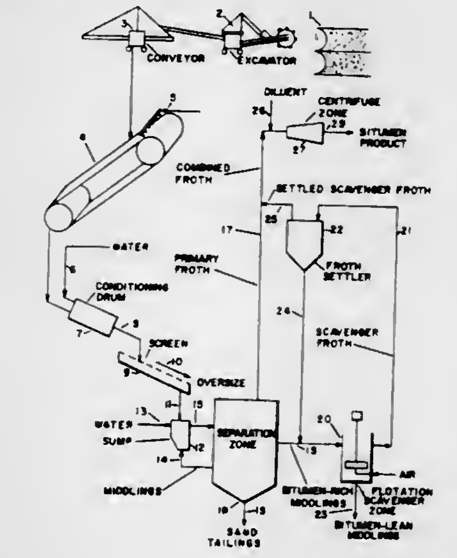
3,529,867
PROCESS FOR THE COLLECTION OF THE PIT GAS FROM AN UNDERGROUND COAL MEASURE

Marcel Justin Theophile Vandesande, 88 Rue Paul Pastur, Fontaine-l'Eveque, Belgium
No Drawing. Filed July 1, 1968, Ser. No. 741,320
Claims priority, application Belgium, July 10, 1967, 46,007, Patent 701,140
Int. Cl. E21c *43/00*
U.S. Cl. 299—2 1 Claim

Process for the collection of the pit gas from a previously and partly worked underground coal measure. This process comprises the hermetic sealing of the access roads to said coal measure and the extracting, at a relatively low pressure, of the gas forming the external gaseous phase in said coal measure so as to maintain said external gaseous phase at a relatively low pressure which considerably facilitates the passage of the gas from the internal and adsorbed gaseous phases in the rocks of said coal measure into said external phase.

3,529,868
TAR SANDS CONVEYOR BELT OPERATION

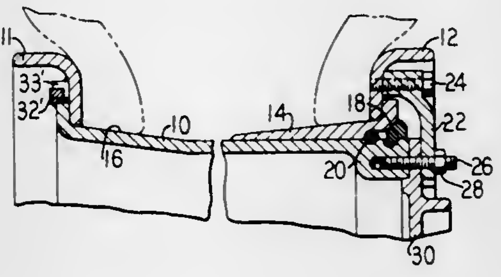
William Hogg, Fort MacMurray, Alberta, Canada, assignor to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Oct. 4, 1968, Ser. No. 765,148
Int. Cl. E21c *41/10*
U.S. Cl. 299—7 12 Claims



This invention relates to a method of transporting bituminous tar sands by belt conveyors. Specifically the invention is an improvement to such methods whereby a spray of an aqueous liquid medium is directed onto the belt to form a water layer thereon thus reducing the tendency of sands to stick at the discharge end of the belt. The invention also relates to a conveyor belt transmission system in combination with a water delivery unit.

3,529,869
DRIVE MEANS IN PNEUMATIC TIRE RIM

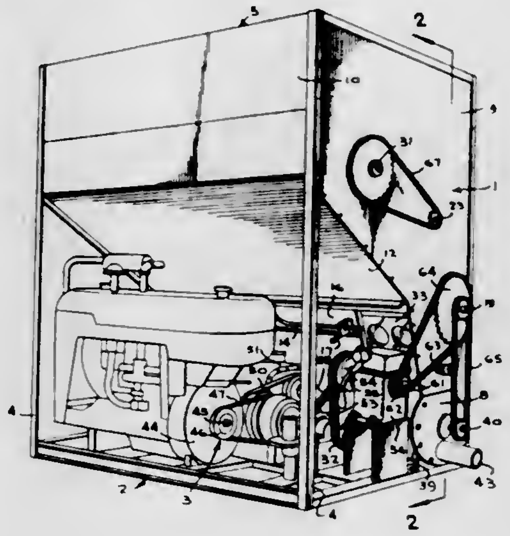
Robert Casey, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 26, 1968, Ser. No. 755,217
Int. Cl. B60b *23/10, 25/14*
U.S. Cl. 301—11 2 Claims



Driving connections between the several parts of a rim and the inflated tire which it supports to prevent slippage of the rim parts with respect to each other and with respect to the tire and, thus, to prevent damage to the tire which results from slippage.

3,529,870
INSULATING MACHINE

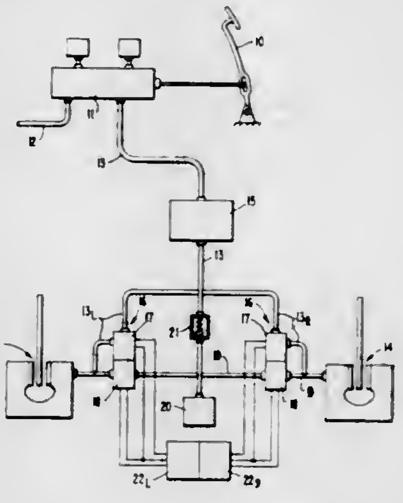
Homer G. Woten, 912 Perrin Ave. NW., Winter Haven, Fla. 33880
Filed July 16, 1968, Ser. No. 745,239
Int. Cl. B65g *53/40*
U.S. Cl. 302—49 5 Claims



A feeder for particulate material having a hopper into which material is fed. A feed auger is in a trough at the hopper bottom to feed material to an adjustable opening at one side. A circulator to feed material oppositely to the auger is adjacent the auger to remove excess material from the opening for recirculation and to prevent bridging of the material over the auger. A rotating jogger prevents bridging over the circular. Material flows from the opening into a granulator where rotating fingers moving between stationary fingers separate adhered particles. Material flows from the granulator into pockets in a rotary air lock for transfer to a pressurized air feed line.

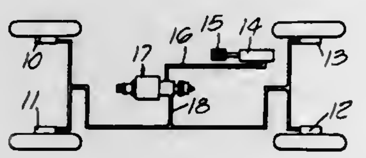
3,529,871
INSTALLATION FOR PREVENTING SKIDDING DURING BRAKING OF MOTOR VEHICLES

Manfred H. Burckhardt, Waiblingen, and Hellmut Krohn, Liebersbronn, Kreis Esslingen, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 27, 1968, Ser. No. 787,433
Claims priority, application Germany, Dec. 28, 1967, 1,630,405
Int. Cl. B60t *8/24*
U.S. Cl. 303—21 25 Claims



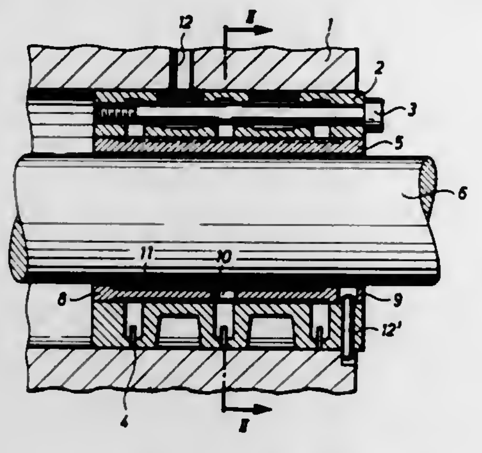
An installation for preventing skidding during braking of motor vehicle with the aid of pulse-controlled intervention into the brake-force, in which a magnetic valve is arranged in each brake-pressure line leading to the rear wheel and is connected with a pulse-transmitter operable only upon transverse acceleration in a given direction; upon energization, the magnetic valve arrangement will disconnect the wheel brake from the brake-pressure line and instead, will connect the wheel brake with a spring loaded accumulator which, in turn, is connected with the brake-pressure line by way of a check valve.

3,529,872
HYDRAULIC BRAKE APPARATUS FOR VEHICLES
Robert E. Mitton, San Diego, Calif., assignor of forty-five percent to E. Forrest Jones, San Diego, Calif., and ten percent to Charles M. Wormington, El Cajon, Calif.
Filed Mar. 3, 1969, Ser. No. 803,850
Int. Cl. B60t *8/00, 13/14, 8/14*
U.S. Cl. 303—24 **1 Claim**



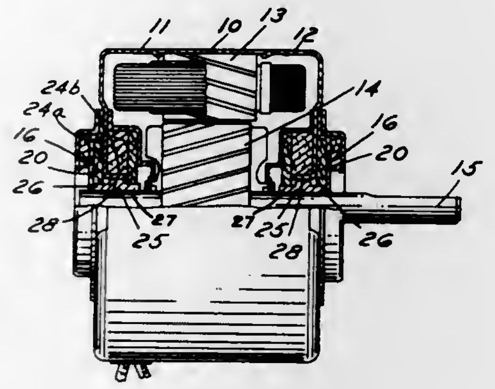
Pressure limiting apparatus is interposed between the master cylinder and the wheel cylinders in a hydraulic brake system on a vehicle in order to insure continued rotation of the wheels during maximum braking effort. A valve device cuts off communication between the master cylinder and the wheel cylinders, under influence of an inertia weight actuated by deceleration of the vehicle. Also, a hydraulic accumulator limits the intensity of hydraulic pressure initially applicable to the wheel-cylinder assemblies.

3,529,873
BEARING-PLAY ADJUSTING DEVICE
Rudolf Spieth, 42 Kennenburger Strasse, 73 Esslingen-Kennenburg, Germany
Filed Dec. 11, 1968, Ser. No. 782,923
Claims priority, application Germany, Dec. 15, 1967, 1,625,621
Int. Cl. F16c *25/00, 1/24, 3/14*
U.S. Cl. 308—65 **8 Claims**



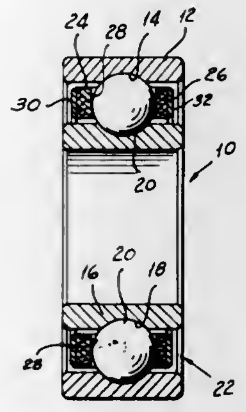
A journal bearing which is adjustable to different radial dimensions to vary the bearing play and which consists of a bearing bushing for supporting a shaft, which bushing is provided with axially parallel ribs on its outer peripheral surface and equally spaced from each other, and adjusting bushing having a meander-shaped longitudinal section surrounding the bearing bushing and inserted into an axial bore in a bearing housing, and screws extending longitudinally through the adjusting bushing for compressing the same in the axial direction and for thereby expanding its solid parts in radial directions so that these parts will press radially against the inner wall of the housing and against the ribs on the bearing bushing, whereby the latter will be deformed so as to form a plurality of separate bearing surfaces for the shaft which are separated by parts which do not engage with the shaft.

3,529,874
BEARING STRUCTURE
George W. Hoddy, Owosso, Mich., assignor, by mesne assignments, to Universal Electric Company, Owosso, Mich., a corporation of Delaware
Filed Sept. 27, 1968, Ser. No. 763,129
Int. Cl. F16c *23/00*
U.S. Cl. 308—72 **13 Claims**



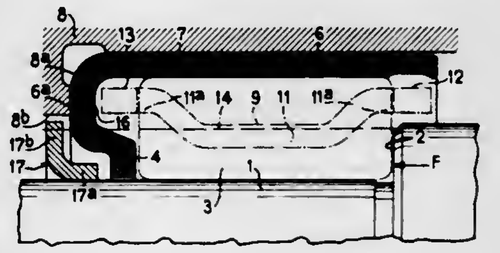
An electric motor includes a motor housing, a stator and a rotor. The housing has an end wall with an opening therein and slots extending radially outwardly from the opening to define a plurality of cantilever mounted segments. Each segment has a first portion extending generally radially and a second portion forming a free end extending generally axially so that the segment is yieldable axially. In one form, the ends of the segments define a cylindrical supporting surface that engages a spherical contacting surface of a bearing member which has a bore therein for receiving the shaft of the rotor. In another form, the ends of the segments define a spherical supporting surface that engages a cylindrical contacting surface on a bearing member.

3,529,875
REINFORCED LUBRICATING BALL BEARING CAGE
Lewis W. McKee, Brookfield, Conn., assignor to The Barden Corporation, Danbury, Conn., a corporation of Connecticut
Filed Dec. 20, 1968, Ser. No. 785,473
Int. Cl. F16c *33/38*
U.S. Cl. 308—201 **10 Claims**



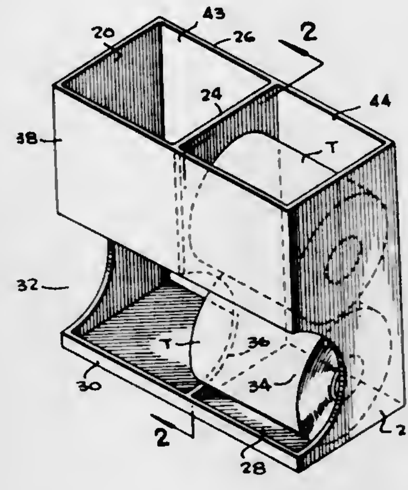
A ball bearing cage in which respective annular reinforcing plates of relatively rigid material are bonded to the outer sides of two ball pocket-forming parts of a split central annular body of porous resin impregnated fibrous material capable of absorbing between about eight percent and about ten percent by weight of a liquid lubricant such as oil. The two parts are retained in assembled relationship and are further reinforced by any suitable means such, for example, as axially extending rivets. The bodies may have different outer diameters to allow excess lubricant to escape and may have different axial thicknesses to provide a parting line which is out of contact with the bearing balls.

3,529,876
JOURNAL ROLLING BEARING ASSEMBLY CAPABLE OF FIXING THE AXIAL POSITION OF A MACHINE ELEMENT
Alfred Pitner, Paris, France, assignor of one-half to Nadella S.A., a French body corporate
Filed Jan. 30, 1968, Ser. No. 701,673
Claims priority, application France, Feb. 10, 1967, 94,430; Sept. 12, 1967, 120,659
Int. Cl. F16c *35/06*
U.S. Cl. 308—207 **34 Claims**



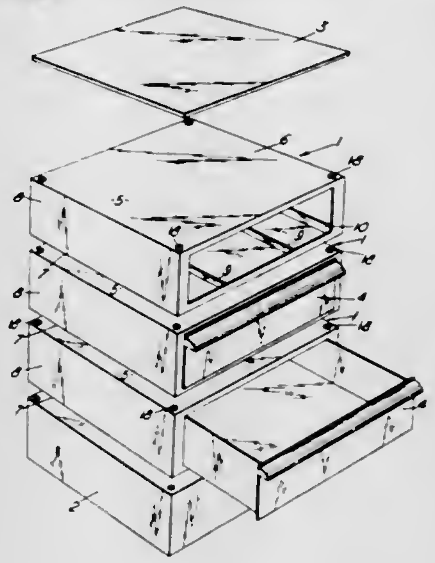
An assembly of at least one journal rolling bearing capable of fixing a machine element in axial position with respect to another machine element and comprising elongated rolling elements radially guided by two raceways which are fixed or formed on the respective machine elements, wherein the rolling elements are needles which are circumferentially guided by a cage and have opposed ends forming support faces for two radial abutment faces respectively integral with the raceways, whereby the relative axial position of the machine elements is fixed at least in one direction.

3,529,877
TOILET TISSUE RESERVE CABINET
Harry E. Cassidy, 1625 NE. 160th St., North Miami Beach, Fla. 33160
Filed May 19, 1969, Ser. No. 825,512
Int. Cl. B65h *19/00*
U.S. Cl. 312—39 **2 Claims**



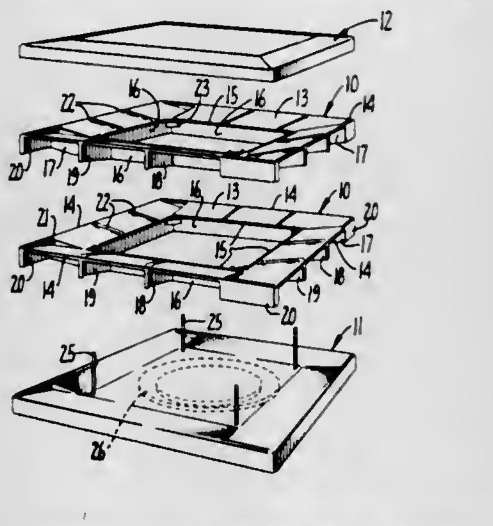
A toilet paper storing and dispensing device including a pair of parallel adjacent storage and dispensing shaft-type openings formed by front and rear panels connected by three parallel panels perpendicular to the front and rear panels and having arcuate cut-outs adjacent their lower ends on the front edges for enabling removal of a stored roll of paper from the respective shafts.

3,529,878
CASE FOR STORING ARTICLES
Stanley Owen Blowers, Cambridge, England, assignor to Kerridge Joinery Limited, London, England, a British company
Filed May 6, 1968, Ser. No. 726,654
Claims priority, application Great Britain, Dec. 1, 1967, 54,692/67
Int. Cl. A47b *47/00, 87/02*
U.S. Cl. 312—107 **2 Claims**



The invention relates to a storage unit comprising at least two drawer cases stacked one above the other and having upper and lower walls provided with sockets. The sockets are designed to receive locating pins by which the sockets in the lower wall of the upper case are registered with corresponding sockets in the upper wall of the lower case. Each socket is by one end firmly anchored in said wall and protrudes inwardly into the case, the said end being provided with a head containing a counterbore of larger diameter than the inner hole of the socket. Each pin connecting an upper and lower case has a head adapted to be received in the counterbore and two tapered shanks extending in opposite directions from the head, each projecting into one of the adjacent sockets.

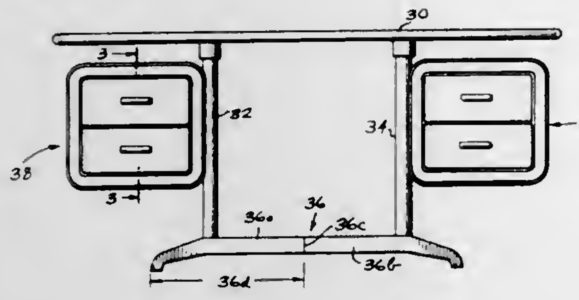
3,529,879
MODULAR CONSTRUCTION FOR STORAGE CABINET
Lyle G. Priest, San Jose, Calif., assignor to Information Design, Inc., Palo Alto, Calif., a corporation of California
Filed Sept. 23, 1968, Ser. No. 761,760
Int. Cl. A47b *81/00*
U.S. Cl. 312—111 **10 Claims**



A modular construction for a storage cabinet comprised of a plurality of tiered sectional dividers, each divider having rear and side barriers that project vertically from a panel having surfaces that extend from a peripheral edge and slope downward from front to back, the panels of adjacent dividers defining the top and bottom surfaces of a plurality of storage compartments separated by the rear and side barriers of at least one divider.

3,529,880
STORAGE MODULE

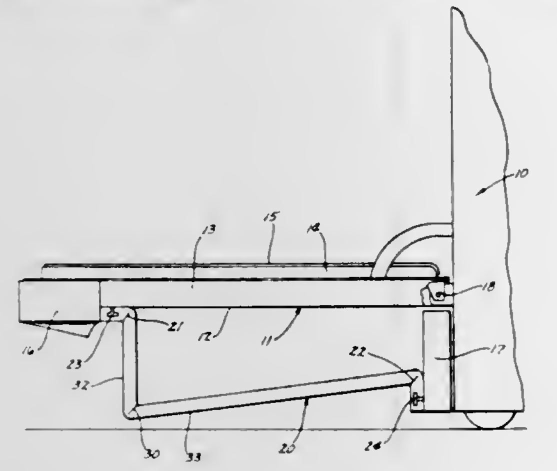
Andreas Christen, Zurich, Switzerland, assignor to Art Metal-Knoll Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,676
Int. Cl. A47b *17/06, 53/00, 95/02*
U.S. Cl. 312—194 **35 Claims**



A storage module that may be easily supported in any of a number of locations so as to be capable of being incorporated into varied environments. The module includes a frame and an enclosure surrounding the frame which is carried by the frame. The frame also carries support members within the enclosure for supporting one or more storage elements. A band outside the enclosure encircles the enclosure and secures the enclosure to the frame. The frame may be secured to any number of different types of support structures so that the storage module may form part of a desk, may be mounted on a wall, or may be incorporated in conventional filing drawer systems, for example.

3,529,881
STABILIZING PANEL FOR AN APPLIANCE

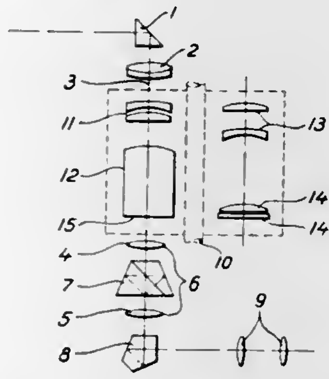
Henry J. Kaldenberg, Des Moines, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,098
Int. Cl. A47b *81/04*
U.S. Cl. 312—276 **14 Claims**



The stabilizing panel of the invention is preferably molded of pliable and bendable plastic material with three grooves formed in the same to provide integral hinges for the sections of the panel. The panel is secured at its top end to the top portion of a front opening door of a portable home appliance. The bottom of the panel is secured to the front wall of the appliance below the horizontal pivot axis for the front opening door. One groove is formed in the stabilizing panel adjacent the top securing means and a second groove is formed in the stabilizing panel adjacent the bottom securing means. A third V-shaped groove is formed in the panel intermediate and parallel to the other grooves. When the door is opened, a stabilizing leg is provided since that section of the panel between the first groove and the intermediate third groove will depend vertically downward and the same may be reinforced by metal channel members secured to the rear surface of the panel.

3,529,882
COMBINED DAY AND NIGHT VIEWING TELESCOPE

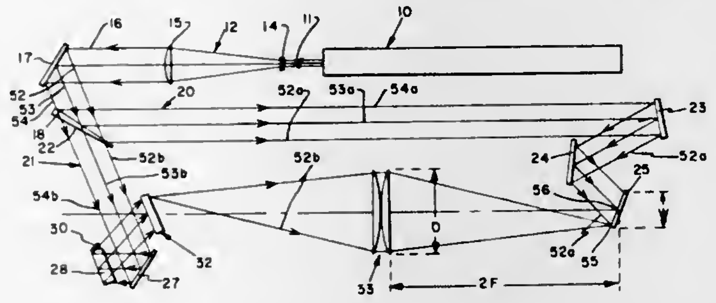
Horst Schmidt, Nauborn, Kreis Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Dec. 12, 1966, Ser. No. 600,850
Claims priority, application Germany, Dec. 22, 1965, L 52,451
Int. Cl. G02b *13/16*
U.S. Cl. 350—2 **5 Claims**



A combined day and night viewing telescope is provided having one objective member that is used for both kinds of observation in combination with two additional interchangeable objective members wherein the one is adapted for night vision and along with its image converter is interchangeable with the other which is adapted for day vision, the two interchangeable objective members having the same focal plane but are separately corrected for chromatic aberration.

3,529,883
PULSED LASER HOLOCAMERA

Ralph F. Wuerker, Palos Verdes Estates, and Lee O. Heflinger, Torrance, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Nov. 7, 1968, Ser. No. 774,019
Int. Cl. G02b *27/00*
U.S. Cl. 350—3.5 **8 Claims**

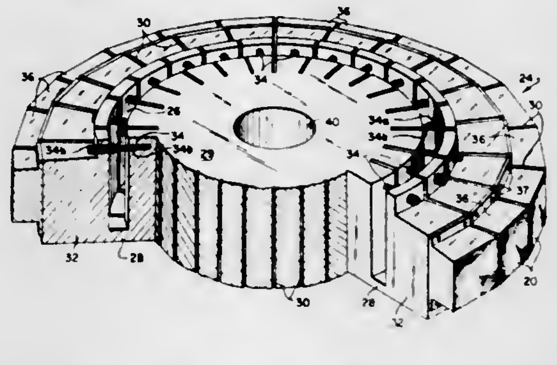


A holographic apparatus for recording transmission holograms of relatively large objects. The apparatus provides both temporal and spatial coherence matching and is capable of utilizing a laser such as a pulsed ruby laser having relatively low coherence. The reference beam and the scene beam are arranged substantially parallel to each other and parallel to the beam developed by the laser. The reference beam includes a roof reflector for inverting the beam as well as a special optical element for bending the scene beam and properly increasing the optical path transversely across it. Both the reference beam and

the scene beam are obtained after expanding and collimating the light beam from the laser. A large inverting lens is used so that the beam bender and the hologram are at conjugate positions. Preferably the hologram is inclined at an angle such that a line perpendicular to the hologram bisects the angle between the reference beam and the scene beam, which may be of the order of 45°.

3,529,884
SCANNING POLYGON MIRROR ASSEMBLY

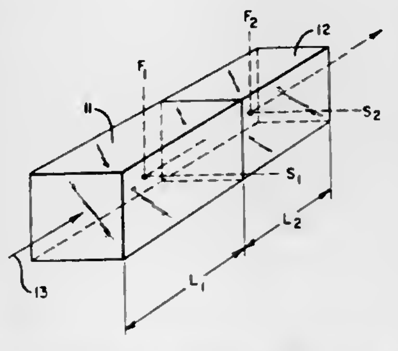
Henry D. Ives, Redondo Beach, Donald L. Roberts, Thousand Oaks, and Alfonso L. Harris, Los Angeles, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 3, 1968, Ser. No. 718,417
Int. Cl. G02b *17/00*
U.S. Cl. 350—7 **6 Claims**



A mirror assembly wherein flat faced mirror surfaces are provided on the sides of a polygon block which is rotatable about an axis of rotation passing through the center of the block for rotating the polygon sides containing the mirror surfaces within a common plane. A stationary light beam can be projected onto the moving mirror surfaces and reflected therefrom in such a manner as to produce a repetitive scanning movement of the reflected light beam. The polygon block is provided by a rigid core portion with edge segments that contain the mirror surfaces being connected to the core portion. The edge segments are individually attached to the core portion for pivotal movement about a pivotal axis. Means are provided for very fine adjustment of the pivotal position of the edge segments about said pivotal axis to adjust the position of the mirror surfaces thereon relative to the axis of rotation of the block.

3,529,885
TEMPERATURE COMPENSATED BIREFRINGENT NETWORKS

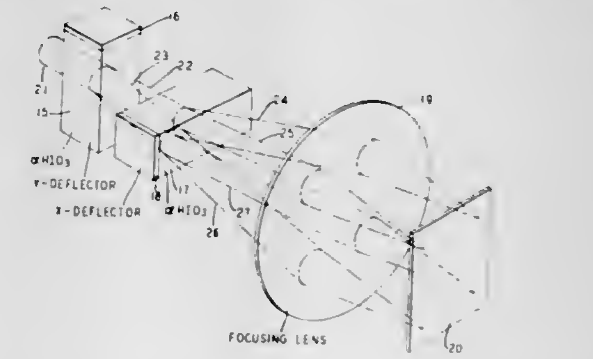
Eugene O. Ammann, Mountain View, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,030
Int. Cl. G02f *1/24*
U.S. Cl. 350—157 **2 Claims**



A pair of naturally birefringent uniaxial crystals having rates of change of retardation with respect to temperature of the opposite sense are cascaded. The crystals are oriented with their fast axes perpendicular to each other when the associated changes in birefringence with respect to temperature are unequal in magnitude and of the same sense. Conversely, the crystal fast axes are parallel when the associated changes in birefringence with respect to temperature are of opposite sense. (The fast and slow axes are defined as the principal axes of the crystal associated with the rays that experience minimum and maximum retardation (travel fastest and slowest, respectively), in passing through the crystal.) The lengths of the crystals in the direction of propagation are predetermined so the incremental retardation of the crystals for a given change in temperature are equal and of opposite sense and therefore cancel. Thus, the net retardation produced by the crystals is substantially independent of temperature. (The lengths of the crystals are defined by Equation 1.)

3,529,886
IODIC ACID ACOUSTO-OPTIC DEVICES

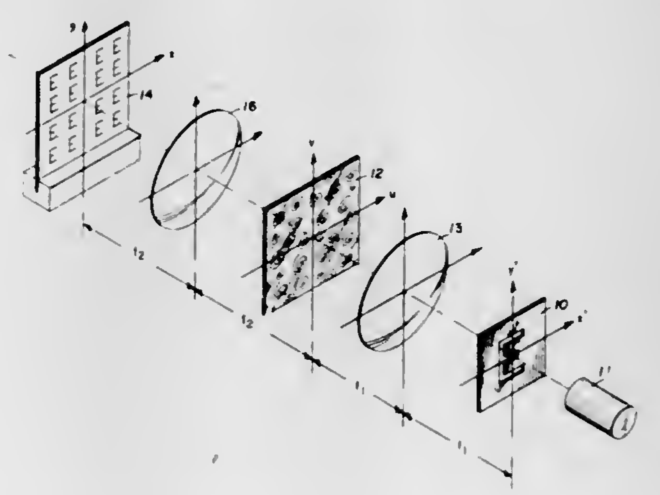
Richard W. Dixon, Morristown, and Douglas A. Pinnow, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed July 31, 1968, Ser. No. 749,928
Int. Cl. G02f *1/28*
U.S. Cl. 350—161 **10 Claims**



Acousto-optic devices dependent for their operation on alpha-iodic acid show improved efficiency as compared with devices based on earlier materials such as lithium niobate. Optical deflectors, modulators, switches and correlators are described.

3,529,887
MULTIPLE IMAGE SYSTEM

Sun Lu, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 20, 1967, Ser. No. 617,349
Int. Cl. G02b *5/18*
U.S. Cl. 350—162 **8 Claims**



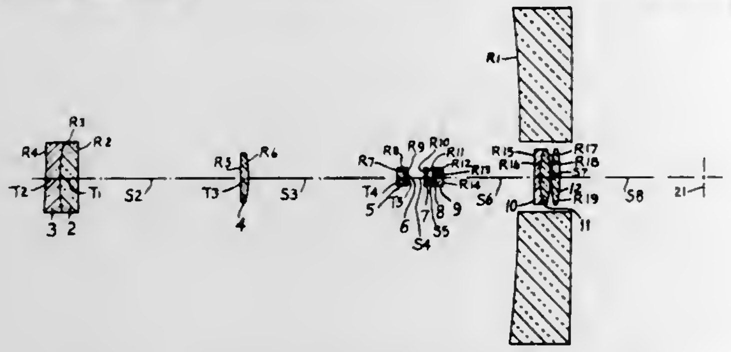
A multiple image pattern is formed from a single image master illuminated by a source of monochromatic light by establishing the Fourier transform of the light disturbance at the master image on a Fourier transform hologram of an array of points corresponding with the array of images to be formed, and establishing the Fourier transform of the light disturbance at the hologram on a light sensitive surface.

ERRATUM

For Class 350—176 see:
Patent No. 3,530,436

3,529,888
CATADIOPTRIC OPTICAL SYSTEM FOR TELESCOPES AND THE LIKE

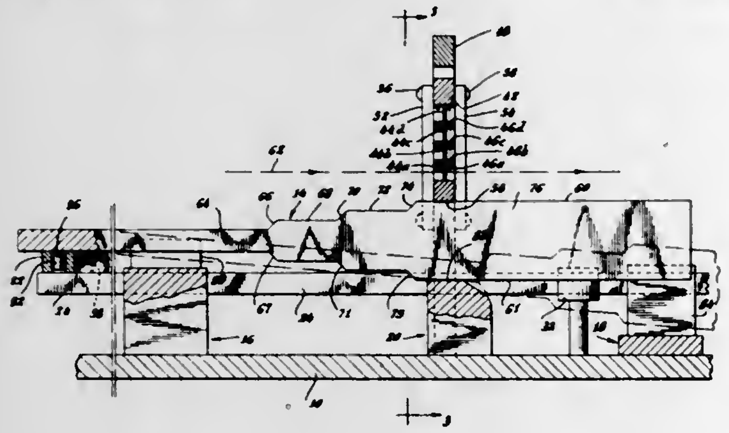
Richard A. Buchroeder, 7270 E. 19th St., Tucson, Ariz. 85710
Filed Sept. 16, 1968, Ser. No. 759,996
Int. Cl. G02b *15/14, 17/02*
U.S. Cl. 350—184 **4 Claims**



A catadioptric optical system useful as an astronomical telescope, a terrestrial telescope, and for other purposes. The incoming light is reflected by a primary mirror onto a secondary mirror, coaxial with the primary mirror and of considerably smaller diameter. The secondary mirror reflects the beam toward a central opening in the primary mirror, the reflected beam passing through a field lens which directs the beam into a relay lens system where much of the correction of aberrations takes place. In a simple form of the construction, all of the curved surfaces are spherical and only two kinds of glass are used and only two different radii of curvature are used on the lens surfaces, thus providing a construction which may be made relatively easily by an amateur telescope maker.

3,529,889
OPTICAL FILTER CHANGING MECHANISM

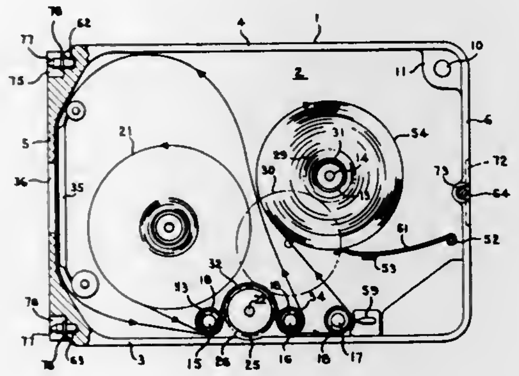
Charles Frederic de Mey II, West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Feb. 12, 1968, Ser. No. 704,876
Int. Cl. G02b *5/22*
U.S. Cl. 350—315 **4 Claims**



An optical filter changing assembly includes a linear array of different filters in a slide support and a two-sided cam lever. One cam surface of the lever rides on a fixed guide, while the opposite camming surface moves the filter holder. In this manner the filters may be moved using relatively gentle cam surfaces, since the filter motion is the sum of the contour changes of the two opposite cam surfaces of the lever. The lever may be moved generally linearly by any convenient arrangement, including conjointly with other adjustable parts of an optical instrument (for example, the wavelength drive rotating the diffraction grating of a filter-grating monochromator).

3,529,890
CAMERA MAGAZINE FOR HIGH FILM CAPACITY USING FREE-FLOATING CORELESS SUPPLY ROLL OF FILM

Georges André Buon, Whitestone, N.Y., assignor to J. A. Maurer, Inc., Long Island City, N.Y., a corporation of New York
Filed Nov. 22, 1965, Ser. No. 508,997
Int. Cl. G03b *23/02*
U.S. Cl. 352—78 **13 Claims**

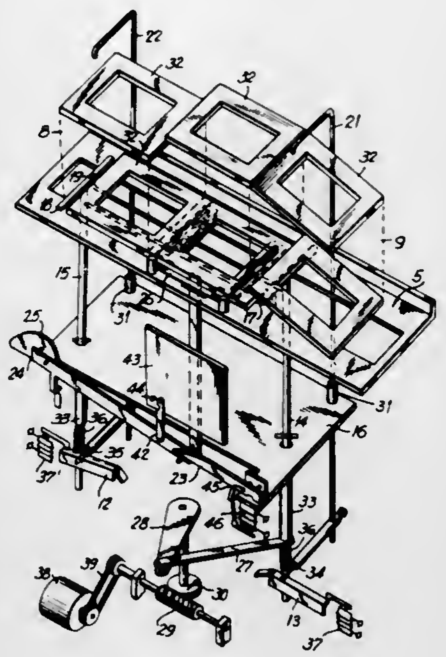


A camera magazine for supplying coreless rolls of film wherein film is threaded from a freely moving roll, over a first roller, a film sprocket, a second roller, between a film pressure plate and an objective aperture, over the first roller, the film sprocket, the second roller and a third roller to a film take-up spool. A film stripper having the ends thereof mounted on the first and second rollers is spaced from and extends around the inner circumferential portion of the film sprocket, preventing the freely moving film roll from contacting the sprocket teeth. A justifying spring engages the edge of the film to keep the film frames at the focal plane of the objective and the magazine is supported on the camera by a three-point suspension system free of any external projections to facilitate storage thereof.

3,529,891
SLIDE PROJECTOR TO SHOW FRAMED SLIDES

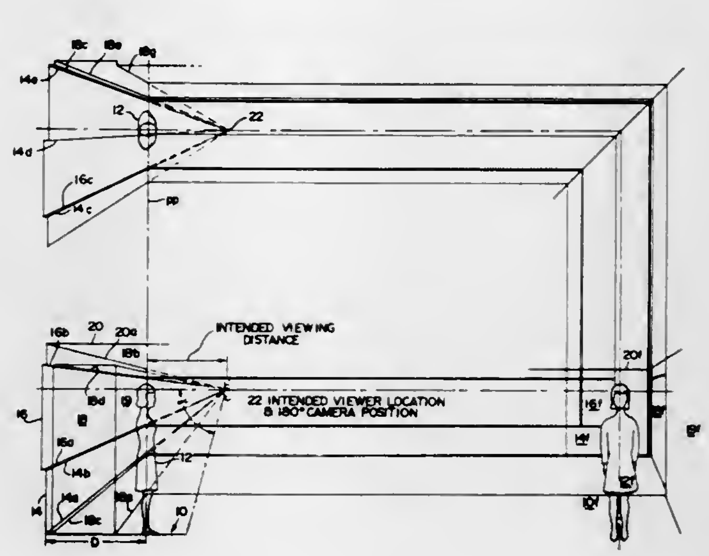
Valerian Alexeevich Mezhekov, Ulitsa Marshala Birjuzova 41, kv. 88, and Alexandr Alexandrovich Zolotarev, Leningradsky prospect 28, kv. 191a, both of Moscow, U.S.S.R.; Viktor Ivanovich Savinkov, Komitetsky Les, poselok Rostokino 10, kv. 2, Kaliningrad, Moskovskoi oblasti, U.S.S.R.; and Mikhail Pavlovich Rudenko, Ulitsa Marshala Birjuzova 4, korpus 1, kv. 41; Jury Mikhailovich Pisarevsky, Ulitsa Mashi Poryvaevoi 33, kv. 21; Nikolai Ivanovich Kostyaev, Gruzinsky val. 16, kv. 3; and Maxim Yakovlevich Ivanov, Ulitsa Zhivopisnaya 13, korpus 1, kv. 52, all of Moscow, U.S.S.R.
Filed Dec. 29, 1967, Ser. No. 694,437
Claims priority, application U.S.S.R., Dec. 31, 1966, 1,120,507
Int. Cl. G03b *23/02*
U.S. Cl. 353—113 **3 Claims**

A slide projector is provided with a slide holder extending perpendicular to the optical axis of the projector and having wells on opposite sides of the axis for stacking mounted slides in a horizontal position. The slide holder has an aperture between the wells, and a slide in either stack is individually moved from its well by a pusher member to the picture aperture, the overlying slides in the stacks being raised by cross-pieces so that the selected slide can be turned to a vertical position perpendicular to the optical axis for projection. The slides can be fed in succession from one well to another for a continuous showing in a closed cycle.



3,529,892
EXPANDED PERSPECTIVE PHOTOGRAPHY METHOD AND APPARATUS

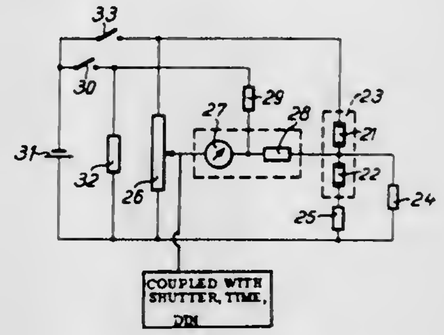
Roger A. Richard, 456 Beacon St., Boston, Mass. 02150
Filed Aug. 21, 1968, Ser. No. 754,392
Int. Cl. G03b *27/68*
U.S. Cl. 355—77 **6 Claims**


INTENDED VIEWING DISTANCE
22 INTENDED VIEWER LOCATION & 180° CAMERA POSITION

A photographic image free from distortion and in correct perspective is produced by photographing an image using a lens having a light acceptance angle of at least 170°. The thus-formed image is then projected through a lens equivalent to the one used to record the image.

3,529,893
PHOTOMETER WITH BRIDGE CIRCUIT

Werner A. Holle, Wetzlar, Rudolf Wilhelm Kreiling, Giessen, and Hans Dietrich Brueckner, Wetzlar, Germany, assignors to Ernst Leitz GmbH.
Filed June 22, 1966, Ser. No. 559,472
Claims priority, application Germany, July 1, 1965, L 51,015
Int. Cl. G01j *1/42, 1/52*
U.S. Cl. 356—222 **5 Claims**

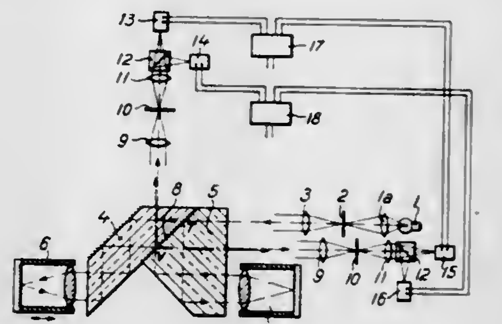


An exposure measuring device having two photoelectric resistors in a bridge circuit. Two ohmic resistors of the two bridge branches are combined to form a potentiometer and further the two photoelectric resistors in combination with at least one ohmic resistor are positioned in the same or in adjacent bridge branches.

The elements are of suitable electrical value to achieve a linear pointer deflection of the measuring system, even if a potentiometer with a linear resistance characteristic is employed in the bridge circuit.

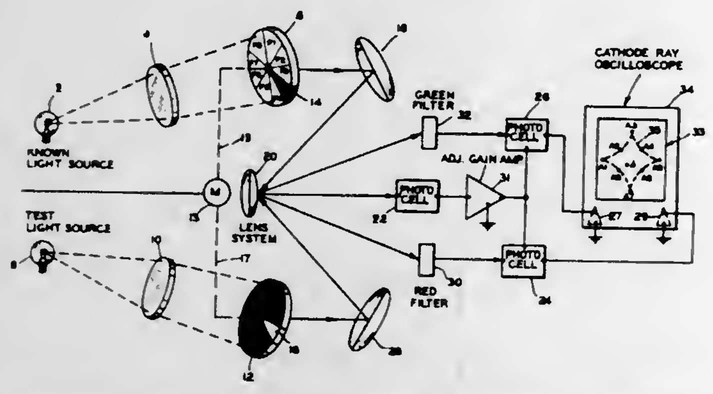
3,529,894
INTERFEROMETER EMPLOYING A PLURALITY OF PAIRS OF INTERFERING BEAMS

Fromund Hock, Wetzlar, Germany, assignor to Ernest Leitz G.m.b.H., Wetzlar, Germany
Filed Jan. 22, 1968, Ser. No. 699,650
Claims priority, application Germany, Jan. 25, 1967, L 55,585
Int. Cl. G01b *9/02*
U.S. Cl. 356—113 **10 Claims**



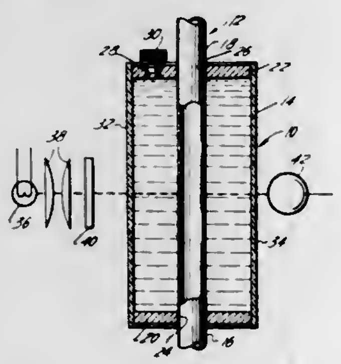
In an interferometer an illuminant light beam is produced wherein are comprised amplitudes in the two principal directions of vibration of the interferometer. A beam splitter is disposed in the path of said light beam for splitting the latter in two coherent component beams containing light energy in the two principal modes of vibration. Optical elements are provided for guiding said component beams along different optical paths of which at least one is anisotropic in relation to the directions of vibrations of the light, thereby causing a phase shift between the principal directions of light vibration according to the path difference. The component beams are then recombined and induced to interfere independently in the principal directions of the vibration of the light, thus generating superimposed phase shifted interference phenomena. From the re-combined beam two partial beams are taken away, one from each side of the beam combiner. Each partial beam is then directed to a beam splitter adapted to separate the partial beam into two linear polarized beams according to the principal directions of vibration of the interferometer. The resulting four linear polarized interfering light beams are incident on two pairs of photoelectric receivers from which signal pairs can be obtained that are counter-phased relative to each other. Further, the two signals of each pair on corresponding sides of the beam combiner are out of phase by 90° due to the law of conservation of energy, thereby introducing a proper phase shift of the anisotropic interferometer components.

3,529,895
AUTOMATIC LIMIT COLORIMETER
Ralph M. Pincus, Fort Lee, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 476,013, July 30, 1965. This application Feb. 24, 1969, Ser. No. 805,977
Int. Cl. G01j *1/10, 3/48;* **B07c** *5/342*
U.S. Cl. 356—179 **3 Claims**



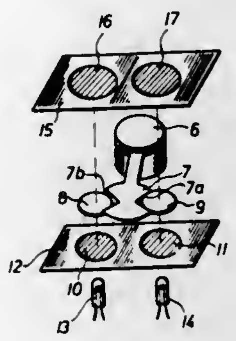
Apparatus for comparing colors of standard and sample lights. An image is displayed corresponding to the standard light and a point is displayed corresponding to the sample light. The relative positions of the image and the point provide the color comparison.

3,529,896
FLOW CELL IMMERSED IN A FLUID HAVING THE SAME REFRACTIVE INDEX AS THE FLOW CELL
Jacques Padawer, Hastings-on-Hudson, N.Y., assignor to Technicon Corporation, a corporation of New York
Filed June 20, 1966, Ser. No. 558,706
Int. Cl. G01j *3/46;* **G01n** *21/06, 1/10*
U.S. Cl. 356—181 **4 Claims**



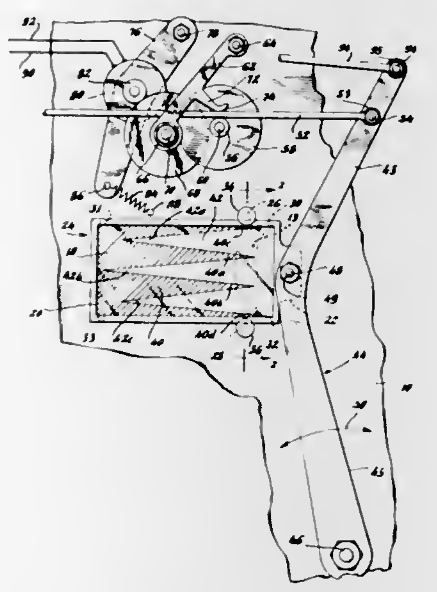
A tubular glass flow cell is positioned and extends through a container having planar parallel sides of transparent material. The container is filled with a liquid medium and, also, treated samples are carried through the flow cell in a liquid stream, each of which has substantially the same refractive index as the glass flow cell.

3,529,897
INDICATING MECHANISM FOR ZERO-CURRENT INSTRUMENTS
Erwin Pfaffenberger, Erlangen, Germany, assignor to P. Gossen & Co. G.m.b.H., Erlangen, Germany
Filed Dec. 29, 1967, Ser. No. 694,453
Claims priority, application Germany, June 16, 1967, G 50,397
Int. Cl. G01j *1/42;* **G01r** *31/00, 13/38*
U.S. Cl. 356—227 **5 Claims**



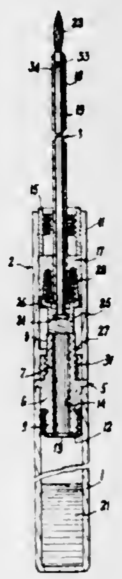
In a photoelectric exposure meter a masking vane is carried by the moving element. A light source produces a beam which is guided to an observation point. The masking vane interferes with the beam going to a pair of observation points according to the degree of deviation of the moving element from a balanced or zero position. No interference occurs when the moving element is in the balanced or zero position, therefore, in the latter position the observation points receives, equal illumination from the beam.

3,529,898
MOUNT FOR OPTICAL ATTENUATOR
Charles Frederic de Mey II, West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Aug. 28, 1967, Ser. No. 663,844
Int. Cl. G02f *1/30*
U.S. Cl. 350—271 **10 Claims**



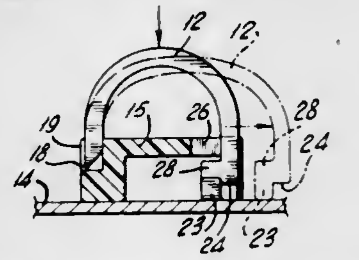
A radiant energy beam modifier (of the type which has different horizontal portions having a variable optical characteristic, such as transmissivity) is mounted by sliding point contact with a pair of stationary pins, arranged directly above and below the radiant beam center. One horizontal end of the modifier is connected by a simple pivot connection to a driving arm. Despite this simple three-point suspension, the portion of the modifier actually in the beam is precisely guided by the stationary pins, and accurately determined by the position of the drive arm.

3,529,899
HOLDER FOR LIQUID MAKE-UP
Ralph Gruska, Saint Maur, Val-de-Marne, France, assignor to Ejectoret S.A., Geneva, Switzerland
Continuation-in-part of application Ser. No. 717,815, Apr. 1, 1968. This application June 24, 1969, Ser. No. 835,947
Claims priority, application France, Apr. 5, 1967, 101,521; Aug. 22, 1967, 118,512; Mar. 15, 1968, 143,891; June 25, 1968, 156,389
Int. Cl. A46b *11/00*
U.S. Cl. 401—121 **27 Claims**



A container for cosmetic paints or similar liquids has a closure carrying a brush. A protective tube covers the brush and is slidable so as to reveal the hairs of the brush for use or to cover them to enable the brush to be pushed back into the container through a resilient sealing and cleaning gland in the neck of the container without the hairs being ruffled.

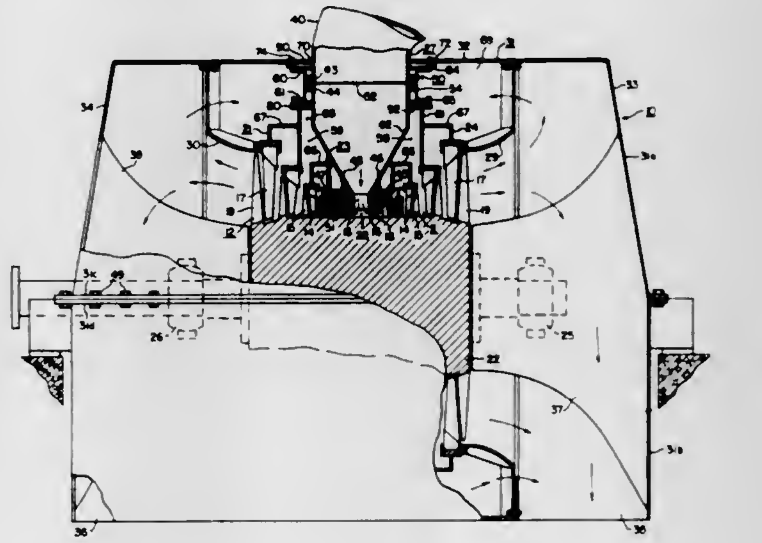
3,529,900
RING BINDER
Frank Pettit, Union, N.J., assignor to Richards Metals Corp., Hillside, N.J., a corporation of New Jersey
Filed Nov. 20, 1967, Ser. No. 684,465
Int. Cl. B42f *13/02*
U.S. Cl. 402—22 **2 Claims**



A ring binder for loose leaf notebooks and the like having ring segments formed of resilient material hinged to one side of a base and having a transverse tab on the free end for engaging a slot formed in the oppsite side of the base to releasably hold said other end of the arcuate member in engagement with the base and retain the ring segment in a closed position.

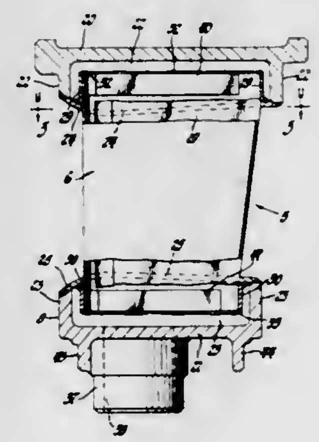
3,529,901
TURBINE MOTIVE FLUID INLET SEAL STRUCTURE
John J. Hart, Broomall, and Lewis J. Miller, Wallingford, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1968, Ser. No. 776,681
Int. Cl. F01d *1/00, 9/00*
U.S. Cl. 415—103 **11 Claims**

A double, opposed axial flow turbine having an outer casing structure and an inner casing structure, the latter formed in at least two sections, and having an inlet conduit structure extending through the outer casing structure and into the inner casing structure, is provided with a flexible seal structure to seal the zone of intermediate pressure between the sections of the inner casing structure from the atmosphere, and to also seal the zone of exhaust (vacuum) pressure between the outer casing structure and the inner casing structure from the atmosphere. The seal structure comprises annular sealing elements connected between the inlet conduit structure and the outer casing structure, on the one hand, and between the conduit structure and one of the sections of the inner casing structure, on the other hand. Guide structures are also provided to maintain the alignment of the inlet conduit structure with the outer casing and with one of the sections of the inner casing. The inlet conduit structure includes only one flanged connection which is placed in the annular space between the outer casing structure and the inner casing structure.



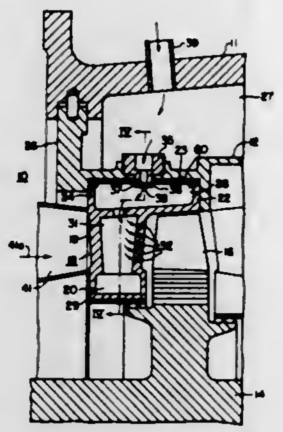
3,529,902
TURBINE VANE
Calvin W. Emmerson, Mooresville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1968, Ser. No. 731,004
Int. Cl. F01d *9/02*
U.S. Cl. 415—115 **9 Claims**

A porous turbine vane adapted to be cooled by air supplied to the interior of the vane has an airfoil at least the surface of which is of a dispersion-strengthened nickel-chromium alloy containing, for example, thoria. The airfoil is associated with two shroud segments, one at each end, these being of hollow box-like form. The blade portion is welded to the shroud segments within the box-like body at a point removed from the portion of the blade which is exposed to the hot motive fluid.



3,529,903
NOZZLE BLADE STRUCTURE

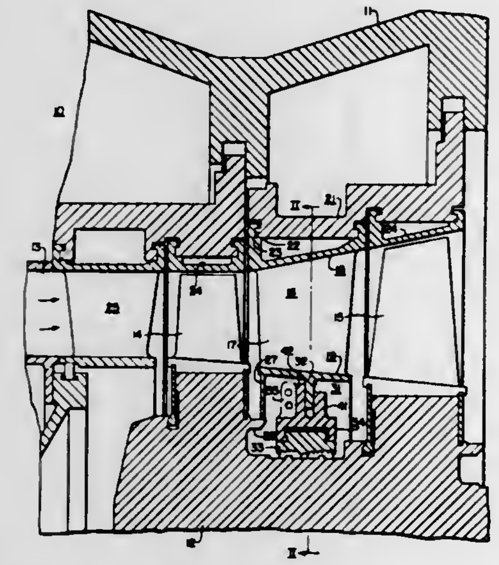
Augustine J. Scalzo, Philadelphia, and Andrew Zabrodsky, Boothwyn, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 29, 1968, Ser. No. 780,057
Int. Cl. F01d *25/12*
U.S. Cl. 415—115 **5 Claims**



An improved nozzle blade structure for an axial flow gas turbine, or the like, comprising one or more blades arranged in an arcuate group and having a plenum chamber portion for admitting air or other coolant fluid to the blade in operation. The plenum chamber structure is an open channel of quadrilateral shape, with a pair of side walls and a contiguous bottom wall forming a U, and a pair of opposed end walls formed integrally with the other walls and the blade, and the sixth wall or closure being provided by a cover plate of mating quadrilateral shape slidably received in encompassing rail members, which members are, in turn secured to the marginal portions of the side walls and the opposed end walls, by continuous leakproof weld joints.

3,529,904
DIAPHRAGM SEAL STRUCTURE

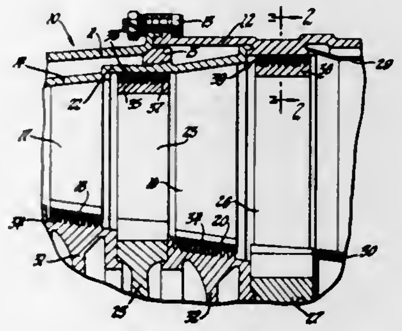
Augustine J. Scalzo, Philadelphia, and James H. Borden, Springfield, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1968, Ser. No. 770,927
Int. Cl. F01d *9/00, 1/00;* **F02f** *11/00*
U.S. Cl. 415—136 **7 Claims**



A seal support arrangement for a bladed diaphragm of an axial flow elastic fluid machine, such as a gas turbine, that reduces leakage past the diaphragm blades is provided. A seal housing ring is supported from diaphragm segments by radially movable keys, thus permitting relative radial motion between the diaphragm segments and the seal assembly, while maintaining the seal concentric with the shaft. Centering of the seal housing ring is accomplished by utilizing integral guide keys and pins together with adjustable eccentric bushings.

3,529,905
CELLULAR METAL AND SEAL

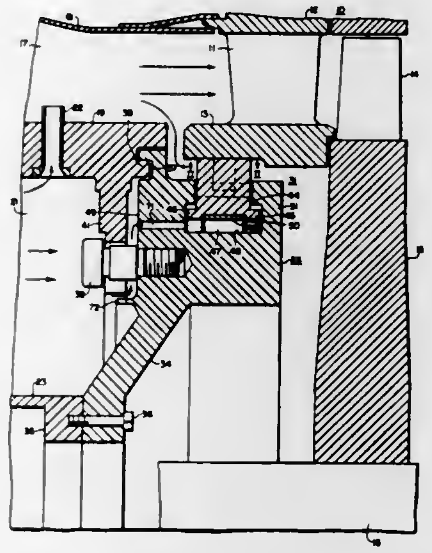
George B. Meginnis, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 601,063, Dec. 12, 1966. This application Aug. 24, 1967, Ser. No. 667,027
Int. Cl. F01d *11/08*
U.S. Cl. 415—176 **32 Claims**



A metal structure of high strength relative to density and readily abradable composed of laminae bonded together. The laminae, or some of them, have holes or pits in them which are closed to provide a cellular structure when the laminae are joined. This may be used as one element of a labyrinth or blade tip seal.

3,529,906
STATIC SEAL STRUCTURE

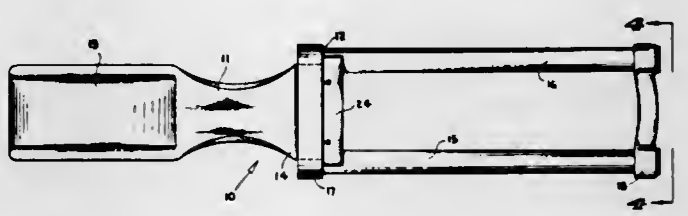
Leroy D. McLaurin and James H. Borden, Springfield, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1968, Ser. No. 771,712
Int. Cl. F01d *9/00, 25/12;* **F04d** *29/00*
U.S. Cl. 415—180 **10 Claims**



An annular static seal structure is provided at the entrance to the stator of an axial flow turbine to minimize by-pass leakage around the first stage nozzle or stator vanes. The seal structure includes a plurality of arcuate ring segments mounted end-to-end in an annular seal housing and pressure loaded against the inner shroud of the first stage stator vanes. At the gaps between segments, one end of each segment is interconnected with one end of the adjacent segment by a radial link and a transverse key. The radial link prevents axial leakage and the transverse key prevents radial leakage which would otherwise by-pass the radial link.

3,529,907
EMERGENCY KIT USABLE AS A PADDLE OR BAILER

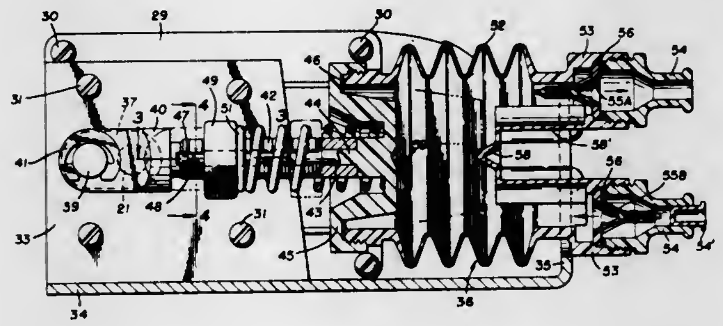
Andreys O. Akermanis, 3401 N. Westmoreland Drive, Orlando, Fla. 32804
Filed Feb. 14, 1969, Ser. No. 799,457
Int. Cl. B63h *16/04*
U.S. Cl. 416—71 **6 Claims**



A device in the nature of an emergency kit for a marine craft or the like involving a pair of principal members that are relatively slidable. The device is normally carried in a stowed condition in which these members are closely interfitted, but being capable of being extended into an operative position in which one member serves as a water-contacting portion, and the other member serves as a handle, thus forming a paddle. The one member is also separable from the other and usable as a bailer. Advantageously, each of these members can contain hollow, watertight portions in which certain small pieces of emergency equipment can be maintained in a dry condition.

3,529,908
VARIABLE OUTPUT POSITIVE DISPLACEMENT BELLOWS PUMP

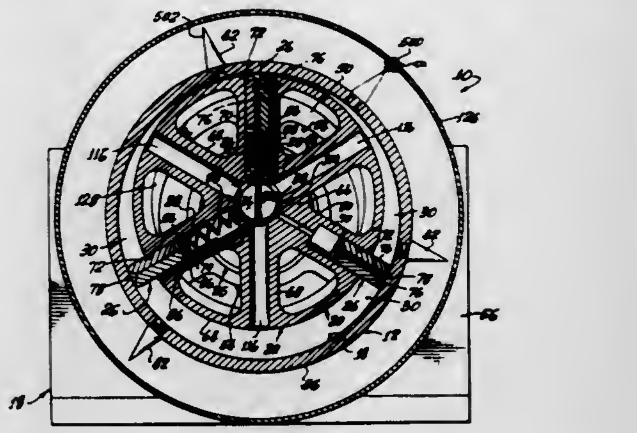
Edward M. Smith, Mansfield, Ohio, assignor to The Gorman-Rupp Company, Mansfield, Ohio, a corporation of Ohio
Filed Oct. 7, 1968, Ser. No. 765,319
Int. Cl. F04b *49/00, 43/08*
U.S. Cl. 417—472 **4 Claims**



A positive displacement bellows pump having means for metering the fluid flow therefrom. The metering is accomplished by varying the effective length of a motor driven connecting rod which controls the pumping action of the bellows structure. One form of the device is adapted to be operated in such a manner so that the bellows is expelled of substantially all liquid in its "at rest" position.

3,529,909
ROTARY ENGINE

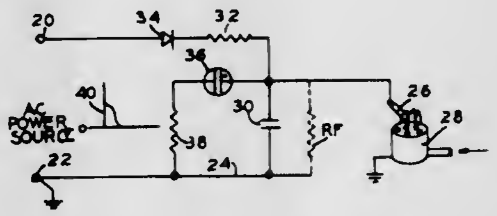
John J. Klover, La Puente, Calif., assignor of thirty percent to Boniard I. Brown, West Covina, and forty-two percent to General Management Company, North Hollywood, Calif., a partnership
Filed May 26, 1966, Ser. No. 553,227
Int. Cl. F02b *53/04, 55/08;* **F01c** *19/02*
U.S. Cl. 418—91 **17 Claims**



A rotary chamber fluid pressure device which includes a housing defining an internal rotor chamber having a central axis, a housing support mounting said housing for rotation on said axis, a rotor within said chamber including a body having a central axis disposed in spaced, parallel relationship to the housing axis, a number of angularly spaced, radially movable vanes carried by the body and normally urged outwardly so as to be in fluid sealing relationship with the inner surfaces of the wall of the chamber. The rotor has intake and exhaust passages and valve means for admitting a working fluid into and for exhausting the working fluid from the chamber spaces through the intake and exhaust passages, respectively, in timed relation to the rotation of the rotor and housing. At the outer ends of the rotor vanes of means are provided for venting the region between the outer edge of each such rotor vane and the chamber wall to a reduced pressure region, preventing leakage of high pressure gas from one chamber to an adjacent chamber.

3,529,910
REIGNITE SYSTEM

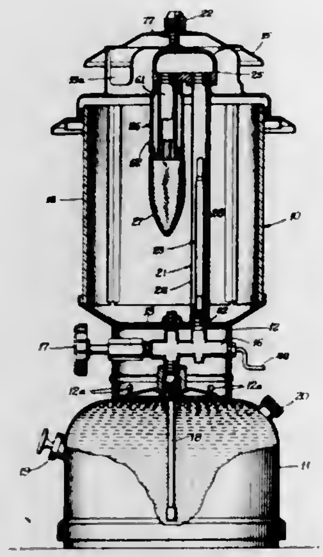
William F. Potts, Liverpool, N.Y., and Francois Duval, Southhull, Quebec, Canada, assignors to Liberty Combustion Corporation, Syracuse, N.Y.
Filed Mar. 20, 1968, Ser. No. 714,704
Int. Cl. F23n *5/02*
U.S. Cl. 431—27 **23 Claims**



Spark ignition apparatus for the ignition and reignition of a gas pilot or other type of gas burner, employing a capacitive-discharge ignition voltage generator in conjunction with independent electrodes, one for forming a spark gap to the burner and the other for flame sensing, wherein sparks occur in the spark gap in the absence of flame and do not occur when burner flame envelops the tip of the flame sensing electrode. The disclosure includes the ignition and reignition of a plurality of burners.

3,529,911
BURNER ASSEMBLY FOR GASOLINE LANTERN

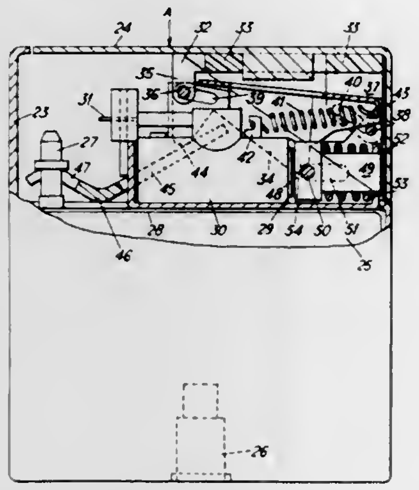
Wilbur J. Townsend, Wichita, Kans., assignor to The Coleman Company, Inc., Wichita, Kans., a corporation of Kansas
Filed May 2, 1968, Ser. No. 726,084
Int. Cl. F21h *1/00*
U.S. Cl. 431—107 **5 Claims**



A burner assembly for adapting a lantern to burn leaded gasoline. The assembly includes an elongated generator tube which communicates with the fuel reservoir and extends upwardly therefrom. A non-combustible sheath is received by the generator tube and provides wick means for transporting liquid fuel by capillary action from the lower end of the generator tube to the upper end. The upper end of the generator tube communicates with a burner tube which delivers the fuel to a mantle, and the burner tube and generator tube are provided with heat-reflective surfaces to maintain the fuel below the temperature at which the lead components of the fuel will decompose. The burner tube is further insulated by a protective shroud which covers the burner tube and is spaced therefrom.

3,529,912
CIGARETTE LIGHTERS

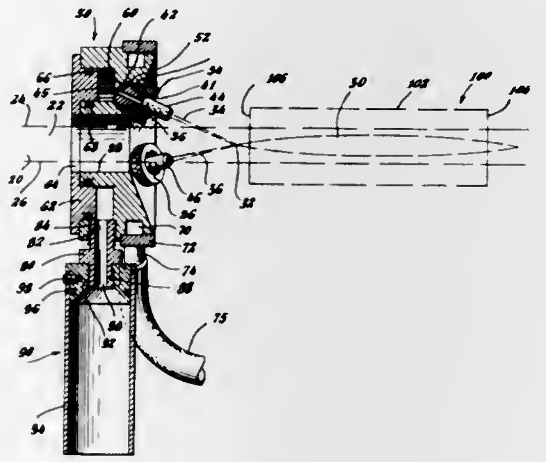
William Retzler, Wickham, England, assignor to Tetra Molectric Limited, London, England, a British company
Filed July 1, 1968, Ser. No. 741,408
Claims priority, application Great Britain, July 14, 1967, 32,608/67; Mar. 26, 1968, 14,551/68
Int. Cl. F23q *2/00*
U.S. Cl. 431—154 **3 Claims**



The invention is concerned with a cigarette lighter having an igniting mechanism with an actuating member which is arranged to be moved by direct manual force to cause ignition of fuel at the lighter burner. The actuating member is guided during its movement by cam action in order to give the actuating member the optimum path of movement.

3,529,913
MEANS FOR GENERATING SAMPLE FLAMES

Alexis A. Venghiattis, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Dec. 28, 1967, Ser. No. 694,156
Int. Cl. F23d *13/36*
U.S. Cl. 431—253 **5 Claims**

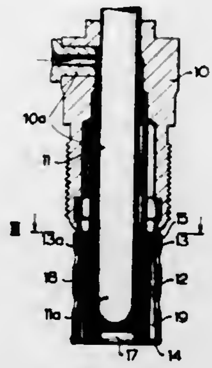


In, for example, atomic absorption spectroscopy, it is desirable to cause a flame (containing an atomized sample material) to go parallelly along an axis without the burner itself crossing or being on this axis (i.e., physically interfering with the sample radiation beam). Although this problem may be solved by existing techniques, such as for example, the use of a deflector (which may for example be in the form of a hollow tube) for "reflecting" the flame into the desired path, such techniques have a limitation as to both contamination and heat damage of the deflector. The present technique utilizes the discovery that flames (for example from a Bunsen-type burner) will "add" vectorially when they meet at a moderate included angle at a single point. Thus two or more burner nozzles completely outside of the beam supply angled flames, which meet at a point on the desired axis and have a vectorial resultant along this axis, thereby forming a long flame along the length of the sample radiation beam without physically interfering with the beam. In fact the resultant flame is in general longer than that obtained from any one of the single burners.

3,529,914
GLOW PLUG

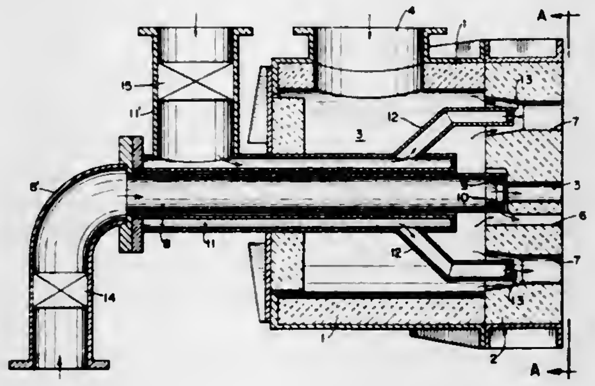
Karl Wolf, Stuttgart-Sonnenberg, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed Aug. 26, 1968, Ser. No. 755,254
Claims priority, application Germany, Sept. 7, 1967, B 72,542
Int. Cl. F23q *7/06*
U.S. Cl. 431—263 **6 Claims**

A glow plug for use in diesel engines comprises a housing having an internal passage provided with a front end. An elongated glow pin is rigidly mounted in this passage defining with the inner circumferential surface thereof an annular fluid conduit through which fluid may flow towards the front end of the passage. The glow pin has a free end located adjacent the front end. An annular sieve insert is mounted in the conduit concentrically surrounding the glow pin in the region of the free end thereof with spacing both from the glow pin and the inner circumferential surface and thus defines an inner and a concentric outer annular clearance with the two, only the outer annular clearance directly communicating with the fluid conduit so that fluid from the latter must pass through the outer annular clearance and through the sieve insert in order to reach the inner annular clearance.



3,529,915
BURNER

Shoichi Tsuji, Toyko-to, Kiyoshi Aoki, Chiba-shi, and Takeshi Sakai, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a company of Japan
Filed June 6, 1968, Ser. No. 735,086
Claims priority, application Japan, June 9, 1967, 42/49,118; Dec. 20, 1967, 42/106,736 (utility models)
Int. Cl. F23g *9/00*
U.S. Cl. 431—284 **1 Claim**

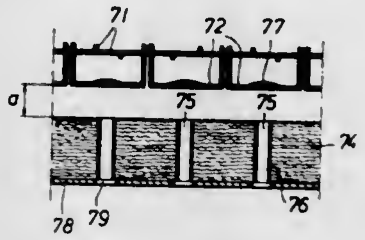


A burner for gas or liquid fuel which comprises a larger nozzle provided in the center of the burner disk and a suitable number of nozzles provided on the circumference of a concentric circle encircling the said a larger nozzle, the quantities of fuel injected from both nozzles being so adjusted as to vary the length of the flames and temperature distribution.

3,529,916
RADIANT BURNER

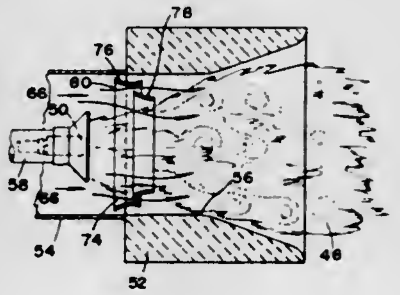
Kurt Krieger, Oberlinstrasse 16, Dusseldorf, Germany
Filed June 26, 1968, Ser. No. 740,153
Claims priority, application Germany, July 3, 1967, 1,629,952
Int. Cl. F23d *13/14*
U.S. Cl. 431—329 **8 Claims**

A radiant burner for burning a mixture of air and gas or fuel vapor, which burner takes the form of a housing having means for supplying the fuel mixture thereto and a radiant gas-permeable plate forming the top surface of the housing. This burner plate is made up of a plurality of separate plate parts. Furthermore, an insulating layer of heat resisting fibrous fleece is spaced from the burner plate within the housing, there being openings in the insulating layer.



3,529,917
AIR-MIXING DEVICE FOR FUEL BURNER

Arthur W. Hindenlang, Cherry Hill, N.J., assignor to The Engineer Company, South Plainfield, N.J., a corporation of New Jersey
Filed July 23, 1968, Ser. No. 746,785
Int. Cl. F23d *15/00*
U.S. Cl. 431—351 **2 Claims**



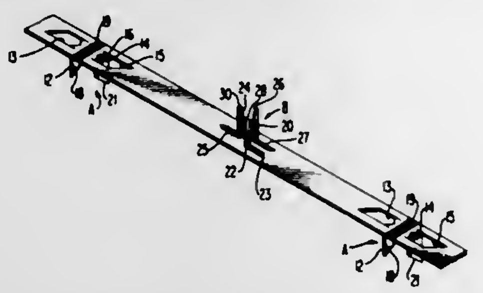
An air-mixing device disposed adjacent the periphery of the throat of a fuel burner through which the combustion air passes under pressure and shaped to compress and direct a major portion of the air toward the axis of the throat to form an initial central solid portion of the flame front while an appreciable portion of the combustion air is diverted and directed toward the periphery of the throat of the burner and moves forwardly toward the flame front in a manner to create turbulence and blend with the central portion of the flame to increase the useful diameter of the resulting flame which is of a solid type produced by intimate, thorough and rapid mixing of fuel and air caused by said turbulence and thereby effects maximum efficiency in the combustion of the fuel.

3,529,918
HIDDEN FASTENER

John Calvin Jureit, Coral Gables, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida
Filed Aug. 6, 1968, Ser. No. 750,740
The portion of the term of the patent subsequent to Oct. 14, 1986, has been disclaimed
Int. Cl. F16b *15/00*
U.S. Cl. 85—13 **33 Claims**

In one form, the hidden fastener comprises a strip of 26 or 28 U.S. Standard gauge sheet metal having a single row of longitudinally spaced groups of teeth struck therefrom to extend normal to and from opposite sides of the strip. In another form, the groups of teeth are formed in two lengthwise extending laterally spaced rows of teeth. The teeth of each group are equally longitudinally spaced one from the other, and one group comprises a pair of scarfed end nail-like teeth struck about axes transverse to the longitudinal axis of the strip such that the teeth lie in back-to-back relation and the openings left thereby in the strip extend in opposite directions from the teeth.

These teeth provide a lateral clinching action when driven into a stud. The other group comprises three teeth struck about axes transversely of the longitudinal axis of the strip and forming an isosceles triangular configuration, the openings left in the strip formed by the teeth comprising the base of the triangle extending from such teeth in a direction opposite to the opening formed in the strip left by the third tooth. The tips of the base teeth have scarfed ends for lateral clinching action and the third tooth is beveled for movement away from the base teeth as a wall panel is pressed toward the stud driving the triangularly arranged group of teeth into the panel, thereby securing the panel to the stud and providing a triangular clinching action.

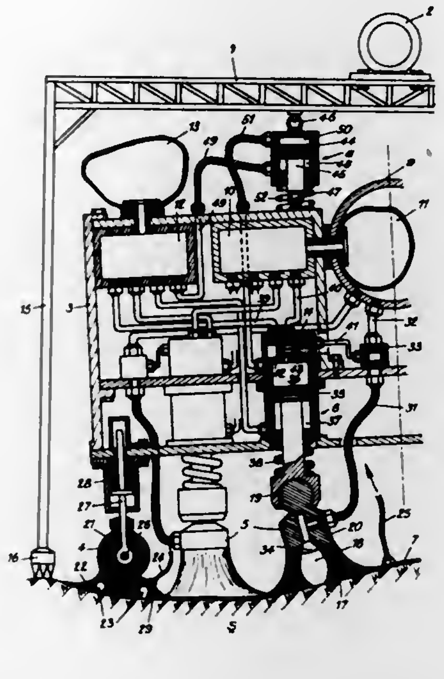


3,529,919

ANCHORING DEVICES

Wladimir Tiraspolsky, 69 Avenue Victor Cresson, Issy-les-Moulineaux, Hauts-de-Seine, France, and Roger Rouviere, Fontfigiere 13, Aix-en-Provence, France
Filed Sept. 27, 1968, Ser. No. 763,168
Claims priority, application France, Oct. 13, 1967, 124,322
Int. Cl. B63b *21/26*
U.S. Cl. 114—206 17 Claims

An anchoring apparatus for producing a releasable anchoring to a horizontal or vertical surface, in either a submarine or air environment utilizing a frame upon which a plurality of suction devices are mounted, and the suction devices are related to a cover member disposed over the attachment surface. The cover member includes sealing means, and upon the creation of a vacuum or underpressure in the suction devices by means of vacuum or underpressure supply means, a firm connection to the anchoring surface is achieved. Clamping means are related to the cover member and the frame supporting the suction devices whereby pressure is exposed on the cover member periphery in the direction toward the supporting surface responsive to the force exerted by the suction devices and their supporting members.



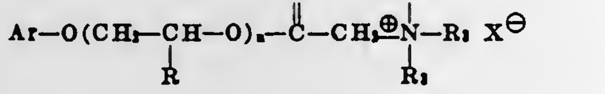
CHEMICAL

3,529,920

PROCESS FOR DYEING SHAPED ARTICLES OF POLYACRYLONITRILE WITH CATIONIC DYESTUFFS

Klaus Walz, Leverkusen-Wiesdorf, Walter Hees, Cologne-Hohenberg, Helmut Kirschnek, Leverkusen, and Mathieu Quaedvlieg, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Aug. 14, 1967, Ser. No. 660,213
Claims priority, application Germany, Aug. 16, 1966, F 49,950; Mar. 25, 1967, F 51,940
Int. Cl. D06p *3/76*
U.S. Cl. 8—4 2 Claims

A process for dyeing shaped articles of polyacrylonitrile with cationic dyestuffs in the presence of quaternary ammonium compounds having the formula:



$$\mathrm{Ar{-}O(CH_2{-}\underset{R}{\underset{|}{C}}H{-}O)_n{-}\overset{O}{\overset{\|}{C}}{-}CH_2{-}\overset{\oplus}{\underset{R_2}{\underset{|}{\overset{R_1}{\overset{|}{N}}}}}{-}R_3}\ X^{\ominus}$$

wherein Ar is a radical of the benzene or naphthalene series; R is hydrogen, methyl, or phenyl; R_1 and R_2 are alkyl radicals of 1–3 carbon atoms which may together form a closed ring; R_3 is an aliphatic, aromatic, cycloaliphatic, or araliphatic radical; *n* is an integer of 0–4; and $X^{\ominus}$ is an anionic radical.

3,529,921

PROCESS FOR DYEING OR PRINTING SYNTHETIC FIBERS WITH BASIC AZO DYESTUFFS

Gert Hegar, Basel, Switzerland, and Hugo Illy, Toms River, N.J., assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed May 2, 1967, Ser. No. 635,333
Claims priority, application Switzerland, May 11, 1966, 6,882/66; Mar. 8, 1967, 3,389/67
Int. Cl. D06p *1/08*
U.S. Cl. 8—41 16 Claims

Process for coloring synthetic textile fibres, e.g. polyacrylonitrile and polyvinylidenecyanide with basic azo-dyestuffs containing a tertiary or quaternary heterocyclic amine bound via its nitrogen atom to an alkyl-amino group bound to the coupling component in para-position to the azo-bridge.

3,529,922

PROCESS FOR DYEING NITROGEN-CONTAINING TEXTILE FIBRES

Alfred Berger and Heinz Abel, Reinach, Basel-Land, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Sept. 2, 1966, Ser. No. 576,865
Claims priority, application Switzerland, Sept. 9, 1965, 12,574/65
Int. Cl. C09b *67/00;* **D06p** *3/14, 5/06*
U.S. Cl. 8—54 9 Claims

The invention relates to a process for dyeing nitrogen-containing textile fibres with wool dyestuffs in the presence of a combination of levelling agents substantially consisting of

(a) quaternary ammonium compounds and
(b) acid esters of at least dibasic oxygen acids and their corresponding alkali metal, ammonium and amine salts, of polyglycol compounds.

3,529,923

ULTRAMARINE BENZYL QUATERNARY AMMONIUM COMPOUND MIXTURE IN A GRANULAR BLUING COMPOSITION

Ronald A. Perry, Mexico City, Mexico, Ronald O. Baukol, Anoka, Minn., and Ronald L. Jacobsen, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 21, 1967, Ser. No. 669,398
Int. Cl. C09c *1/32;* **D06l** *3/12*
U.S. Cl. 8—77 7 Claims

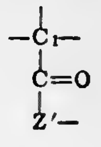
A granular bluing composition having non-staining qualities comprising an inorganic particulate alkaline salt, ultramarine blue and a cationic quaternary ammonium compound, preferably in a form agglomerated with an adhesive agent and water. The bluing composition is particularly useful in admixture with white or lightly colored detergent granules to provide a speckled composition.

3,529,924

MODIFIED POLYOLEFIN COPOLYMER COMPOSITION

Daniel Edwin Maloney, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 31, 1964, Ser. No. 422,498
Int. Cl. D06m *15/38*
U.S. Cl. 8—116 4 Claims

Proteinaceous or cellulosic substrates coated with a copolymer containing at least 50 mole percent alpha olefin units, and at least 0.1 mole percent of units derived from an alpha, beta ethylenically unsaturated carboxylic acid containing the radical



$$\begin{array}{c} | \\ -C_1- \\ | \\ C{=}O \\ | \\ Z'- \end{array}$$

where C_1 is a carbon atom in the main copolymer chain, and Z′ is derived from a hydroxyl, amine or amide group in the substrate and contains one less hydrogen atom than the group from which it was derived, and processes of preparing coated proteinaceous or cellulose substrates.

3,529,925

PROCESS FOR INTERFIBER BONDING OF CELLULOSIC FIBROUS WEBS

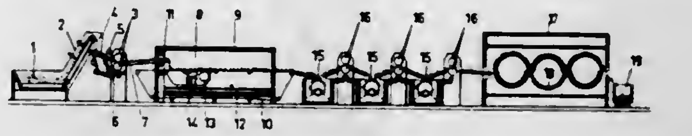
Berwyn B. Thomas and Judson H. Holloway, Shelton, Wash., assignors to ITT Rayonier Incorporated, a corporation of Delaware
No Drawing. Filed Sept. 25, 1967, Ser. No. 670,404
Int. Cl. D06m *1/00;* **D04h** *1/06, 1/50*
U.S. Cl. 8—118 8 Claims

The interfiber bonding of the fibers of cellulosic fibrous webs, such as papers and textiles, is effected by treating the web with a solution of dimethyl sulfoxide containing from about 3 to 20% by weight nitrogen dioxide under carefully controlled and coordinated conditions of time, temperature, and nitrogen dioxide content of the solution. A wide variety of parchmentized or vulcanized products having increased wet strength and dimensional stability and if desired reduced porosity are obtained.

3,529,926

PROCESS AND APPARATUS FOR THE CONTINUOUS TREATMENT OF LOOSE FIBROUS MATERIALS

Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to VEPA AG, Basel, Switzerland
Filed Oct. 16, 1967, Ser. No. 681,604
Claims priority, application Germany, Oct. 14, 1966, V 32,126
Int. Cl. D06c *1/06*
U.S. Cl. 8—149.1 25 Claims



The present disclosure relates to a process and apparatus for the continuous treatment, particularly for dyeing loose fibrous material such as for example wool, cotton, viscose staple fiber, synthetic staple fiber and the like. More particularly, the present disclosure is directed to a process and apparatus for continuously dyeing loose fibrous material wherein said material is impregnated with a dyeing liquor, squeezed, treated in a steam atmosphere to achieve dyestuff setting, washed, and finally dried.

3,529,927

ASSISTANT FOR FIXING CATIONIC DYES ON FIBERS OF ACRYLONITRILE POLYMERS

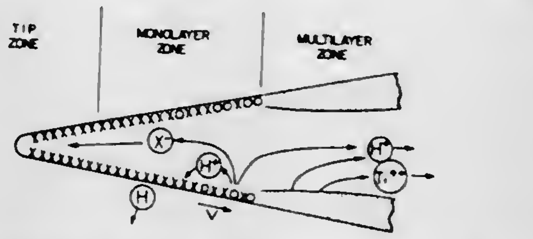
Hans-Jochem Ulrich, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Apr. 5, 1967, Ser. No. 628,535
Claims priority, application Germany, Apr. 9, 1966, 1,619,334
Int. Cl. D06p *5/04*
U.S. Cl. 8—171 10 Claims

Process for the dyeing of polyacrylonitrile fibers and copolymers thereof with cationic dyes from an aqueous pad liquor or printing paste wherein, as a fixing assistant for cationic dyes, a composition containing ethylene carbonate, propylene carbonate and mixtures φ thereof, at least one nonionic surfactant in the weight ratio 15:85 to 85:15 and if desired up to 2% by weight of an antifoam agent, e.g., trialkyl phosphate is incorporated in said pad liquor or printing paste; and subsequently steaming the padded or printed fibers in the presence of said fixing assistant.

3,529,928

METHOD OF INHIBITING STRESS CORROSION CRACKS IN TITANIUM ALLOYS

Thomas O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Theodore R. Beck, Seattle, Wash.
Filed Sept. 30, 1968, Ser. No. 763,869
Int. Cl. C23f *11/08*
U.S. Cl. 21—2.7 8 Claims



Method to prevent stress corrosion cracking of titanium alloys which are subjected to liquids, including pure solvents, comprising adding an oxyanion to the liquids in excess over any chloride, bromide or iodide ions retained in the titanium alloy metal, present in the liquids or obtained from the environment. Further, the addition of the oxyanion prevents stress corrosion cracking of titanium alloys subjected to solutions containing such chloride, bromide and iodide ions in concentrations that are not excessive.

3,529,929
PROCESS FOR PRODUCTION OF FINELY DIVIDED CALCIUM FLUORIDE

Eric John Page and Trevor Raymond White, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 22, 1968, Ser. No. 746,301
Claims priority, application Great Britain, July 31, 1967, 35,015/67
Int. Cl. C01f *11/22*
U.S. Cl. 23—88 **2 Claims**

The present invention relates to finely divided calcium fluoride and to a method for the preparation thereof.

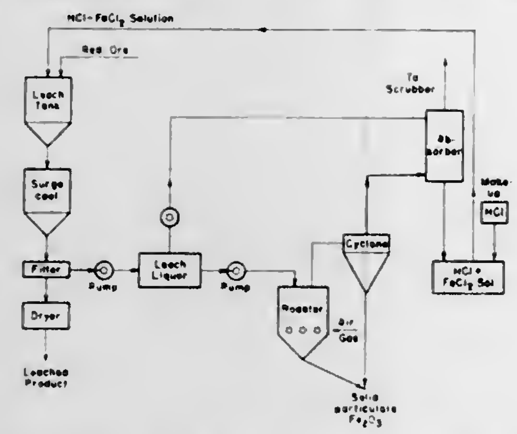
3,529,930
PROCESS FOR IMPROVING FERROMAGNETIC PROPERTIES OF CHROMIUM DIOXIDE BY HEATING IN AN OXIDIZING ENVIRONMENT

William George Bottjer, Wilmington, and Norman L. Cox, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 13, 1968, Ser. No. 705,029
Int. Cl. C01g *37/02;* **H01f** *1/00*
U.S. Cl. 23—145 **5 Claims**

This invention in its broadest scope encompasses a process for increasing the ferromagnetic properties of ferromagnetic chromium dioxide which comprises heating ferromagnetic chromium dioxide containing surface impurities of chromium compounds of the chromium-oxygen-hydrogen system, said heating being conducted at or near atmospheric pressure and 150° C.–450° C. or pressures from 0.2 to 3000 atmospheres in the presence of an oxidizing agent.

3,529,931
REGENERATING HCl FROM IRON CHLORIDE SOLUTIONS

Olav Moklebust, Belle Mead, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed July 12, 1968, Ser. No. 744,438
Int. Cl. C01b *7/08;* **C01g** *23/04*
U.S. Cl. 23—154 **4 Claims**



The disclosure is of an improved process for regenerating HCl from aqueous iron chloride solutions derived from such processes as leaching metallized titaniferous ores, pickling steel or the like wherein the iron values are dissolved in an aqueous solution of HCl and iron chloride. The resulting iron chloride filtrate is divided into two portions in such a manner that one portion contains the same amount of iron chloride as was present in the original HCl-iron chloride solution. This portion is sent, as liquid, to an absorber. The other portion of the filtrate is roasted to recover the iron values as solid particulate Fe_2O_3 and the chlorine as gaseous HCl which is sent to the absorber where it is contacted by the aforesaid liquid one-portion and condensed to form a condensate comprising an aqueous HCl-iron chloride solution which is recycled to dissolve additional iron values.

Thus a large proportion of the water present in the iron chloride filtrate is used in the absorber for condensing the gaseous HCl and a correspondingly less amount of water goes into the roaster; since the heat requirements for the roaster are directly proportional to the volume of liquid being roasted sending smaller amounts of water to the roaster reduces heating costs. In addition since the capacity of the roaster is dependent upon the volume of liquid to be roasted, a decrease of the required amount of liquid to be roasted will require a correspondingly smaller roaster—or an existing roaster will have a correspondingly higher capacity.

Moreover with increasing concentrations of iron chloride in the original HCl-iron chloride solution correspondingly smaller amounts of water will be required to be evaporated in the roaster per ton of HCl produced thereby contributing to the savings in heating and capital costs.

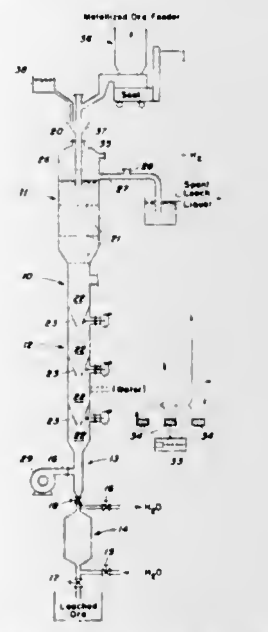
3,529,932
PROCESS FOR REMOVING TITANIUM FROM TITANIUM-CONTAINING PHOSPHORIC ACID

Riichiro Imoto, Toshio Sakomura, and Mitsuo Kikuchi, Yamaguchi-ken, Japan, assignors to Toyo Soda Manufacturing Co., Ltd., Yamaguchi-ken, Japan
No Drawing. Filed Sept. 7, 1967, Ser. No. 665,956
Claims priority, application Japan, Oct. 31, 1966, 41/71,389
Int. Cl. C01b *25/18, 25/22*
U.S. Cl. 23—165 **14 Claims**

A method for preparing titanium-free phosphoric acid from impure wet process phosphoric acid containing titanium by adding an aliphatic alcohol as a solvent to the impure wet process phosphoric acid in the presence of trivalent iron ions whereby the phosphoric acid is dissolved in the alcohol phase and the titanium remains in the aqueous phase.

3,529,933
METHOD FOR TREATING A SOLID PARTICULATE MATERIAL WITH A FLUID

Andrew P. Honchar, Westfield, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Original application June 17, 1966, Ser. No. 558,337. Divided and this application Apr. 2, 1969, Ser. No. 839,108
Int. Cl. C01g *23/04*
U.S. Cl. 23—202 **3 Claims**



The instant invention relates in general to a method and apparatus for contacting a fluid with a solid for the purpose of altering the composition of the solid and in particular to a method and apparatus for continuously leaching a metallized titaniferous iron ore with an acid to dissolve and remove the iron values and recover a titanium concentrate suitable for chlorination in the production of $TiCl_4$.

3,529,934
PROCESS FOR THE PREPARATION OF CARBON FIBERS

Akio Shindo, Ikeda-shi, Japan, assignor to Nippon Carbon Company Limited, Tokyo, Japan
No Drawing. Filed Jan. 4, 1968, Ser. No. 695,560
Claims priority, application Japan, Jan. 6, 1967, 42/1,300; Jan. 9, 1967, 42/1,700; Feb. 20, 1967, 42/11,044
Int. Cl. C01b *31/07;* **D06c** *7/04*
U.S. Cl. 23—209.1 **12 Claims**

Carbonaceous and carbon fibers of an improved quality are produced from each of cellulosic, polyvinyl alcoholic and acrylic fibers at a high yield by subjecting it to heat treatment in an acidic atmosphere containing a gaseous hydrogen chloride, which has been found to be effective for the manufacture of carbon fibers.

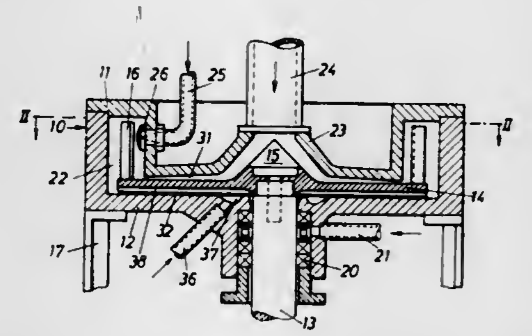
3,529,935
CATALYTIC REACTION OF CARBON MONOXIDE WITH STEAM

Ernst Lorenz, Friedrich Wodtcke, Franz Ludwig Ebenhoech, and Erich Giesler, Ludwigshafen (Rhine), and Helmut Kirner, Lambsheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Apr. 10, 1968, Ser. No. 720,369
Claims priority, application Germany, Apr. 15, 1967, 1,667,386
Int. Cl. C01b *1/03*
U.S. Cl. 23—213 **6 Claims**

The catalytic reaction of carbon monoxide with steam in the presence of oxidic or sulfidic catalysts containing the transition elements of Group VI of the Periodic System and cobalt and/or nickel on a carrier of aluminum oxide and magnesium oxide.

3,529,936
APPARATUS FOR PRODUCING BINDER PARTICLES BY PRECIPITATION

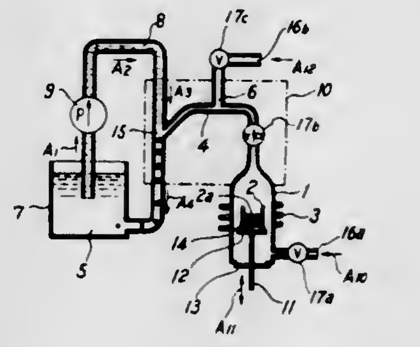
Wilhelm Müller-Rid, Ernst Albert Schöffmann, and Werner Schön, Heidenheim (Brenz), Germany, assignors to Firma J. M. Voith GmbH., Heidenheim (Brenz), Germany, a limited liability company of Germany
Filed Dec. 13, 1968, Ser. No. 783,594
Claims priority, application Germany, Dec. 16, 1967, 1,729,853
Int. Cl. C08c *1/16;* **C01j** *2/06*
U.S. Cl. 23—252 **10 Claims**



Apparatus for producing binder particles by the precipitation of latex and having a closed circular casing with an annular chamber about its periphery. An inlet conduit is connected coaxially with the casing and an outlet conduit is connected tangentially to the annular chamber. A plurality of inlet nozzles are connected to the annular chamber to discharge latex therein in a direction away from the rotational axis of the casing. A disk is rotatably mounted within the casing and is provided with shearing blades at its periphery so that the blades move in a circular path within the annular chamber. The shearing blades are perpendicular to the axes of the inlet nozzles and move across these axes at only a slight distance from the nozzles.

3,529,937
QUANTITATIVE ANALYZER OF SULFUR CONTENTS

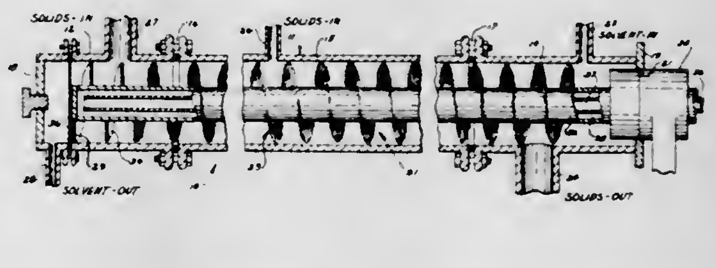
Takashi Ihara, Tokyo-to, and Kiyoshi Hoshino, Sagamihara-shi, Japan, assignors to Kokusai Denki Kabushiki Kaisha, Minato-ku, Tokyo-to, Japan
Filed Feb. 24, 1967, Ser. No. 618,446
Claims priority, application Japan, Mar. 10, 1966, 41/14,271, 41/14,272
Int. Cl. G01n *27/00, 27/56, 31/06, 31/12*
U.S. Cl. 23—253 **9 Claims**



A quantitative analyzer for analyzing the sulfur content of a sulfurous sample burned in a combustion chamber. The products of combustion are delivered through a heated conduit to an absorption cell containing an absorbing solution in which the gaseous sulfurous products are dissolved. The conduit is heated and maintained at a suitably high temperature to prevent attachment of the gaseous sulfurous products on the surface of the conduit and to prevent absorption of the gaseous sulfurous products by moisture present in the conduit. Means are also provided for recirculating the absorbing solution to uniformize its concentration.

3,529,938
CRYSTALLIZATION OR LEACHING DEVICE

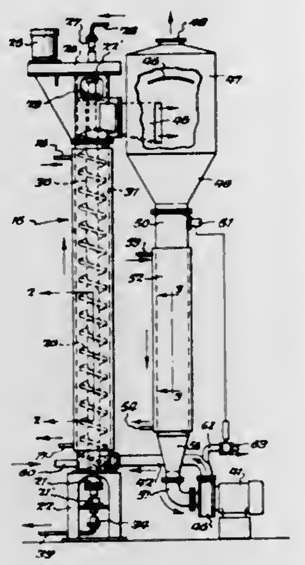
Chong Y. Yoon, Kalamazoo, and Robert E. Melson, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Oct. 6, 1967, Ser. No. 674,381
Int. Cl. B01d *9/02, 11/02*
U.S. Cl. 23—270 **7 Claims**



Apparatus for separating components of a mixture of chemicals in which a selective liquid solvent is fed through a treating zone countercurrent to the mixture of chemicals in such a fashion that a multistage leaching or solvent crystallization operation is carried out.

3,529,939
CONTINUOUS RENDERING APPARATUS

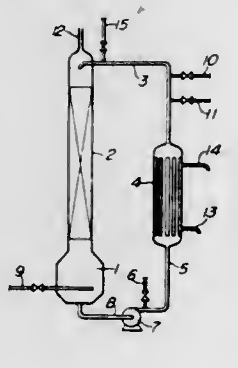
Gene Clarence Mason, Piqua, Ohio, assignor to The French Oil Mill Machinery Company, Piqua, Ohio
Filed Feb. 23, 1966, Ser. No. 529,450
Int. Cl. A22c *17/00;* **B01d** *43/00*
U.S. Cl. 23—280 **9 Claims**



Apparatus for rendering meat scraps and other material to cook and/or separate the water content from the such scraps or material to render the material so that the oils or fats contained therein are in condition to be more readily separated from the solids or fibrous material. For this purpose the apparatus includes a vertical evaporator with steam jacketed walls to which material is supplied to the lower part thereof and agitated therein, from which the material is discharged to an evaporator unit also having heating means passing through the same and from which the material is discharged at its lower end.

3,529,940
APPARATUS FOR TWO-STAGE PRODUCTION OF β-METHYLMERCAPTOPROPIONALDEHYDE

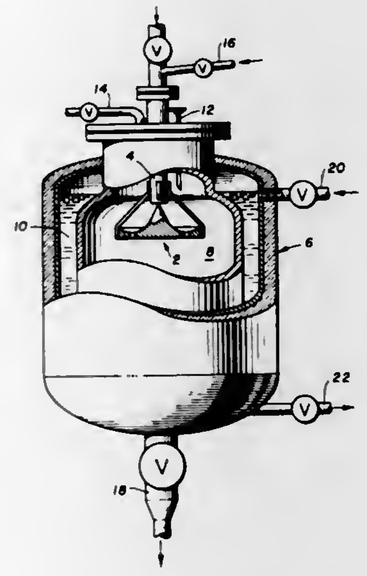
Takesaburo Shima, Akio Yamagishi, Masao Sada, Hasunaga Shiozaki, and Mitsuyoshi Manabe, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a Japanese corporation
Original application Apr. 21, 1967, Ser. No. 632,639. Divided and this application Feb. 4, 1969, Ser. No. 816,443
Claims priority, application Japan, Apr. 25, 1966, 41/26,498
Int. Cl. B01j; C07c *47/02*
U.S. Cl. 23—288 **5 Claims**



Apparatus for a process for producing β-methylmercaptopropionaldehyde, an intermediate for the synthesis of methionine, from acrolein and methylmercaptan, characterized in that methylmercaptan is contacted with β-methylmercaptopropionaldehyde and, after the heat generation is substantially completed, the reaction product is contacted with acrolein. A packed column open at the top and having a reaction tank at the bottom, with recycling means including a heat exchanger.

3,529,941
LIQUID DEFLECTION APPARATUS

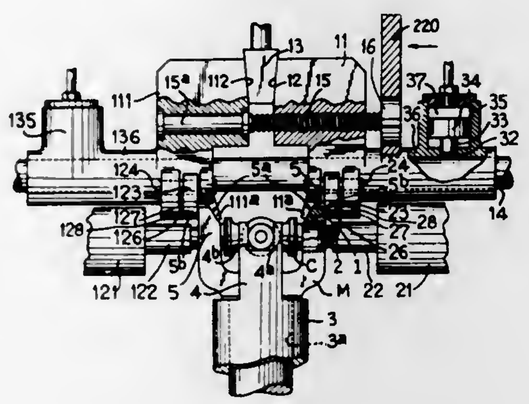
Thomas J. Tobiassen, Pensacola, and Roger M. Warner, Gulf Breeze, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,113
Int. Cl. B01j *3/02*
U.S. Cl. 23—290 **1 Claim**



A device for showering liquid onto the inner walls of a vessel in an annular shower flow to wash down the inner vessel walls.

3,529,942
METHOD FOR ASSEMBLING A UNIVERSAL JOINT

Alfred Pitner, Paris, France, assignor of one-half to S.A. Nadella, Malmaison, France, a French body corporate
Filed Apr. 20, 1967, Ser. No. 632,334
Claims priority, application France, Apr. 28, 1966, 59,466; Sept. 21, 1966, 77,076
Int. Cl. B23p *19/00*
U.S. Cl. 29—434 **5 Claims**

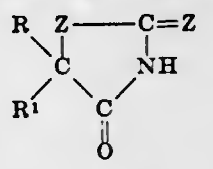


Method and apparatus for assembling a universal joint, said method comprising elastically deforming the two branches of each fork of the joint, positioning and fixing needle cups in smooth bores of the deformed fork so that the cups cap the journals of the cross member of the joint, releasing the forces which produced the elastic deformation of the branches, the means for deforming the branches being employed independently of the cup positioning and fixing means, by exerting on the branches a force of a predetermined magnitude for spreading them apart or moving them towards each other so as to create, after release of said force, a thrust of the end walls of the cups against faces of the journals of a definite value.

3,529,943
GASOLINE COMPOSITION CONTAINING A METAL SALT OF AN AZOLIDINEDIONE

Seymour H. Patinkin, Chicago, Ill., assignor to Sinclair Research Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 645,524, June 12, 1967. This application May 7, 1969, Ser. No. 824,746
Int. Cl. C10l *1/22*
U.S. Cl. 44—63 **24 Claims**

A gasoline composition consisting essentially of hydrocarbon gasoline, an anti-knock quantity of tetra-lower-alkyl lead compound, and a gasoline-soluble metal salt of an azolidinedione having the formula:



wherein R is a hydrocarbon radical of up to 30 carbon atoms, R^1 is selected from the group consisting of hydrogen and R; and Z is a chalcogen having an atomic number from 8 to 16. The metal is selected from the group consisting of Groups I*a*, II*a*, III*a*, V*a*, I*b*, II*b*, III*b*, IV*b*, V*b*, VI*b*, VII*b*, VIII and tin. The invention also contemplates adding an alkali metal salt of an azolidinedione to the gasoline composition in combination with a metal salt of an azolidinedione wherein the metal is one of Groups III*a*, V*a*, I*b*, II*b*, III*b*, IV*b*, V*b*, VI*b*, VII*b*, VIII and tin.

3,529,944
PROCESS FOR CLARIFYING AND STABILIZING HYDROCARBON LIQUIDS

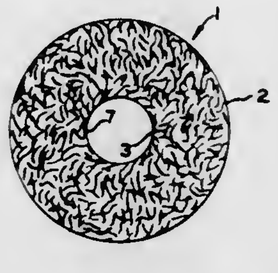
Arnold M. Leas, Ashland, Ky., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
No Drawing. Continuation-in-part of application Ser. No. 276,865, Apr. 30, 1963. This application Jan. 23, 1967, Ser. No. 610,762
Int. Cl. C10l *1/18, 1/22*
U.S. Cl. 44—70 **6 Claims**

A method for clarifying and stabilizing hydrocarbon liquids which are subject to oxidative deterioration, particularly jet fuels, which includes adding to the fuel a material which accelerates the oxidative deterioration of the fuel, such as a polyphenyl substituted lower alkane or lower alkylene, an alkanol ester of citric acid or acetoxy ethyl monobutylether; passing the hydrocarbon liquid through the solid, particulate, adsorbent media to remove microimpurities and the products of oxidative deterioration; and thereafter adding additional amounts of a stabilizing material to stabilize the hydrocarbon liquid against further oxidative deterioration.

3,529,945
ROTARY BRUSHING TOOL CONTAINING NON-WOVEN FIBROUS MATERIAL

Vernon K. Charvat, Bay Village, Ohio, assignor to The Sherwin-Williams Company, a corporation of Ohio
Filed Aug. 18, 1959, Ser. No. 834,501
Int. Cl. B24b *1/00;* **B24d** *3/100*
U.S. Cl. 51—295 **8 Claims**

1. A rotary abrasive brushing tool comprising a matrix of adhesive resin binder, discrete abrasive material densely peripherally incorporated therein, and a preformed, self-supporting skeletal structure of randomly disposed non-woven fibrous material adhesively interconnected into said skeletal structure by a first adhesive extending throughout said wheel, a multitude of small cells in said matrix in the interstices between the elements of abrasive material slightly spacing said abrasive apart, said fibrous material slightly projecting randomly through the outer peripheral face of said wheel and presenting a multiplicity of denticulate abrasive capturing projects providing a brushing action for said wheel.



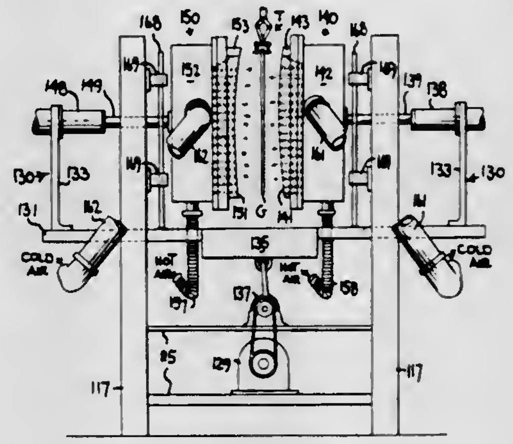
3,529,946
METHOD OF STRENGTHENING A GLASS ARTICLE BY ION EXCHANGE

Hellmuth G. Fischer, Toledo, and Augustus W. La Due, Maumee, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation of application Ser. No. 526,037, Feb. 9, 1966. This application Aug. 18, 1969, Ser. No. 853,595
Int. Cl. C03c *21/00;* **C03b** *27/00*
U.S. Cl. 65—30 **5 Claims**

An inorganic article which is a glass, thermally crystallizable glass or glass-ceramic is strengthened by contacting the article with an aqueous ion exchange medium containing alkali metal ions to provide a compressive surface layer thereon. The aqueous ion exchange medium such as an aqueous sodium nitrate solution is used with superatmospheric pressure to provide the strengthened articles.

3,529,947
APPARATUS FOR AND METHOD OF BENDING GLASS SHEETS BETWEEN OPPOSED PRESS SHAPING MOLDS

Robert G. Frank, Tarentum, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania
Filed Mar. 11, 1968, Ser. No. 712,014
Int. Cl. C03b *23/02*
U.S. Cl. 65—104 **8 Claims**



The improvement in bending glass sheets wherein a heated glass sheet is press bent between opposing contoured shaping molds having foraminous shaping surfaces conforming to the shape desired for the opposite major surfaces of the glass wherein a heated fluid is applied to each of the shaping molds to have the molds at a desired temperature range while shaping the glass and immediately applying chilling fluid rapidly under pressure through the foramina of the shaping surfaces while the latter are disengaged but closely adjacent the bent glass sheet until the bent sheet is tempered. Mold disengagement may be assisted by applying fluid toward one surface only of the bent glass sheet through mold orifices between the bending and chilling steps. Apparatus for performing this method comprises hollow molds having separate means for supplying hot fluid and cold fluid through the foramina of the shaping surfaces and means to control the sequential application of the fluids in predetermined time sequence correlated with the press bending operation.

3,529,948

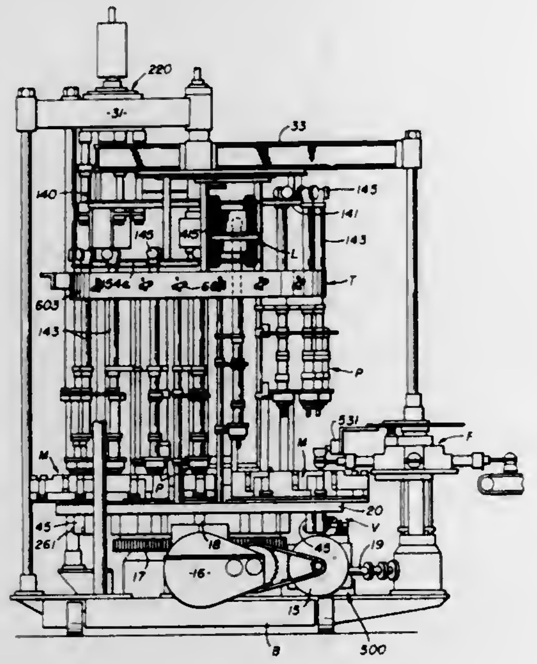
CONTINUOUS TURRET TYPE GLASS MOLDING MACHINE

John W. Eldred, James B. Legg, and Jerry L. Hull, Columbus, and Joseph C. Johnson, Lancaster, Ohio, assignors to The Eldred Company, Columbus, Ohio, a corporation of Ohio

Filed Nov. 29, 1966, Ser. No. 597,601

Int. Cl. C03b *11/02*

U.S. Cl. 65—159 **17 Claims**



A glass molding machine of the continuously rotating turret type which is pneumatically actuated and electrically controlled, has a plurality of plungers cooperating with axially aligned molds and actuated successively by pressing and hold-down cylinders to form molten glass supplied to the molds, has an endless type conveyor for elevating the plungers, and has an endless type conveyor for actuating the lifting valves of the molds after the article is formed.

3,529,949

DISTRIBUTOR MANIFOLD SYSTEM FOR A TURRET-TYPE GLASS BURN-OFF MACHINE

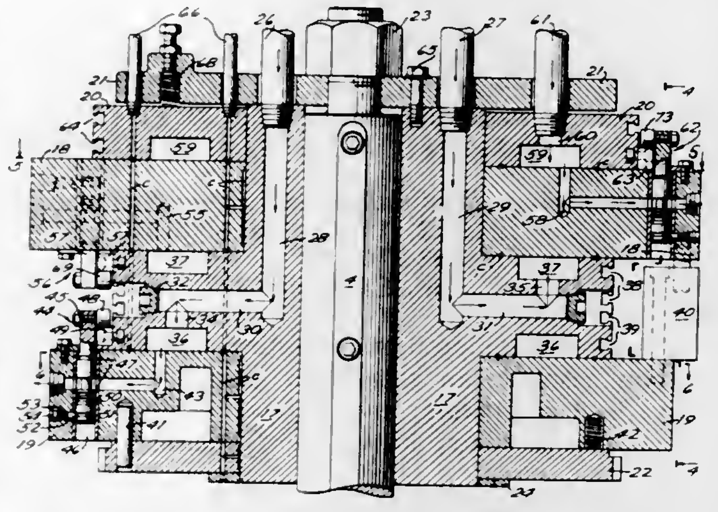
James F. Cotter, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware

Filed Apr. 26, 1967, Ser. No. 633,830

Int. Cl. C03b *23/00*

U.S. Cl. 65—269 **6 Claims**

A compact gas distributor system for a rotary machine such as a turret-type glass burn-off machine or the like comprising a fixed axial distributor portion mounted at the top of the turret center post and cooperating annular manifolds mounted about an extended portion of the fixed distributor and rotatable with the turret carrying the gas utilizing operating heads. Cam-operated valves are located in the outlets of the ducts in the rotating annular manifolds and the operating cams for the valves are mounted on an exposed surface of the fixed distributor. Cam mounting slots are provided in the surface of the fixed distributor so that the cams may be slidably positioned for opening and closing the various valves at the desired operating locations around the circular operating path.



3,529,950

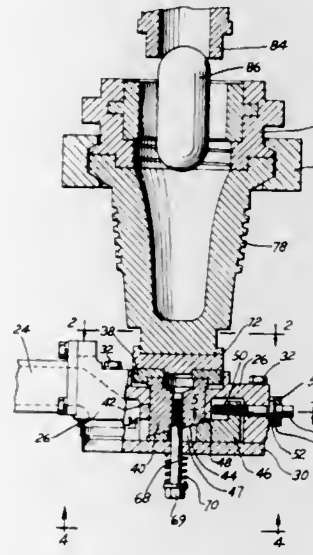
ADJUSTABLE-BLANK CARRIER FOR GLASSWARE FORMING MACHINES

Paul Brinduse, Anderson, Ind., assignor to Lynch Corporation

Filed Apr. 29, 1968, Ser. No. 725,007

Int. Cl. C03b *9/40*

U.S. Cl. 65—323 **10 Claims**



A blank or parison mold carrier for a glassware forming machine is provided with adjusting means to change the elevation of the blank in a micrometric manner to thereby accurately position the blank relative to a finish ring and a clamp for clamping the blank and the finish ring together. The adjusting means includes an arbor slidable axially of the blank, and a wedge slidable at right angles to the arbor and adjusted by an adjusting screw, inclined surfaces between the wedge and the arbor being at such angle as to provide comparatively fine increments of axial adjustment of the arbor compared to increments of rotation of the adjusting screw. A simple locking means is also provided for the adjusting screw.

3,529,951

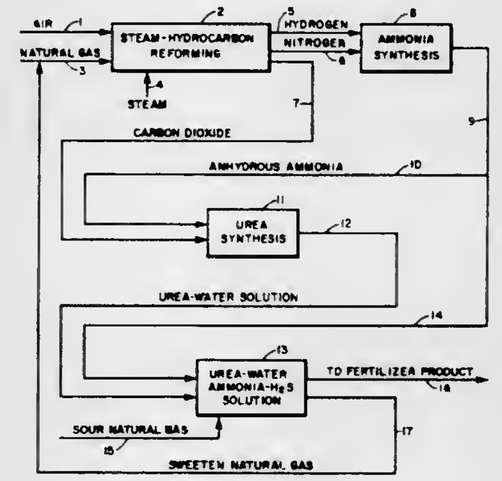
METHOD FOR PREPARING LOW PRESSURE SULFUR-NITROGEN FERTILIZER SOLUTIONS

Richard L. Every, Ponca City, Okla., and Paul F. Cox, Richardson, Tex., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 677,840, Oct. 18, 1967, which is a continuation-in-part of abandoned application Ser. No. 493,460, Oct. 6, 1965. This application Jan. 10, 1969, Ser. No. 804,340

Int. Cl. C05c *9/00*

U.S. Cl. 71—28 **8 Claims**



A high nitrogen content sulfur-containing liquid fertilizer of low vapor pressure and low salting out temperature can be prepared by adding sulfur, either as elemental sulfur or a sulfide, to an ammonia or ammonia salt aqueous solution and subsequently adjusting the nitrogen content by use of urea. The vapor pressure and salting out temperature is controlled by selecting the ratio of urea to ammonia in a predetermined manner.

3,529,952

PLANT CONTROL WITH 5-OXO-1,4,2-DIOXAZINES

Linus M. Ellis, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 567,818, July 26, 1966. This application Sept. 17, 1968, Ser. No. 760,345

Int. Cl. A01n *5/00, 9/20*

U.S. Cl. 71—88 **11 Claims**

5-oxo-1,4,2-dioxazines such as 6-methyl-3-phenyl-1,4,2-dioxazine-5-(6H)-one are useful as plant growth regulants.

3,529,953

CYCLOOCTYL - 2 - ENE - 1 - OL ESTERS OF SUBSTITUTED CARBANILIC ACIDS AS SELECTIVE HERBICIDES

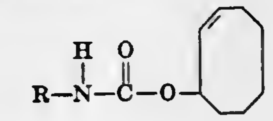
Raymond W. Luckenbaugh, 15 Imperial Drive, Wilmington, Del. 19805

No Drawing. Continuation-in-part of application Ser. No. 425,632, Jan. 14, 1965. This application Feb. 1, 1968, Ser. No. 702,176

Int. Cl. A01n *9/20*

U.S. Cl. 71—111 **10 Claims**

Controlling the growth of annual weed grasses with compounds of the formula:



wherein R is phenyl, o-fluorophenyl or tolyl.

3,529,954

METAL FIBERS

Robert E. Cech, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 22, 1968, Ser. No. 723,313

Int. Cl. B22f *9/00*

U.S. Cl. 75—.5 **8 Claims**

A metal sulfide is reduced with hydrogen in the presence of a scavenging agent to produce metal fibers. These fibers can be sintered to produce a product having numerous interstices useful as a filter.

3,529,955

METHOD FOR CONTROLLING THE TEMPERATURE OF METAL LANCES IN MOLTEN BATHS

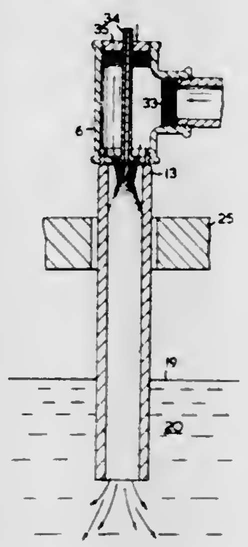
Nickolas J. Themelis, Beaconsfield, Quebec, Canada, assignor to Noranda Mines Limited, Toronto, Ontario, Canada

Original application Mar. 31, 1967, Ser. No. 627,466. Divided and this application Apr. 9, 1969, Ser. No. 836,678

Claims priority, application Great Britain, Apr. 13, 1966, 16,232/66

Int. Cl. C21c *5/34, 5/46*

U.S. Cl. 75—60 **5 Claims**



A water-cooled lance which may be used in the treatment of molten metal and which may be inserted beneath the surface of the metal. The lance structure provides a passage for gases and a passage for a coolant such as water. The water vaporizes as it contacts the hot lance body and so acts as a cooling medium and the gas and water vapour are admixed as they pass through the lance body and enter the molten metal as a gaseous mixture.

3,529,956

REFINING COPPER

William Harold Foard, Miami, and Robert D. Lear, Tucson, Ariz., assignors to The Anaconda Company, New York, N.Y., a corporation of Montana

No Drawing. Continuation-in-part of application Ser. No. 468,959, July 1, 1965. This application June 3, 1969, Ser. No. 830,141

Int. Cl. C22b *15/14*

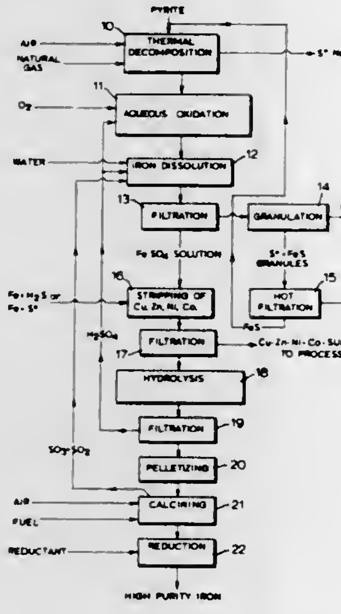
U.S. Cl. 75—76 **4 Claims**

Molten copper containing excess oxygen is deoxidized in a refining furnace in which a hydrocarbon fuel is incompletely burned above the surface of the metal to form a reducing furnace atmosphere containing hydrogen, water vapor, carbon monoxide and carbon dioxide. Poling fluid comprising a hydrocarbon fuel is introduced into the molten copper below its surface, resulting in formation of carbon monoxide, hydrogen and water vapor by decomposition and/or reaction of the poling fuel, accompanied by deoxidation of the copper. At the conclusion of the deoxidation treatment tough pitch copper is withdrawn and cast into suitable shapes. The rate of admission and total amount of poling fuel introduced is correlated with the amount of copper oxide in the molten metal and the amount of oxygen and fuel admitted above the charge to establish and maintain in the furnace atmosphere low ratios of H_2O/H_2 and CO_2/CO neither of which should exceed 0.5 at the conclusion of the deoxidation treatment and which preferably are kept below 2.75 and 1.50, respectively, throughout the deoxidation treatment.

3,529,957
PRODUCTION OF ELEMENTAL SULPHUR AND IRON FROM IRON SULPHIDES

Wasyl Kunda, Herbert Arthur Hancock, and Nicolas Zubryckyj, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company duly organized under the laws of the Province of Ontario

Filed Feb. 9, 1968, Ser. No. 704,298
Claims priority, application Canada, Aug. 25, 1967, 998,676
Int. Cl. C22b *3/00*
U.S. Cl. 75—108 **12 Claims**



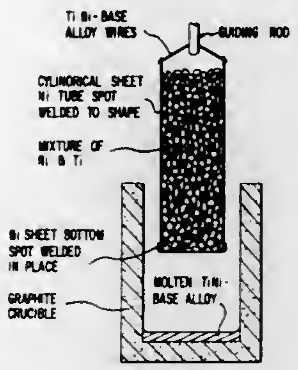
An improvement in the known aqueous oxidation method of treating iron sulphides whereby elemental sulphur and high purity iron are recovered as well as any desired non-ferrous metals associated with the sulphides. The sulphides are oxidized by reaction with oxygen in an aqueous medium at a temperature below about 245° F. The oxidation end slurry is treated in an iron dissolution reaction involving reaction of the slurry with H_2SO_4 and SO_2 to dissolve oxidized iron. The iron containing solution is separated from the residue and, after stripping of non-ferrous metals if present, is heated to hydrolyze dissolved iron and precipitate it as pure basic iron sulphate. Elemental sulphur is recovered from the residue.

3,529,958
METHOD FOR THE FORMATION OF AN ALLOY COMPOSED OF METALS REACTIVE IN THEIR ELEMENTAL FORM WITH A MELTING CONTAINER

William James Buehler, 10649 Weymouth St., Apt. 203, Bethesda, Md. 20014

Filed Nov. 4, 1966, Ser. No. 592,069
Int. Cl. C22c *1/02, 15/00, 19/00*
U.S. Cl. 75—135 **19 Claims**

A method for forming TiNi base alloys in which a prealloyed material of the type to be obtained is placed into a graphite crucible and is heated above the melting point by external application of power, whereupon the component metals are melted in the molten alloy in such a manner as to prevent direct contact between the component metals and the walls of the crucible.



3,529,959
GOLD-BASE ALLOY

Alan S. Darling and Gordon L. Selman, London, England, assignors to Johnson, Matthey & Co., Limited, London, England, a British company

Filed July 14, 1966, Ser. No. 565,276
Claims priority, application Great Britain, July 23, 1965, 31,556/65
Int. Cl. C22c *5/00;* **D01d** *3/00*
U.S. Cl. 75—165 **5 Claims**

A gold-base alloy which contains between 50% and 80% gold, between 0.04% and 0.5% iridium, and remaining part platinum, apart from the impurities. A method of making the alloy by induction melting the components, casting a sheet and homogenizing is also disclosed.

3,529,960
METHODS OF TREATING RESIST COATINGS

Hilbert Sloan, 5 Pomona Ave., Newark, N.J. 07112

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,224
Int. Cl. G03c *5/00*
U.S. Cl. 96—36 **12 Claims**

A substrate is coated with a resist composition comprising a curable, heat-sensitive resin composition in a vaporizable solvent or solvent mixture. The major portion of the solvent medium for the resist coating composition is gradually removed at a temperature sufficiently low to inhibit any curing of the resin as by air drying at room temperature. The coating thus dried is subjected to high vacuum drying in successive stages at gradually reduced pressures for periods sufficiently long and to a pressure sufficiently low to gradually remove residual solvent. The graduated high vacuum drying is accomplished at a temperature sufficiently low to inhibit curing of the resin and to maintain the integrity of the coating free of surface skinning, pinholes or blisters. As a result of such drying procedure, when the resin of the resist composition is thereafter cured, as with light, heat, by electron beam radiation, or by ion bombardment, the resist is firmly bonded to the substrate and the resist's physical and chemical characteristics are not degraded.

3,529,961
FORMATION OF THIN FILMS OF GOLD, NICKEL OR COPPER BY PHOTOLYTIC DEPOSITION

Donald L. Schaefer and James F. Burgess, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 27, 1966, Ser. No. 604,596
Int. Cl. G03c *5/00*
U.S. Cl. 96—36.2 **12 Claims**

A method is disclosed whereby metallic films of gold, nickel, and copper for example may be photolytically deposited in the form of a thin coherent film upon the surface of a substrate from a liquid solution containing a source of the metal. The substrate may be either transparent or opaque and be of such diverse materials as quartz, glass, metal, or metalloids such as silicon. High resolution is obtainable and patterns such as printed circuit elements may be made in this manner.

3,529,962
PROCESS OF WASHING AND PROTECTING PHOTOGRAPHIC SILVER IMAGES

Howard C. Haas, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Sept. 15, 1965, Ser. No. 487,597
Int. Cl. G03c *5/54, 5/26*
U.S. Cl. 96—29 **9 Claims**

The stability of silver images produced by diffusion transfer photographic techniques is enhanced by applying to the silver print a solution of an aromatic or aliphatic carboxylic acid substituted partial acetal of polyvinyl alcohol and drying the solution to form a protective coating thereon. Preferred compositions contain, in addition to the polymer, a salt of a heavy metal which forms an insoluble sulfide, water, a water-miscible organic solvent and a volatile alkaline material.

3,529,963
IMAGE-YIELDING ELEMENTS AND PROCESSES

James Salvatore Marchese, North Plainfield, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 468,977, July 1, 1965. This application Aug. 23, 1966, Ser. No. 574,300
Int. Cl. G03c *1/02, 5/26*
U.S. Cl. 96—50 **8 Claims**

Image-yielding elements comprising (a) a silver salt of a highly fluorinated alkanesulfonic acid or dodecahydrododecaboric acid, said acids having a pKa no greater than 2, (b) a photosensitizer which may be a photoreducible dye capable under actinic radiation of decomposing said salt to liberate the acid, (c) a hydrogen abstractable material, and (d) a polymer binder, and optionally (e) an acid-sensitive material preferably an aldehyde precursor and/or (f) water or a water-yielding material; and processes of image formation by exposing the elements to actinic radiation and heating them to form an image.

3,529,964
HEAT DEVELOPABLE DIAZO COMPOSITIONS AND DIAZOTYPE REPRODUCTION MEDIA

John F. Kienast, River Edge, and Edward O. Aichelman, Irvington, N.J., assignors to L. L. Ridgway Enterprises, Inc., Houston, Tex., a corporation of Texas

No Drawing. Filed Jan. 14, 1966, Ser. No. 520,664
Int. Cl. G03c *1/60*
U.S. Cl. 96—91 **6 Claims**

Diazotype reproduction media consisting of a supported light-sensitive heat developable diazo composition comprising 10–40 parts by weight each of a diazo compound and coupler therefor, at least 100 parts by weight by thiourea, at least 70 parts by weight of a noncolorific acid-to-neutral metal salt of a heat-responsive organic acid, and an acid stabilizer establishing a pH between about 2.5 and about 4 in said composition.

3,529,965
IRRADIATION-SENSITIVE MATERIAL ADAPTED FOR DEVELOPMENT BY AQUEOUS DEVELOPER SOLUTION

Eduard Roell, Thalanderistr. 5, Munich-Obermenzing, Germany

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,407
Claims priority, application Germany, Aug. 10, 1965, R 41,292
Int. Cl. G03c *1/52*
U.S. Cl. 96—91 **4 Claims**

An irradiation-sensitive material which can be developed by means of aqueous developer solutions and retains its high mechanical strength properties during development and which is relatively insensitive to high developing temperatures and permits rapid drying. Said material consists of a supporting water-insoluble film base and a layer composed of an intimate mixture of a water-soluble or swellable, film-forming material preferably gelatin, a water-insoluble, water-dispersible polymer preferably a styrene-butadient polymer, and an irradiation-sensitive compound such as a diazo compound.

3,529,966
MATERIAL AND PROCESS FOR THE PREPARATION OF PLANOGRAPHIC PRINTING PLATES

Heinz Herrmann, Wiesbaden-Biebrich, and Manfred Hahn, Ingelheim, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Jan. 9, 1967, Ser. No. 607,897
Claims priority, application Germany, Jan. 10, 1966, K 58,104
Int. Cl. G03f *7/02;* **G03c** *5/00, 1/68*
U.S. Cl. 96—33 **5 Claims**

The invention relates to a new material and a new process for the preparation of printing plates. In the present invention, it has been found that coatings containing acid-curable resins and iodine in an uncombined form or in the form of alkali metal iodide are suitable for the preparation of photomechanical printing plates. When imagewise exposing such a coating and subsequently heating it, the unexposed areas of the coating are hardened more intensively than the exposed areas. By means of a suitable solvent, the less hardened, i.e. the exposed, areas of the coating then may be removed. When using a coating support which is known to be suitable, the support may be further processed together with the residual image thereon of the prior coating to give a printing plate, e.g. an offset plate. From a positive original, there is obtained a positive copy.

3,529,967
MINK FEED COMPOSITIONS

Ejvind Nissen Riisberg, Virum, Denmark, assignor to Lovens Kemiske Fabrik Produktionsaktieselskab, Ballerup, Denmark, a firm

No Drawing. Filed Sept. 2, 1966, Ser. No. 576,827
Claims priority, application Great Britain, Sept. 8, 1965, 38,415/65
Int. Cl. A23k *1/10*
U.S. Cl. 99—7 **5 Claims**

A mink feed composition in dry form comprising from 30 to 60% by weight fishmeal having a protein content of at least 60% with a content of available lysine of at least 6%; from 1 to 10% by weight of water-soluble proteins of low molecular weight or peptides; and from 10 to 40% by weight carbohydrates. The composition may also contain from about 10 to 25% by weight of conventional animal feed components such as fats, vitamins, minerals, and the like.

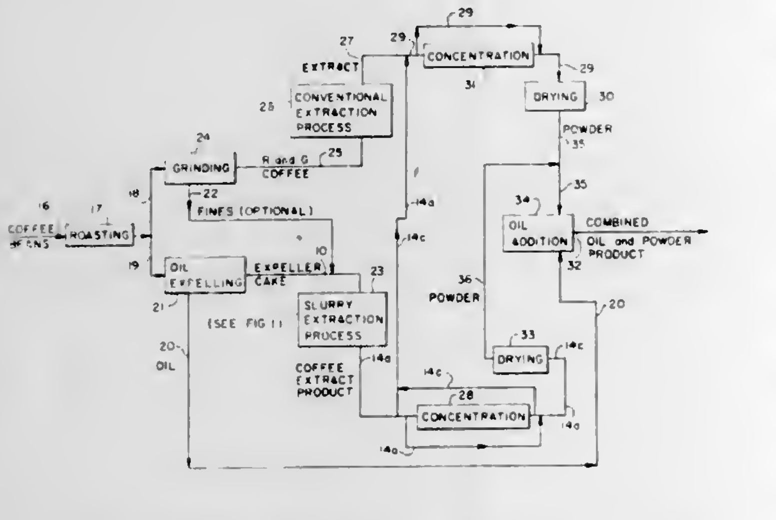
ERRATUM

For Class 99—18 see:
Patent No. 3,529,530

3,529,968

COUNTERCURRENT SLURRY EXTRACTION OF COFFEE EXPELLER CAKE

Eddy R. Hair, Colerain Township, Hamilton County, Ohio, and Donovan Francis Dasher, Pacifica, Calif., assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 18, 1967, Ser. No. 691,411
Int. Cl. A23f *1/08*
U.S. Cl. 99—71 **1 Claim**



Coffee expeller cake is extracted by a countercurrent slurry extraction process which involves a fresh stage and a hydrolysis stage. The slurry extraction process can be combined with a conventional process in the overall production of instant coffee.

3,529,969

PROTEIN BASE FOR BAKERY GOODS

Eugene J. Turro, Addison, Ill., assignor to Central Soya Company, Inc., Fort Wayne, Ind., a corporation of Indiana
No Drawing. Filed Sept. 1, 1966, Ser. No. 576,543
Int. Cl. A21d *13/00*
U.S. Cl. 99—86 **3 Claims**

The protein base contains from about 30 to 50 percent ground oats, from about 20% to about 45% soy protein concentrate, from about 5% to about 10% isolated soy protein, and from about 5% to about 10% of egg white solids.

3,529,970

BAKERY FORMULATION

Eugene J. Turro, Addison, Ill., assignor to Central Soya Company, Inc., Chicago, Ill., a corporation of Indiana
No Drawing. Filed Feb. 8, 1967, Ser. No. 614,563
Int. Cl. A21d *2/36*
U.S. Cl. 99—90 **3 Claims**

The addition to a bakery formulation of a mixture of 1 part soy protein concentrate with ½ to 2 parts soy flour having a Nitrogen Solubility Index of over 66% results in an improved yield of bread because of increased water absorption in the dough while maintaining the other physical and chemical characteristics of the dough and bread at least of equal character.

3,529,971

METHOD OF LYE-PEELING ONIONS

Herbert T. Pals, 16424 Cottage Grove Ave., South Holland, Ill. 60473, and Cornelius R. Rietveld, Rte. 2, Box 388, Cottage Grove Ave., Chicago Heights, Ill. 60411
Filed July 5, 1966, Ser. No. 562,589
Int. Cl. A23l *1/00*
U.S. Cl. 99—103 **9 Claims**

Producing onions by subjecting physically unaltered onions to a caustic bath and subsequently removing neck and root portions of the onion.

3,529,972

PROCESS FOR PREPARING COOKED FOOD PRODUCT

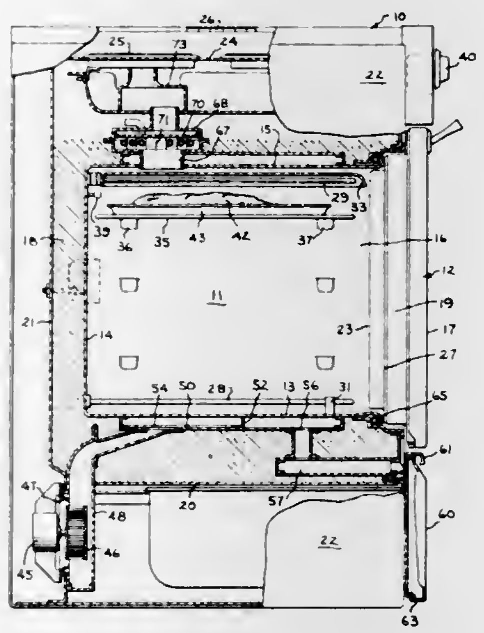
Lee Bertha Sutton, 2541 Wilson Ave.,
Knoxville, Tenn. 37914
No Drawing. Filed Apr. 10, 1967, Ser. No. 629,394
Int. Cl. A23l *1/31, 1/315*
U.S. Cl. 99—107 **7 Claims**

Chicken food product using predominantly the wings of the chicken and cooked with other parts of fowl or of meat to form a desired meat product.

3,529,973

METHOD OF BROILING IN AN OVEN

Christian A. Eff, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Original application Apr. 18, 1966, Ser. No. 543,210, now Patent No. 3,367,316, dated Feb. 6, 1968. Divided and this application Aug. 31, 1967, Ser. No. 664,843
Int. Cl. A23l *1/00*
U.S. Cl. 99—107 **2 Claims**



A closed door broiling oven having an oven cavity with a radiant heat broiling means in the top thereof, and means for sealing the oven door during a broiling operation. The oven also has an exhaust vent with an oxidation unit combined therewith. There is a restricted air opening into the oven for admitting oxygen required by the oxidation unit. A temperature control means is provided for the oven, and it includes a temperature sensor adjacent one wall of the oven housing. External, forced air cooling means are provided for extracting heat from the walls forming the cooking cavity and also reducing the temperature of the sensor so that the oven temperature control means is prevented from cycling at a preset broiling temperature so that the oven heating means is energized continuously. The oven is also provided with a layer of thermal insulation surrounding the cooking means, as well as an external oven housing or body structure.

3,529,974

NOVEL VEGETABLE OIL

Daniel Melnick, West Englewood, and Arthur E. Waltking, Fair Lawn, N.J., assignors to CPC International Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 29, 1967, Ser. No. 626,706
Int. Cl. A23d *5/00*
U.S. Cl. 99—118 **16 Claims**

A vegetable oil having properties similar to corn oil is prepared by blending together, in specified proportions, the following refined bleached oils: an oil of high *P/S* ratio such as safflower or sunflower oil; a modified soybean oil; winterized cottonseed oil; and peanut oil. The blend is subsequently deodorized.

3,529,975

PROCESS FOR PREPARING DRY FLAVORING MATERIAL FROM MOLLUSKS

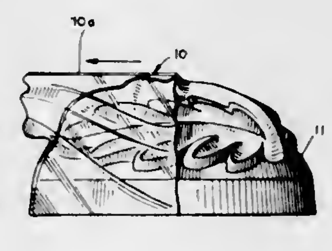
Robert D. Gray, Gloucester, Mass., assignor to Gray Chemical, Inc., Gloucester, Mass., a corporation of Massachusetts
No Drawing. Continuation-in-part of application Ser. No. 480,475, Aug. 17, 1965. This application Aug. 7, 1969, Ser. No. 848,326
Int. Cl. A23l *1/22;* **A23b** *3/04*
U.S. Cl. 99—140 **5 Claims**

Process for manufacture of dry food products storable without refrigeration, and adapted for human consumption, comprising the steps of cooking an edible mollusk, separating the flesh portions only, and wet milling said separated edible flesh portions to produce a homogeneous uniform slurry and drying said slurry to produce a finely divided chemically and flavor stable material, and dry, edible products produced thereby.

3,529,976

EMBOSSMENT PACKAGING FOR SOFT FOODS

Leo Peters, 750 Plymouth Road SE.,
Grand Rapids, Mich. 49506
Filed Feb. 21, 1968, Ser. No. 707,035
Int. Cl. B65b *25/06*
U.S. Cl. 99—179 **3 Claims**

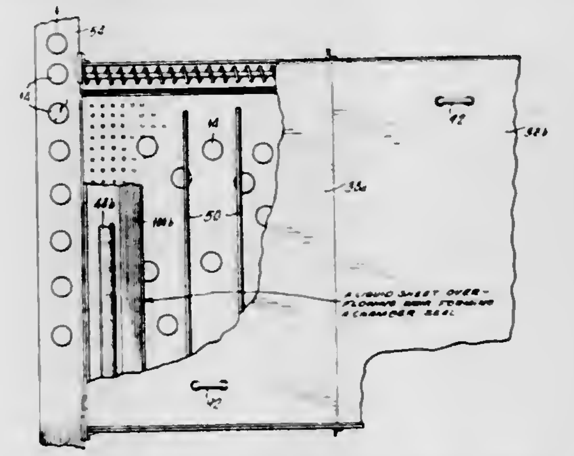


A package for soft, edible materials such as butter or margarine including a rigid plastic receptacle having an open bottom with at least 50% of the top of the receptacle being embossed, a thin-flexible soft thermoplastic liner having a thickness of the order of about 0.0005" in conforming relation to the interior of the embossed surface and the receptacle being filled with the soft, edible material so that the material can be removed from the receptacle by a dumping action after which the liner can be peeled from the embossed surface of the soft material without destroying the fine detail thereof.

3,529,977

STEAM PASTEURIZING ARTICLES

Schuyler M. Hibbard, Penn Yan, N.Y., assignor to Lohmann Foods Corporation, Gorham, N.Y., a corporation of New York
Original application Apr. 12, 1966, Ser. No. 542,010, now Patent No. 3,457,851, dated July 29, 1969. Divided and this application Mar. 5, 1969, Ser. No. 804,507
Int. Cl. A23b *3/02*
U.S. Cl. 99—216 **3 Claims**



A method of pasteurizing articles with steam involving the transportation of the articles through an open ended steam chamber which is sealed at its open end by the formation of an unrestrained curtain or sheet of liquid at the open end.

3,529,978

GENERAL PURPOSE $BaTiO_3$ CERAMIC DIELECTRIC COMPOSITIONS

Howard Urban Taylor, Thiensville, and Stanley Arnold Long, Mequon, Wis., assignors to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Continuation of application Ser. No. 490,375, Sept. 27, 1965. This application Sept. 23, 1969, Ser. No. 860,472
Int. Cl. C04b *33/00*
U.S. Cl. 106—39 **9 Claims**

An improved ceramic dielectric composition which is made up essentially of barium titanate, $BaTiO_3$, in which the temperature coefficient and processing characteristics are greatly enhanced by the co-ordinated additions of a minor amount of a negative additive material such as Bi_3NbTiO_9, $CaBi_2Nb_2O_9$, $SrBi_2Nb_2O_9$, $BaBi_2Nb_2O_9$,

$PbBi_2Nb_2O_9$

$KBi_5Nb_4O_{18}$, $NaBi_5Nb_4O_{18}$, and $CdBi_2Nb_2O_9$, as well as $SrBi_2Ta_2O_9$, Bi_3NbSnO_9, Sb_3NbTiO_9, and Bi_3NbZrO_9, and a positive additive material such as ZnO or MgO, the negative additive material producing a clockwise rotation of the temperature-dielectric constant curve and the positive additive material producing a counterclockwise rotation of that characeteristic curve, the combination producing a substantially flat curve which is relatively independent of small variations in processing conditions.

3,529,979

METHOD OF PREPARING ALKALI SAND PRODUCTS

Frank J. Yarsa, Barberton, Ohio, assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 26, 1966, Ser. No. 589,593
Int. Cl. C03c *3/04*
U.S. Cl. 106—52 **7 Claims**

A product useful in the manufacture of glass is prepared by fluidizing a bed of sand particles and alkali metal hydroxide in the presence of CO_2 while the temperature is such that hydroxide and sand react to form alkali metal silicate. Sufficient CO_2 is supplied to react with unreacted alkali metal hydroxide to form alkali metal carbonate.

3,529,980
BOROSILICATE OPTICAL CROWN GLASS WITH ANOMALOUS PARTIAL DISPERSIONS WITH NEGATIVE $\Delta\nu_e$ DISPERSION VALUES

Heinz Bromer, Hermannstein, Kreis Wetzlar, and Norbert Meinert, Wetzlar, Germany, assignors to Ernst Leitz GmbH., Wetzlar, Germany

Continuation-in-part of application Ser. No. 542,035, Apr. 12, 1966. This application Apr. 28, 1967, Ser. No. 634,746

Claims priority, application Germany, May 3, 1966, L 53,490

Int. Cl. C03c *3/04, 3/08*

U.S. Cl. 106—54 **4 Claims**

Optical crown glasses with anomalous partial dispersion with negative $\Delta\nu_e$ values and improved chemical resistance properties, with mean refractive indices n_e from 1.54 to 1.58 and 1.61 to 1.64 can be produced from a mixture consisting essentially of 24 to 52 mol percent SiO_2; 25 to 35 mol percent B_2O_3; 10 to 25 mol percent selected from the group consisting of oxides of alkali elements; 2 to 8 mol percent Al_2O_3; up to 10 mol percent selected from the group consisting of oxides of the bivalent elements zinc, cadmium, and lead; 1 to 7 mol percent selected from the group consisting of oxides of tantalum and niobium; and optional additives up to 15 mol percent selected from the group consisting of oxides of zirconium, lanthanum and tungsten.

3,529,981
METHOD FOR MAKING ASBESTOS-CEMENT SHAPES

Frederick E. Hawkins, Ambler, Pa., and Joseph L. Cangelosi, Caparra Heights, Puerto Rico, assignors to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Continuation-in-part of application Ser. No. 511,732, Dec. 6, 1965. This application Sept. 9, 1968, Ser. No. 767,892

Int. Cl. C04b *31/08*

U.S. Cl. 106—99 **7 Claims**

A method for use in the extrusion of asbestos-cement shapes by means of a screw extruder, and particularly a method for preparing the mix or furnish by means of a muller. The mixing technique provides for dry mixing of the asbestos and cement in the muller, addition of the water, and then continued mulling after water addition for a very limited period of time, which results in physical characteristics of the furnish greatly facilitating screw extrusion.

3,529,982
PROCESS FOR PROTECTING ORGANIC MATERIAL FROM THE ACTION OF ULTRAVIOLET RAYS

Christian Luethi, Munchenstein, Max Duennenberger, Frankendorf, and Hans Rudolf Biland, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Feb. 6, 1967, Ser. No. 614,039

Claims priority, application Switzerland, Feb. 7, 1966, 1,679/66, 1,680/66

Int. Cl. C08f *45/60;* **C08g** *51/60;* **B44d** *1/00*

U.S. Cl. 106—178 **4 Claims**

This invention refers to a process for protecting organic materials that can be damaged by ultraviolet rays, from the action of ultraviolet rays, wherein asymmetrical oxalic acid diarylamides of the general formula

$$A—NH—CO—CO—NH—B$$

where A and B are different from each other and each represents a benzene or naphthalene residue, these residues A and B (a) being free from hydroxyl groups in the ortho-positions to the amide nitrogen atom and (b) containing if desired substituents that contain no more than 20 carbon atoms and do not displace the absorption maximum of the compound towards values above 400 mμ, are applied to said materials, as well as compositions containing said oxalic acid diarylamides.

3,529,983
PAINTS CONTAINING CERTAIN TRIFLUOROACETATE SALTS

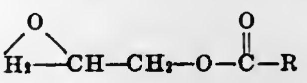
Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Dec. 21, 1967, Ser. No. 692,309. Divided and this application July 1, 1968, Ser. No. 741,262

Int. Cl. B05b *5/02;* **C08b** *21/06*

U.S. Cl. 106—178 **6 Claims**

The disclosure shows that by employing as an additive a certain type of salt compound, paints can be made which have improved pigment-wetting and flow properties and which are suitable for application by electrostatic spray techniques; the salt compound can be made by reacting trifluoroacetic acid with a tertiary amine compound obtained from the reaction between a primary amine (e.g., lauryl amine) and an ester of the formula



wherein R is a branched chain C_8–C_{10} alkyl group.

3,529,984
MIXTURES OF WATER-INSOLUBLE DISAZO DYESTUFFS AND PROCESS FOR PREPARING THEM

Wolfgang Bandel, Kelkheim, Taunus, and Joachim Ribka, Offenbach am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

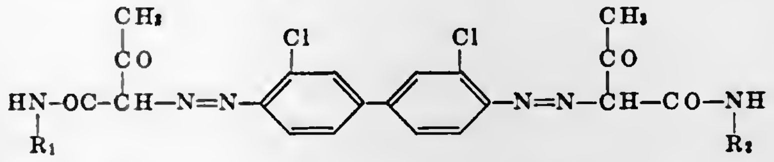
No Drawing. Filed Aug. 11, 1966, Ser. No. 571,703

Claims priority, application Germany, Aug. 14, 1965, F 46,907

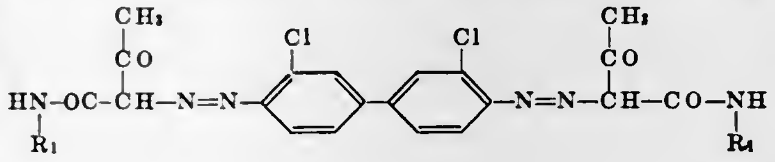
Int. Cl. C08h *17/14*

U.S. Cl. 106—288 **11 Claims**

The present invention relates to mixtures of water-insoluble disazo-dyestuffs and to a process for preparing them; in particular it relates to new, water-insoluble disazo dyestuff mixtures consisting of one asymmetrical dyestuff each of the general formula



and two symmetrical dyestuffs of the general formulae



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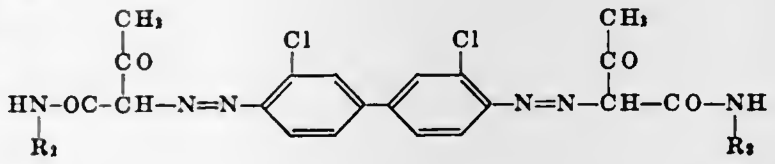


(3)

in which R_1 represents a phenyl radical which may be substituted by alkyl or alkoxy groups or by chlorine atoms, or a naphthyl radical, and R_2 represents an aromatic or heterocyclic radical which may be substituted by non-hydrosolubilizing groups, provided that if one coupling component is 1-acetoacetylamino-2-methoxybenzene, the other is neither 1-acetoacetylamino-2,4-dimethylbenzene nor 1-acetoacetyl-amino-2,5-dimethoxy-4-chlorobenzene.

3,529,985
TITANIUM DIOXIDE PIGMENT AND PROCESS FOR PRODUCING SAME

Harry C. Jester, Westfield, and Robert S. McNeil, Red Bank, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 26, 1967, Ser. No. 693,087

Int. Cl. B02c *19/06;* **C09c** *1/36*

U.S. Cl. 106—300 **9 Claims**

The present invention relates to an improved TiO_2 pigment for use in coating compositions and more particularly to a double-coated TiO_2 pigment which combines both superior optical properties and durability in alkyd, solution vinyl, latex, acrylic and similar coating compositions; and is characterized by TiO_2 pigmentary material having two successive coatings thereon of titania and/or alumina wherein the first coating is calcined and hence partially or completely dehydrated and the second coating is simply dried; and to a method for producing the same wherein both the first and second coatings of titania and/or alumina are deposited on a TiO_2 pigmentary material by precipitation from aqueous slurries of the pigmentary material and water soluble metal salts of titanium and/or aluminum, the coated and calcined TiO_2 being milled both before and after deposition of the second coating.

The term "optical properties" as used herein shall be understood to mean the capacity of the double-coated TiO_2 pigment to impart brightness and opacity to pigmented coating compositions; the term "TiO_2 pigmentary material" denotes a rutile TiO_2 that has been produced at a temperature of at least 700° C. before being double-coated by the process of the invention and may be TiO_2 burner discharge i.e. a chloride-base TiO_2 recovered from the vapor phase oxidation of $TiCl_4$, or a calcined sulfate-base TiO_2; while the "durability" of a pigmented coating composition will be understood to mean retention of its initial gloss in alkyd and acrylics, or tint retention in solution vinyls and acrylic latex, over an extended length of time when subjected to weathering.

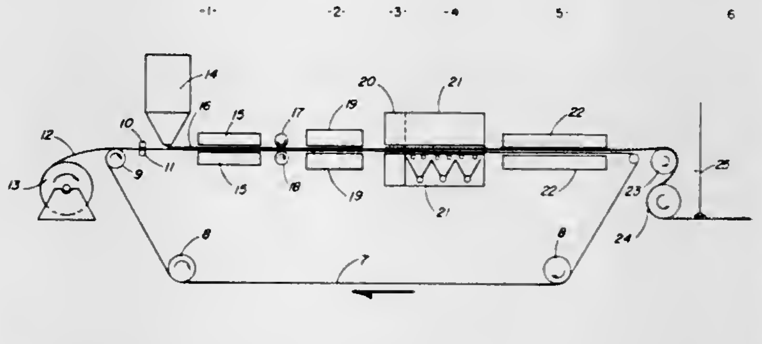
3,529,986
METHOD FOR APPLYING FLOCK TO A RESIN COATED SUBSTRATE

George Kappas, Champaign, and Alfred B. Zimmerman, Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Apr. 18, 1966, Ser. No. 543,332

Int. Cl. B44c *1/08;* **B44d** *1/44*

U.S. Cl. 117—17 **9 Claims**



Producing a flocked product by a process comprising applying a polyolefin in the form of a 100% solid system to a substrate on a temporary support to yield a web, heating the web thus formed to a temperature required to melt the polyolefin to yield a continuous superstratum of the polyolefin, directing flock material normal to the path of movement of the web so that the bulk of the flock is directly embedded into the molten surface of the polyolefin, cooling the flocked material, and removing excess flock. Additional embodiments are described in the specification.

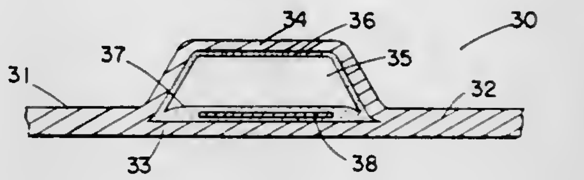
3,529,987
METHOD OF COATING CONDUIT

Jerome H. Lemelson, 85 Rector St.,
Metuchen, N.J. 08841

Continuation-in-part of application Ser. No. 432,033, Nov. 25, 1964. This application Nov. 1, 1966, Ser. No. 601,259

Int. Cl. H05b *1/00, 3/00*

U.S. Cl. 117—21 **6 Claims**



A method for providing a coating on the inside of a conduit for the purpose of protecting the conduit from chemical corrosion and, in certain instances, physical erosion. Coating is effected by predeterminately flowing a fluid through the conduit and causing same to deposit on or effect a change in the composition of the inside surface of the conduit until a desired degree of thickness of coating material is attained. When said condition is attained, the excess fluid which is still within the conduit, is purged from the interior of the conduit and the material coating same is totally solidified or set. In one form, the coating material is a molten polymer which solidifies upon contact with the surface of the conduit as it cools. In another form, the coating material is a monomer which is polymerized in situ on the inside surface of the conduit. In still another form, the inside surface of the conduit is provided with an outside layer by providing the material injected into the conduit as an oxidizing fluid and causing same to oxidize the inside surface of the conduit.

3,529,988
METHOD FOR MAKING HYPERSTOICHIOMETRIC CARBIDE COMPOSITIONS

Paul F. Woerner, Grosse Pointe, Mich., assignor to Teeg Research, Inc., Detroit, Mich., a corporation of Delaware

Filed Sept. 23, 1965, Ser. No. 581,646

Int. Cl. C23c *11/08*

U.S. Cl. 117—46 **28 Claims**

A method for making a metal carbide-carbon composition in the form of a coating on a substantially stable substrate, the composition being obtained as the result of the heat reaction of a hydrocarbon, hydrogen and a halide of the metal. The resulting metal carbide-carbon composition falls within the hyperstoichiometric region of the carbide-carbon phase diagram, preferably in the hypoeutectic and hypereutectic regions of the phase diagram, and the free carbon content of the composition is substantially proportional to the temperature of reaction and to the hydrocarbon halide mol ratio and inversely proportional to the hydrogen to halide ratio of the reactants.

3,529,989

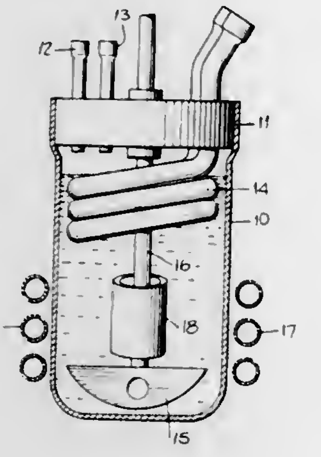
ELECTROLESS PLATING OF NICKEL VIA DECOMPOSITION OF NICKEL ZERO COMPLEXES IN SOLUTION

David P. Jordan, Mahwah, and Donald H. Antonsen, Upper Saddle River, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,718

Int. Cl. C23c *3/04*

U.S. Cl. 117—47 **14 Claims**



A process for the electroless deposition of nickel is disclosed in which a substrate is contacted with a solution of tetrakis-(triorganophosphite)nickel (0) compounds dissolved in non-aqueous solvents such as esters of dicarboxylic acids and ethers and the substrate to be coated is heated to the decomposition temperature of the tetrakis-(triorganophosphite)nickel (0) compounds while maintaining the solution at a temperature at least about 90° C. below the decomposition temperature of the tetrakis-(triorganophosphite)nickel (0) compounds to form a low phosphorus nickel-containing plate on the substrate.

3,529,990

PROCESS OF FINISHING TEXTILE MATERIALS

Gustav Becker, Leverkusen, Heinz Griepentrog, Cologne, Wolfgang Klebert and Friedrich Reich, Leverkusen, and Karl Schafer, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 22, 1967, Ser. No. 669,711

Claims priority, application Germany, Sept. 24, 1966, F 50,279

Int. Cl. B44d *1/44*

U.S. Cl. 117—63 **6 Claims**

Textile materials are treated with polymers based on vinyl monomers and polyurethane prepolymers having free —NCO groups in the presence of metal salts of carboxylic acids, drying the treated textile material if desired and then treating it with water.

3,529,991

BORATE AND METAL SALT COATED GLASSWARE AND METHOD OF MAKING

Francis J. Shonebarger and Charles G. Allen, Lancaster, Ohio, assignors to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware

No Drawing. Filed June 16, 1967, Ser. No. 646,470

Int. Cl. C03c *17/22, 17/32*

U.S. Cl. 117—72 **7 Claims**

An improved protective coating for glass articles such as containers, tumblers, tableware and the like which is applied as a water spray to the hot surfaces of the glass articles after their formation. The coating protects the glass articles against damage by providing a scratch resistant and lubricating surface and it also is useful as an undercoat for secondary polyethylene and other lubricative coatings. The coating formulation comprises a water solution of a source of boron such as boric acid with an additional compound for providing a source of metal ions such as aluminum, zinc or magnesium compounds. The coating is applied to hot glass surfaces as a spray or otherwise and the coating reacts on the hot surfaces to form what are believed to be highly polar complexes containing BO_3^{-3} groups.

3,529,992

APPARATUS AND METHOD FOR DECORATING SHEET MATERIALS

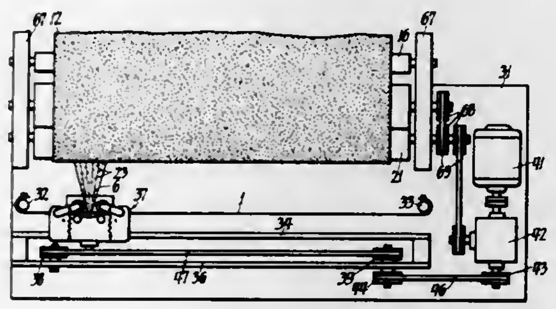
Jack Frederick Sinclair, Highton, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research, Victoria, Australia, a body corporate

Filed Feb. 13, 1968, Ser. No. 705,115

Claims priority, application Australia, Feb. 16, 1967, 17,812/67

Int. Cl. B05b *13/02*

U.S. Cl. 117—105.3 **16 Claims**



Decorating sheet material, particularly cloth, by applying a dye or the like to a ribbon-like band of metal mesh so that the dye is retained in the mesh and displacing the dye from the mesh onto a sheet material by means of an air jet which reciprocally traverses the band along its length.

3,529,993

POLYANHYDRIDE-POLYAMINE COATED SURFACE AND METHOD OF COATING

Lowell O. Cummings, San Anselmo, Calif., assignor to Pacific Vegetable Oil Corporation, San Francisco, Calif., a corporation of California

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,387

Int. Cl. B05b *13/02, 7/26;* **B44d** *1/02;* **C03c** *17/00*

U.S. Cl. 117—105.5 **23 Claims**

A substrate is coated with a composition comprising the reaction product of a reaction between a polyanhydride and one of the following polyamines: a condensation product of tung acrolein adduct and a lower amine, an amide-amine resin, the partial reaction product of an amine and an epoxy resin, and the reaction product of a lower polyamine and a methyl ester of a bodied drying oil. The coating is best applied by spraying solutions of the polyamine and polyanhydride simultaneously and directly on the substrate.

3,529,994

PAPER COATED WITH PIGMENT COMPRISED OF COPRECIPITATED $CaHPO_4 \cdot 2H_2O$ AND $CaSO_4 \cdot 2H_2O$

Arthur M. Brooks, Baltimore, Md., assignor to W. R. Grace & Co., Clarksville, Md., a corporation of Connecticut

No Drawing. Original application May 3, 1968, Ser. No. 726,595, now Patent No. 3,445,259, dated May 20, 1969. Divided and this application Dec. 27, 1968, Ser. No. 803,509

Int. Cl. D21h *1/22*

U.S. Cl. 117—152 **3 Claims**

A pigment composition comprising coprecipitated calcium hydrogen phosphate dihydrate and calcium sulfate dihydrate, and a process for preparing this composition from calcium hydroxide, sulfuric acid, and phosphoric acid. The coprecipitated pigment is coated on a paper base.

3,529,995

FLUORINE-CONTAINING COPOLYMER TREATED FABRICS

Samuel Smith, Roseville, and Patsy O. Sherman, Bloomington, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 415,154, Dec. 1, 1964. This application Dec. 1, 1967, Ser. No. 687,090

The portion of the term of the patent subsequent to Dec. 5, 1984, has been disclaimed

Int. Cl. B32b *27/08;* **B44d** *1/14*

U.S. Cl. 117—161 **5 Claims**

Fabrics provided with various resin treatments and additionally with treatments of copolymers of fluorinated and hydroxyl-containing monomers exhibit durability of oil and stain resistance.

3,529,996

WELDING ELECTRODE

Joseph F. Quaas, Island Park, N.Y., and A David Joseph, New Canaan, Conn., assignors to Eutectic Welding Alloys Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 16, 1967, Ser. No. 638,732

Int. Cl. B23k *35/34, 35/36*

U.S. Cl. 117—205 **5 Claims**

An electrode capable of depositing on a base metal a weld deposit of a highly alloyed nickel base alloy containing molybdenum, chromium and tungsten with the alloy deposit being capable of being work hardened. The electrode having a low alloy nickel core wire and a high alloy containing flux coating.

3,529,997

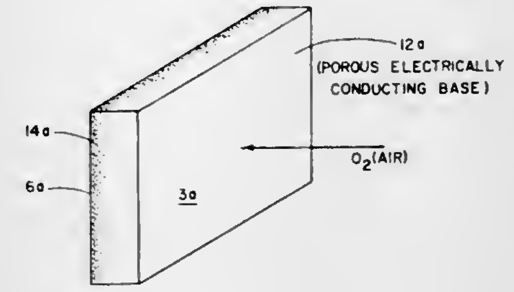
POROUS ELECTRODE FOR THE PRODUCTION OF PEROXIDE SOLUTIONS

Donald H. Grangaard, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Original application Dec. 27, 1966, Ser. No. 604,686. Divided and this application Mar. 17, 1969, Ser. No. 807,817

Int. Cl. C01b *15/02;* **B01k** *1/00*

U.S. Cl. 117—228 **3 Claims**



An electrode for use in the electrochemical reduction of oxygen as a cathode being a porous electrically conductive body provided with an impregnant of a redox resin. A process using the noted electrode and involving in the production of peroxide the substantially simultaneous oxidation and reduction of a redox resin, the reduction being by means of electrical current action.

3,529,998

PICKLING PROCESS

Fritz Singer, Starnberg, Upper Bavaria, Germany, assignor of one-half to Tadeusz Sendzimir, Waterbury, Conn.

No Drawing. Filed Feb. 13, 1967, Ser. No. 615,394

Claims priority, application Germany, Feb. 16, 1966, 1,621,646

Int. Cl. C23g *1/24*

U.S. Cl. 134—1 **5 Claims**

A method of rapidly removing scale from the surfaces of ferrous articles with ammonium salt solutions, the articles being treated at several degrees Centigrade below the boiling point of the ammonium salt solution in an open vessel, and precipitating ferric hydroxide out of the ferrous-ammonium salt solution formed during the process by oxidation of the ferrous-ammonium salt through contact with the atmosphere. Water-soluble alkaline earth metal salts and/or water-soluble zinc or cadmium salts added to the ammonium salt pickling solution minimize ammonia losses. The air blanket above the pickling bath is continuously regenerated by a hollow frame positioned a short distance above the bath surface, the lower wall of the frame having uniformly distributed perforations and the upper wall having a connection to a pressured air system. The method may also advantageously be combined with ultrasonic systems for scale removal.

3,529,999

METHOD FOR CLEANING NATURAL AND ARTIFICIAL STONES

David Boeniger, 287 Seefeldstrasse, Zurich, Switzerland

No Drawing. Filed May 15, 1968, Ser. No. 729,398

Claims priority, application Switzerland, May 19, 1967, 7,076/67

Int. Cl. B08b *3/08*

U.S. Cl. 134—2 **12 Claims**

Stone surfaces can be cleaned when using a mixture for treating same which contains an alkali metal hydroxide, the salt of the same specific alkali metal used with a weak acid, and a thickening agent, the treating time being limited by the fact that the treating mixture must not be allowed to dry completely on the stones. Afterwards, the treating mixture is washed away with water or steam, and a neutralizing solution may be used thereon if very alkali sensible stones are concerned.

3,530,000

CLEANING OF LIQUID CIRCULATING EQUIPMENT

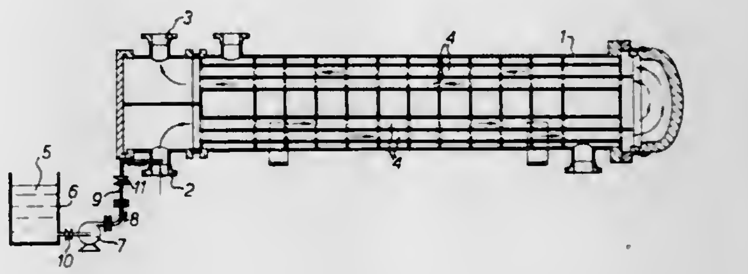
Clive B. Searles, Dibdon Purlieu, Hampshire, England, assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Feb. 28, 1967, Ser. No. 619,347

Claims priority, application Great Britain, Jan. 20, 1967, 5,042/66

Int. Cl. B08b *9/06*

U.S. Cl. 134—22 **2 Claims**



On-stream method of removing scale, mud and vegetable matter from water cooling equipment while maintaining normal flow of a stream of cooling water therein comprises injecting into the stream of flowing cooling water a solution of specified acid and corrosion inhibitor-wetting agent to provide particular concentrations of same in the cooling water and at a flow rate of at least 3 feet per second through the water circulating channels of said cooling equipment.

3,530,001

STORAGE CELLS UTILIZING FLEXIBLE ELECTRODES COMPRISING A POROUS FLEXIBLE FIBROUS CARRIER

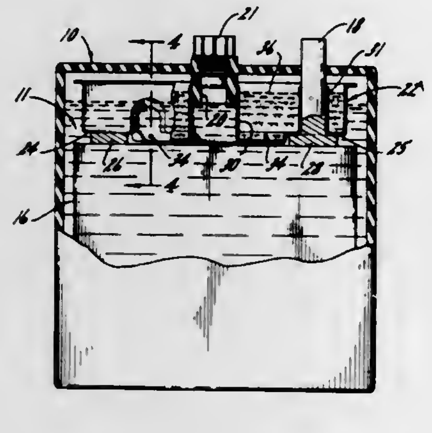
Jean-Pierre Louis Rodolphe Harivel, Paris, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, France, a company of France
Continuation of application Ser. No. 598,298, Dec. 1, 1966. This application Nov. 19, 1969, Ser. No. 871,689
Claims priority, application France, Dec. 1, 1965, 40,520
Int. Cl. H01m *35/00, 35/06*
U.S. Cl. 136—6 **10 Claims**

Storage cells utilizing foldable and flexible electrodes that can be assembled in containers of any selected design and also deformable. The electrodes comprise a porous fibrous flexible carrier of synthetic material and active materials therein. Some of the fibres, at least, are of plastic or other synthetic material that is normally non-conductive and insensible to thermal, chemical and electrochemical conditions in batteries or cells into which the electrodes are incorporated. The fibrous carrier prior to assembly in the cell being in compressed reduced state of thickness relative to its initial thickness.

3,530,002

WATER-ACTIVATED, DRY CHARGED LEAD ACID STORAGE BATTERY UTILIZING GELLED SULFURIC ACID ELECTROLYTE PRECURSOR AND METHOD OF ACTIVATING SAME

Martin H. Little, St. Paul, Minn., assignor to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
Filed Apr. 28, 1967, Ser. No. 636,238
Int. Cl. H01m *39/00*
U.S. Cl. 136—26 **16 Claims**

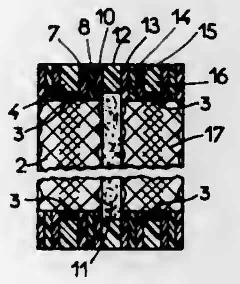


Lead-acid type storage batteries are stored in the dry-charged condition with an immobilized concentrated sulfuric acid maintained in the cell compartments but out of contact with the electrodes or plates. Preferred gel is concentrated sulfuric acid gelled with boron phosphate. Battery is activated by addition of water which dissolves gel and forms electrolyte in situ. An improved storage battery construction adapted for use with immobilized sulfuric acid is described.

3,530,003

COMPACT FUEL CELL BATTERY

Bernard Warszawski, Paris, and Bernard Verger, Palaiseau, France, assignors to Societe Generale de Constructions Electriques et Mecaniques (Alsthom), Paris, France, a corporation of France
Filed Feb. 26, 1968, Ser. No. 708,225
Claims priority, application France, Feb. 24, 1967, 2,734
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **7 Claims**



A fuel cell battery is formed of an assembly of parallel, stacked thin plates including electrode and diaphragm elements, with insulating spacer frames interposed between the electrodes and the diaphragms; the electrode and diaphragms are fitted into windows cut into their holding elements; the spacer frames have marginal portions extending in slightly overlapping relation over the electrodes and diaphragms, and being formed with openings to provide for electrolyte supply ducts. Three spacer frames are interposed between an electrode and a diaphragm, each, and the central one is formed with additional communicating channels, to introduce electrolyte from the supply ducts formed by the stacked openings to the space between an electrode and a diaphragm.

3,530,004

FUEL CELL INCLUDING PENTACYANOCOBALTATE - CONTAINING ELECTROLYTE AND METHOD FOR PRODUCING ELECTRICITY

Thomas H. Coffield, Orchard Lake, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Mar. 25, 1968, Ser. No. 715,528
Int. Cl. H01m *11/00, 27/00*
U.S. Cl. 136—86 **11 Claims**

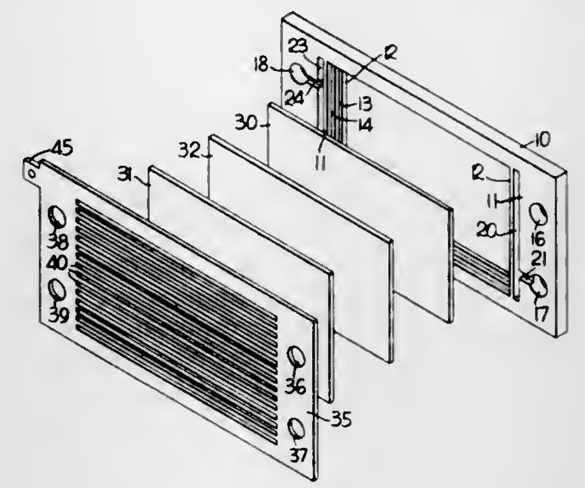
A fuel cell containing alkali metal, alkaline earth metal, or ammonium pentacyanocobaltates as catalysts.

3,530,005

COMPACT ELECTROCHEMICAL CELL

Ronald J. Leonard, Elk Grove Village, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 21, 1968, Ser. No. 738,983
Int. Cl. H01m *27/00;* **B01k** *3/00*
U.S. Cl. 136—86 **4 Claims**

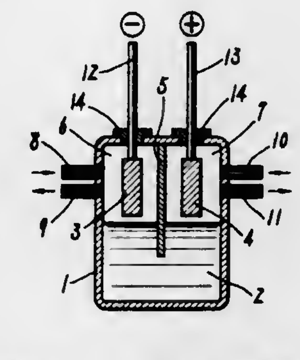
An individual electrochemical cell for use in combination with other such cells wherein a pair of porous electrodes, spaced by an electrolyte matrix, are secured by a frame member around the periphery. A single fluid distribution plate, having a fluid distribution grid therethrough, overlaps the frame member. The frame member and fluid distribution plate are provided with a pair of reactant inlet ports and a pair of product outlet ports. The face of said frame member against said gas distribution plate is provided with a predistribution groove, communicating with one of said inlet ports, under one of the fluid distribution grid; and a collecting groove, communicating with one of said outlet ports, under the opposite end of said fluid distribution grid.



3,530,006

FUEL CELL WITH METALLIC OXIDE FUEL AND OXIDIZING ELECTRODES

Shoji Makishima, 115 1-chome, Kamitakaido, Suginami-ku, Tokyo, Japan; Hidefumi Hirai, 2122 4-chome, Kamimeguro, Meguro-ku, Tokyo, Japan; and Kazuo Tomiie, 4 5-chome, Aoyama - Minamicho, Akasaka, Minato-ku, Tokyo, Japan
Continuation of application Ser. No. 492,434, Oct. 4, 1965. This application Aug. 29, 1969, Ser. No. 857,625
Claims priority, application Japan, Nov. 26, 1964, 39/66,742
Int. Cl. H01m *27/04*
U.S. Cl. 136—86 **3 Claims**



A fuel cell is disclosed in which the electrodes are movable alternately between an electrolyte to produce an electromotive reaction and either an oxidizer or fuel to oxidize or reduce the electrode material. The electrode itself is composed of metal oxides obtained by sintering at a high temperature a metal oxide of variable atomic valency and at least one component taken from the group consisting of alkali, alkaline earth, Zn, Cd, Ag, Al, Mg, Ja, In, rare earth, Si, Ge, Sn, Sb, Pb, As, Bi, Se and Te.

3,530,007

SOLAR CELL INCLUDING ACEANTHRAQUINOXALINE PHOTOSENSITIVE MATERIAL

Aleksandar Golubovic, Arlington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 19, 1967, Ser. No. 691,890
Int. Cl. H01l *3/24*
U.S. Cl. 136—89 **3 Claims**

A photoelectric device comprising a photoconductive organic layer disposed between and interconnected to two metal electrodes. Upon exposure to illumination, the photoconductive organic material generates a voltage between the electrodes, thus providing a system for use as a solar cell or a photosensitive circuit element. The cell is responsive to distinct wavelengths of incident radiation in the ultra violet, visible and infrared regions.

3,530,008

THERMO-E.M.F. GENERATOR CONSISTING OF A SINGLE CRYSTAL ANISOTROPIC CADMIUM ANTIMONIDE

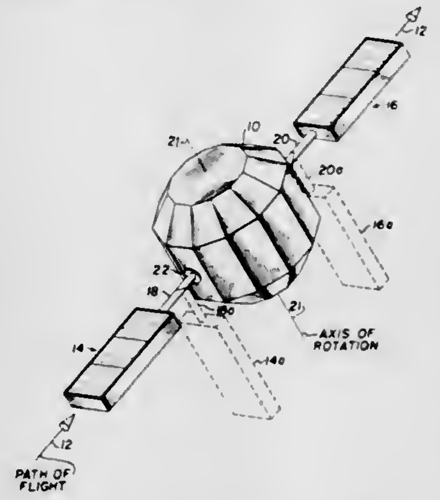
Anatoly Grigorievich Samoilovich, Ulitsa Universitetskaya 13, kv. 4; Izrail Moiseevich Pilat, Ulitsa Zankovetskaya 15, kv. 10; and Lukyan Ivanovich Anatychuk, Ulitsa Russkaya 95, all of Chernovtsy, U.S.S.R.
Filed Jan. 26, 1967, Ser. No. 611,993
Int. Cl. H01v *1/06, 1/30;* **H02n** *4/00*
U.S. Cl. 136—200 **2 Claims**

A thermo-E.M.F. is made of one single crystal of cadmium antimonide which exhibits thermo-E.M.F. anisotropy in at least two directions normal to each other. The temperature gradient is applied at a particular angle with respect to the direction of anisotropy. The resulting E.M.F. is taken off in a direction normal to the temperature gradient applied. The E.M.F. depends not only on the thermoelectric properties of the single crystal and the temperature difference applied, but also on the geometric dimensions of the single crystal.

3,530,009

DEPLOYABLE RADIOISOTOPIC THERMOELECTRIC GENERATOR

Guy F. Linkous, Glen Arm, and Paul J. Dick, Lutherville, Md., assignors, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Oct. 20, 1967, Ser. No. 676,851
Int. Cl. H01v *1/00*
U.S. Cl. 136—202 **20 Claims**



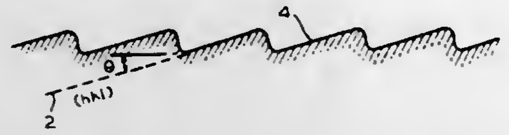
A thermoelectric generator for use with space vehicles and satellites. The generator uses a flat, rectangular shaped radioisotopic heat source which is positioned between two parallel banks of interconnected thermoelectric elements. The paddle shaped assembly is deployable from a thin arm extending from a satellite. Heat deriving from the radioisotopic heat source passes through the inward facing ends of the thermoelements to be dumped from radiating panels forming the opposed outer sides of the paddle shaped structure.

3,530,010

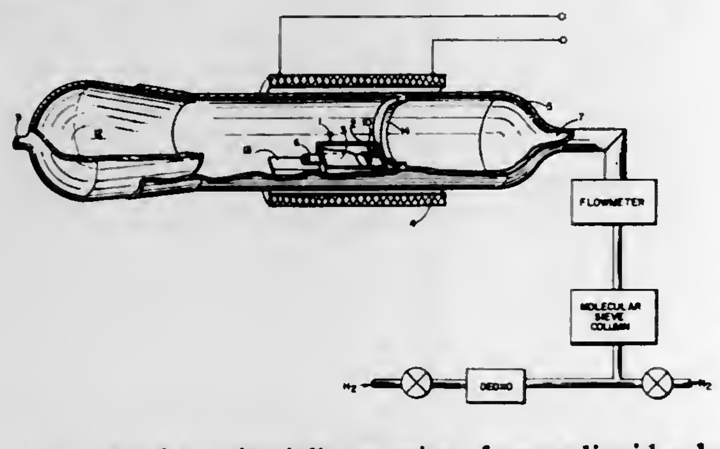
METHOD OF MAKING BLAZED OPTICAL DIFFRACTION GRATINGS

John M. Blakely, Ithaca, N.Y., assignor, by mesne assignments, to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed July 22, 1968, Ser. No. 746,652
Int. Cl. C22f *1/02*
U.S. Cl. 148—1 **5 Claims**

Blazed optical diffraction gratings are made by forming a single crystal body refracting material having an extended plane surface oriented at an acute angle to a crystallographic plane of the body of low specific surface energy, forming in said extended plane surface a periodic corrugation the grooves of which are parallel to the line of intersection of the low specific surface energy plane with the extended plane surface, and subjecting said body to a subatmospheric pressure at a temperature which is a major fraction of the melting temperature of the material in degrees absolute.



3,530,011
PROCESS FOR EPITAXIALLY GROWING GERMANIUM ON GALLIUM ARSENIDE
Clarence K. Suzuki and Roy H. Harada, Costa Mesa, Calif., assignors to North American Rockwell Corporation
Filed Dec. 7, 1964, Ser. No. 416,219
Int. Cl. H01l *7/34, 7/38*
U.S. Cl. 148—1.5 **14 Claims**

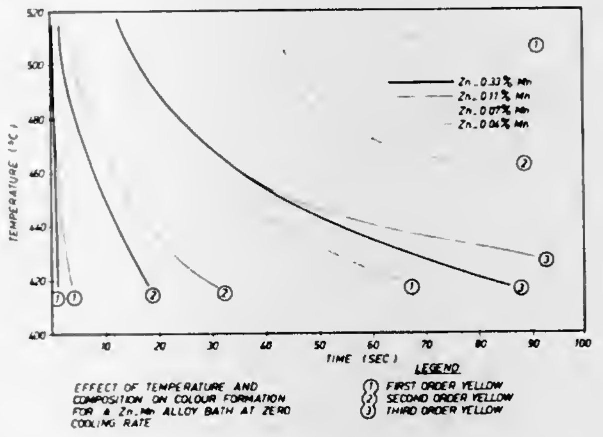


A process for epitaxially growing, from a liquid solution, germanium on gallium arsenide. A GaAs substrate and a solution of Ga and Ge are placed in isolated relationship in a container. The solution is heated to a temperature at which an excess of about 0.5 percent germanium exists; the substrate is heated to between 5° and 15° higher than this temperature. The substrate then is immersed in the solution, and as the combination reaches temperature equilibrium a thin layer of the substrate is dissolved into the solution, forming a smooth surface for subsequent deposition. The equilibrium temperature of the substrate and the solution then is lowered gradually to maintain between 0.5% and 5% excess germanium in the solution. The excess germanium percipitates out and grows epitaxially on the substrate. The substrate with its epitaxial germanium layer then is removed from the remainder of the solution.

3,530,012
METHOD OF TREATING METAL SURFACES
Akira Nakamura and Noboru Sakamoto, Osaka, Tatsuo Kataoka, Tokyo, and Motoo Kawasaki, Hirakata, Japan, assignors to Rasa Kasei Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Dec. 20, 1966, Ser. No. 603,090
Claims priority, application Japan, Dec. 23, 1965, 40/79,152
Int. Cl. G23f *7/10*
U.S. Cl. 148—6.15 **8 Claims**

A method for the treatment of metal surfaces containing iron or steel in order to form a corrosion-proofing film thereon is provided. The metal surface need not be treated to remove foreign matter such as oil, grease and/or rust prior to treatment. The surface is coated with the solution and subsequently dried. Solutions are also provided as well as the treated article. The solution is water, organic solvent or mixture of water and organic solvent containing at least one ultraphosphate. The solution may additionally contain phosphoric acid, phosphates, polyphosphoric acid and polyphosphates as well as other additives.

3,530,013
PROCESS FOR THE PRODUCTION OF COLOURED COATINGS
Robert W. Smyth, Oakville, Ontario, and Gerald P. Lewis, Streetsville, Ontario, Canada, assignors to Cominco Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed Aug. 24, 1966, Ser. No. 574,684
Int. Cl. C23f *7/02*
U.S. Cl. 148—6.3 **15 Claims**



A process for the production of coloured surfaces on zinc coatings by the provision of oxide films having light interference effects. A molten alloy of zinc with a minor amount of an oxygen-avid element such as titanium, manganese or vanadium is oxidized by exposure to a free-oxygen containing gas under controlled time and temperature conditions for the provision of a surface film of an oxide of the oxygen-avid addition element having light interference colour characteristics.

3,530,014
METHOD OF PRODUCING GALLIUM ARSENIDE DEVICES
George Richard Antell, Saffron Walden, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 9, 1968, Ser. No. 696,519
Claims priority, application Great Britain, Jan. 13, 1967, 1,851/67
Int. Cl. H01l *7/44*
U.S. Cl. 148—187 **10 Claims**

A method of manufacturing gallium arsenide PIN diodes by diffusing oxygen, a deep acceptor, through an oxygen permeable layer into an N-type epitaxial gallium arsenide layer, thus forming an intrinsic region, and then forming a P-type layer on or in the intrinsic region.

3,530,015
METHOD OF PRODUCING GALLIUM ARSENIDE DEVICES
George Richard Antell, Saffron Walden, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 12, 1968, Ser. No. 697,480
Claims priority, application Great Britain, Jan. 13, 1967, 1,852/67
Int. Cl. H01l *7/44*
U.S. Cl. 148—188 **8 Claims**

This is a method of diffusing impurities into gallium arsenide devices without surface erosion and oxygen contamination by depositing an impurity doped layer of silicon onto a surface of gallium arsenide and diffusing the impurities into the gallium arsenide by heating the device in a sealed evacuated arsenic free atmosphere. Silicon will not diffuse in an arsenic free atmosphere and acts as a barrier to oxygen attempting to enter the PN junction. After the diffusion is complete, the silicon layer is removed.

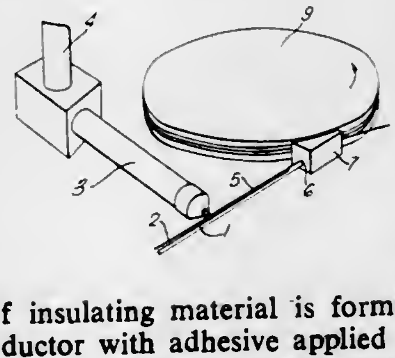
3,530,016
METHODS OF MANUFACTURING SEMICONDUCTOR DEVICES
Owen Francis Joseph, Harlow, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Mar. 8, 1968, Ser. No. 711,691
Claims priority, application Great Britain, July 10, 1967, 31,683/67
Int. Cl. H01l *7/44*
U.S. Cl. 148—189 **4 Claims**

The manufacturing processes involved in the production of semiconductor devices employ one or more diffusion steps, in which dopant impurities are diffused into semiconductor bodies. To ensure uniformity of properties of the semiconductor devices different batches must be subjected to the same conditions. In the known diffusion processes the number of variables involved makes uniformity of conditions very difficult to achieve.

3,530,017
PROCESS FOR SURFACE TREATMENT OF METAL EXPANSION ALLOYS
Floyd Louis Mickelson, Chicago, Wilbert Joseph Roberts, Oak Lawn, and Michael Joseph Lancy, Chicago, Ill., assignors to The Diversey Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Filed May 8, 1967, Ser. No. 636,656
Int. Cl. C23f *3/04*
U.S. Cl. 156—20 **16 Claims**

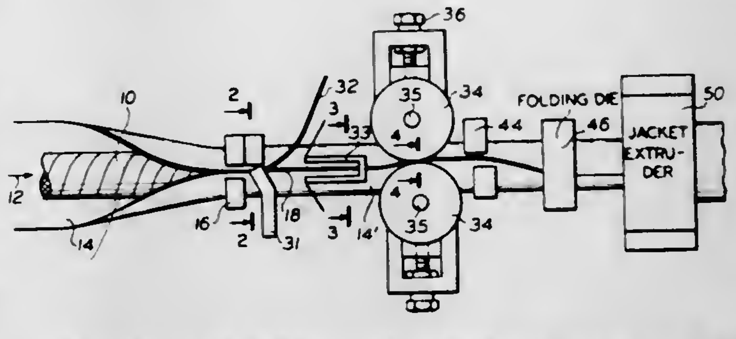
Disclosed is a process for treating low-expansion metals, advisably containing one or more of nickel, iron and cobalt, to improve the surface by controlled metal removal with inhibition of necking and undercutting, while providing a surface having low outgassing characteristics. Brightening of the metal surface can also be obtained if desired. Principally used in the metal treatment process is an acid bath containing nitric and hydrochloric acids and an additive containing a polyethoxyethylene chain. This process also uses additional treatments before and after the acid bath to further improve the metal surface.

3,530,018
METHOD OF MANUFACTURING AN INSULATED ELECTRICAL CONDUCTOR
Bernard Edwin Ash, Bexleyheath, Kent, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 589,108
Claims priority, application Great Britain, Nov. 23, 1965, 49,638/65
Int. Cl. H01b *13/10*
U.S. Cl. 156—54 **7 Claims**



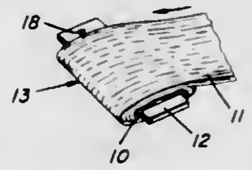
A strip of insulating material is formed into a tube about a conductor with adhesive applied to an edge between overlapping portions. The insulated conductor is passed around a pulley with the overlapping portions pressed between the pulley and conductor until the adhesive sets. An elongated stepped die opening tapers into a round opening to form the tube with overlapping edges.

3,530,019
APPARATUS AND METHOD FOR MAKING LAMINATED CABLE SHEATH
Fred F. Polizzano, Allendale, N.J., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Filed May 28, 1968, Ser. No. 732,753
Int. Cl. H01b *13/26*
U.S. Cl. 156—54 **8 Claims**



Electrical cable sheaths are commonly made by folding longitudinally, around a cable core, a laminated tape having a center lamination of metal and plastic laminations on both sides of the metal lamination. The edges of the strip are bent up to form tabs which are sealed together by heat and pressure. This invention has rolls that seal the confronting faces of the tabs together with the heat and pressure correlated to squeeze plastic from between the tabs outward and over top edges of the metal laminate to protect these edges from corrosion. One modification of the invention has rolls with steps for applying different pressure at different levels of the tabs in accordance with different temperatures of the plastic.

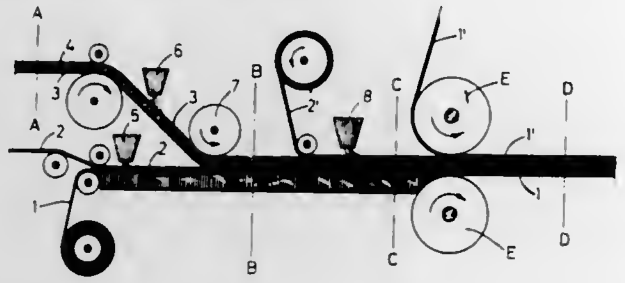
3,530,020
PROCESS OF MANUFACTURING A BONDED FIBER PILLOW
Benno E. Liebermann, Louisville, Ky., assignor to Novotex, Inc., Louisville, Ky., a corporation of Kentucky
Filed Feb. 9, 1967, Ser. No. 614,984
Int. Cl. B31c
U.S. Cl. 156—189 **8 Claims**



An inner layer of a bonded high loft web and an outer layer of an unbonded fiber web are wound onto a plate to form a multilayered pillow core. The outer layer of the core is partially impregnated with a binder, dried and cured. After removal of the plate, opposite edges of the core are trimmed and heat sealed.

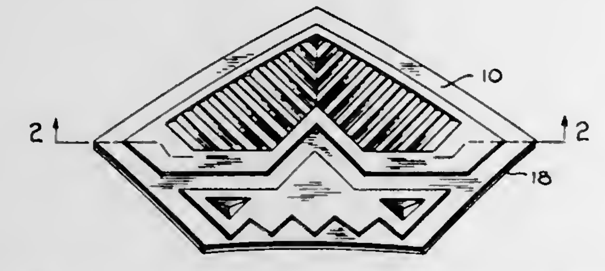
3,530,021
METHOD OF PRODUCING FIBER-REINFORCED PANELS OF SYNTHETIC RESIN
Karl Johann Reichl, Regensburger Str. 4, Weiden, Upper Palatinate, Germany
Filed Dec. 5, 1966, Ser. No. 599,075
Claims priority, application Germany, Dec. 16, 1965, D 48,925
Int. Cl. B31f *1/22*
U.S. Cl. 156—206 **14 Claims**

A method of producing, in a continuous-motion process, fiber-reinforced hollow panels, their multiple longitudinal cavities being either the hollow interior of tubular spacer profiles, or the channels left after removal of the spacer profiles from the finished panels. A central fiber web is deformed to receive, in alternate positions on either side, flexible but generally non-deformable spacer tubes, to both sides thereof is applied an additional fiber web, all the layers are impregnated with a hardenable liquid resin, and both sides are covered with a skin layer.



3,530,022
METHOD OF MAKING INTERCHANGEABLE MEDALLIONS FOR PLASTIC MAT-FORMING MOLDS

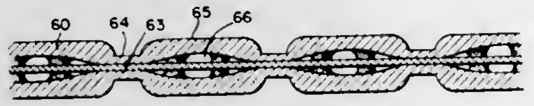
Lamont D. Mallory, Doylestown, Ohio, assignor, by mesne assignments, to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Jan. 17, 1966, Ser. No. 534,929
Int. Cl. B28b *7/10;* **B29c** *7/00*
U.S. Cl. 156—245 **6 Claims**



Method and means for providing matrix of mold for making plastic mats with quickly interchangeable medallion insert, without use of screws or other separable attaching devices. Complete medallion inserts economically and accurately formed directly in shallow recess in matric surface to mate with mat design in matrix and to affix plurality of permanent magnets in each insert magnetically attracted to metal surface of matrix. Medallion inserts, as for selectively variable, company brand indicia on like mat designs, rapidly interchangeable by forcible release of the magnetic attachment of insert magnets to matrix surface.

3,530,023
LAMINATED SHEET MATERIAL AND METHODS OF MAKING SUCH MATERIAL

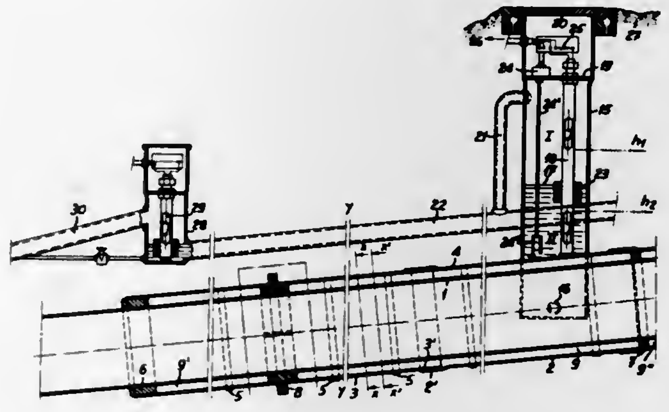
Richard W. Schutte, Newton Square, Pa., and Clifford J. Roberts, Jr., Blackwood, N.J., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 25, 1965, Ser. No. 482,567
Int. Cl. B32b *31/00*
U.S. Cl. 156—290 **2 Claims**



Laminated sheet material comprising at least two adjacent layers of cellulosic fiber sheet material secured together at a plurality of spaced points by heat and pressure without the addition of any adhesive material. Material of the type described above including at least one inner layer of thermoplastic material providing a waterproof film or barrier flanked by adjacent absorbent layers. Methods for forming the above materials.

3,530,024
METHOD FOR FORMING PROTECTING CASINGS ON PIPELINES

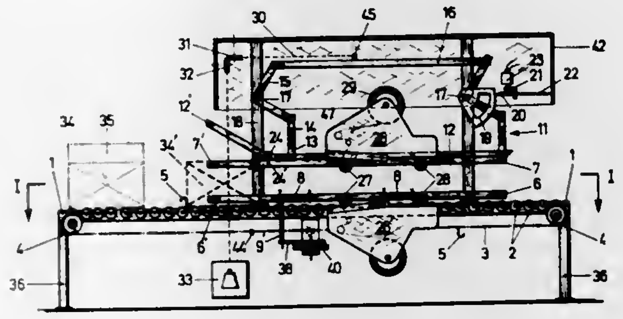
Gerard F. Wittgenstein, 29 Chemin du Champrond, 1012 Lausanne, Switzerland
Original application May 15, 1967, Ser. No. 638,198. Divided and this application Apr. 28, 1969, Ser. No. 819,923
Int. Cl. F16i *57/00*
U.S. Cl. 156—304 **5 Claims**



The disadvantageous consequences of the leakage of a pipeline are avoided by forming around the pipe at least one sealed annular compartment. This is done by circling the pipe with casing sections having at least one longitudinal cut therein, abutting these sections, and closing the cut.

3,530,025
APPARATUS FOR CLOSING CARDBOARD BOXES AND SIMILAR PACKAGES BY MEANS OF ADHESIVE TAPE

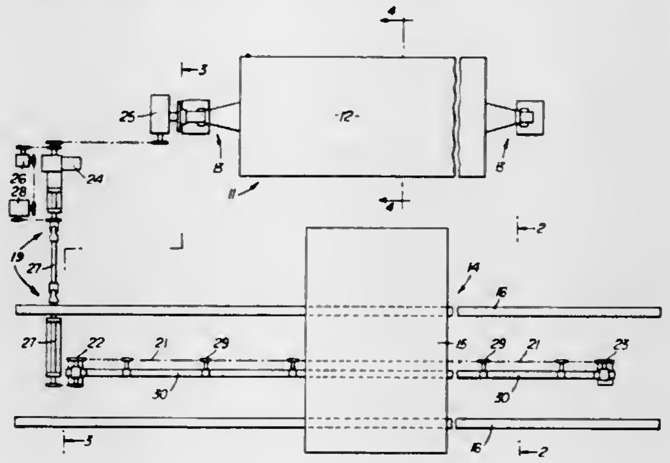
Bernardus Jan Achterberg, Pieter de Hooghstraat 10, Hilversum, Netherlands
Filed June 26, 1968, Ser. No. 740,236
Claims priority, application Netherlands, June 29, 1967, 6709092
Int. Cl. B32b *31/00;* **G05g** *15/00*
U.S. Cl. 156—358 **15 Claims**



An apparatus for closing and sealing cardboard boxes by the application of adhesive tape lengthwise on the joints between the top and bottom closure flaps of the boxes. The boxes are advanced between self-adjusting lateral guide rails and underneath vertically movable slides with upwardly inclined entry ends allowing an advancing box to raise these slides to the level of the box height. Thereupon a locking device is automatically actuated to lock the slides against further upward movement, thereby allowing an adhesive tape applicator carried by these slides to stick-on the adhesive tape with the required sealing pressure.

3,530,026
APPARATUS FOR FILAMENT WINDING OF ARTICLES IN REINFORCED SYNTHETIC RESIN

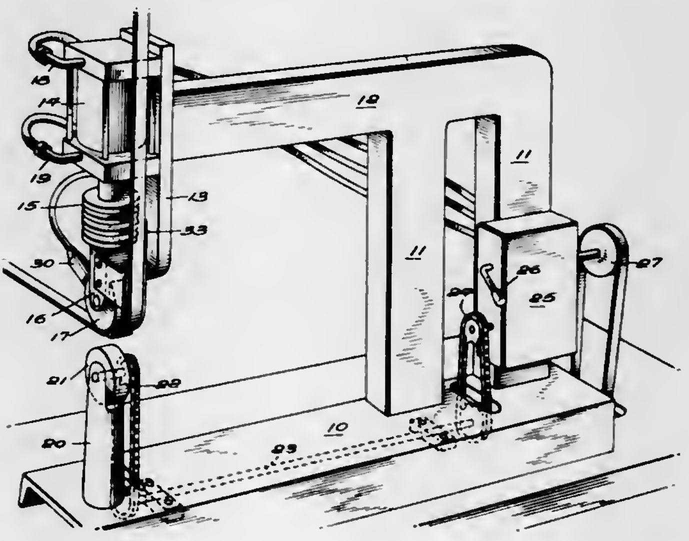
Frank Hanslow Proctor, Patrick Alfred Emmett, and Frank Hayling, Gloucester, England, assignors to Gloster Saro Limited, Gloucester, England, a British company
Filed July 20, 1966, Ser. No. 566,525
Claims priority, application Great Britain, July 21, 1965, 31,122/65
Int. Cl. B65h *81/04*
U.S. Cl. 156—425 **12 Claims**



A winding machine is disclosed for the manufacture of large hollow vessels by laying resin-soaked reinforcing filaments on to a former. The former rotates about a horizontal axis and a traversing carriage is reciprocating along side it to lay up the resin-soaked filaments. The drive ratio between the former rotation and the carriage traverse is adjustable, and the final drive element to the carriage is an endless chain which is adjustable in length. The filaments are supplied from cheeses carried on end in individual compartments upon a platform of a carriage. Each filament passes down through an individual opening in the platform into an individual guide tube that leads it under the carriage platform to a resin soak tank likewise mounted on the carriage.

3,530,027
THERMO ADHESIVE TAPE APPLICATOR

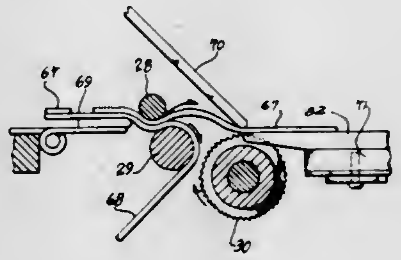
Kenton Malicote Nuckols, Jr., Richmond, Va., assignor to M & B Headwear Co., Inc., Richmond, Va., a corporation of Virginia
Filed Aug. 8, 1968, Ser. No. 751,090
Int. Cl. B32b *31/10, 31/20*
U.S. Cl. 156—582 **4 Claims**



A machine to apply adhesive seam covering types to a stitched article such as a hat that provides a driving wheel that is speed controlled and a driven heated, tape applying presser wheel movable toward and away from the driving wheel for leading, unleading and controlling the machine.

3,530,028
APPARATUS FOR PEELING LABELS FROM A BACKING STRIP

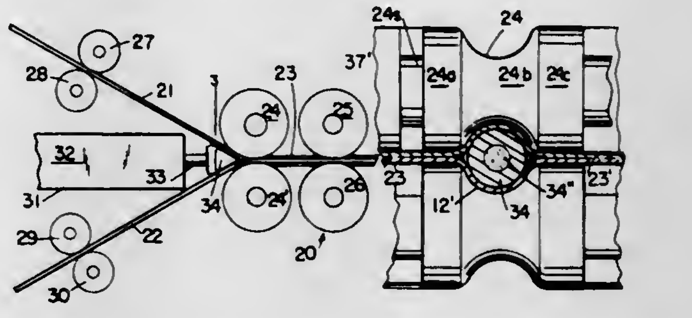
Edwin E. Messmer, 203 Leonard Young St., Oradell, N.J. 07649
Original application Oct. 27, 1964, Ser. No. 406,727, now Patent No. 3,428,509, dated Feb. 18, 1969. Divided and this application Nov. 6, 1968, Ser. No. 773,742
Int. Cl. B32b
U.S. Cl. 156—584 **5 Claims**



Continuous backing strip to which series of labels is adhesively secured is advanced along a support and has its direction of movement sharply reversed by being led around a roller spaced from the support. An element above the strip presses the latter into the space between the support and roller so as to kink the strip and help separate each label from strip. A knurled roller, rotating faster than speed of advancement of the strip, engages separated label and continues its advancement away from the strip.

3,530,029
COMPOSITE SHEET FORMING APPARATUS AND METHOD

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of applications Ser. No. 589,848, May 28, 1956, and Ser. No. 331,000, Dec. 16, 1963. This application Nov. 12, 1968, Ser. No. 774,647
Int. Cl. B22b *5/20;* **B31f** *1/24*
U.S. Cl. 156—594 **15 Claims**



An apparatus and method for forming composite sheet materials or panels on a continuous basis. In one form, two sheets of material are fed and brought together after deforming at least one of the sheets to provide one or more continuous longitudinal passageways defined by the two sheets. A third material, preferably in a fluent or molten state, is fed between the sheets and is prevented from flowing laterally by weld lines provided continuously as the sheets are fed together. The material either is fed in such a manner as to completely fill the passageway or passageways between the sheets or is expanded into a cellular mass between said sheets shortly after being fed thereto. Other forms of the invention include means for selectively expanding composite sheet materials to provide portions which are expanded and other portions which are unexpanded.

3,530,030

TEXTILE SUBSTITUTE

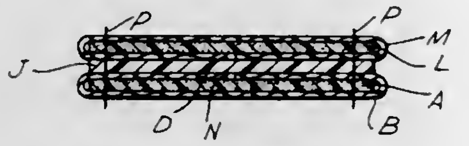
Whitney R. Adams, Wilmington, Del., and Albert L. McConnell, Chester, and Milton Schor, Havertown, Pa., assignors to Scott Paper Company, Delaware, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 22, 1968, Ser. No. 754,719
Int. Cl. B32b *3/28, 5/26, 7/14*
U.S. Cl. 161—73 **17 Claims**

A textile substitute comprising a substrate of thin, flexible, permeable cellular polymeric material having a thickness in the range between about 10 mils and about 80 mils and a pore size in the range between about 10 pores per linear inch and about 150 pores per linear inch, laminated to a sheet of paper material having a thickness less than about 30 mils and a basis weight less than about 75 lbs. per ream.

3,530,031

LAMINATED BELT CONSTRUCTION

Theodore Loew, Schenectady, N.Y., assignor to Cee Bee Mfg. Co., Inc., Brooklyn, N.Y., a corporation of New York
Filed Sept. 28, 1967, Ser. No. 671,434
Int. Cl. B32b *3/10;* **A41f** *9/00*
U.S. Cl. 161—106 **6 Claims**

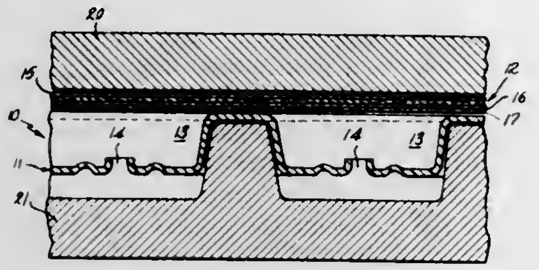


The disclosure sets forth a laminated belt construction backing and/or the facing have a core of vinyl polymer wrapped in textile material which may entirely cover one side of the vinyl polymer and be split at the other side of the vinyl polymer. The base or core of vinyl may be foamed so that it will be resilient. The laminated belt construction may vary in width from ½ to ¾ of an inch on the low side to 1, 2 or even 3 inches on the wide side. The plastic materials may constitute the major thickness of the belt and multiple sections may be bound together by intervening sheets of plastic material, preferably of vinyl, which should terminate short of the side edges of the split textile tubing.

3,530,032

VINYL PEG BOARD LAMINATES BONDED BY AMINE CURING EPOXY ADHESIVES IN A BINARY SOLVENT

Meyer J. Ragir, Highland Park, Ill., assignor to Selfix, Inc., Chicago, Ill., a corporation of Illinois
Filed July 29, 1966, Ser. No. 568,825
Int. Cl. B32b *3/24, 27/38*
U.S. Cl. 161—113 **16 Claims**

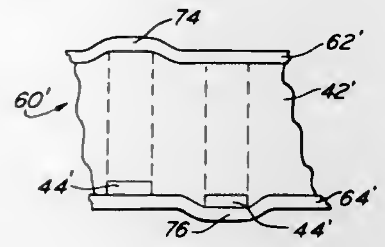


A flexible peg board laminate comprising a polyvinyl chloride or polyvinylidene chloride peg board sheet is produced without warping the peg board sheet utilizing epoxy resin and amine curing agent therefor in an organic solvent solution containing a proportion of active solvent for vinyl resin.

3,530,033

ELONGATED STRIP OF ELASTOMERIC MATERIAL WITH SPACED METAL STRIPS EMBEDDED THEREIN

Raymond K. Hildebrandt, Lewistown, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Burnham, Pa., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 611,898
Int. Cl. B32b *3/00*
U.S. Cl. 161—120 **8 Claims**



An elongated strip of resilient material provided with spaced parallel transversely extending reinforcement strips which perform the function of suppressing noise transmission across the major faces of the resilient strip. The major faces of the resilient strip may be coated with metal and the reinforcement strips may provide electrical continuity between the metal facings.

3,530,034

CONTINUOUS AQUEOUS PREHYDROLYSIS OF WOOD CHIPS

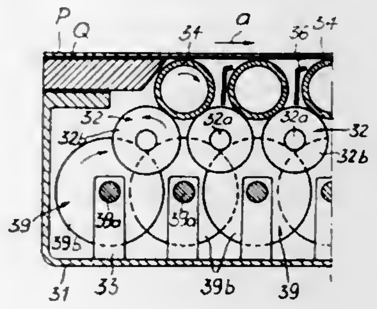
Russell F. Erickson, Scarsdale, N.Y., assignor to ITT Rayonier Incorporated, a corporation of Delaware
Continuation of application Ser. No. 526,101, Feb. 9, 1966, which is a continuation-in-part of application Ser. No. 388,331, Aug. 7, 1964. This application May 16, 1969, Ser. No. 827,111
Int. Cl. D21c *3/26*
U.S. Cl. 162—19 **8 Claims**

A continuous process for the prehydrolysis of wood chips preparatory to the digestion thereof is disclosed which comprises presteaming the chips, subjecting the presteamed chips to a high temperature hydrolysis during which volatile chemicals are separated, passing the hydrolyzed chips countercurrent to cooling water to cool the chips and to wash released chemicals therefrom and discharging the chips from the vessel at atmospheric pressure to flash liquid from the interior of the chips.

3,530,035

SUCTION BOX FOR DRAINING PULP WEB ON PAPERMAKING MACHINE

Joseph Wey, Lucerne, Switzerland, assignor to Nippon Denso Kabushiki Kaisha, Aichi-ken, Japan
Filed Sept. 6, 1966, Ser. No. 577,508
Claims priority, application Switzerland, Sept. 6, 1965, 12,487/65
Int. Cl. D21f *1/50*
U.S. Cl. 162—373 **2 Claims**

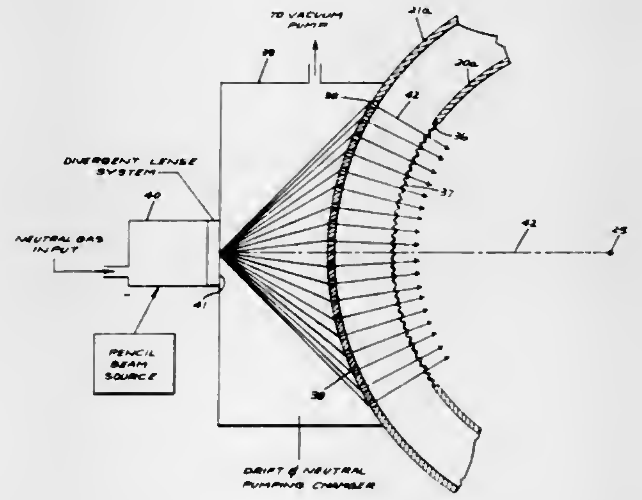


A support surface for the permeable belt carrying the pulp web across a suction box of papermaking machines, for draining the pulp web, includes cylinders mounted for rotation about axes extending transversely of the belt movement and spaced longitudinally of the belt, the cylinders being commonly tangent to the belt. The cylinders are supported on roller assemblies, the supporting rollers of each roller assembly being coaxial and axially spaced on a common shaft for rotation about an axis parallel to and spaced below the axes of the web supporting cylinders. The roller shafts are supported on spaced bearings, and the rollers are relatively narrow axially, the axial spacing of the rollers being substantially in excess of the axial width of the rollers.

3,530,036

APPARATUS FOR GENERATING FUSION REACTIONS

Robert L. Hirsch, Fort Wayne, Ind., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Dec. 15, 1967, Ser. No. 691,049
Int. Cl. G21b *1/02*
U.S. Cl. 176—1 **10 Claims**



Apparatus for generating fusion reactions comprising a generally spherical anode which has concentrically positioned therein a generally spherical cathode permeable to charged particle flow. The cathode is hollow and defines a volume centrally located with respect to both the anode and the cathode. This volume is free of tangible structure. A fusion-reactive gas is contained within the volume. A plurality of ion-producing devices are mounted on the exterior of the anode and are spherically spaced and diametrically aligned in pairs. Each ion-producing device is provided with a drift chamber, interposed between a plasma region and the anode, for receiving ions. Focusing electrodes may be contained within each ion-producing device which, in cooperation with both the anode and cathode, serve to accelerate ions toward the center of the cathode volume along paths which are essentially radial.

3,530,037

METHOD FOR SOLUBILIZATION OF COLLAGEN FIBERS WITH PROTEOLYTIC ENZYMES

Tomio Nishihara, 14 Russell Terrace, Belmont, Mass. 02178
No Drawing. Continuation-in-part of application Ser. No. 411,631, Nov. 4, 1964. This application Mar. 20, 1967, Ser. No. 624,228
Int. Cl. C12d *13/06*
U.S. Cl. 195—6 **5 Claims**

An improved method for solubilizing insoluble collagen is disclosed in which proteolytic enzymes of *Aspergillus niger*, ATCC No. 16,513, *Aspergillus saitoi*, ATCC No. 14,332, or *Aspergillus oryzae* are employed.

3,530,038

PROCESS FOR PREPARATION OF TRIHYDROXY STEROIDS

Jan de Flines and Willem Frederik van der Waard, Delft, Netherlands, assignors to Koninklijke Nederlandsche Gist- en Spiritusfabriek N.V., Delft, Netherlands, a corporation of the Netherlands
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,944
Claims priority, application Netherlands, Apr. 25, 1966, 6605514
Int. Cl. C07c *167/08*
U.S. Cl. 195—51 **12 Claims**

11β,17α,21-trihydroxy steroids are prepared by oxygenating corresponding 11 desoxy, 17α acyloxy, 21 acyloxy steroid or 11 desoxy, 17α acyloxy, steroid, with Curvularia.

3,530,039

PROCESS FOR FERMENTATION AND RECOVERY OF MICROBIAL CELLS

Ralph Bernheimer, Rifle, Colo., and Morton R. Friedman, New York, N.Y., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Jan. 17, 1966, Ser. No. 520,858
Int. Cl. C12k *3/00*
U.S. Cl. 195—96 **9 Claims**

Microorganisms secured in a biosynthesis fermentation using an aqueous growth medium containing a source of carbon, hydrogen, oxygen, and other essential cell nutrients, are separated from said aqueous growth medium by adding to said aqueous growth medium an immiscible organic liquid which preferentially wets said microorganisms to form an aqueous phase and an organic phase containing said microorganisms, and recovering the microorganisms from the organic phase.

3,530,040

TEST COMPOSITION, DEVICE AND METHOD FOR DETECTING UREA IN AQUEOUS FLUIDS

Elsie June Shrawder and William Fred Hendershot, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Continuation-in-part of application Ser. No. 388,718, Aug. 10, 1964. This application Aug. 25, 1967, Ser. No. 663,211
Int. Cl. G01n *31/14*
U.S. Cl. 195—103.5 **15 Claims**

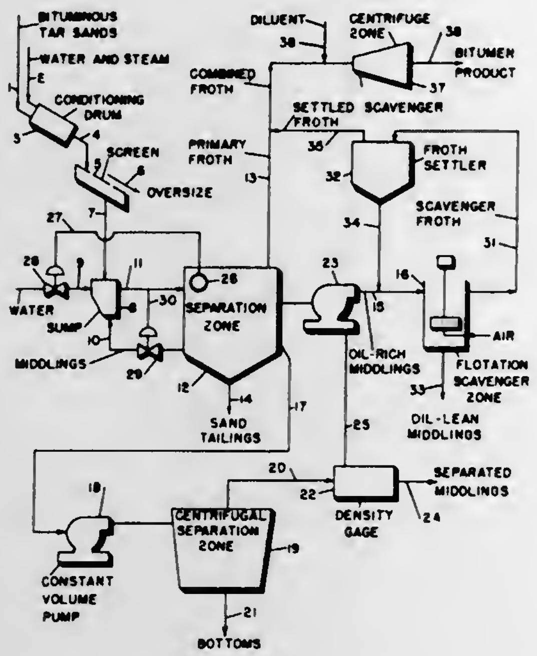
Improved test composition, device and method for colorimetrically detecting urea in aqueous fluids comprising urease, a pH indicator, a buffer for controlling the pH of the test composition, and, as a color stabilizer a combination of albumin and a heteropolysaccharide. The test composition is preferably incorporated wth a carrier member such as bibulous paper.

3,530,041

CONTINUOUS SETTLED DENSITY ANALYSES

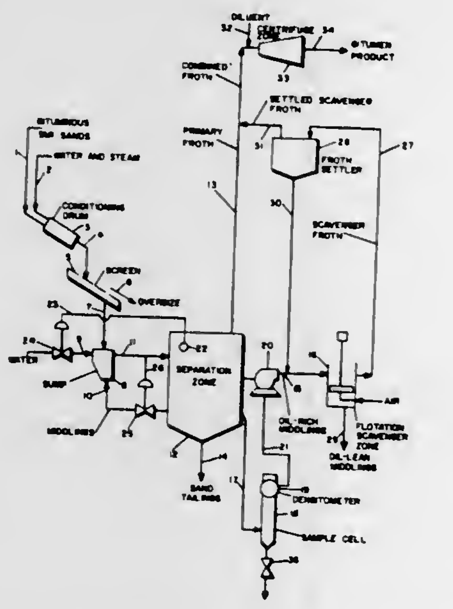
Harold L. Erskine, Chester, and Chester N. White, Moylan, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Feb. 1, 1968, Ser. No. 702,394
Int. Cl. C10g *1/00*
U.S. Cl. 196—14.52 **4 Claims**

This invention relates to a system and method for continuously controlling the hot water process for the treatment of tar sands. The improvement in the process comprises introducing a portion of process separation zone middlings into a centrifugal separation zone, continuously separating mineral material which will not pass a 325 mesh screen from the middlings in the centrifuge zone to continuously provide a separated middlings to a hereinafter specified measuring zone, continuously introducing the separated middlings into the measuring zone, continuously measuring the density of the separated middlings and continuously regulating the water entering and leaving the process separation zone in response to the measurements so as to continuously control the viscosity of the middlings in the zone. The system used for continuously controlling the viscosity of the middlings comprises a centrifugal separator, a density sensing device, and regulating means responsively connected to the sensing device to control the water withdrawn from the separation zone.



3,530,042
APPARATUS AND CONTROL FOR HOT WATER PROCESS

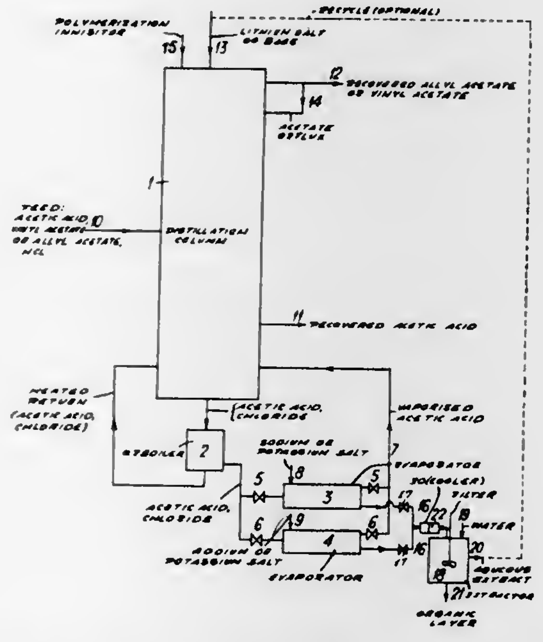
James B. Graybill, Chadds Ford, Chester N. White, Moylan, and Junior W. Loveland, Media, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed Nov. 20, 1967, Ser. No. 684,292
Int. Cl. B01d *11/00;* **C10g** *1/00*
U.S. Cl. 196—14.52 **6 Claims**



This invention relates to an apparatus and method for controlling the hot water process for the treatment of tar sands. The improvement in the process comprises introducing a portion of separation cell middlings into a sampling system, settling the middlings in the system, measuring the density of the settled middlings, and regulating the water entering and leaving the process separation zone in response to these measurements so as to control the viscosity of the middlings in the zone. The apparatus used for controlling the viscosity of the middlings comprises a sample cell, a density sensing device, and regulating means responsively connected to the sensing device to control the water withdrawn from the separation zone.

3,530,043
PURIFICATION OF VINYL OR ALLYL ACETATE BY TREATMENT WITH ALKALI METAL COMPOUNDS DURING DISTILLATION AND EVAPORATION WITH PURGING OF CONCENTRATE STREAMS

Peter Edwin Horn and Ronald Wales, Stockton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Feb. 14, 1969, Ser. No. 799,234
Claims priority, application Great Britain, July 4, 1968, 31,928/68
Int. Cl. B01d *3/34;* **C07c** *67/06*
U.S. Cl. 203—4 **9 Claims**

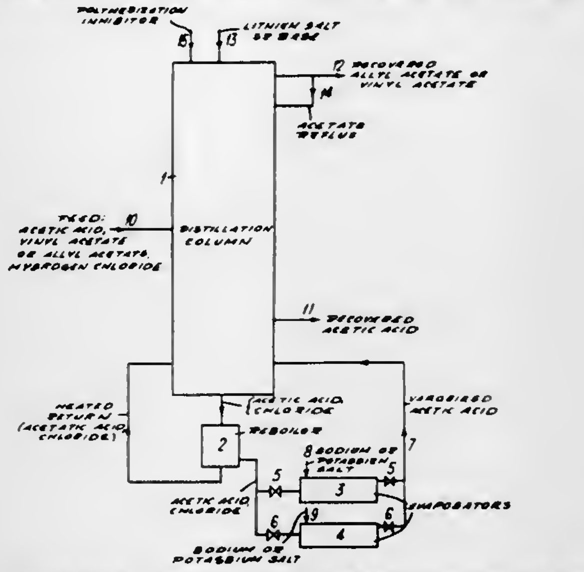


Mixtures of vinyl or allyl acetate and acetic acid containing hydrogen chloride are distilled in a column, a lithium salt being added at the column top and a purge being taken from the column base the purge being evaporated in the presence of a sodium or potassium salt to precipitate sodium or potassium chloride which is discarded thereby removing hydrogen chloride which tends to corrode the distillation column and to catalyse the hydrolysis of the vinyl or allyl acetate during the distillation. A purge is also drawn from the evaporator from which valuable lithium acetate is recovered by water extraction.

3,530,044
PURIFICATION OF VINYL OR ALLYL ACETATE BY TREATMENT WITH A LITHIUM COMPOUND DURING DISTILLATION AND WITH A SODIUM OR POTASSIUM SALT DURING EVAPORATION

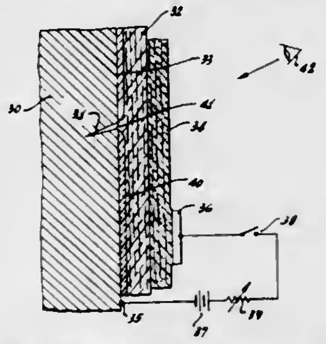
Peter Edwin Horn, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Feb. 14, 1969, Ser. No. 799,233
Claims priority, application Great Britain, Mar. 4, 1968, 10,289/68
Int. Cl. B01d *3/34;* **C07c** *67/06*
U.S. Cl. 203—7 **9 Claims**

Mixtures of vinyl or allyl acetate and acetic acid containing hydrogen chloride are distilled in a column, a lithium salt being added at the column top and a purge being taken from the column base the purge being evaporated in the presence of a sodium or potassium salt to precipitate sodium or potassium chloride. If desired, the lithium may be recovered from the evaporator purge by water extraction.



3,530,045
ELECTRICALLY RESPONSIVE COLOR-FORMING METHOD OF NONDESTRUCTIVE TESTING

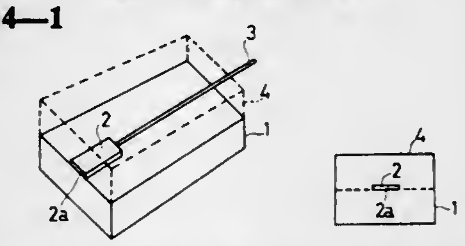
James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011
Filed Dec. 27, 1966, Ser. No. 604,869
Int. Cl. G01n *27/00;* **G01r** *31/00*
U.S. Cl. 204—1 **5 Claims**



A nondestructive testing method for detecting small surface or sub-surface defects in metallic parts, in which the test part is employed as a color-forming electrode immersed in a pH-sensitive "Electroflor" indicator liquid. When small sub-threshold electrical currents are passed between the test part electrode and an electrode of opposite polarity, color or fluorescence indications are formed on the surface of the test part. The color response exhibits variations in intensity depending on the presence of defects in the test part which may cause variations in current density at the color-forming electrode surface. Thus, the presence of defects is displayed by color patterns on the test surface.

3,530,046
POLAROGRAPHIC ELECTRODE AND METHOD OF USING SAME

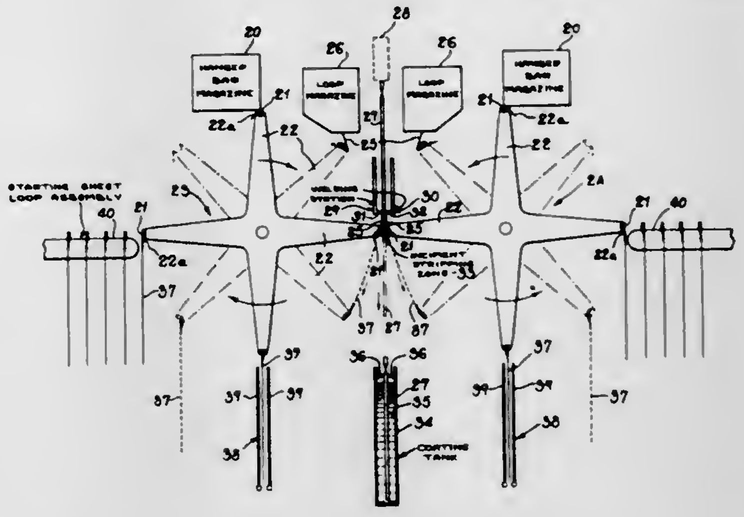
Masaji Mochizuki, Sapporo, and Yukio Saito, Warabi, Japan, assignors to Sankyo Company Limited, a corporation of Japan
Continuation-in-part of application Ser. No. 442,006, Mar. 23, 1965. This application Nov. 18, 1968, Ser. No. 776,411
Int. Cl. G01n *27/46*
U.S. Cl. 204—1 **6 Claims**



A polarographic electrode determines small concentrations of chemicals. An improved electrode includes a film layer embedded in an insulating body, the edge of the film being exposed.

3,530,047
STRIPPING OF SHEET METAL ELECTRODEPOSITS FROM STARTING SHEET BLANKS

Stanley J. Billett, East Twickenham, England, assignor to American Smelting and Refining Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 15, 1968, Ser. No. 767,610
Int. Cl. C23b *7/02;* **B01k** *3/04*
U.S. Cl. 204—12 **23 Claims**



One or more loops are attached, preferably by spot welding, to the sheet metal electrodeposits on the main depositing surfaces of starting sheet blanks, and the electrodeposits are stripped from the depositing surfaces by a pulling force applied to the electrodeposits by means of or with the aid of the loop or loops. Care is exercised during the attachment of the loops to the electrodeposits not to damage the starting sheet blank. The invention is especially useful in the stripping removal of electrolytic copper sheet deposits from the starting sheet blanks for forming copper cathode starting sheets for use in the electrolytic refining of copper.

3,530,048
BRIGHT ANODIZED ALUMINUM ALLOY

George Richard Darrow, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
No Drawing. Filed Feb. 8, 1968, Ser. No. 703,897
Int. Cl. C23b *9/02*
U.S. Cl. 204—33 **11 Claims**

A bright anodized article, such as a golf club shaft, of an aluminum alloy of the 7000 series, is produced by preconditioning the alloy prior to heat treatment, by subjecting the alloy to a cold mechanical work of at least 40%, followed by application of a deoxidizing bath. The alloy is then heat treated, the surface deoxidized again, chemically brightened by an aluminum phosphate bath at elevated temperature, and finally anodized and sealed.

3,530,049
GOLD AND RUTHENIUM PLATING BATHS

Julius Scherzer, Baltimore, Md., and Alfred M. Weisberg, Providence, R.I., assignors to Technic, Inc., Cranston, R.I., a corporation of Rhode Island
No Drawing. Original application Mar. 15, 1965, Ser. No. 439,988. Divided and this application Oct. 2, 1968, Ser. No. 764,593
Int. Cl. C23b *5/42, 5/24*
U.S. Cl. 204—43 **3 Claims**

An aqueous electroplating bath for depositing ruthenium comprising ruthenium as a chelate of ethylene diamine tetraacetic acid, nitrilo triacetic acid or cyclo hexane diamine tetraacetic acid. The above chelates also are used as grain refining agents in acidic gold plating baths.

3,530,050
ELECTRODEPOSITION OF PALLADIUM

John Hill, Ickenham, Uxbridge, and Laurence Alfred Heathcote, Camberwell, London, England, assignors to Johnson, Matthey & Company Limited, London, England, a British company

No Drawing. Filed June 8, 1965, Ser. No. 462,433

Claims priority, application Great Britain, June 12, 1964, 24,457/64

Int. Cl. C23b *5/24*

U.S. Cl. 204—47 **14 Claims**

Electrolysis or electrodeposition is carried out with an aqueous neutral or alkaline bath containing a palladium compound and an ammonium salt of a weak organic acid which does not form an insoluble compound with the palladium compound.

3,530,051
ELECTROLYTIC METHOD FOR PREVENTING FOULING OF SEA WATER-IMMERSED STRUCTURES BY MARINE LIFE

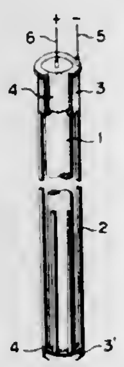
Kenji Ueda, Nagasaki-shi, Minoru Hirata, Nishisonoki-gun, Nagasaki-ken, and Tsutomu Horiguchi, Nagasaki-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed July 1, 1966, Ser. No. 562,316

Claims priority, application Japan, July 5, 1965, 40/40,269

Int. Cl. C23f *13/00*

U.S. Cl. 204—147 **2 Claims**



In a method for preventing adherence to marine life to structures submerged in sea water by immersing, in the sea water adjacent the structure, an insoluble anode and at least one cathode in closely spaced relation and passing a current between the anode and the cathode or cathodes, the build up of deposits on the cathode or cathodes, is prevented by maintaining the current value so as to have a current density, on each cathode, in excess of 3 a./dm.².

3,530,052
FLUORINE PURIFICATION

Charles T. Goetschel and Vincent A. Campanile, Walnut Creek, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 22, 1967, Ser. No. 647,946

Int. Cl. B01j *1/10*

U.S. Cl. 204—157.1 **3 Claims**

Oxygen present in liquid fluorine is converted to dioxygen difluoride by irradiating oxygen-containing liquid fluorine, and relatively pure fluorine is removed from the resulting mixture in the vapor phase.

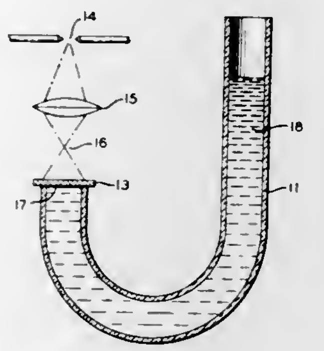
3,530,053
METHOD OF PREPARING A CADMIUM SULFIDE THIN FILM FROM AN AQUEOUS SOLUTION

Richard F. Scott, North Plainfield, and Robert J. Strain, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Jan. 11, 1968, Ser. No. 697,130

Int. Cl. B01j *1/10*

U.S. Cl. 204—157.1 **6 Claims**



An improved photoconductive cadmium sulfide film is grown on a suitable substrate by contacting the substrate with an aqueous solution of ammonia, thiourea, a cadmium salt, and a copper salt, and by illuminating the solution during the growth process with a high intensity light.

3,530,054
ELECTRODEPOSITION OF ADDITION PRODUCT PARTIAL ESTER AND AMINE-ALDEHYDE CONDENSATION PRODUCT

J. Alden Erikson, Gibsonia, and Donald P. Hart, Allison Park, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,590

Int. Cl. B01k *5/02;* **C09d** *3/48;* **C23b** *13/00*

U.S. Cl. 204—181 **10 Claims**

Vehicles which can be employed in water-dispersed coating compositions adapted for use in electrodeposition processes comprise a fatty acid ester-acid anhydride addition product partially esterified with a diol, and an amine-aldehyde condensation product. The addition product-partial ester and the amine-aldehyde condensate are preferably reacted together and when applied by electrodeposition provide coatings in which the proportion of amine-aldehyde condensate is substantially the same as in the coating composition.

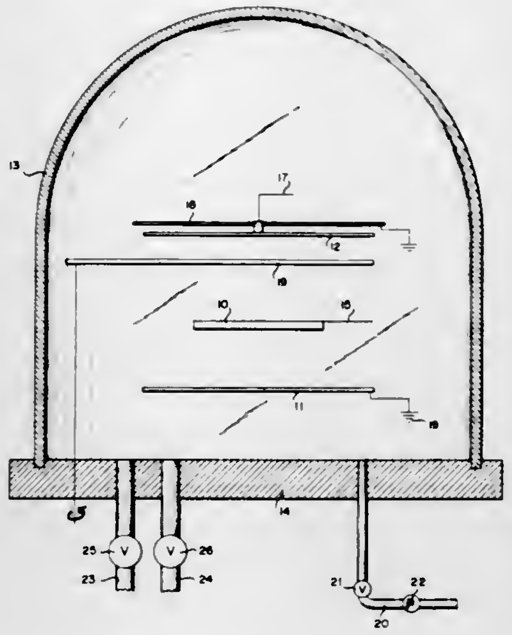
3,530,055
FORMATION OF LAYERS OF SOLIDS ON SUBSTRATES

Leon I. Maissel and Paul M. Schaible, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 585,208, Oct. 7, 1966. This application Aug. 26, 1968, Ser. No. 756,081

Int. Cl. C23c *15/00*

U.S. Cl. 204—192 **2 Claims**



Sputtering metal from a cathode and first depositing films of metal and oxygen gas components, and subsequently depositing pure metallic films by imposing a relatively small positive bias with respect to an anode at the surface of a substrate and then by imposing a relatively large negative bias on the substrate while continuously sputtering metal from a cathode to the substrate, are described herein.

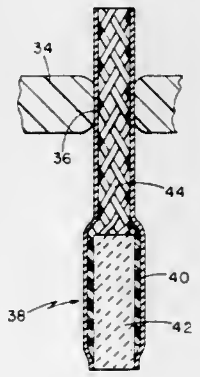
3,530,056
FLEXIBLE LIQUID JUNCTION

Ihsan A. Haddad, Brighton, Mass., assignor to Ingold Electrodes, Inc., Watertown, Mass., a corporation of Massachusetts

Filed Mar. 21, 1968, Ser. No. 714,920

Int. Cl. G01n *27/30*

U.S. Cl. 204—195 **7 Claims**



A flow control structure for use in a reference or similar type of electrode structure includes a ¾ inch length of heat shrinkable Kynar tubing (initially of 0.045 inch I.D.) in which is positioned a length of 24 gauge fiberglass braided sleeveing and a porous ceramic cylinder 0.032 inch in diameter and 0.125 inch in length. The sleeve is shrunk by application of heat to secure the ceramic plug at one end of the tubing and in contact with the sleeving so that an electrolyte flow path is provided through the tubing. The flow control structure is secured in an opening in the wall of the electrolyte chamber and provides a controlled leak of electrolyte to form a "liquid junction."

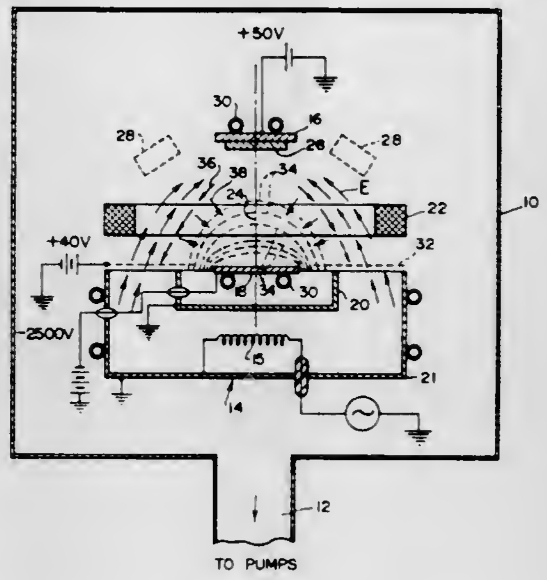
3,530,057
SPUTTERING

Emil C. Muly, Jr., Needham, Mass., assignor to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts

Filed May 29, 1967, Ser. No. 641,861

Int. Cl. C23c *15/00*

U.S. Cl. 204—298 **5 Claims**



A sputtering apparatus with an opposing anode and sputter cathode target with an electron source behind the target producing an electron beam encircling the target and conveying towards the anode.

3,530,058
OZONIZER ELEMENT

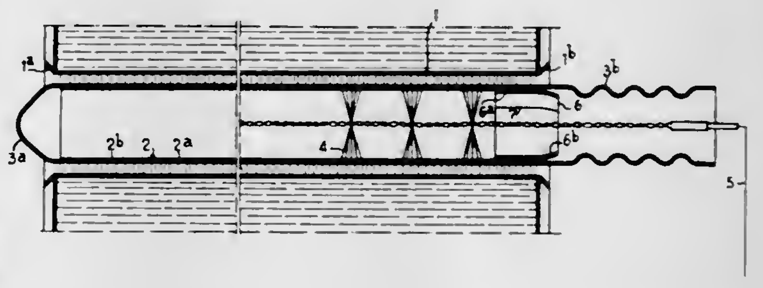
Paul Blanchard, Paris, France, assignor to Compagnie Generale des Eaux, Paris, France, a French body corporate

Filed Apr. 12, 1968, Ser. No. 720,869

Claims priority, application France, May 16, 1967, 106,536

Int. Cl. C01b *13/12*

U.S. Cl. 204—320 **5 Claims**



An ozonizer element of the type comprising a metal outer sleeve and a glass tube located within said sleeve and having an inner face which is at least partially metallized, said element comprising, in said glass tube, in roughly facing relation to the end of said metal sleeve, a metal deflecting ring having a roughly cylindrical portion in contact with said metallized layer and a curved remaining portion, the concavity of said curved portion facing the interior of said tube, whereby the distance between said ring and said wall of said tube increases progressively.

3,530,059
ARYL-SUBSTITUTED ALIPHATIC ALDEHYDES AS CORROSION INHIBITORS

Zisis Andrew Foroulis, East Orange, N.J., assignor to Esso Research & Engineering Company, a corporation of Delaware

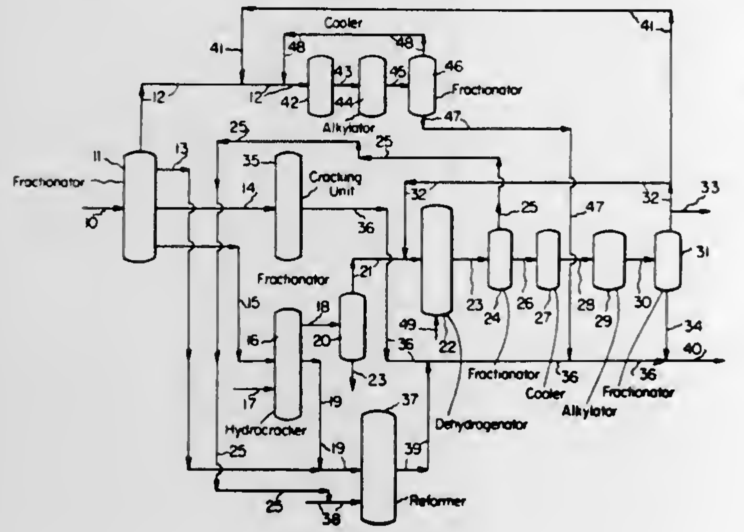
No Drawing. Filed May 17, 1968, Ser. No. 729,926
Int. Cl. C23f *9/00, 11/00*
U.S. Cl. 208—47 **21 Claims**

Corrosion of metals by aqueous acidic solutions in a non-oxidizing atmosphere is markedly inhibited by the presence of an aralkyl aldehyde in which the —CHO group is attached to the aliphatic side chain. A particularly effective inhibitor of this type is beta-phenylpropionaldehyde. Corrosion of chemical and petroleum process equipment handling hydrocarbon streams containing acidic gases and water vapor is minimized by the presence of a corrosion inhibitor of this invention.

3,530,060
GASOLINE MANUFACTURE

Robert D. Offenhauer, Pennington, N.J., assignor to Mobil Oil Corporation, a corporation of New York

Filed Dec. 30, 1968, Ser. No. 787,442
Int. Cl. C10g *13/00*
U.S. Cl. 208—60 **10 Claims**



The production of high octane gasoline from a hydrocarbon charge stock is maximized by fractionating the same to obtain a gasoline fraction (a), a catalytic cracking charge stock (b), and hydrocracking charge stock (c). Stock (c) is hydrocracked to form gasoline fraction (d) and isobutane which is dehydrogenated selectively to form a mixture of isobutene and isobutane suitable as an alkylation charge. The mixture is alkylated to high octane gasoline components and recovered isobutane is recycled for selective dehydrogenation.

3,530,061
STABLE HYDROCARBON LUBRICATING OILS AND PROCESS FOR FORMING SAME

Bernard A. Orkin, Cherry Hill, and Milton Braid, Westmont, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 630,221, Apr. 12, 1967. This application July 16, 1969, Ser. No. 842,367
Int. Cl. C10g *37/10*
U.S. Cl. 208—60 **5 Claims**

A lubricating oil product fraction of hydrocracking comprising polycyclic hydrocarbons is made resistant to deterioration upon exposure to light and air by contacting the lube oil fraction with a solid contacting agent having hydrogenation/dehydrogenation properties under particularly selected conditions of temperature, space velocity and hydrogen pressure.

3,530,062
CATALYTIC CONVERSION OF HYDROCARBON MIXTURES CONTAINING ASPHALTENES

John G. Gatsis, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

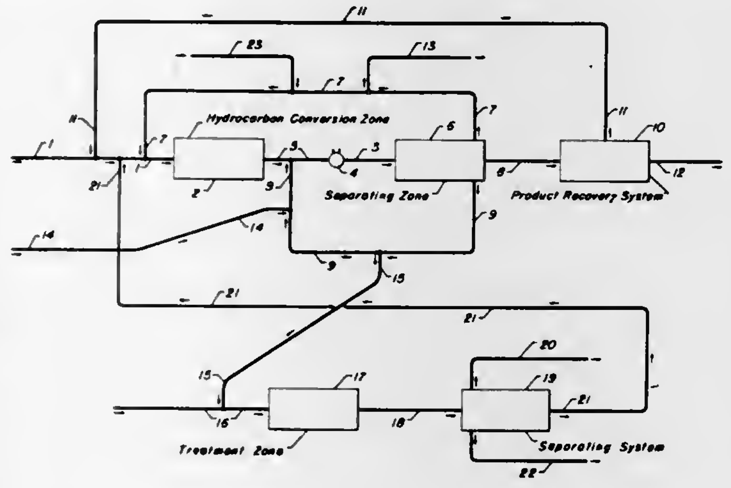
No Drawing. Filed May 19, 1967, Ser. No. 639,713
Int. Cl. C10g *23/00*
U.S. Cl. 208—89 **3 Claims**

Conversion of asphaltene-containing hydrocarbonaceous mixtures commonly referred to as black oils. Applicable principally where the charge stock is additionally contaminated by sulfurous and/or nitrogeneous compounds as well as organo-metallic complexes. The charge stock is initially processed at a catalyst temperature below 430° C. (806° F.) and subsequently at a maximum catalyst temperature above 430° C.

3,530,063
TREATMENT OF AN AQUEOUS WASTE STREAM FROM A HYDROCARBON CONVERSION PLANT WITH CONTINUOUS RECYCLE OF THE TREATED AQUEOUS STREAM

Peter Urban, Northbrook, and Robert H. Rosenwald, Western Springs, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 16, 1968, Ser. No. 760,015
Int. Cl. C10g *13/00*
U.S. Cl. 208—108 **11 Claims**



A hydrocarbon charge stock containing sulfurous and nitrogenous contaminants is converted and elemental sulfur and ammonia is simultaneously recovered by the steps of: (a) contacting in a hydrocarbon conversion zone the hydrocarbon charge stock, hydrogen and an aqueous recycle stream containing $(NH_4)_2S_2O_3$ with a hydrocarbon conversion catalyst at conversion conditions sufficient to form an effluent stream containing substantially sulfur-free and nitrogen-free hydrocarbons, hydrogen, NH_3, H_2S, and H_2O; (b) cooling and separating the effluent stream from step (a) to form a hydrogen-rich gaseous stream, a hydrocarbon-rich liquid product stream, and an aqueous waste stream containing NH_4HS; (c) catalytically treating the aqueous waste stream from step (b) with oxygen at oxidizing conditions effective to produce an effluent stream containing elemental sulfur or ammonium polysulfide, NH_4OH and $(NH_4)_2S_2O_3$; (d) separating sulfur and ammonia from the effluent stream from step (c) to produce the aqueous recycle stream containing $(NH_4)_2S_2O_3$; and (e) passing this last aqueous stream to step (a). Key feature of the resulting process is the continuous recycle of the treated water back to the hydrocarbon conversion process with consequential abatement of water pollution problems and substantial reduction of requirements for make-up water.

3,530,064
HIGH TEMPERATURE CATALYTIC CRACKING OF GAS OILS

Nai Yuen Chen, Cherry Hill, and Stanley J. Lucki, Runnemede, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed May 29, 1968, Ser. No. 732,893
Int. Cl. C10g *13/00*
U.S. Cl. 208—113 **9 Claims**

This invention is concerned with a process for carrying out the catalytic cracking of hydrocarbons, e.g., gas oils, into products of lower molecular weight wherein the heat necessary for carrying out the cracking reaction is provided at least in part by a simultaneous shape selective combustion of lower molecular weight hydrocarbons. Both the cracking reaction and the selective combustion reaction take place in the same reactor and are carried out at specific temperatures, space velocities and catalyst-to-oil (cat-oil) ratios.

3,530,065
CATALYTIC CRACKING OF HYDROCARBONS

Wilbur K. Leaman, Medford Lakes, Charles J. Plank, Woodbury, and Bohdan W. Wojciechowski, Glassboro, N.J., assignors to Mobil Oil Corporation, a corporation of New York

Continuation of application Ser. No. 483,617, Aug. 30, 1965. This application June 27, 1968, Ser. No. 752,421
Int. Cl. C10g *11/02*
U.S. Cl. 208—120 **7 Claims**

1. In the cracking of gas oils to gasoline at a conversion level of at least about 50% employing high space velocities and a stream stable rare earth exchanged crystalline aluminosilicate at a temperature in the range of 850° F. to 1000° F., the method for improving the C_5+ gasoline selectivity which comprises employing a gas oil charge liquid hourly space velocity in the reaction zone within the range of from about 32 to about 256 v./hr./v. and maintaining the residence time of the catalyst in the reaction zone within the range of 1 to 3 minutes.

3,530,066
CATALYTIC HYDROTREATING PROCESS OF PETROLEUM HYDROCARBONS CONTAINING ASPHALTENES

Tsutomu Kuwata and Yutaka Oguchi, Tokyo, and Hirotsugu Nomura, Kawasaki-shi, Japan, assignors to Nippon Oil Company, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 29, 1968, Ser. No. 748,220
Claims priority, application Japan, July 29, 1967, 42/48,483
Int. Cl. C10g *23/02*
U.S. Cl. 208—309 **15 Claims**

An improved process for feeding petroleum hydrocarbon feed stock containing asphaltenes wherein the feed stock is first preliminarily treated to eliminate asphaltenes and metallic components and thereafter subjected to catalytic hydrotreatment, the improvement comprising effecting such pre-treatment by contacting said asphaltene-containing hydrocarbon feed stock with a particulate solid having a plurality of pores, the size of said pores ranging between 1,000 and 50,000 A., said particulate solid containing at least one member selected from the group consisting of Fe, Co, Ni, W, Cr, Mo and V, said particulate solid being obtained by mixing refractory particles of particle size 20–500 microns with 1–15% by weight (dry basis), based on said particles, of alumina hydrogen, followed by molding the mixture and drying.

3,530,067
METHOD OF TREATING SEWAGE

Louis D. Friedman, New Brunswick, N.J., assignor to FMC Corporation, a corporation of Delaware

No Drawing. Filed June 6, 1968, Ser. No. 734,856
Int. Cl. C02c *1/40*
U.S. Cl. 210—15 **8 Claims**

The process of this invention deals with the treatment of sewage to produce a sludge of improved settling characteristics. In the illustrative embodiment, a mixed liquor in addition to being aerated has hydrogen peroxide added to it incrementally or continuously during the aeration operation. The hydrogen peroxide-treated mixed liquor is withdrawn to a settling tank where the sludge can be settled in 15 minutes to 30 minutes.

3,530,068
PLASTIC ANTIFRICTION MATERIALS

Vasily Vladimirovich Korshak, Ulitsa Gubkina 4, kv. 81; Svetlana Vasilievna Vinogradova, Jugo-Zapad, kvartal 42a, korpus 1, kv. 35; Grigory Lvovich Slonimsky, Ulitsa Chkalova 1/4, kv. 16; Irina Alexandrovna Gribova, Ulitsa Vavilova 10, korpus 20, kv. 31; Alla Nikolaevna Chumaevskaya, Leninsky prospekt 101, korpus 163, kv. 86; Alexandr Petrovich Krasnov, Prospekt Kalinina 31, kv. 28; Zinaida Yakovlevna Fomina, 1 Yaroslavskaya ulitsa 23a, kv. 16; and Anri Alexandrovich Askadsky, Jugo-Zapad, kvartal 46–47, korpus 39, kv. 25, all of Moscow, U.S.S.R.

No Drawing. Filed June 2, 1967, Ser. No. 643,058
Int. Cl. C10m *7/06, 7/16, 7/44*
U.S. Cl. 252—12 **7 Claims**

Antifriction materials consisting of a polymer component comprising a polyarylate resin selected from the group consisting of isophthalic acid-methyl phosphonic acid-phenolphthalein resin and terephthalic acid-bis(carboxyphenyl) - methylphosphine oxide - phenolphthalein resin having less than 3% by weight of phosphorus and a filler component comprising powdered molybdenum disulfide and powdered copper or silver are prepared by stirring the components for 3–5 minutes in a mill and molding the resulting composition an an elevated temperature and pressure.

3,530,069
STABILIZED ORGANIC MATERIAL

James D. O'Neill, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 603,716, Dec. 22, 1966. This application Mar. 10, 1969, Ser. No. 805,808
Int. Cl. C10m *1/12, 3/32*
U.S. Cl. 252—46.4 **11 Claims**

The combination of a dihydrocarbyl tin sulfide (e.g., di-n-butyl tin sulfide) with a phenolic antioxidant exhibits a synergistic stabilizing effect, especially in lubricating oils. Representative phenolic antioxidants are 4,4′-bis-(2,6 - di-tert-butylphenol), 4,4′-thiobis(6-tert-butyl-meta-cresol), 4,4′-methylene bis (2,6-di-tert-butylphenol), and 2,2′-methylene bis(4-methyl-6-tert-butylphenol).

3,530,070

SYNTHETIC LUBRICANTS

John Arthur Wickings, Sutton, Surrey, Eric James Percy, Coulsdon, Surrey, and David John Rosevear, Epsom, Surrey, England, assignors to BP Chemicals (U.K.) Limited, London, England, a British company

No Drawing. Filed Aug. 9, 1967, Ser. No. 659,332

Claims priority, application Great Britain, Aug. 24, 1966, 37,886/66

Int. Cl. C10m *1/26*

U.S. Cl. 252—56 **6 Claims**

The invention is lubricant compositions which have as base compounds which may be made by esterifying with a mixture of acids the product of reaction of an alkylene oxide with a polyol. The compounds are found to have high viscosity indices and good resistance to shear stresses, and are therefore suitable for use in transmissions, gear boxes and the like.

3,530,071

SCOURING CLEANSER CONTAINING CHLORINATED TRISODIUM PHOSPHATE STABILIZED AGAINST LOSS OF BLEACHING EFFECTIVENESS WITH BORAX

Franklin Dale Moore, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 26, 1967, Ser. No. 649,021

Int. Cl. C11d *7/56*

U.S. Cl. 252—99 **10 Claims**

Scouring cleansers containing water-insoluble abrasive, chlorinated trisodium orthophosphate, borax, and, optionally, organic detergent and/or alkaline detergency builder.

3,530,072

PIEZOELECTRIC CERAMIC COMPOSITION

Tsuneo Akashi, Masao Takahashi, and Tomeji Ohno, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a Japanese corporation

Original application Oct. 17, 1966, Ser. No. 587,242, now Patent No. 3,481,875. Divided and this application Apr. 15, 1969, Ser. No. 817,274

Claims priority, application Japan, Nov. 10, 1965, 40/69,028; Dec. 24, 1965, 40/79,737

Int. Cl. C04b *35/00*

U.S. Cl. 252—62.9 **3 Claims**

A piezoelectric ceramic composition of the formula (Pb_uA_v) $(Zr_xTi_ySn_z)O_3$, where A represents at least one member selected from a group consisting of calcium, strontium and barium and u, v, x, y and z are given by

$$u=0.75-1.00 \quad v=0.00-0.25, \quad u+v=1.00$$
$$x=0.00-0.90, \quad y=0.10-0.60, \quad x=0.00-0.65$$

and $x+y+z=1.00$, characterized in that said ceramic composition contains a set of additional constituents consisting of a chromium compound equivalent in amount to a chromium sesquioxide of from 0.01 to 0.30 weight percent and a cobalt compound equivalent in amount to a cobalt sesquioxide of from 0.02 to 0.50 weight percent, each of the weight percentages being the percentage of the total weight of said ceramic composition.

3,530,073

AZEOTROPIC COMPOSITION

Jared W. Clark, Charleston, and Charles E. Rectenwald, South Charleston, W. Va., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 590,185, Oct. 28, 1966. This application Sept. 30, 1968, Ser. No. 763,951

Int. Cl. C09d *9/00;* **C11d** *7/50;* **C23g** *5/02*

U.S. Cl. 252—170 **2 Claims**

The disclosure relates to azeotropic mixtures of tetrachlorodifluoroethane, ethanol and water. It has been discovered that this azeotrope may be used in solvent vapor cleaning and degreasing applications.

3,530,074

PREPOLYMER COMPOSITION OF BIS(DIALKYLAMINOALKYL) 4,4′ - CARBONYLDIPHTHALIC ACID AND AN AROMATIC DIAMINE

Ralph E. De Brunner, Kettering, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Dec. 20, 1966, Ser. No. 603,179. Divided and this application Apr. 28, 1969, Ser. No. 833,237

Int. Cl. B32b *5/20;* **C08j** *1/14;* **C09k** *3/00*

U.S. Cl. 252—184 **2 Claims**

A heat-reactive, liquid composition prepared by contacting a bis(dialkylaminoalkyl) ester of 4,4′-carbonyldiphthalic acid with an aromatic diamine in a ratio of about one mole of the ester to about one mole of the amine.

3,530,075

PHOTOCHROMIC COMPOSITIONS

Alwyn Frederick Wiebe, Ridgefield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Nov. 1, 1967, Ser. No. 679,740

Int. Cl. F21v *9/00;* **G02b** *5/20*

U.S. Cl. 252—300 **10 Claims**

Photochromic compositions of matter comprising a polymeric matrix having a combination of two members of two specific classes of photochromic materials dispersed throughout the body thereof are disclosed.

3,530,076

SYNERGISTIC ANTIOZONANT MIXTURE OF AROMATIC DIAMINES

Allen Sparks, Des Plaines, and Edwin J. Latos, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,963

Int. Cl. B01j *1/16;* **C08f** *45/60*

U.S. Cl. 252—401 **4 Claims**

Synergistic antiozonant mixture of from about 25% to about 75% by weight of N - isopropyl - N′ - phenyl - p-phenylenediamine and correspondingly from about 75% to about 25% by weight of N,N′ - di - sec - alkyl - p-phenylenediamine containing from 3 to 10 carbon atoms in each alkyl, and use thereof as antiozonant in rubber.

3,530,077

POLYMERIZATION CATALYST

John W. Shepard, Munster, Ind., and Omar O. Juveland, South Holland, Ill., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Continuation-in-part of application Ser. No. 434,393, Feb. 23, 1965. This application Oct. 15, 1968, Ser. No. 767,815

Int. Cl. B01j *11/78*

U.S. Cl. 252—442 **6 Claims**

A catalyst is prepared by distributing a minor amount of a transition metal oxide of Groups V*a* and VI*a* of the Periodic Table upon a major amount of alumina having a surface area within the range of 150 to 500 $m.^2/gm.$ and a pore diameter within the range of 100 to 200 A., then reducing the transition metal to an average valence about 1 less than maximum and chloriding the resulting combination with anhydrous hydrogen chloride to a chlorine content of about 2 to 5 percent by weight.

3,530,078

METHOD FOR THE PREPARATION OF POLYMERS OF TRIMETHYLSILOXY ALUMINUM DIHYDRIDE

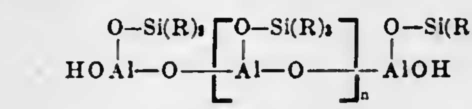
Charles B. Roberts, Midland, and Darrell D. Toner, Sanford, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 24, 1967, Ser. No. 655,301

Int. Cl. C08g *31/36, 33/20*

U.S. Cl. 260—2 **2 Claims**

This invention relates to a process for the preparation of inorganic polymers having the general formula:



$$\mathrm{HO}\overset{\mathrm{O-Si(R)_3}}{\overset{|}{\mathrm{Al}}}\mathrm{-O-}\left[\overset{\mathrm{O-Si(R)_3}}{\overset{|}{\mathrm{Al}}}\mathrm{-O-}\right]_n\overset{\mathrm{O-Si(R)_3}}{\overset{|}{\mathrm{Al}}}\mathrm{OH}$$

by contacting a substituted siloxyaluminum dihydride having the formula $H_2AlOSi(R)_3$ wherein R is an alkyl, aryl, aralkyl or cycloalkyl radical having up to 6 carbon atoms with water in an inert solvent at a temperature of from about 0° C. to about 30° C.

3,530,079

REINFORCED ELASTOMER FOAM COMPOSITIONS

John M. Iwasyk and Francis W. Doherty, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,027

Int. Cl. C08c *17/08;* **C08j** *1/16*

U.S. Cl. 260—2.5 **8 Claims**

Foam rubber compositions having improved strength and stability, comprising an elastomer, such as neoprene, and alkali metal titanate particles of a diameter below 3.0 microns and a length to diameter ratio of at least 10.

3,530,080

STABLE VINYL ACETATE COPOLYMER EMULSION, ITS PREPARATION AND COATING COLORS PREPARED THEREFROM

Harold Kirkwood Inskip, Tonawanda, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 659,319, Aug. 9, 1967. This application Mar. 26, 1969, Ser. No. 810,830

Int. Cl. C08f *15/02, 15/04;* **C08h** *7/00*

U.S. Cl. 260—8 **23 Claims**

A vinyl acetate/ammonium salt of an unsaturated mono or dicarboxylic acid copolymer emulsion is prepared by introducing the acid comonomer in the reaction mixture as the ammonium salt so as to prepare an emulsion and coating color stable at a pH of at least 8.5.

3,530,081

PROCESS FOR GROUTING EMPLOYING AN IRON-HYDROXIDE POLYOL SETTING AGENT

Franklin W. Herrick, Lloyd E. Van Blaricom, and Robert L. Strachila, Shelton, Wash., and George E. Durkee, Pleasantville, N.Y., assignors to ITT Rayonier Incorporated, Shelton, Wash., a corporation of Delaware

No Drawing. Filed Mar. 13, 1969, Ser. No. 807,118

Int. Cl. C08g *20/08;* **E04d** *7/00;* **E04g** *23/02*

U.S. Cl. 260—17.2 **6 Claims**

An alkaline aqueous gel-forming grouting composition comprising a vegetative polyphenolic material, formaldehyde and an iron hydroxide-polyol complex is injected into earth, sand, gravel and other porous formations of particulate solids to produce a grouted structure of improved strength and stability. The grouting composition has improved penetration properties and a readily predictable "in situ" gel time. The inclusion of clay in the grouting composition has been found to be particularly advantageous.

3,530,082

OIL-FREE LINEAR POLYESTER RESINS BASED ON PHTHALIC ACIDS, DIMER FATTY ACIDS, NEOPENTYL GLYCOL, BETA-SUBSTITUTED DIOLS AND A BISPHENOL-BASED DIOL

Malachy T. O'Gorman and John D. Downs, Kankakee, Ill., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed June 11, 1969, Ser. No. 832,487

Int. Cl. C08g *17/10;* **C09d** *3/64*

U.S. Cl. 260—22 **15 Claims**

Oil-free polyester resins are provided in which a mixture of a phthalic acid, such as isophthalic acid, and dimer fatty acids are formed into a polyester with dihydroxy compounds primarily constituted by a mixture of neopentyl glycol, beta-substituted diols such as 2,2-dimethyl - 3 - hydroxypropyl 2,2 - dimethyl - 3 - hydroxypropionate and a bisphenol-based diol such as 1,1′-isopropylidenebis(p-phenyleneoxy)di-2-propanol.

3,530,083

FIRE RETARDANT POLYMER COMPOSITIONS

Raymond R. Hindersinn, Lewiston, N.Y., and John F. Porter, Durham, N.C., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 390,219, Aug. 17, 1964. This application June 7, 1968, Ser. No. 735,184

Int. Cl. C08g *51/52;* **C08k** *1/64*

U.S. Cl. 260—28 **11 Claims**

A fire retardant composition can be formed by use of a fire retarding agent of an arylhaloalkylalkyl phosphonate in combination with an organo halide compound. A typical example is cresyl-2-bromoethylmethyl phosphonate in combination with chlorinated paraffin.

3,530,084

PROCESS FOR MAKING ETHYLENE-VINYL ACETATE COPOLYMERS OF LOW MELT INDEX, AND WAX COMPOSITIONS CONTAINING THE COPOLYMERS

James E. Potts, West Millington, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,033

Int. Cl. C08c *11/70;* **C08f** *1/16*

U.S. Cl. 260—28.5 **2 Claims**

Application of ionizing radiation in a dose between 0.5 and 1.5 megareps to copolymers of ethylene and vinyl acetate lowers the melt index and increases the toughness and flexibility of the copolymers without substantially decreasing solubility or thermoplasticity. The increased toughness and flexibility carries over into blends with wax or polyethylene.

3,530,085

WAX COATING COMPOSITION

James W. Beardmore, Walnut Creek, and Cyril B. Goenen, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 28, 1968, Ser. No. 708,767

Int. Cl. C08c *11/70*

U.S. Cl. 260—28.5 **6 Claims**

Hot melt petroleum wax compositions of improved adhesivity to paper containing a minor proportion of a copolymer polyester of ethylene and an unsaturated ester comonomer, e.g. ethylene-vinyl acetate copolymer or ethylene-methyl acrylate copolymer and 200 p.p.m. to 2000 p.p.m. of an N-(di- or tri-alkoxysilylalkyl)alkylenediamine, e.g., N - (di-methoxymethylsilylisobutyl)ethylenediamine, the polyester and silane compound cooperating to provide the improved adhesivity of the wax composition.

3,530,086
SULFUR-CONTAINING DERIVATIVES OF METHYLOLATED AMINOTRIAZINES

Daniel Porret and Ewald Forster, Binningen, and Juerg Maurer, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Feb. 13, 1968, Ser. No. 705,012
Claims priority, application Switzerland, Feb. 24, 1967, 2,737/67
Int. Cl. C08g *9/04;* **C07d** *55/20, 55/22*
U.S. Cl. 260—30.2 3 Claims

The invention relates to new sulphur-containing derivatives of methylolated aminotriazines, suitable for use as plasticizers for quick-curing aminoplast moulding compositions, said derivatives being condensation products of (I) 1.8 to 2.2 mols, preferably about 2 mols, of a methylolated amino-s-triazine containing at least two amino groups, more than 80% of whose methylol groups are etherified with a lower aliphatic alcohol containing 1 to 4 carbon atoms, and (II) 1 mol of a dialcohol or dimercaptan containing at least one thioether bridge.

3,530,087
ADHESIVE COMPOSITIONS OF POLYEPOXIDE AND POLYSULFONES

Barrie James Hayes, Little Eversden, and Panchanan Mitra, Manchester, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Feb. 8, 1968, Ser. No. 703,891 -
Claims priority, application Great Britain, Feb. 21, 1967, 8,252/67
Int. Cl. C08g *51/04, 45/06*
U.S. Cl. 260—37 13 Claims

Hardenable compositions comprising an epoxide resin, a hardening agent therefor, and a thermoplastic polysulfone resin containing a repeating unit of formula

$$—A—SO_2—$$

where A denotes a divalent aromatic group which may be interrupted by ether oxygen atoms and/or by divalent aliphatic groups.

3,530,088
SYNERGISTIC FLAME-RETARDANT COMPOSITIONS

Christos Savides, Piscataway Township, Middlesex County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 1, 1968, Ser. No. 741,249
Int. Cl. C08f *45/58, 45/60;* **C08g** *51/60*
U.S. Cl. 260—45.8 10 Claims

Synergistic flame-retardant compositions comprising a diphosphonium halide and 2,3-dicarboxy-5,8-endomethylene - 5,6,7,8,9,9 - hexachloro - 1,2,3,4,4a,5,8,8a-octahydronaphthalene anhydride and its esters and compositions comprising a thermoplastic resin and said synergistic compositions are disclosed.

3,530,089
SYNERGISTIC FLAME-RETARDANT COMPOSITIONS

Christos Savides, Piscataway Township, Middlesex County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 1, 1968, Ser. No. 741,250
Int. Cl. C08f *45/58, 45/60;* **C08g** *51/60*
U.S. Cl. 260—45.8 10 Claims

Synergistic flame-retardant compositions comprising a monophosphonium halide and 2,3 - dicarboxy-5,8-endomethylene - 5,6,7,8,9,9 - hexachloro - 1,2,3,4,4a,5,8,8a-octahydronaphthalene anhydride and its esters and compositions comprising a thermoplastic resin and said synergistic compositions are disclosed.

3,530,090
SYNERGISTIC FLAME-RETARDANT COMPOSITIONS

Christos Savides, Piscataway Township, Middlesex County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 1, 1968, Ser. No. 741,255
Int. Cl. C08f *45/58, 45/60;* **C08g** *51/60*
U.S. Cl. 260—45.8 10 Claims

Synergistic flame-retardant compositions comprising a halogenated alkyl phosphate and 2,3-dicarboxy-5,8-endomethylene - 5,6,7,8,9,9 - hexachloro - 1,2,3,4,4a,5,8,8a-octahydronaphthalene anhydride and its esters and compositions comprising a thermoplastic resin and said synergistic compositions are disclosed.

3,530,091
LIGHT AND HEAT STABILIZED SYNTHETIC POLYMERS

Atsushi Kitaoka, Nobeoka, Shinichi Ishida and Kunio Sato, Tokyo, Isamu Suzuki and Jukichi Ohmura, Fuji, and Keisuke Murayama, Syoji Morimura, Saburo Akagi, Tomoyuki Kurumada, and Ichiro Watanabe, Tokyo, Japan, assignors to Sankyo Company Limited, Tokyo, and Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Oct. 31, 1967, Ser. No. 679,515
Claims priority, application Japan, Nov. 12, 1966, 41/74,309; Apr. 15, 1967, 42/23,969; Apr. 17, 1967, 42/24,344
Int. Cl. C08f *45/58;* **C08g** *51/58*
U.S. Cl. 260—45.85 4 Claims

Resinous polymers particularly polyolefins, polyurethanes and polyacetals are stabilized against photo-deterioration by incorporating therein at least one compound selected from the bis-phenol formate derivatives in a sufficient amount to prevent such deterioration.

3,530,092
PROCESS FOR PREPARING ORGANOSILICON-NITROGEN COMPOUNDS

Robert Curtis Borchert, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed July 26, 1968, Ser. No. 747,833
Int. Cl. C08f *11/04*
U.S. Cl. 260—46.5 7 Claims

Process for preparing a siloxamine polymer containing at least one amino radical directly bonded to silicon which comprises reacting a hydrosilicon modified silicone polymer with an amine compound in the presence of a catalytic amount of a platinum catalyst.

The organosilicon-nitrogen compounds prepared by this process are used to treat paper, textile, leather, etc., to impart water-repellancy and help reduce shrinkage characteristics and can also be used to water-proof metals, glass and ceramics.

3,530,093
COMPOSITIONS COMPRISING AN EPOXY RESIN, DICYANDIAMIDE AND AN AMINOPYRIDINE

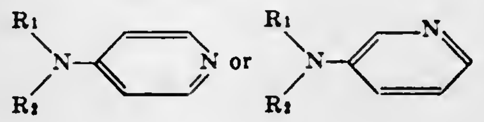
Juerg Maurer, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Nov. 19, 1968, Ser. No. 777,183
Claims priority, application Switzerland, Dec. 8, 1967, 17,249/67
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 9 Claims

Storable mixtures which cure rapidly at an elevated temperature and are suitable for the manufacture of shaped structures, impregnations, coatings and adhesive bonds, especially when used in form of sinter powders, characterized in that they contain:

(a) A polyepoxy compound whose molecule contains on an average more than one epoxide group,

(b) Dicyandiamide as curing agent, and

(c) As curing accelerator a monoaminopyridine of the formula



in which, independently of each other, R_1 and R_2 represent a hydrogen atom or an aliphtaic, cycloaliphatic, araliphatic or aromatic residue each. or R_1+R_2 represent a divalent aliphatic, cycloalphatic or araliphatic residue.

3,530,094
POLYCARBONATES

Hermann Schnell, Krefeld-Uerdingen, and Ludwig Bottenbruch, Hans-Helmut Schwarz, and Hans-Georg Lotter, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 598,149, Dec. 1, 1966. This application Dec. 23, 1968, Ser. No. 786,452
Claims priority, application Germany, June 10, 1960, F 31,406
Int. Cl. C08g *17/13*
U.S. Cl. 260—47 11 Claims

A continuous process for preparing high molecular weight substantially linear polycarbonates having improved properties which comprises

(1) continuously introducing a stream of (a) an aqueous alkaline solution of an aromatic dihydroxy compound and of a monohydric phenol as chain breaker containing from about 1.7 to about 2.3 mols of alkali hydroxide per mole of dihydroxy compound, and simultaneously (b) an inert organic solvent capable of dissolving the resulting polycarbonate, (c) at least an equivalent amount of phosgene or the bis-chlorocarbonic acid ester of an organic dihydroxy compound and, if the phenolate solution contains less than about 2.2 mols of alkali hydroxide per mol of dihydroxy compound (d) a concentrated aqueous alkali hydroxide solution in such a ratio to maintain the pH value of the aqueous phase between about 12.0 and about 13.5,

(2) progressively flowing the reaction mixture while introducing (e) a catalyst and simultaneously (f) a further stream of a concentrated aqueous alkali hydroxide solution in such a ratio to maintain the pH value of the aqueous phase between about 12.0 and about 13.5 and

(3) separating the organic phase from the aqueous phase and isolating the polycarbonate from the organic phase.

3,530,095
CURABLE MIXTURES OF EPOXIDE RESINS AND CYCLIC UREA DERIVATIVES

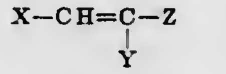
Daniel Porret, Binningen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Mar. 10, 1969, Ser. No. 805,850
Claims priority, application Switzerland, Mar. 19, 1968, 4,034/68
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 9 Claims

Hot-curable composition of matter containing a polyglycidyl compound as for example a liquid polyglycidyl ether of bisphenol A, Δ^4-tetrahydrophthalic acid diglycidyl ether or triglycidyl-iso-cyanurate and, as curing agent, ethylene urea (or propylene urea). The curable mixtures are suitable as one package systems owing to their good storage stability. Further advantages of ethylene urea as curing agent are its good compatibility with most epoxide resins and the good electrical properties of the cured shaped articles. Ethylene urea presumably acts as a "latent curing agent" which is only split at the curing temperature (100–180° C.) into the cross-linking component.

3,530,096
REDUCTION OF HYDROXYL GROUP CONTENT OF EPOXIDE RESINS

Bryan Dobinson, Duxford, Cambridge, and Eric Whichell Young, Saffron Walden, Essex, England, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Continuation-in-part of application Ser. No. 607,145, Jan. 4, 1967. This application Aug. 11, 1969, Ser. No. 849,209
Claims priority, application Great Britain, Feb. 11, 1966, 6,035/66
Int. Cl. C08g *30/00, 30/04, 30/06*
U.S. Cl. 260—47 6 Claims

The present invention provides a process for reducing the hydroxyl group content of an epoxide resin which comprises reacting a hydroxyl group-containing epoxide resin with a compound of the formula



$$\mathrm{X-CH=\underset{Y}{C}-Z}$$

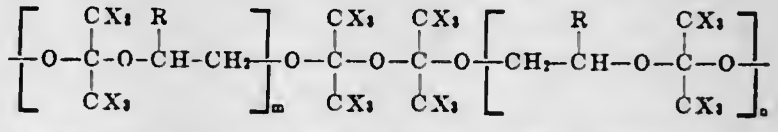
(I)

wherein one of X and Y represents hydrogen and the other represents hydrogen or methyl, and Z represents either a —CN group or a carbalkoxy group containing up to six carbon atoms.

3,530,097
PERHALOACETONE-EPOXIDE POLYMERS AND METHOD OF PREPARATION

Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 12, 1968, Ser. No. 775,166
Int. Cl. C08g *15/00*
U.S. Cl. 260—63 9 Claims

This invention is concerned with the use of alkali metal oxides as catalysts for the interpolymerization of perhaloacetones and epoxides to produce new polymer compositions. The use of such catalysts produces chain growth on both ends of the polymer to produce novel polymeric materials useful as structural materials, films, coatings and the like. Such new polymers have the general formula



$$\mathrm{\left[-O-\underset{CX_3}{\overset{CX_3}{C}}-O-\overset{R}{C}H-CH_2-\right]_m O-\underset{CX_3}{\overset{CX_3}{C}}-O-\underset{CX_3}{\overset{CX_3}{C}}-O\left[-CH_2-\overset{R}{C}H-O-\underset{CX_3}{\overset{CX_3}{C}}-O-\right]_n}$$

wherein X is chlorine or fluorine, R is hydrogen, an alkyl or an aryl radical having from 1 to 14 carbon atoms and *m* and *n* are integers greater than 0.

3,530,098
PROCESS FOR PREPARING LINEAR POLYESTERS USING BORON - CONTAINING MIXED ANHYDRIDES AS CATALYSTS

Peter Schweizer, Konigsbrunn, near Augsburg, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed July 26, 1967, Ser. No. 656,072
Claims priority, application Germany, Aug. 16, 1966, F 49,952
Int. Cl. C08q *17/015*
U.S. Cl. 260—75 3 Claims

A process for preparing linear, fibre- and film-forming polyesters by polycondensing indicated dicarboxylic acid bis-diol esters in the presence of mixed anhydrides of indicated boron acids with organic acids or in the presence of adducts of these mixed anhydrides with compounds containing donator atoms as polycondensation catalysts.

3,530,099

SYNTHETIC LINEAR POLYCARBONAMIDES HAVING AN IMPROVED RECEPTIVITY FOR ACID DYES

Richard D. Chapman, Pensacola, and Lawrence W. Crovatt, Jr., Gulf Breeze, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 565,085, July 14, 1966. This application July 9, 1968, Ser. No. 743,305
Int. Cl. C08g *20/20*
U.S. Cl. 260—78 3 Claims

A fiber-forming synthetic linear polycarbonamide has improved receptivity to acid dyes when a small amount of a low molecular weight addition polymer of 1,1,1-trimethylolpropane monoallylether is incorporated therein.

3,530,100

CROSSLINKING POLYMERS

Gaetano F. D'Alelio, South Bend, Ind., assignor, by mesne assignments, to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,688
Int. Cl. C08f *3/64*
U.S. Cl. 260—78.4 19 Claims

The preparation of highly radiation sensitive crosslinkable polymers whereby said polymers are treated by subjecting same to high energy ionizing irradiation so as to produce three-dimensional crosslinked, insoluble, infusible polymers at relatively low doses of ionizing irradiation.

3,530,101

PROCESS FOR PREPARATION OF ALKYL HALF ESTERS OF MALEIC ANHYDRIDE COPOLYMERS

Richard T. Haynes and Riley N. Weston, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 17, 1968, Ser. No. 737,348
Int. Cl. C08f *27/12*
U.S. Cl. 260—78.5 9 Claims

In preparing alkyl half esters of alkyl vinyl ether—or olefin—maleic anhydride copolymers by reaction of primary or secondary alcohols containing 1 to 8 carbon atoms with the copolymer, the reaction is conducted in the presence of isopropanol under superatmospheric pressure at a temperature at least 2° C. above the atmospheric boiling point of the reaction mixture. Preferably, the reaction mixture comprises about 1 molecular proportion of the reacting alcohol and about 1 molecular proportion of isopropanol per maleic anhydride group. The half ester product is suitable for a variety of applications including use as a holding film in hair spray formulations.

3,530,102

TERPOLYMERS OF MALEIC ANHYDRIDE, VINYL ALKYL ETHER AND DIVINYLBENZENE AND PROCESS FOR PRODUCTION THEREOF

Frank J. Welch, Charleston, and Herbert J. Paxton, Jr., Elkview, W. Va., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed May 16, 1968, Ser. No. 729,516
Int. Cl. C08f *1/60, 1/90, 19/20*
U.S. Cl. 260—78.5 6 Claims

Polymeric thickening agents, effective in both aqueous and organic systems, composed of an alternating equimolar high molecular weight copolymer of maleic anhydride and a vinyl alkyl ether crosslinked with a small amount of divinylbenzene. High molecular weight and consequent ability to thicken effectively with a minimum degree of crosslinking is achieved by effecting the polymerization with the vinyl alkyl ether in large molar excess relative to the maleic anhydride.

3,530,103

COPOLYMERS OF CARBON BISULFIDE AND CERTAIN MONOOLEFINIC MONOMERS

Harold M. Pitt, Lafayette, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 461,169, June 3, 1965. This application June 12, 1969, Ser. No. 836,207
Int. Cl. C08g *23/00*
U.S. Cl. 260—79 12 Claims

A copolymer of carbon bisulfide and any organic material containing an unsaturated alkyl chain and which is capable of undergoing free radical polymerization or copolymerization by contacting said carbon bisulfide and said organic material in an inert atmosphere under the illumination of light having a wave length of 3000 to 6000 angstroms or in the presence of a catalyst at a temperature about approximately 35° C. and the copolymers produced thereby.

3,530,104

VINYL CHLORIDE COPOLYMERS

Elliott Farber, Trenton, and Marvin Koral, Warren, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,219
Int. Cl. C08f *15/40*
U.S. Cl. 260—80.81 6 Claims

The rate of polymerization of vinyl chloride-vinyl alkanoate monomer mixtures can be controlled by incorporating in the mixtures a small amount of a long chain α-olefin. The resulting polymers have excellent heat stability and processing characteristics. A terpolymer prepared from a monomer mixture containing 85 percent to 94 percent of vinyl chloride, 5 percent to 10 percent of vinyl acetate and 0.5 percent to 3 percent of octadecene-1 has an unusually valuable combination of properties.

3,530,105

PROCESS FOR MAKING HIGH MOLECULAR WEIGHT POLYMERS

Kent S. Dennis and Donald A. Maass, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,550
Int. Cl. C08f *7/04, 15/04*
U.S. Cl. 260—88.2 15 Claims

A process for making monoalkenyl aromatic hydrocarbon polymers having a molecular weight of at least about 500,000 which involves contacting the monomeric reaction mixture with a combination of anionic initiators: an organolithium compound and a complex or addition compound of an alkali metal having an atomic weight between 39 and 133 with a polynuclear aromatic compound or with alpha-methylstyrene, useful for making molded articles.

3,530,106

COPOLYMER OF ISOBUTYLENE AND 5-METHYLHEPTATRIENE-1,3,6 AND A PROCESS FOR THE PRODUCTION OF SAME

Mitsuo Ichikawa, Yokkaichi-shi, and Yoshitada Kagawa and Koichiro Shimizu, Matsuzaka-shi, and Akira Kogure, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan
No Drawing. Filed Dec. 12, 1967, Ser. No. 689,765
Claims priority, application Japan, Dec. 13, 1966, 41/81,387
Int. Cl. C08f *15/04*
U.S. Cl. 260—88.2 16 Claims

A process for producing a copolymer of isobutylene and 5-methylheptatriene-1,3,6 which comprises contacting a mixture of isobutylene and 5-methylheptatriene-1,3,6 with a catalyst prepared by mixing (1) titanium tetrachloride, and (2) at least one compound selected from the group consisting of (a) phenols and (b) organic carboxylic acids having a strong acidity, in an aliphatic hydrocarbon solvent.

3,530,107

MODIFIED CATALYST SYSTEM AND PROCESS FOR PRODUCTION OF POLYMERS OF 1-OLEFINS

Shiro Yoshioka, Kimio Kurashima, and Yozo Kinoshita, Nagoya, Japan, assignors to Mitsui Toatsu Chemicals, Inc., Tokyo, Japan, a corporation of Japan
No Drawing. Continuation-in-part of application Ser. No. 408,680, Nov. 3, 1964. This application Nov. 6, 1968, Ser. No. 773,938
Int. Cl. C08f *15/04*
U.S. Cl. 260—878 13 Claims

A catalyst system and a process for producing homopolymers of propylene and copolymers of propylene and other 1-olefins, said catalyst system comprising a titanium trichloride component, a dialkyl aluminum monohalide and an organic compound selected from organic monoether compounds and monoketone compounds, the titanium trichloride component and organic compound being present in the form of copulverised and agglomerated granular particles, more than 80% by weight of said granular particles having a diameter ranging from 10 to 105 microns.

3,530,108

ELASTIC POLYPROPYLENE FILM AND PROCESS

George C. Oppenlander, Embreeville, Pa., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Original application June 12, 1964, Ser. No. 374,634. Divided and this application Jan. 26, 1968, Ser. No. 749,221
Int. Cl. C08f *29/02*
U.S. Cl. 260—93.7 1 Claim

An elastic polypropylene film is taught characterized by gamma orientation and exhibiting an elastic recovery of about 80 to 91% from a 75% elongation. The polypropylene is modified by incorporation of about 0.1 to 0.8 mol of an azido crosslinking agent per mole of polypropylene.

3,530,109

ETHYLENE-CARBON MONOXIDE COPOLYMERS

Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
Filed Dec. 5, 1966, Ser. No. 599,243
Int. Cl. C08f *1/64, 13/04*
U.S. Cl. 260—94.9 4 Claims

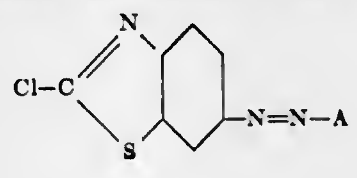
Copolymers of a C_2–C_8 alpha-olefin and carbon monoxide are produced using palladous cyanide as a catalyst. The ethylene-carbon monoxide copolymer has a melting point of about 250° to 350° C. and can be converted to a thermosetting compound by heating.

3,530,110

WATER-INSOLUBLE DYESTUFFS CONTAINING A 2-CHLORO-BENZOTHIAZOLE-6-AZO GROUP

Walter Jenny and Stefan Hari, Basel, and Karl Seitz, Oberwil, Basel-Land, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Continuation-in-part of application Ser. No. 205,124, June 25, 1962. This application Oct. 9, 1968, Ser. No. 766,320
Claims priority, application Switzerland, June 23, 1961, 7,369/61; May 9, 1962, 5,556/62
Int. Cl. C09b *29/08, 29/16, 29/38*
U.S. Cl. 260—158 7 Claims

A water-insoluble azo dyestuff of the formula



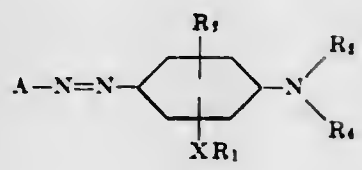
wherein A is the residue of a coupling component which is free from water-solubilizing groups, said dyestuff being useful as disperse dyestuffs for fibers containing cellulose and which dyeings are distinguished by purity of tint, good light fastness, and excellent wash fashness.

3,530,111

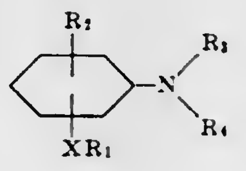
WATER-INSOLUBLE PHENYL-AZO-PHENYL DYESTUFFS

Hansjoerg Angliker, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Dec. 20, 1966, Ser. No. 603,135
Claims priority, application Switzerland, Dec. 24, 1965, 17,811/65; Oct. 28, 1966, 15,710/66
Int. Cl. C07c *107/06;* **C09b** *29/24*
U.S. Cl. 260—206 12 Claims

Water-insoluble azo dyestuffs of the formula



in which A represents the residue of an aromatic or heterocyclic diazo component, X represents an oxygen or a sulphur atom or a direct bond, R_1 represents a cycloalkyl, aryl or aralkyl residue, R_2 represents a hydrogen atom, an alkyl or alkoxy group or the residue XR_1, R_3 represents a hydrogen atom or an alkyl group that may be substituted, R_4 represents a hydrogen atom or a cyanoalkyl, acyloxyalkyl, carbalkoxyalkyl or cyanoalkoxyalkyl group, at least one of R_3 and R_4 being other than hydrogen, obtained when a diazo compound of an aromatic or heterocyclic amine is coupled with an amine of the formula



in which X, R_1, R_2, R_3 and R_4 are as defined above.

3,530,112

PROCESS FOR PREPARING DISPERSANTS USEFUL IN HYDRAULIC CEMENT SLURRIES

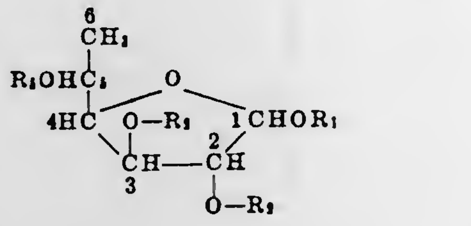
John Charles Steinberg and Kenneth Russell Gray, Shelton, Wash., assignors to ITT Rayonier Incorporated, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 366,920, May 12, 1964. This application July 24, 1967, Ser. No. 655,299
Int. Cl. C08b *19/00*
U.S. Cl. 260—209 3 Claims

A dispersant, effective as a dispersant in hydraulic cement slurries, is prepared by reacting (a) a concentrated hydrolyzate containing predominantly short-chain polymers of the non-cellulose carbohydrate constituents resulting from the partial hydrolysis of coniferous wood, with (b) a water-soluble salt of sulfurous acid. The amount of such water-soluble salt is equivalent to 0.10 to 0.25 part of SO_2 per parts solids in the hydrolyzate. The reaction is carried out at a temperature of 160°–180° C. until the resulting reaction product is substantially free of sugars.

3,530,113
6-DESOXY-D-FURANOSIDE ETHERS

Alberto Rossi, Oberwil, Basel-Land, Switzerland, assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware
No Drawing. Filed Sept. 4, 1968, Ser. No. 757,499
Claims priority, application Switzerland, Sept. 11, 1967, 12,703/67; July 2, 1968, 9,835/68
Int. Cl. C07c *47/18*
U.S. Cl. 260—210 **10 Claims**

6-desoxy-D-xylohexafuranosides of the formula:



(I)

in which R_1 represents an aliphatic, cycloaliphatic, cycloaliphatic-aliphatic or araliphatic residue, and R_2 represents hydrogen or the acyl residue of an organic carboxylic acid, and in which one of the groups R_3 and R_5 represents a hydrogen atom or an aliphatic, cycloaliphatic, cycloaliphatic-aliphatic or araliphatic residue, and the other an aliphatic, cycloaliphatic, cycloaliphatic-aliphatic or araliphatic residue, and the salts of compounds having salt-forming groups have anti-inflammatory properties.

3,530,114
ISOLATION PROCEDURES OF COUMERMYCIN A_1

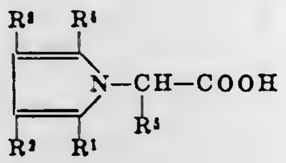
Hubert Maehr, Belleville, James Parnell Scannell, Bloomfield, and Vernon Zeltz, Passaic, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Sept. 16, 1969, Ser. No. 858,523
Int. Cl. C07c *47/18*
U.S. Cl. 260—210 **4 Claims**

A process for isolating the antibiotic coumermycin A_1 from a crude coumermycin complex without the prior isolation of the coumermycin complex involving a two-phase system, one phase comprising an ester of a lower alkanoic acid or a water immiscible lower alkyl ketone and the other phase comprising a water miscible solvent.

3,530,115
ACYL DERIVATIVES OF 6-AMINO PENICILLANIC ACID

Karl Vogler, Riehen, and Guido Zanetti, Reinach, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Feb. 28, 1968, Ser. No. 708,797
Claims priority, application Switzerland, Mar. 3, 1967, 3,159/67
Int. Cl. C07d *99/16*
U.S. Cl. 260—239.1 **26 Claims**

Processes for the preparation of acyl derivatives of 6-aminopenicillanic acid and the pharmaceutically acceptable, non-toxic salts of these acids are disclosed. Such processes involve reaction of an acid compound of the formula:

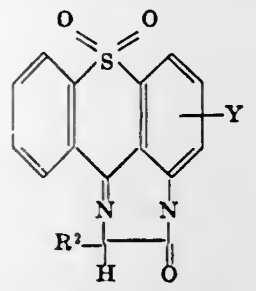


with 6-aminopenicillanic acid to yield novel (pyrrol or substituted pyrrol-1-yl-methyl)-penicillins. These compounds are useful as antibacterial agents.

3,530,116
3(4H)-OXO-2H-THIAXANTHENO (9,9α,1-ef)-1,4-DIAZEPIN-8,8-DIOXIDES

Edward L. Engelhardt, Gwynedd Valley, and David C. Remy, North Wales, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Aug. 21, 1967, Ser. No. 661,784
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 **3 Claims**

This invention pertains to pharmocologically active compounds of the following structure:



wherein Y is hydrogen, halo, alkyl, NO_2—, perfluoroalkyl, cyano, RO—, RSO_2—, R_2NSO_2—, R_2NCO— (R being alkyl, aryl, aralkyl, alkaryl or hydrogen); and R^2 is alkyl, aryl, aralkyl, alkaryl, or hydrogen and R^3 is alkyl, aralkyl or hydrogen. The disclosed process is summarized in the flow sheet at column 2 of the specification. The compounds exhibit antianxiety activity and a depressant effect on the central nervous system.

3,530,117
Δ^4 AND $\Delta^{4,6}$ - 17 - HYDROXY - STEROIDAL PYRAZOLES OF THE PREGNANE SERIES

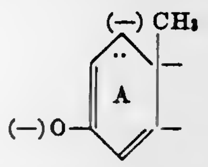
Avery Rosegay, Springfield, Ralph F. Hirschmann, Scotch Plains, Gerald J. Kent, Princeton, and Arthur A. Patchett, Metuchen, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 626,341, Mar. 27, 1967, which is a continuation of application Ser. No. 262,304, Mar. 4, 1963. This application Jan. 9, 1969, Ser. No. 791,877
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **7 Claims**

This invention is concerned generally with novel [3,2-c]pyrazole compounds of the pregnane series, and with processes of preparing the same. More particularly, it relates to 17α-hydroxy-2-oxo-4-pregneno- (and 4,6-pregnadieno)-[3,2-c]pyrazoles, and to processes of making these compounds.

3,530,118
PROCESS FOR THE SELECTIVE SATURATION OF DOUBLE BONDS IN STEROIDS

Georg Anner, Basel, and Peter Wieland, Oberwil, Basel-Land, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 18, 1968, Ser. No. 745,676
Claims priority, application Switzerland, July 28, 1967, 10,713/67
Int. Cl. C07c *169/00*
U.S. Cl. 260—239.55 **13 Claims**

A new method for selectively saturating the 1,2-double bond of a $\Delta^{1,4}$-3-oxosteroid-diene is based on the finding that when a radical anion is caused to react on the $\Delta^{1,4}$-3-oxo-steroid-diene at a low temperature there is obtained a steroid anion of the partial formula

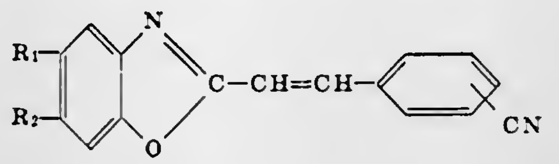


which on protonization at a low temperature affords the corresponding Δ^4-3-oxo-steroid.

3,530,119
STYRYL BENZOXAZOLES

Erich Schinzel, Frankfurt am Main, Rolf Austrup, Bad Soden, Taunus, and Karl Heinz Lebkücher, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed June 7, 1963, Ser. No. 286,164
Claims priority, application Germany, June 9, 1962, F 37,032
Int. Cl. C07d *85/48*
U.S. Cl. 260—240 **3 Claims**

Cyanstyryl benzoxazoles of the formula



in which R_1 is hydrogen, lower alkyl, lower alkoxy or chlorine and R_2 is lower alkyl, lower alkoxy or chlorine. These compounds are useful as optical brighteners for synthetic fibers.

3,530,120
NOVEL PROCESS FOR PREPARATION OF ENAMINES

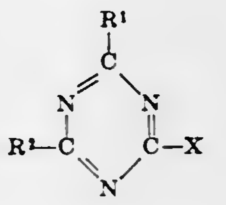
Hubert von Hirsch, 20 Jahnstrasse, 8032 Grafelfing, Germany
No Drawing. Filed Feb. 2, 1967, Ser. No. 613,444
Claims priority, application Germany, Feb. 21, 1966, H 58,613
Int. Cl. C07c *85/08;* **C07d** *27/26, 29/10*
U.S. Cl. 260—240 **5 Claims**

Preparation of enamines by reaction of an aldehyde or a ketone with a tris-(sec. amino)-arsine, said enamines being intermediates and as monomers for copolymerization with other compounds.

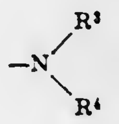
3,530,121
BIOLOGICALLY ACTIVE SUBSTITUTED TRIAZINES

Werner Heimberger, Hanau am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
No Drawing. Filed July 17, 1967, Ser. No. 653,663
Claims priority, application Germany, July 19, 1966, D 50,618; Dec. 22, 1966, D 51,843
The portion of the term of the patent subsequent to Aug. 19, 1986, has been disclaimed
Int. Cl. C07d *55/20*
U.S. Cl. 260—240 **9 Claims**

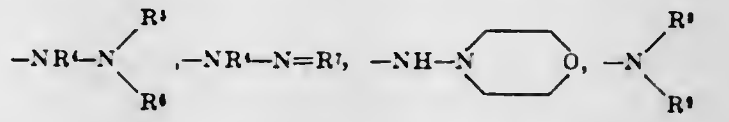
Novel triazines of the formula



in which X is a cycloalkyl di-imine radical connected directly to the triazine nucleus over one of the nitrogens, preferably, piperazine or homopiperazine or their N′-alkyl or N′-hydroxyalkyl substitution products (wherein the alkyl or hydroxyalkyl groups contain 1–6 carbon atoms); R^1 is —CCl_3, —OAlk, —SAlk or



in which each of R^3 and R^4 can be hydrogen or lower alkyl (straight or branch chained) of 1–6 carbon atoms and Alk is alkyl of 1 to 6 carbon atoms; and R^2 is

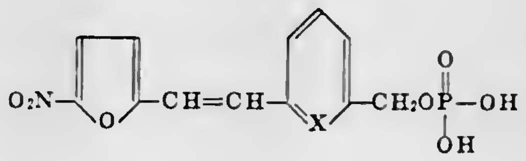


morpholino, piperidino, pyrrolidino or piperazino in which R^5 and R^6 have the same significance as R^3 and R^4 and in addition can be aryl, R^7 is lower alkylidine, cycloalkylidine or aralkylidine, R^8 and R^9 have the same significance as R^3 and R^4 and in addition can be morpholino alkyl, piperazino alkyl, homopiperazino alkyl, hydroxy alkyl or an alkylene diamine radical of 1–6 carbon atoms, the second nitrogen of which can be substituted by alkyl or phenyl. The novel compounds are useful as herbicides and especially as analgesic and/or antiinflammatory agents.

3,530,122
6 - PHOSPHONOMETHYL - 2 - [2 - (5 - NITRO-2-FURYL)VINYL]PYRIDINES AND THEIR ALKALI METAL SALTS, AND PRODUCTION THEREOF

Shinsaku Minami, Yamatokouriyama-shi, Tadatsugu Yamamoto, Nara-shi, Masanao Shimizu, Kobe-shi, and Yoshiyuki Takase, Itami-shi, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., a corporation of Japan
No Drawing. Filed Oct. 17, 1968, Ser. No. 768,529
Claims priority, application Japan, Oct. 21, 1967, 42/67,997
Int. Cl. C07d *31/28*
U.S. Cl. 260—240 **5 Claims**

6 - phosphonomethyl-2-[2-(5-nitro-2-furyl)vinyl]pyridine and its N-oxide of the formula:



wherein X is N or N→O, and their alkali metal salts, which have high antimicrobial activity and are soluble in water with facility. The water solubilities of 6-phosphonomethyl-2-[2-(5-nitro-2-furyl)vinyl]pyridine monosodium salt and of 6-phosphonomethyl-2-[2-(5-nitro-2-furyl)vinyl]pyridine N-oxide monosodium salt are about 1000 times those of the corresponding 6-hydroxymethyl compounds.

3,530,123
3-THIOLATED-7-SYDNONE-ACYLAMINO-CEPHALOSPORANIC ACID DERIVATIVES

Tadayoshi Takano, Hirakata, Hirokichi Harada, Nishinomiya, Masaru Kurita, Takatsuki, Masashi Hashimoto, Osaka, and Hiroo Nikaido, Ikeda, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a company of Japan
No Drawing. Filed Oct. 31, 1967, Ser. No. 679,529
Claims priority, application Japan, Nov. 2, 1966, 41/72,514
Int. Cl. C07d *99/24*
U.S. Cl. 260—243 **11 Claims**

The compounds of this invention are 3-thiolated 7-sydnonecephalosporin compounds. These compounds exhibit significant activity against a wide variety of microorganisms including both gram-negative and gram-positive bacteria.

3,530,124
4-(5-NITRO-2-THIAZOLYL)-THIOMORPHOLINE-OXIDES

Atso Ilvespaa, Neu-Allschwil, Switzerland, assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

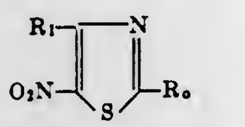
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,296

Claims priority, application Switzerland, Mar. 17, 1967, 3,899/67; July 25, 1967, 10,530/67; Sept. 20, 1967, 13,204/67; Jan. 18, 1968, 756/68

Int. Cl. C07d *93/10*

U.S. Cl. 260—243 **13 Claims**

Compounds of the formula



in which

R_0=optionally substituted thiomorpholine-1-oxide or 1,1-dioxide group

R_1=substituent, e.g. hydrocarbon radical of aliphatic character

e.g. 4-[nitrothiazolyl-(2)]-thiomorpholine-1,1-dioxide.

Use: Antiparasitary agents

3,530,125
THIAZINOBENZOTHIAZINE CARBAMATES

Betty H. Tarnowski, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 3, 1968, Ser. No. 733,761

Int. Cl. C07d *93/12*

U.S. Cl. 260—243 **4 Claims**

Disclosed are 2,3,5,6 - tetrahydro - (1,4)-thiazino(4,3,2-de)(1,4) - benzothiazin-9-yl carbamate 1,1,7,7-tetraoxides in which the carbamate nitrogen is substituted with lower alkyl or phenyl, and the 8-methyl and 8-methoxy derivatives thereof. These compounds are useful as pesticides. Intermediates for the production of these useful compounds, 2,3,5,6-tetrahydro - (1,4)-thiazino-(4,3,2-de)(1,4)-benzothiazin-9-ol 1,1,7,7 - tetraoxide and the 8-methyl and 8-methoxy derivatives thereof are also disclosed.

3,530,126
N-HETEROCYCLIC SUBSTITUTED CYCLOHEXANES

Raymond Bernasconi, Oberwil, Basel-Land, and Karl Schenker, Binningen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

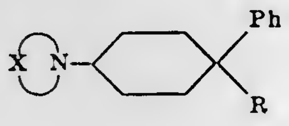
No Drawing. Filed Sept. 7, 1966, Ser. No. 577,621

Claims priority, application Switzerland, Sept. 29, 1965, 13,439/65; Aug. 19, 1966, 12,030/66

Int. Cl. C07d *29/32, 41/02*

U.S. Cl. 260—247 **17 Claims**

Compounds of the formula



in which X represents an alkylene radial which may be interrupted by an oxygen atom, pH stands for a phenyl radical and R for a cyano group or a carbalkoxy radical, and their salts, useful as anti-tussives or analgesics.

3,530,127
TRIAZINE DERIVATIVES

Hans Rudolf Biland, Gelterkinden, Karl Eschle, Basel, Christian Luethi, Muenchenstein, and Max Duennenberger, Frenkendorf, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

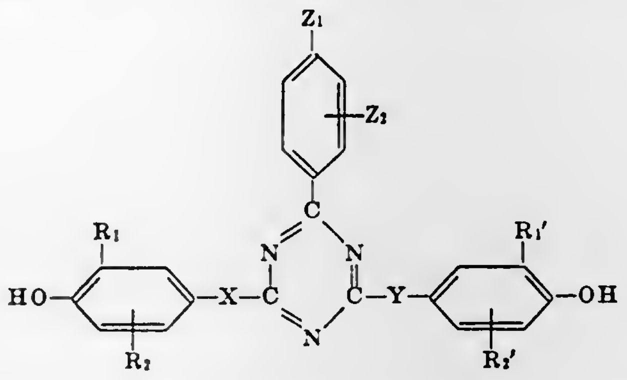
No Drawing. Filed July 30, 1968, Ser. No. 748,608

Claims priority, application Switzerland, Aug. 4, 1967, 11,012/67

Int. Cl. C07d *55/12, 55/18, 55/20*

U.S. Cl. 260—248 **9 Claims**

The invention concerns new triazine derivatives having outstanding antioxidative properties and having the formula



wherein Z_1 stands for H, alkyl, alkoxy, phenyl or halogen, Z_2 for H or alkyl, R_1 and R_1' denote a branched-chain alkyl of at least 3 carbon atoms, R_2 and R_2' stand for H, halogen or alkyl and X and Y denote —O— or —NH—.

3,530,128
PROCESS FOR THE PREPARATION OF TETRAHYDRO-5-HYDROXY-2(1H)-PYRIMIDONE

Leonard Levine, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 7, 1968, Ser. No. 765,658

Int. Cl. C07d *51/28*

U.S. Cl. 260—251 **8 Claims**

Tetrahydro - 5 - hydroxy - 2(1H) - pyrimidone is prepared by reacting a cyclic alkylene carbonate with 1,3-diamino-2-propanol.

3,530,129
8H-ISOQUINO[1,2-b]QUINAZOLIN-8-ONES

William J. Houlihan and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz Inc., Hanover, N.J.

No Drawing. Original application Mar. 15, 1967, Ser. No. 623,238, now Patent No. 3,497,499, dated Feb. 24, 1970. Divided and this application Nov. 17, 1969, Ser. No. 877,425

Int. Cl. C07d *51/48*

U.S. Cl. 260—251 **9 Claims**

Compounds from the group consisting of 5,6-dihydro-5,6,13,13a - tetrahydro-, and 5,6,8a,9,10,11,12,12a,13,13a-decahydro - 8H - isoquino[1,2-b]-quinazolin-8-ones. The compounds are useful as central nervous system depressants, antiinflammatories and antipyretic agents.

3,530,130
1-ACYLATED-6-METHOXYPHENAZINE 5,10-DIOXIDES

Willy Leimgruber, Montclair, and Manfred Weigele, Cedar Grove, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 14, 1967, Ser. No. 667,653

Int. Cl. C07d *51/80*

U.S. Cl. 260—287 **2 Claims**

Anti - bacterial 1 - acetoxy - 6 - methoxyphenazine 5,10 - dioxide and 1 - benzoyloxy - 6 - methoxyphenazine 5,10 - dioxide are prepared by reacting 1 - hydroxy-6-methoxyphenazine 5,10 - dioxide with acetic anhydride and benzoyl chloride respectively.

3,530,131
BENZYL ETHERS

George de Stevens, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware

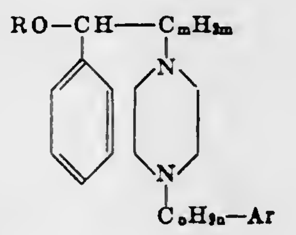
No Drawing. Filed Oct. 5, 1966, Ser. No. 584,345

The portion of the term of the patent subsequent to Feb. 2, 1982, has been disclaimed

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **4 Claims**

α-(4-aralkylpiperazinoalkyl)-benzyl ethers, e.g. those of the formula:



R=lower alkyl

Ar=phenyl or pyridyl

m,*n*=1–3

quaternaries and salts thereof are adrenolytic agents.

3,530,132
WATER-INSOLUBLE ANTHRAQUINONE DYESTUFFS

Jean-Frédéric Guye-Vuilleme, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

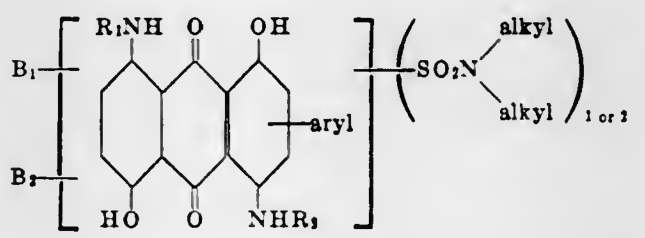
No Drawing. Filed Feb. 3, 1967, Ser. No. 613,766

Claims priority, application Switzerland, Feb. 10, 1966, 1,867/66; Dec. 28, 1966, 18,777/66

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **9 Claims**

Water-insoluble anthraquinone dyestuffs of the formula



wherein R_1 and R_2 each represents hydrogen or alkyl and B_1 and B_2 each represents alkyl, hydrogen or halogen.

3,530,133
DIETHYLENE DIAMINO BIS(CARBOXY-3,5-DINITRO-2-SODIUM PHENOLATE)

Lionel A. Henderson, Columbus, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Original application Sept. 28, 1962, Ser. No. 227,048, now Patent No. 3,420,874, dated Jan. 7, 1969. Divided and this application Aug. 15, 1967, Ser. No. 681,941

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **1 Claim**

Diethylene diamino bis(carboxy-3,5-dinitro-2-sodium phenolate) for use as a combustion catalyst in propellant compositions.

3,530,134
DIBENZONAPHTHACRIDINES

Arnold Wick, Therwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

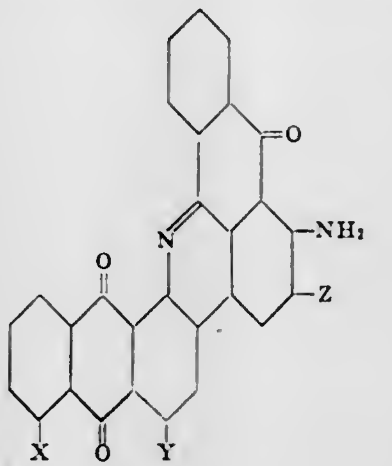
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,533

Claims priority, application Switzerland, Jan. 12, 1966, 358/66

Int. Cl. C07d *39/00*

U.S. Cl. 260—274 **4 Claims**

This invention relates to dibenzonaphthacridines of the formula



wherein X and Y are each hydrogen and Z is hydrogen or a sulfuric acid moiety. These compounds are useful as dyestuff intermediates.

3,530,135
ACYLATED DIBENZO NAPHTHACRIDINE-5,11,16-TRIONES

Arnold Wick, Therwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

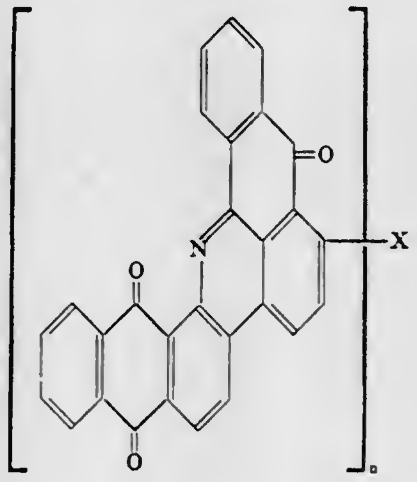
No Drawing. Filed June 13, 1967, Ser. No. 645,597

Claims priority, application Switzerland, June 14, 1966, 8,568/66

Int. Cl. C07d *37/00*

U.S. Cl. 260—274 **7 Claims**

This invention relates to dyestuffs of the formula



wherein X is a mono- or diamido group bound at the nitrogen and *n* is 1 or 2.

3,530,136
QUINACRIDONE SYNTHESIS FROM DIANILINO-TEREPHTHALIC ACID WITH SILICON TETRACHLORIDE

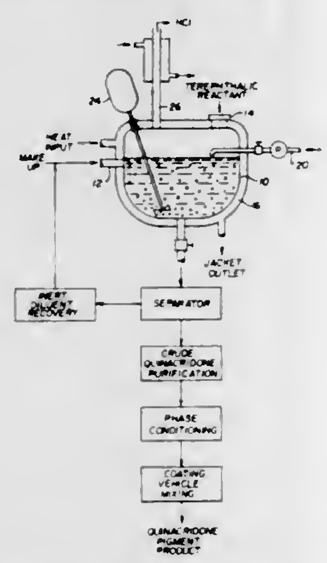
Kei C. Hsia and George J. Meisters, Chicago, Ill., assignors to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 11, 1968, Ser. No. 697,230

Int. Cl. C07d *39/00*

U.S. Cl. 260—279 **5 Claims**

Quinacridones are synthesized by reacting diarylaminoterephthalic acid and derivatives with silicon tetrachloride in an inert diluent. By varying reaction temperature and mole ratio of silicon tetrachloride to terephthalic reactant,

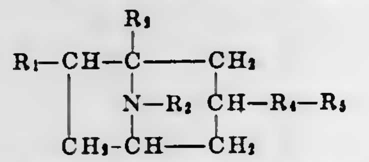


different crystal forms can be manufactured directly. The product is useful as a pigment.

3,530,137
CERTAIN ALKYL AND ARYL ETHERS AND THIOETHERS OF TROPINE AND DERIVATIVES THEREOF

Karoly Nador, Gabor Kraiss, Lajos Gyorgy, Jeno Molnar, Margit Doda, Eva Galambos, and Klara Pfeifer, Budapest, Hungary, assignors to Chinoin Gyogyszer es Vegyeszeti Termekek Gyara RT., Budapest, Hungary, a firm
No Drawing. Filed Sept. 19, 1967, Ser. No. 668,947
Claims priority, application Hungary, Sept. 20, 1966, CI–661
Int. Cl. C07d *43/06*
U.S. Cl. 260—292 **4 Claims**

New tropine-ethers having the general formula



and pharmaceutically acceptable addition salts thereof and lower alkyl quaternary salts thereof containing 1–4 carbon atoms, wherein such general formula

R_1 stands for hydrogen or a lower alkoxy group;
R_2 stands for hydrogen;
R_3 stands for a hydrocarbon radical containing not more than 4 carbon atoms;
R_4 stands for oxygen or sulphur;
R_5 stands for alkyl groups containing 1–4 carbon atoms and up to two phenyl groups.

3,530,138
3 - HYDROXY - PYRID - 2 - THIONES AND 3-HYDROXY-2-MERCAPTO - PYRIDINES AND THEIR ETHERS

Kjell Undheim, Asker, and Vegard Nordal and Knut Tjonneland, Oslo, Norway, assignors to Nyegaard & Co. A/S, Oslo, Norway, a Norwegian body corporate
No Drawing. Filed May 12, 1967, Ser. No. 637,889
Claims priority, application Great Britain, May 12, 1966, 21,078/66
Int. Cl. C07d *31/50*
U.S. Cl. 260—294.8 **7 Claims**

3-hydroxy-pyrid-2-thiones and the tautomeric 3-hydroxy-2-mercapto-pyridines and their N- and S-lower alkyl and substituted lower alkyl derivatives. These compounds and their physiologically compatible acid addition salts have antibacterial and antiviral activity. Methods of preparing these compounds are disclosed.

3,530,139
PROCESS FOR PRODUCING CERTAIN INTERMEDIATES FOR 1,4-BENZODIAZEPINES

Earl Reeder, Nutley, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Application Dec. 14, 1964, Ser. No. 417,855, now Patent No. 3,362,962, dated Jan. 9, 1968, which is a continuation-in-part of application Ser. No. 339,910, Jan. 24, 1964. Divided and this application Nov. 22, 1967, Ser. No. 684,973
Int. Cl. C07c *87/28;* **C07d** *31/50*
U.S. Cl. 260—294.8 **6 Claims**

1,4-benzothiazepines (A) bearing aromatic or alkyl substituents in the 5-position are prepared by first reacting a diazonium compound with a copper thiocyanate. The diazonium compound is hydrolyzed to the corresponding 2-mercapto compound which in turn is reacted with an amino-lower alkyl halide to give the corresponding 2-aminoethylthiophenyl ketone. The latter is ring closed to (A) above. (A) is useful as muscle relaxants and anticonvulsants.

3,530,140
CERTAIN PYRIDYL-HYDRAZINO-2-YL-IMIDAZOLINES

Werner Kummer, Helmut Stähle, Herbert Köppe, and Karl Zeile, Ingelheim am Rhine, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhine, Germany, a corporation of Germany
No Drawing. Filed Jan. 19, 1968, Ser. No. 699,044
Claims priority, application Germany, Jan. 20, 1967, B 90,822
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **7 Claims**

The compounds are N′-heterocyclic-substituted hydrazino-imidazolines-(2) and non-toxic acid addition salts thereof, useful as blood pressure affecting agents in warm-blooded animals.

3,530,141
PROCESS FOR PREPARING 1,1′-DIALKYL-4,4′-BIPYRIDYLIUM COMPOUNDS

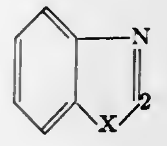
John Edward Downes and Janet Elisabeth Jameson, Bracknell, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
No Drawing. Filed Oct. 16, 1967, Ser. No. 675,336
Claims priority, application Great Britain, Nov. 7, 1966, 49,800/66, 49,801/66
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **3 Claims**

A process for preparing a 1,1′-dialkyl-4,4′-bipyridylium diquaternary salt, which comprises heating 4,4′-bipyridyl for at least three minutes with an aliphatic carboxylic acid containing 2 to 5 carbon atoms substituted in the alpha position with a radical capable of conversion into a stable negative ion and recovering a 1,1′-dialkyl-4,4′-bipyridylium diquaternary salt.

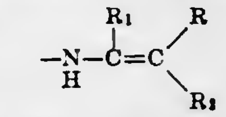
3,530,142
N - (2 - BENZOXAZOLYL OR -BENZOTHIAZOLYL)-AMINOMETHYLENE-CARBOXYLIC ACID ESTERS

Mohan Damodaran Nair and Thomas George, Goregaon, Bombay, India, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Nov. 21, 1967, Ser. No. 684,635
Claims priority, application Switzerland, Nov. 29, 1966, 17,082/66; Oct. 19, 1967, 14,630/67
Int. Cl. C07d *91/46, 85/48*
U.S. Cl. 260—305 **10 Claims**

Benzheterocyclic compounds having the nucleus of the formula



X=oxygen or sulfur, these compounds being substituted in 2-position by a group of the formula


$$-\underset{H}{N}-\overset{R_1}{C}=C\begin{matrix}R\\ R_2\end{matrix}$$

R=reactive functionally converted carboxyl group, R_1= hydrogen or an organic radical, and R_2=functionally converted carboxyl or acyl group, tautomers, oxides or salts thereof have antiviral properties.

3,530,143
MERCAPTOBENZOTHIAZOLE PROCESS WITH DIARYLAMINODITHIOPHOSPHORIC ACID CATALYST

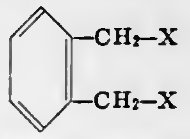
Hanno Maria Merlin, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing Filed Oct. 10, 1967, Ser. No. 674,093
Int. Cl. C07d *91/48*
U.S. Cl. 260—306 **4 Claims**

This invention relates to a novel process for making 2-mercaptobenzothiazole. More particularly, this invention relates to a novel catalytic process for making 2-mercaptobenzothiazole by the reaction of aniline, carbon disulfide and sulfur in the presence of an effective amount of a catalyst comprising a diarylaminodithiophosphoric acid.

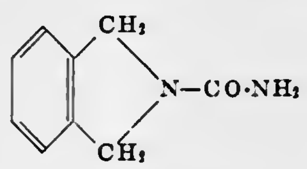
3,530,144
PRODUCTION OF ISOINDOLINE-2-CARBOXYLIC ACID AMIDE

Christoph Dauth, Heinz Tönjes, and Karlheinz Heldenbluth, Radebeul, and Joachim Schmidt, Magdeburg, Germany, assignors to VEB Arzneimittelwerk Dresden, Dresden-Radebeul, Germany
No Drawing. Continuation-in-part of application Ser. No. 553,321, May 27, 1966. This application Apr. 10, 1969, Ser. No. 815,203
Int. Cl. C07d *27/48*
U.S. Cl. 260—326.1 **2 Claims**

An o-xylylene halide of the formula



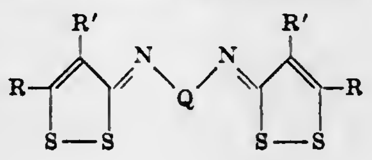
wherein X is chlorine, bromine or iodine, is reacted in acetonitrile and the reaction product is saponified to form or the reaction is conducted in an aqueous medium directly to form



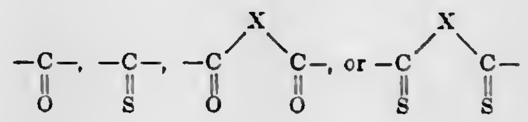
3,530,145
BIS-DITHIOLYLIDENE COMPOUNDS AND PREPARATION

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Dec. 14, 1967, Ser. No. 690,390
Int. Cl. C07d *71/00*
U.S. Cl. 260—327 **8 Claims**

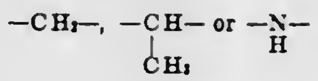
3 - chloro - 1,2 - dithiolium salts condense with lower aliphatic bis-primary amides such as urea, biuret, malonamide or methylmalonamide, optionally with sulfurization, to form bis-dithiolylidene compounds of the formula



where R and R′ typically are hydrogen, phenyl, or together with dithiole ring form a benzo or naphtho ring; and Q is the divalent radical



where X is


$$-CH_2-,\ \underset{\underset{CH_3}{|}}{-CH-}\ \text{or}\ \underset{H}{-N-}$$

The compounds are disperse dyes.

3,530,146
SUBSTITUTED BENZOTHIOPHENDIONE COMPOUNDS

Howard Newman, Monsey, and Robert Bruce Angier, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed July 1, 1968, Ser. No. 741,256
Int. Cl. C07d *63/22;* **C12b** *1/00;* **A61k** *27/00*
U.S. Cl. 260—330.5 **4 Claims**

The preparation of substituted unsaturated thiogriseofulvin compounds using 3,5-dimethoxyaniline as starting material, is described. The present compounds are useful as intermediates for the preparation of substituted thiogriseofulvins which are prepared by fermentation of the present compounds in the presence of *Streptomyces cinereocrocatus.* The latter compounds are highly active fungicides.

3,530,147
COMBINED INHIBITORS IN SULFOLANE PRODUCTION

Jan P. Campen and Willem Brackman, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 17, 1968, Ser. No. 729,907
Claims priority, application Netherlands, Dec. 19, 1967, 6717353
Int. Cl. C07d *63/04*
U.S. Cl. 260—332.1 **4 Claims**

The process of producing sulfolane compounds which comprises the reaction of a conjugated diene and sulfur dioxide to produce a sulfolene compound and the subsequent hydrogenation of the sulfolene compound to sulfolane compounds is improved by conducting the reaction of the conjugated diene and sulfur dioxide in the presence of an inhibitor mixture of a sterically hindered phenol and phenyl-β-naphthyl amine.

3,530,148
PROCESS FOR PRODUCING TETRAOXANE

Yasuhiko Miyake, Fujisawa, Tadafumi Yamauchi, Yokohama, and Katsumi Minomiya, Odawara, Japan, assignors to Mitsui Toatsu Chemicals Inc., Tokyo, Japan
Filed Oct. 30, 1967, Ser. No. 679,087
Int. Cl. C07d *19/00*
U.S. Cl. 260—340 **11 Claims**

A process for producing tetraoxane by adding an acid catalyst and an inert organic extracting agent to a formaldehyde source such as an aqueous solution of formaldehyde and paraformaldehyde, extracting the produced tetraoxane into said inert organic extracting agent and then separating the tetraoxane from the inert organic extracting agent containing the dissolved tetraoxane.

3,530,149

METHOD OF PREPARING α-METHYL-γ-ISOBUTYL-BUTYROLACTONE

Alberto Fiecchi, Turin, Italy, assignor to Collins Chemical Co., Inc., New York, N.Y.

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,123

Int. Cl. C07d *5/06*

U.S. Cl. 260—343.6 **5 Claims**

A novel flavoring agent, α-methyl-γ-isobutyl-butyrolactone, is prepared from 2-morpholino-4-methyl-1-pentene. The latter is reacted with methyl- or ethyl-bromopropionate in the presence of a tertiary amine, the reaction product (ester) is saponified with alkali, the keto-group in the ester is reduced, and the lactone ring is formed by acidification with aqueous mineral acid.

3,530,150

PROCESS FOR THE MANUFACTURE OF 1 - AMINO - 2 - HYDROXYALKOXY - 4-HYDROXY-ANTHRAQUINONES

Hans Rudolf Rickenbacher, Basel, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Aug. 10, 1966, Ser. No. 571,432

Claims priority, application Switzerland, Aug. 13, 1965, 11,400/65

Int. Cl. C09b *1/54;* **C07c** *97/14*

U.S. Cl. 260—380 **7 Claims**

1 - amino-2 hydroxyalkoxy-4-hydroxy-anthra-quinones are prepared by heating 1 - amino - 2-chloro-4-hydroxy-anthraquinone with a glycol in the presence of an alkali metal hydroxide.

3,530,151

HALOGENATION PROCESS

Robert C. Hoare, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 1, 1964, Ser. No. 364,269

Int. Cl. C09b *1/28, 1/48*

U.S. Cl. 260—381 **6 Claims**

An improved method for halogenating water-insoluble organic compounds, such as diarylene-ortho-diketones is set forth whereby fluidity of the reaction mass and reaction yields are improved by conducting said halogenation in the presence of an inert liquid medium comprising an aliphatic alcohol and an organic diluent such as nitrobenzene.

3,530,152

NOVEL BIS TETRAPHENYLMETHANES

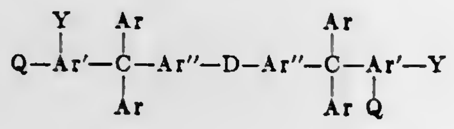
Emery G. Tokoli, Princeton, N.J., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed July 27, 1966, Ser. No. 568,111

Int. Cl. C09b *11/10*

U.S. Cl. 260—390 **9 Claims**

Compounds of the formula



$$Q-\overset{\displaystyle Y}{\overset{|}{Ar'}}-\underset{\underset{\displaystyle Ar}{|}}{\overset{\overset{\displaystyle Ar}{|}}{C}}-Ar''-D-Ar''-\underset{\underset{\displaystyle Ar}{|}}{\overset{\overset{\displaystyle Ar}{|}}{C}}-\underset{\underset{\displaystyle Q}{|}}{Ar'}-Y$$

wherein each Ar is phenyl or halophenyl, each Ar′ is phenyl having no substitutents other than Y and Q, each Ar″ is unsubstituted phenylene, D is —O—, —S—, —NH— or —CH_2—, each Y is NH_2, OH, SH or H, and each Q is NH_2, OH or SH. These compounds can be used as intermediates in the preparation of polymers. They can also be reacted through the Q groups with compounds such as long chain isocyanates to form surfactants.

3,530,153

PROCESS FOR PREPARING N-MONOSUBSTITUTED SECONDARY-ALKYL AMIDES FROM OLEFINS

Ralph H. Potts, La Grange, and Eugene J. Miller, Jr., Wheaton, Ill., and Ago Mais, Trenton, N.J., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 397,287, Sept. 17, 1964, and Ser. No. 644,060, June 7, 1967. This application Aug. 25, 1967, Ser. No. 663,226

The portion of the term of the patent subsequent to Aug. 29, 1984, has been disclaimed

Int. Cl. C07c *103/08, 103/34*

U.S. Cl. 260—404 **23 Claims**

Process for preparing aliphatic organic nitrogen compounds by the reaction of an aliphatic olefinic compound with nitrile and water in the presence of hydrogen fluoride to form secondary-alkyl amides.

3,530,154

PROCESS FOR THE CONTINUOUS PREPARATION OF ADDITION PRODUCTS OF ETHYLENE OXIDE TO CARBOXYLIC ACIDS

Werner Stein, Erkrath-Unterbach, and Wilfried Umbach, Langenfeld, Rhineland, Germany, assignors to Henkel & Cie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed July 14, 1967, Ser. No. 653,320

Claims priority, application Germany, Aug. 9, 1966, H 60,194

Int. Cl. C11c *3/00*

U.S. Cl. 260—410.6 **10 Claims**

This invention relates to an improved process for the continuous production of addition products of ethylene oxide with organic carboxylic acids which comprises in combination (a) continuously passing a mixture of an organic compound selected from the group consisting of organic carboxylic acids free from reactive hydrogen atoms other than the carboxyl hydrogen atom and addition products of ethylene oxide thereof, with ethylene oxide in a molar ratio of 1:1 to 1:6 in the presence of from 0.01% to 1% by weight of alkali metal based on said organic compound, of an alkali metal ethoxylation catalyst, through a jacketed reactor having a small cross-section compared to its length, under a pressure at which the reaction mixture is liquid, (b) heating said mixture while passing through said jacketed reactor to attain a maximum temperature of between about 230° C. and 390° C., (c) maintaining said mixture in said jacketed reactor for about 10 to 150 seconds, whereby an addition product is formed, (d) immediately cooling said addition product to a temperature below 180° C. after said addition product leaves said jacketed reactor, and (e) recovering said addition product. More particularly, the invention relates to a process for the preparation of products with a high content of ethyleneglycol carboxylic acid monoesters in high volume-time-yields.

3,530,155

HYDROCARBOXYLATION OF OLEFINS

Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Feb. 6, 1968, Ser. No. 703,850

Int. Cl. C11c *1/06*

U.S. Cl. 260—413 **15 Claims**

The invention comprises hydrocarboxylation of olefins by contacting the olefin under liquid phase conditions with a catalyst comprising a platinum or palladium complex with an aromatic phosphine, water and carbon monoxide. High reactivity and high yields of the normal acid are obtained by incorporating in the reaction medium an anionic or nonionic surface active agent.

3,530,156

METHOD FOR THE PRODUCTION OF α-SUBSTITUTED ACIDS

Ljudmila Sergeevna Bondar, Jugo-Zapad, kvartal 42-a, korp. 15, kv. 20, and Rostan Alexandrovich Okunev, Nova-Basmannaya ul. 4/6, kv. 162, both of Moscow, U.S.S.R.

No Drawing. Filed Oct. 3, 1968, Ser. No. 764,912

Int. Cl. C11c *1/06*

U.S. Cl. 260—413 **8 Claims**

A method for the production of α-substituted acids which comprises reacting an alkyl or cycloalkyl malonic ester with α,β-unsaturated aliphatic alcohols, such as terpene alcohols, at a temperature above the boiling point of the alcohol and saponifying the resultant ester. The products are useful as detergents, wetting agents, flotation agents and foaming agents.

3,530,157

ORGANOTIN MERCAPTOACID ESTERS

Samuel Hoch, Brooklyn, N.Y., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 5, 1967, Ser. No. 672,954

Int. Cl. C07f *7/22*

U.S. Cl. 260—429.7 **4 Claims**

Stable organotin mercaptoacid esters are prepared by condensing an organotin halide or oxide with an ester of a mercaptoacid in a reaction mixture that contains at least 60 percent of an inert organic solvent such as benzene, toluene, mineral spirits, methanol, and the like. Organotin compounds prepared in this way remain stable for many months, whereas those prepared in less dilute reaction mixtures undergo decomposition on storage for as little as one day. These organotin compounds find utility as stabilizers for vinyl halide resin compositions.

3,530,158

ORGANO ANTIMONY MERCAPTIDES AND THE PREPARATION THEREOF

John R. Leebrick, Old Lyme, Conn., and Nathaniel L. Remes, Livingston, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Application Apr. 24, 1964, Ser. No. 362,483, which is a continuation-in-part of application Ser. No. 241,023, Nov. 29, 1962. Divided and this application Nov. 25, 1966, Ser. No. 612,063

Int. Cl. C07f *9/90*

U.S. Cl. 260—446 **26 Claims**

Novel compositions are provided having fungicidal and bacteriocidal properties and having the general formula R_nSbX_{3-n} wherein R is selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, cycloalkyl, and cycloalkenyl, X is selected from the group consisting of halide, carboxylate, alkoxide, oxide, hydroxide, sulfide, mercaptide, and *n* is an integer less than 4.

3,530,159

ORGANOSILICON POLYMERS CONTAINING OXYALKYLENE RESIDUES

Paul Alfred Eugene Guinet and Jean Marius Ernest Morel, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Filed July 15, 1965, Ser. No. 472,358

Claims priority, application France, July 22, 1964, 982,648

Int. Cl. C07f *7/08*

U.S. Cl. 260—448.2 **3 Claims**

The invention provides polysiloxanes containing two oxyalkylene residues attached to each terminal silicon atom, which are useful as surface active agents in the production of polyurethane foams.

3,530,160

(ORGANO- OR HYDROLYZABLE GROUP SUBSTITUTED)$_3$SILYL (UNSUBSTITUTED CHLORO- OR SULFENYL CHLORIDE SUBSTITUTED HYDROCARBYLENE) SULFENYL CHLORIDES

Irwin J. Gardner, Fanwood, George E. Serniuk, Roselle, Francis P. Baldwin, Summit, and Thomas A. Manuel, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Feb. 9, 1968, Ser. No. 704,226

Int. Cl. C07f *7/02*

U.S. Cl. 260—448.2 **3 Claims**

Reactive silyl group-containing sulfenyl halides are prepared by reacting hydrolyzable silanes containing unsaturated hydrocarbon radicals with sulfur dichloride; alternatively, the hydrolyzable silanes may be reacted with sulfur monochloride in the presence of a mild Lewis acid followed by halogenolysis. The reactive silyl group-containing sulfenyl halides may then be reacted with unsaturated polymers (e.g. copolymers of isobutylene and piperylene) to produce moisture-curable polymers.

3,530,161

AROMATIC ISOTHIOCYANATE PRODUCTION

Colin G. Hull, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 19, 1968, Ser. No. 753,734

Int. Cl. C07c *161/04*

U.S. Cl. 260—454 **8 Claims**

Aromatic isothiocyanates are produced by contacting aromatic nitro compounds with carbon monoxide and carbon disulfide in the presence of zero-valent iron or cobalt carbonyl complexes.

3,530,162

N,N-DICHLOROAMINES AND THEIR PREPARATION

Julius J. Fuchs, Forwood, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 661,491, July 11, 1967. This application July 19, 1968, Ser. No. 745,974

Int. Cl. C07c *121/42, 121/46, 121/66*

U.S. Cl. 260—464 **2 Claims**

N,N-dichloroamine compounds such as 1-(N,N-dichloroamino)cyclohexanecarbonitrile are prepared by either

(1) chlorinating the corresponding amine such as 1 aminocyclohexanecarbonitrile in the presence of water and a water immiscible inert organic solvent such as carbon tetrachloride while maintaining an approximately neutral pH, by adding a strongly basic acid acceptor such as sodium hydroxide; or (2) chlorinating the corresponding amine in the absence of water, the presence of an inert organic solvent such as carbon tetrachloride, and the presence of a weakly basic acid acceptor such as sodium bicarbonate. The N,N-dichloroamine compounds thus prepared are useful in preparing symmetrical azo compounds such as azo-bis(cyclohexanecarbonitrile).

3,530,163
1-CYANOBICYCLO[1.1.0]BUTANES

Henry K. Hall, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

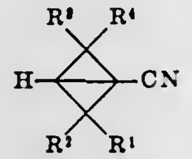
No Drawing. Continuation-in-part of application Ser. No. 534,673, Mar. 16, 1966. This application Nov. 26, 1968, Ser. No. 783,453

Int. Cl. C07c *121/46*

U.S. Cl. 260—464 **3 Claims**

(1) Monomers of the formula

(I)



wherein R^1, R^2, R^3 and R^4, which may be alike or different, are hydrogen or hydrocarbyl of 1 through 18 carbon atoms free of aliphatic carbon-to-carbon unsaturation; and

(2) A process for preparing the foregoing monomers, which are useful in the preparation of polymers which in turn find a variety of applications as tough, non-brittle, self-supporting films or fibers.

3,530,164
FLAME RETARDANT AGENTS FOR THERMOPLASTIC PRODUCTS

Helen Currier Gillham, Princeton, N.J., and Allan Ellis Sherr, Norwalk, and Harvey Gerald Klein, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

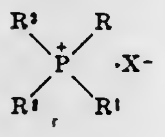
No Drawing. Continuation-in-part of application Ser. No. 296,364, July 19, 1963. This application Aug. 13, 1965, Ser. No. 479,599

Int. Cl. C09k *3/28*

U.S. Cl. 260—45.8 **12 Claims**

This invention relates to flame-retardant compositions comprising thermoplastic polymers containing a flame-retarding amount of a monophosphonium halide having the formula

(I)



wherein R, R^1, R^2 and R^3 are, individually, alkyl (C_1–C_8), alkenyl (C_2–C_8), cyano, hydroxy, imidazolyl, and carboxy substituted alkyl (C_1–C_8), aryl C_6–C_{10}), aralkyl (C_7–C_{11}), vinyl, halo, polyhalo, and nitro ar-substituted aralkyl (C_7–C_{11}), dialkylaminoalkyl (C_3–C_8), carboalkoxyalkyl (C_3–C_6), carboxyalkenyl (C_3–C_4) or carboalkoxyalkenyl (C_4–C_8) radicals, and X is a bromine, chlorine or iodine radical.

3,530,165
PHARMACEUTICALLY ACTIVE 4-PHENYLBICYCLO[2.2.2]-OCTANE AND OCT-2-ENE-1-CARBOXAMIDES AND DERIVATIVES THEREOF

Paul E. Aldrich, Wilmington, and Edward C. Hermann, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 8, 1967, Ser. No. 688,998

Int. Cl. C07c *69/14, 69/30*

U.S. Cl. 260—479 **3 Claims**

This disclosure teaches that a new class of compounds, the 4-phenylbicyclo[2.2.2]octane and oct-2-ene-1-carboxamides and derivatives thereof are pharmaceutically useful as antifertility agents.

Compounds within the scope of this invention can be formulated into parenteral, oral or rectal dosage forms and when administered by the appropriate route, surprisingly prevent pregnancy in animals.

3,530,166
1,3,4,10-DECANETETRACARBOXYLIC ACID AND ESTERS THEREOF

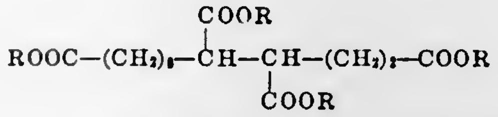
Neville Finch, Irvington, and William Irving Taylor, Summit, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 10, 1966, Ser. No. 526,379

Int. Cl. C07c *55/24, 69/34*

U.S. Cl. 260—485 **2 Claims**

A compound of the formula



$$ROOC-(CH_2)_6-\underset{}{\overset{COOR}{\overset{|}{C}}}H-\underset{\underset{COOR}{|}}{C}H-(CH_2)_2-COOR$$

in which R is selected from the group consisting of hydrogen, lower alkyl and aralkyl. The compounds are useful as intermediates in the preparation of pharmacologically active compounds.

3,530,167
ACETAL-CONTAINING MONOMERS

Rostyslaw Dowbenko, Gibsonia, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 14, 1966, Ser. No. 542,446

Int. Cl. C07c *69/54, 69/60*

U.S. Cl. 260—485 **4 Claims**

Novel acetal-containing compounds which are useful in thermosetting polymers and coating compositions are obtained by reacting a vinyloxy compound with a polymerizable ethylenically unsaturated hydroxyl-containing material.

3,530,168
PREPARATION OF ESTERS

Giovanni Biale, Fullerton, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Aug. 30, 1966, Ser. No. 575,980

Int. Cl. C07c *69/54, 69/56, 69/58*

U.S. Cl. 260—486 **9 Claims**

The invention comprises the oxidative carbonylation of a hydrocarbon olefin by contacting the olefin, carbon monoxide and oxygen with an alcoholic reaction medium containing a catalyst comprising a Group VIII noble metal in complex with a biphyllic ligand. The reaction forms esters of saturated and unsaturated carboxylic acids having one more carbon than the olefin and esters of dicarboxylic acids having two more carbons than the olefin. A specific illustration is the formation of methyl acrylate by introducing ethylene, carbon monoxide, and oxygen into a methanol solution comprising palladous

chloride, cupric chloride, and triphenylphosphine at a pressure of about 1000 p.s.i.g. and at a temperature of about 150° C.

3,530,169
PRODUCTION OF METHACRYLIC ESTERS

Rolf Platz, Mannheim, and Heinz Nohe, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed June 28, 1966, Ser. No. 561,011

Claims priority, application Germany, July 2, 1965, 1,286,022

Int. Cl. C07c *69/54*

U.S. Cl. 260—486 **3 Claims**

Process for producing methacrylic esters by the dehydrogenation of isobutyric esters with oxygen in which the dehydrogenation reaction takes place in the presence of iodine and an inert heat carrier having a mean pore radius of from 200 to 20,000 A. and an internal surface area of from 0.05 to 10 sq. m./g. The process provides high yields of methacrylic esters with high conversion rates.

3,530,170
SELECTED 2-ACYL-A-NOR-5α-ANDROSTANE DERIVATIVES

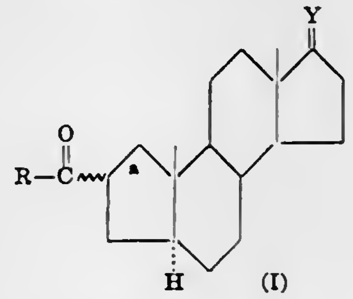
Richard M. Scribner, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 499,016, Oct. 20, 1965. This application Sept. 4, 1968, Ser. No. 757,502

Int. Cl. C07c *49/26, 49/76, 61/14*

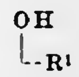
U.S. Cl. 260—488 **10 Claims**

Described and claimed are the A-nor-5α-androstane derivatives of the formulas



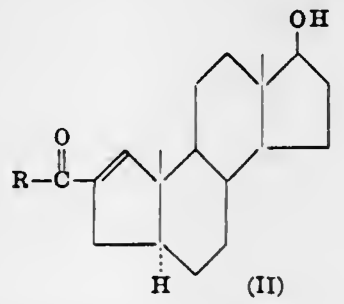
(I)

wherein Y is =0 or the group



$$\overset{OH}{\underset{|}{}}\!\!\text{--}R^1$$

R^1 being CH_3, CH_2CH_3, $CH{=}CH_2$ or $C{\equiv}CH$, R is fluorophenyl, aryl of up to 8 carbon atoms or an alkyl group of 1–6 carbon atoms and *a* is a single or a double bond; provided that when *a* is a single bond, R^1 cannot be CH_3 and



(II)

wherein R is likewise fluorophenyl, aryl of up to 8 carbon atoms or an alkyl group of 1–6 carbon atoms.

The compounds of this invention are useful as antifertility, anabolic and antigonadotrophic agents.

3,530,171
2α-ACYL-3-CARENES AND THEIR DERIVATIVES

David C. Heckert, Oxford, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 717,390, Mar. 29, 1968. This application July 30, 1968, Ser. No. 748,640

Int. Cl. C07c *69/14, 49/61, 35/22*

U.S. Cl. 260—489 **7 Claims**

2α-acyl-3-carenes, their alcohol and ester derivatives, as novel compounds useful as perfume components; and processes for their preparation are disclosed.

3,530,172
PRODUCTION OF ESTERS FROM ISOBUTYLENE

Duncan Clark and Donald Wright, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,451

Claims priority, application Great Britain, Aug. 24, 1962, 32,618/62

Int. Cl. C07c *67/04*

U.S. Cl. 260—497 **16 Claims**

A process for the production of methallyl esters of carboxylic acids which comprises the steps of contacting isobutene with a palladium salt and a carboxylate which is ionized under the reaction conditions in a carboxylic acid which is maintained at a temperature greater than 100° C. and at most 200° C.

3,530,173
CERTAIN ACIDS AND HYDRAZIDES

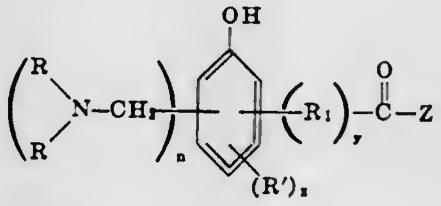
David Aelony, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 17, 1967, Ser. No. 609,770

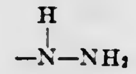
Int. Cl. C07c *103/26*

U.S. Cl. 260—519 **20 Claims**

Compounds of the formula



where Z is —OH or



$$-\overset{H}{\overset{|}{N}}-NH_2$$

and compositions comprising such compounds and epoxy resins. A representative acid is prepared by condensing dimethylamine, formaldehyde and salicylic acid. A representative hydrazide is prepared by reacting said acid with hydrazine. Such acids and hydrazides react rapidly with epoxy resins at elevated temperatures and yet are used to prepare mixtures or B-stage resins which are relatively stable at room temperature.

3,530,174
PURIFICATION OF ORGANIC ACIDS

Roy T. Gottesman, Glen Rock, and Henri Sidi, Paramus, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 5, 1966, Ser. No. 584,336

Int. Cl. C07c *65/02*

U.S. Cl. 260—521 **8 Claims**

Salicylic acid and other hydroxy aromatic monocarboxylic acids may be readily purified and decolorized by sequential treatment of an aqueous solution containing the acid with a chelating agent, such as tetrasodium ethylenediaminetetraacetate, and then with activated carbon under carefully controlled conditions.

3,530,175
PROCESS FOR PREPARING α,β-UNSATURATED CARBOXYLIC ACIDS

Masaya Yanagita, 162 Kamihoya, Hoya-cho, Kitatama-gun, Tokyo, Japan; Masao Kitahara, 938 Sakusabe-cho, Chiba-shi, Chiba-ken, Japan; Kaoru Tsuboyama, 335 Maruyamajutaku, 31 Maruyama-cho, Bunkyo-ku, Tokyo, Japan; and Takashi Mitsui, 1 Nakameguro, Meguro-ku, Tokyo, Japan
No Drawing. Filed Sept. 27, 1965, Ser. No. 490,623
Claims priority, application Japan, Sept. 30, 1964, 39/55,216
Int. Cl. C07c *51/26*
U.S. Cl. 260—530 **12 Claims**

A high yield process for preparing α,β-unsaturated carboxylic acids by the vapor phase oxidation of the correponding α,β-unsaturated aldehydes with molecular oxygen using a highly active catalyst composition consisting of oxygenated compounds of molybdenum, vanadium and aluminum compounded in ratios by weight of 100:1–500: 0.1–20 calculated as MoO_3, V_2O_5 and Al_2O_3, respectively.

3,530,176
CATALYTIC OXIDATION PROCESS

Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 483,802, Aug. 30, 1965. This application Feb. 16, 1966, Ser. No. 527,726
The portion of the term of the patent subsequent to July 9, 1985, has been disclaimed
Int. Cl. C07c *51/32*
U.S. Cl. 260—533 **6 Claims**

Unsaturated aldehydes and carboxylic acids are prepared by oxidation of propylene or isobutylene at an elevated temperature in the presence of a catalyst containing manganese molybdate, tellurium oxide and manganese phosphate.

3,530,177
2,6-XYLENOL-3-SULFONYL CHLORIDE AND 2,6-XYLENOL-4-SULFONYL CHLORIDE

Walter L. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Original application Feb. 1, 1965, Ser. No. 429,652, now Patent No. 3,337,512, dated Aug. 22, 1967. Divided and this application Apr. 19, 1967, Ser. No. 631,849
Int. Cl. C07c *143/70*
U.S. Cl. 260—543 **3 Claims**

The compounds, 2,6 - xylenol-3-sulfonyl chloride, 2,6-xylenol-4-sulfonyl chloride and mixtures thereof, are new chemical compounds useful for making polymeric aromatic sulfonates by a self-condensation reaction.

3,530,178
[4 - (2 - ALKYLIDENEACYL)PHENOXY] ALKANOIC ACID ANHYDRIDES AND THEIR PREPARATION

Everett M. Schultz, Ambler, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed May 1, 1967, Ser. No. 634,870
Int. Cl. C07c *51/56, 63/60*
U.S. Cl. 260—546 **11 Claims**

[4 - (2 - alkylideneacyl)phenoxy]alkanoic acid anhydrides, a class of compounds possessing diuretic and saluretic properties for use in treating conditions associated with electrolyte and fluid retention and prepared by reacting the precursor or starting acids with a dehydrating agent in an anhydrous solvent and then separating out the anhydrides thus formed.

3,530,179
CONDENSATION PRODUCTS OF TETRACYCLINES CONTAINING SULFUR

Feriano Banci and Ezio Tubaro, Rome, Italy, assignors to Stabilimenti Chimico-Farmaceutici Dott. R. Ravasini & C.ia S.p.A., Rome, Italy, a corporation of Italy
No Drawing. Filed Dec. 30, 1966, Ser. No. 606,013
Claims priority, application Italy, Jan. 29, 1966, 1,877/66, 1,878/66; Nov. 26, 1966, 43140A/66
Int. Cl. C07c *103/19*
U.S. Cl. 260—559 **1 Claim**

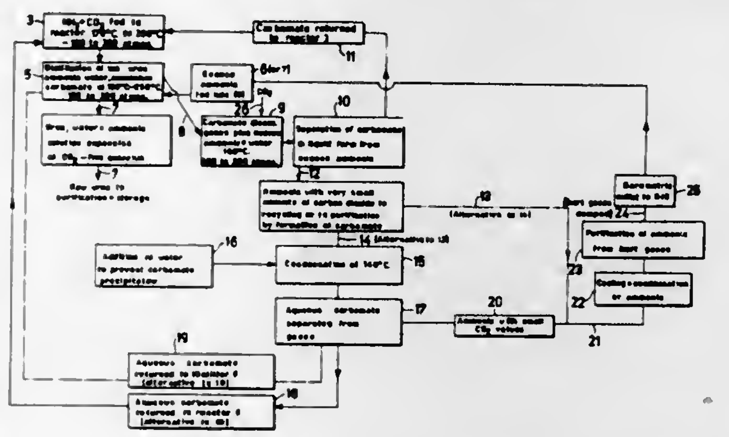
Condensation products of tetracyclines containing sulfur are prepared by reacting together a tetracycline, formaldehyde and an amine containing a sulfuric acid radical having the formula

$$R—NH—Z—SO_2X$$

wherein R is taken from the group consisting of hydrogen, alkyl and hydroxyalkyl radicals containing up to 4 carbon atoms, Z is taken from the group consisting of CH_2 and $CH_2—CH_2$, and X is taken from the group consisting of OH when Z is CH_2, H when Z is $CH_2—CH_2$ and SH when Z is $CH_2—CH_2$. The molar ratio of amine to tetracycline in the products is 1:2.

3,530,180
PROCESS FOR THE MANUFACTURE OF UREA FROM AMMONIA AND CARBON DIOXIDE

Guido Giommi, Via Boni 2, Milan, Italy
Filed Mar. 7, 1967, Ser. No. 621,316
Claims priority, application Italy, Sept. 15, 1966, 22,445/66
Int. Cl. C07c *127/00*
U.S. Cl. 260—555 **2 Claims**



A process for the manufacture of urea from ammonia and carbon dioxide is disclosed, the improvement consisting in condensing the split products withdrawn from the distillation zone so as to form liquid carbamate and separating said carbamate from excess ammonia, the carbamate being returned to the synthesis environment whereas ammonia is recirculated towards the distillation zone again: the subject process requires a lesser expenditure of raw materials and power and gives improved yields over the prior art methods.

3,530,181
HERBICIDAL BENZAMIDES

Samuel B. Soloway, Sittingbourne, Kent, England, and Jerome G. Kuderna, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 3, 1965, Ser. No. 430,195
Int. Cl. C07c *103/76*
U.S. Cl. 260—558 **7 Claims**

2-nitrobenzamides containing chlorine, bromine, trifluoromethyl or sulfonyls substituted on the phenyl ring, useful as herbicides.

3,530,182
FORMAMIDE PRODUCTION

Peter Haynes, Oakland, Calif., Josef F. Kohnle, Ludwigshafen-Gartenstadt, Germany, and Lynn H. Slaugh, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1967, Ser. No. 693,111
Int. Cl. C07c *103/34*
U.S. Cl. 260—561 **10 Claims**

Hydrocarbon formamides are prepared by intimately contacting carbon dioxide, hydrogen and primary or secondary amines in the presence of certain halogen-containing transition metal compounds.

3,530,183
DIBENZOCYCLOHEPTENES

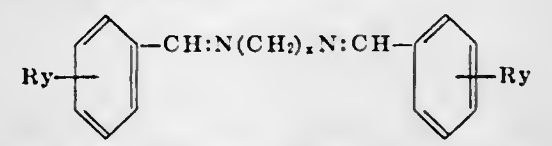
Emilio Kyburz, Rienach, and Hans Spiegelberg, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 30, 1965, Ser. No. 517,788
Claims priority, application Switzerland, Jan. 6, 1965, 110/65
Int. Cl. C07c *103/34*
U.S. Cl. 260—562 **3 Claims**

Dibenzo[a,d]cycloheptenes bearing a secondary or tertiary amino group at position-5, prepared, inter alia, from the corresponding 5-halo compounds, are described. The end products are useful as psychostimulants.

3,530,184
N,N'-(SUBSTITUTED BENZYLIDENE) ALKYLENE DIAMINES

Pasquale P. Minieri, Woodside, N.Y., and Joseph F. DeGaetano, Montvale, N.J., assignors to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 410,734, Nov. 12, 1964. This application Aug. 7, 1968, Ser. No. 750,768
Int. Cl. C07c *119/00*
U.S. Cl. 260—566 **3 Claims**

N,N'-(substituted benzylidene)-alkylene diamines having the structural formula



wherein each R represents chloro, nitro, amino, lower alkyl, or lower alkoxy groups or a mixture thereof; *x* represents an integer in the range of 1 to 6; and each *y* represents an integer in the range of 2 to 5, are effective preemergence and postemergence selective herbicides. Illustrative of these compounds are N,N'-bis-(2,3,6-trichlorobenzylidene)-ethylene diamine and N,N'-bis-(2,6-dichloro-3-nitrobenzylidene)-ethylene diamine.

3,530,185
OXIDATION PROCESS

Kalev Pugi, Kingston, Ontario, Canada, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 432,054, Jan. 25, 1965, which is a continuation-in-part of application Ser. No. 343,911, Feb. 3, 1964. This application Aug. 8, 1966, Ser. No. 570,834
Int. Cl. C07c *45/02*
U.S. Cl. 260—586 **8 Claims**

A process for manufacturing precursors of adipic acid by oxidation with an oxygen-containing inert gas which process is conducted in at least three successive oxidation stages by passing a stream of liquid cyclohexane maintained at a temperature in the range of 140 to 200° C. and a pressure in the range of 50 to 350 p.s.i.g. through each successive oxidation stage and by introducing a mixture of gases containing oxygen in each oxidation stage in an amount such that substantially all of the oxygen introduced into each stage is consumed in that stage thereafter causing the residual inert gases to pass countercurrent into the stream of liquid during the passage of the stream through the said stages.

3,530,186
PROCESS FOR THE PREPARATION OF CATECHOL AND 2,2'-DIHYDROXYDIPHENYLAMINE OR LOWER ALKYL ETHERS THEREOF

Nicholas P. Greco, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
No Drawing. Filed Nov. 14, 1966, Ser. No. 593,712
Int. Cl. C07c *91/42, 39/02*
U.S. Cl. 260—571 **4 Claims**

Catechol and 2,2'-dihydroxydiphenylamine or lower alkyl ethers thereof are formed in high yields and high purity in a one-step process by the phosphoric acid hydrolysis of ortho-aminophenol or lower alkyl ethers of ortho-aminophenol at temperatures of 180–250° C. and superatmospheric pressure.

3,530,187
PREPARATION OF N-(ALKADIENYL)AMINES

Thomas M. Shryne, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 26, 1967, Ser. No. 693,159
Int. Cl. C07c *43/14, 43/20, 85/00*
U.S. Cl. 260—583 **7 Claims**

Aromatic 2,7-alkadienyl ethers, aliphatic 2,7-alkadienyl ethers and N-(2,7-alkadienyl)amines are produced by a dimerization-addition reaction of phenols, alcohols, or organic amines, in which there is present at least one N-hydrogen substituent, with conjugated alkadienes, e.g., butadiene, in the presence of palladium or platinum complexed with tertiary phosphine ligands. The unsaturated ethers are useful for conversion to epoxides and the amines are useful for conversion to detergents and herbicides.

3,530,188
BROMOMETHYLBENZOPHENONES AND RELATED COMPOUNDS

Dong H. Kim, Strafford, Arthur A. Santilli, Havertown, Theodore S. Sulkowski, Narberth, and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 581,751, Sept. 26, 1966. This application Feb. 26, 1968, Ser. No. 707,971
Int. Cl. C07c *49/80;* **C07d** *63/12, 5/16*
U.S. Cl. 260—591 **8 Claims**

The disclosure is directed to bromomethylbenzophenones and related compounds. The compounds are useful as intermediates in the synthesis of hexahydro-2,5-benzodiazocines which are known to possess pharmacological activity.

3,530,189
PROCESS FOR THE PREPARATION OF 4'-NITRO-4-ACETYL- OR 4-CHLOROACETYL-DIPHENYL

Eduard Moergeli, Muttenz, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Dec. 28, 1965, Ser. No. 517,133
Claims priority, application Switzerland, Jan. 8, 1965, 258/65
Int. Cl. C07c *49/76, 49/80*
U.S. Cl. 260—592 **7 Claims**

A process for the preparation of 4'-nitro-4-acetyl- or 4-chloroacetyl-diphenyl which comprises acylating diphenyl with acetyl chloride or chloroacetyl chloride in the presence of aluminum chloride, nitrating the acylated product in the same reaction medium with concentrated nitric acid in the presence of aluminum chloride and hydrolyzing the mixture.

3,530,190

RECOVERY OF CATALYST IN OXO PROCESS

Kenneth L. Olivier, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,304
Int. Cl. C07c *45/12*
U.S. Cl. 260—604 **8 Claims**

The invention comprises a method for the selective removal of tars and high boiling byproducts formed during hydrocarbonylation of an olefin. In the hydrocarbonylation, the olefin is contacted with a liquid phase reaction medium containing a homogeneous catalyst comprising a complex of a Group VIII metal salt or hydride and a biphyllic ligand. During the hydrocarbonylation there occurs a slight conversion to high boiling byproducts which accumulate in the distillate bottoms returning to the hydrocarbonylation zone.

All or a portion of the distillation bottoms are, in accordance with the invention, contacted with an aqueous cyanide solution which is effective for the extraction of the catalyst metal values as cyano complexes from the distillate residue. The cyanide solution is preferably an aqueous solution of hydrogen, alkali metal or other water soluble cyanides. The extracted high boiling residue can then be economically discarded from the system and replaced with fresh reaction medium. The cyano complex of the metal catalyst is processed for the recovery of the metal.

3,530,191

PRODUCTION OF DIMETHYL SULFIDE FROM TRITHIANE AND METHANOL

Hans-Dieter Rupp, Erlenbach, Gerhard Meyer, Obernburg, and Helmut Mägerlein, Erlenbach, Germany, assignors to Glanzstoff AG, Wuppertal, Germany

No Drawing. Filed Feb. 28, 1968, Ser. No. 708,810
Claims priority, application Germany, Mar. 2, 1967, G 49,456
Int. Cl. C07c *149/10*
U.S. Cl. 260—609 **12 Claims**

Process for producing dimethyl sulfide by reacting trithiane with methanol at a temperature of about 200–400° C. in the presence of a strong acid catalyst or a Friedel-Crafts catalyst, preferably under anhydrous conditions and at an elevated pressure. The resulting dimethyl sulfide is readily oxidized to dimethyl sulfoxide which is a valuable solvent.

3,530,192

SYNTHESIS OF POLYCHLOROBENZAL CHLORIDE

Charles F. Kohll and Nanno Fekkes, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,308
Int. Cl. C07c *25/00, 25/14*
U.S. Cl. 260—651 **10 Claims**

Preparation of polychlorobenzal chloride having at least one ortho chlorine by chlorinating certain substituted toluenes in the presence of catalytic amounts of a heteroaromatic nitrogen base and an inorganic phosphorus compound at elevated temperatures.

3,530,193

CHLOROCYCLOHEXADIENONES AS METAL SCAVENGERS

William H. Starnes, Jr., Baytown, Tex., assignor to Esso Research and Engineering Company

Filed July 1, 1968, Ser. No. 741,745
Int. Cl. C07c *7/08, 7/18;* **B01j** *1/16*
U.S. Cl. 260—666.5 **9 Claims**

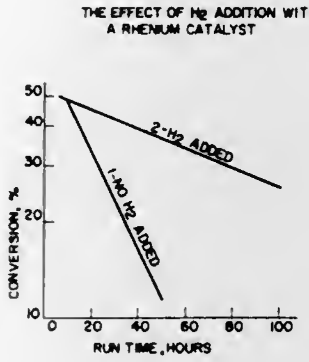
Certain chlorocyclohexadienones have been found to be effective metal scavengers and useful in an inhibitor system for preventing the metal catalyzed autoxidation of organic substrates.

3,530,194

PROCESS FOR THE CATALYTIC CONVERSION OF HYDROCARBONS WITH STEAM

Willem C. J. Quik and Pieter A. van Weeren, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Nov. 8, 1967, Ser. No. 681,547
Claims priority, application Netherlands, Nov. 17, 1966, 6616179
Int. Cl. B01j *11/74;* **C01b** *1/16;* **C07c** *3/58*
U.S. Cl. 260—672 **9 Claims**



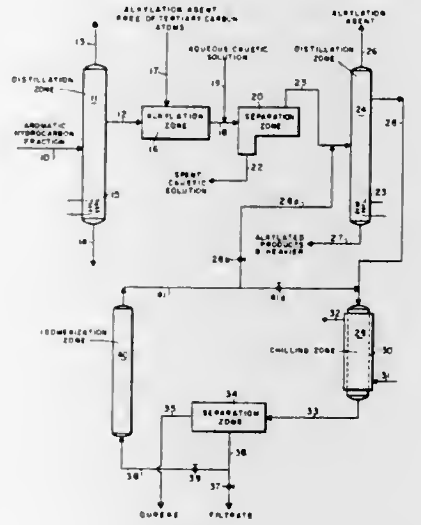
A process for the catalytic conversion of hydrocarbons in the presence of steam and a catalyst containing rhenium into hydrogen and lower molecular weight hydrocarbons in which catalyst performance is significantly improved by addition of hydrogen to the feed.

3,530,195

SEPARATION AND PURIFICATION OF DURENE

Emanuel M. Amir, Baytown, Tex., assignor to Esso Research and Engineering Company

Filed May 3, 1968, Ser. No. 726,342
Int. Cl. C07c *3/50, 7/14, 15/00*
U.S. Cl. 260—674 **14 Claims**



Durene is separated and purified by subjecting a fraction containing durene, isodurene, and other C_{10} aromatic hydrocarbons to alkylation under alkylation conditions with an alkylation agent free of tertiary carbon atoms whereby the durene and isodurene are not alkylated; the product may be treated with an alkaline reagent to remove acid catalyst and is then distilled to remove excess alkylation agent and alkylated products. The durene fraction is recovered and chilled to crystallize the durene which is then separated from the mother liquor. The latter, which is rich in isodurene, may be isomerized to produce more durene.

3,530,196

OLEFIN DISPROPORTIONATION PROCESS

David M. Singleton, Richmond, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 25, 1968, Ser. No. 747,484
Int. Cl. C07c *3/62*
U.S. Cl. 260—680 **8 Claims**

Olefins are disproportionated employing a catalyst composition produced by contacting a molybdenum or tungsten tetrahalide salt and an inorganic aluminum trihalide in selected molar proportions of about 3 to 30 moles of aluminum trihalide per mole of molybdenum or tungsten salt.

3,530,197

CODIMERIZATION OF α-OLEFINS AND CONJUGATED DIOLEFINS

James D. McClure, Oakland, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 28, 1968, Ser. No. 755,787
Int. Cl. C07c *3/10, 11/12*
U.S. Cl. 260—680 **5 Claims**

Alpha-olefins and conjugated diolefins are codimerized in the presence of catalytic amounts of π-(cyclopentenyl) cyclopentadienylnickel and an organoaluminum compound.

3,530,198

PROCESS FOR PREPARATION OF OLEFINS

Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Apr. 2, 1968, Ser. No. 718,264
Int. Cl. C07c *1/20*
U.S. Cl. 260—682 **19 Claims**

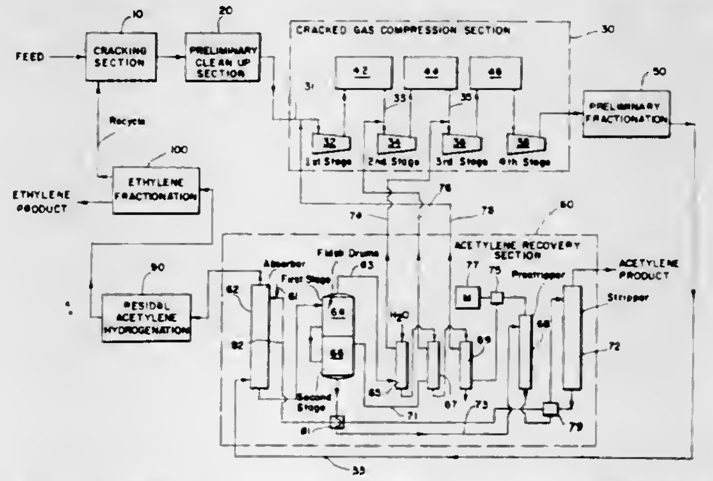
A process for preparation of olefins from carboxylic acids, esters, anhydrides or acid halides comprising contacting the acid, ester, anhydride or acid halide with a complex catalyst comprising a Group VIII noble metal and a biphyllic ligand from the group consisting of organic phosphines, arsines and stibines. The olefins find utility in a wide variety of applications, e.g., production of acids, esters, anhydrides, acid halides, aldehydes, ketones, amines, amides, oxides, hydrocarbon polymers, oxo alcohols, etc. These products in turn find extensive utility in diverse fields such as detergents, solvents, plastics, etc.

3,530,199

ETHYLENE PRODUCTION PROCESS

Edgar G. Lowrance, Dedham, Mass., assignor to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts

Filed June 22, 1967, Ser. No. 648,035
Int. Cl. C07c *11/02, 11/24*
U.S. Cl. 260—683 **10 Claims**



An ethylene production process is provided which allows the recovery of a pure acetylene byproduct. Hydrocarbons are cracked, compressed in a multistage compression section, fractionated, treated in a solvent absorber for removal of acetylene and then subjected to final fractionation for separation of the ethylene product. The acetylene removed in the absorber is purified by a series of flash evaporation steps, a prestripping step and a final stripping step, to provide a pure acetylene byproduct. The ethylene impurities separated from the acetylene in the flash evaporation steps are recycled to the compression stages of the ethylene production process.

3,530,200

ETHYLENE OLIGOMERIZATION

Peter W. Glockner, Alameda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 738,802, June 21, 1968. This application Jan. 13, 1969, Ser. No. 790,839
Int. Cl. C07c *3/18*
U.S. Cl. 260—683.15 **11 Claims**

An improved ethylene oligomerization process employs a catalyst composition produced by contacting (1) a sulfided cobalt or nickel compound on an alumina refractory metal oxide support and (2) an alkyl aluminum compound.

3,530,201

DYEABLE POLYOLEFINS CONTAINING THERMOPLASTIC NITROGEN CONTAINING POLYMERS AND POLYETHYLENE OXIDE

Andor Schwarcz, Pompton Lakes, N.J., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 599,362, Dec. 6, 1966. This application Nov. 1, 1967, Ser. No. 679,618
Int. Cl. C08g *41/04;* **C08f** *41/12, 29/12*
U.S. Cl. 260—857 **17 Claims**

The invention relates to a composition of matter which can be spun into fibers, which are dyeable with anionic dyes, said composition comprising at least 80 to 99% by weight of a fiber forming, alpha-monoolefinic polymer, between about 0.5 and 5% by weight of a polymeric thermoplastic basic nitrogen-containing dye receptor and between about 0.5 and 5% by weight of polymers containing ethylene oxide.

3,530,202

HIGH TEMPERATURE UNSATURATED POLYESTER

Frank Fekete, Monroeville, and John S. McNally, Arnold, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed June 5, 1967, Ser. No. 643,466
Int. Cl. C08f *21/02*
U.S. Cl. 260—861 **2 Claims**

An unsaturated polyester, having excellent electrical and high temperature properties when copolymerized with a monomer such as styrene or vinyl toluene is formed by reacting 1,4-cyclohexane dimethanol with maleic anhydride and an unsaturated, hydrogenated aromatic dicarboxylic acid such as tetrahydrophthalic anhydride. The copolymerized polyester resin is useful in electrical applications as a replacement for wood, ceramics, and rubber materials or the like.

3,530,203

HEPTATRIENE CONTAINING POLYESTER RESIN COMPOSITION HAVING LONG B-STAGE AGE LIFE

Melvin E. Baum, Monroeville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Aug. 3, 1967, Ser. No. 658,074
Int. Cl. C08f *11/02*
U.S. Cl. 260—861 **4 Claims**

An unsaturated polyester resin system having rapid gel time at lower temperatures is formed from a phthalic-maleic-glycol unsaturated polyester and monomeric 3-methyl-1,4,6-heptatriene. The resin in the gel or B-stage has long storage life, yet is quickly cured when subjected to temperatures above about 70° C. The system may be used with or without the use of conventional ethylenically unsaturated copolymerizable monomers such as styrene.

3,530,204
PHOSPHORUS REACTION PRODUCTS

Robert C. Harrington, Jr., and James H. Bond, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 323,081, Nov. 12, 1963. This application Nov. 9, 1967, Ser. No. 681,918
Int. Cl. C07f *9/02;* **C09k** *3/28*
U.S. Cl. 260—926 8 Claims

A reaction product comprising a phosphorus compound derived by reacting a compound having the formula $P_nN_{n-1}Cl_{2n+3}$ wherein *n* is an integer greater than 1 and a pentahalogenated phenol. The reaction product is particularly useful in imparting fire resistance properties to plastics when compounded therewith.

3,530,205
PHOSPHORUS-CONTAINING POLYOLS

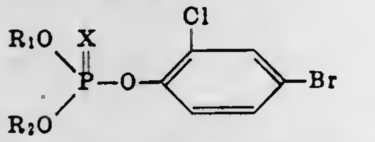
John T. Patton, Jr., Wyandotte, and Robert J. Hartman and Arthur L. Austin, Southgate, Mich., assignors to Wyandotte Chemical Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed June 9, 1966, Ser. No. 556,266
Int. Cl. C07f *9/08;* **C09k** *3/00;* **C08g** *17/133*
U.S. Cl. 260—953 3 Claims

Phosphorus-containing products are prepared by transesterifying neutral phosphate polyols with polyhydric alcohols or ethylene oxide adducts of polypropylene glycol. The resulting products exhibit surface active properties.

3,530,206
O,O-DILOWERALKYL-O - (2-CHLORO - 4 - BROMO PHENYL) PHOSPHATES AND THIOPHOSPHATES

Ernst Beriger, Allschwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Mar. 17, 1967, Ser. No. 623,842
Claims priority, application Switzerland, Mar. 25, 1966, 4,370/66
Int. Cl. C07f *9/12, 9/18*
U.S. Cl. 260—964 4 Claims

A compound of the formula

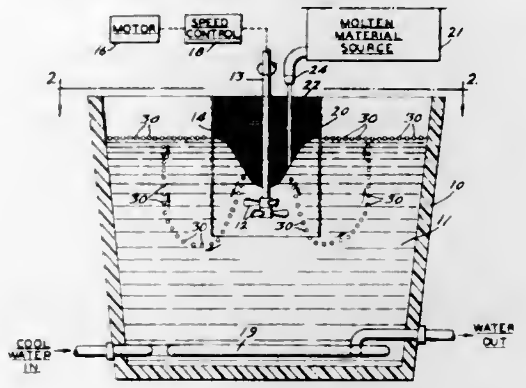


in which R_1 and R_2 each represents a lower alkyl radical and X represents a member selected from the group consisting of oxygen and sulfur. Said compounds are useful in combating harmful insects, bacteria, fungi, microorganisms and other pests.

3,530,207
METHOD AND APPARATUS FOR PRODUCING MATERIAL IN BEAD FORM

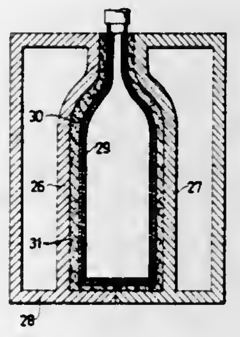
Charles L. Scheer, Berwyn, Pa., assignor to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania
Filed Apr. 3, 1968, Ser. No. 718,627
Int. Cl. B29c *23/00*
U.S. Cl. 264—14 12 Claims

Beads of lithium are produced by introducing a stream of molten lithium into a vortex in a hydrocarbon oil bath maintained at a temperature below the melting point of lithium. The lithium is thereby broken up into molten globules which freeze into substantially spheroidal solid beads in the hydrocarbon oil and which are impelled downwardly and outwardly around the lower edge of a separatory screen surrounding the vortex; being lighter than the oil, they float to the surface outside the screen, whence they are collected. The screen is of sufficiently fine mesh to prevent return of the floating solid beads to the vortex while permitting flow of oil through it to maintain the vortex.



3,530,208
METHOD OF MOLDING A LINED HOLLOW BODY UTILIZING FOAMABLE POLYSTYRENE PARTICLES AND AN INFLATABLE INNER MOLD

Hans Anders Rausing, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Feb. 5, 1968, Ser. No. 703,031
Claims priority, application Sweden, Feb. 15, 1967, 2,079/67
Int. Cl. B29d *27/08*
U.S. Cl. 264—45 1 Claim

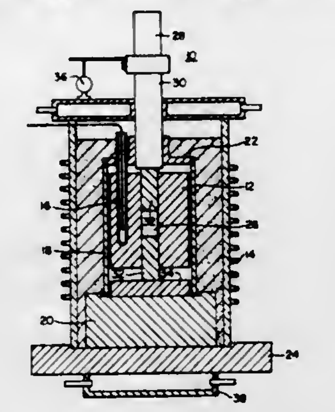


A method is provided for forming hollow bodies from partially pre-foamed particles of polystyrene plastic material. A suitable expandible inner mould component covered with a polystyrene plastic liner is provided so that bodies having openings smaller than the main cavity of the body can be formed with a liner of polystyrene plastic material secured to the inner wall of the hollow body.

3,530,209
METHOD FOR FORMING MAGNESIUM ALUMINATE SPINEL BODIES

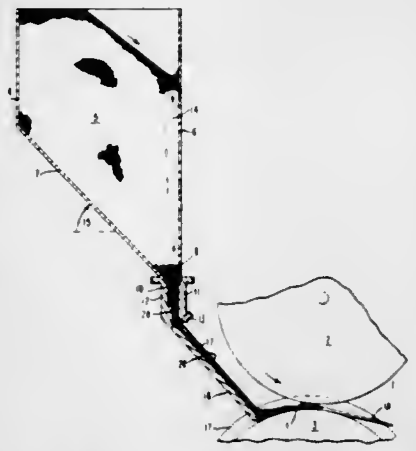
Shih M. Ho, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 17, 1966, Ser. No. 535,202
Int. Cl. F27b *9/04, 9/10*
U.S. Cl. 264—65 6 Claims

To form a magnesium aluminate spinel body having a density which closely approaches theoretical, a relatively high strength, and very good radiation transmission characteristics, there is first formed a compact of very finely divided spinel powder. The formed compact is then sintered under very high-pressure, high-temperature conditions to produce a sintered body having a very high density in addition to a very fine grain structure.



3,530,210
METAL POWDER ROLLING PROCESS

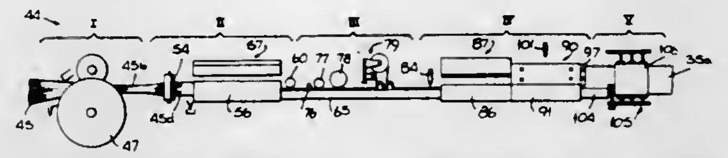
Wilbur L. Patton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,222
Int. Cl. B22f *3/18*
U.S. Cl. 264—111 5 Claims



Metal powder is rolled directly to sheet with at least 75% theoretical density by flowing the metal powder to the rolling nip in a rectangular profile as it enters the roll nip, the powder longitudinally tumbling just in advance of the rolling nip to aid in avoding particle size segregation.

3,530,211
MANUFACTURE OF FAIRED CABLE

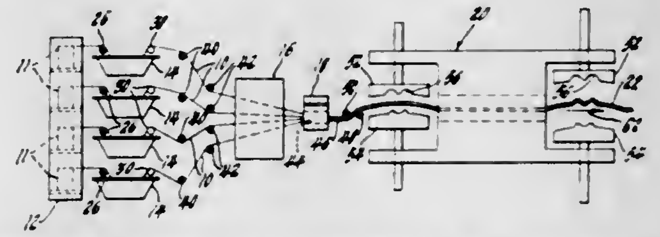
Edwin C. Uhlig and Robert C. Kohrn, South Bend, Ind., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Nov. 22, 1967, Ser. No. 685,076
Int. Cl. B29g *1/00;* **B32b** *17/04*
U.S. Cl. 264—136 3 Claims



A continuous, longitudinally unsectioned, faired underwater guidance cable of substantial length for submerged detection and exploration devices is disclosed, together with a method of manufacturing such cable, and the structure and method of assembly of end couplings therefor. The cable body has the cross-sectional contours of an airfoil that is symmetric with respect to its chord line and is designed so that its shear center is located in the immediate vicinity of the leading edge of the cable and a considerably greater distance forward of its center of pressure than the centroid of the strength member section, and that its center of gravity is located approximately at or slightly forward of its center of pressure, and that it has a low drag coefficient and low torsional rigidity. The load-bearing, relatively less flexible, resin and filament forward strength member preferably is generally channel-like or U-shaped in cross-section and houses the nonload-bearing electrical conducting and insulating elements of the cable, and a nonload-bearing, relatively more flexible, syntactic foam aft or tail member which is generally triangularly shaped in cross-section is formed into an integral entity with the strength member by a continuous sequence of intermittent shaping and molding operations in respective portions of an assembly line-like apparatus to build successive cable portions up step by step.

3,530,212
METHOD OF MAKING GLASS RESIN LAMINATES

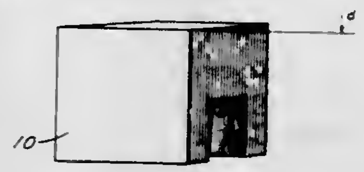
Richard F. Kienle, Trotwood, and James A. Frenchik and Edward P. Harris, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 16, 1967, Ser. No. 616,704
Int. Cl. B29c *24/00;* **B29g** *5/00*
U.S. Cl. 264—137 3 Claims



A glass fiber reinforced synthetic resin structural member, such as for example, a single leaf automobile spring having high flexural strength and low void content is fabricated by thoroughly impregnating a plurality of individual glass filament rovings with a thermosetting resin; flexing, bending and heating the impregnated rovings to completely wet the glass filaments of each roving, to decrease the viscosity of the resin, and to expel entrained air from the resin; performing the rovings while the resin is still not completely cured by aligning them in side-by-side relationship and expelling air entrained therebetween, as well as excess resin, to form a moldable glass roving mass which is nearly void-free and in which each filament is coated with resin; and finally molding the preformed rovings under pressure in a hot mold to cure the resin.

3,530,213
METHOD OF FORMING A HINGE IN A BLOCK OF FOAM POLYETHYLENE

Richard A. Belle Isle, Wilbraham, Mass., assignor to Tainer Tech Corp., a corporation of Delaware
Filed Jan. 14, 1969, Ser. No. 790,907
Int. Cl. B29c *24/00*
U.S. Cl. 264—296 4 Claims

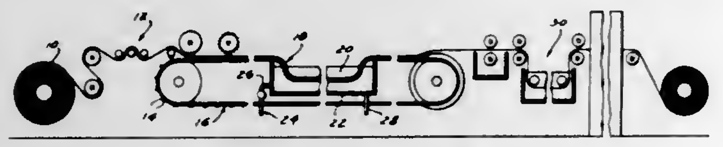


A method of forming a hinge in a block of foam polyethylene which comprises heating one surface of the foam to melting temperature, then compressing the heated surface to densify the foam and thereafter or simultaneously slitting the foam from the opposite surface to a location close to the densified surface so that the densified portion provides a hinge between the two portions on either side of the slit.

3,530,214

METHOD FOR TREATING TEXTILE MATERIALS TO UNIFORMLY SET THEIR SHAPE

Julius Hermes, Martinsville, Va., assignor of one-half to Bernard Klebanow, New York, N.Y.
Filed Feb. 24, 1967, Ser. No. 618,433
Int. Cl. D06c *3/00*
U.S. Cl. 264—342 **1 Claim**



A method is described for treating a textile fabric web of synthetic fibers with interlacing loops and offsets to uniformly reset its shape and texture at a higher elastic memory. While supported in an unstretched condition, the web is immersed in a bath of liquid treating medium maintained at a temperature above the temperature at which the original texture was imparted to the fabric but below the glass transition temperature of the fibers. The liquid medium is caused to flow concurrently at a predetermined relative velocity with respect to the web to control the degree of web texture. The web is thereafter cooled so that the texture is uniformly reset at the higher elastic memory.

3,530,215

CONDITIONING HAIR WITH QUATERNIZED HOMOPOLYMERS

Norman L. Greif, North Woodmere, Sheldon Levy, Rego Park, and William Perlberg, Bellmore, N.Y., and Milton H. Schwarz, Westport, Conn., assignors to Revlon, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 28, 1966, Ser. No. 568,412
Int. Cl. A61k *7/10*
U.S. Cl. 424—70 **4 Claims**

This invention relates to methods and compositions for conditioning and setting hair, and relates in particular to methods for conditioning and setting human hair with compositions comprising aqueous solutions of alcohol-insoluble quaternized homopolymers of dimethylaminoethyl methacrylate or diethylaminoethyl methacrylate.

3,530,216

VITAMIN COMPOSITIONS COMPRISING RIBOFLAVIN-5-PHOSPHATE AND FERRIC PYROPHOSPHATE SOLUBLE

Arnold Cavalli, Cedar Grove, and Louis Magid, Clifton, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 5, 1967, Ser. No. 673,025
Int. Cl. A61k *15/12*
U.S. Cl. 424—128 **4 Claims**

Sodium riboflavin 5-phosphate and ferric pyrophosphate soluble, mixed in aqueous medium at about pH 4.4, form a stable, clear solution.

3,530,217

TOPICAL COMPOSITIONS COMPRISING CORN COB CELLULOSE POWDER

Cleveland J. White, Oak Park, Ill., and Richard M. Cox, Cornwallville, N.Y., assignors to Stiefel Laboratories, Inc., Oak Hill, N.Y., a corporation of New York
No Drawing. Filed Apr. 1, 1966, Ser. No. 539,311
Int. Cl. A61k *7/00*
U.S. Cl. 424—180 **12 Claims**

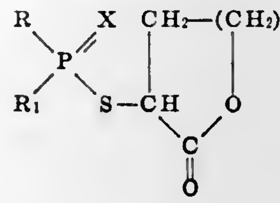
A therapeutic composition for the treatment of acne and related conditions comprises a dispersion or suspension of corn cob cellulose having a particle size of from about 100 mesh to 400 mesh (Tyler Standard) in an aqueous or water-containing fluid medium. The composition contains from about 1 to 25% by weight of cob powder and from 10 to 99% by weight water, together with other spreading, emulsifying and/or gelling agents to give the composition the desired consistency.

3,530,218

PESTICIDES

Arthur John Floyd, Bracknell, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Continuation-in-part of application Ser. No. 301,604, Aug. 12, 1963. This application Feb. 1, 1965, Ser. No. 429,682
Claims priority, application Great Britain, Aug. 17, 1962, 31,698/62
Int. Cl. A01n *9/36*
U.S. Cl. 424—203 **11 Claims**

Process for destroying pests and pesticidal compositions useful therein, the pesticidal compound being of the formula:



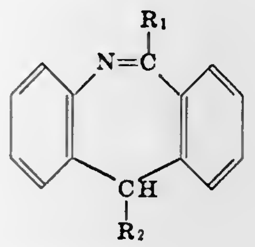
wherein X is sulphur, R is lower alkyl and R_1 is lower alkoxy and *n* is an integer of from 1 to 3.

3,530,219

PHARMACEUTICAL COMPOSITION CONTAINING 6,11-DIAMINO MORPHANTHRIDINES

Gordon Northrop Walker, Morristown, N.J., assignor to Ciba Corporation, Summit, N.J., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 674,636, Oct. 11, 1967, now Patent No. 3,471,473, which is a continuation-in-part of application Ser. No. 622,477, Mar. 13, 1967, which in turn in a continuation-in-part of application Ser. No. 599,696, Dec. 7, 1966. This application Nov. 12, 1968, Ser. No. 775,115
Int. Cl. A61k *27/00*
U.S. Cl. 424—244 **1 Claim**

6,11 - diamino - morphanthridines, e.g. those of the formula



$R_{1,2}$=an amino group salts and quaternaries thereof, exhibit diuretic effects.

3,530,220

PESTICIDAL COMPOSITION AND METHOD CONTAINING ALKYL 1-CARBAMOYL-N-(SUBSTITUTED CARBAMOYLOXY)THIOFORMIMIDATES

James B. Buchanan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 647,234, June 19, 1967. This application May 13, 1968, Ser. No. 728,739
Int. Cl. A01n *9/00*
U.S. Cl. 424—320 **27 Claims**

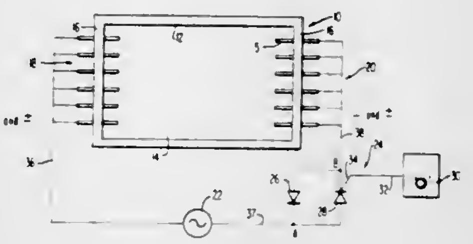
Chemical compounds of the class alkyl 1-carbamoyl-N-(substituted carbamoyloxy)thioformimidates such as methyl 1 - carbamoyl-N-(methylcarbamoyloxy)thioformimidate useful in preventing the destructive effects of pests such as insects, ticks, mites and nematodes.

ELECTRICAL

3,530,221

AC/DC ELECTRODE AND POWER SUPPLY SYSTEM FOR A GLASS FURNACE

H. Larry Penberthy, 5624 SW. Admiral Way, Seattle, Wash. 98116
Filed May 1, 1968, Ser. No. 725,886
Int. Cl. C03b *5/02*
U.S. Cl. 13—6 **11 Claims**

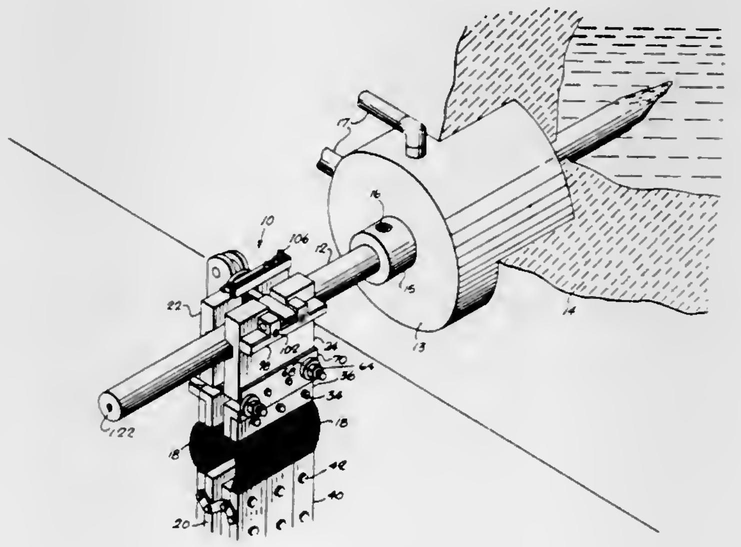


Disclosed is an electrode and power supply assembly for protecting electrodes in electrically heated glass furnaces. An alternating current having a DC component is passed through one or more of the heating electrodes in the furnace. The electrode is formed of a material resistant to ions having one type of electrical charge and is polarized by the DC component such that ions of opposite charge are repelled by the electrode. The result is greater current carrying capacity and longer life for the electrode or electrodes so protected.

3,530,222

ELECTRODE CONNECTOR FOR ELECTRIC FURNACE

Dwight B. Raddatz, Woodridge, Ill., assignor to Ball Corporation, a corporation of Indiana
Filed Dec. 31, 1968, Ser. No. 789,041
Int. Cl. H05b *7/10, 7/14*
U.S. Cl. 13—16 **11 Claims**

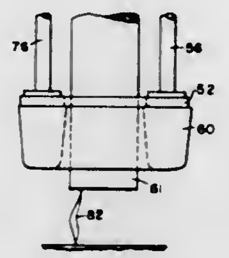


An electrode connector to connect an electrode to a source of high electrical power, the connector being readily releasable to facilitate rapid repositioning and/or change of an electrode utilized in a furnace such as a glass melting furnace.

3,530,223

ELECTRODE APPARATUS FOR USE IN AN ARC ELECTRODE FURNACE AND MAGNETIC FIELD COILS FOR MOVING AND FOCUSING THE ARCS THEREFROM

Ronald R. Akers, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 565,464, July 15, 1966. This application Mar. 3, 1969, Ser. No. 803,656
Int. Cl. H05b *7/06*
U.S. Cl. 13—18 **18 Claims**

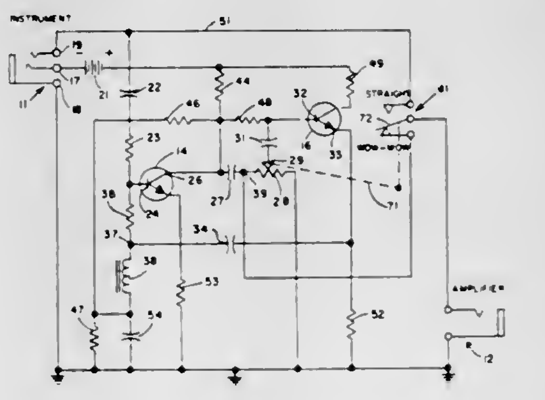


A furnace which may be three phase has electrode supporting and positioning apparatus for carboniferous electrodes and means for mounting and adjusting the positions of fluid cooled magnetic field coils located near the arcing surfaces for producing magnetic fields which move the arcs around the electrodes and prevent uneven wear which would produce arc flare, and focus the arcs from the electrodes in an axial direction thereby further reducing arc flare. The field coils may be lifted toward the top of the furnace during scrap melt down when arc flare to the scrap is desirable.

3,530,224

FOOT CONTROLLED CONTINUOUSLY VARIABLE PREFERENCE CIRCUIT FOR MUSICAL INSTRUMENTS

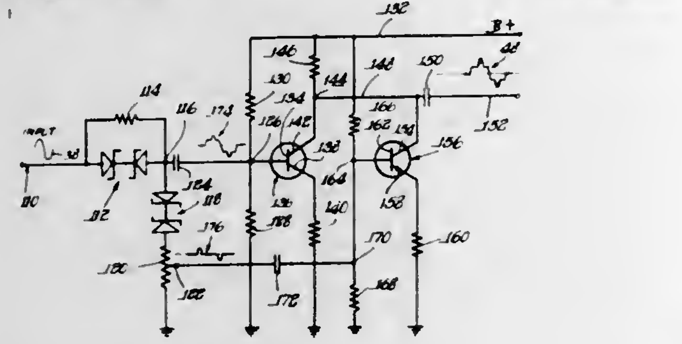
Bradley J. Plunkett, Van Nuys, and Lester L. Kushner, North Hollywood, Calif., assignors to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 24, 1967, Ser. No. 618,359
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.11 **7 Claims**



In a musical instrument a resonant circuit is connected in the circuit between the tone generators and the loudspeaker. The tone generators deliver tone signals rich in harmonics covering a wide frequency spectrum. Within this spectrum a given frequency (or a narrow band of frequencies) is given preference in the delivery path of the tones from the tone generators to the loudspeaker. The position on the frequency scale of this preferred frequency or resonant peak is continuously variable, from low frequency to high frequency over the wide frequency spectrum. This variability is under the ready control of the instrument player, as for example by being connected to a foot pedal. Thus, during playing of the instrument, the player can continuously move the resonant peak back and forth across the frequency spectrum and create a rhythmic musical sound. The musical effect may be described as a wow-wow and is closely akin to that produced by the warbling of a trumpet mute across the bell of a trumpet.

3,530,225
DERIVATIVE SYNTHESIS OF MUSICAL INSTRUMENT TONES BY MEANS OF NONLINEAR TRANSFER FUNCTION DEVICE

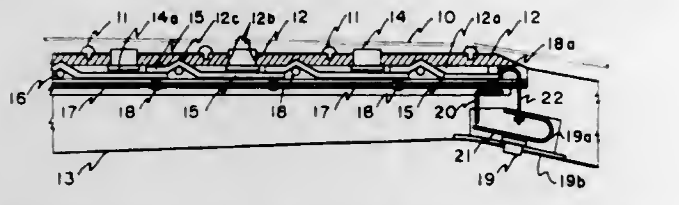
Eric Gschwandtner, Rexdale, Ontario, Canada, assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Filed Sept. 6, 1966, Ser. No. 577,203
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.13 **16 Claims**



A musical instrument tone (e.g., clarinet) device wherein a nonlinear transfer function of voltage input versus voltage output is provided by a combination of a plurality of active devices and a plurality of quiescent devices. The nonlinear transfer function comprises a plurality of straight line segments and may be symmetric about a predetermined operating point (or quiescent point). The quiescent point is fixed and the curve is adjustable to determine the desired output wave form. The circuitry includes a pair of back-to-back Zener diodes and a pair of transistors.

3,530,226
STRINGED GUITAR WITH ELECTRONIC ORGAN TONE GENERATORS ACTUATED WITH FINGERBOARD SWITCHES

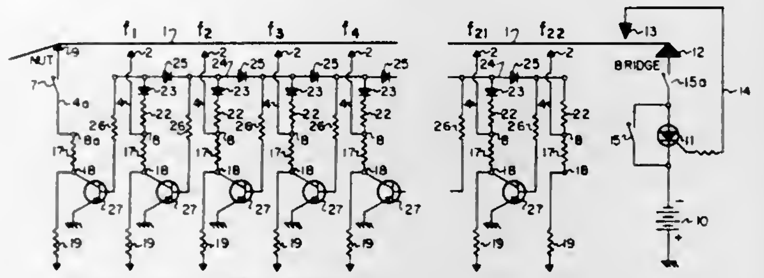
Richard L. Wheeler and Donald J. Terlinde, St. Paul, Minn., assignors to General Music Incorporated, St. Paul, Minn., a corporation of Minnesota
Filed Apr. 10, 1968, Ser. No. 720,030
Int. Cl. G10d *3/08;* **G10h** *5/00*
U.S. Cl. 84—1.16 **10 Claims**



A stringed guitar with electronic organ tone generators selectively actuated with fingerboard switches and including a silicon controlled rectifier between strings and a battery. The fingerboard supports spaced divided frets against which the strings may be engaged by finger pressure in the normal manner. The under side of the fingerboard is grooved to provide a groove beneath each string. Switch blades are supported in overlapping relation in each groove, the blades being held in place by transversely extending retaining pins. A push button is supported above each switch blade. When the string is pressed against a fret, the corresponding push button is depressed. The switch blades are normally in contact, and current is supplied to each row of switch blades. A circuit board is positioned below the finger board and includes contacts connected to corresponding tone generators. When a push button is depressed the corresponding blade is flexed out of engagement with the next adjacent switch blade and into engagement with a tone generator contact.

3,530,227
STRINGED GUITAR WITH ELECTRONIC ORGAN TONE GENERATORS ACTUATED WITH FINGERBOARD SWITCHES OR FRETS AND CONDUCTIVE PICK

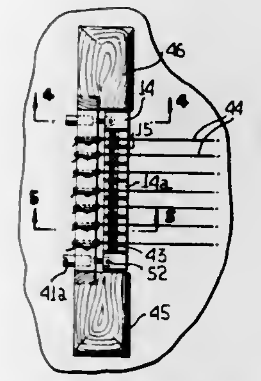
Richard L. Wheeler and Donald J. Terlinde, St. Paul, Minn., assignors to General Music Incorporated, St. Paul, Minn., a corporation of Minnesota
Filed Apr. 10, 1968, Ser. No. 720,154
Int. Cl. G10d *3/08;* **G10h** *3/02, 5/04*
U.S. Cl. 84—1.16 **14 Claims**



A guitar-organ instrument of guitar-like form includes an instrument neck over which metal strings are stretched. Frets are provided beneath each string. A tone generator is provided for each fret of each string. A switch is provided for each fret of each string. Closing of any switch closes a potential circuit comprising a transistor or relay keying circuit to a corresponding tone generator. The potential circuit is held open by an SCR or relay in a conductive pick circuit pending engagement of the string with a conductive pick which closes the potential circuit. Only the highest note played on any one string will activate a tone generator. A string switch is provided for each string to permit disabling of the string relative to the tone generators.

3,530,228
ELECTRIC GUITAR PIEZOELECTRIC TRANSDUCER BRIDGE WITH REPLACEABLE STRING HEIGHT ADJUSTORS

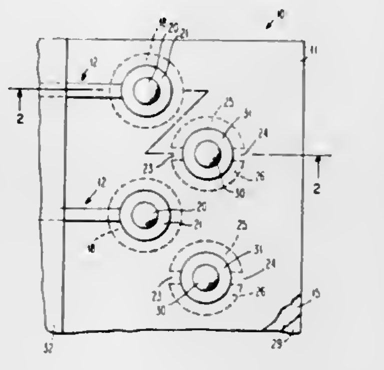
Robert C. Scherer, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 483,679, Aug. 30, 1965. This application Apr. 23, 1968, Ser. No. 723,535
Int. Cl. G10d *3/04, 5/00*
U.S. Cl. 84—1.16 **10 Claims**



A piezoelectric transducer bridge for an electric guitar fabricated of an aluminum extrusion of U-shaped transverse cross section, in which slots are cut in the extrusion to form cantilevers for separately supporting each string of the guitar. A nylon filament is extended longitudinally of the extrusion and forms the direct support for the strings. The filament, sometimes called a "bone," may have its height adjusted by the musician, to provide string heights suiting his musical taste, yet does not acoustically couple the cantilevers. If the filament is overfiled the entire filament may be readily replaced.

3,530,229
TRANSMISSION LINE CABLE OR THE LIKE AND TERMINAL CONNECTION THEREFOR

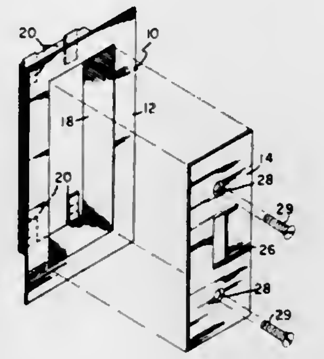
Peter J. Burke, Jr., Tioga Center, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Sept. 3, 1968, Ser. No. 756,782
Int. Cl. H05k *1/04*
U.S. Cl. 174—68.5 **3 Claims**



A multiple conductor transmission line cable comprises plural conductor lines and a ground plane on opposite sides of a flexible dielectric layer. Terminal pins are electrically connected to the conductor lines and ground plane by a soldered joint to terminal lands and pads formed on opposite surfaces of the dielectric layer. In the ground plane, the terminal pin is soldered to a land portion formed in the ground plane which is connected by bridge sections connected to the main position of the ground plane. The bridge sections present thermal restriction to heat dissipation due to heat sink characteristics of the ground plane.

3,530,230
ELECTRICAL SWITCH COVER PLATE

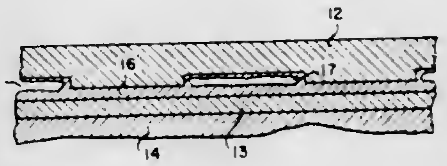
Vernon F. Cormier, 21 Vestry St., Beverly, Mass. 01915, and Richard D. Henken, 34 Summer St., Salem, Mass. 01970
Filed Mar. 13, 1969, Ser. No. 806,846
Int. Cl. H02g *3/14*
U.S. Cl. 174—66 **3 Claims**



A replaceable cover plate for electrical wall plug and switch outlet boxes that can be utilized with wall remodeling applications, when the wall cover around the electrical outlet box has been increased. The cover plate has two components, an outer frame member and a central control plate that can be adjusted to a depth of the added wall cover, whereby the original spacing between the outlet box and the wall plate is maintained without adjustment to the outlet box.

3,530,231
BONDING HIGH DENSITY INTERCONNECTION LINES

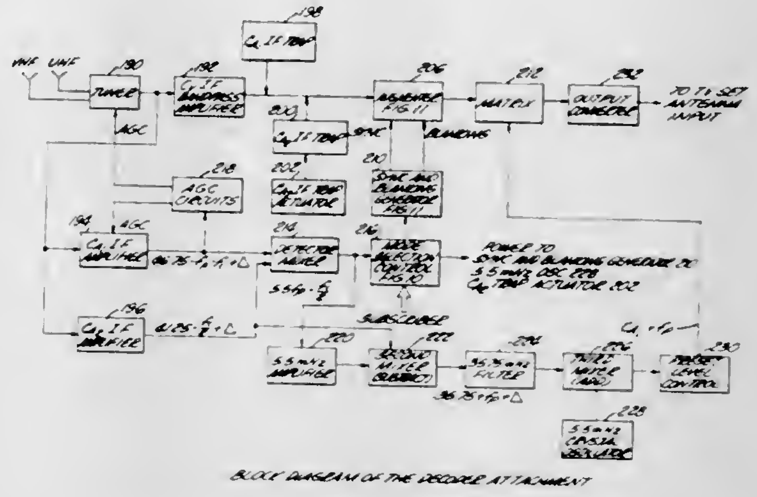
Ralph F. Penoyer, Shelburne, Vt., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 15, 1969, Ser. No. 791,456
Int. Cl. H05k *3/32*
U.S. Cl. 174—68.5 **11 Claims**



In microminiaturized circuitry a plurality of closely spaced thin conducting lines are simultaneously bonded to closely spaced areas of a circuit board by solder reflow method. A series of grooves are formed in contact points of the conducting lines. These grooves provide empty spaces for accommodating excess reflowed solder to prevent lateral flow of the solder and thereby shorting between adjoining lines.

3,530,232
SUBSCRIPTION TELEVISION SYSTEM

Abraham M. Reiter, Reseda, and Patrick R. J. Court, Los Angeles, Calif., assignors to International Telemeter Corporation, Los Angeles, Calif., a corporation of New York
Filed June 17, 1966, Ser. No. 558,401
Int. Cl. H04k *1/00;* **H04n** *1/44*
U.S. Cl. 178—5.1 **22 Claims**



A subscription television system has a transmitter at which the generated sync and blanking signals are reduced to the gray level, which is amplitude modulated on the video carrier. Program information audio is frequency modulated upon a first audio carrier and program audio signals are frequency modulated on a second audio carrier which is lower in frequency than the first audio carrier, and which is also frequency modulated with the program information audio.

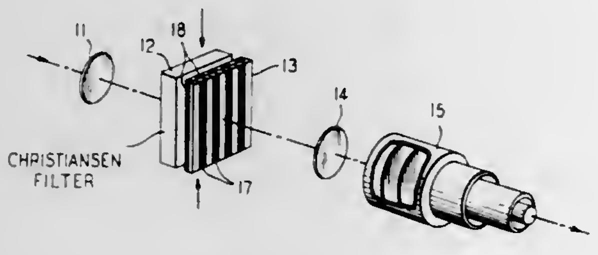
Sync restoration signals are also generated at the transmitter and are then encoded. For decoding control code signals are generated. Sync restoration signals and control code signals are amplitude modulated on the second audio carrier.

A receiver attachment is connected between the antenna and the receiver input and allows the program information audio to be reproduced by the receiver and the video picture is unintelligible until a subscriber pays for the program. Then the sync is restored, the video picture becomes intelligible, and the program audio signals are supplied to the receiver to be reproduced in place of the program information audio.

3,530,233
RESOLUTION CONTROL OF THE THREE PRIMARY COLOR IMAGES IN A SINGLE PICK-UP TUBE COLOR CAMERA SYSTEM

Soo Young Chai, Matawan, Louis H. Enloe, Holmdel, and Arthur B. Larsen, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed July 3, 1968, Ser. No. 742,439
Int. Cl. H04n *9/06*
U.S. Cl. 178—5.4 6 Claims

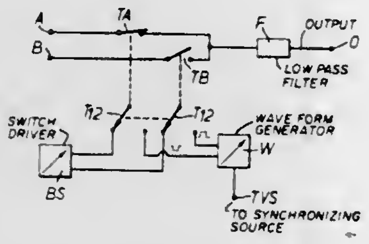


In a Kell-type single pick-up tube color camera system, a Christiansen filter is disposed in tandem with the striped color filters and out of the image plane thereof. The Christiansen filter comprises selected optical glass particles closely packed in a liquid whose index of refraction matches that of the glass particles near the center of the green optical frequency band; at red and blue optical frequencies the indices of refraction are mismatched.

3,530,234
SIGNAL MIXING ARRANGEMENTS USING PROPORTIONAL CLOSING OF SAMPLING SWITCHES

Roger Wakefield Fenton, Writtle, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Jan. 15, 1968, Ser. No. 697,682
Claims priority, application Great Britain, Mar. 9, 1967, 11,108/67
Int. Cl. H03k *17/02, 17/68;* **H04n** *7/00, 5/22*
U.S. Cl. 178—6 10 Claims



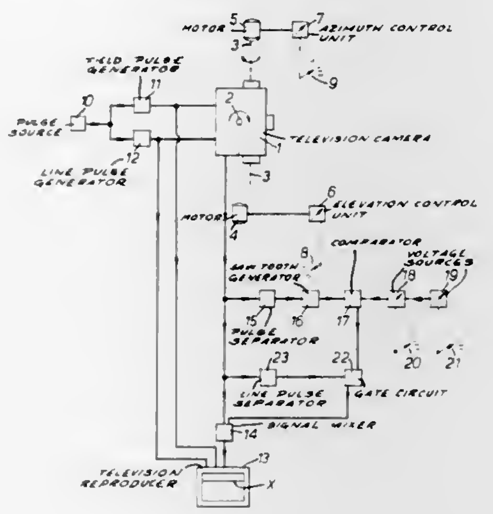
In known signal mixing arrangements signals from two sources are fed to two variable gain amplifiers, which are paired with joint opposed control to give a constant composite output level. If signals from four sources are to be mixed composite signals from two pairs are mixed, involving three amplifier pairs, and it is difficult to maintain good stability. Also this is expensive.

In the invention each signal source is connected through a sampling switch to a common output. The sampling switches are controlled by a high frequency signal, and are arranged so that only one switch may be closed at a time.

3,530,235
RANGE AND BEARING MEASURING APPARATUS

Ramon Bolton, Great Baddow, England, assignor to The Marconi International Marine Company Limited, Chelmsford, Essex, England, a British company

Filed June 30, 1967, Ser. No. 650,362
Claims priority, application Great Britain, July 4, 1966, 29,860/66
Int. Cl. H04n *7/02*
U.S. Cl. 178—6.8 10 Claims



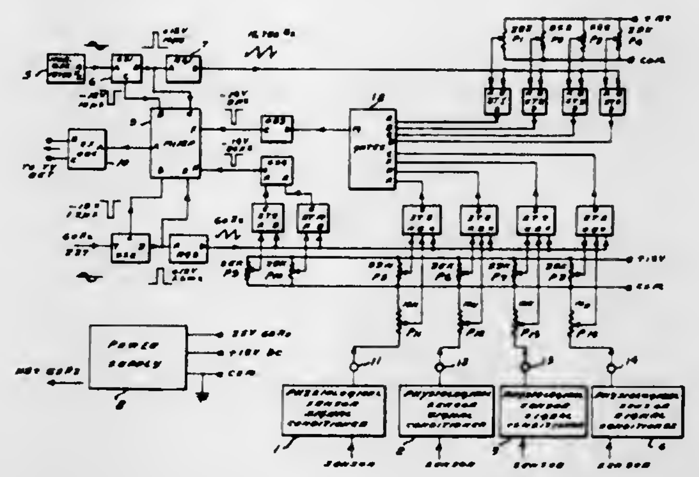
A closed circuit television apparatus for determining range and bearing which is particularly adapted for use in blind navigation of ships is described. The apparatus includes a television camera and a television reproducer. Means are provided for swinging the camera, which is mounted on the bow of a ship, in azimuth with a given angular relationship with a horizontal plane to provide bearing data. Means are provided for developing a movable cursor line which appears horizontally across the screen of a television reproducer superimposed on the image thereon viewed by the camera. The image on the screen, from top to bottom, corresponds to pre-determined distances from the ship. Control means, responsive in part to a saw-tooth wave corresponding to a field scan, is provided for moving the cursor line by a manual control in order to bring the cursor line into alignment with an image appearing in the centre of the screen. The manual control is associated with an indicator on which a range index is provided. Additional controls are provided for compensating for varying attitude and varying draft of the ship.

3,530,236
SIGNAL CONVERTER TO DISPLAY PHYSIOLOGICAL SIGNALS ON CONVENTIONAL TELEVISION RECEIVERS

Adolf R. Marko, Fairborn, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed July 30, 1968, Ser. No. 748,746
Int. Cl. H04n *5/38*
U.S. Cl. 178—6.8 6 Claims

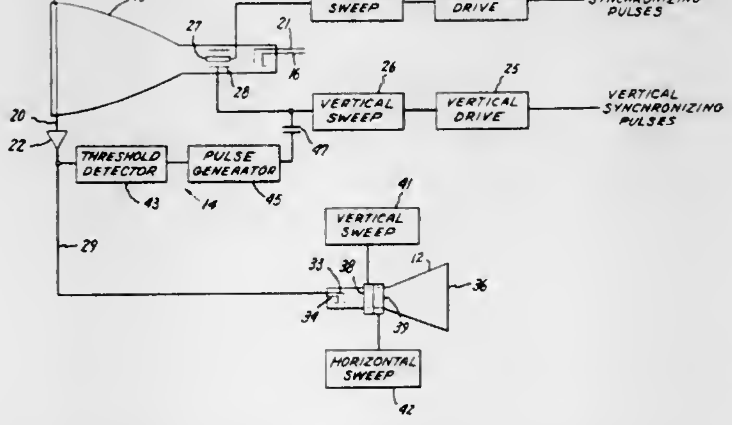
Direct current potentials from conventional physiological measuring instruments are converted to modulate sweep signals which modulate a radio frequency carrier providing a radio frequency signal such that when connected to the antenna input of a conventional home entertainment television receiver the physiological measurements will appear in the form of bar graphs on the television picture tube. Adjustable upper and lower safe limit lines across the bar graphs are provided to indicate the limits of acceptable deviations in the physiological measurements before a dangerous condition occurs.



3,530,237
DEFLECTION SCANNING SYSTEM

Rowland W. Redington, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed June 1, 1967, Ser. No. 642,914
Int. Cl. H04n *3/16*
U.S. Cl. 178—7.2 6 Claims

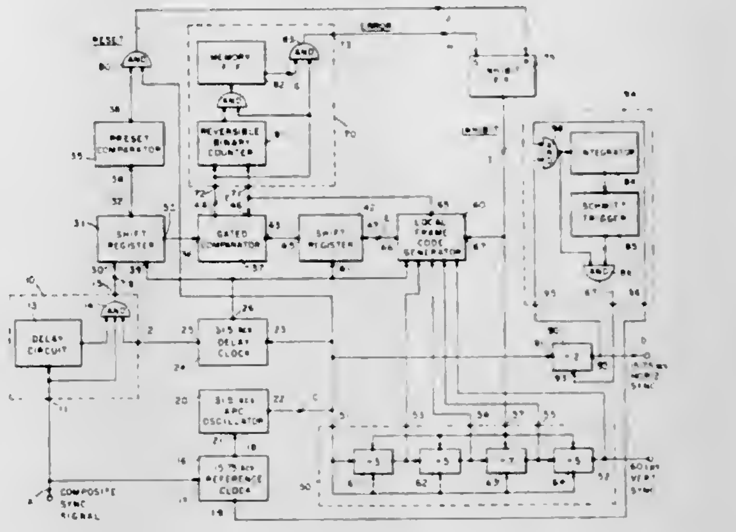


Dissipation of a signal from a point image over several scan lines is eliminated by a feedback circuit connected between the output terminal of a vidicon target electrode and the vertical deflection plates of the vidicon. When the skirts of the low velocity electron beam traversing the target electrode initially produce an output voltage above a predetermined level, as fixed by a threshold detector, a pulse generator is actuated to produce a rectangular pulse which pulse is capacitively coupled to the vertical deflection plates of the vidicon. The magnitude, rise time and duration of the rectangular pulse is set relative to both the sensing periphery of the electron beam and the scan rate to vertically deflect the centroid of the beam over the point image producing the detected output signal. The electron beam can be deflected for a portion of the line scan wherein the output signal was originally detected or the entire scan line succeeding the originally detecting scan line can be deflected to pass the scanning electron beam directly over the detected point image. The exact location of point images can be determined by storing output signal information from a scanned frame and utilizing the stored information to selectively scan individual lines in succeeding frames at locations corresponding to the detected locations of point images observed during the scan of the intial frame.

3,530,238
DIGITAL SYNCHRONIZING SYSTEM FOR TELEVISION RECEIVERS

John Matarese, New City, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed Dec. 4, 1967, Ser. No. 687,573
Int. Cl. H04n *5/04*
U.S. Cl. 178—7.3 16 Claims

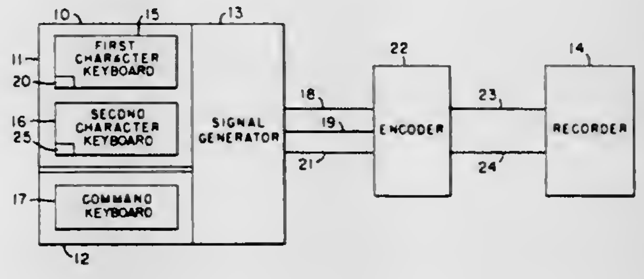


A synchronizing system for television receivers is described wherein digital logic sync separation techniques are employed to extract the horizontal and vertical frequency and phase information from a locally generated binary equivalent of the conventional composite sync signal. A local oscillator establishes the basic system frequency or bit rate, and division of the local oscillator signal is utilized to generate the 60 c.p.s. vertical sync signal. A local framing code is generated during each field and compared in a binary comparator with the binary composite sync signal. If coincidence does not exist between the local framing code and the framing code of the binary signal, an error signal is generated which inhibits the operation of the dividers until synchronism is obtained. The horizontal sync signal is generated by division of the local oscillator signal and is compared with a reference phase signal to insure synchronism.

3,530,239
INFORMATION ENCODING AND RECORDING SYSTEM

Ira L. Corell and Jack Turchon, Bellmore, N.Y., assignors to Jara Electronics, Incorporated, Bellmore, N.Y., a corporation of New York

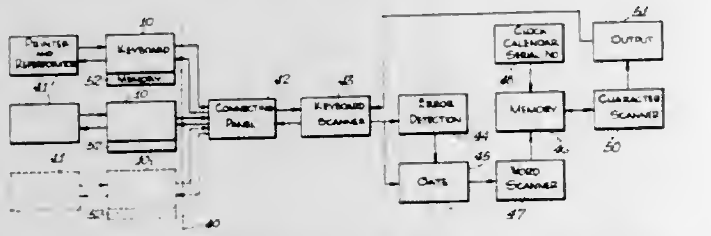
Filed Jan. 17, 1968, Ser. No. 698,647
Int. Cl. H04l *15/06*
U.S. Cl. 178—17 13 Claims



A keyboard operated information encoding and recording system for preparation of a record adapted for use in graphic arts composition computers in which expanded information handling capacity is provided by a keyboard complex which includes a first set of keys, a second set of keys having variable identity and control keys which designate the second set of keys to have one identity at any given time and which may indicate a printing characteristic for characters represented by said first and second sets of keys. A signal generator is responsive to the operation of the keyboard complex to provide distinct electrical signals which identify each key in the complex. A recorder receives and records the signals to produce an intelligence bearing record indicative of the informational variants entered in the keyboard complex and the printing characteristics therefor.

3,530,240
AUTOMATIC TELEGRAPHIC SIGNAL GENERATOR

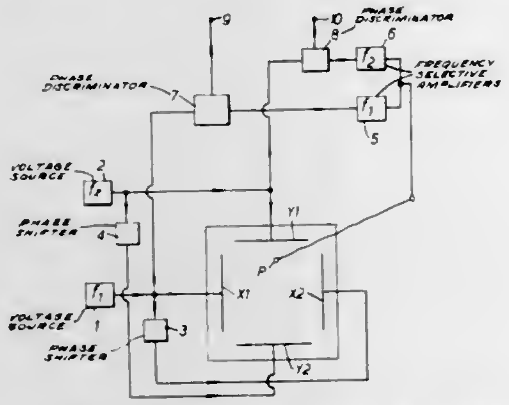
Robert W. Thompson, Toronto, Ontario, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada
Filed Mar. 6, 1968, Ser. No. 711,060
Int. Cl. H04l *23/00*
U.S. Cl. 178—17 4 Claims



Apparatus for generating a telegraphic signal, representing a message format, having at least one message preparation position with at least one keyboard connected to a programming unit which generates the message format signals required by each keyboard. Switches are preselected on each keyboard for the required format and with actuation of a starting or scanning switch on a keyboard the programming unit searches for and is connected to that keyboard and generates in the correct order the signals according to the preselected switches.

3,530,241
ELECTRICAL POSITION RESOLVER ARRANGEMENTS

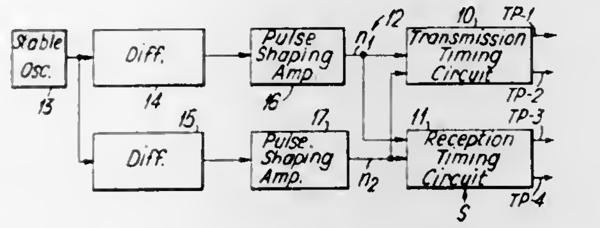
Alfred Brian Edwin Ellis, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Nov. 24, 1967, Ser. No. 685,369
Claims priority, application Great Britain, Dec. 23, 1966, 57,565/66
Int. Cl. G08c *21/00*
U.S. Cl. 178—19 7 Claims



An electrical position resolver which includes a resistive surface layer to which electrical connection is made by two co-ordinately positioned pairs of strips is described. Input signals of one frequency are applied to one pair of strips with the phase of the signal applied to each strip being different. Input signals of a second frequency are applied to the other pair of strips with the phase of the signal applied to each strip being different. A probe is arranged to couple signals from the resistive surface, via filters which pass respectively signals of the one frequency and the second frequency to phase detectors. Reference phase inputs to the phase detectors are provided from the sources of signals of the one frequency and the second frequency. The outputs from the phase detectors indicate the position of the probe along X and Y co-ordinates.

3,530,242
SYNCHRONIZING SYSTEM FOR PCM SYSTEMS

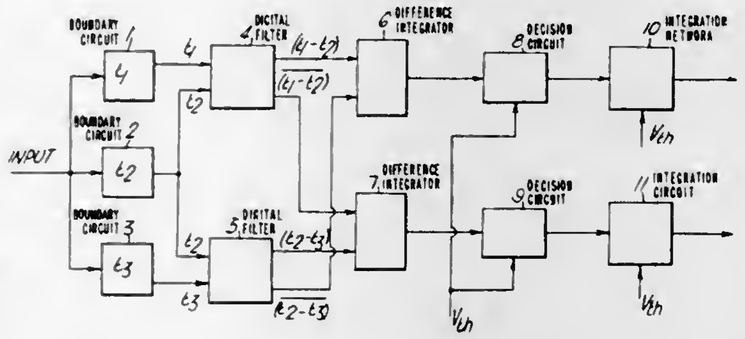
Jean Victor Martens, Deurne, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 12, 1966, Ser. No. 586,219
Claims priority, application Netherlands, Oct. 21, 1965, 6513602
Int. Cl. H04l *7/00*
U.S. Cl. 178—69.5 10 Claims



A system for synchronizing local timing pulses to the phase of the incoming PCM signals. A double phase clock generates two pulse trains at a frequency which is an integral multiple of the basic frequency of the PCM signals. These two pulse trains are supplied to two divider stages for generating basic pulse patterns which logically combine with the phases of the two pulse trains to form the local timing pulses. The above dividers are controlled by two logical circuits detecting the early and late transitions of the PCM signals with respect to a central finite tolerance zone. If a late transition is detected, the basic pulse patterns of the dividers and, hence, the local timing pulses are delayed by skipping one triggering pulse of the first divider. If an early transition is detected, the basic pulse patterns and the local timing pulses are advanced by coupling a trigger pulse of the first divider to the second divider.

3,530,243
APPARATUS FOR ANALYZING COMPLEX SIGNAL WAVEFORMS

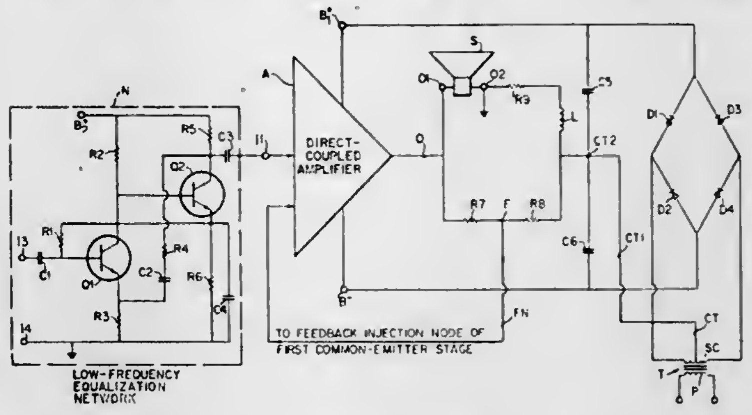
Wincenty Bezdel, Harlow, England, assignor to Standard Telephones and Cables Limited, London, England, a British company
Filed May 10, 1968, Ser. No. 728,146
Claims priority, application Great Britain, June 23, 1967, 29,100/67
Int. Cl. G10l *1/00*
U.S. Cl. 179—1 4 Claims



Circuits are provided for detecting different sound classes by measuring the rate at which zero crossings characterising these sounds occur and producing outputs proportional to their difference. Means are provided for automatically altering the boundaries of the sound ranges and the thresholds in the detectors.

3,530,244
MOTIONAL FEEDBACK AMPLIFIER SYSTEMS

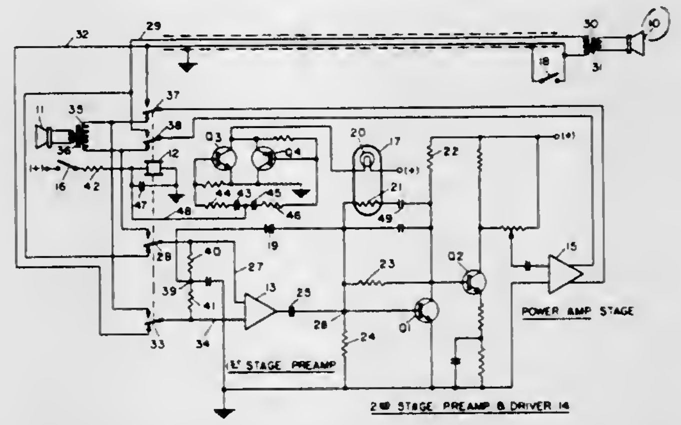
Martin G. Reiffin, 102 Gallows Hill Road, Peekskill, N.Y. 10566
Original applications Aug. 10, 1964, Ser. No. 388,399, and July 7, 1966, Ser. No. 563,586. Divided and this application Feb. 13, 1967, Ser. No. 629,047
Int. Cl. H03f *3/26;* **H04r** *3/08*
U.S. Cl. 179—1 10 Claims


B+
S
A
N
DIRECT-COUPLED AMPLIFIER
LOW-FREQUENCY EQUALIZATION NETWORK
TO FEEDBACK INJECTION NODE OF FIRST COMMON-EMITTER STAGE
D1
D2
D3
D4
C5
L
CT
SC

A bridge network connected to the output of an amplifier and a loudspeaker provides a motional feedback signal functionally related to the cone movement. The signal is fed back degeneratively to the amplifier. The loudspeaker and amplifier stages within the feedback loop are direct-current-coupled. In a second embodiment the feedback signal is generated by a feedback coil attached to the cone.

3,530,245
SELECTIVE SUPPRESSION CONTROL OF AMPLIFIERS IN INTERCOMMUNICATION SYSTEMS

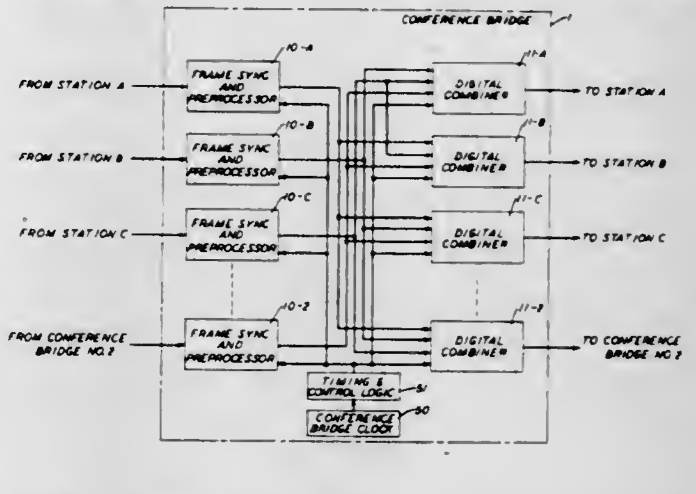
Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut
Filed May 11, 1967, Ser. No. 637,728
Int. Cl. H04m *9/08*
U.S. Cl. 179—1 7 Claims



An intercommunication system has a relay for selectively connecting an amplifier input alternately to one or the other of two remotely spaced electroacoustical transducers in accordance with a designated direction of communication. An intermediate stage of the amplifier is suppressed for short intervals in response to the energization and deenergization of the relay to provide noiseless switching by suppressing output from the amplifier during the time of operation of the relay contacts. A photoconductor is used to suppress the amplifier, having a control lamp that is energized for a short interval by one or the other of two transistors which are respectively turned on in accordance with whether potential across the winding of the relay is increasing or decreasing respectively. A privacy switch associated with one of the transducers selectively controls the bias on a diode which in turn selectively suppresses the intermediate stage of the amplifier.

3,530,246
DIGITAL CONFERENCING OF VOCODERS

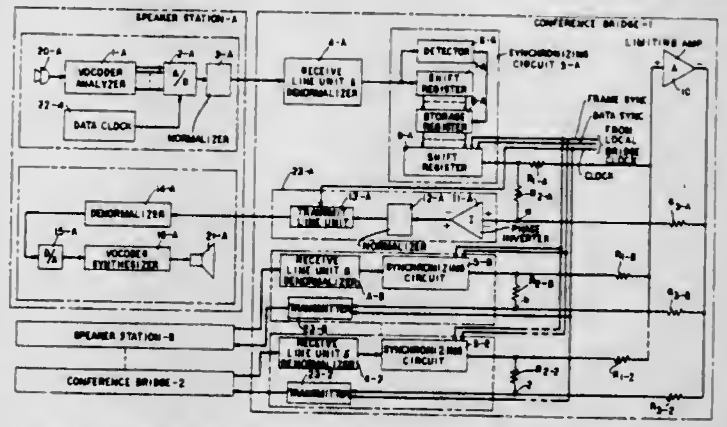
James M. Kelly, Holmdel, and Richard N. Kennedy, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 29, 1967, Ser. No. 664,023
Int. Cl. G10l *1/08*
U.S. Cl. 179—1 7 Claims



A system for the digital conferencing of vocoders is disclosed in which digital code words representing the speech of several simultaneous talkers are synchronized at a conference bridge by sets of shift-register synchronizing circuits corresponding on a one-to-one basis to the talkers. After synchronization, different groupings of simultaneously occurring digital code words are summed, on an RMS basis, to produce sequences of composite digital code words for transmission to the talkers. Each talker receives a sequence of composite code words representing the simultaneous speech of all the other talkers.

3,530,247
DIGITAL VOCODER CONFERENCE SYSTEM

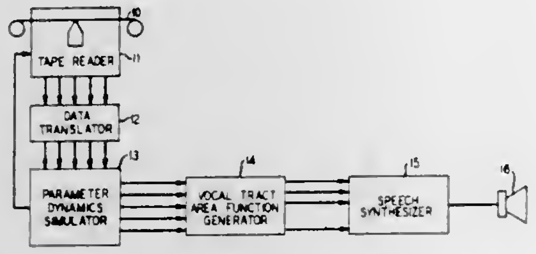
George H. Huber, Short Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 29, 1967, Ser. No. 664,024
Int. Cl. G10l *1/08*
U.S. Cl. 179—1 7 Claims



In a system for the digital conferencing of vocoders, a composite sequence of code words representing the composite speech of simultaneous talkers is obtained by superimposing synchronized sequences of code words, each sequence representing the speech of one talker, on a common conductor. By amplitude limiting the pulses in the resulting composite sequence to a selected value, inverting the polarity of the amplitude-limited pulses, and then adding the resulting amplitude-limited, phase-inverted composite sequence separately to each of the synchronized sequences of code words, a unique composite sequence of code words is derived for transmission to each talker, this sequence representing the composite speech of all other simultaneous talkers.

3,530,248
SYNTHESIS OF SPEECH FROM CODE SIGNALS

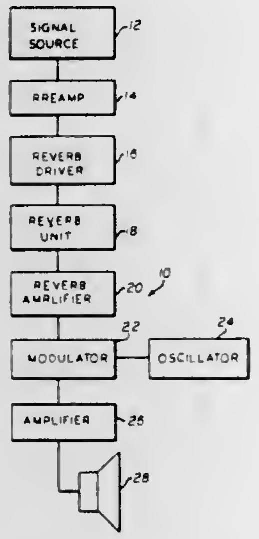
Cecil H. Coker, Chatham Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 29, 1967, Ser. No. 664,129
Int. Cl. G10l *1/00*
U.S. Cl. 179—1 **12 Claims**


10
TAPE READER
11
DATA TRANSLATOR
12
13
PARAMETER DYNAMICS SIMULATOR
14
VOCAL TRACT AREA FUNCTION GENERATOR
15
SPEECH SYNTHESIZER
16

In producing synthetic speed in response to recorded phonemic symbols, a number of signals must be developed for adjusting a synthesizer used for producing speech sounds and the transitional sounds between them. These control signals may be prepared by apparatus that simulates the action of the human vocal tract during phonation. An important parameter of such vocal tract apparatus is the momentary glottal area. A speech synthesis system is described which utilizes phonemic data to develop signals proportional to glottal areas.

3,530,249
ELECTRONICALLY SIMULATED TAPE ECHO SYSTEM

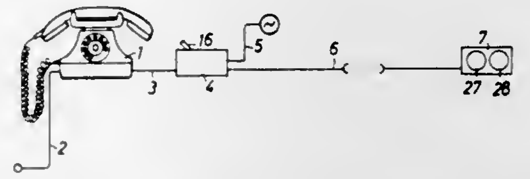
Eugene B. André, Rahway, N.J., assignor to The Ampeg Co., Inc., Linden, N.J., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 672,312
Int. Cl. G10h *1/02*
U.S. Cl. 179—1 **7 Claims**



A simulated tape echo circuit for electronic sound systems in which the desired percussive attack of each sound on repetition is attained by electronically modulating the output signal of a reverberation circuit in an amplifier to periodically interrupt the signal. Desired modulation is obtained by feeding the output of the reverberation circuit through a modulator coupled to an oscillator generating a signal of between 4 and 20 cycles per second. The modulator may be of a variety of electronic or photo-electric types such as a neon tube positioned in light transmitting relationship with respect to a photocell controlling the passage of the signal in response to the oscillation of the neon tube.

3,530,250
TELEPHONE MONITORING OF REMOTELY LOCATED AREAS

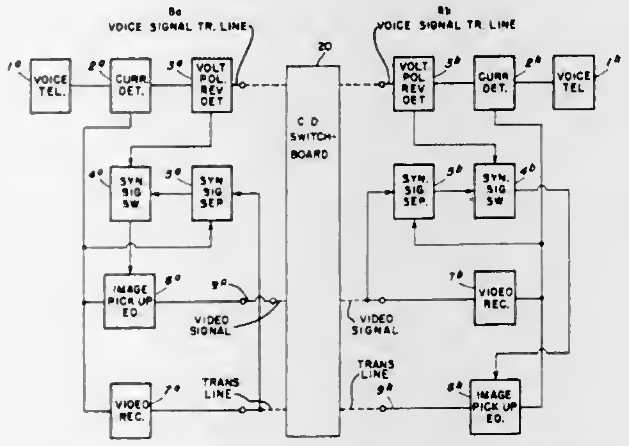
Gustav Schaum, Leverkusen, Rudolf Kremp, Grunwald, near Munich, Johann Becker, Dinslaken, Fritz Hieber, Grunwald, near Munich, and Hans-Peter Huber, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed June 16, 1966, Ser. No. 558,037
Claims priority, application Germany, June 19, 1965, A 49,529; Apr. 6, 1966, A 52,093
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 **4 Claims**



A telephone arrangement for monitoring acoustically remotely-located areas through the use of conventional instruments. A switching device, when set, will receive the ringing signals from a remotely-located telephone instrument, and after the elapse of a predetermined time interval, will connect a microphone to the line. The microphone will thereupon transmit over the telephone line any sounds impinging upon it. After the elapse of a second time interval, the switching device disconnects the microphone from the telephone line, and the monitoring cycle is terminated. When the switching device is set, the ringing signals are not transmitted to the bell of the telephone instrument, but are instead routed to circuitry within the switching device.

3,530,251
VIDEO TELEPHONE SET

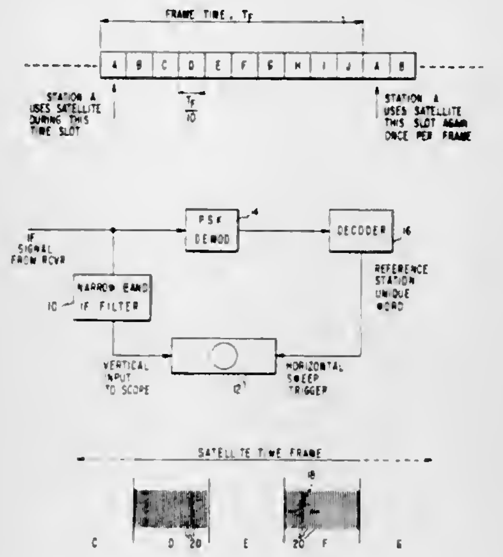
Kiyoharu Miyawaki, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan
Filed Nov. 21, 1967, Ser. No. 684,799
Claims priority, application Japan, Nov. 21, 1966, 41/76,173
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 **5 Claims**



A video telephone set system, including two geographically spaced telephone sets equipped with image pick-up equipments producing appropriate direct current and alternating current signals of preselected frequencies for utilizing the alternating current signals to synchronize the image pick-up equipment of each telephone set with the image pick-up equipment of the other telephone set.

3,530,252
ACQUISITION TECHNIQUE FOR TIME DIVISION MULTIPLE ACCESS SATELLITE COMMUNICATION SYSTEM

John G. Puente, Rockville, Md., assignor to Communications Satellite Corporation, a corporation of Washington, D.C.
Filed Nov. 16, 1966, Ser. No. 594,830
Int. Cl. H04j *3/06*
U.S. Cl. 179—15 **6 Claims**

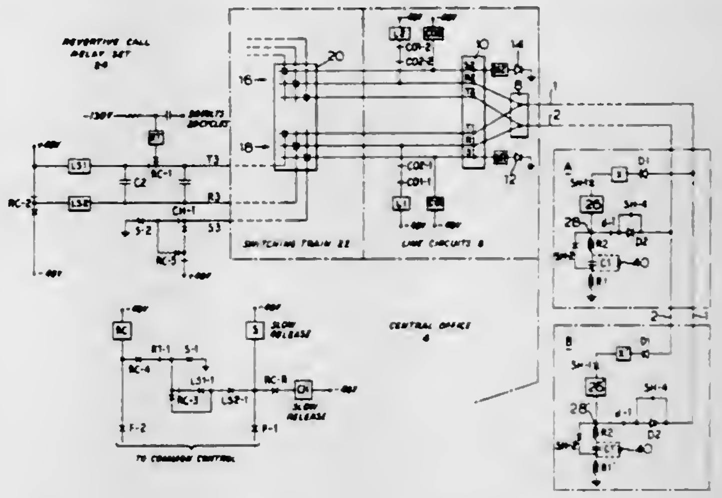


A method of permitting an earth station to initially access its assigned time slot in the satellite relay station in a time division multiple access satellite communication system without interfering with the transmissions of other earth stations in adjacent time slots. Low power accessing pulses are continuously transmitted from the station to the satellite. When a pulse is returned to the station, its position in the satellite time frame is observed. The phase of the access pulse is varied until it appears at the beginning of the time slot assigned to the station. At this time the station's next signal burst is transmitted and the burst will arrive in its assigned time slot when it reaches the satellite. The access pulse is of sufficiently low amplitude so that it does not interfere with the transmissions of other stations utilizing the other time slots in the satellite. The access pulse is of slightly longer duration than the intelligence bit pulses so that it will pass through a narrow band filter at the station and be distinguished from the intelligence bit pulses.

3,530,253
PARTY LINE CIRCUIT USING DIODES IN RINGING CONTROL, LOCKOUT, AND REVERTIVE CALLING

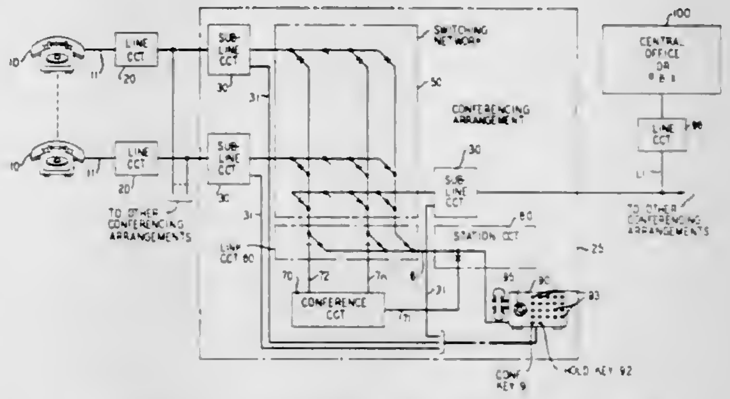
Eric Bierman, Toronto, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed Feb. 20, 1967, Ser. No. 617,254
Int. Cl. H04m *1/70*
U.S. Cl. 179—17 **11 Claims**

A party line system arranged for secrecy and revertive calling, in which two party stations are oppositely connected to two line conductors from a central office. Each station has two diodes in series between the line conductors (the diodes of one station being poled oppositely to those of the other station), and ringing means connected between ground and a point between the diodes. When a revertive call is made, a revertive call relay set in the central office applies to one line conductor a ringing voltage having A.C. and D.C. components. The ringing voltage enters only the called station, not the calling station, because the D.C. component reverse biases a diode of the calling station. When the called party answers, the ringing current D.C. level increases to terminate ringing. Common polarity talking potential is then applied through supervision relays to both line conductors.



3,530,254
EXECUTIVE CONFERENCING SYSTEM

Robert D. Berryman, Red Bank, James R. McEowen, Madison Township, Middlesex County, and George E. Saltus, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 1, 1968, Ser. No. 749,366
Int. Cl. H04m *3/56*
U.S. Cl. 179—18 **13 Claims**

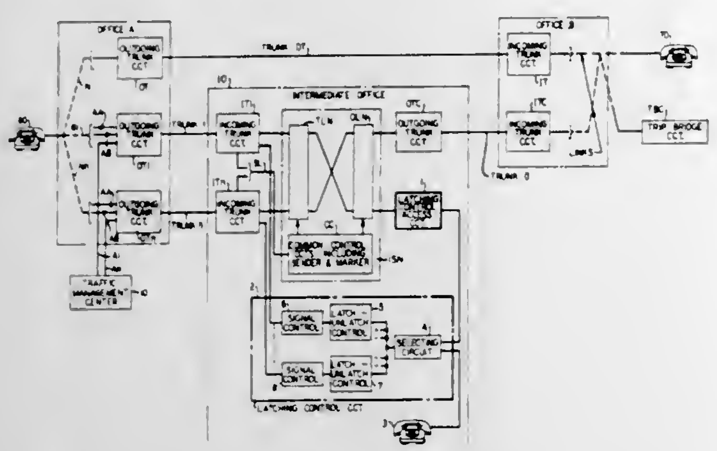


An executive conferencing arrangement for use in a key telephone system provides establishment of a conference call under control of the master station set by sequentially operating a conference key and the respective selection keys associated with the individual stations with which the conference is desired. Additional parties may be subsequently added on to the conference, or existing parties may be dropped off, by simply operating the selection keys associated therewith at the master station set. The master station set can consult privately with one of the conference parties or with another station set over a private link while holding the conference call.

3,530,255
EQUIPMENT FOR LATCHING INTEROFFICE TRUNKING AND SWITCHED PATHS

Clarence H. Dagnall, Jr., Westerville, Gordon C. Irwin, Columbus, and James B. Kennedy, Bexley, Ohio, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 17, 1967, Ser. No. 661,326
Int. Cl. H04m *7/00*
U.S. Cl. 179—18 **17 Claims**

A system is disclosed for augmenting, or supplementing, direct communication trunks between two central offices by controlling the establishment and latching of switched connections through an intermediate office to provide direct paths therebetween. A switch network and common switching equipment are provided at the intermediate office for the establishment of "tandem" connections between the central offices. The intermediate office further includes latching control equipment which is responsive to coded signals generated locally or from a remote location for connecting to prescribed "tandem" connections and thereafter controlling the latching of such connections.



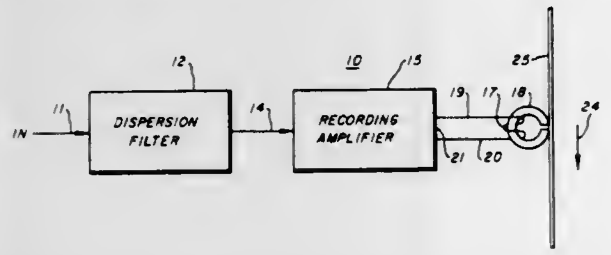
3,530,256
INFORMATION RECORDING AND REPRODUCTION APPARATUS WITH SIGNAL DISPERSION AND RESTORATION FILTERS

Wayne Kassell Hodder, Glendore, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed June 2, 1967, Ser. No. 643,119

Int. Cl. G11b *5/02*

U.S. Cl. 179—100.2 **10 Claims**



Apparatus for recording and reproducing time-varying electric information signals having means for recording information corresponding to elemental fractions of the electric information signals on extended sections of a recording medium, and means for converting information recorded on extended sections of the recording medium into elemental fractions of reproduced information signals, whereby the energy of momentary error signals is dispersed relative to the elemental fractions of the reproduced information signals.

3,530,257
MODULATION OF AN OSCILLATORY CIRCUIT FOR DRIVING A MAGNETIC RECORDING HEAD

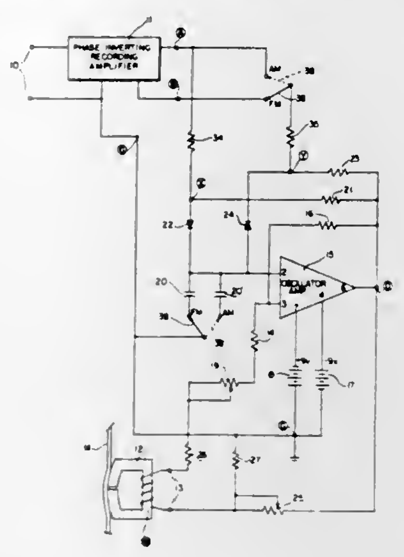
Robert F. Brown, Jr., Dallas, Tex., assignor to Teledyne Industries—Geotech Division, a corporation of Texas

Filed July 22, 1968, Ser. No. 746,546

Int. Cl. G11b *5/04, 5/06;* **H03b** *5/20*

U.S. Cl. 179—100.2 **9 Claims**

An oscillatory circuit for driving a magnetic recording head to record analog intelligence signals in either one of two selectible modes, i.e., frequency modulation of a carrier supplied by the oscillator, or amplitude modulation resembling signals recorded by ordinary AC-biased techniques, the latter also being claimed as a method. The system employs the same oscillatory circuit in both cases, this circuit operating in one mode as a voltage-controlled oscillator wherein both half cycles of the oscillations are either lengthened or shortened depending upon the polarity of said analog input signal, and operating in the other mode in such a way that the analog input, depending upon its polarity, either shortens or lengthens one half cycle of oscillation with respect to the other, whereby the zero axis of the oscillations is shifted up or down with changes in amplitude and polarity of the analog input signal to produce in the magnetic recording head a single oscillation signal resembling the composite of an analog signal plus AC-bias which is normally introduced into a recording head by prior art recording techniques. The mode of recording is conveniently determined by simple switch means.



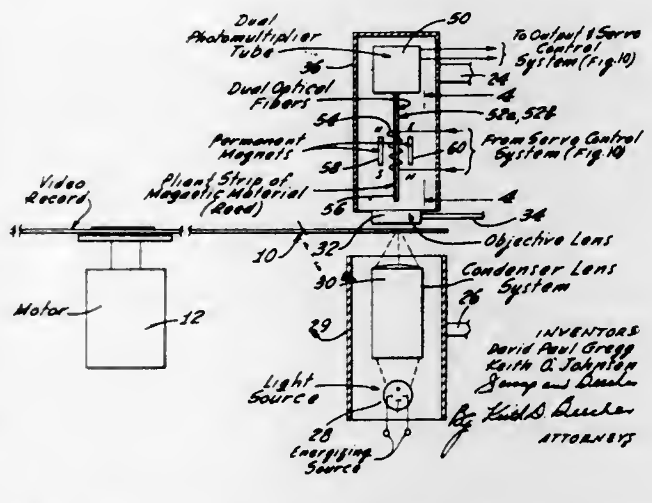
3,530,258
VIDEO SIGNAL TRANSDUCER HAVING SERVO CONTROLLED FLEXIBLE FIBER OPTIC TRACK CENTERING

David Paul Gregg, Los Angeles, and Keith O. Johnson, Topanga Canyon, Calif., assignors, by mesne assignments, to MCA Technology, Inc., Santa Monica, Calif.

Continuation-in-part of application Ser. No. 507,474, Nov. 12, 1965. This application June 28, 1968, Ser. No. 741,020

Int. Cl. G11b *7/00;* **H04n** *5/86, 1/24*

U.S. Cl. 179—100.3 **7 Claims**



A video signal reproducer pick-up head is provided for deriving video signals from a track on an optical recording medium; the pick-up head includes a movable support which is suspended over the recording medium, and means on the support for sensing the video signals recorded on the medium, the transducer being capable of generating control signals which are applied to a servo control system which, in turn, controls the position of the support and thereby serves to maintain the sensing means in proper registry with the track on the recording medium.

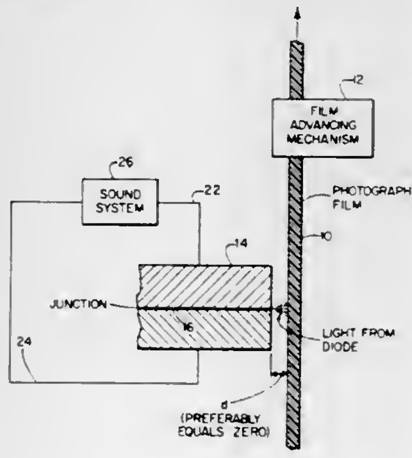
3,530,259
ELECTROLUMINESCENT DIODE AND SOUND RECORDING SYSTEM WITH CONTROLLED MAXIMUM LIGHT INTENSITY

Allan S. Miller, Wellesley, and Paul L. Vitkus, Bedford, Mass., assignors to Norton Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Continuation-in-part of applications Ser. No. 532,121, Mar. 7, 1966, Ser. No. 556,408, June 9, 1966, Ser. No. 591,332, Nov. 1, 1966, Ser. No. 603,853, Dec. 22, 1966, Ser. No. 652,173, July 10, 1967, and Ser. No. 731,938, May 24, 1968. This application July 15, 1969, Ser. No. 841,950

Int. Cl. G11b *7/12;* **G01d** *9/42;* **H05b** *33/16*

U.S. Cl. 179—100.3 **9 Claims**



An electroluminescent junction diode having sharply peaked light output is used, in a preferred form, in conjunction with a sound motion picture camera to record sound on motion picture film. The diode provides a transmission curve on a motion picture film which closely approximates an exponential model. The modulation of the light output is controlled so that the maximum intensity of sound signal to be recorded is below the upper knee of the exposure curve of the film.

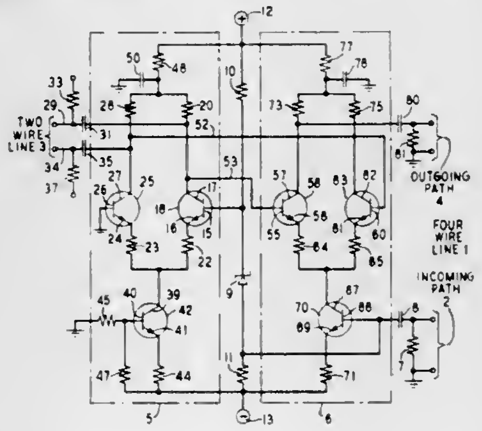
3,530,260
TRANSISTOR HYBRID CIRCUIT

Wilmer B. Gaunt, Jr., Boxford, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Dec. 23, 1966, Ser. No. 604,267

Int. Cl. H04m *1/58*

U.S. Cl. 179—170 **7 Claims**



A transistor hybrid circuit is described which couples the incoming and outgoing paths of a four-wire communications line to a bidirectional two-wire communications line. A first differential amplifier applies a balanced incoming path signal to the two-wire line in response to an unbalanced incoming path signal. The balanced incoming path signal and an outgoing signal from the two-wire line are applied to a second differential amplifier, the output of which is connected to the outgoing path. The unbalanced incoming path signal is also applied to the second amplifier to cancel the incoming path signal from the two-wire line thereby preventing coupling of signals from the incoming path to the outgoing path of the four-wire line.

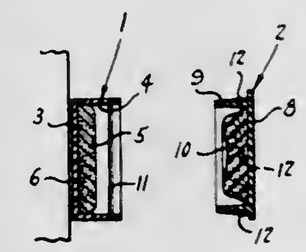
3,530,261
STERILIZING DEVICE FOR TELEPHONE HANDSETS

Raul Guim, 2161 SW. 14th Terrace, Apt. 2, Miami, Fla. 33144

Filed Mar. 22, 1966, Ser. No. 536,342

Int. Cl. H04r *1/12*

U.S. Cl. 179—185 **3 Claims**



A portable sterilizing device for telephone mouthpieces and receivers, comprising an adhesive backed container with disinfectant means therein, a cover for said container, said cover having a shaped pad attached thereto adapted to pick up disinfectant from said disinfectant means when said cover is on said container, and adapted to contact and sterilize a telephone mouthpiece or receiver when the cover is removed and the pad placed against the mouthpiece or receiver and rotated by the hand. A novel latching arrangement comprises detents in the cover, engageable with an annular groove in the container.

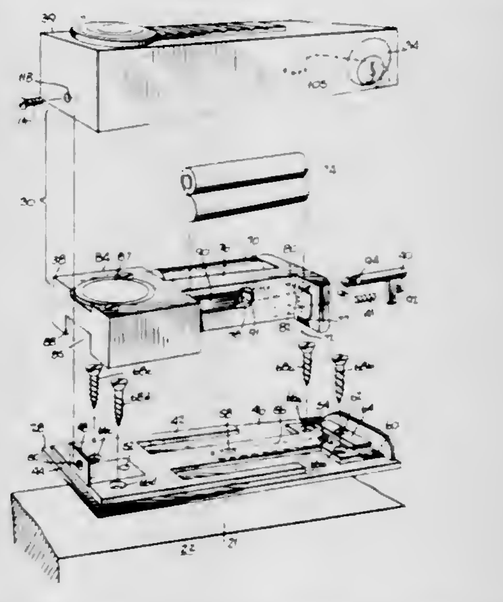
3,530,262
LOCK SWITCH DEVICES

Paul Maddison Hawkins, Jericho, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 25, 1968, Ser. No. 700,510

Int. Cl. H01h *9/28;* **G08b** *13/08*

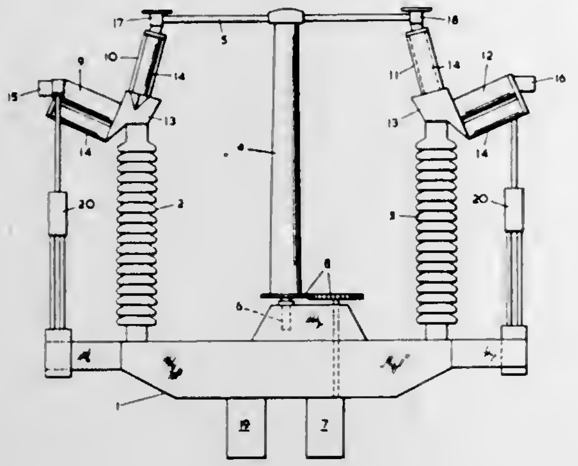
U.S. Cl. 200—44 **13 Claims**



Lock-alarm device having anchor plate adaptable to be secured to closure member, a top secured to anchor plate but having relative movement therewith, and electrical alarm having a multiposition switch including spaced-apart electrodes completed by a plunger rod.

3,530,263
SWITCHING ISOLATORS

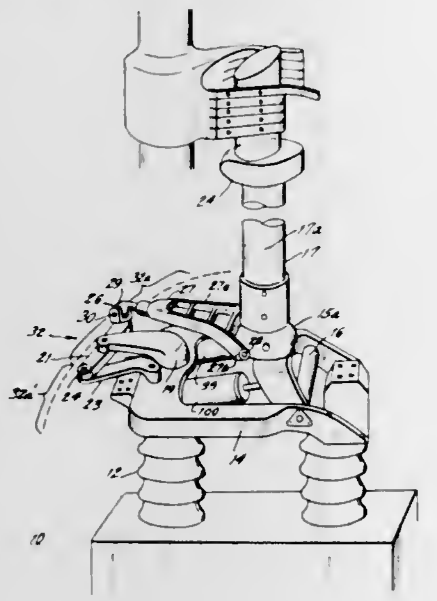
William John Joyce, Stafford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Sept. 30, 1968, Ser. No. 763,588
Claims priority, application Great Britain, Sept. 28, 1967, 44,241/67
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **10 Claims**



A switch isolator has two support insulators **2, 3** each carrying a fixed isolator contact **17, 18** in series with a series-connected pair of circuit interrupters (**9** to **12**), and a rotatable centre post **4** which carries a conductor blade **5** for bridging the two fixed isolator contacts **17, 18.** A drive mechanism **7, 8** is provided for slowly rotating the post **4** and thus the blade **5**, and a separate operating mechanism **19** is provided for rapidly opening the circuit interrupters (**9** to **12**) through suitable linkage. The operating mechanism **19** for the circuit interrupters (**9** to **12**) is preferably in the form of a stored energy device utilising compressed air, hydraulic fluid or mechanical springs.

3,530,264
VERTICAL REACH DISCONNECT SWITCH

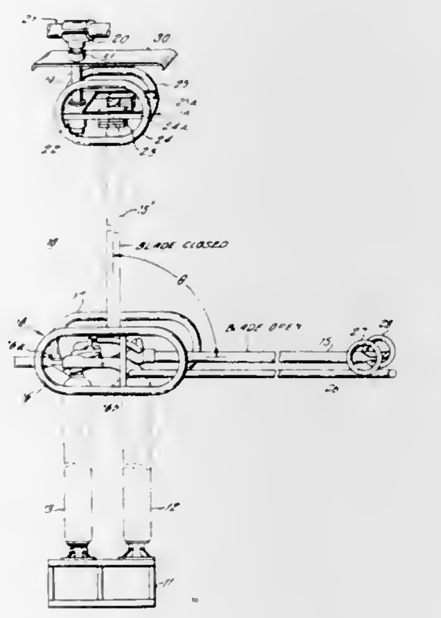
Eugene Gorin, Walter B. Kelly, and Donald C. Musgrave, Greensburg, Pa., assignors to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 9, 1969, Ser. No. 823,428
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **15 Claims**



A vertical reach disconnect switch having an operating mechanism for moving the switch blade from the open (horizontal) position to the closed (vertical) position. Approximately fifty percent of the motion experienced by the operating mechanism (during both opening and closing operations) is devoted to the "twisting" of the blade providing a high magnitude moment for engaging contact between the blade and the jaw structure to provide excellent wiping engagement and assure good electrical contact even in cases of heavy ice loading. Corona shielding is vastly improved over conventional techniques while, at the same time, the weight, overall length and possible ice loading are significantly diminished. Unique beaver-tail structure in the form of a bolted casting provides excellent metal-to-metal contact.

3,530,265
SHIELDING FOR VERTICAL BREAK SWITCHES OF HIGH VOLTAGE RATING

Roy H. Albright, Greensburg, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 28, 1969, Ser. No. 828,566
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **3 Claims**



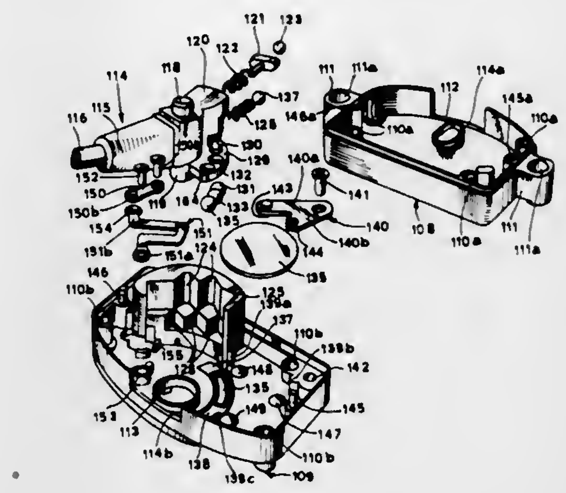
A vertical reach disconnect switch in which the switch blade is maintained in the horizontal position when open and the vertical position when closed. Shields of predetermined shape are mounted to a supporting structure adjacent the blade end at both the jaw structure and the blade support structure for reducing electrical stress concentration of an energized blade to eliminate corona discharge and radio interference as well as for eliminating the need for a spherical conductive member employed in conventional horizontal reach and vertical reach switch designs.

3,530,266
SWITCHING CONTROL APPARATUS FOR VEHICLE DIRECTION INDICATORS AND MAIN LIGHTS WITH OSCILLATORY DISC CONTACTS

Massimo Vitaloni, Rivalta di Torino, Italy, assignor to VIF-Vitaloni S.a.s. di Vitaloni Mario, Giovanni & C., Viale Risorgimento, Beinasco, Torino, Italy, an Italian body corporate
Filed May 31, 1968, Ser. No. 733,551
Claims priority, application Italy, June 3, 1967, 51,936/67; Nov. 2, 1967, 53,578/67
Int. Cl. H01h *3/16*
U.S. Cl. 200—61.34 **13 Claims**

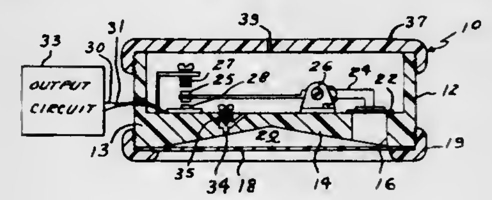
Switching control apparatus for steering-column mounting on a vehicle includes at least two switching units controlling the direction indicators and main lights, the units having respective operating levers which extend laterally

outwardly on the same side of the steering column. Oscillatory discs are used as movable switching contacts, camming devices being used to control the inclination of these discs relative to fixed contacts in response to rocking movement, or in some embodiments, rotational or translational movement, of the respective operating lever.



3,530,267
PULSE SENSOR AND TRANSDUCER FOR SMALL MOVEMENTS

Henry B. Whitmore, Rte. 5, Box 369, San Antonio, Tex. 78211
Filed Oct. 8, 1968, Ser. No. 765,778
Int. Cl. H01h *35/34, 35/40*
U.S. Cl. 200—83 **5 Claims**

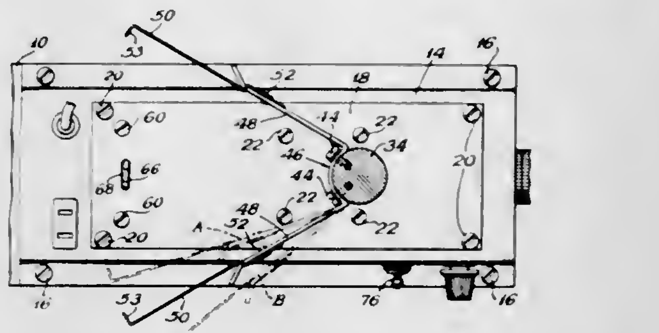


A blood pressure pulse sensor-transducer has a fluent material filled chamber with a sensing diaphragm closing one side of the chamber. The movement of fluent material within the chamber, in response to movement of the diaphragm, is used to move a smaller diaphragm to amplify the movement. The smaller diaphragm moves a pivotable contact arm which acts to close a pair of contacts to an external circuit to provide an output signal. An adjustable bypass passage is provided around the small diaphragm for damping low frequencies. In one embodiment the fluent material is air and in a second embodiment the fluent material is a liquid.

3,530,268
CONTROL FOR CONTINUOUSLY OSCILLATING APPARATUS

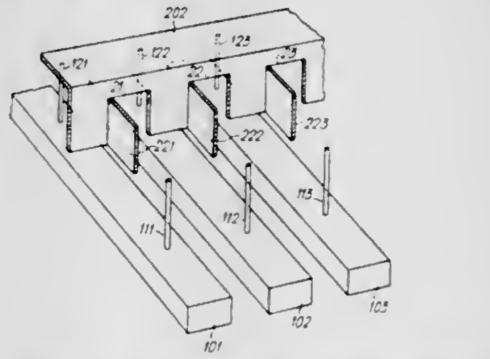
Donald M. Aubrey, Union, Ill., assignor to Aubrey Manufacturing Inc., Union, Ill., a corporation of Delaware
Filed Mar. 1, 1968, Ser. No. 709,716
Int. Cl. H01h *3/16*
U.S. Cl. 200—153 **6 Claims**

A support and control apparatus for oscillating a workpiece, such as a TV camera, through a substantial angular range, about an upright axis for purposes of observing and/or recording the actions and movements of persons and things viewed by the camera throughout its range of oscillating movement. The apparatus includes an electric motor driving a gear train for oscillatably moving a pair of spaced arms in one direction whereupon one arm engages a lever for actuating switch means to reverse the direction of rotation of the motor and gear train for moving said arms in the opposite direction with the other arm upon engagement with said lever actuating said switch means to again reverse the direction of the motor and gear train whereby the gear train continuously oscillates the workpiece.



3,530,269
CROSSBAR CROSSPOINT MATRIX WITH VIBRATION DAMPING MEANS

Pierre M. Lucas, 20 Rue Tariel, 92 Issy-les-Moulineaux, France, and Auguste A. Sautel, 13 Rue Anatole, 94 Bonneull-sur-Marne, France
Filed Aug. 26, 1968, Ser. No. 755,259
Claims priority, application France, Aug. 31, 1967, 119,629
Int. Cl. H01h *67/02*
U.S. Cl. 200—175 **5 Claims**

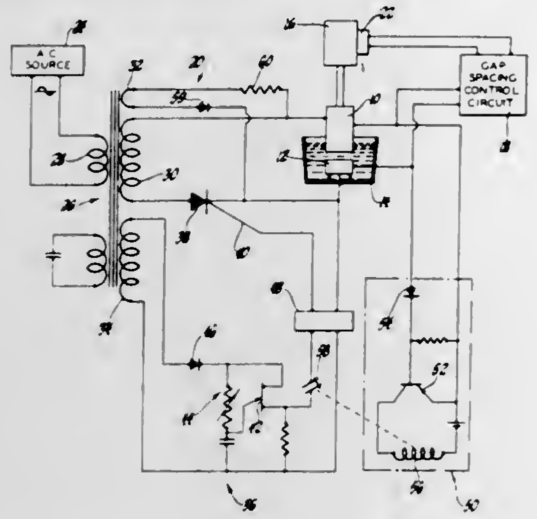


Cross-bar selection switch comprising selection bars and hold bars situated in two parallel planes and perpendicular to each other. Each selection bar bears a plurality of equidistant flexible, conductive selector pins and each hold bar is provided with openings offering unobstructed passage to the selector pins. Along one side of each opening there is a flap extending transversely to the hold bar and forming therewith a dihedron into which a definite selector pin may be conveyed by longitudinal displacement of the bars.

3,530,270
ELECTRICAL DISCHARGE MACHINING APPARATUS

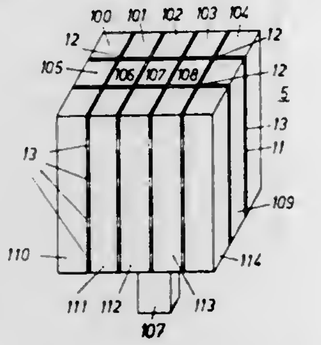
John J. Ross, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 30, 1966, Ser. No. 576,019
Int. Cl. B23p *1/08*
U.S. Cl. 219—69 **9 Claims**

An electrical discharge machining apparatus power supply incorporating a controlled rectifier both for rectification and switching purposes. A triggering device operates the controlled rectifier, which converts power from an AC source to unidirectional pulses of a certain time-phase relation to the AC power and in synchronism with its frequency. A voltage detector senses short circuit conditions and causes the triggering device to turn off the controlled rectifier until the condition is cleared, after which a reset voltage is applied across the gap and the voltage detector then, in response to this reset voltage, reactivates the triggering device so as to recommence operating the controlled rectifier.



3,530,271
ELECTRO-EROSIVE WORKING ELECTRODE HAVING MULTIPLE INDIVIDUALLY INSULATED ELEMENTS

Werner Ullmann, Locarno, and Robert Farinelli, Losone, Switzerland, assignors to AG. fur Industrielle Elektronik Agie Losone B. Locarno, Losone-Locarno, Switzerland
Filed July 24, 1967, Ser. No. 655,630
Claims priority, application Switzerland, July 29, 1966, 11,019/66
Int. Cl. B23p *1/04, 1/08*
U.S. Cl. 219—69 **13 Claims**

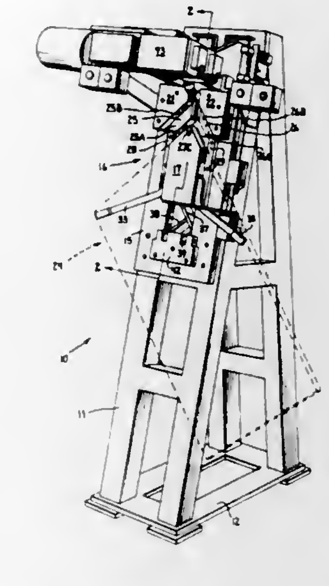


An electrode for the electro-erosive machining of an oppositely situated workpiece which defines therewith an erosion gap filled with a dielectric liquid. The inventive electrode comprises a plurality of neighboring individual electrically conducting elements, and means for insulating the aforesaid plurality of individual elements from one another. Such insulating means comprises a respective insulating layer disposed between said neighboring individual elements, and each insulating layer possesses a thickness in the order of magnitude of the width of the erosion gap.

3,530,272
METHOD AND APPARATUS FOR FORMING SHEET METAL CORNER MEMBERS

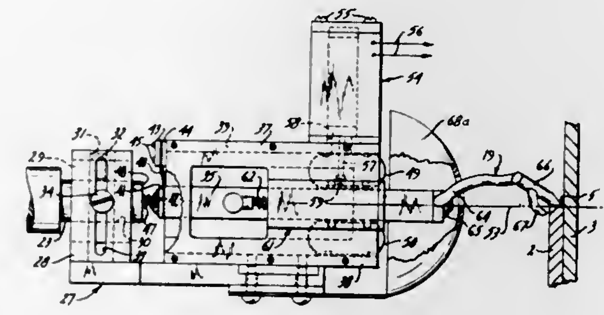
Ralph E. Roper, Indianapolis, Ind., assignor to Wallace Expanding Machines, Inc., Indianapolis, Ind., a corporation of Indiana
Original application Apr. 15, 1966, Ser. No. 542,896, now Patent No. 3,440,711, dated Apr. 29, 1969. Divided and this application Oct. 4, 1968, Ser. No. 785,416
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **1 Claim**

An apparatus for automatically positioning and simultaneously welding the vertical and horizontal junctions of a sheet metal corner. A first clamp member and a pair of second clamp members are shaped complementarily to the sheet metal corner to hold it and to hold together the portions of the corner to be joined. A pair of welding guns are mounted for reciprocal movement through perpendicular paths adjacent the sheet metal corner and between the pair of second clamp members for fusing the corner together.



3,530,273
AUTOMATIC TRACER FOR POSITIONING CONTROL

John G. Bollinger and Howard L. Harrison, Madison, Wis., and Bjorn Berglund, Sandvika Baerum, Norway, assignors to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Jan. 24, 1969, Ser. No. 793,860
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **15 Claims**

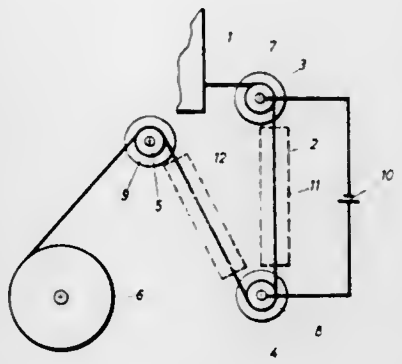


This disclosure includes a weld head driven along a weld seam. A floating probe has a tip riding in the seam. The probe is supported at the outer end by a cantilever leaf spring and at the forward end by a pair of opposed loop springs secured to the top and bottom of the probe. A pair of linear variable differential transformers are mounted to the probe unit and the cores positioned in accordance with the weld seam.

3,530,274
APPARATUS FOR CONTINUOUSLY HEATING WIRE

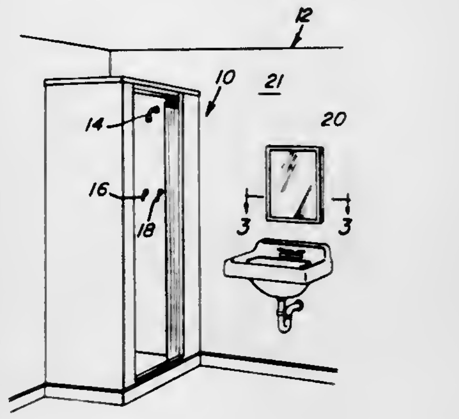
Werner Henrich, 16 Jahnstrasse, 6349 Merkenbach, Germany
Filed Aug. 30, 1968, Ser. No. 756,610
Claims priority, application Germany, Sept. 5, 1967, 1,583,367
Int. Cl. C21d *9/62;* **H05d** *1/00*
U.S. Cl. 219—155 **1 Claim**

Wire emerging from a wire drawing apparatus is passed through a heating zone and then a cooling zone before being rewound. A plurality of rollers driven through permanent magnetic clutches are interposed between the cooling zone and the rewinding roller to carry the moving wire so as to absorb any fluctuations in the speed of the moving wire caused by adjustments in the speed of the rewinding roller. These rollers act as buffers to prevent forces resulting from such speed fluctuations being transmitted to the wire while it is in the heating zone.



3,530,275
CONDENSATION CONTROL FOR MIRRORS

Duyane J. Rust, 109 N. Brown, Bryan, Tex. 77801
Filed Oct. 31, 1968, Ser. No. 772,094
Int. Cl. H05b *3/00*
U.S. Cl. 219—219 **1 Claim**

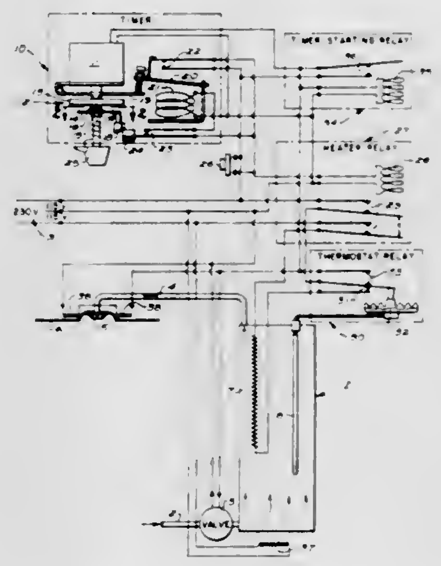


A thermal sensitive switch is mounted on the hot water supply pipe of a shower. When heated water of a predetermined minimum temperature flows through the pipe, the switch is closed and causes energization of a heating element mounted behind a nearby mirror thereby causing the mirror glass to heat which prevents condensation from forming on the outward surface of the mirror.

3,530,276
AUTOMATIC COFFEE BREWING CONTROL

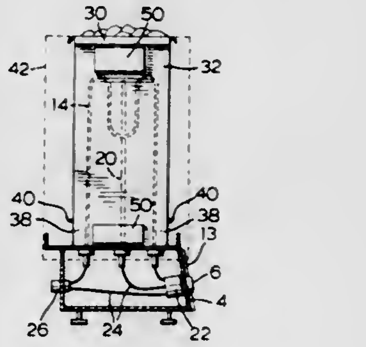
Daniel M. Wells, Torrance, Calif., assignor to Farmer Bros. Co., Torrance, Calif., a corporation of California
Filed May 20, 1968, Ser. No. 730,224
Int. Cl. F24h *1/00*
U.S. Cl. 219—334 **7 Claims**

A control for brewing coffee automatically, in which a momentary manually actuated starter switch initiates operation of a main heater located in a water storage tank controlled by an emersion thermostat, and a holding switch maintains the operation of the heater subject to the thermostat until a predetermined brewing temperature is reached, whereupon the thermostat closes circuits which open a water supply valve to the storage tank to admit cold water, thereby to discharge the previously heated water through a spray head onto a charge of coffee, and simultaneously to initiate operation of a timer which shuts off the supply valve after a predetermined time so that a predetermined volume of hot water is supplied to the coffee. More particularly, during the brewing period determined by the timer, the thermostat may energize and de-energize the main heater to maintain the water at maximum temperature without affecting the timing of the brewing period. Finally on completion of the brewing period, the entire control system is shut off and reset for subsequent repeat of the entire cycle when the starter switch is again momentarily closed.



3,530,277
SAUNA HEATER

Sakari Kujansuu, 1413 Kingston Road, Scarborough, Ontario, Canada
Filed June 12, 1968, Ser. No. 736,500
Int. Cl. A61h *37/00;* **H05b** *1/00*
U.S. Cl. 219—365 **12 Claims**



A sauna heater having a control box, an inner rock container above the control box, and an outer shield surrounding and spaced from the inner container. The space between the shield and container is open at its top and bottom, and the lateral dimensions of the control box adjacent the bottom of the shield are less than those of the shield, so that cool air near the floor is sucked up into the space between the shield and container to cool the control box.

The inner container contains electric elements each surrounded by an element protector spaced slightly from the bottom of the inner container. Air enters the bottom of the element protectors, rises therethrough to cool the elements, and then heats rocks placed above the element protectors.

3,530,278

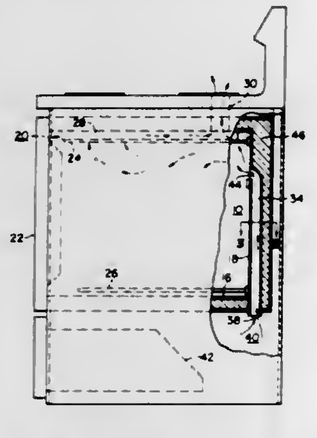
AIR INLET ARRANGEMENT FOR HEAT-CLEANING OVEN

Carl W. Tilus, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1968, Ser. No. 709,123

Int. Cl. F27d *11/02*

U.S. Cl. 219—393 6 Claims



Heat-cleaning oven apparatus in which the air admitted during the cleaning cycle is admitted through ducts extending generally upwardly along one of the fixed vertical walls of the oven for admission into the oven at a level well above the bottom wall of the oven, and with the oven door substantially sealing against admission of air therearound.

3,530,279

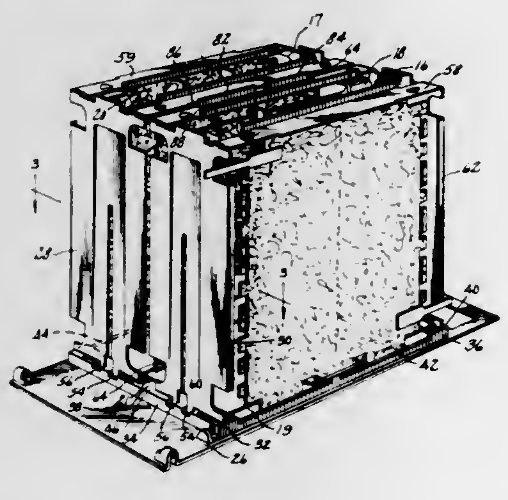
ELECTRIC TOASTER CONSTRUCTION

James A. Ottinger, Allentown, Pa., assignor to General Electric Company, a corporation of New York

Filed Jan. 6, 1969, Ser. No. 789,319

Int. Cl. H05b *3/06;* **A47j** *37/08*

U.S. Cl. 219—542 3 Claims



An electric toaster construction wherein an electric heater card **64** is sandwiched between two heater frame assemblies **28** and **30** and a base plate **26** so that the heater card **64** may be quickly and inexpensively supported on the toaster.

3,530,280

RATIFICATION SYSTEM FOR CREDIT CARDS AND THE LIKE

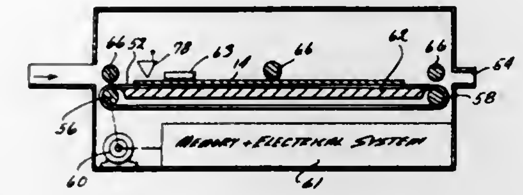
Robert N. Goldman, Pacific Palisades, Calif., assignor to Telecredit, Inc., a corporation of Delaware

Filed Jan. 17, 1967, Ser. No. 609,796

Int. Cl. G05b *1/00;* **G06k** *5/00;* **H04m** *17/02*

U.S. Cl. 235—61.7 4 Claims

The illustrative embodiment cooperates with credit cards containing a number. Designations for cards which have been revoked are recorded upon a magnetic tape and are compared with the designation that is sensed from a card. In the event of coincidence, the card is indicated to have been revoked. Card designations carried on the tape are arranged in accordance with a predetermined numerical sequence. Structures detect when the tape loop has passed the designation of the card under consideration. To further reduce time, the card designations are broken down and carried on several parallel channels of the tape. Each of the channels contains certain digits of the numerical card designations while other digits are employed to address the proper channel.



3,530,281

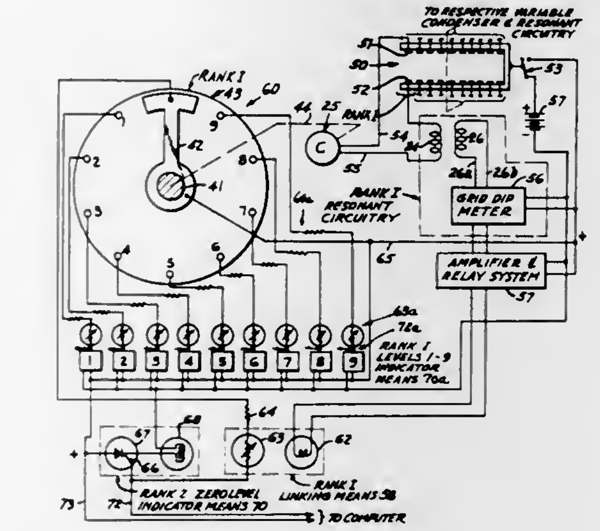
DATA STORAGE AND READOUT DEVICES

Wilfred Smelman, 33372 Bremerton St., Dana Point, Calif. 92629

Filed Sept. 13, 1966, Ser. No. 579,113

Int. Cl. G07f *1/06;* **G06k** *7/00, 19/00, 21/00*

U.S. Cl. 235—61.11 15 Claims


TO RESPECTIVE VARIABLE CONDENSER & RESONANT CIRCUITRY
RANK I
RANK I RESONANT CIRCUITRY
GRID DIP METER
AMPLIFIER & RELAY SYSTEM
RANK I LEVELS 1-9 INDICATOR MEANS
RANK 2 ZERO LEVEL INDICATOR MEANS
RANK I LINKING MEANS
TO COMPUTER

This invention relates to a system for storing and reading out value levels in one or more ranks. Storage means bears for each rank a complete circuit element (a "value element") with an electrical property whose value is proportional to a selected postulated level. A value loop is formed with the value element, a reference coil and a variable element which can be caused to resonate, and whose resonation may be read out as a function of the value with the circuitry described herein.

3,530,282

PNEUMATICALLY OPERATED PUNCHED TAPE READING DEVICE

John Sydney Cant, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company

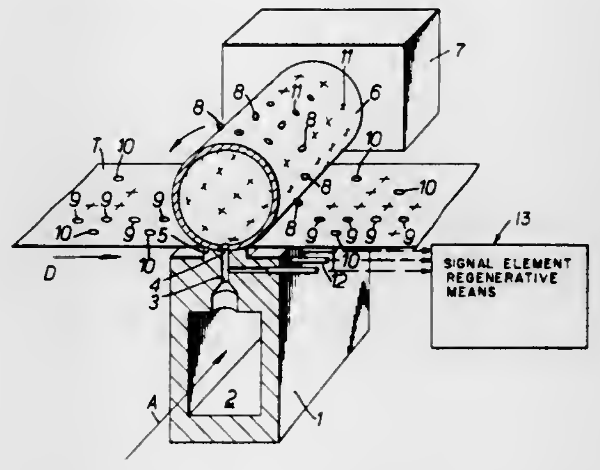
Filed July 14, 1967, Ser. No. 653,552

Claims priority, application Great Britain, July 19, 1966, 32,309/66

Int. Cl. G06k *9/02*

U.S. Cl. 235—61.11 2 Claims

Pneumatic punched tape readers commonly use input and output channels separated by a perforated tape. In operation gas is forced from the input channels through the holes in the tape to the receiving channels where it actuates signal means. The invention uses input channels leading gas under pressure to a row of mouths in a fixed surface. In operation tape is drawn across and pressed against the surface by a roller having holes arranged to exhaust, to atmosphere, gas which has passed through any of the mouths and the holes in the tape, whereby changes in pressure in the input channels, which are closed by the tape when a hole is not present, actuate signal means.



3,530,283

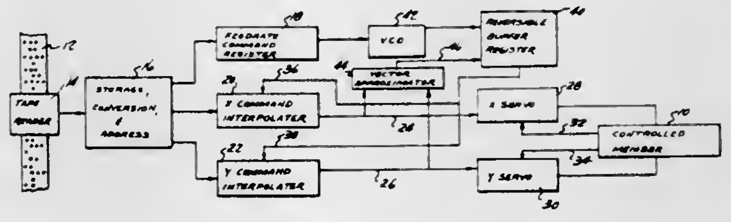
FEED RATE CONTROL FOR CONTOURING OR SLOPE CONTROL SYSTEM

George H. McDaniel III, Northville, Mich., assignor to The Bendix Corporation, a corporation of Delaware

Filed Sept. 11, 1967, Ser. No. 666,902

Int. Cl. G06f *7/64*

U.S. Cl. 235—150.5 13 Claims



The input data to a numerical control system consists of commands directing the distances over which a part is to be moved along each of a plurality of mutually perpendicular axes and a feed rate command number proportional to the rate at which the resultant of these motions is to occur. Each command number is repeatedly added into a register and overflows from the registers generate a plurality of command pulse trains for the various axes wherein each pulse represents a basic increment of movement of the output member along its axis. These pulse trains are provided to servo systems for each axis and to a vector approximator which generates a pulse train having frequency proportional to the rate of motion of the resultant of the component motions commanded by the various pulse trains. The feed rate command is used to generate a pulse train having a frequency proportional to the rate at which the motion is commanded to occur. The output of the vector approximator and the feed rate pulse train are respectively used to add or subtract from the count in a reversible buffer register. When the count is of one polarity, indicating that more pulses have been received from the vector approximator than from the command pulse train, the command adder operation is terminated when the count on the buffer is of an opposite polarity indicating that more pulses have been received from the feed rate command train than from the vector approximator, the addition process is renewed.

3,530,284

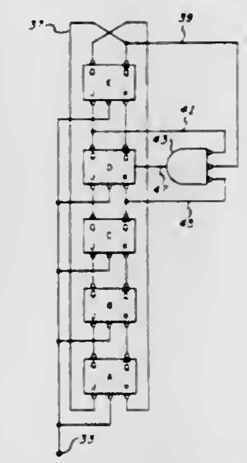
SHIFT COUNTER HAVING FALSE MODE SUPPRESSION

Delos L. Wood, Charlottesville, Va., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed Mar. 25, 1968, Ser. No. 715,746

Int. Cl. G06m *3/12;* **H03k** *21/34*

U.S. Cl. 235—153 9 Claims



A multi-stage shift register counter in which preferred and spurious modes may occur has auxiliary gating means coupled to three successive counter stages. The gating means is connected to produce a correction signal to the intermediate of these stages if the three stages happen to be switched to the ZERO-ONE-ZERO state.

3,530,285

ARRANGEMENT FOR PERFORMING ARITHMETIC OPERATIONS USING AN INTERMEDIATE STORAGE

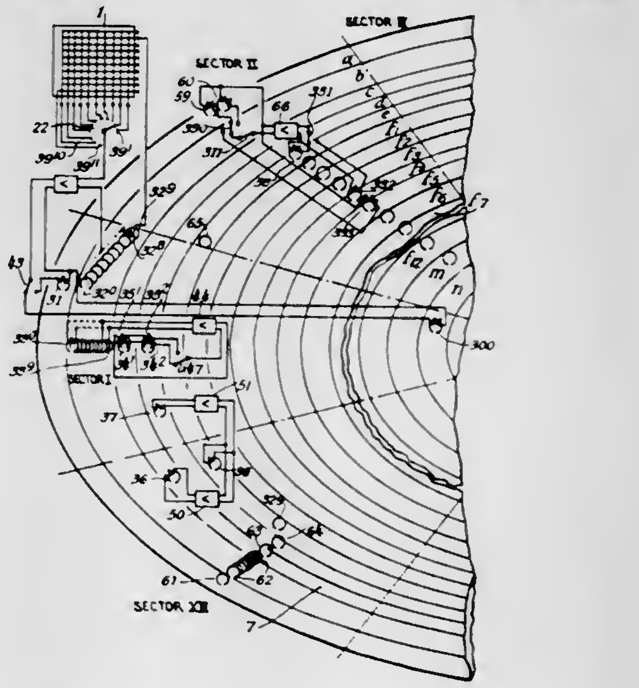
Gerhard Dirks, Los Altos Hills, Calif., assignor to Dirks Electronics Corporation, Los Altos Hills, Calif., a corporation of Delaware

Continuation of abandoned application Ser. No. 421,140, Dec. 8, 1964, which is a continuation of application Ser. No. 728,983, Apr. 16, 1958. This application Oct. 23, 1965, Ser. No. 518,506

Claims priority, application Germany, Oct. 1, 1948, P 11,464

Int. Cl. G06f *7/50*

U.S. Cl. 235—176 10 Claims



A number, having a plurality of decimal digits, each digit corresponding to a determined denominational order is stored on a disc, wherein each of said decimal digits is represented by at least one corresponding data bit within storage positions assigned to said denominational order. A second number may be entered on a keyboard, the keyboard also having ten storage positions assigned to each denominational order. First digit signals corresponding to the value of a digit of a given denomination in the first number are furnished simultaneously with second digit signals corresponding to the value of the corresponding digit in the second number. The sum signal representing the sum of the two digits is recorded on one track of the disc if the sum is less than ten and on another track if the sum is greater than nine. A signal sensed from the first track is then recorded directly on the output track, while a signal sensed from the other track is recorded on the output track diminished by ten while a carry signal is generated causing the first sum signal formed from digits of the next higher denominational order to be increased by one prior to recording.

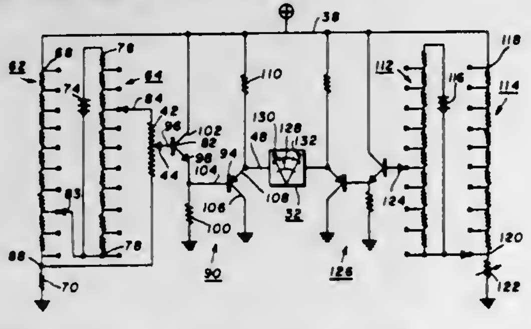
3,530,286
INSTRUMENT FOR STATISTICAL COMPUTATIONS

Thomas E. Pelt and Phillip A. Legare, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation of application Ser. No. 739,908, June 14, 1968, which is a continuation of application Ser. No. 402,192, Oct. 7, 1964. This application Dec. 16, 1968, Ser. No. 785,446

Int. Cl. G06g *7/00;* G01r *17/14*

U.S. Cl. 235—179 **2 Claims**



A potentiometer reduces the voltage supplied to one terminal of a meter relay. The potentiometer is connected between ground and a contact stepped along a first voltage divider. The opposite terminal of the meter relay is connected to a contact stepped along a second voltage divider. One contact is stepped for each rejected sample; the other contact is stepped for each accepted sample. Adjustment of the potentiometer tap permits setting the device for different sequential sampling plans.

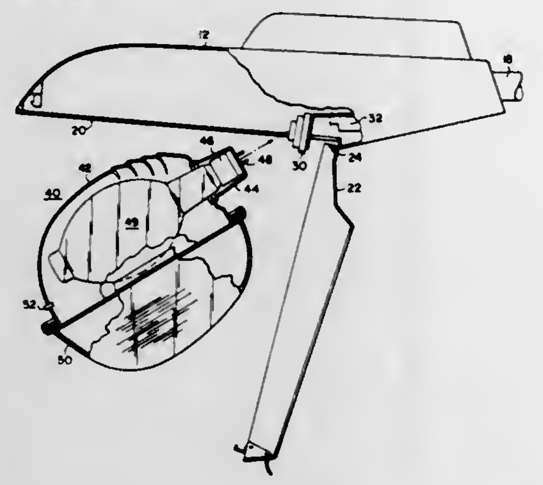
3,530,287
STREETLIGHTING LUMINAIRE CONTAINING REPLACEABLE SEALED OPTICAL SYSTEM

Donald E. Husby, Fairview Park, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 6, 1968, Ser. No. 710,847

Int. Cl. F21s *1/10*

U.S. Cl. 240—25 **10 Claims**



A streetlighting luminaire employing a self-contained, replaceable, sealed optical system in which the reflector and refractor are sealed together to form a hermetically sealed container. Within the container is mounted a lamp socket having male electrical connector blades which extend externally of the sealed container to plug into a female electrical socket fixed with respect to the luminaire housing. A lamp is mounted in the socket and the interior of the container surrounding the lamp may be evacuated or may contain a gas fill with relamping of the luminaire being accomplished by replacing the entire sealed optical system.

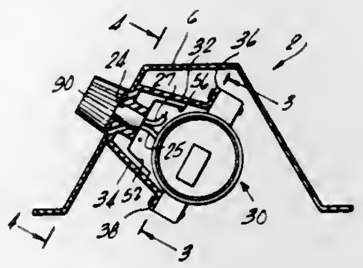
3,530,288
AQUARIUM REFLECTOR

Allan H. Willinger, New Rochelle, N.Y., assignor to Metaframe Corporation, Maywood, N.J., a corporation of Delaware

Filed Feb. 13, 1968, Ser. No. 705,148

Int. Cl. F21s *1/02*

U.S. Cl. 240—52 **6 Claims**



A lamp bracket assembly is mounted on an aquarium lamp reflector. The lamp assembly comprises a lamp socket, a switch and a bracket. The bracket has a collar against which the switch abuts and a pair of shoulders adjacent the collar. A leg depends from each shoulder and the lamp socket is affixed to the legs at the end opposite from the shoulders. The bracket is connected from an electrically non-conductive substance and insulates the socket from any surrounding conductive substances.

3,530,289
LIGHT REFRACTING FIXTURE

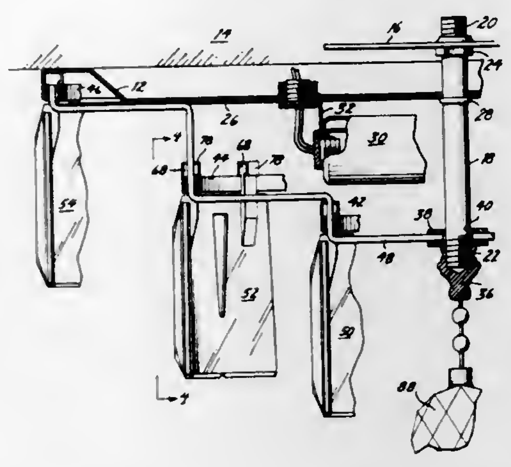
Julius Friedman, Levittown, and Carl Wellhofer, Glenside, Pa., assignors to Lighting Corporation of America, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 19, 1968, Ser. No. 753,435

Int. Cl. F21v *1/04*

U.S. Cl. 240—108 **10 Claims**

A light fixture having faceted pendants are coupled to a frame adjacent a light source to form a refracting fixture of crystal-like appearance. The faceted pendants are supported on the frame by hook elements which have a light for receiving the frame. The hook element is fastened to the frame by a resilient clip. The pendant member may comprise several discrete pendant elements and may be supported by a number of hook elements.



3,530,290
FIELD EMISSION ION SOURCE FOR A MASS SPECTROMETER HAVING RELATIVELY MOVABLE ANODE AND CATHODE ELECTRODES

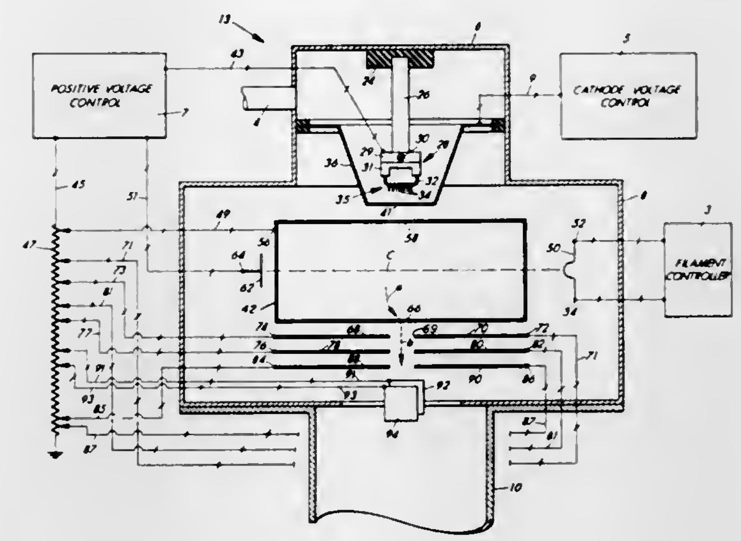
Graham G. Wanless, Westfield, N.J., and George A. Glock, Baltimore, Md., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Sept. 13, 1967, Ser. No. 674,040

(Filed under Rule 47(a) and 35 U.S.C. 116)

Int. Cl. H01j *39/36*

U.S. Cl. 250—41.9 **4 Claims**



An improved ionization source for a mass spectrometer which sources employ a tip array anode consisting of a multiplicity of individual anode tips arrayed on a support means. The anodes contemplated may consist of a row of evenly spaced tips or alternatively there may be two or more such rows.

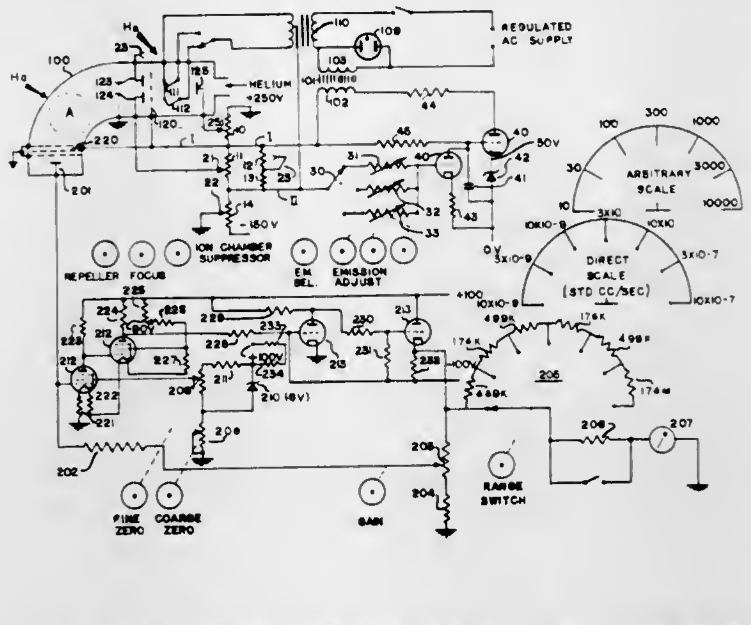
3,530,291
MASS SPECTROMETER LEAK DETECTOR CONTROL CIRCUIT

Walton E. Briggs, Lynnfield, and Deane P. Sheldon, Franklin, Mass., assignors to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed Dec. 9, 1965, Ser. No. 512,649

Int. Cl. H01j *39/34*

U.S. Cl. 250—41.9 **3 Claims**



Mass spectrometer tube leak detector control with direct reading capability achieved principally by an electron emission regulator which holds electron emission in the spectrometer tube to a desired rate allowing the operator to rely on an initial tuning.

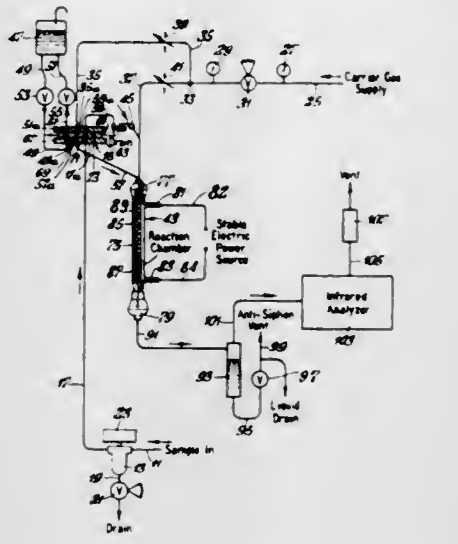
3,530,292
APPARATUS AND METHOD FOR DETERMINATION AND MEASUREMENT OF CARBON IN AQUEOUS SOLUTIONS

Herbert N. Hill, Jr., South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

Filed Apr. 26, 1967, Ser. No. 633,807

Int. Cl. G01n *21/26, 21/34*

U.S. Cl. 250—43.5 **10 Claims**



An apparatus and method for determining the presence and amount of relatively small concentrations of organic and inorganic carbon-bearing constituents in aqueous solutions. A predetermined quantity of aqueous solution sample to be analyzed for carbon present therein is injected into an inert nonoxygen containing carrier gas stream and transported into a reaction chamber wherein the water is vaporized and the carbon-bearing constituents are converted to carbon dioxide at a temperature of from about 700° C. to about 900° C. The vaporized water, carbon dioxide and other reaction products from the reaction chamber are carried through a conduit wherein some water condenses, through a gas-liquid separator wherein the water is removed and wherefrom remaining gases and vapors are transported to an analyzer selectively sensitized to measure carbon dioxide and which reads out or produces indicia in terms of total carbon present in the original sample.

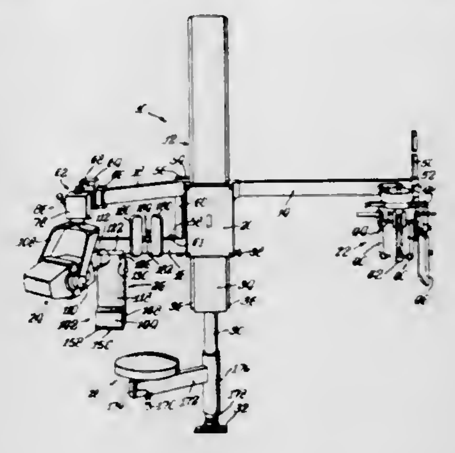
3,530,293
CEPHALOMETER DEVICE

Bruno F. Wehmer, 740 Old Dobbin Road, Lexington, Ky. 40502

Filed Apr. 1, 1968, Ser. No. 717,604

Int. Cl. H05g *1/02*

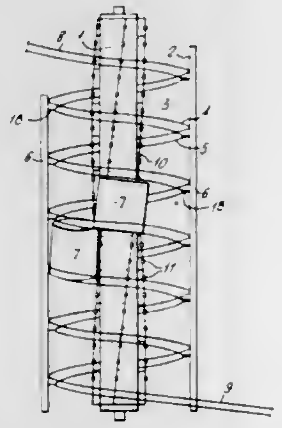
U.S. Cl. 250—50 **7 Claims**



A cephalometer including a base support member having counterbalanced support arms, a head positioning fixture disposed on one of the support arms and defining a generally fixed alignment axis, an X-ray head adjustably supported on another of the support arms and including an X-ray beam-directing tube, and a fixator having a support plate pivotally connected to one of the support arms. The fixator includes a fixator channel adapted to selectively receive and maintain the beam-directing tube in axial alignment with the alignment axis of the head positioning fixture when the fixator is disposed in a first position, the fixator being movable to a second position allowing operation of the X-ray head independently of the fixator. A seat and headrest are associated with the base support for conveniently locating a subject generally adjacent the X-ray head.

3,530,294
APPARATUS FOR IRRADIATING ARTICLES MOVING ALONG A HELICAL TRACKWAY

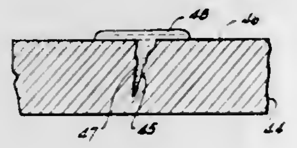
Frank Rogers, Longworth, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Apr. 21, 1966, Ser. No. 544,155
Claims priority, application Great Britain, Apr. 26, 1965, 17,562/65
Int. Cl. G01n *21/00, 23/20*
U.S. Cl. 250—52 **8 Claims**



Apparatus for irradiating articles with a source of radiation comprising a longitudinal member surrounded by guide structure which defines a helical trackway. At least part of the trackway is disposed within the field of radiation from the source. Means associated with the longitudinal member cooperate with the articles to be irradiated such that when the longitudinal member is rotated the articles are rolled along the trackway and are subjected to irradiation from the source.

3,530,295
TRACER PROCESSES EMPLOYING ULTRAVIOLET ABSORBER MATERIALS

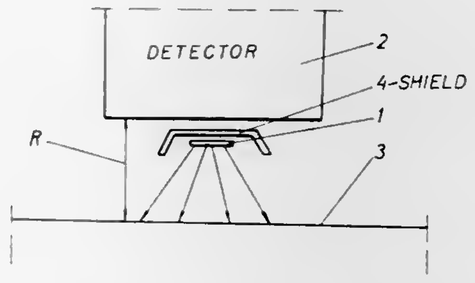
James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 90046
Original application Oct. 4, 1965, Ser. No. 492,674, now Patent No. 3,386,920. Divided and this application May 22, 1968, Ser. No. 731,225
Int. Cl. G01n *21/16*
U.S. Cl. 250—71 **4 Claims**



An inspection process and inspection tracer compositions which utilize ultraviolet absorber dyes dissolved in liquid or resinous carriers. The tracer compositions disclosed may be used in the detection of surface defects in fluorescent plastic parts, or in conjunction with various fluorescent substrates, whereby the presence of the tracer is revealed, under ultraviolet irradiation, as a black nonfluorescent indication against a fluorescent background.

3,530,296
METHOD FOR MEASURING QUANTITIES ASSOCIATED WITH THE FILLER DISTRIBUTION OF PAPER

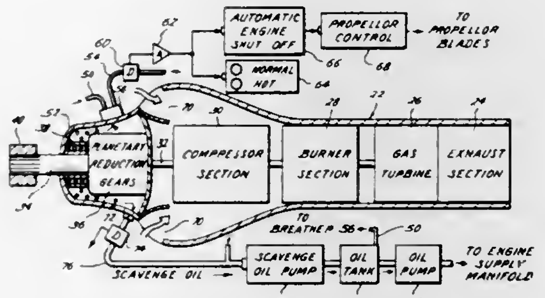
Antti Ilmari Lehtinen, Jyvaskyla, and Eino Juhani Kuusi, Helsinki, Finland, assignors to Valmet Oy, Helsinki, Finland, a corporation of Finland
Filed Mar. 29, 1968, Ser. No. 717,350
Claims priority, application Finland, Apr. 1, 1967, 962/67
Int. Cl. G01t *1/16*
U.S. Cl. 250—83 **2 Claims**



Coatings and fillers in paper are measured without destroying the paper by a radioisotope radiation source, alpha radiation being used for measuring the coating substance and the filler contents of the surface layers of paper, while X-ray, gamma or beta radiation is used for measuring the total filler contents in the direction of paper's thickness.

3,530,297
METHOD AND APPARATUS FOR DETERMINING EXCESS TEMPERATURE OF A MACHINE COMPONENT BY THE USE OF AN INERT RADIOACTIVE GAS

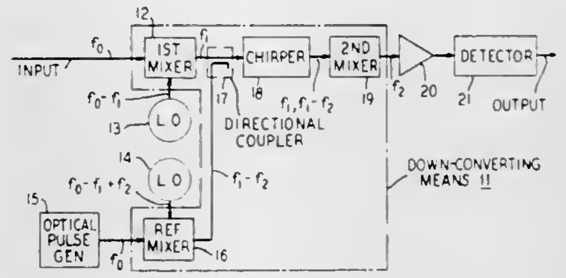
William C. Eddy, Jr., Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Aug. 8, 1966, Ser. No. 571,120
Int. Cl. G01f *1/16*
U.S. Cl. 250—83.3 **19 Claims**



A method and apparatus for detecting when a component part within a machine is operated at a temperature in excess of a predetermined maximum safe temperature includes incorporating an inert radioactive gas such as Kr 85 interstitially within one or more selected parts, preheating the treated parts to the predetermined temperature, the operation above which may cause the part to fail, to release a quantity of the radioactive gas until no further gas is released at or below that temperature, installing the treated parts within the machine, detecting the presence of released radioactive gas to indicate that the temperature of a part has subsequently exceeded the predetermined temperature, and indicating or signalling that the safe temperature of a part has been exceeded.

3,530,298
OPTICAL HETERODYNE RECEIVER WITH PULSE WIDENING OR STRETCHING

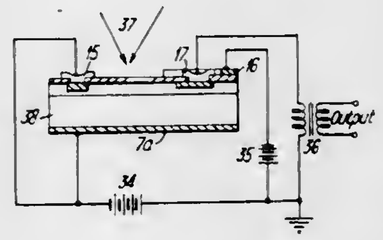
William M. Hubbard, Middletown Township, Monmouth County, and Rudolf Kompfner, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 17, 1968, Ser. No. 722,106
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 **7 Claims**



In the optical heterodyne receivers disclosed, the overall signal-to-noise ratio is improved by efficiently widening the information modulated pulses at some point in the down-conversion process so that their bandwidth is comparable to the bandwidth of the intermediate frequency portion of the receiver. In particular, dispersive widening techniques are disclosed. In the multiple-stage down-conversion processes disclosed, several different sequences of dispersive widening and mixing are employed.

3,530,299
OPTICAL DEVICE FOR RESPONDING TO DIFFERENCE FREQUENCY OF INCIDENT LIGHT BEAMS

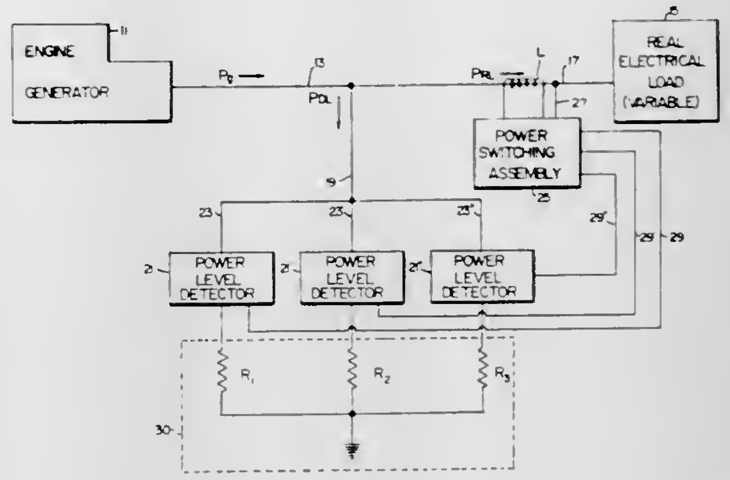
Carl Peter Sandbank, Bishop's Stortford, England, and Robert Joseph Strain, Plainfield, N.J., assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 19, 1966, Ser. No. 573,555
Claims priority, application Great Britain, Aug. 27, 1965, 36,915/65
Int. Cl. H01l *15/06*
U.S. Cl. 250—211 **15 Claims**



A semiconductor optical mixer system having a thin epitaxial photosensitive mixing layer deposited on a substrate of opposite conductivity type. The mixing layer has an electric field and induced current established therein parallel to the surface of the mixing layer which is modulated upon exposure to two incident beams of light at their difference frequency. The mixing layer is covered with a transparent protective layer, such as silicon oxide, having a thickness which provides for optical impedance matching.

3,530,300
AUTOMATIC LOAD CONTROL FOR GENERATOR ENGINE SETS

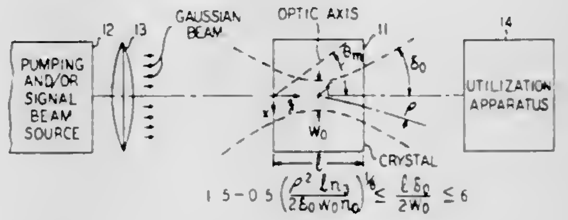
Frank A. Gunther, Staten Island, N.Y., and Peter B. Smith, Monroe, Conn., assignors to Dynamics Corporation of America, New York, N.Y., a corporation of New York
Filed Sept. 11, 1968, Ser. No. 759,159
Int. Cl. H02j *3/10*
U.S. Cl. 307—33 **4 Claims**



An engine generating system including a generating set for delivering power to a real fluctuating load. A variable dummy load is inter-connected between the generating set and the real load, and is automatically varied in a ratio inversely proportional to the fluctuations of the real load so as to maintain the power output from the generating set substantially constant.

3,530,301
NONLINEAR OPTICAL DEVICES EMPLOYING OPTIMIZED FOCUSING

Gary D. Boyd, Rumson, and David A. Kleinman, Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Mar. 14, 1968, Ser. No. 713,055
Int. Cl. H03f *7/00*
U.S. Cl. 307—88.3 **10 Claims**


PUMPING AND/OR SIGNAL BEAM SOURCE
12
13
GAUSSIAN BEAM
OPTIC AXIS
11
θ_m
δ_0
14
UTILIZATION APPARATUS
ρ
x
ξ
W_0
CRYSTAL
l
$1.5-0.5\left(\frac{\rho^2 l n_3}{2\delta_0 w_0 n_0}\right)^{1/6} \le \frac{l\delta_0}{2w_0} \le 6$

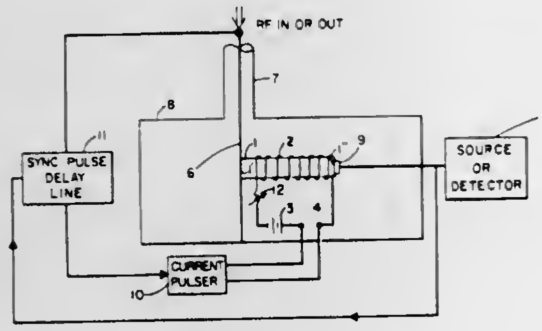
Optimum focusing is disclosed for various optical parametric devices, harmonic generators and nonparametric nonlinear mixers, such as sum-frequency mixers. It is found that, in each case, optimum focusing resides in a range of a focusing parameter which is not intuitively obvious because of the complex inter-relationship of the advantages of increased beam intensity provided by sharper focusing and the disadvantages of more rapid divergence due to diffraction caused by the sharper focusing. Moreover, in some resonant cases in which crystal losses are appreciable, it is shown that there exists an optimum optical path length in the body of nonlinear material.

3,530,302
METHOD OF AND APPARATUS FOR CHANGING FREQUENCY POWER AND/OR DELAY TIME OF WAVE ENERGY

Frederic R. Morgenthaler, Winchester, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

Filed June 14, 1967, Ser. No. 645,947
Int. Cl. H03f *7/00*

U.S. Cl. 307—88.3 **14 Claims**



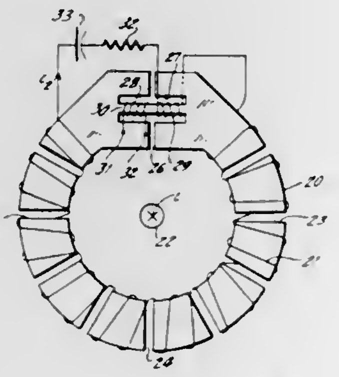
A method of varying frequency and power of wave energy by introducing the wave energy into a material, said material being one which supports propagating wave energy of which the phase velocity and/or group velocity can be varied by varying the environmental parameters within the material, controlling said parameters to ensure that at least a part of the energy takes the form of a wave of which the phase velocity and/or group velocity can be varied, and, during the time that the energy is in such form, changing said parameters in time thereby to vary the frequency and power of the wave. The method is useful, also, to vary the period of time that the wave is in the material thereby to provide a variable delay line for wave energy, and to vary the duration of a wave pulse in order to effect pulse compression or expansion.

3,530,303
CURRENT ZERO ANTICIPATING CIRCUIT

Felix H. Bachofen, Folcroft, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 1, 1969, Ser. No. 811,815
Int. Cl. H01h *9/56*

U.S. Cl. 307—106 **9 Claims**



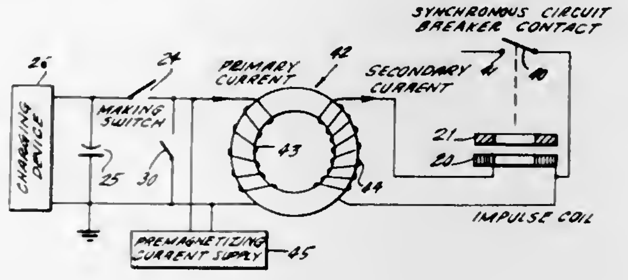
A circuit for generating a signal pulse at a given time before the current zero value of a symmetric or asymmetric current. The pulse is obtained by adding the outputs of two circuits, one of which is proportional to the current of the circuit being measured, and the other being proportional to the sum of the derivative of the current being measured and the time delay that would normally be produced.

3,530,304
DRIVING CIRCUIT FOR IMPULSE COILS WITH CAPACITOR SHORTING SWITCH

Felix H. Bachofen, Folcroft, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 21, 1968, Ser. No. 754,334
Int. Cl. H01f *7/18*

U.S. Cl. 307—108 **5 Claims**



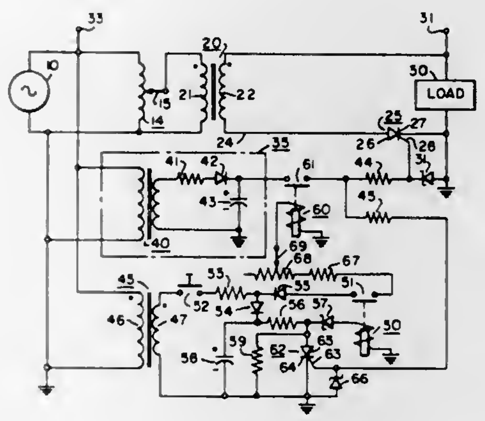
An impulse coil system has a primary winding and a short-circuited secondary winding closely coupled to the primary winding and movable away from the primary winding. The primary winding is energized from a charged capacitor through a making switch. A high speed shorting switch, such as a diode, controlled rectifier, a suitable spark gap arrangement or a suitable mechanically driven pair of contacts are connected across the capacitor and short-circuit the capacitor when the capacitor voltage attempts to reverse.

3,530,305
SINGLE PULSE GENERATOR

Wallace D. Loftus, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennnsylvania

Filed Apr. 1, 1969, Ser. No. 811,890
Int. Cl. H01h *9/56*

U.S. Cl. 307—133 **7 Claims**



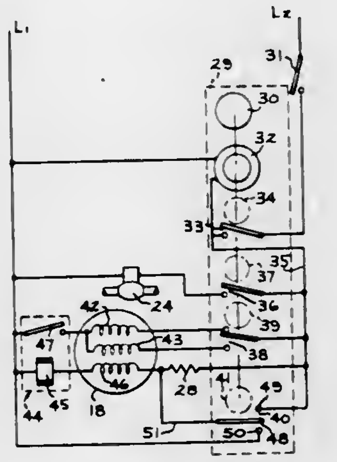
Herein disclosed is single pulse providing generator. A controlled switch is connected between a load and a transformer to an alternating current power source. Threshold responsive means are provided which, upon a predetermined alternating current source signal, activates means for closing the controlled switch after the alternating current power source voltage next passes through zero thereby permitting the passage of the alternating current to the load. When the alternating current next passes through zero means are provided to open the controlled switch and also to disable the threshold responsive means thereby permitting only a single pulse of electrical energy to the load. Additionally the single pulse may be provided in synchronization with a steady state alternating current signal additionally provided to the load.

3,530,306
DISHWASHER CONTROL CIRCUIT

Lauren W. Guth, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Apr. 11, 1969, Ser. No. 815,327
Int. Cl. H01h *9/54*

U.S. Cl. 307—136 **4 Claims**



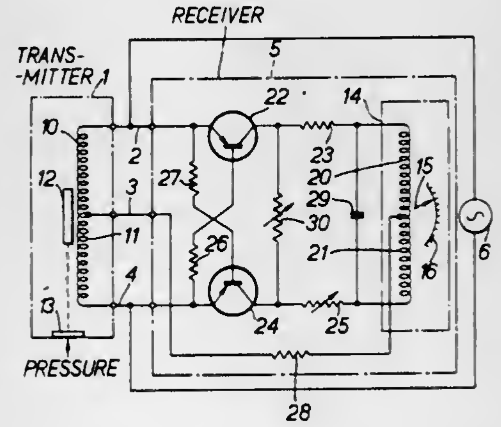
A control circuit is provided for an automatic dishwasher having a sequence control means, a motor and a heating means, wherein the motor winding and the heating means are connected in series across a source of power. Switching means having at least two operative positions shunts the heating means when in one position thereby connecting the motor winding directly across the source of power, and shunts the motor winding when in the second position thereby connecting the heating means directly across the source of power. By this arrangement, arcing within the switching means is minimized by causing the switching means to switch less volt-amperes than is delivered to either the heating means or to the motor winding when the switching means is positioned in either of the two operative positions.

3,530,307
A.C. ENERGIZED REMOTE SIGNALLING SYSTEM

John F. O. Evans, Micheldever, near Winchester, and Roger H. Sandford, Oakley, near Basingstoke, England, assignors to Smiths Industries Limited, London, England, a British company

Filed Oct. 10, 1967, Ser. No. 674,143
Claims priority, application Great Britain, Oct. 13, 1966, 45,897/66
Int. Cl. H03k *5/20;* **G01n** *27/00*

U.S. Cl. 307—232 **14 Claims**



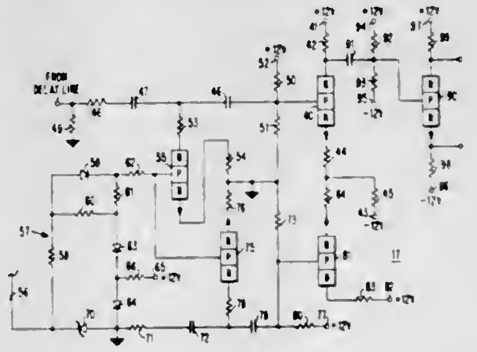
A variable-reluctance pressure-sensing transducer has serially-connected windings energized with alternating current, and sensed pressure is indicated by the ratio of the collector-currents of two transistors. The transistors, which conduct alternately with one another are oppositely-connected across the serial-winding combination, each having its emitter and base electrodes connected to opposite ends of the combination. As an alternative, a frequency-sensitive network that replaces the serial-winding combination, is energized by a variable-frequency source such as to apply to the transistors signals having relative amplitudes dependent upon the applied frequency.

3,530,308
SIGNAL ATTENUATING CIRCUIT USING TRANSISTOR WITH DIRECT CURRENT ISOLATED COLLECTOR AND NONLINEAR BASE INPUT COMPENSATION

Joseph P. Pawletko, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Original application July 6, 1965, Ser. No. 469,499, now Patent No. 3,471,832, dated Oct. 7, 1969. Divided and this application June 5, 1969, Ser. No. 830,643
Int. Cl. H03k *5/08;* **H03g** *3/30*

U.S. Cl. 307—237 **2 Claims**



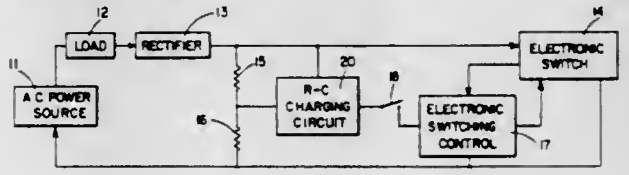
An improved variable gain amplifier is characteried by a transistor amplifier having an input circuit which includes a shunt impedance comprising a common emitter transistor amplifier, the collector-to-emitter impedance of which forms the variable impedance of the input circuit. The collector-to-emitter impedance is controlled by the level of a gain control voltage applied to the base electrode of the shunt transistor. A nonlinear base input circuit for the shunt transistor substantially compensates for the inherent nonlinear voltage-current characteristic of the transistor base-emitter junction, as well as the offset voltage of the base-emitter diode, whereby the shunt impedance varies substantially linearly with the input gain control voltage.

3,530,309
ELECTRONIC SWITCHING CIRCUIT

John C. Mabbett, Hollywood, Calif., assignor to Crosby Research, Inc., Los Angeles, Calif., a corporation of California

Filed Apr. 14, 1967, Ser. No. 631,068
Int. Cl. H03k *17/00*

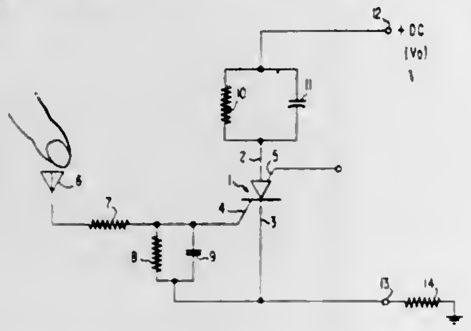
U.S. Cl. 307—246 **11 Claims**



An electronic switching control circuit is placed in series between a load, the actuation of which is to be controlled, and a power source for supplying such load. The electronic switching control circuit operates responsively to a resistive-capacitive charging circuit which is momentarily connected to the control circuit by means of a momentary contact control switch. Successive momentary actuations of the control switch cause the switching control circuit to be alternately activated and deactivated as the capacitor of the charging circuit alternately is charged in opposite directions.

3,530,310
TOUCH ACTIVATED DC SWITCH AND PROGRAMMER ARRAY

Alexander Michael Adelson, Elmsford, and Jerome Swartz, Elmhurst, N.Y., assignors, by mesne assignments, to Hall-Barkan Instruments, Inc., Tuckahoe, N.Y., a corporation of New York
Filed Oct. 28, 1966, Ser. No. 594,327
The portion of the term of the patent subsequent to Feb. 3, 1987, has been disclaimed
Int. Cl. H03k *17/00*
U.S. Cl. 307—252 **9 Claims**



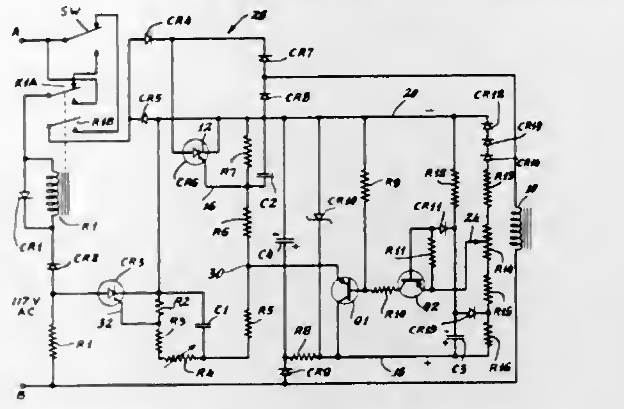
A solid state momentary switch device which responds to the touch of the human body and includes an SCR whose power terminals are connected in series with a source of electric power and an electric load. Also included in the series circuit is a time constant arrangement in the form of a current flow control means which automatically varies its impedance between a high and a low impedance state. This arrangement consists of a resistor large enough to reduce the current flow to below that required for maintaining discharge through the SCR and a capacitor which presents a low initial impedance during charging and a high impedance after it is fully charged. The gate terminal of the SCR is arranged to be contacted by the human body through an isolating impedance and a low pass filter is interposed between the control terminal and a power terminal. The touching by a human body supplies an AC signal from the body to the control terminal. The invention also comprises the use of the switch circuit in various sophisticated manners such as in parallel with different time constants and also in a controllable latched ON-OFF configuration.

3,530,311
VOLTAGE CONTROL MEANS FOR SOLID STATE AC RELAY ELECTRONIC TIMER

Robert S. Lundin, Thomaston, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Mar. 3, 1967, Ser. No. 620,316
Int. Cl. H03k *17/00, 17/28*
U.S. Cl. 307—252 **10 Claims**

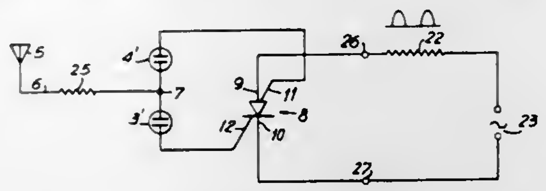
A solid state AC relay comprising a diode bridge circuit connected in series with an AC load across an AC power line. A silicon-controlled rectifier is connected across the bridge circuit such that when the rectifier is in its conducting state, full wave alternating current power is supplied to the load. A novel direct current supply for the silicon-controlled rectifier is derived from the same power line without the use of a transformer. A Zener diode is connected in parallel with a transistor and biasing resistors for controlling the gate of the SCR and insures that over voltages are not applied either to the SCR or to the transistor. The electronic timer derives its DC power from across the Zener diode. The timer comprises a resistor-capacitor bridge charging circuit having a transistor detector connected across it. A diode is connected intermediate of one arm of the bridge and to the capacitor for precharging the capacitor on initiation of a timing function. A diode is connected in series with the transistor junction to protect it against reverse bias.

A multiple interval timer utilizing the above. A self-holding relay is initially energized upon transfer of a transfer switch. The timer is energized upon retransfer of the switch. At completion of the timer interval an output load is energized through the SCR controlled alternating current relay. The signal that initiates conduction of the SCR is passed through a delay device. After a delay, it energizes a second SCR which shorts out the first relay to discontinue energization of it and the load. A plurality of diodes are incorporated into one arm of the bridge circuit and compensate for the temperature dependence of the junction potentials of the previously mentioned semiconductor.



3,530,312
TOUCH RESPONSIVE MOMENTARY SWITCH CIRCUIT

Alexander M. Adelson, Elmsford, and Jerome Swartz, Stony Brook, N.Y., assignors to Hall-Barkan Instruments, Inc., Tuckahoe, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 580,056, Sept. 16, 1966. This application Feb. 14, 1969, Ser. No. 799,163
Int. Cl. H03k *17/00*
U.S. Cl. 307—252 **11 Claims**

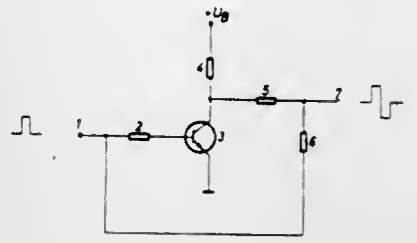


A touch responsive switching device made up of a pair of glow discharge tubes, a load, a source of electric energy having a grounded terminal connected in circuit with the load and the pair of glow discharge tubes. The pair of glow discharge tubes have a common junction. These tubes have a high impedance in the OFF state. A touch element is connected to the common junction and is adapted to receive a voltage pick-up signal from an external body when contacted thereby. When this occurs the impedance of said glow discharge tubes is substantially reduced in response to the voltage pick-up signal to switch the glow discharge tubes from their high impedance state to an impedance level between their non-self-maintained discharge point and the beginning of the normal glow discharge region.

3,530,313
CIRCUIT ARRANGEMENT TO CONVERT RECTANGULAR PULSES

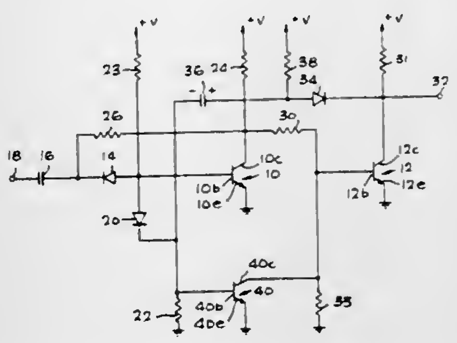
Gerhard-Günter Gassmann, Berkheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 28, 1968, Ser. No. 716,893
Claims priority, application Germany, Apr. 5, 1967, 1,512,549
Int. Cl. H03k *5/00*
U.S. Cl. 307—261 **3 Claims**

A circuit which converts input pulses into pairs of pulses of alternate polarity by utilizing the storage time delay effect of a transistor instead of the conventionally used tuned circuit. The embodiment comprises a transistor which converts rectangular input pulses into output pulses with a time duration which is greater than that of the input pulse by an amount equal to the storage time of said transistor and a parallel feed which transmits the signal at the input to the output where it is added to the transistor output to produce pulse pairs of alternate polarity.



3,530,314
MONOSTABLE MULTIVIBRATOR CIRCUIT INCLUDING MEANS FOR PREVENTING VARIATIONS IN OUTPUT PULSE WIDTH

Roy P. Foerster, Thousand Oaks, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Nov. 3, 1966, Ser. No. 591,886
Int. Cl. H03k *3/10*
U.S. Cl. 307—273 **5 Claims**

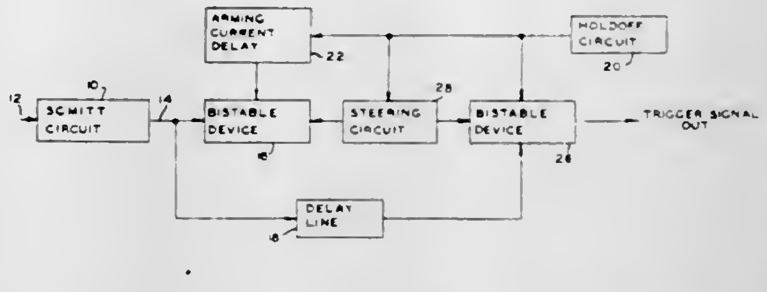


A monostable multivibrator circuit including means for preventing variations in output pulse width which could otherwise be caused by an input trigger pulse occurring prior to the complete recharging of the multivibrator timing capacitor. The circuit includes a locking transistor responsive to the flow of capacitor charging current for preventing conduction in the circuit output transistor.

3,530,315
JITTER-FREE TRIGGERING CIRCUIT

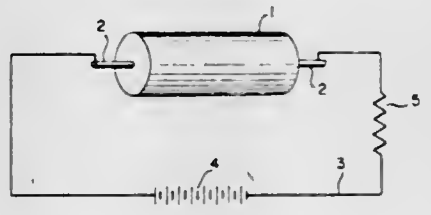
Murlan R. Kaufman, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Mar. 15, 1968, Ser. No. 713,451
Int. Cl. H03k *3/315*
U.S. Cl. 307—286 **25 Claims**

In a circuit for triggering an oscilloscope, an input triggering signal is detected by a first bistable device at the conclusion of a sweep holdoff period. Steering circuit means intercouples this first bistable device with a second bistable device whereby operation of the first device in response to detection of a triggering signal diverts current to the second in order to establish a triggering condition for the second. A delay means also couples the aforementioned triggering signal to the second bistable device, so that after the second bistable device is stabilized, the delayed triggering signal is supplied thereto and causes the second bistable device to provide an output.



3,530,316
ELECTRIC POWER METHODS AND APPARATUS

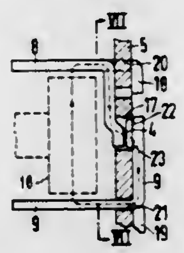
James O. Burke, 4705 Rolfe Road, Richmond, Va. 23226
Continuation-in-part of application Ser. No. 381,754, July 10, 1964. This application Mar. 1, 1968, Ser. No. 709,742
Int. Cl. H03f *21/00*
U.S. Cl. 310—3 **6 Claims**



A method and apparatus for producing and/or amplifying electric current utilizing radioactive material. Current from a suitable source is passed through a conductor in contact with or under the influence of radioactive material to produce a current of higher magnitude than the input current. The current may be conducted by a conductive can containing radioactive material, metallic rods surrounding or dispersed within radioactive material or by a coil disposed around the radioactive material.

3,530,317
ELECTRONIC PULSE GENERATOR

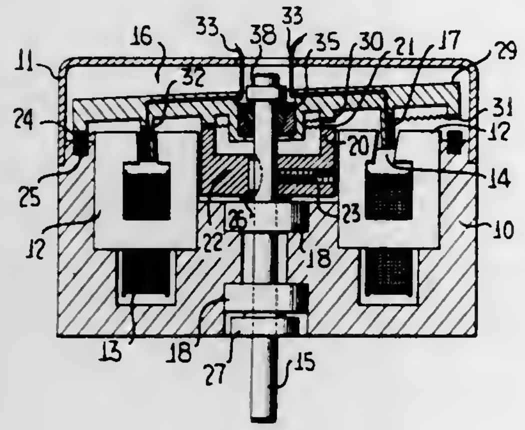
Walter Lang, Nuremberg, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 5, 1968, Ser. No. 773,534
Claims priority, application Germany, Nov. 11, 1967, S 112,795
Int. Cl. H01c *7/16*
U.S. Cl. 310—10 **8 Claims**



An electronic pulse generator produces a number of pulses proportional to the angle of rotation of a shaft. Part of the shaft is magnetized to produce a magnetic field and a Hall probe is fixedly mounted on a fixed conductor plate adjacent the magnetized part of the shaft in the magnetic field. A printed circuit on the conductor plate is electrically connected to the Hall probe and ferromagnetic baffle sheets mounted on the conductor plate direct the magnetic field to the Hall probe.

3,530,318
WOBBLE COIL STEPPING MOTOR

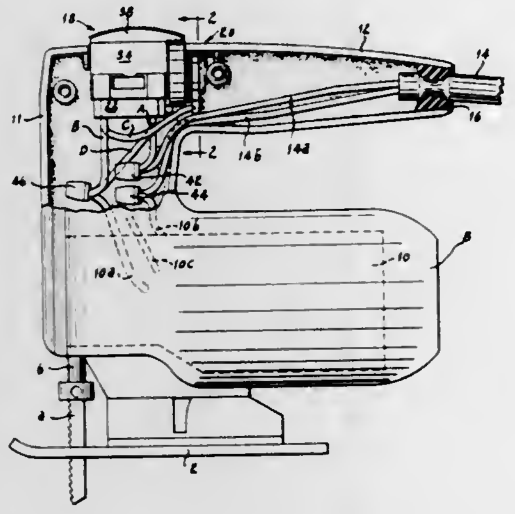
Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,364
Int. Cl. H02k *37/00*
U.S. Cl. 310—49 12 Claims



A stepping motor in which the wobbling rotor element that coacts with the stator, when the stator windings are energized in a specified winding sequence, to undergo wobble relative to the motor shaft and thereby to cause the meshing of mating gears attached to the rotor element, motor housing, and shaft, is a coil wound on a non-magnetic support for the element gears. The coil is energized so that it carries an electric current during motor operation.

3,530,319
SWITCH ASSEMBLY FOR ADJUSTABLE SPEED TOOL

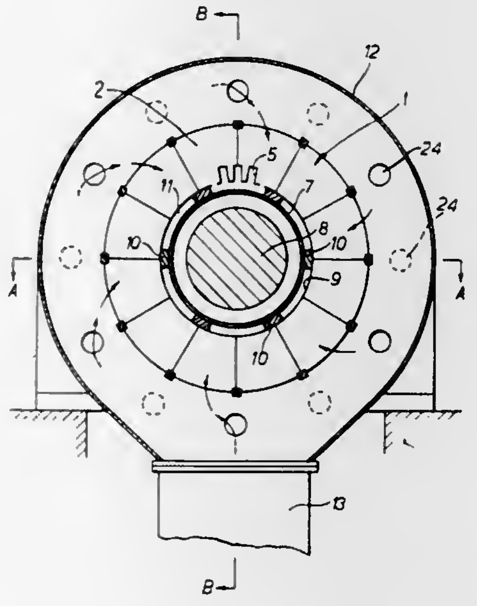
Robert E. Larkin, Waukesha, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Mar. 26, 1969, Ser. No. 810,649
Int. Cl. H02k *7/14*
U.S. Cl. 310—50 9 Claims



A slide button tool handle switch having an on-off switch in the upper part of its housing and an adjustable speed motor control circuit in the lower part of its housing with the connecting leads coming out through the bottom. A rotary button operated, speed adjusting, variable resistor is connected to the motor control circuit and mounted in the tool handle so that one end of the slide button in its off position covers the rotary button to prevent any change in the speed adjustment when the tool is turned off.

3,530,320
STATOR COOLING MEANS FOR DYNAMO-ELECTRIC MACHINES

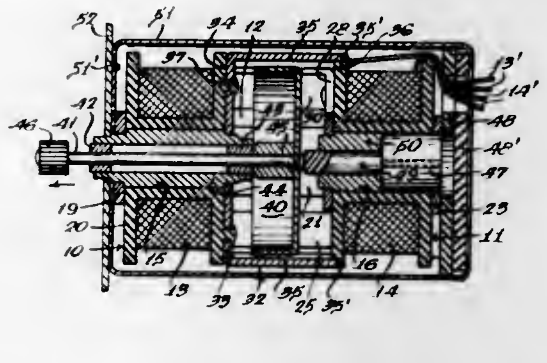
David Fulton Davidson, Hale Barns, England, assignor to Associated Electrical Industries Limited, London, England, a British company
Filed Nov. 20, 1968, Ser. No. 777,388
Claims priority, application Great Britain, Nov. 22, 1967, 53,215/67
Int. Cl. H02k *9/10*
U.S. Cl. 310—52 6 Claims



The stator of a dynamo-electric machine has cooling ducts allowing the circulation of a fluid coolant to cool the stator. A gas-impervious cylinder is disposed in the annular gap between the rotor and the stator, fast with the stator, and spaced from the bore of the stator to permit circulation of the fluid coolant over said bore.

3,530,321
ELECTRIC MOTOR WITH AXIALLY MOVABLE ROTOR

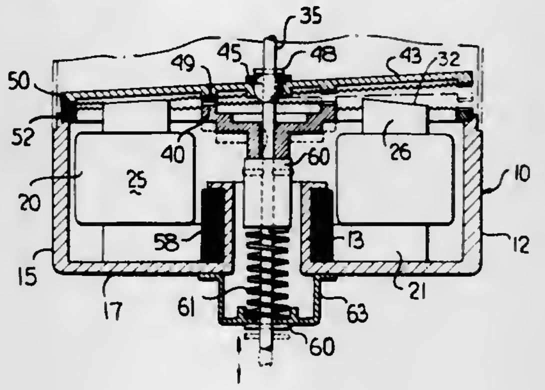
Ralph W. Reitherman, Lake Villa, Ill., assignor to Skill-Di, Inc., a corporation of Illinois
Filed May 21, 1964, Ser. No. 369,154
Int. Cl. H02k *7/12*
U.S. Cl. 310—75 5 Claims



An electric motor having a pair of axially spaced stator coils and an interleaved stator pole structure extending between them. A rotor is mounted between the two stator coils on a shaft which extends axially through the center of one of the stators and has a pinion mounted on the other end, for connection with a gear train. A magnetic slug is slidably positioned in the core of the other stator and has an actuating member for engagement with the rotor. Upon energization of the motor, the magnetic slug is drawn into the stator coil, displacing the rotor and shaft to a second axial position for rotation. In the second axial position, the drive pinion on the shaft, or some other element of the gear train, is engaged.

3,530,322
STEP MOTOR WITH VARIABLE TILT

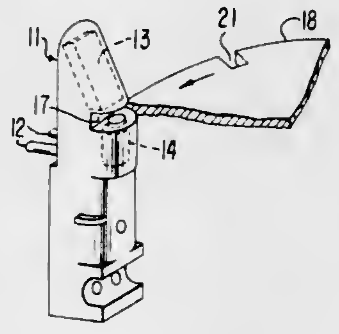
Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,807
Int. Cl. H02k *7/10*
U.S. Cl. 310—82 5 Claims



A step motor has a shaft sharing a common axis with a pair of planar ring gears whose teeth confront each other in normally spaced parallel planes. A rotor supporting one of the gears is pivotally coupled to the shaft to permit inclination thereon, and a stator is provided to deflect the rotor to produce meshing of the gears along a limited sector in a wobbling motion about the shaft. The spacing between the gears, and hence the angle of inclination or tilt of the rotor to produce the deflection sufficient to cause meshing of the gears, is varied according to whether slow speed or high speed wobbling is desired, by a solenoid coil and core that selectively deflect the shaft along its axis.

3,530,323
ELECTROMAGNETIC TRANSDUCER APPARATUS USING DC MAGNET INPUT AND ELECTROMAGNETIC PICKUP COIL OUTPUT

Roy A. Applequist, San Jose, Calif., assignor to Peripheral Systems Corporation, Sunnyvale, Calif., a corporation of California
Filed June 5, 1969, Ser. No. 830,627
Int. Cl. H02k *19/20*
U.S. Cl. 310—168 3 Claims

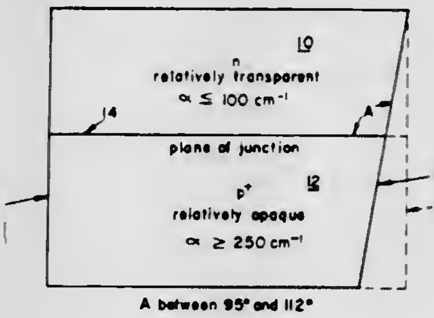


A transducer apparatus for use with the indexing discs of a disc pack is described. The input of the transducer is a DC magnet, preferably a permanent magnet, for creating a magnetic field. The output of the transducer is an electromagnetic pickup coil. The transducer input and output are positioned adjacent the rapidly rotating indexing disc of the disc pack. The rotating disc, in passing through the magnetic field of the input magnet, generates eddy currents in the surface thereof, these eddy currents being disturbed at those instances in time when a discontinuity, such as a slot in the disc, passes through the magnetic field. This discontinuity produces a change in the eddy currents.

The eddy currents induce a magnetic field which envelops the output pickup coil. A change in the eddy currents produced by the discontinuity in the indexing disc produces a changing flux through the pickup coil which in turn results in a pulse output from the pickup coil which serves as the indexing signal from the indexing disc.

3,530,324
ELECTROLUMINESCENT SILICON CARBIDE DIODE WITH SHARPLY PEAKED LIGHT EMISSION FROM THE EDGE OF THE JUNCTION

Lewis R. Koller, Cambridge, and Allan S. Miller, Wellesley, Mass., assignors, by mesne assignments, to Norton Research Corporation
Filed May 16, 1967, Ser. No. 638,868
Int. Cl. G01d *9/42;* **G11b** *7/12;* **H05b** *33/16*
U.S. Cl. 313—108 4 Claims

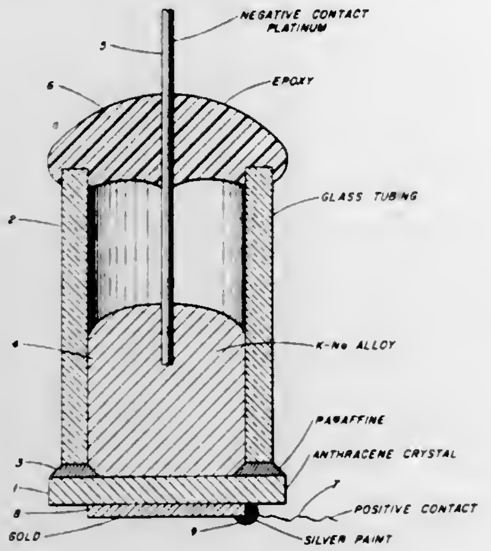


An electroluminescent diode, such as a silicon carbide diode, has one edge cut so that it makes an angle of between about 5° and 22° to the normal to the plane of the junction. Accordingly, some of the light which would normally escape from the edge is internally reflected and the effective width of the light emitted from the junction is considerably narrower than would be the case if the edge were perpendicular to the junction. When the edge of the junction is held in close proximity to motion picture film, it can be utilized for recording sound on the film in a sound motion picture camera.

3,530,325
CONVERSION OF ELECTRICAL ENERGY INTO LIGHT

Wolfgang Mehl and Burkhard Funk, Geneva, Switzerland, assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Aug. 21, 1967, Ser. No. 662,089
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—108 12 Claims

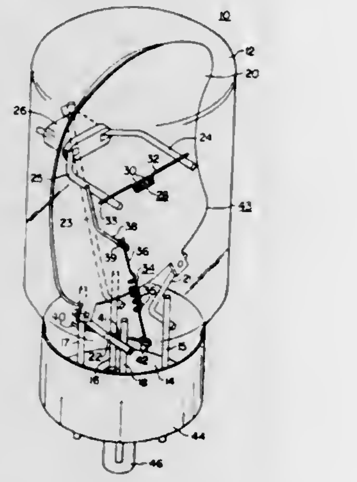
A highly purified crystal of a condensed nuclei aromatic hydrocarbon semiconductor, preferably anthracene, is coated on one side with an extremely thin, transparent coating of evaporated gold or a metal having an electronic work function of about 6 electron volts, the other side of the crystal being kept in contact with alkali metal, such as a liquid alloy of sodium and potassium. When a voltage is applied to the two metals, holes are injected from the gold contact and electrons from the alkali metal or other suitable metal or alloy, which has an electronic work function not greater than 2.27 electron volts. The current results in recombination of electrons and holes with uniform radiation of light. The spectrum of the emitted light is identical with the optically excited luminescence spectrum modified at short wavelengths due to internal absorption, i.e. it is blue in the case of anthracene and it shows somewhat different colors in the case of other aromatic hydrocarbons, for example more greenish with perylene.



Light emission is observed uniformly over the contact area and not only at certain isolated spots. The efficiency of light generation is very high, at least 0.2 photon per electron, and a high quantum yield of at least 20% results for a 50μ thick crystal.

3,530,326
ELECTRIC INCANDESCENT PROJECTION LAMP HAVING AN IMPROVED DUAL-FILAMENT MOUNT ASSEMBLY, AND METHOD OF MAKING SUCH ASSEMBLIES

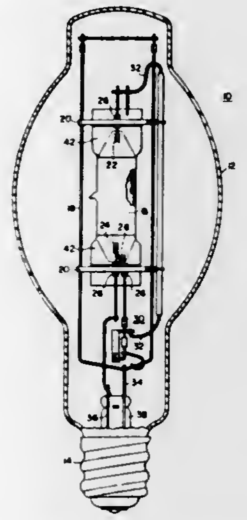
Aristide R. DeCaro, Edison, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 25, 1968, Ser. No. 762,477
Int. Cl. H01j *5/16, 61/40*
U.S. Cl. 313—115 **10 Claims**



The coiled-coil main and ballast filaments of an incandescent projection lamp are wound from refractory wire, such as tungsten, of the same diameter and are mounted "as-wound" on the reflector-stem assembly. The filaments are connected in series and their electrical characteristics and lighted lengths are controlled by correlating the pitch of the primary and secondary turns, the primary and secondary coil diameters and the spacing between the conductive supports to which they are attached. In a preferred embodiment, the main filament is fastened to its support wires by spot welding the coil legs to the wires and the lighted length of the main filament is controlled by molybdenum inserts which are placed within the coil legs and short-circuit the overlying segments of the legs that are located inwardly of the spot welded junctures.

3,530,327
METAL HALIDE DISCHARGE LAMPS WITH RARE-EARTH METAL OXIDE USED AS ELECTRODE EMISSION MATERIAL

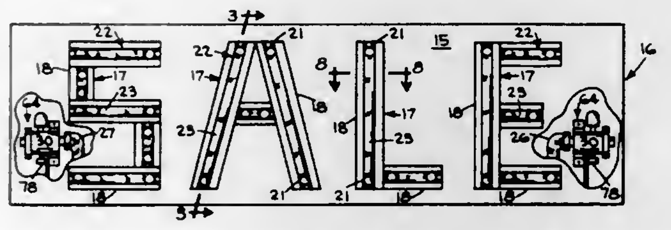
Robert J. Zollweg, Monroeville, Pa., Dietrich F. Ennulat, Elmira Heights, N.Y., Norman Slagg, Wayne, N.J., and Patrick C. Ward, New York, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 11, 1968, Ser. No. 712,238
Int. Cl. H01j *61/06, 61/12, 61/18*
U.S. Cl. 313—184 **13 Claims**



Rare-earth metal oxide used as the electrode emission material in a metal halide additive arc discharge device. The rare-earth metal oxide is particularly resistant to attack by the reactive rare-earth metal halide. The rare-earth metal component of the emission material may be the same as the rare-earth metal component of the discharge-sustaining filling.

3,530,328
LOCK NOZZLED ELECTRODE

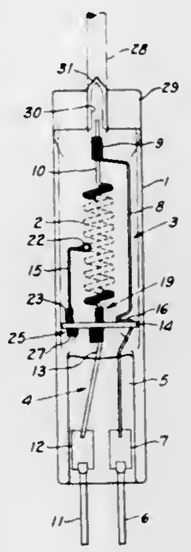
James A. Henschel, 5706 Finkman St., and John Henry Tierney, Jr., 7119 Nottingham, both of St. Louis, Mo. 63109
Filed May 27, 1968, Ser. No. 732,147
Int. Cl. H01j *17/04*
U.S. Cl. 313—217 **7 Claims**



A gaseous discharge tube of the cold cathode type for use in illuminating a characterized signboard, said tube being composed of transparent flexible plastic material having a pair of both polarized and energized electrodes established in sealed communication with the lumen of a finite length of said tubing. Each said electrode having means for establishing said lumen into communication with the atmosphere or a neon gas stored within a container selectively; whereby an initial charge of said gas ingressing within one end of said lumen through one of said electrodes will force the air lodged within said lumen to egress from the opposite end of said lumen through the second said electrode by virtue of its inherent substantially pressurized characteristic; thereby, the luminescence of said tube will be established by the ionization of said gas by virtue of said energized electrodes, when said charge of gas is sealed within said lumen by the closed position of said electrodes, wherein the latter said position of each said electrode defines herein a lock nozzled electrode.

3,530,329
FILAMENT SUPPORT AND HEAT SHIELD CONSTRUCTION FOR ELECTRIC LAMPS

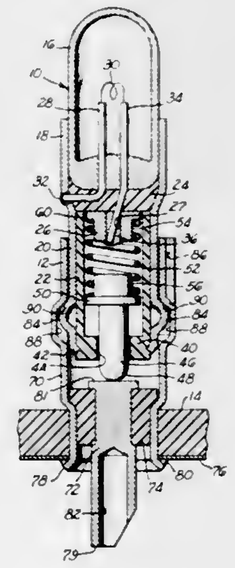
Melvin L. Stone, Cleveland Heights, and George K. Danko, Chesterland, Ohio, assignors to General Electric Company, a corporation of New York
Filed June 25, 1968, Ser. No. 739,852
Int. Cl. H01k *1/18, 1/50*
U.S. Cl. 313—278 **2 Claims**



In a high intensity tubular incandescent lamp, an axially extending coiled filament is supported by long and short lead-in conductors which are connected to respective ends of the filament and are anchored in a ceramic disc in such relationship as to hold the filament permanently in tension. The disc is located between the filament and a pinch seal at the end of the envelope and through which the lead-in conductors extend, thereby reducing the seal temperature. An auxiliary support connected to the filament at its center is also anchored in the said disc which serves the function of a bridge as well as that of a heat shield.

3,530,330
LAMP WITH SPRING BIASED CONTACT

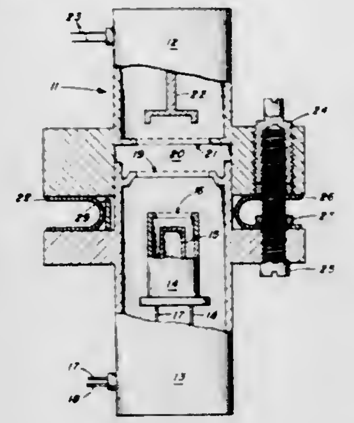
James N. Dupree, South El Monte, Calif., assignor to Western Indicator Co., Inc., South El Monte, Calif., a corporation of California
Filed June 30, 1967, Ser. No. 650,518
Int. Cl. H01j *5/48, 5/50*
U.S. Cl. 313—318 **3 Claims**



A lamp with a housing carrying a bulb and a movable contact pin with the pin electrically connected to the bulb and spring-biased for engagement with a fixed contact in a socket.

3,530,331
KLYSTRON TUNING MEANS

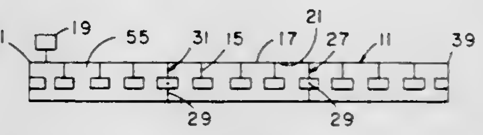
William F. Huntley, Waltham, and Leo J. Potty, Salem, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Apr. 14, 1969, Ser. No. 815,729
Int. Cl. H01j *25/22*
U.S. Cl. 315—5.21 **3 Claims**



This invention is directed to a tuner for a klystron. The tuner utilizes two springs in combination with a differential screw. The two springs are mounted on either side of the klystron between its anode and cathode blocks. The differential screw is threaded in the anode and cathode blocks and varies the spacing between these blocks to vary the interaction gap of the tube. The springs apply a constant torque to the two blocks.

3,530,332
MULTI-PERIODIC ACCELERATING STRUCTURE

Salvatore Giordano, Port Jefferson, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 20, 1969, Ser. No. 826,098
Int. Cl. H01j *25/10*
U.S. Cl. 315—5.41 **10 Claims**

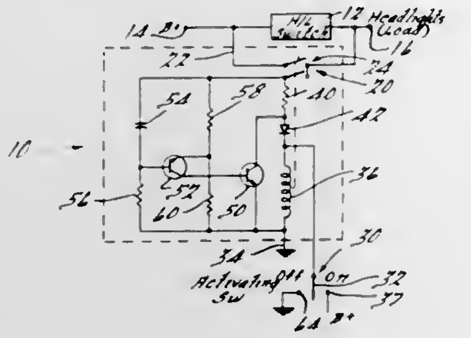


Multi-periodic charged particle accelerator apparatus and method having a cylindrical, Alvarez-type, accelerator tank formed with a plurality of spaced-apart drift tubes supported therein by one supporting stem, and having multiple periodic tuning means at periodic, spaced apart intervals in said tank for producing transverse stem resonances for reducing detuning and beam loading effects, and providing tank stiffening that reduces field variation due to frequency perturbation, while reducing power consumption and mechanical complexity.

3,530,333
CONTROL SYSTEM

Gordon A. Roberts, Ann Arbor, Mich., assignor, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California
Filed Aug. 19, 1968, Ser. No. 753,617
Int. Cl. B60q *1/02*
U.S. Cl. 315—83 **19 Claims**

A control system for use in connection with controlling the operation of vehicle headlights, the system being operative to illuminate the headlamps for a preselected period of time after the headlight switch has been opened. The circuit control system may either be manually or automatically operated to energize a switch assembly illustrated in the form of a relay, the relay having a set of contacts associated therewith to interconnect the headlights with a source of electrical energy until such time as the relay is deenergized. A timing circuit is provided which, when timed out, will cause the relay to deenergize and disconnect the headlights from the source of electrical energy. The system further includes a door switch assembly which senses the condition of the headlight switch or running light switch being closed when the operator opens the door of the vehicle. An audio or visual signal is provided to indicate this condition.



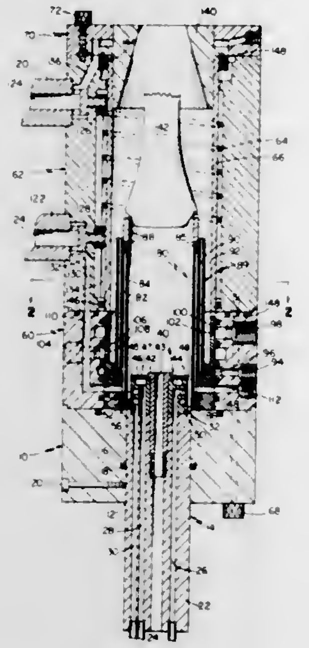
3,530,334
INDUCTION PLASMA GENERATOR HAVING IMPROVED CHAMBER STRUCTURE AND CONTROL

Merle L. Thorpe and Kent W. Harrington, Suncook, N.H., assignors to Humphreys Corporation, Concord, N.H., a corporation of New Hampshire

Filed Sept. 14, 1967, Ser. No. 667,786

Int. Cl. H01j *7/24;* **H05b** *31/26*

U.S. Cl. 315—111 **16 Claims**



An induction plasma generator has a plasma forming chamber defined by sixty-seven axially extending metal tubes surrounded by a 3½ inch diameter ceramic tube that is 7¼ inches long. A six turn induction coil of ¼ inch copper tubing surrounds the ceramic tube. Extending into one end of this chamber is an assembly that defines a main gas injector and an auxiliary gas injector with a tube (2⅛ inches I.D. and 6½ inches long) between the two injectors. The main injector has twelve axial discharge ports, twelve radial discharge ports and twelve swirl ports, while the auxiliary injector has forty-two axial ports, and six swirl ports.

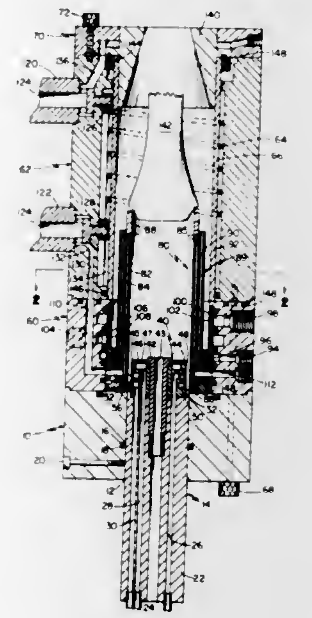
3,530,335
INDUCTION PLASMA GENERATOR WITH HIGH VELOCITY SHEATH

Merle L. Thorpe and Kent W. Harrington, Suncook, N.H., assignors to Humphreys Corporation, Concord, N.H., a corporation of New Hampshire

Continuation-in-part of application Ser. No. 667,786, Sept. 14, 1967. This application Feb. 3, 1969, Ser. No. 796,121

Int. Cl. H01j *7/24;* **H05b** *31/26*

U.S. Cl. 315—111 **30 Claims**



An induction plasma generator has a plasma forming chamber defined by a plurality of axially extending tubes surrounded by an electric field permeable, gas impermeable tube. An induction coil surrounds the tube. Extending into one end of this chamber is an assembly that defines a main gas injector and an auxiliary gas injector with a stabilizing structure separating the gas flows from the two injectors.

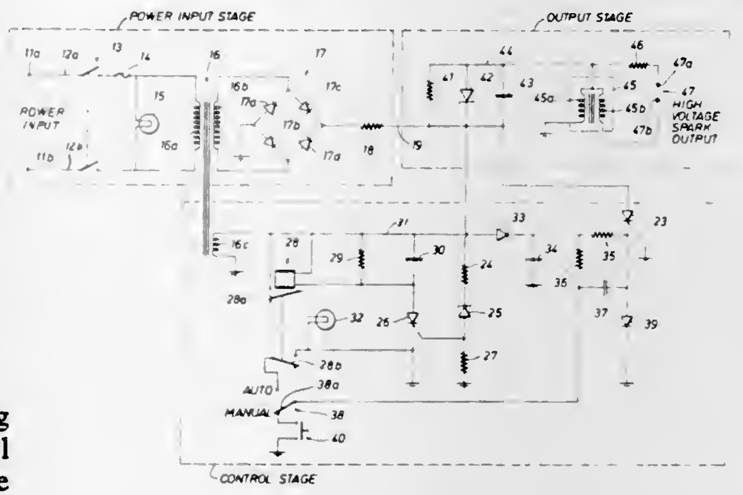
3,530,336
HIGH VOLTAGE PULSE GENERATOR

David L. Pippen, Las Cruces, N. Mex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 28, 1969, Ser. No. 845,365

Int. Cl. H05b *41/14*

U.S. Cl. 315—241 **5 Claims**



A capacitive discharge circuit is employed to produce a controlled, high voltage, fixed energy spark. A fixed voltage for the spark discharge is provided by a storage capacitor connected in parallel with a Zener diode. Discharge of the capacitor through the primary of an output transformer is controlled by a separatelp powered control circuit which employs a silicon controlled rectifier (SCR) as a switching device. A Zener diode employed in the control circuit is subject to the storage capacitor voltage and when the desired capacitor voltage is reached, is driven into conduction to fire a second SCR in the control circuit which in turn activates a relay to energize a ready lamp indicating that the circuit is prepared to deliver a fixed energy spark. The charge circuit is manually fired by closing a switch or is automatically fired each time the circuit is prepared to deliver the fixed energy spark by linking the switching mechanism to the relay. After each discharge, the first SCR is automatically commutated by the back EMF of the output transformer and the second SCR is commutated by the AC input to the control circuit.

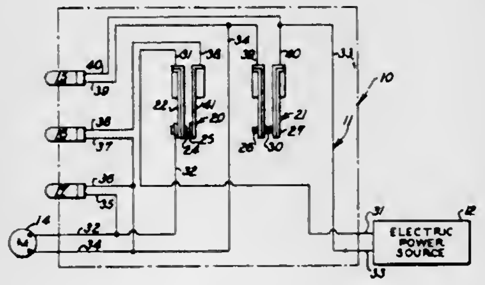
3,530,337
ELECTRICAL MOTOR OVERLOAD INDICATOR AND VOLTAGE CUTOUT DEVICE

Thomas Moore, 7235 Leavitt Road, Elyria, Ohio 44035

Filed Nov. 6, 1968, Ser. No. 773,923

Int. Cl. H02h *3/08, 7/08*

U.S. Cl. 317—13 **10 Claims**



An electrical outlet receptacle for receiving the cords of an electric motor, the receptacle containing lights (1) to indicate that the motor is operating normally, (2) to warn of overload conditions and (3) to indicate that the motor has been cut out because of continuous overload conditions. A pair of bimetallic thermal switches mounted in the receptacle are in series with each side of the motor. One of such switches is normally opened with the current to the motor passing through a single bimetallic portion of the switch only. When the current is sufficient to heat and therefore bend such bimetallic element, it closes and completes the circuit to an overload warning lamp. The other bimetallic thermal switch, normally closed, is adjusted to open when heated by the quantity of current passing therethrough which is indicative of a serious overload condition in the motor. An indicator lamp is connected across such switch so that when the switch opens, the indicator lamp, which has a comparatively high resistance, is placed in series with the motor and due to the comparatively low resistance of the motor the voltage on the motor is reduced drastically to be practically nil and the other lamps also lose the voltage applied thereto. A further indicator lamp is placed across the electrical lines leading to the motor to show the availability of normal voltage to the motor. The receptacle may be either adapted to be received within an ordinary wall socket or as an adaptor for a household outlet.

3,530,338
ELECTRONIC SWITCHING CIRCUIT

Karl-Otto Knabe, Ortlerstrasse 1, Munich 25, Germany

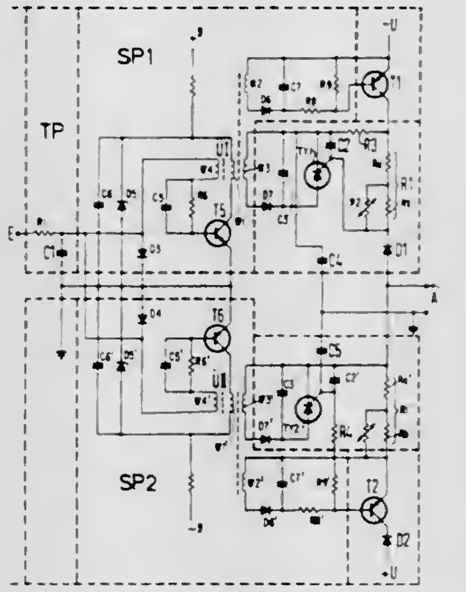
Filed Sept. 22, 1967, Ser. No. 669,893

Claims priority, application Germany, Sept. 23, 1966, S 106,067

Int. Cl. H02h *7/00;* **H02j** *3/10*

U.S. Cl. 317—33 **2 Claims**

A safety circuit to prevent damage to a low resistance switching device, responsive to overload conditions existing in an associated load circuit to cause said switching device to disconnect the load circuit from its power supply. The switching device may comprise a transistor switch, which in its conducting state, connects the power supply through to the load circuit. The safety circuit comprises a semiconductor element that is activated in response to overload conditions in the load circuit, to drive the transistor switch to the non-conducting state and thereby disconnect the power supply from the load circuit. The transistor switch is coupled to the output circuit of an oscillator, and driving the transistor switch to the non-conducting state does not inactivate the oscillator, because the activated semiconductor element is substituted for the transistor switch in the oscillator output circuit. If the overload condition is corrected, the transistor switch is automatically recoupled to the oscillator output circuit and is again driven to the conducting state thereby to complete the connection between the power supply and the load circuit, and the semiconductor element is inactivated.



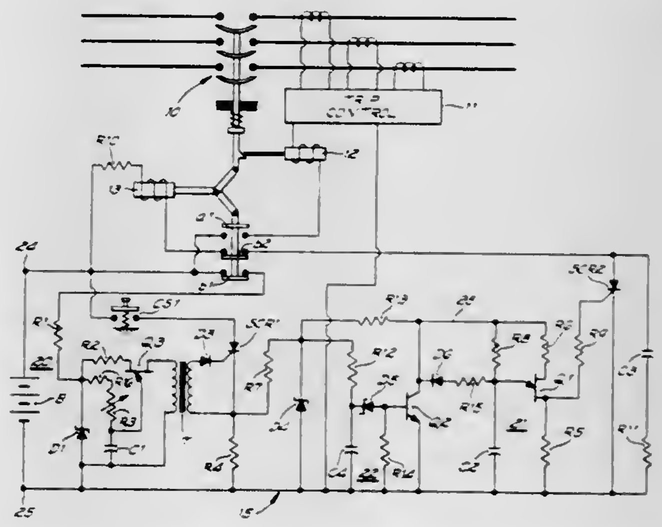
3,530,339
CIRCUIT BREAKER ANTIPUMPING CONTROL SYSTEM

Paul L. Beck, Washington, Pa., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Mar. 14, 1968, Ser. No. 713,179

Int. Cl. H02h *1/00, 5/00*

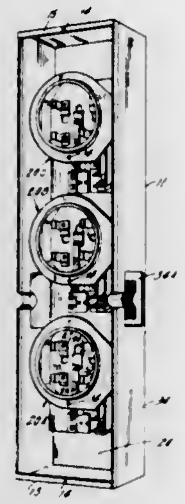
U.S. Cl. 317—54 **11 Claims**



A circuit breaker control system including a first circuit for providing a continuous close signal as long as the circuit breaker closing contact is held in its closed position, a second circuit for energizing the circuit breaker closing coil in response to the close signal and a third circuit operable after a time delay to disable the second circuit if the closing signal continues so that pumping of the circuit breaker contacts is prevented.

3,530,340
MULTIPLE METER PANEL

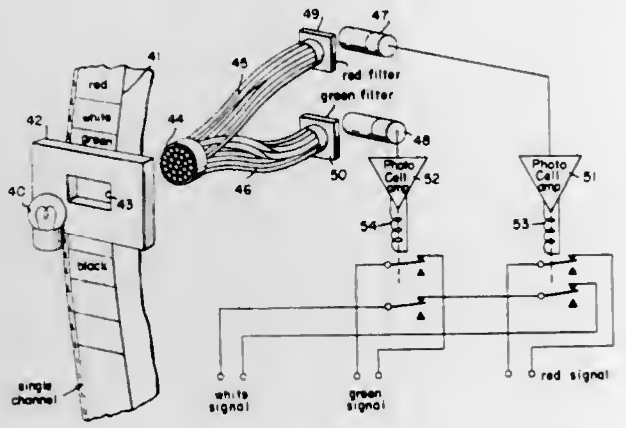
James Frank Meacham, Bellmawr, N.J., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 9, 1969, Ser. No. 790,097
Int. Cl. H02b *1/10, 9/00*
U.S. Cl. 317—106 **10 Claims**



A multiple meter panel is provided with a single openable cover having individual openings for each of the meter sockets. Each socket is provided with a locking ring and the cover openings are large enough so that the cover may be opened without the necessity of removing any of the meters or breaking any of the meter locking seals or removing any meter locking collars. Line busing at the panel interior is enclosed in a housing disposed within the panel case so that when the cover is open all line or unmetered busing is protected. Transverse extensions of the bus bars facilitate energization thereof as well as electrical connection to bus bars of adjacent panels in multiple panel installations.

3,530,341
FLEXIBLE TAPE OPTICAL PROGRAMMER

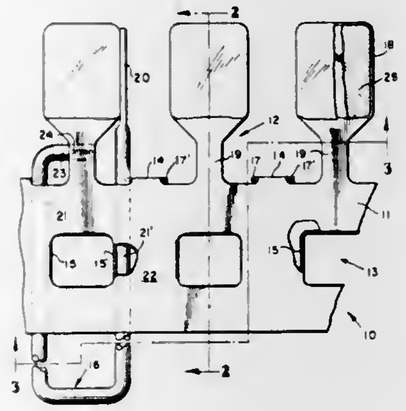
Richard C. Hutchinson, 346 N. Vermont Ave., Los Angeles, Calif. 90004
Filed Oct. 31, 1966, Ser. No. 590,969
Int. Cl. H01h *47/24*
U.S. Cl. 317—127 **6 Claims**



A programming device using an endless loop of moving photographic film having a plurality of channels located lengthwise on the film in the direction of movement of the film. Changes in opacity and color on each of the channels is detected by selectively filtered photo cells for individually controlling external relay operated circuits; programming time selection being determined by the length of the endless tape selected.

3,530,342
METHOD FOR MAKING SOLID ELECTROLYTIC CAPACITORS UTILIZING A STRIP CONFIGURATION

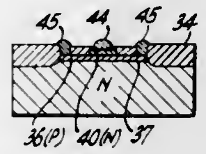
Gerhart P. Klein, Manchester, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 19, 1968, Ser. No. 722,702
Int. Cl. B01j *17/00*
U.S. Cl. 317—230 **7 Claims**



The present invention relates to a method of making a solid electrolytic capacitor. A strip of film-forming metal including at least one appendage having a reduced neck portion and a depression which serves as a retaining means for film-forming metal. The appendage and the mass of film-forming metal have an oxide layer, a semiconductive layer and a conductive layer formed thereover, terminal means include at least one extremity having a bent end portion connected to the reduced neck portion and another extremity having a substantially flattened end portion connected to the conductive layer carried by the bonded mass of film-forming metal.

3,530,343
TRANSISTOR DEVICE WITH PLATEAU EMITTER AND METHOD FOR MAKING SAME

Toshiaki Irie, Katsuo Sato, and Yoshiyuki Nanko, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 571,204, Aug. 9, 1966. This application May 14, 1969, Ser. No. 827,101
Claims priority, application Japan, Aug. 9, 1965, 40/48,381
Int. Cl. H01l *5/00, 7/44, 7/36*
U.S. Cl. 317—235 **2 Claims**

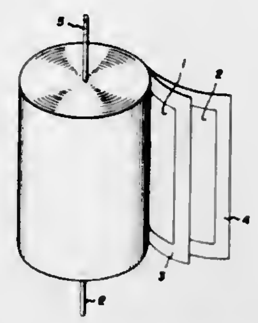


A semiconductor device and a method for making the same, in which diffusion of impurities forming the collector and emitter areas of the device are confined to raised portions of the substrate. Undesired lateral diffusion of the impurities is thus eliminated.

Diffusion of the impurities through the aforementioned raised portions produces collector-base and emitter-base junctions which are substantially parallel.

3,530,344
ELECTRICAL CAPACITOR

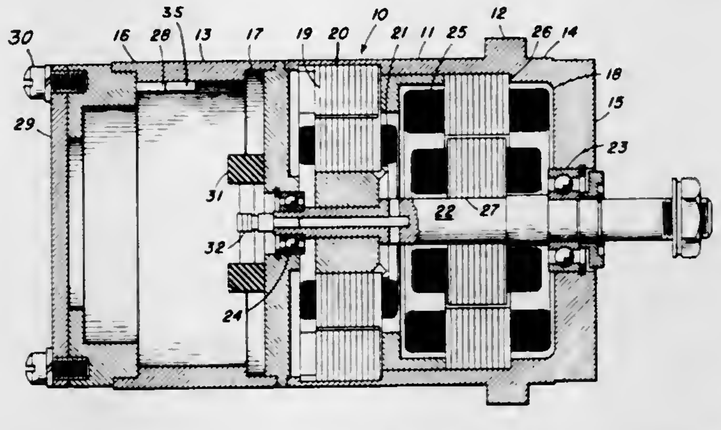
Arthur Katchman, Delmar, N.Y., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 649,922, June 29, 1967. This application Mar. 12, 1969, Ser. No. 806,416
Int. Cl. H01g *3/21*
U.S. Cl. 317—258 **10 Claims**



An electrical capacitor incorporates a resinous dielectric material which is a polyblend of a polyphenylene oxide and polystyrene. A particularly favorable dielectric composition is 50% polystyrene-50% poly-(2,6-dimethylphenylene-1,4) ether.

3,530,345
SYSTEM AND INTEGRAL STRUCTURE OF AN ANGULAR POSITIONING AND TORQUE OUTPUT SERVOMECHANISM

Faik K. Ibrahim, Pacific Palisades, and Sven E. Braaten, Torrance, Calif., assignors to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York
Filed Jan. 23, 1967, Ser. No. 610,921
Int. Cl. G05b *11/12*
U.S. Cl. 318—30 **1 Claim**

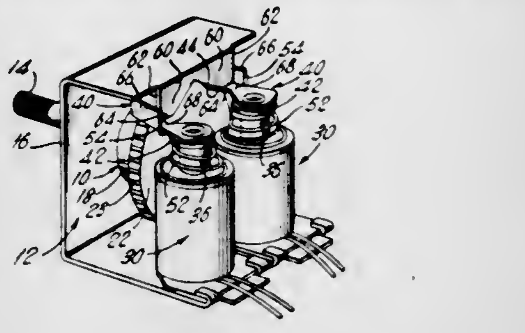


This invention relates to servo systems and in particular, to a compact servomechanism adapted to convert synchro input signals into output torque. Specifically, it concerns a closed housing having a torque motor and a synchro transformer mounted on the same shaft and an amplifier for producing accurate angular shaft rotation as a result of input signal transmission data supplied to the synchro transformer.

3,530,346
ELECTROMAGNETICALLY DISPLACING A SHAFT IN STEPWISE INCREMENTS

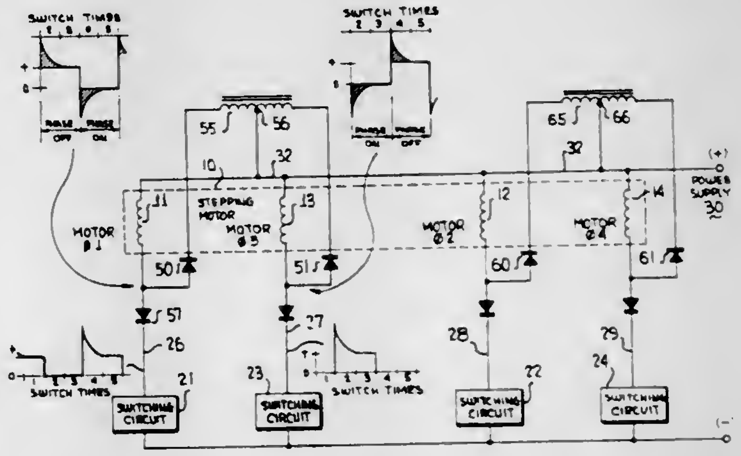
Remo Mariani, Berkeley Heights, N.J., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska
Continuation-in-part of application Ser. No. 632,264, Apr. 20, 1967. This application July 17, 1969, Ser. No. 856,514
Int. Cl. H02k *7/06*
U.S. Cl. 318—123 **5 Claims**

A toothed wheel is secured to the shaft of a potentiometer and pawl members are positioned adjacent the wheel on opposite sides of the longitudinal axis of the potentiometer shaft. A solenoid is coupled to each of the pawls. When the solenoids are individually energized, the pawl coupled thereto will angularly advance the wheel one tooth at a time. The position of the pawls permit stepwise rotation of the potentiometer shaft in opposite angular directions.



3,530,347
ENERGY TRANSFER MEANS FOR STEPPING MOTORS

Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware
Continuation-in-part of application Ser. No. 581,334, Sept. 22, 1966. This application Jan. 28, 1969, Ser. No. 794,563
Int. Cl. H02k *37/00*
U.S. Cl. 318—138 **7 Claims**

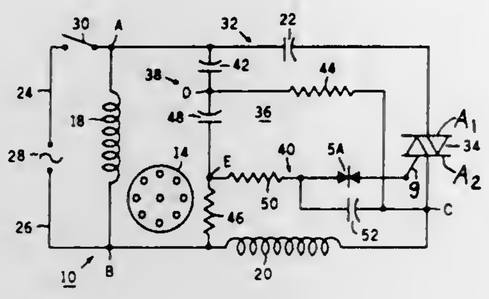


In control circuitry for exciting the field windings of a multi-phase stepping motor, in which energizing currents are applied to the field windings of the motor in a predetermined sequential switching format so that each winding is energized during certain preselected time increments of the format and de-energized during certain other preselected time increments of the format, a modification is provided by which the reverse voltage accompanying the collapse of the magnetic field about a de-energized winding is applied to another winding at the moment the latter winding is to be energized in the normal sequence of the switching format, to provide additional energizing current to the winding at that moment.

3,530,348
SWITCHING CIRCUIT FOR INDUCTION MOTOR START WINDING INCLUDING BILATERAL SWITCHING MEANS

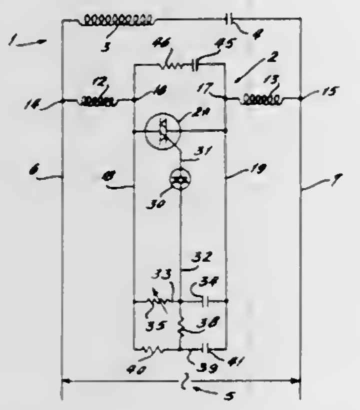
Leonard E. Conner, St. Louis, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Aug. 15, 1968, Ser. No. 752,914
Int. Cl. H02p *1/44*
U.S. Cl. 318—221 **7 Claims**

A switching circuit for a motor including bilateral semi-conductor switching means connected in series with a starting winding of the motor, and control means including a triggering circuit coupled with the gating circuit of the switching means to trigger the same into conduction on each half cycle of the supply voltage to effect energization of the starting winding, the control means being responsive to the voltage induced in the starting winding to inactivate the triggering circuit and effect de-energization of the starting winding when the induced voltage therein increases to a predetermined value.



3,530,349
NOISE SUPPRESSION

Neal B. Royer, Des Peres, and Edward A. Kitsch, Kirk-Wood, Mo., assignors to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed May 20, 1968, Ser. No. 730,544
Int. Cl. H02p *5/40*
U.S. Cl. 318—227 4 Claims

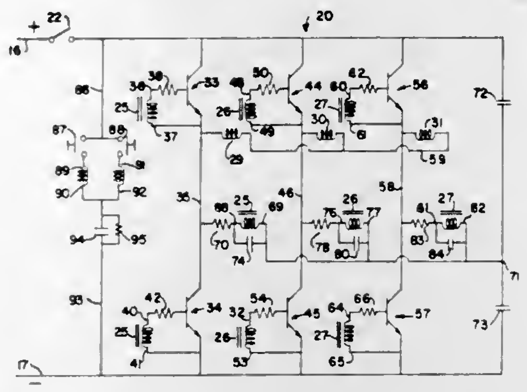


In an alternating current device such as an electric motor or fluorescent lighting ballast with dimmer, wherein a multiturn coil is electrically connected to a source of alternating current through a solid state switch by which the voltage to the coil is regulated, the coil is split into two parts and the solid state switch is electrically interconnected to and between the split parts of the coil. This has been found to reduce both radio frequency interference and audible noise, both of which are embraced within the term "noise" as used herein.

3,530,350
POWER SYSTEM FOR PORTABLE ELECTRIC TOOLS INCLUDING INDUCTION-TYPE ELECTRIC MOTOR WITH ASSOCIATED SOLID STATE FREQUENCY GENERATOR

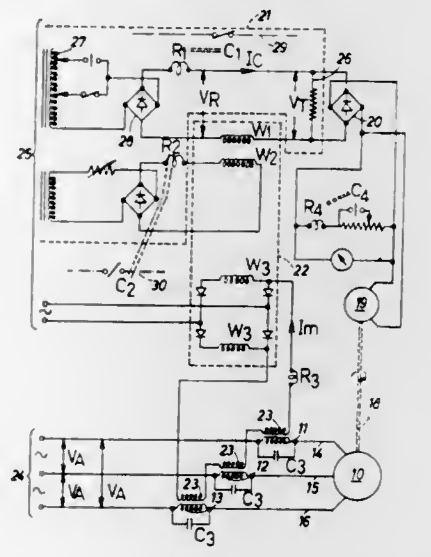
Alex F. Gawron, Chicago, Frank A. Kaman, Prospect Heights, and Frank C. Schrack, Chicago, Ill., assignors to Skil Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 566,103, July 18, 1966. This application Jan. 3, 1969, Ser. No. 791,864
Int. Cl. H02p *7/62*
U.S. Cl. 318—227 16 Claims

The power system includes an induction-type motor with a solid state frequency generator including pairs of transistors arranged in push-pull relation, the sequence of switching being controlled by a saturable core transformer. The power system in its entirety is mounted within a portable tool.



3,530,351
CONTROL FOR INDUCTION MOTORS

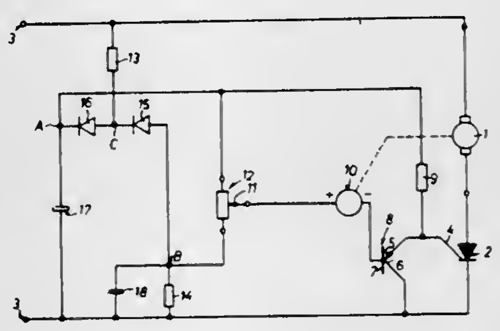
Geoffrey Luther Grimwood, Almondsbury, England, assignor to Thomas Broadbent & Sons Limited, Huddersfield, England, a British company
Continuation of application Ser. No. 238,844, Nov. 20, 1962. This application Aug. 15, 1967, Ser. No. 663,921
Claims priority, application Great Britain, Nov. 21, 1961, 41,517/61
Int. Cl. H02p *7/40*
U.S. Cl. 318—229 4 Claims



Control apparatus and method for high inertia loaded asynchronous induction motors such as centrifuges in refineries, chemical plants and similar high inertia loads. Variable impedance devices in at least two phase lines feeding the motor are controlled in such a way that when the motor is running at any selected speed the impedance of the variable impedance devices is at a maximum and minimum power is delivered to the motor when operating at that speed. When the motor is running at a speed below a selected speed, a voltage proportional to speed is compared with a reference voltage to produce an error signal which is used to reduce the impedance of the variable impedance devices to thereby supply more power to the motor to bring it up to the selected speed. As the motor reaches the selected speed the error signal is reduced so at the selected speed the impedance of the variable impedance devices is again at a maximum and minimum power is delivered to the motor. The high inertia load on the induction motor is sufficient mass to increase the time constant of the mechanical part of the system to where it is substantially greater than the time constant of control circuit so that instability does not arise. Consult the specification for other details and features.

3,530,352
CIRCUIT FOR REGULATING THE SHAFT SPEED OF A COMMUTATOR-TYPE MOTOR

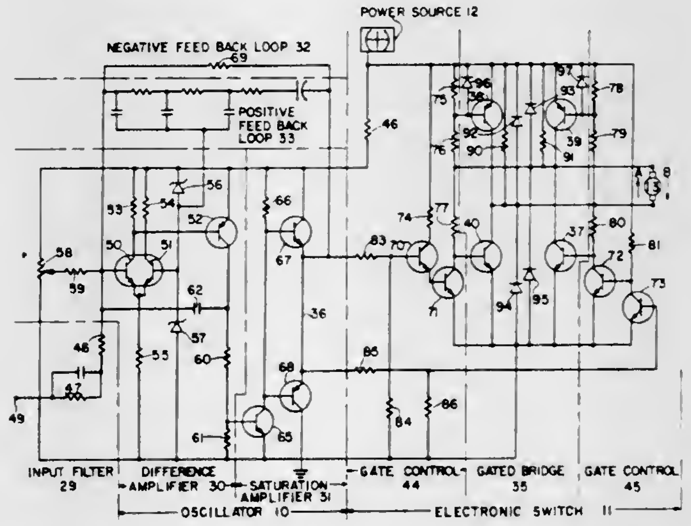
Heinrich Guhl, Zurich, Switzerland, assignor to Transistor A.G., Zurich, Switzerland
Filed Nov. 29, 1966, Ser. No. 597,679
Claims priority, application Switzerland, Dec. 1, 1965, 16,545/65
Int. Cl. H02p *5/40*
U.S. Cl. 318—327 12 Claims



A speed control circuit for a commutator-type motor employs a thyristor connected in series with the motor and an AC source. A pulsating DC voltage 90° out of phase with the AC source is employed to controllably gate the thyristor in response to the value of a voltage proportional to the motor's speed relative to a variably settable reference voltage so as to provide continuous self-adjusting phase control of the thyristor operation for regulation of the motor speed.

3,530,353
CONTROL CIRCUITS FOR INDUCTIVE LOADS

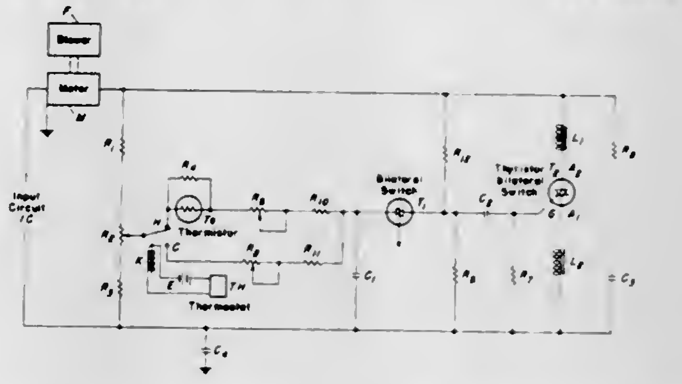
Thomas L. Thompson, Ingleside, Ill., assignor to Chicago Aerial Industries, Inc., Barrington Village, Ill., a corporation of Delaware
Filed Aug. 30, 1967, Ser. No. 664,562
Int. Cl. H02p *5/16*
U.S. Cl. 318—341 3 Claims



A circuit for obtaining bidirectional control of an inductive load by reversing load current with an electrically controlled power switching bridge. An oscillator having a variable duty cycle, regulated by a low power control signal, provides the electronic switching initiation. For motor control applications, constant motor speed may be obtained by using a tachometer feedback loop to provide a control signal proportional to motor shaft speed. Alternatively, a torque motor may be controlled by a voltage analog signal obtained from the feedback of load position information.

3,530,354
CONTROL CIRCUIT WITH LINE VOLTAGE COMPENSATION

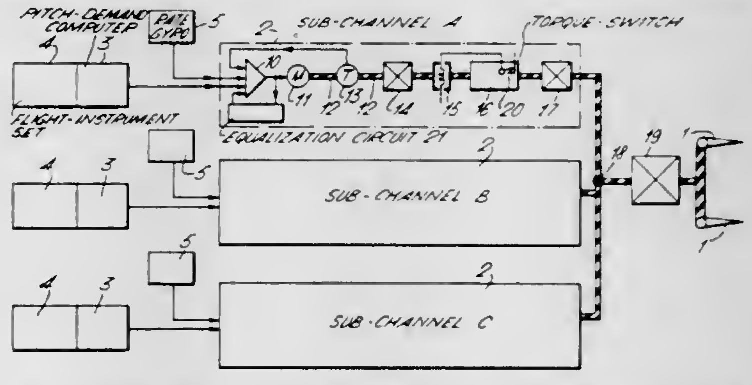
George J. Granieri, Piscataway, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed May 10, 1967, Ser. No. 637,376
Int. Cl. H02p *7/28*
U.S. Cl. 318—345 10 Claims



This application discloses a circuit arrangement for controlling a motor or other load connected to a source of alternating current. A capacitor is alternately charged to the positive and negative voltages of the source and these opposing charges in turn cause positive and negative pulses to be applied to a bilateral switch. The latter switch normally interposes a high impedance between the A.C. source and the load, but its impedance is reduced to a negligible value in response to the positive and negative pulses to control the flow of A.C. current through the load.

3,530,355
AUTOMATIC CONTROL SYSTEMS

John Alfred Hodgkins, Staverton Lea, Staverton, Cheltenham, Gloucestershire, England
Filed Oct. 14, 1968, Ser. No. 767,130
Int. Cl. G05b *13/02*
U.S. Cl. 318—564 21 Claims

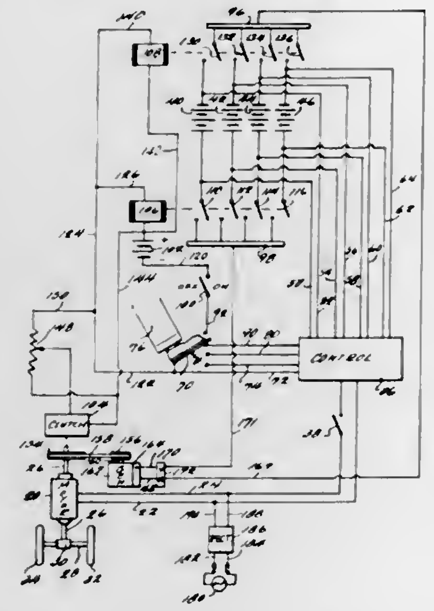


A triplex servo channel of an aircraft flight-control system includes equalization balancing out acceptable long- and short-term inequalities between the three servo sub-channels. Each sub-channel servomotor is coupled to a common output of the sub-channels via a torque-switch that de-clutches its sub-channel under excessive torque-loading. The torque-switch has a lost-motion characteristic for restricting de-clutching to sustained loadings and thereby suppress transients of acceptable short period.

3,530,356
REGENERATIVE SYSTEM FOR ELECTRIC VEHICLE

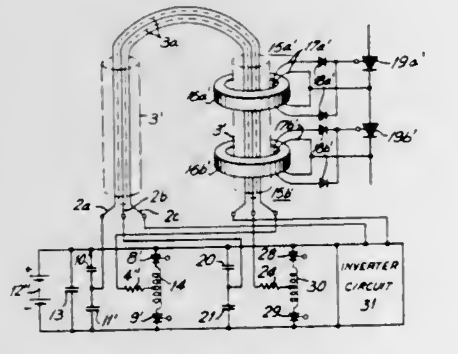
Robert R. Aronson, Ferndale, Mich., assignor to Electric Fuel Propulsion, Incorporated, Ferndale, Mich., a corporation of Delaware
Filed Dec. 26, 1967, Ser. No. 693,433
Int. Cl. H02j *7/14*
U.S. Cl. 320—61 8 Claims

The invention relates to an electrical system for an electric automobile or vehicle whereby the storage batteries are recharged whenever the accelerator control is in a predetermined position and the vehicle is in motion or the batteries are being recharged from an exterior source of voltage. In one embodiment, the motor mechanically drives an alternator which produces alternating current which is rectified to recharge the storage batteries. The motor may also be excited by an external source to drive the alternator and recharge the batteries.



3,530,357
CURRENT RECTIFYING SYSTEM FOR HIGH VOLTAGE

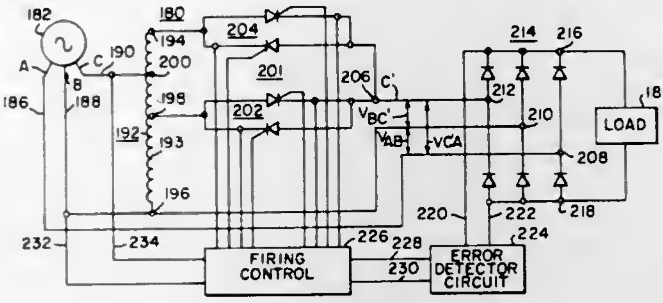
Karl-Friedrich Leowald, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 662,694, Aug. 23, 1967. This application Dec. 17, 1968, Ser. No. 784,310
Claims priority, application Germany, Dec. 22, 1967, 1,638,637
Int. Cl. H02m *3/28*
U.S. Cl. 321—2 **4 Claims**



A current rectifier system for high voltage has a number of thyristors series connected in the load circuit. The thyristors are fired simultaneously from respective secondary windings of pulse transformers whose primary winding is constituted by a single loop of a high voltage cable upon which iron cores of the secondary windings are placed one beside the other. The cable comprises a plurality of mutually insulated electrical conductors each connected to a source of direct current through a corresponding one of a plurality of inverter circuits each of which converts the direct current into alternating current pulses so that each transformer core is alternately magnetized in opposite directions of magnetization. The secondary circuits connected to the firing electrodes of the thyristors comprise rectifier diodes which provide properly polarized firing pulses at the proper times.

3,530,358
THREE-PHASE REGULATOR SYSTEMS

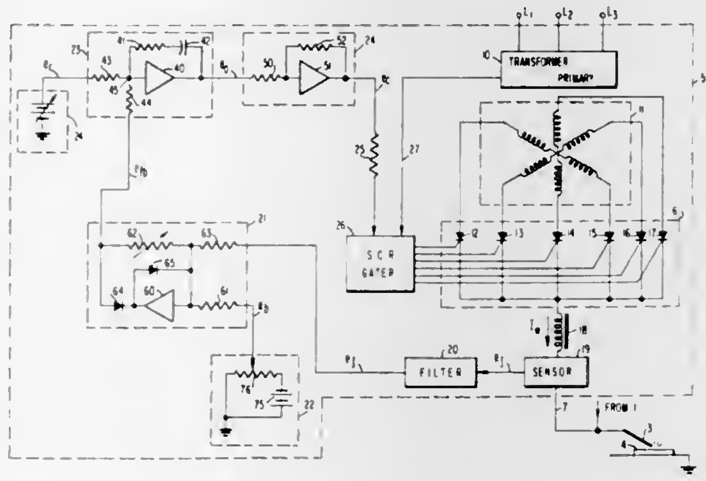
Raymond Thompson, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 8, 1968, Ser. No. 711,748
Int. Cl. G05f *1/20;* **H02m** *7/20*
U.S. Cl. 321—5 **10 Claims**



Regulator apparatus for three-phase AC electrical systems. The regulator apparatus utilizes static switching means for changing tap connections on a transformer winding, in response to an error signal produced by the deviation of the quantity to be regulated from the desired magnitude.

3,530,359
ADJUSTABLE ARC WELDING POWER SUPPLY SYSTEM

Franklin James Grist, Appleton, Wis., assignor to Miller Electric Manufacturing Co., Appleton, Wis.
Filed Sept. 20, 1968, Ser. No. 761,061
Int. Cl. B23k *9/10;* **H02m** *7/00*
U.S. Cl. 321—5 **5 Claims**

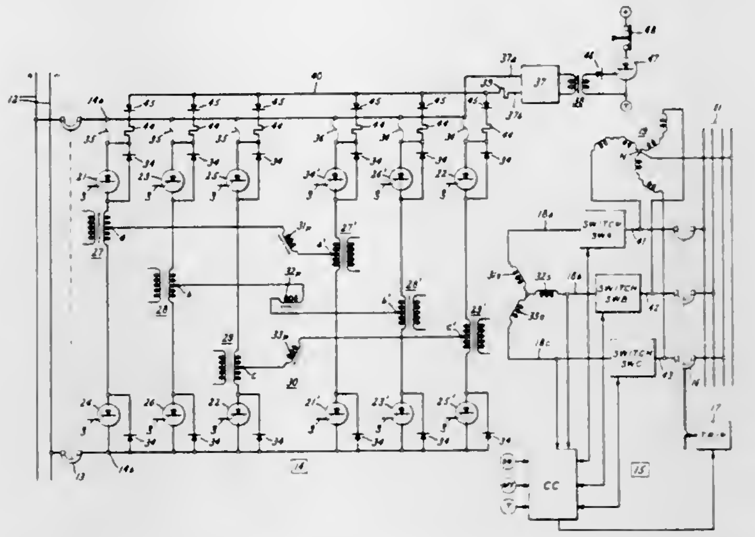


An adjustable arc welding power supply system includes a first power supply of the rectifier type connected in parallel with a second power supply of the rectifier type. The first power supply provides low current at high voltage to the electrodes while the second power supply provides high current at low voltage to the electrodes and has rectifiers preventing the output of the first high-voltage power supply from discharging into the second lower voltage supply. The slope of the volt-ampere curve of the second low-voltage high-current power supply is made adjustable by an electronic feedback circuit.

3,530,360
HIGH-SPEED PROTECTIVE MEANS FOR UNINTERRUPTIBLE POWER SYSTEMS

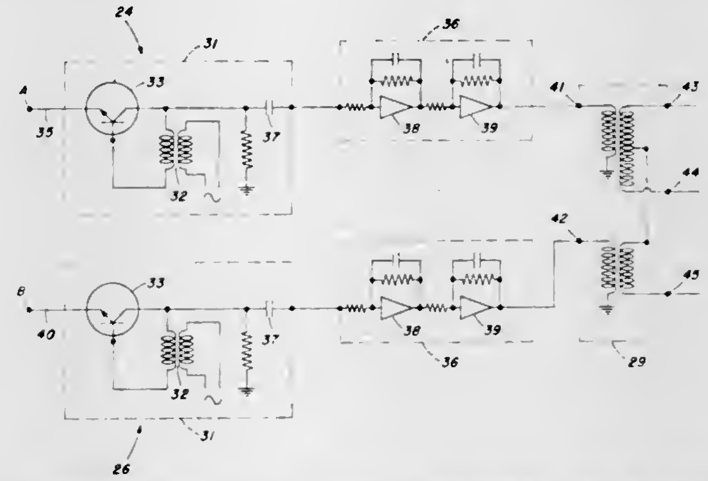
Alfred E. Relation, Merion Station, Pa., assignor to General Electric Company, a corporation of New York
Filed May 31, 1968, Ser. No. 733,446
Int. Cl. H02h *7/14*
U.S. Cl. 321—5 **10 Claims**

A static inverter suitable for use with other redundant inverters for supplying uninterruptible power to a critical A-C bus is equipped with a malfunction detector for operating an isolating switch so fast that the failing inverter is removed from service before it can impair the integrity of the critical power bus. The isolating switch comprises a normally conducting current limiting circuit interrupter that is turned off in high-speed response to the detection of the first commutation failure in the inverter.



3,530,361
SOLID STATE D.C. TO SYNCHRO CONVERTER

Sidney Davis, East Norwich, and Joseph Carlstein, East Meadow, N.Y., assignors to Vernitron Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 3, 1968, Ser. No. 756,773
Int. Cl. G08c; H02m *7/42*
U.S. Cl. 321—5 **3 Claims**

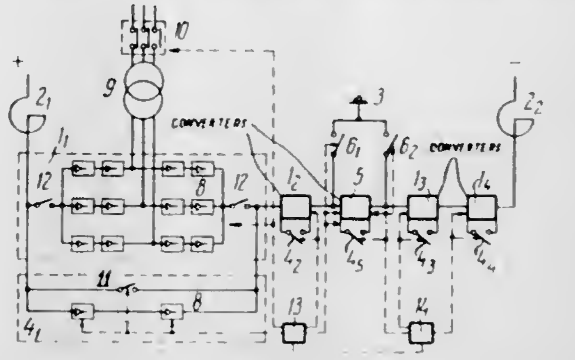


An angular position D.C. signal is chopped, shaped and applied as one input to a Scott-T. A reference source of D.C. voltage is chopped, shaped and applied as a second input to the Scott-T. The Scott-T outputs are indicative of angular position and correspond to synchro output signals.

3,530,362
CONVERTER SUBSTATION FOR DIRECT CURRENT POWER TRANSMISSION

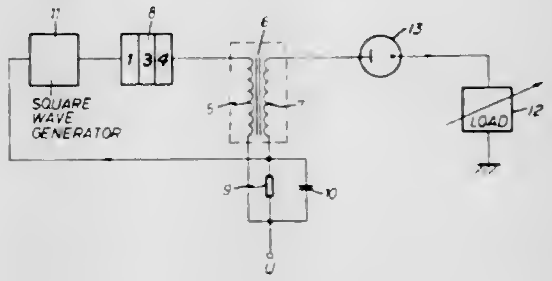
Alexei Nikolaevich Filimonov, Ordinarnaya ulitsa 20, kv. 54, Mark Borisovich Kegeles, Ulitsa Dekabristov 30, kv. 26, and Pavel Aronovich Malkin, Prospekt Maxima Gorkogo 47, kv. 31, all of Leningrad, U.S.S.R.
Filed Mar. 4, 1968, Ser. No. 710,392
Int. Cl. H02m *1/18;* **H02j** *7/00, 1/00*
U.S. Cl. 321—11 **6 Claims**

A converter substation for direct current power transmission comprises a plurality of converter blocks interconnected in series with one another and with an additional stand-by converter block adapted for selectively being switched in series with the converter blocks in place of constant grounding of the substation, there being grounding commutating devices for shunting the stand-by block from both sides, one of the grounding commutating devices being disconnected in the event of failure of any of the converter blocks which is cut into the same pole of the substation.



3,530,363
ARRANGEMENT FOR STABILIZING THE RECTIFIED OUTPUT VOLTAGE PULSES OF A TRANSFORMER

Robert Schimke, Zell, and Manfred Sträble, Nellingen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 26, 1968, Ser. No. 740,137
Claims priority, application Germany, July 1, 1967, 1,588,844
Int. Cl. H02m *1/08;* **H03k** *3/16*
U.S. Cl. 321—16 **6 Claims**

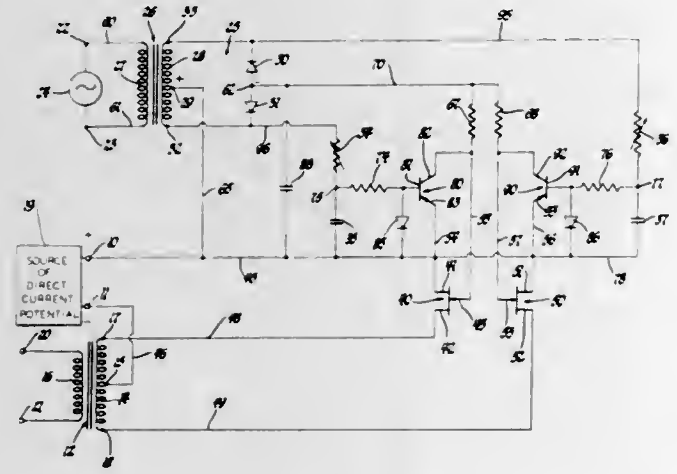


In a circuit arrangement for stabilizing a D.C. voltage derived from rectifying pulses provided by a transformer, current fed through the primary is turned on and off by a transistor controlled by pulses from a square wave generator. The primary is shunted by a capacitor and a diode. When the transistor is turned off, a high potential pulse is developed across the primary which appears in the secondary and is then rectified and applied to a load. To control the output voltage under varying load conditions the current through the secondary is used to produce a voltage drop across a resistor shunted by a capacitor and this voltage drop is applied to control the frequency of the square wave generator, thereby changing the amplitude of the output pulses and the resulting output voltage.

3,530,364
CIRCUIT FOR CONVERTING A DIRECT CURRENT POTENTIAL TO AN ALTERNATING CURRENT POTENTIAL

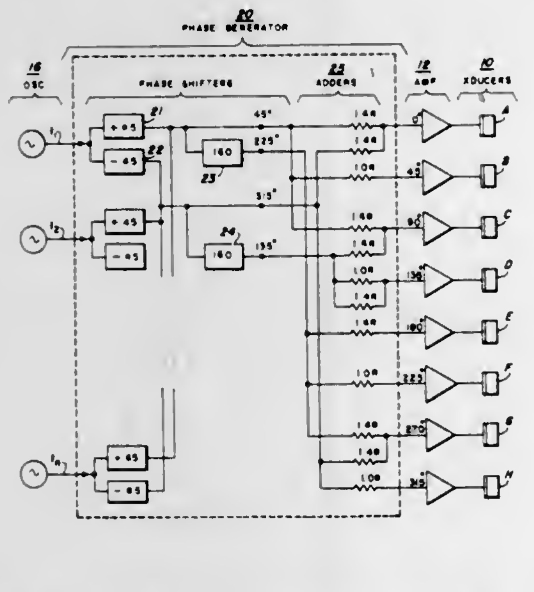
Robert E. Nelson and Carl B. Davis, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 27, 1969, Ser. No. 828,130
Int. Cl. H02m *7/48*
U.S. Cl. 321—45 **3 Claims**

A circuit for converting a direct current potential, applied across a two terminal input circuit, to an alternating current potential. One direct current input terminal is connected to the center tap of a transformer center tapped primary winding and the other is connected to the terminal ends of the transformer primary winding through the current carrying electrodes of two normally non-conducting field effect transistors, in parallel. Respective transistors, the current carrying electrodes of each of which are connected across a selected one current carrying electrode and the gate electrode of a respective field effect transistor, are alternately rendered conductive to substantially remove the gate bias from the corresponding field effect transistor by an alternating current driving signal which is applied through a phase shifting network across the control electrode and one current carrying electrode of both transistors in an opposite phase relationship. The output signal is taken from the secondary winding of the transformer and is produced by the alternately conducting field effect transistors which establish the direct current input circuit for current flow in one direction between one terminal end of the transformer primary winding and the center tap and in the opposite direction between the other terminal end of the primary winding and the center tap.



3,530,365
PHASE SHIFTING NETWORK FOR PRODUCING A PHASE OF ANY VALUE FROM 0° to 360°

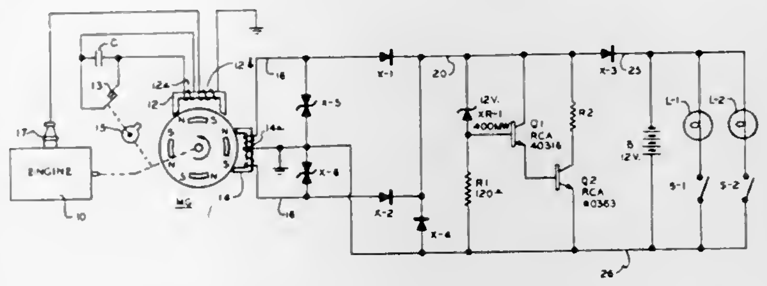
James A. Peugh, 952 Moana St., San Diego, Calif. 92106
Original application Sept. 27, 1967, Ser. No. 671,158. Divided and this application Nov. 12, 1968, Ser. No. 774,736
Int. Cl. H02m *5/00*
U.S. Cl. 321—54 **2 Claims**



A phase-shifting network comprises means for generating two quadrature phases; then by 180° phase-splitting, four vectors 90° apart are formed. By vector addition, a phase of any value from 0° to 360° is easily produced.

3,530,366
MAGNETO SYSTEMS

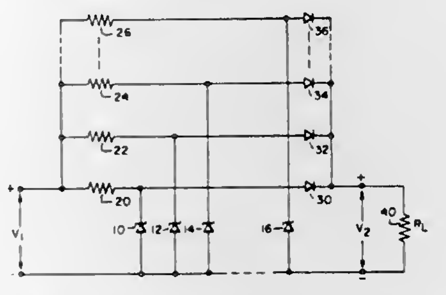
Edward G. Schwarm, Acton, Mass., assignor, by mesne assignments, to Culver-Stearns Manufacturing Company, Inc., Worcester, Mass., a corporation of Massachusetts
Filed Feb. 19, 1968, Ser. No. 706,555
Int. Cl. H02p *9/00;* **G05f** *5/00*
U.S. Cl. 322—28 **8 Claims**



A regulated electrical power system for a machine having a magneto-generator driven at widely-varying speeds by an internal combustion engine, where the magneto-generator provides power for both ignition and lights and battery-charging. The system includes rectifier means for rectifying the magneto output, a Zener diode circuit for sensing rectified voltage level and transistor current amplifier means which draws current through a load resistor when the rectified voltage exceeds a predetermined level, thereby reducing the rectified voltage level due to increased drop across the internal impedance of the magneto-generator.

3,530,367
ZENER DIODE VOLTAGE REGULATOR CIRCUIT

Robert A. Gardenghi, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 7, 1969, Ser. No. 805,131
Int. Cl. G05f *1/60*
U.S. Cl. 323—8 **5 Claims**

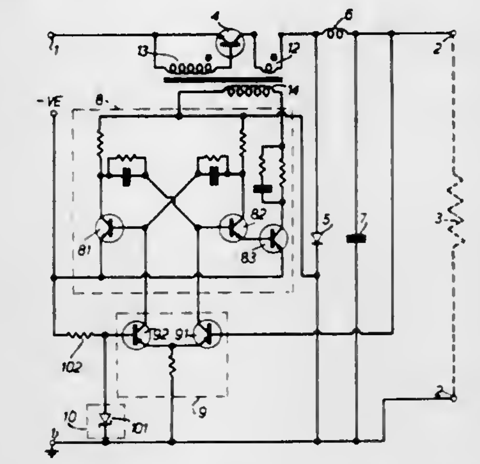


A Zener diode voltage regulator circuit wherein a plurality of Zener diodes are each connected to a respective impedance element with a like plurality of conventional diodes connecting a load impedance across each Zener diode. The conventional diodes allow current to the load impedance and block current between Zener diodes.

3,530,368
STABILISERS

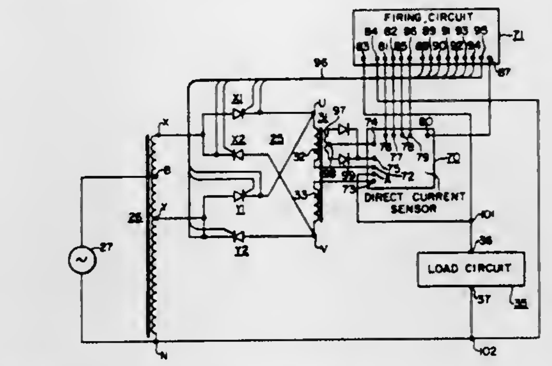
Roger Edwin John Gerard, London, England, assignor to The Marconi Company Limited, London, England, a British company
Filed June 12, 1967, Ser. No. 645,554
Claims priority, application Great Britain, June 17, 1966, 27,146/66
Int. Cl. G05f *1/40*
U.S. Cl. 323—22 **9 Claims**

In known stabilisers the relationship between output and input is controlled by a transistor switched by a comparator comparing the output voltage with a reference. This arrangement requires an additional transistor to amplify the current fed to the load; it has high volt-drop across the transistor when closed; low gain and slow switching. In the invention positive feedback is applied to the transistor through a transformer having three windings, one in the collector circuit, a second between base and emitter and a third through which switching pulses, from the known comparator arrangement, are applied to the transistor.



3,530,369
REGULATOR APPARATUS INCLUDING STATIC SWITCHING CIRCUIT HAVING MID-TAPPED INDUCTOR

Raymond Thompson, Redcar, Teesside, England, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Mar. 23, 1967, Ser. No. 625,447. Divided and this application May 9, 1969, Ser. No. 823,364
Int. Cl. H02m *5/12;* **H02p** *13/06*
U.S. Cl. 323—22 **16 Claims**

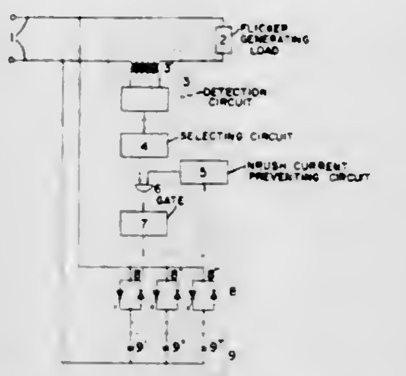


Regulator apparatus having a static switching circuit connected between a source of alternating potential and a load circuit. The static switching circuit includes controllable static switching devices and a mid-tapped inductor. A firing circuit is provided which switches static switching devices in the static switching circuit to regulate the voltage across the load circuit, and to maintain a circulating current flowing between the ends of the mid-tapped inductor above one-half the magnitude of the current flowing in the mid-tap.

3,530,370
FLICKER PREVENTING CIRCUIT

Yukio Yamachi and Sinya Tanaka, Tokyo, and Takashi Kato, Adachi-gun, Japan, assignors to Sanken Electric Company, Limited, Adachi-gun, Japan
Filed July 23, 1968, Ser. No. 746,941
Claims priority, application Japan, Dec. 2, 1967, 42/77,092
Int. Cl. G05f *1/68*
U.S. Cl. 323—106 **4 Claims**

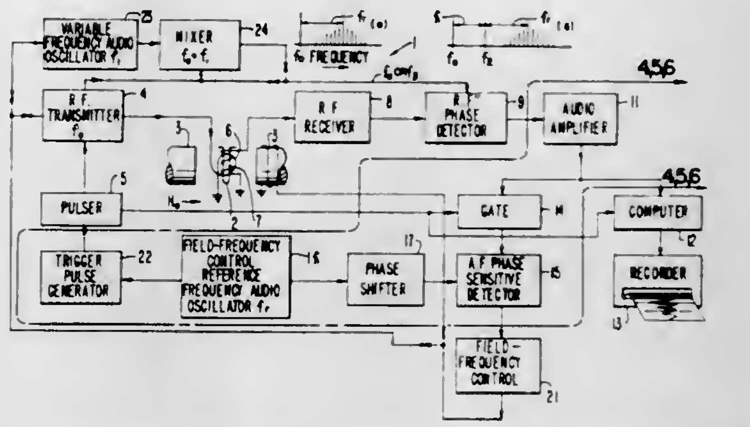
A circuit for preventing flicker in a power line which utilizes a detection circuit for detecting variations in the power line signal and for generating a signal proportional to the amount of the variations. This output is compared against the previously existing level in the power line to determine the amount of correction required. One or more capacitors in a capacitor bank are selectively switched into the power line under the control of semiconductor switches in order to correct the power factor.



Switching is further controlled so as to occur at a time when the current in the power line is passing substantially through its zero value so as to signficantly limit the amount of in-rush current flowing into the capacitors as they are switched into the power line circuit.

3,530,371
INTERNAL FIELD-FREQUENCY CONTROL FOR IMPULSE GYROMAGNETIC RESONANCE SPECTROMETERS

Forrest A. Nelson, Palo Alto, Calif., and Richard R. Ernst, Winterthur, Switzerland, assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 1, 1968, Ser. No. 741,496
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **11 Claims**



An impulse gyromagnetic resonance spectrometer is disclosed. The spectrometer includes a pulsed radio frequency transmitter for applying a train of impulses of radio frequency energy to a sample of matter disposed in a polarizing magnetic field to excite a train of transient gyromagnetic resonance signals emanating from the sample. Each transient resonant signal contains a plurality of simultaneously resonant line signals at a plurality of different frequencies corresponding to the gyromagnetic resonant lines of the sample. A receiver receives the transient resonant signals. The resonant line signals are fed to a computer which Fourier analyzes the signals to derive the separate components which are recorded. A signal, which is determinative of the frequency of one or more of the resonant lines of the sample, is derived from the resonant signal and compared with a reference quantity determinative of a certain predetermined reference polarizing magnetic field intensity or resonance detecting frequency to derive an error signal. The error signal is fed to a field-frequency controller for correcting the intensity of the polarizing field or the frequency of a reference frequency fed to the receiver to a predetermined reference intensity or frequency respectively.

In one embodiment, the reference quantity comprises a reference audio frequency which is compared in a phase sensitive detector with a transient audio frequency resonance signal correponding to one of the resonant lines of the sample to produce the error field-frequency control signal.

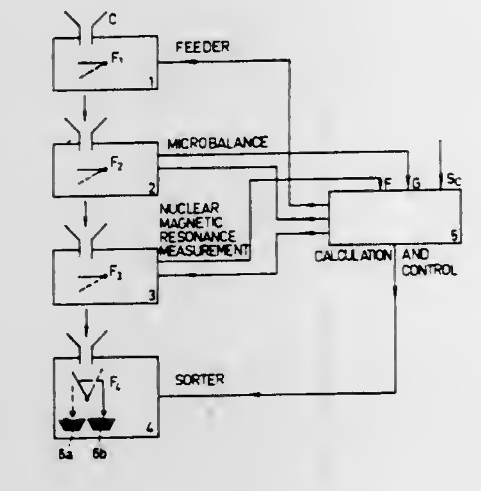
In another embodiment, the signal derived from the transient resonances is applied to a crystal frequency discriminator to derive the error signal.

In another embodiment, the transient resonant signal is filtered and the frequency of the filtered signal measured to derive a D.C. signal which is compared against a D.C. reference level to derive the field-frequency control error signal.

In still another embodiment, a first transient resonant signal is recorded in a memory and subsequently read out for comparison with a subsequently obtained transient resonant signal to derive the error signal.

3,530,372
METHOD AND APPARATUS FOR SELECTING PLANT SEEDS FOR SOWING

Günther Laukien, Silberstreifen, 7501 Forchheim, near Karlsruhe, Germany
Filed Mar. 1, 1968, Ser. No. 709,771
Claims priority, application Switzerland, Mar. 3, 1967, 3,183/67
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **5 Claims**

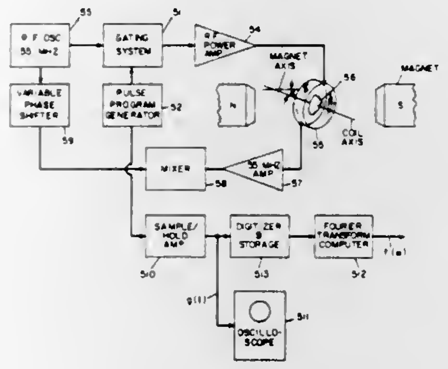


A method and apparatus for automatically non-destructively testing plant seeds and sorting the seeds on the basis of their content of a specific substance. The weight of a particular seed and the amount of the given substance contained in it are determined automatically, from which the specific content of this substance of the seed is calculated automatically, whereupon suitable seeds are selected using as the criterion whether the specific content is greater than a prescribed desired value.

3,530,373
METHODS AND APPARATUS FOR PULSED NUCLEAR MAGNETIC RESONANCE OF SOLIDS

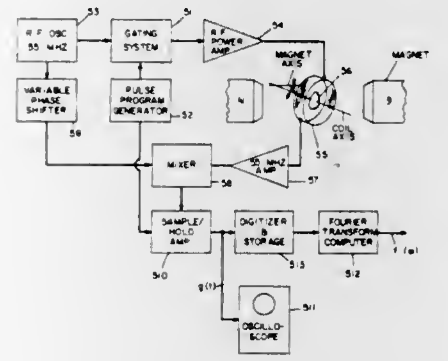
John S. Waugh, Lincoln, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 16, 1968, Ser. No. 762,171
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **17 Claims**

Pulsed nuclear magnetic resonance (NMR) apparatus is programmed to produce magnetic field excitation energy whose amplitude and phase and time sequence are such that the effects of static nuclear magnetic dipole-dipole interactions and/or quadrupolar interactions are averaged to a reduced value; whereas resonance shifts and electron-coupled spin-spin interactions can still be observed in the output signal. The method is particularly useful for investigating solids whose resonance shifts and electron-coupled spin-spin interactions are smaller than, and would otherwise be obscured by, dipole-dipole interactions and/or quadrupolar perturbations. The method consists of adapting the coherent radio frequency modulator found in pulsed NMR apparatus to provide a particular sequence of phase modulated R-F pulses or alternatively to provide a phase modulated R-F pulse in conjunction with a video pulse.



3,530,374
PULSED NUCLEAR MAGNETIC RESONANCE OF SOLIDS

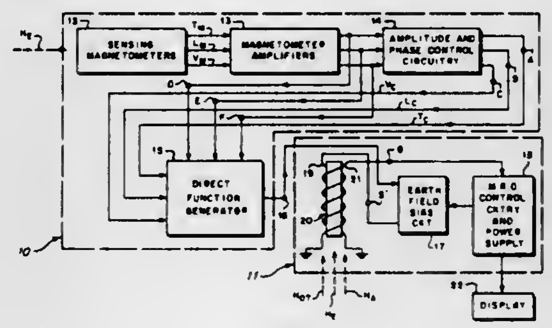
Ulrich H. Haeberlen, Boston, and John S. Waugh, Lincoln, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Sept. 16, 1968, Ser. No. 762,258
Int. Cl. G01n *27/78*
U.S. Cl. 324—.5 **3 Claims**



Pulsed nuclear magnetic resonance (NMR) apparatus is programmed to produce magnetic field excitation energy whose amplitude and phase and time sequence are such that the effects of static nuclear magnetic dipole-dipole interactions and/or quadrupolar interactions are averaged to a reduced value; whereas resonance shifts and electron-coupled spin-spin interactions can still be observed in the output signal. The method is particularly useful for investigating solids whose resonance shifts and electron-coupled spin-spin interactions are smaller than, and would otherwise be obscured by, dipole-dipole interactions and/or quadrupolar perturbations. The method consists of adapting the coherent radio frequency modulator found in pulsed NMR apparatus to provide a particular sequence of phase modulated R-F pulses or alternatively to provide a phase modulated R-F pulse in conjunction with a video pulse.

3,530,375
AIRCRAFT MAGNETOMETER SYSTEM WITH MEANS TO COMPENSATE SAID SYSTEM FOR DISTURBING MAGNETIC FIELD GENERATED BY THE AIRCRAFT

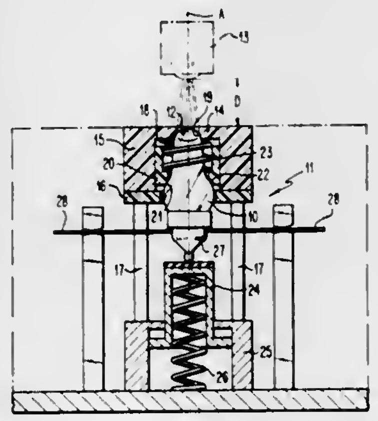
Fransiscus A. Passier, Dorion, Quebec, Canada, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 22, 1968, Ser. No. 769,670
Int. Cl. G01v *3/16*
U.S. Cl. 324—4 **4 Claims**


SENSING MAGNETOMETERS
MAGNETOMETER AMPLIFIERS
AMPLITUDE AND PHASE CONTROL CIRCUITRY
DIRECT FUNCTION GENERATOR
EARTH FIELD BIAS CKT
CONTROL CKTRY AND POWER SUPPLY
DISPLAY

A magnetometer compensation system receiving a first orthogonal set of signals representative of the earth's magnetic field and a second set of orthogonal signals representative of the disturbing magnetic field generated by the aircraft as it maneuvers in the earth's field for electrically providing a single compensating signal for direct electrical injection into an airborne MAD equipment. The system includes two reversible, null seeking servo motors each respectively driving like pluralities of sine/cosine potentiometers, selected potentiometers receiving the first orthogonal signal set and other potentiometers receiving the second orthogonal signal set. The potentiometers which receive the first signal set provide positional input signals to the servo motors.

3,530,376
APPARATUS FOR AXIALLY ALIGNING AND PRECISELY FIXING THE POSITION OF LIGHT BULBS HAVING TAPERED ENVELOPES

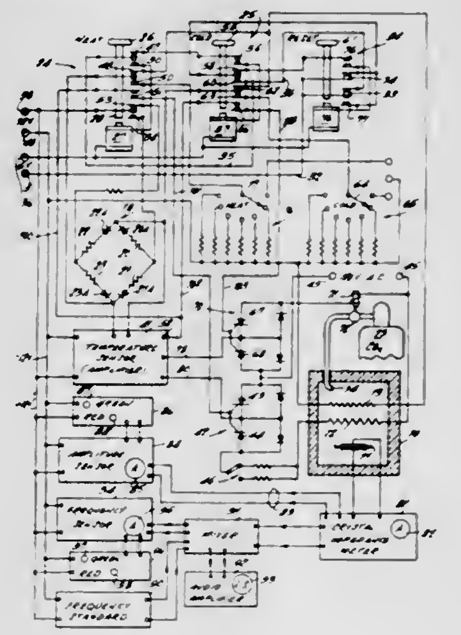
John T. Gulliksen, Peekskill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 23, 1968, Ser. No. 699,855
Int. Cl. G01r *31/22*
U.S. Cl. 324—20 **11 Claims**



Lens end light bulbs with outwardly tapering envelopes are aligned in apparatus so that the lens is at a fixed axial distance from light receptive means by a pair of annular collars having a common axis which passes through the light receptive means. The first annular collar seats the lens end of the bulb and the second collar engages the tapered portion of the bulb envelope. The second collar is axially movable, of a greater diameter than said first collar and axially spaced from said first collar. Tension means normally urge said second collar away from the first collar. The light bulb to be aligned is pressed against the tension means into engagement with the collars.

3,530,377
TEST MEANS FOR DETERMINING THE FREQUENCY STABILITY OF PIEZOELECTRIC CRYSTALS

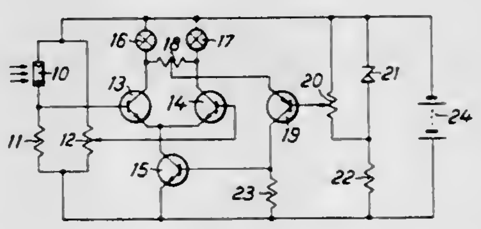
Herbert D. Tanzman, Elberon, N.J., assignor to Winslow Tele-Tronics, Inc., Asbury Park, N.J., a corporation of Pennsylvania
Filed May 22, 1968, Ser. No. 731,061
Int. Cl. G01r *29/22*
U.S. Cl. 324—56 **6 Claims**



A circuit for analyzing the performance of piezoelectric crystals within an extended temperature range. The oscillating activity and the frequency stability are measured at temperatures from −55° C. to +105° C. The crystal, with two electrodes, is mounted in an enclosed chamber and either heated by an electric resistance heater or cooled by the discharge of liquid carbon dioxide. Variations in generated frequencies and oscillator activity are measured for each of a number of temperature increments.

3,530,378
LAMP INDICATOR FOR THE BALANCE OF A WHEATSTONE BRIDGE

Werner Holle, Wetzlar, and Arthur Kessler, Grossaltenstadten, near Wetzlar, Germany, assignors to Ernst Leitz GmbH, Wetzlar, Germany
Filed Aug. 16, 1968, Ser. No. 753,148
Claims priority, application Germany, Aug. 24, 1967, 1,623,773
Int. Cl. G01r *27/00;* G08b *21/00;* H03f *1/00*
U.S. Cl. 324—57 **3 Claims**



In a Wheatstone-bridge circuit there are connected two sub-miniature incandescent lamps between the current supply line of the bridge on one side and a differential amplifier in the diagonal branch of the bridge on the other side. These lamps serve to indicate the balance or unbalance of the bridge. A network consisting of ohmic resistors and a voltage stabilizer is provided by means of which the sum of the voltage of both bulbs is kept constant. The elements of the network are so designed as to maintain this constant sum of the voltages of both bulbs higher than the voltage which is permissible for one bulb alone and, further, means are provided which limit the voltage supplied to one bulb to that highest permissible voltage.

3,530,379
CAPACITANCE MEASURING APPARATUS UTILIZING VOLTAGE RAMPS OF PREDETERMINED SLOPE

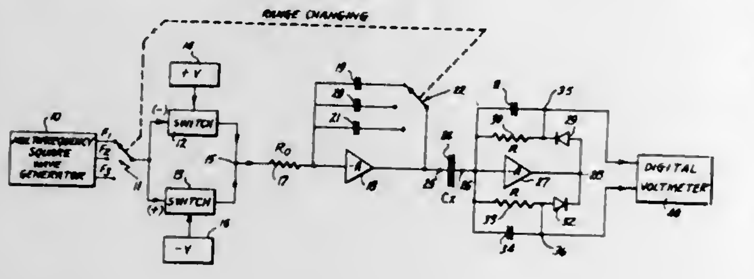
Guy Demerliac, Boulogne, France, assignor to Societe d'Instrumentation Schlumberger, Paris, France, a corporation of France

Filed Apr. 11, 1968, Ser. No. 720,651

Claims priority, application France, Apr. 13, 1967, 102,637

Int. Cl. C01r *11/52, 27/26*

U.S. Cl. 324—60 **8 Claims**



Capacitance measuring apparatus in which ramps of precisely known slope are provided to a differentiating circuit in which the unknown capacitor is the input element. The differentiated output is rectified and applied to a meter. The ramps are produced by using a square wave to switch an integrator input between two equal and opposite polarity precise voltage sources. The integrator provides the ramps. Selectable capacitors in the integrator match selectable frequencies or repetition rates from the square wave source, the selector switches being ganged together to provide range switching. The differentiator output is rectified and then measured and displayed by a meter, e.g., a digital voltmeter.

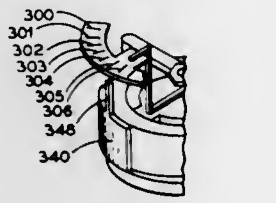
3,530,380
MOVING COIL INSTRUMENT HAVING A MAGNETIC DETENT MECHANISM

Joseph R. Andreaggi, Short Hills, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed May 5, 1966, Ser. No. 547,884

Int. Cl. G01r *15/10, 1/14*

U.S. Cl. 324—132 **2 Claims**



A projected indication meter having a cylindrical magnetic member within which is a moving coil operating on the D'Arsonval principle. The moving coil carries an arm which supports a scale. An optical system projects light through transparent or translucent portions of the scale and projects readings on a screen. The arm also carries a piece of permanent magnet material. An arcuate member, of magnetic material, is mounted on the cylindrical magnetic member surrounding the moving coil, the arcuate member having an upstanding portion which is also arcuate, which is concentric with the moving coil, and which has inwardly projecting teeth. When the input to the meter causes the moving coil to arrive at a region corresponding to the magnitude of the input, the permanent magnet and the teeth interact to move the arm and scale to a preselected scale position corresponding to a range of input values. In an alternative embodiment, the arcuate member includes upstanding segments of magnetic material in place of the teeth. In a further alternative embodiment, the arcuate member includes a single upstanding piece of permanent magnet material and the arm carries a plane member having segments of magnetically permeable material carried thereby. The apparatus produces indications of a digital nature.

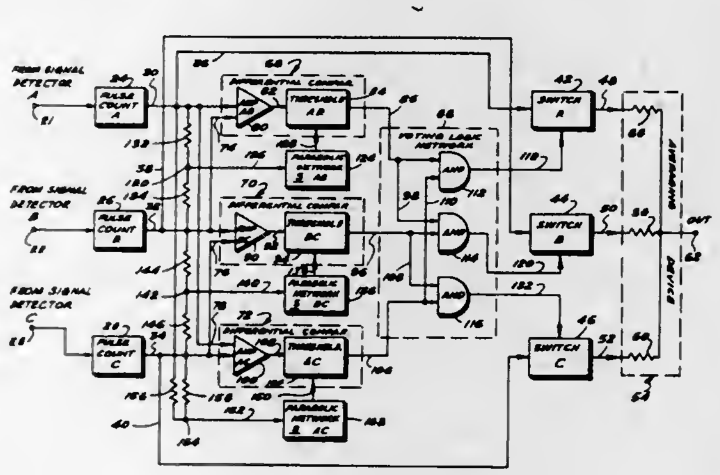
3,530,381
VOTING CIRCUIT CONTROL APPARATUS FOR MULTIPLE APERTURE PARTICLE ANALYZING DEVICE

Walter Robert Hogg, Robert Ivan Klein, and Carl Burgess Hayes, Hialeah, Fla., assignors to Coulter Electronics, Inc., Hialeah, Fla., a corporation of Illinois

Filed Jan. 15, 1968, Ser. No. 697,985

Int. Cl. G01n *27/00;* **G06f** *7/38;* **G06g** *7/14*

U.S. Cl. 324—71 **35 Claims**



Apparatus for use with a particle analyzing device of the type which uses the electronic scanning principle based upon the movement of a liquid suspension of particles relative to an electric field established in a minute aperture, the field being any suitable form such as an electric current, and the movement of particles through the aperture serving to cause momentary changes in the field which may be detected, such changes being proportional to the size of the respective particles which caused the same. The apparatus with which the invention is concerned uses multiple apertures with a detector for each aperture and circuitry for obtaining a count from each detector in the form of an accumulated count signal. The redundancy of so-called count channels provides a measure of accuracy where the same size of aperture is used and the same sample scanned by signal-producing means having substantially the same circuit responses for each channel. The average of all readings will be an excellent statistical value. Time may be saved by this arrangement. Plugging of the apertures will occur, but rarely more than one at a time, and a voting circuit is used to cut out the channel which gives a signal count that is different from the other two. Thus, all channels are connected to an averaging device and the count period starts and proceeds. As the counts accumulate in the respective channels their output voltages increase, are averaged in the averaging device, and will be read at the end of the count time. If one should in the meantime develop a blockage, its signal will be removed from the averaging device by means of the voting circuit.

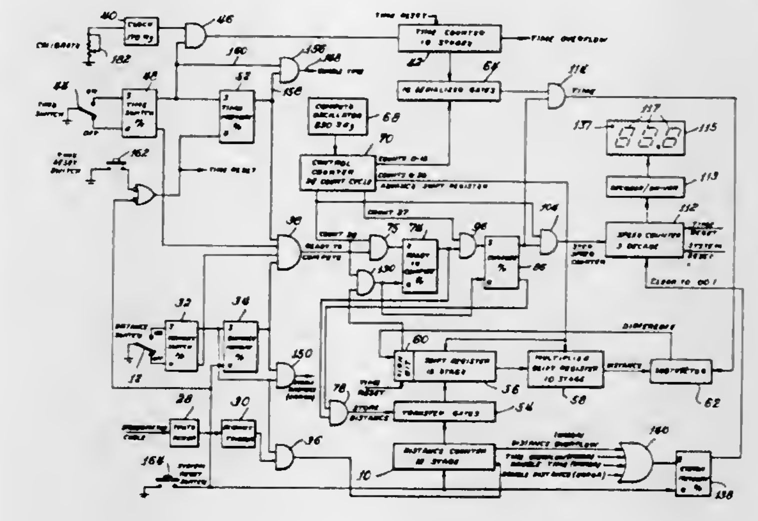
3,530,382
SYSTEM FOR SPEED INDICATION UTILIZING DIGITAL DISTANCE AND DIGITAL TIME MEASURING APPARATUS

John W. Liston, Mount Prospect, Gordon E. Gee, Homewood, and William K. Oliver, Chicago Heights, Ill., assignors to Federal Sign and Signal Corporation, Blue Island, Ill., a corporation of Delaware

Filed Feb. 27, 1969, Ser. No. 802,875

Int. Cl. G01p *3/66*

U.S. Cl. 324—178 **21 Claims**



An improved speed measuring and indicating apparatus which can be mounted in a first vehicle and operated therefrom to determine the speed of a second vehicle, the apparatus including first means coupled to the driving mechanism of the first vehicle for generating a number of electrical pulses proportional to the distance travelled by the first vehicle, second means for generating a number of electrical pulses proportional to the time required for the second vehicle to travel the same distance, and means for dividing the distance pulses by the time pulses to indicate the average speed of the vehicle over the foregoing distance, the apparatus also including readout means for indicating such speed and time and distance switches for manual actuation by an operator.

3,530,383
ULTRA-SENSITIVE RECEIVER

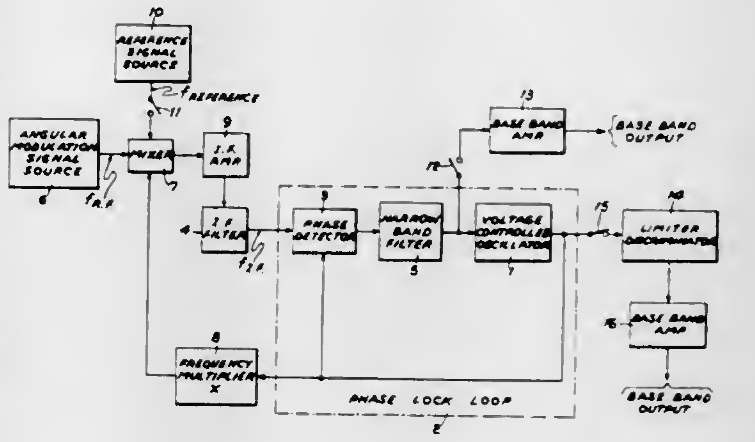
Marvin L. Sassler, Wayne, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland

Filed Nov. 18, 1966, Ser. No. 595,395

Int. Cl. H04b *1/16*

U.S. Cl. 325—346 **5 Claims**

An angularly modulated receiver employing both frequency compression and phase locked loop techniques. The receiver includes a conventional phase locked loop with the output of the phase locked loop voltage controlled oscillator being coupled to the phase detector of the phase locked loop and in addition to a frequency multiplier whose output is coupled to a mixer which in turn is coupled to the receiver input. The output of the mixer provides the other input to the phase detector of the phase locked loop. An additional reference frequency signal can be coupled to the mixer to give more flexibility in selecting the multiplying factor of the multiplier, the RF signal frequency and the resultant IF signal frequency to enable adjustment of the receiver sensitivity.



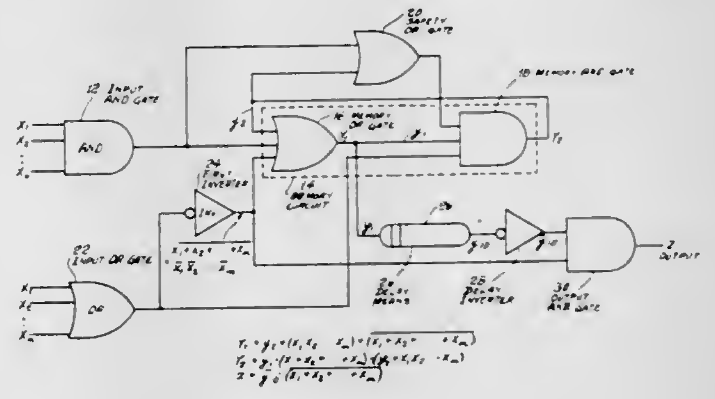
3,530,384
PLURAL-INPUT DROPOUT AND NOISE DETECTION CIRCUIT FOR MAGNETIC RECORDING TAPE

Ronald Zussman, Brooklyn, N.Y., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 29, 1968, Ser. No. 748,447

Int. Cl. H03k *19/00, 19/36;* **G06f** *11/00*

U.S. Cl. 328—92 **8 Claims**



A minimal, hazard-free, logic circuit for testing the merit of magnetic tape with respect to dropout and noise errors, the circuit being the implementation of the following input-output logical design equations:

$$Y_1=y_2+(X_1X_2\ .\ .\ .\ X_n)+(\overline{X_1+X_2+\ .\ .\ .\ +X_n})$$

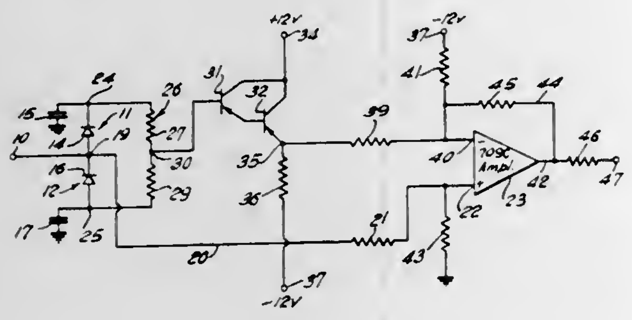
$$Y_2=y_1\cdot(X_1+X_2+\ .\ .\ .\ +X_n)\cdot(y_2+X_1X_2\ .\ .\ .\ X_n)$$

$$Z=y_{1D}\cdot(\overline{X_1+X_2+\ .\ .\ .\ +X_n})$$

The plural inputs, X_1 to X_n, each being a series of spaced pulses from a different track on a magnetic tape, are fed in parallel to an input AND gate and an input OR gate. The output of the AND gate is fed to a memory circuit comprising an OR gate in series with an AND gate, the output signal of the memory AND gate being fed back to one input of the memory OR gate. A third input signal to the memory OR gate is the inverted output of the input OR gate, this inverted output signal also being one of the input signals of the output AND gate which provides the Z output signal of the circuit. The direct output of the input OR gate is fed to one of the inputs of the memory AND gate. The output of the memory OR gate is also delayed, inverted and fed as an input to the output AND gate. The preferred embodiment also employs a safety OR gate which receives the output signals of the input AND gate and the memory AND gate and feeds its output signal to the memory AND gate. The output Z signal indicates the presence of error conditions (dropout and noise) on the magnetic tape.

3,530,385
STABILIZATION CIRCUIT FOR THE MEAN LEVEL OF A THREE LEVEL WAVEFORM

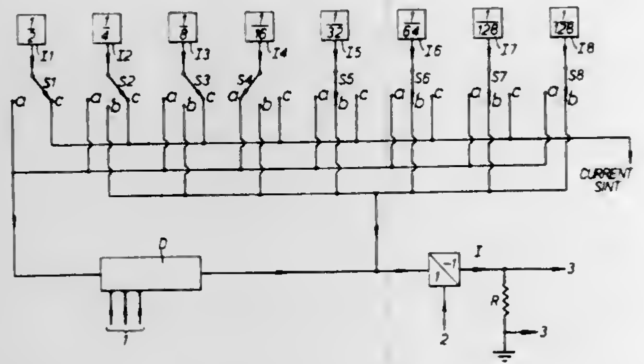
John W. Smith, Whitestone, N.Y., and Albert H. Libbey, Hampton, N.H., assignors to Graphic Transmission Systems, Inc., East Hanover, N.J.
Filed Apr. 29, 1969, Ser. No. 820,264
Int. Cl. H03k *5/20*
U.S. Cl. 328—116 **4 Claims**



A stabilization circuit is shown including a pair of peak level detectors connected to a voltage divider to provide a waveform representative of variations in the mean level of the three level waveform. Circuit means including an operational amplifier is shown for inverting the variation in mean level waveform and for combining the inverted waveform with the three level waveform to provide a three level waveform having a stabilized mean level.

3,530,386
ADJUSTABLE VOLTAGE SOURCE

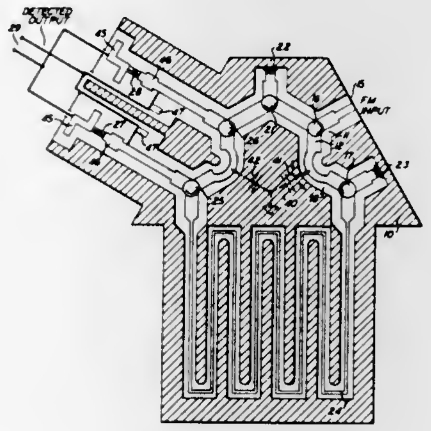
John Brian Terry, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Oct. 11, 1967, Ser. No. 674,488
Claims priority, application Great Britain, Nov. 2, 1966, 49,215/66
Int. Cl. G06g *17/12*
U.S. Cl. 328—142 **4 Claims**



An adjustable voltage source for producing any of a range of fixed voltages lying on a voltage curve consisting of a plurality of linear portions between successive voltage values lying in geometrical progression comprising an output resistance, a plurality of current generators, the currents from which when fed directly to the resistance produce the voltage values lying in geometrical progression and a divider through which the current of any one of the generators is passed before being fed to the resistance so as to produce voltage values on the linear portions, switching means being provided to obtain the appropriate routing of the currents.

3,530,387
PHASE COMPARISON MICROWAVE DISCRIMINATOR

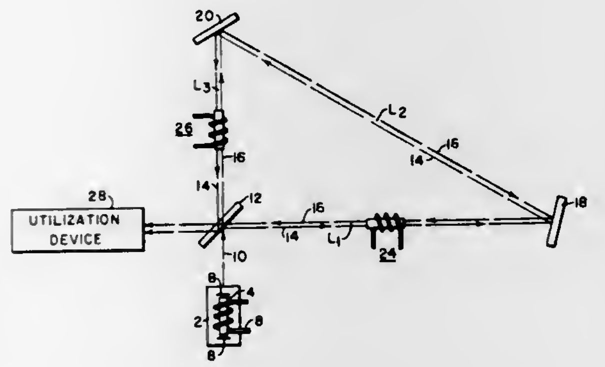
Murray D. Bonfeld, Allentown, Pa., and Edward G. Jaasma, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Mar. 1, 1968, Ser. No. 709,732
Int. Cl. H03d *9/02*
U.S. Cl. 329—116 **6 Claims**



A microwave discriminator of the phase comparison type suitable for strip line construction in which an impedance mismatch, variable in both size and position, is used with circulators to divide a frequency modulated signal between two paths of different loss and delay so that when signals from the two paths are recombined by a similar mismatch-circulator combination they sum to produce a net amplitude proportional to frequency.

3,530,388
LIGHT AMPLIFIER SYSTEM

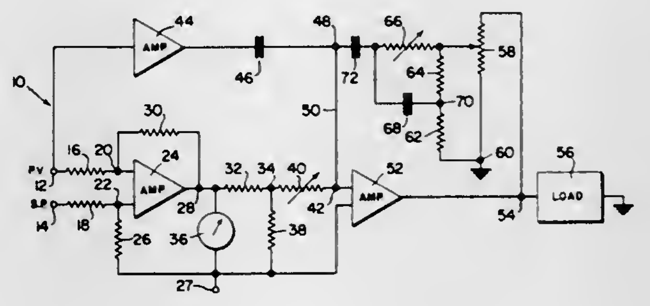
Raymond Guerra, Glen Burnie, Gerald W. McElyea, Baltimore, John H. Cullom, Catonsville, and Gordon S. Ley, Arnold, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1965, Ser. No. 450,574
Int. Cl. H01s *3/02*
U.S. Cl. 330—4.3 **11 Claims**



A light beam is split into two parts each directed to travel substantially the same path but in opposite directions. Any disturbance altering the optical path of one part will similarly change the optical path of the other part. The resultant interferometer system can be used to amplify a light beam by placing active laser elements in at least some of the legs of the path followed by the aforementioned parts. Additional stages of amplification can be advantageously obtained by cascading stages of amplification.

3,530,389
ELECTRONIC PROCESS CONTROLLER HAVING A TWO PART ERROR AMPLIFIER

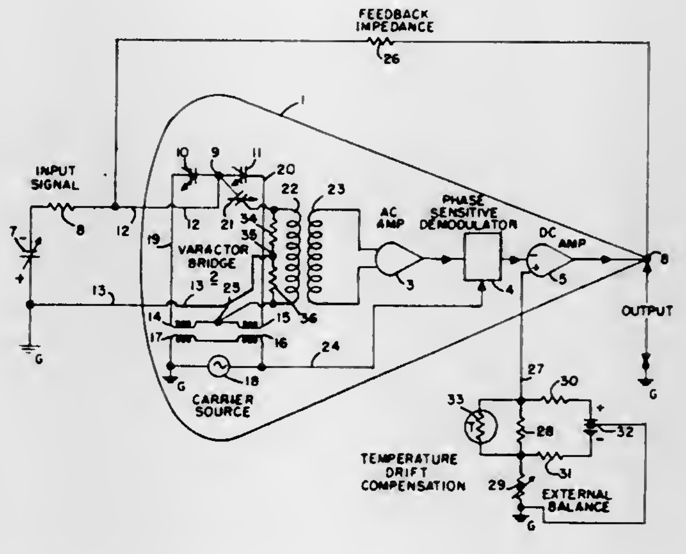
Joseph Gormley, Southampton, and James A. Hogan, Hatfield, Pa., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 9, 1968, Ser. No. 704,421
Int. Cl. H03f *1/02;* **G06f** *11/00*
U.S. Cl. 330—9 **8 Claims**



Circuitry operating from a single voltage power supply having an error amplifier and a controller amplifier is arranged to modify a process variable signal and a set point signal and produce an output signal which is applied to a load element for controlling a process. The error amplifier applies the process variable signal and the difference between the process variable signal and the set point signal to the controller amplifier. The controller amplifier modifies these signals to limit the output signal and prevent amplified saturation, reset wind up, transient disturbances and reset dumping.

3,530,390
OPERATIONAL AMPLIFIER WITH VARACTOR BRIDGE INPUT CIRCUIT

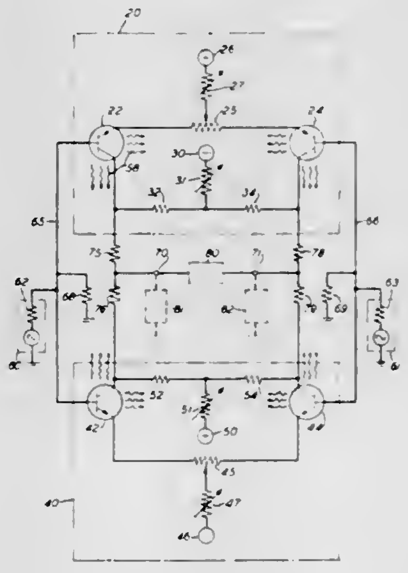
Lewis R. Smith, Sudbury, Mass., assignor to Analog Devices, Inc., Cambridge, Mass.
Continuation of application Ser. No. 605,451, Dec. 28, 1966. This application July 16, 1969, Ser. No. 846,634
Int. Cl. H03f *1/02, 3/38*
U.S. Cl. 330—9 **1 Claim**



A modulator-demodulator circuit for producing a stabilized amplifier including a varactor bridge circuit as the input circuit. The bridge comprises voltage variable capacitor diodes and helps maintain the carrier from the carrier oscillator and any carrier present on the input leads balanced at the input to the AC amplifier. Improved temperature stability and wide band frequency response is obtained by the use of an untuned transformer coupling the modulator to the AC amplifier and temperature drift compensating network including a balancing impedance connected to the DC output amplifier.

3,530,391
DIFFERENTIAL AMPLIFIER

Robert V. Goordman, Hackettstown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Aug. 18, 1967, Ser. No. 661,683
Int. Cl. H03f *3/04, 3/68*
U.S. Cl. 330—23 **12 Claims**

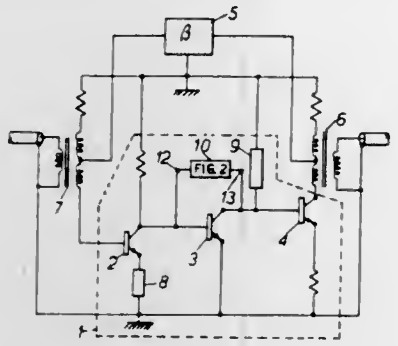


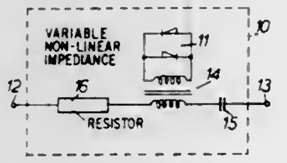
A temperature-compensated differential amplifier is developed from a combination of two emitter-coupled differential amplifier stages arranged in a bridge configuration. In various embodiments the stages are coupled together by means of either resistors, diodes, or batteries. Temperature-induced common-mode signals in the stages balance, or offset, one another between the two stages. A feedback loop provides positive and negative feedback to control the operation of the differential amplifier.

3,530,392
NEGATIVE FEEDBACK AMPLIFIERS

Ian Johnson Hirst, Charlton, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,289
Claims priority, application Great Britain, Sept. 7, 1967, 40,949/67
Int. Cl. H03f *1/34;* **H03g** *3/30*
U.S. Cl. 330—28 **3 Claims**

To reduce the effect of overload on negative feedback amplifiers a stage in the forward path of the amplifier is provided with local negative feedback. The magnitude of this feedback is made amplitude dependent by connecting a non-linear element (a pair of diodes connected in parallel opposition) between the collector and base of a transistor stage thereby providing shunt feedback. The residual non-linear distortions are reduced by overall negative feedback threshold of the diodes set so that local

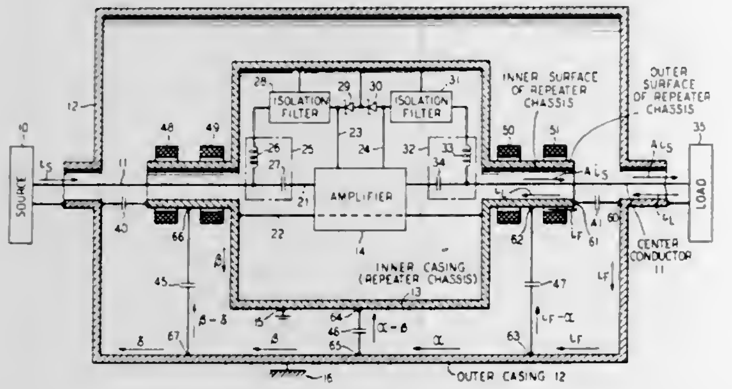




negative feedback is produced only when signals exceed a predetermined level.

3,530,393
HIGH FREQUENCY GROUND ISOLATION FILTER FOR LINE POWERED REPEATER CIRCUITS

Raymond A. Thatch, Middletown, and Frederick D. Waldhauer, Fair Haven, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Mar. 11, 1968, Ser. No. 712,093
Int. Cl. H03f *1/00, 3/60*
U.S. Cl. 330—56 **5 Claims**

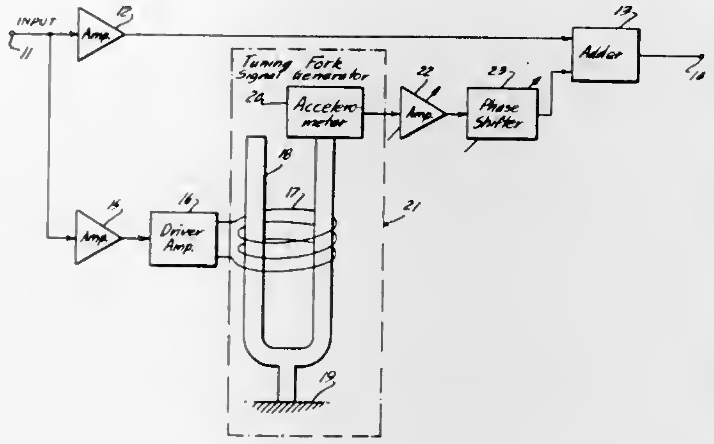


Multiple inductor-capacitor sections are placed in the feedback circuit between the input and output blocking capacitors of a line powered repeater. The inductance, provided by ferrite core sections placed around the outer surface of coaxial portions of the repeater, impedes the flow of spurious feedback current at high frequencies while leaving the signal current unaffected. Shunt capacitors, placed from repeater ground to earth ground between the ferrite core sections, divert the flow of feedback current away from the input.

3,530,394
AUDIO FREQUENCY REJECT FILTER

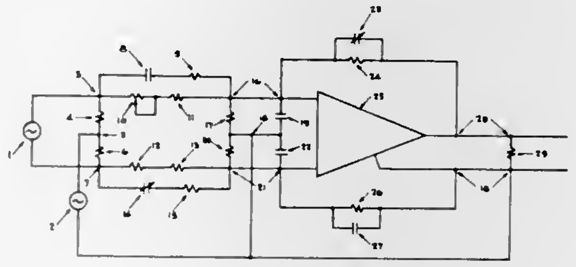
Alfonso DeLoach, Panama City, Fla., assignor to the United States of America as represented by the Secretary of the Navy
Filed July 8, 1968, Ser. No. 743,219
Int. Cl. H03f *13/00*
U.S. Cl. 330—60 **14 Claims**

A filter for cancelling a predetermined frequency component from a composite signal having a plurality of frequency components, said filter including a tuning fork having a resonant frequency identical to the frequency of said predetermined frequency component to be cancelled, an inductance coil for electro-magnetically driving said tuning fork into vibration at its resonant frequency in response to said predetermined frequency component, an accelerometer for generating an electrical signal corresponding to the resonant frequency of said tuning fork in response to the vibration thereof, an adjustable amplifier for amplifying said electrical signal to an amplitiude equal to that of said predetermined frequency component to be cancelled, a variable phase shifter for inverting said amplified electrical signal, and a comparator for algebraically adding said inverted electrical signal with the aforesaid composite signal in order to produce an output signal equal to the difference thereof.



3,530,395
DIFFERENTIAL AMPLIFIER SYSTEM

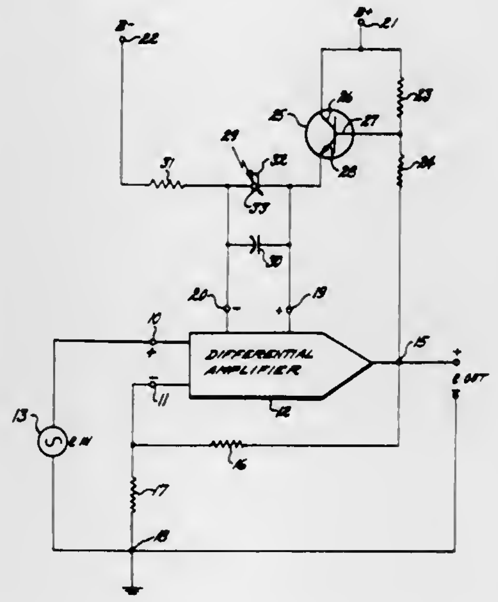
George J. Prusha, 23201 Lincolnshire Drive, Bay Village, Ohio 44140
Filed Dec. 29, 1967, Ser. No. 694,565
Int. Cl. H03f *3/68, 21/00*
U.S. Cl. 330—69 **6 Claims**



A differential direct current amplifier system capable of detecting and amplifying low level signals in the presence of extremely large interfering common mode signals. The amplifier has differential input terminals to which is operatively connected a passive differential input divider circuit. The divider circuit consists of passive elements connected in a parallel or branch configuration and includes impedance elements in each branch operable to attenuate the direct current and alternating current components of the common mode signals. The impedance elements are adjustable so that the common mode signals may be directed to each branch of the divider circuit in any preselected ratio of division. The amplifier system also includes a preamplifier connected to the input of the divider circuit and to which the low level signals are applied and amplified, the common mode interference signal being connected to the input of the divider circuit bypassing the preamplifier.

3,530,396
SUPPLY-VOLTAGE DRIVER FOR A DIFFERENTIAL AMPLIFIER

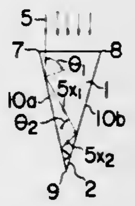
John D. Rudolph, Inglewood, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 25, 1968, Ser. No. 770,689
Int. Cl. H03f *1/30, 5/00*
U.S. Cl. 330—69 **5 Claims**



A supply-voltage driver apparatus for differential amplifiers to provide supply voltages which track the amplifier's output and thereby giving the amplifier an increase in its limits on common-mode voltage input.

3,530,397
LASER ELEMENT

Chuhei Suzuki, Nerima-ku, and Takao Tanaka, Nakano-ku, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 27, 1965, Ser. No. 459,333
Claims priority, application Japan, June 1, 1964, 39/30,732
Int. Cl. H01s *3/05, 3/16, 3/09*
U.S. Cl. 331—94.5 **15 Claims**

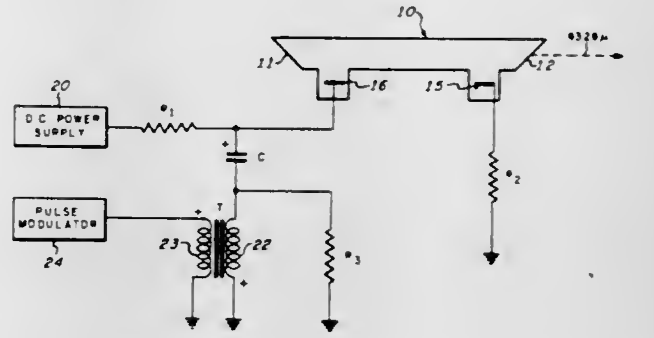


A prism-shaped active laser medium is employed which concentrates the pumping light energy applied from the base of the prism to a vertex edge portion by total reflection to effect concentration of the pumping light energy along the vertex edge.

3,530,398
RAPID ON-OFF SWITCHING OF A C.W. LASER SOURCE

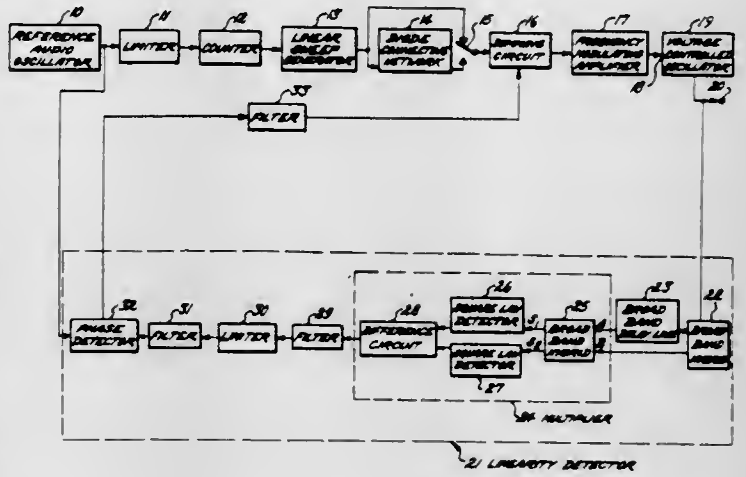
Irving Itzkan, Great Neck, and Peter S. Zory, Jr., Glen Cove, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 534,120
Int. Cl. H01s *3/09, 3/10, 3/22*
U.S. Cl. 331—94.5 **12 Claims**

Apparatus for rapidly switching a laser on and off comprising a lasing medium characterized by energy levels having population density versus applied energy characteristics such that a population inversion is established therein in response to a first quantity of energy to provide normal lasing action and then disrupted by the application of a sufficient quantity of additional energy whereby the lasing action is abruptly terminated. Conversely, removal of the additional quantity of energy restores the population inversion and enables normal lasing action to resume.



3,530,399
ULTRALINEAR SWEEP GENERATOR

William B. Goggins, Jr., Winchester, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 26, 1968, Ser. No. 779,049
Int. Cl. H03b *3/04, 23/00*
U.S. Cl. 331—23 **4 Claims**

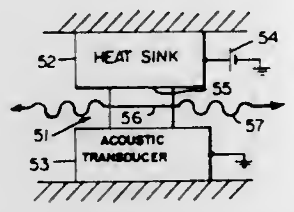


An ultralinear sweep generator is provided wherein a preselected sweep voltage is generated for application to a voltage controlled oscillator thus generating a nearly linear swept frequency signal. Deviations from linearity are sensed by a linearity detector. The linearity detector operates so that the frequency difference between the swept frequency signal and a delayed swept frequency signal is provided. If the swept frequency signal departs from linearity, the difference frequency is found and is compared to a reference frequency. This comparison causes a correction signal to be generated which is added to the original frequency control voltage for correction purposes to provide an ultralinear sweep signal.

3,530,400
ACOUSTICALLY MODULATED LASER

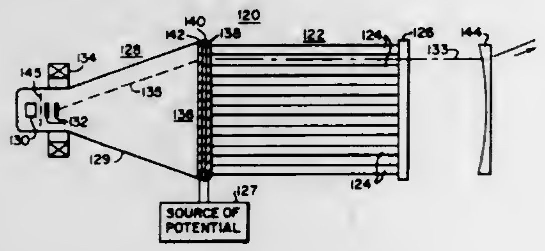
George W. Pratt, Jr., Wayland, and Jose E. Ripper, Arlington, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts
Filed Aug. 30, 1966, Ser. No. 576,094
Int. Cl. H01s *3/10*
U.S. Cl. 331—94.5 **9 Claims**

Laser apparatus is described wherein the frequencies of the allowable modes of radiation are modulated by acoustically varying the index of refraction of the active lasing medium. The wavelength of the acoustic energy applied to the active lasing medium is large enough so that substantially uniform acoustic wave pressure exists throughout the active laser medium at any given time.



3,530,401
LASER SCANNING SYSTEM

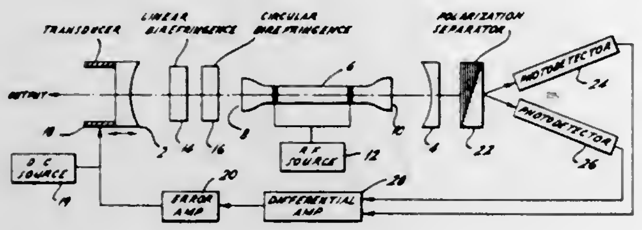
Max Garbuny, Pittsburgh, and Charles H. Jones, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1966, Ser. No. 587,042
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **31 Claims**



1. A radiation control system including first means capable of being excited to an inverted population between at least two different energy states and capable of radiating energy of a frequency related to the difference in energy between said energy states, second means for applying pumping excitation to said first means to establish said inverted population, third means for selectively establishing first reflective portions in response to impinging energy, and fourth means for presenting second reflective portions to effect in cooperation with said first portions coupling of the radiant energy of said first means to establish beams of coherent radiation as determined by the position of said first reflective portions.

3,530,402
LASER FREQUENCY STABILIZATION SYSTEM

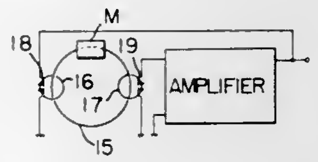
Walter M. Doyle, Laguna Beach, and Matthew B. White, Newport Beach, Calif., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 26, 1968, Ser. No. 724,484
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **9 Claims**



A laser frequency stabilization system wherein circular birefringence and linear birefringence are established within the laser cavity. By choosing the proper ratio of circular birefringence to linear birefringence, a very sharp frequency discriminant can be obtained.

3,530,403
OSCILLATOR

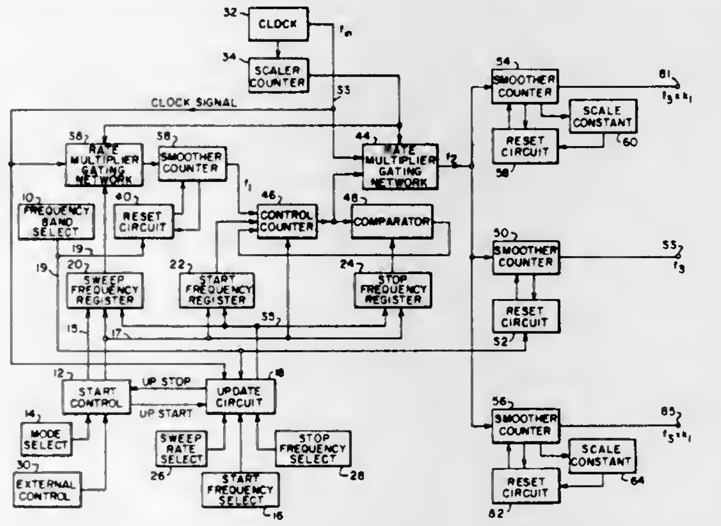
Daizo Nukiyama, 5–9 Nishikata, 1-chome, Bunkyo-ku, Tokyo, Japan, and Noriyuki Miyazaki, 12–9 Hon-Kugenuma, 3-chome, Karagawa-ken, Fujisawa, Japan
Filed Nov. 7, 1967, Ser. No. 681,290
Claims priority, application Japan, Nov. 8, 1966, 41/73,030; Dec. 19, 1966, 41/82,762; Aug. 10, 1967, 42/50,974
Int. Cl. H03b *5/30*
U.S. Cl. 331—156 **6 Claims**



An oscillator comprising a nonmagnetic mechanical vibrator arranged in a DC magnetic field, an amplifier having said mechanical vibrator connected to its input side, and a circuit feeding the output of said amplifier back to said mechanical vibrator.

3,530,404
LINEAR FM SIGNAL GENERATOR

Joseph Abruzzo and William L. Price, Severna Park, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 23, 1968, Ser. No. 754,786
Int. Cl. H03b *23/00*
U.S. Cl. 331—178 **12 Claims**

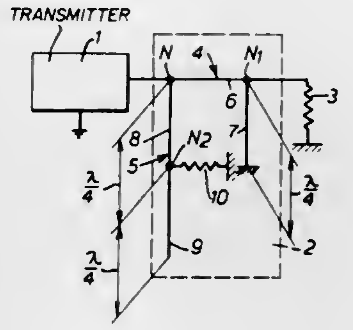


A linear FM digital signal generator employing the concept of a digital dynamic rate multiplier to provide a plurality of simultaneous frequency swept output voltages. The frequency from one output terminal differs from that from another ouptut terminal by a fixed selectable percentage at any instant during the sweep. Additionally, the signal generator is operable in several modes which allow the operator to select a digital output over a predetermined frequency band in stepped frequency increments or ramp function sweeps.

3,530,405
HARMONIC SEPARATING FILTERS

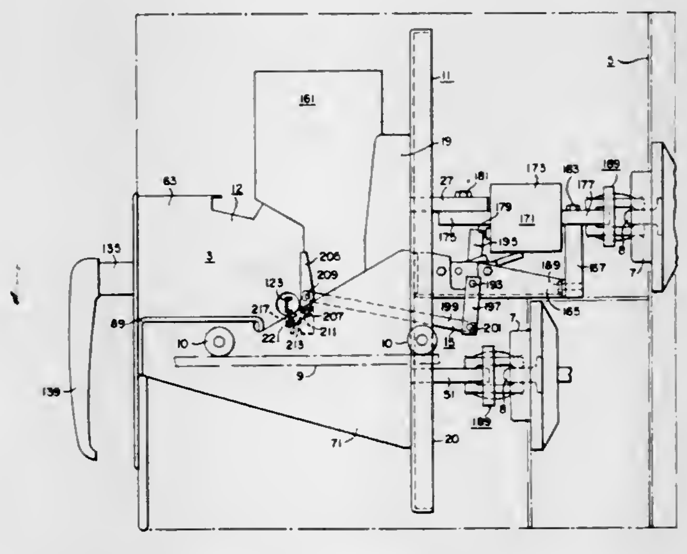
Giorgio Luzzatto, Genoa, Pegli, Italy, assignor to The Marconi Company Limited, London, England, a British company
Filed Jan. 6, 1969, Ser. No. 789,326
Claims priority, application Italy, Jan. 19, 1968, 50,194/68
Int. Cl. H01p *1/20, 5/12*
U.S. Cl. 333—6 **7 Claims**

A harmonic separating filter has at least two input line stubs one of which includes a section of line of one-eighth of the wavelength at the fundamental frequency; a main useful load to be fed through the one-eighth wavelength section with energy at the fundamental frequency from a radio frequency transmitter; and a quarter wavelength line section connected in shunt with the useful main load (when connected). The other of the line stubs feeds energy at the second harmonic frequency to an auxiliary load when connected to a nodal point at the centre point between two line sections each of one-quarter wavelength and together constituting the other line stub.



3,530,406
CIRCUIT BREAKER WITH CURRENT-LIMITING FUSES AND MISSING FUSE INTERLOCK

Zwingle J. Dragar, Pittsburgh, and John L. Drown, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1968, Ser. No. 779,506
Int. Cl. H01h *85/48*
U.S. Cl. 337—7 **10 Claims**

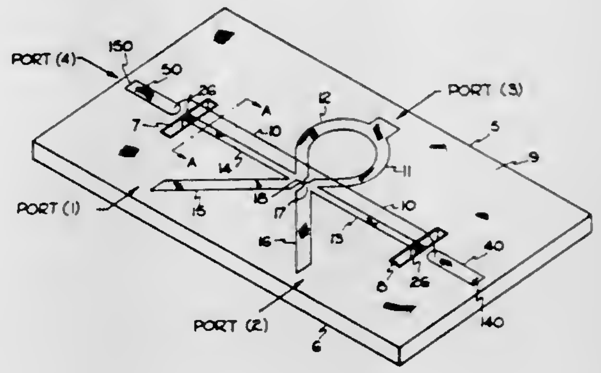


A fused multi-pole drawout type circuit breaker comprises a separate current-limiting fuse for each pole unit with means operable when any of the fuses blows to open the breaker, and with a missing-fuse interlock for automatically opening the breaker when a fuse is removed and for preventing closing of the breaker when any of the fuses is not in place.

3,530,407
BROADBAND MICROSTRIP HYBRID TEE

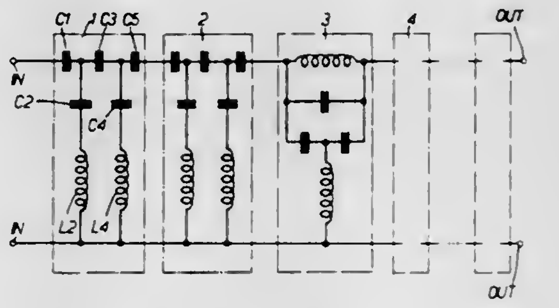
Ronald E. Blight, Framingham, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts
Filed Dec. 16, 1968, Ser. No. 784,148
Int. Cl. H01p *5/12*
U.S. Cl. 333—11 **23 Claims**

A broadband microstrip hybrid tee in one layer pattern above a ground plane is disclosed. Four ports are constructed and connected in a manner such that a signal feed into one of the branch arms will divide equally and in phase between two arms connected to matched loads with no signal appearing in the fourth branch. Similarly a signal fed into the fourth branch will divide equally but out of phase between the two arms connected to matched loads, and no signal will appear in the first branch arm.



3,530,408
DISPERSIVE NETWORKS

Percy Samuel Brandon and Allan Harry Boyce, Essex, England, assignors to The Marconi Company Limited, London, England, a British company
Filed June 12, 1967, Ser. No. 645,146
Claims priority, application Great Britain, June 15, 1966, 26,593/66
Int. Cl. H03h *5/100*
U.S. Cl. 333—28 **4 Claims**

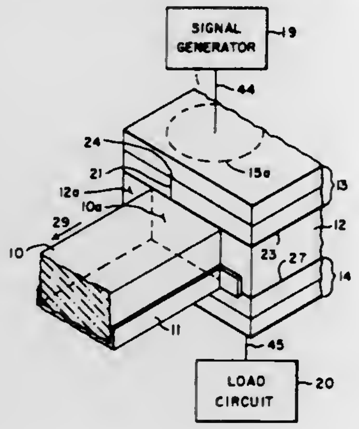


A dispersive network which is intended for operation over a frequency band with predetermined limits and in which all the sections would ordinarily be all-pass, is modified by replacing at least one all-pass section by a filter section which has a high pass cut-off flank of which the flank band is substantially the same as the frequency band between the lower of said predetermined limits and the lower limit delay frequency of the unmodified network, said filter section also having a filter cut-off delay characteristic which is at least approximately the same as the component group delay characteristic of the normally provided all-pass section which said filter section replaces.

3,530,409
TWO-PORT MAGNETOELASTIC DELAY LINE

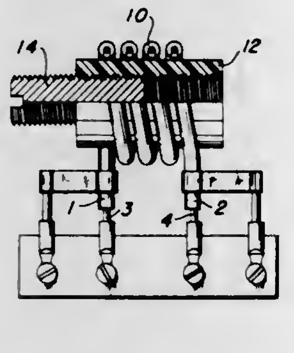
Carmine F. Vasile, Greenlawn, N.Y., assignor to Hazeltine Research Inc., a corporation of Illinois
Filed Sept. 24, 1968, Ser. No. 762,067
Int. Cl. H03h *7/30, 9/30, 9/34*
U.S. Cl. 333—30 **18 Claims**

A two-port magnetoelastic delay line having a sample of single crystal magnetic insulator material such as yttrium iron garnet (YIG) having a polished face and located in an axially varying magnetic bias field. Electromagnetic energy is coupled to the YIG material through a shielded coupling device which is positioned adjacent to the polished face and which includes a current carrying wire and a shielding ground plane which confines the field produced by current flow in the wire. The energy propagates in the YIG bar in the form of medium-K waves, high-K exchange spin-waves and elastic waves and returns to the polished face with a specified delay. A second shielded coupling device similar to the first and also positioned at the polished face of the YIG detects the return wave and produces a signal representative of the signal in said input coupling device delayed by a predetermined amount. Undelayed leakage through the air is prevented by having the two coupling devices shielded from each other and undelayed leakage through the YIG is prevented by separating the wire conductors by a distance equal to at least one-third their length. Alternative arrangements are also covered.



3,530,410
VARIABLE SLUG-CONTROLLED COAXIAL TRANSFORMER

Sam E. Parker, 3651 Liggett Drive, San Diego, Calif. 92106
Filed July 1, 1969, Ser. No. 838,167
Int. Cl. H03h *7/38;* **H01q** *9/16*
U.S. Cl. 333—33 **5 Claims**

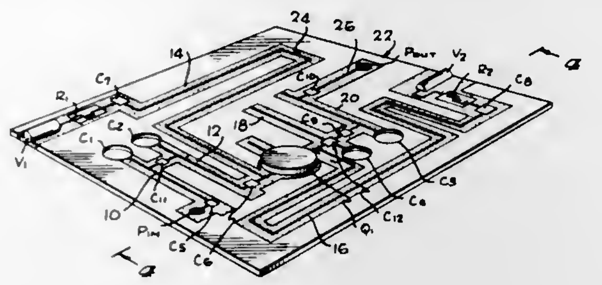


A coaxial cable coiled, the inner and outer conductors being connected as the primary and secondary windings of a transformer and a metal slug is adjustable along the axis of the coil to change the impedance transformation. The device is excellent for matching the impedance of a resonant load such as an antenna to a feed line of any characteristic impedance.

3,530,411
HIGH FREQUENCY ELECTRONIC CIRCUIT STRUCTURE EMPLOYING PLANAR TRANSMISSION LINES

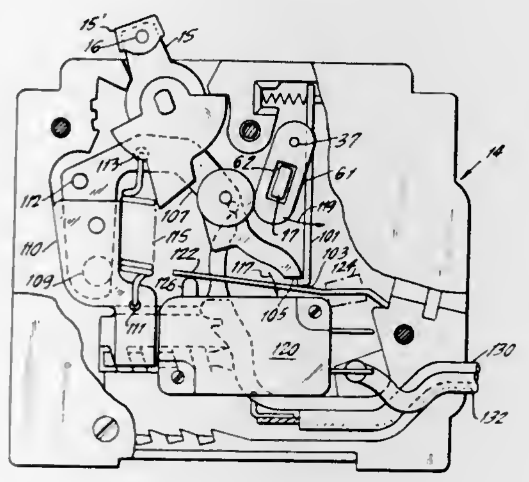
Brian E. Sear, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Continuation of application Ser. No. 576,099, Aug. 30, 1966. This application Feb. 10, 1969, Ser. No. 800,038
Int. Cl. H01p *3/06, 7/04;* **H01q** *5/24*
U.S. Cl. 333—96 **12 Claims**

A structure forming a high frequency electronic circuit comprised of both active and reactance components. The structure is comprised of one or more electrically conductive plates secured together to define a composite electrically conductive board structure. Planar coaxial transmission lines extend through the board structure defining inductive components and establishing circuit interconnections. Each transmission line is comprised of a conductor supported by dielectric material within a channel extending through the board structure. Active components are also supported within recesses defined within the board structure. Adjustable capacitive components are formed by movable plugs which extend into holes formed in the board structure.



3,530,412
CIRCUIT BREAKER STACK INCLUDING AUXILIARY ALARM SWITCH

Carl E. Gryctko, Haddon Heights, N.J., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed July 17, 1968, Ser. No. 745,448
Int. Cl. H01h *73/12*
U.S. Cl. 335—8 **4 Claims**

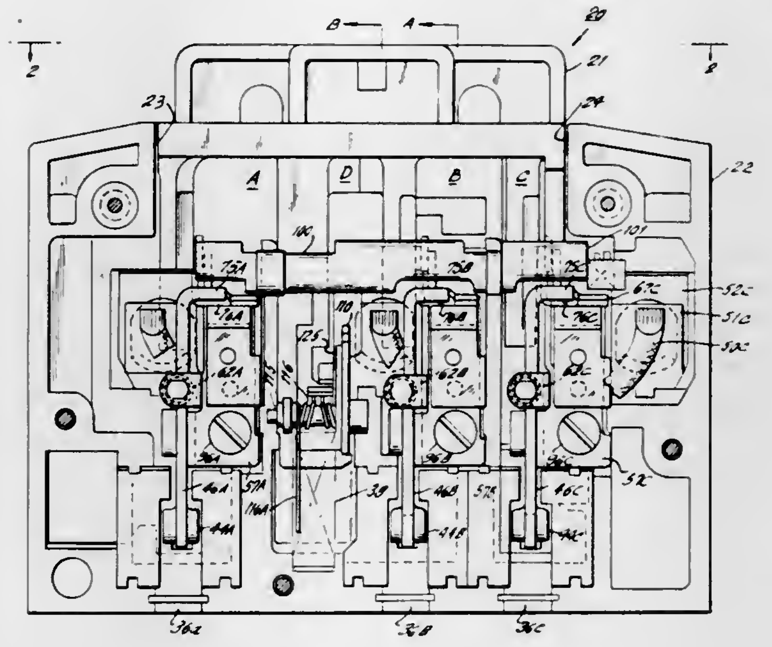


In combination with a stack of individually housed single pole circuit breakers, there is provided a similarly housed alarm switch for indicating circuit breaker movement to the TRIPPED OPEN condition.

3,530,413
FORCE MULTIPLYING MEANS FOR CIRCUIT BREAKER TRIP UNIT

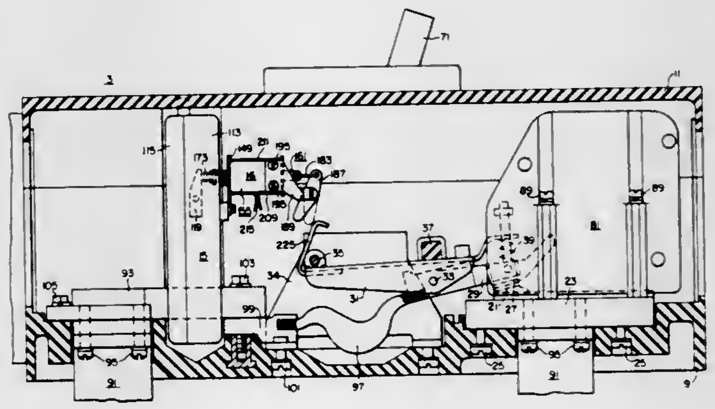
Martin V. Zubaty, Warren, and Robert W. Thomas, St. Clair Shores, Mich., assignors to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 15, 1968, Ser. No. 752,888
Int. Cl. H01h *77/00*
U.S. Cl. 335—9 **6 Claims**

A so-called push-push type circuit breaker in which an automatic tripping impulse in any one of a plurality of phases includes means effective to operate the trip units of all other phases so that all phases of the circuit breaker open at substantially the same time. Such includes a force multiplier provided by a cam surface on the tripper of one phase. Such cam surface is engaged by and cooperating with a contact arm formation which, upon operation of such contact arm to open circuit position, transmits forces generated by the main operating spring to operate a common trip bar to trip position and thereby open the contacts of all of the circuit breaker phases.



3,530,414
CIRCUIT BREAKER WITH IMPROVED TRIP MEANS

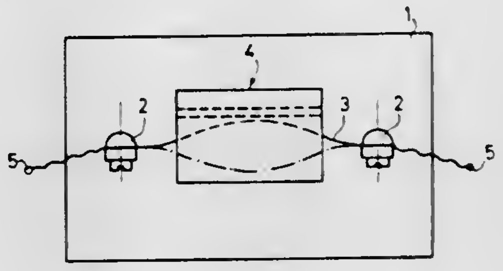
Howard A. Wagner, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1969, Ser. No. 802,430
Int. Cl. H01h *9/20*
U.S. Cl. 335—174 **10 Claims**



A circuit breaker comprises a trip actuator comprising an armature structure and permanent magnet means supplying magnetic flux that operates through a magnetic supporting frame to maintain the armature structure in an initial non-tripping position. When released, the armature structure moves to a tripping position and, at one end thereof, actuates the breaker latch and trip device to trip the breaker. As the breaker opens, the operating mechanism operates against a pivotally supported lever, that is resiliently connected to the other end of the armature structure, to automatically reset the armature structure in the initial position.

3,530,415
ELECTRODYNAMIC SNAP-ACTING ACTUATOR

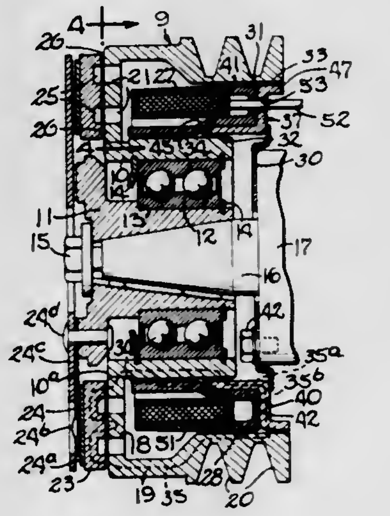
Andre Greuter and Arpad Korum, Zurich, Switzerland, assignors to Gesellschaft zur Forderung der Forschung an der Eidgenossichen Technischen Hoschschule, Zurich, Switzerland
Filed Nov. 7, 1967, Ser. No. 681,192
Claims priority, application Switzerland, Nov. 15, 1966, 16,695/66
Int. Cl. H01h *5/18*
U.S. Cl. 335—188 **17 Claims**



An electrodynamic snap-action actuator includes a flexible strip member positioned between first and second support points which are spaced from each other by a distance smaller than the free length of the strip therebetween such that the strip is caused to snap from one to the other side of a straight line between the two support points. The strip member if not itself electrically conductive carries an electrical conductor extending longitudinally therealong and a magnet which supplies a magnetic field whose lines of force cut the electrical conductor, exerts a motor action on the conductor and effects a snap-action movement of the flexible strip dependent upon the direction in which current is passed through the conductor.

3,530,416
MAGNETIC ELEMENT FOR STATIONARY FIELD CLUTCHES

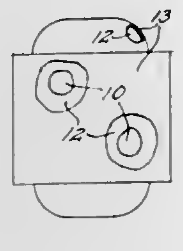
Hubert E. Klinkenberg, Beloit, Wis., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware
Filed Dec. 13, 1968, Ser. No. 783,483
Int. Cl. H01f *7/08*
U.S. Cl. 335—281 **9 Claims**



In a magnetic friction clutch of the stationary field type, the inner and outer cylindrical air gaps are defined between a driving annulus of magnetic material and U-shaped radial cross section and a stationary pole ring supporting the energizing winding and composed of unmachined rings stamped out of sheet metal and nested and secured together and dividing the toroidal flux circuit into parallel paths.

3,530,417
CAPSULATED ELECTRICAL APPARATUS

Edwin A. Link, Waukesha, Wis., assignor to RTE Corporation, Waukesha, Wis., a corporation of Wisconsin Continuation of application Ser. No. 632,425, Apr. 10, 1967. This application May 26, 1969, Ser. No. 828,808
Int. Cl. B44d *1/14;* **H01f** *27/02*
U.S. Cl. 336—96 **2 Claims**



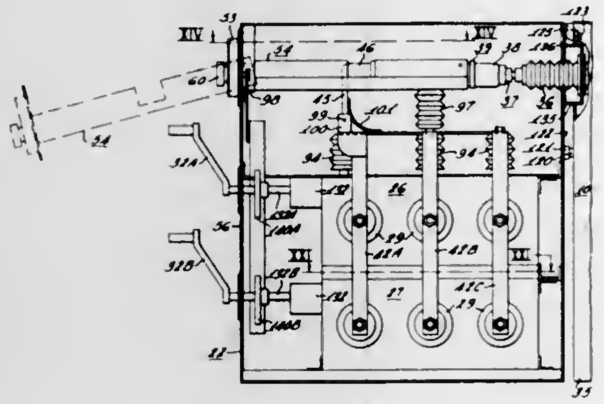
An electrical apparatus such as a core or coil having a uniform semirigid skin with a flowable dielectric material completely filling the space within the skin. The dielectric material will not form any fissures under varying temperature conditions.

ERRATUM

For Class 337—7 see:
Patent No. 3,530,406

3,530,418
HIGH VOLTAGE DRAWOUT FUSE ARRANGEMENT FOR INDOOR POWER CENTER

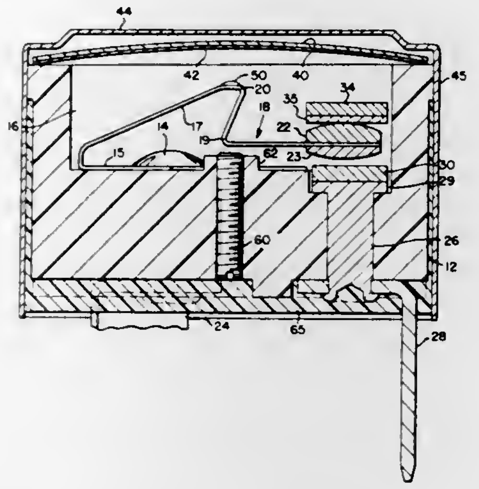
Thomas H. Keogh, Pittsburgh, and Adolph E. Krupit, Allison Park, Pa., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Oct. 18, 1968, Ser. No. 768,816
Int. Cl. H01h *85/22, 85/36, 85/60*
U.S. Cl. 337—194 **19 Claims**



An indoor power center has circuit breakers from a plurality of high voltage feeder sources, high voltage fuses supported on horizontal drawout fuse drawers in alignment with insulating bushings extending horizontally from an electrical transformer, pivoted connector bars electrically connected to the circuit breakers and engaging one end of the fuses, latching means for the fuse drawers, and fuse clamping means manually operable after the drawers are closed to resiliently push the connector bars against the fuses to move them longitudinally and press the opposite end of the fuses against the transformer insulating bushings. The fuse clamping means prevent release of the latching means and withdrawal of the fuse drawers until clamping pressure is removed from the fuses. Universal motion terminal means on the transformer insulating bushings compensate for misalignment between fuses and bushings.

3,530,419
THERMOSTAT

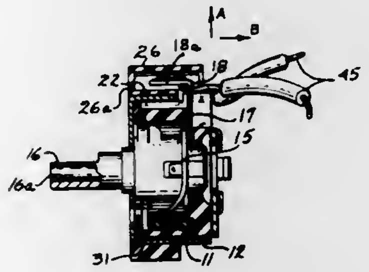
Charles John Hire, Pittsford, N.Y., assignor to Fasco Industries, Inc., Rochester, N.Y., a corporation of New York
Filed Mar. 21, 1968, Ser. No. 714,934
Int. Cl. H01h *37/54, 37/72*
U.S. Cl. 337—365 **1 Claim**



This thermostat is operated by a bimetallic disc secured, by a cover over a recess in a base, to flex suddenly, when the ambient temperature varies from a predetermined value. An electrically-conductive switch arm is laterally offset at one end and secured in the recess. It is flexible, and extends diametrally across the recess beneath the disc between two spaced electrical contacts. The switch arm is medially bent for engagement by the disc when it flexes. The thermostat can be calibrated by a screw adjustable in the base, or by altering the pressure exerted by the cover on the disc. The base may be sealingly secured in the cap or cover by an epoxy resin cement.

3,530,420
ELECTRICAL CONTROL WITH INSULATION SYSTEM AND TERMINAL REINFORCING MEANS

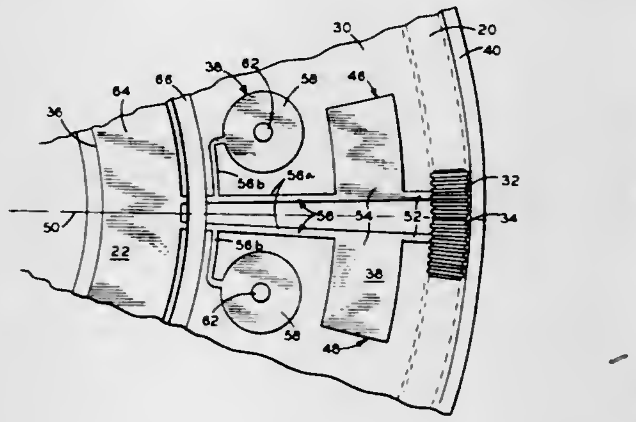
Ronald L. Stuckey, 462 E. Franklin, and Christian C. Holst, 403 W. Main St., both of Berne, Ind. 46711
Filed Apr. 29, 1968, Ser. No. 724,731
Int. Cl. H01c *5/02, 1/02*
U.S. Cl. 338—174 **14 Claims**



Housing of electrical control and terminals projecting from the housing are insulated by insulation system disposed around the housing. Terminals are disposed in and protected by a chambered portion of the insulation system that constrains the terminals against movement outwardly away from the housing. Forces applied to the terminals through external lead wires are distributed around the housing by the insulation system and bearing pads space the insulation system from the housing to permit the passage of convective air currents along the housing. Latches integral with the insulation system hold the insulation system and housing in assembled relation and panel fastening means may be formed integrally with the insulation system in order to permit the facile assembly of the control with a control mounting panel.

3,530,421
WIRE WOUND POTENTIOMETERS WITH PRINTED CIRCUIT TERMINALS

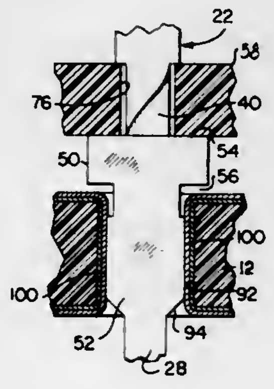
Georges Dion, New York, N.Y., assignor to Societe d'Instrumentation Schlumberger, a corporation of France
Filed Oct. 9, 1968, Ser. No. 766,100
Claims priority, application France, Nov. 2, 1967, 126,821
Int. Cl. H01c *5/02*
U.S. Cl. 338—174 **6 Claims**



The ends of a potentiometer resistance element, and especially a resistance coil, are soldered to the potentiometer output terminals without having been previously unwound. The electrical connection is effected by printed circuits formed on an insulating substrate. Each printed circuit includes a contact strip which underlies a portion of the different ends of the resistance element, an adjoining junction strip which terminates at each output terminal and a heating plate of relatively large surface area designed to support at least the tip of a conventional soldering tool. The heating plate is formed contiguous the two strips but is spaced from each output terminal a distance great enough to prevent the disconnection of a soldered connection between a terminal and a junction strip when solder is applied to the contact strip. Preferably, the junction strip is relatively flat and narrow and while providing good electrical conduction between it and the contact strip, provides relatively poor heat conduction from a heating plate to an associated soldered output terminal.

3,530,422
CONNECTOR AND METHOD FOR ATTACHING SAME TO PRINTED CIRCUIT BOARD

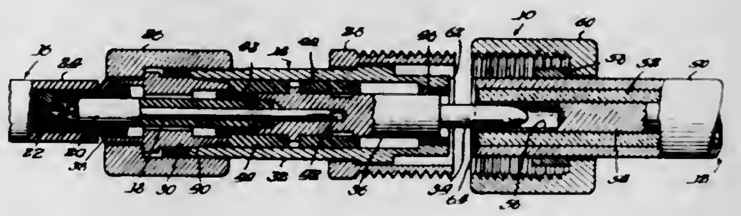
David S. Goodman, Doylestown, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,666
Int. Cl. H01r *9/16;* **H05k** *1/12*
U.S. Cl. 339—17 **4 Claims**



A connector comprising contacts twist-locked to an insulator is held to a mother board by means of an interference fit between the tails of the contacts and plated-through holes in the mother board. The tails of the contacts are forced into the plated-through holes by applying pressure to the insulator body.

3,530,423
CONDUCTOR ASSEMBLY

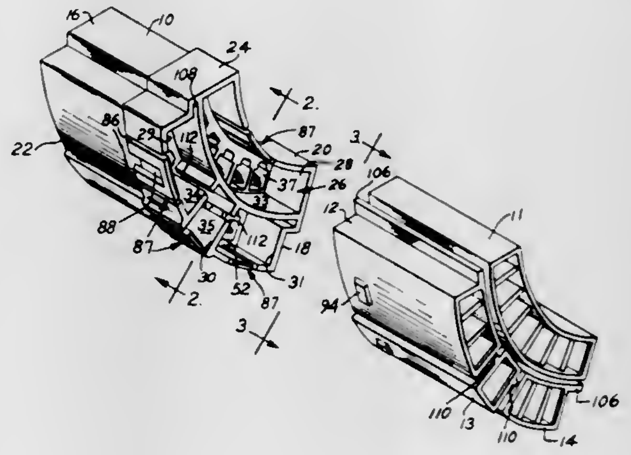
Bayard C. Davis, Lombard, Ill., assignor to Continental Sensing, Inc., Melrose Park, Ill., a corporation of Illinois
Filed June 4, 1968, Ser. No. 734,490
Int. Cl. H01r *13/54*
U.S. Cl. 339—89 **2 Claims**



A coaxial conductor assembly having a terminal portion adapted to function as the male or female unit of a connector. A solid inner conductor is positioned within a cylindrical outer conductor and insulated therefrom. In the female form an axial bore is provided in one end of the inner conductor to receive the pin contact of a standard male connector unit. In the male form, the inner conductor extends from the outer conductor and is sized to mate with the socket contact of a standard female connector unit. In both forms, a threaded member is employed to draw the standard unit into contact with the terminal portion of the assembly.

3,530,424
MULTIPLE CONNECTOR

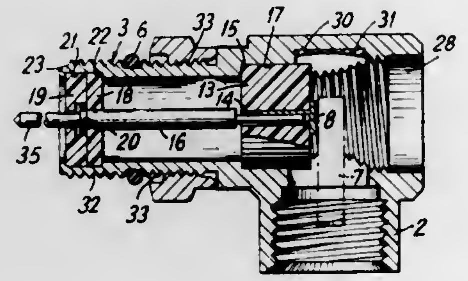
James T. Gregory, Garden City, Mich., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan
Filed Aug. 23, 1968, Ser. No. 754,771
Int. Cl. H01r *13/54*
U.S. Cl. 339—91 **8 Claims**



A multiple connector adapted to be mounted on a curvilinear surface includes first and second housings having exterior faces of a shape to conform to the surface. The first of the housing carries a socket of curvilinear cross section into which one or more of the second housings which are also of curvilinear cross section are inserted, each of the housings including a plurality of passages for carrying electrical terminals therein. The housings include polarizing means for preventing disoriented insertion of the second housings in the socket and the housings include latching means for maintaining the housings in their inserted relationship.

3,530,425
COAXIAL CABLE CONNECTOR

Vasantrai A. Vachhani, Greensboro, N.C., assignor to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 672,223, Oct. 2, 1967. This application Oct. 22, 1968, Ser. No. 769,766
Int. Cl. H01r *11/20, 17/18*
U.S. Cl. 339—95 **9 Claims**



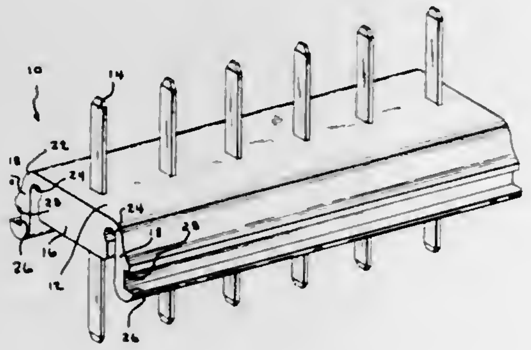
An impedance matched fixture for joining sections of coaxial cable, at selected angles, or for connecting a coaxial cable to a distribution or similar utility box at an angle to a face of the box. The connector may be straight, curved or L-shaped.

The sheath of the cable is held to the connector by sleeves which thread into a cast aluminum body. The center conductors of connecting cables are securely held between serrated contacts of pressure terminals. One such contact is swivelly attached to a plug nut which threads into the body of the connector, and the other is mounted within the body of the connector.

Coaxially mounted impedance compensating elements connect the terminals of the connector, effecting electrical connection between the center conductors of the cables, and function to match the impedance of the connector with that of the cable line in which installed. In the L-shaped embodiment of the connector, the impedance compensating element is in the form of a pin which extends from the connector and serves as a probe contact to enter an equipment box to which the connector is attached.

3,530,426
CONNECTOR HOUSING

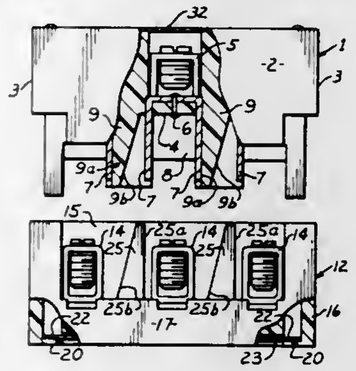
Clair Wilson Snyder, Jr., Hellam, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Apr. 25, 1968, Ser. No. 724,147
Int. Cl. H01r *9/16, 9/22*
U.S. Cl. 339—128 **7 Claims**



A housing for mounting connectors in a panel or chassis comprising an extruded member of electrically insulating material which receives contact members and which has resilient legs for snapping into an opening in the panel and for retaining the housing in position relative to the panel.

3,530,427
MULTIPOLE PULL-APART TERMINAL BLOCK OR CONNECTOR

John R. Stauder, Milwaukee, Wis., and Richard C. Rothweiler, Asheville, N.C., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Aug. 19, 1968, Ser. No. 753,576
Int. Cl. H01r *9/00, 13/64, 25/06*
U.S. Cl. 339—198 **7 Claims**

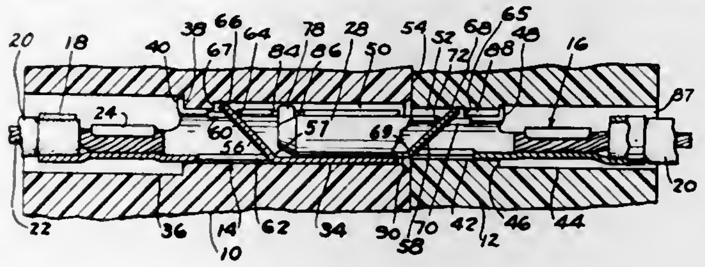


The multipole terminal block comprises a top and base carrying sets of complementary contacts with complementary wedging barriers between the sets. The barriers are so arranged that they guide the top and base into proper initial alignment and exert a wedging action so as to wedge them into precise final alignment. In the assembled block, associated barriers reinforce each other and buttress their associated complementary contacts in tight contact relation.

The contacts of the base are secured to a contact supporting bottom wall thereof by suitable screws of which the heads are exposed at the underside of the wall. A peripheral wall portion of the base is arranged with respect to the contact supporting wall so that an insulating liner can be installed, by snap-fastening it into place, in covering and concealing relation to the heads of the screws.

3,530,428
ELECTRICAL TERMINAL

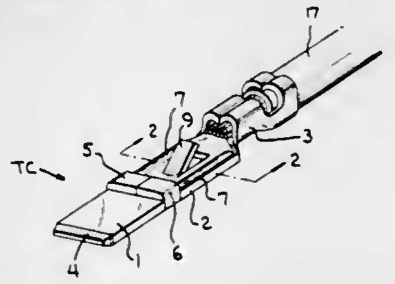
Alfred M. Zak, 6110 Casmere Ave., Detroit, Mich. 48212
Continuation-in-part of application Ser. No. 506,657, Nov. 8, 1965. This application Mar. 28, 1966, Ser. No. 537,976
Int. Cl. H01r *13/42*
U.S. Cl. 339—217 **7 Claims**



1. An electrical terminal of the type adapted to be inserted within a socket of a terminal block and having an elongated body with a forward and rear end, said body comprising a hollow portion of generally circular cross section having an opening in one side thereof and a tab struck inwardly from the opposite side thereof, said tab traversing the interior of said hollow portion at an acute angle to the longitudinal axis of the hollow portion and projecting through said opening at its free end, said tab being connected with the hollow portion by a first bend extending around a portion of the circular periphery of said hollow portion, said tab having a second bend therein spaced lengthwise of the tab from said first bend, the portion of the tab provided with the second bend being generally flat and the second bend extending transversely across said tab and being located closely adjacent the first bend and remotely from the free end of said tab, said tab being adapted to engage shoulder means on the terminal block to limit movement of the terminal in the socket in the direction of said rear end, the projecting portion of the tab being axially offset substantially from the portion of the tab connected with said opposite side of said hollow portion, said opening having sufficient axial extent in a direction rearwardly of the projecting portion of the tab to permit flexing of the tab about said second bend radially inwardly through said opening in the manner of a leaf spring, said opening having two sides and having one end located closely adjacent the projecting portion of the tab on the forward side thereof to limit flexing of the tab in a direction toward the forward end of the terminal.

3,530,429
ELECTRICAL TAB CONNECTOR

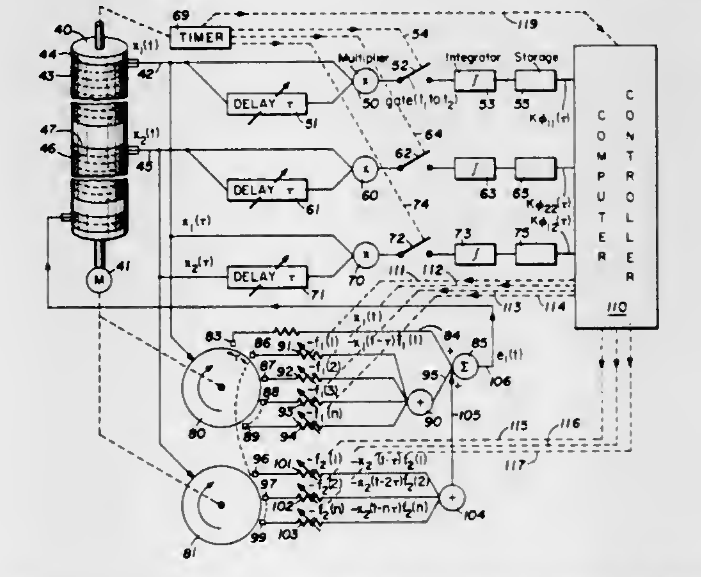
Wilfred Richard Scheller, New Cumberland, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 14, 1968, Ser. No. 738,377
Int. Cl. H01r *9/16*
U.S. Cl. 339—217 **7 Claims**



An electrical tab connector comprises a contact section provided with an outer flat portion for engagement with a complementary receptacle and a securing portion for securing the tab connector in a passageway of a housing. The securing portion having lug means extending outwardly from one or both surfaces of the securing portion and depressions extending outwardly from one surface of the securing portion and along the peripheral edges thereof in a rearward direction from the contact section and a spring lance struck out from the securing portion between the depressions.

3,530,430
METHOD OF AND APPARATUS FOR STACKING ELECTRICAL SEISMIC TRACES

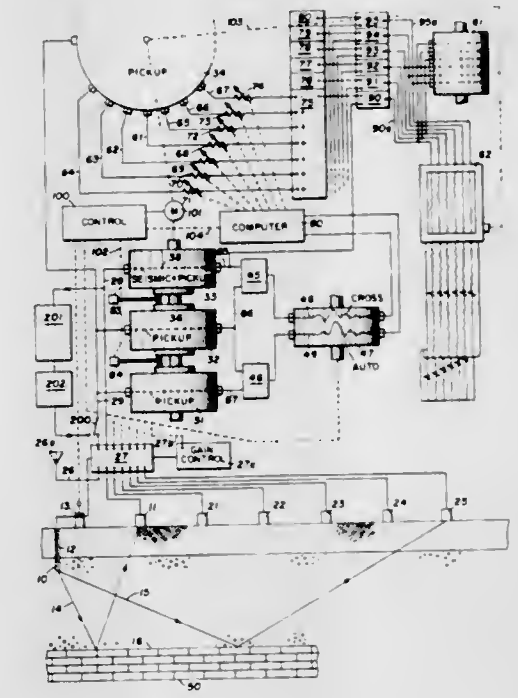
Peter Embree, Farmers Branch, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 535,758, Mar. 21, 1966. This application Mar. 4, 1968, Ser. No. 710,400
Int. Cl. G01v *1/28*
U.S. Cl. 340—15.5 **3 Claims**



Method of and apparatus for stacking electrical seismic traces of two seismic records representing seismic waves detected at the same receiving locations in response to the generation, spaced in time, of seismic waves at two different elevations at the same sending location by passing one of the electrical seismic traces of one seismic record through a time domain filter and passing the corresponding electrical seismic traces of the other seismic record through a time domain filter and controlling the filter parameters in accordance with the cross and auto correlation functions of the electrical seismic traces.

3,530,431
PRECISION HIGHLINE PICKUP REMOVAL FROM A RECORDED SEISMIC TRACE

James R. Brey, Irving, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 550,315, May 16, 1966. This application Apr. 10, 1969, Ser. No. 816,173
Int. Cl. G01v *1/28*
U.S. Cl. 340—15.5 **12 Claims**

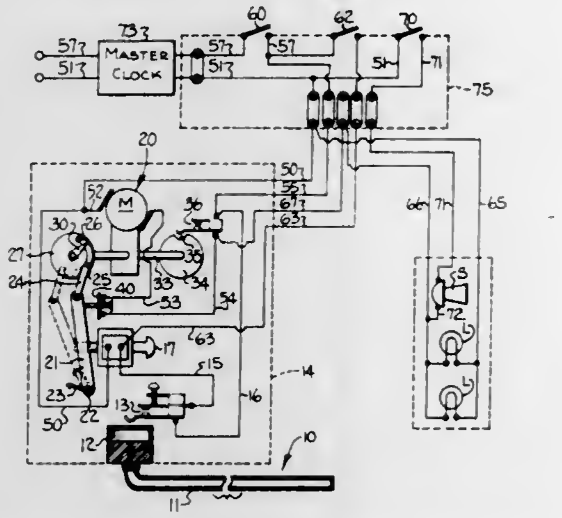


Apparatus and a method of removing highline pickup components from a phonographically recorded seismic trace wherein crosscorrelation functions and autocorrelation functions are employed in the synthesis of a filter uniquely related to the seismic trace. The correlation functions are fed into a computer to determine the weights of signals in a seven point time-domain filter to be summed in an output unit. The combined signal from the output unit may then be mixed, with phase reversal, with a seismic signal having undesirable pickup recorded therewith to cancel the pickup component thereby producing a signal which can be either stored or recorded as a wiggle trace or other visible recording.

3,530,432
CONTROL APPARATUS FOR OUTDOOR LIGHTING CIRCUIT

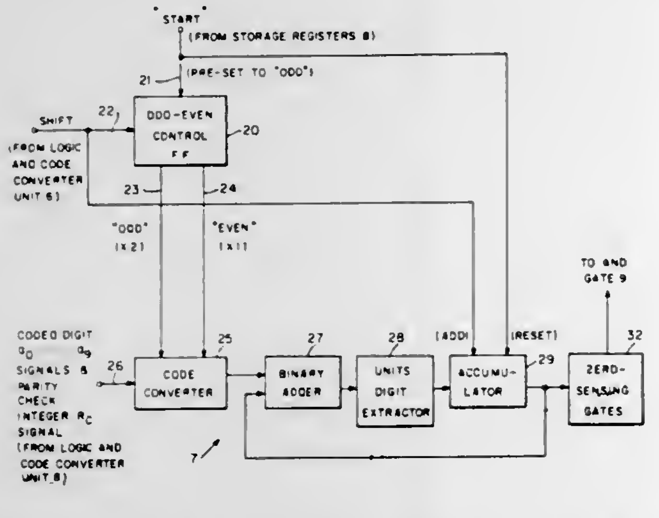
George F. Pope, Burlington, N.C., assignor to Diversified Manufacturing & Marketing Co., Inc., Burlington, N.C., a corporation of North Carolina
Filed May 31, 1967, Ser. No. 642,581
Int. Cl. G08g *1/02*
U.S. Cl. 340—31 **10 Claims**

An outdoor lighting circuit control apparatus in which a trip device, responsive to passage of a vehicle thereover, momentarily energizes a solenoid whose plunger then moves through an operation stroke effective to start operation of a timing device through a time cycle of adjustably variable duration and wherein the timing device activates the lighting circuit for the duration of the time cycle.



3,530,433
INFORMATION PROCESSING SYSTEMS
Christos B. Kapsambells, Canton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 30, 1968, Ser. No. 787,813
Int. Cl. G06f *11/10;* **G06k** *5/00*
U.S. Cl. 340—146.1 **17 Claims**



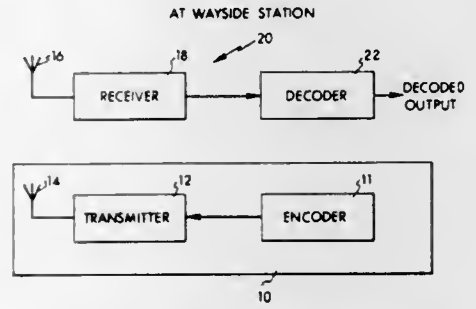
Parity-checking apparatus for use in coded-vehicle identification systems. A retroreflective label to be affixed to a vehicle is coded to represent a plurality of digits $a_0 \ldots a_n$, each having a value between 0 and 9, and a parity check integer R_C having a value determined in accordance with an arithmetic error-checking code in the following manner:

the digits $a_0 \ldots a_n$ in the even positions (counting from the right, starting with the units digit) are taken with their actual decimal values;
the digits $a_0 \ldots a_n$ in the odd positions (again counting from the right) are multipiled by 2;
the sum of the digits in the even positions and the units and tens digits of the products derived as a result of operating on the digits in the odd positions is then obtained; and
the units digit of the sum is ascertained and subtracted from 10 to derive the value of the parity check integer R_C.

The above-mentioned coded label is scanned by scanning apparatus, and successive coded signals representative of and corresponding in value to the digits $a_0 \ldots a_n$ and the parity check integer R_C are produced and applied to parity-checking apparatus in accordance with the present invention. In the parity-checking apparatus, the coded signals representative of the digits $a_0 \ldots a_n$ in the even positions (counting from the right) are taken with their actual values, and the values of the coded signals in the odd positions (again counting from the right) are multiplied by 2. A sum is then obtained of the values of the coded signals in the even positions, the values of the units and tens digits of the products obtained by operating on the values of the coded signals in the odd positions, and the value of the coded signal representative of the parity check integer R_C. If the value of the units digit of the resultant sum is equal to zero, the coded signals satisfy system parity requirements.

3,530,434
CODED FREQUENCY VEHICLE IDENTIFICATION SYSTEM
Francis H. Stites, Wayland, and Elton E. Dunbar, Waltham, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

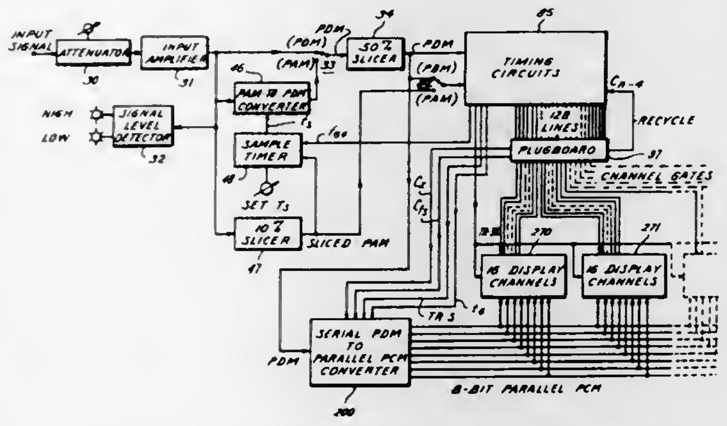
Filed June 14, 1967, Ser. No. 645,943
Int. Cl. H04q; H04m *11/02;* **H02b** *1/00*
U.S. Cl. 340—149 **11 Claims**



An electromagnetic vehicle identification system in which a low power transmitter carried by a vehicle to be identified continuously emits a coded frequency multiplex signal which is received by a way side receiver as the vehicle passes a wayside station. The received signal is decoded to ascertain the identity of the vehicle. The coded format is binary coded decimal plus odd parity and is generated by selectively combining several oscillator tones to form the multiplex signal.

3,530,435
TELEMETERING DECODER SYSTEM
Jean P. Magnin, Sarasota, Fla., assignor, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

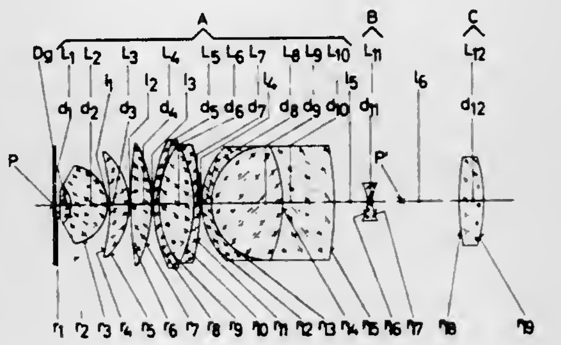
Original application Mar. 17, 1961, Ser. No. 96,413, now Patent No. 3,377,585, dated Apr. 9, 1968. Divided and this application Nov. 1, 1966, Ser. No. 591,206
Int. Cl. H04q *9/00*
U.S. Cl. 340—167 **18 Claims**



In a telemetering decoder system for decoding a pulse train composed of repetitive cycles of time-multiplexed signal intervals where one signal interval of each cycle contains an indication of a full-scale signal value, there is included a counting circuit responsive to the pulse value during each signal interval for developing a plural-bit pulse code signal representative thereof and means for examining said pulse code signal and for adjusting the counting rate of the counting circuit if such signal departs from a predetermined full-scale value.

3,530,436
OIL IMMERSION OBJECTIVE WITH FLATTENED IMAGE FIELD CONTAINING A FREE-STANDING BICONCAVE LENS OF STRONG REFRACTIONAL POWER
Ludwig Bertele and Jürgen Bertele, Heerbrugg, Switzerland; said Jürgen Bertele assignor to Wild Heerbrugg, Aktiengesellschaft, Heerbrugg, Switzerland, a corporation of Switzerland

Filed Jan. 6, 1967, Ser. No. 607,733
Claims priority, application Switzerland, Jan. 11, 1966, 530/66
Int. Cl. G02b *9/64, 21/02*
U.S. Cl. 350—176 **9 Claims**

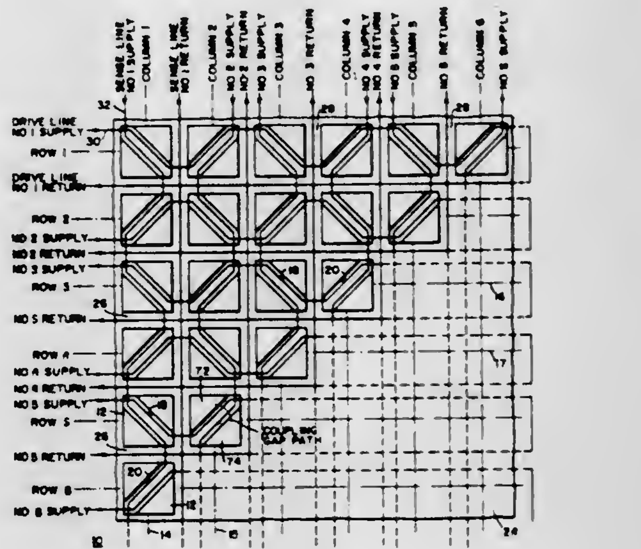


A microscope objective of the immersion type with an aperture larger than 0.95 is disclosed, such objective which, considered from the object, comprises a lens assembly with collective power of refraction, a lens member with dispersive power of refraction having a biconcave form, and a lens member with collective power of refraction, and wherein the following conditions are simultaneously fulfilled: (a) the axial focal length of the dispersive lens member is in the range of about —0.6F and —1.50F, wherein F represents the total focal length of the objective with respect to air; and, (b) the image of the object produced by a smaller aperture through the collective lens assembly is spaced at 0.7F to 2.3F from the main point of the dispersive lens member at the side of the image, and said image is depicted magnified more than 1.3-fold, due to the refraction at the dispersive lens member.

3,530,437
MANIPULATION PAD WITH FERROMAGNETIC MATRIX ESPECIALLY ADAPTED FOR USE IN AN OBJECT RECOGNITION COMPUTER SYSTEM
Clyde A. Booker, Jr., Pittsburgh, John E. Lambright, Monroeville, Francis T. Thompson, Verona, and Bruce R. Dow, Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

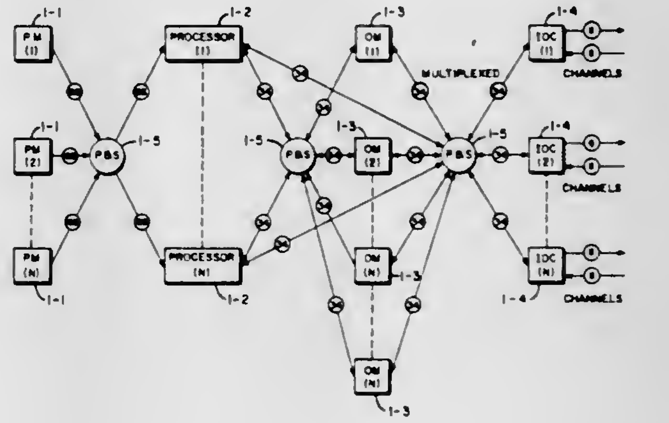
Filed Dec. 5, 1966, Ser. No. 599,031
Int. Cl. G11c *11/02;* **G06k** *9/00*
U.S. Cl. 340—172.5 **20 Claims**

Magnetic cores made from high permeability and high saturation flux density material are disposed in a pad with drive and sense wiring to form a ferromagnetic object recognition matrix. The pad generates digital output data and is operable in an educational or other digital computer system at drive pulse rates as high as 100 kHz. or more and with spatial resolution as great as 50 points or more per square inch. Recognition operation is highly discriminate against objects made from materials other than those similar to that used for the pad cores.



3,530,438
TASK CONTROL
Gregory E. Mellen, Bloomington, and James C. Nelson, Rosemount, Minn., and Robert G. Clevenger, Vienna, Va., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1965, Ser. No. 513,226
Int. Cl. G06f *9/18*
U.S. Cl. 340—172.5 **42 Claims**

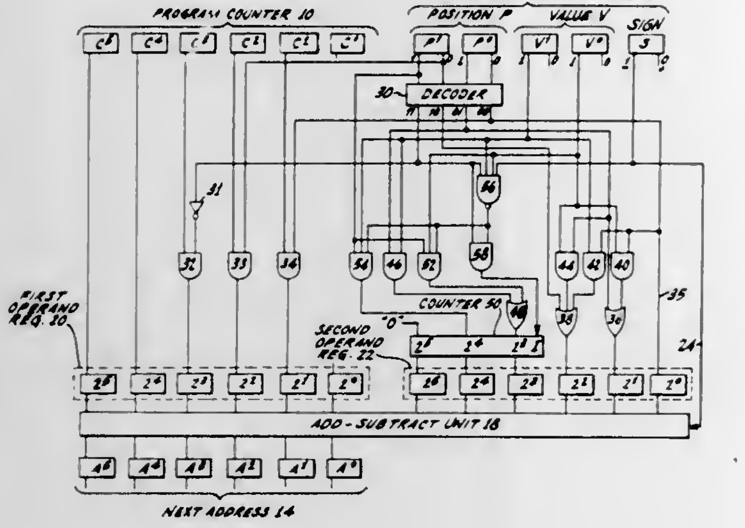


The disclosure describes a take task programming method including the steps of determining from a control flag memory area the highest priority task table filled with an address of a beginning instruction word of an unassigned task, using the result of the determination to acquire from a corresponding reference control memory area the address of the address of the beginning instruction, and sampling the acquired address to obtain the address of the beginning instruction word of a program.

3,530,439
COMPUTER MEMORY ADDRESS GENERATOR
Richard D. Smith, Moorestown, N.J., assignor to RCA Corporation, a corporation of Delaware

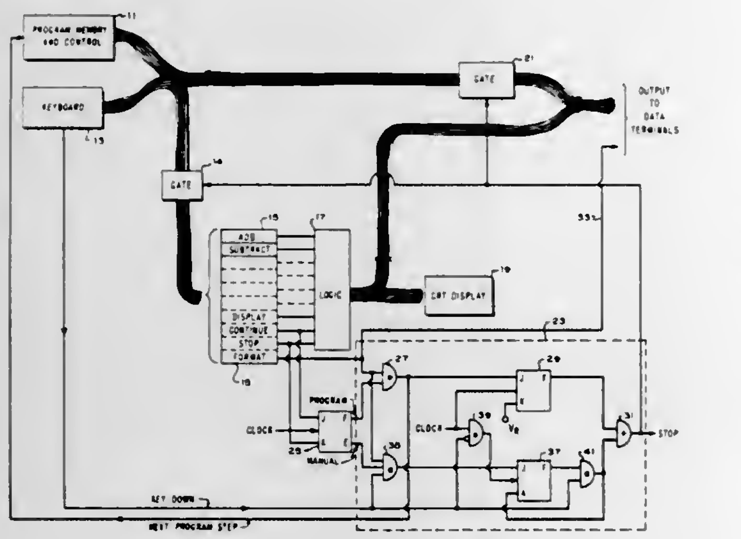
Filed July 22, 1968, Ser. No. 746,513
Int. Cl. G11c *7/00*
U.S. Cl. 340—172.5 **5 Claims**

An address generator, responsive to address modification information derived from an instruction, for generating a desired next memory address. The address modification information may consist of relatively few bits compared with the number of bits needed for the present address and the next address. The address generator includes logic for adding to or subtracting from the present address a number formed by positioning "value bits" of the address modification information at bit rank positions determined by the "position bits" of the address modification information. The new address may be any numerically nearby address, or any one of many more remote addresses, or one of fewer most remote addresses.



3,530,440
DATA PROCESSING SYSTEM INCLUDING CONTROLLABLE MEANS FOR DIRECTLY INTERCONNECTING THE INPUT AND OUTPUT UNITS

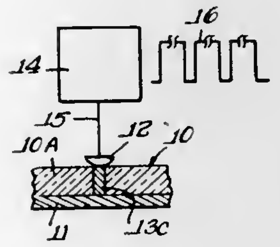
Thomas E. Osborne, San Francisco, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Aug. 26, 1968, Ser. No. 755,127
Int. Cl. G06f *3/00*
U.S. Cl. 340—172.5 3 Claims



A data processing system includes a bypass gate and control circuitry therefor which permits external data terminals to receive and distinguish function control signals transmitted directly from a program memory unit or a keyboard. The bypass gate is connected in series between the input and output units and is enabled by the control circuitry after a format selection code is received from either the program memory or the keyboard. Only the input signal next succeeding the format code is transmitted directly to the data terminals.

3,530,441
METHOD AND APPARATUS FOR STORING AND RETRIEVING INFORMATION

Stanford R. Ovshinsky, Bloomfield Hills, Mich., assignor to Energy Conversion Devices, Inc., Troy, Mich., a corporation of Delaware
Continuation-in-part of application Ser. No. 754,607, Aug. 22, 1968. This application Jan. 15, 1969, Ser. No. 791,441
Int. Cl. G11c *11/34, 13/00, 13/04*
U.S. Cl. 340—173 58 Claims

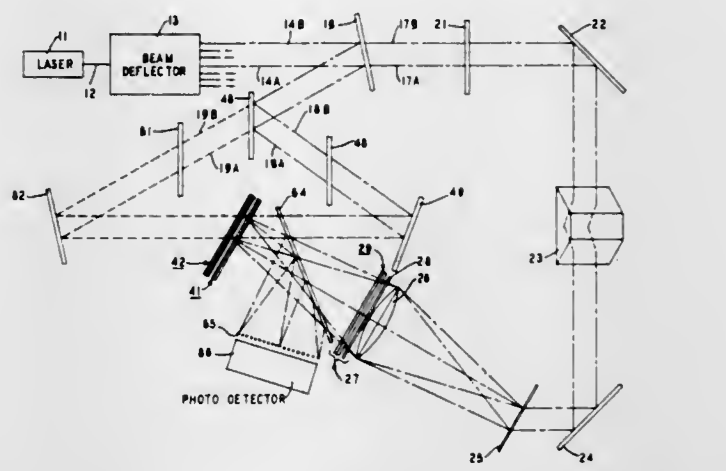


In storing and retrieving information, a film or layer of memory semiconductor material is utilized wherein the layer is capable of having desired discrete portions thereof reversibly structurally altered between one stable atomic structure condition having a high resistance or insulating condition characteristic and another stable atomic structure condition having a low resistance or conducting characteristic, the layer normally being in one condition. Energy is selectively applied to said layer at desired discrete portions thereof for altering said layer at said desired discrete portions from said one normal condition to the other condition to store desired information in said layer. The conditions of said desired discrete portions of said layer are detected with respect to said one normal condition of the remainder of said layer to retrieve the desired information stored in said layer. The retrieval of the stored information is nondestructive and the information remains stored until erased by applying energy to the layer to realter the condition of said desired discrete portions of said layer to the normal condition thereof. The layer may have adaptive memory of its conditions, that is, the high resistance and low resistance conditions may be varied as desired. Producing the desired discrete portions of information in the memory semiconductor material and the realteration thereof to the normal condition are accomplished in various ways and also the detection and retrieval of the information are accomplished in various ways.

3,530,442
HOLOGRAM MEMORY

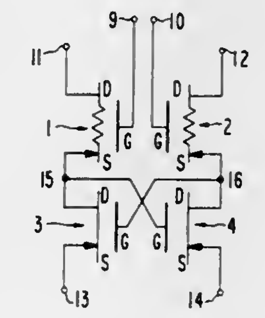
Robert J. Collier, New Providence, and Lawrence H. Lin, Chatham, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 9, 1968, Ser. No. 766,240
Int. Cl. G11c *13/04*
U.S. Cl. 340—173 10 Claims

A high-speed, high-capacity hologram memory is disclosed. To write into the memory, an *x–y* light deflector is used to address selectively one hologram in a matrix of holograms. Light from this hologram is then directed through a data source and this light is used to write a hologram of the data source into the memory. To read from the memory, the *x–y* deflector addresses the hologram to be read, and its contents are imaged onto a suitable photodetector. For the proper choice and arrangement of materials, mechanical motion is avoided and alignment problems are minimized.



3,530,443
MOS GATED RESISTOR MEMORY CELL

Harold S. Crafts, Los Altos Hills, Wendell B. Sander, Palo Alto, and James B. Angell, Portola Valley, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 779,398
Int. Cl. G11c *11/34, 11/40*
U.S. Cl. 340—173 28 Claims

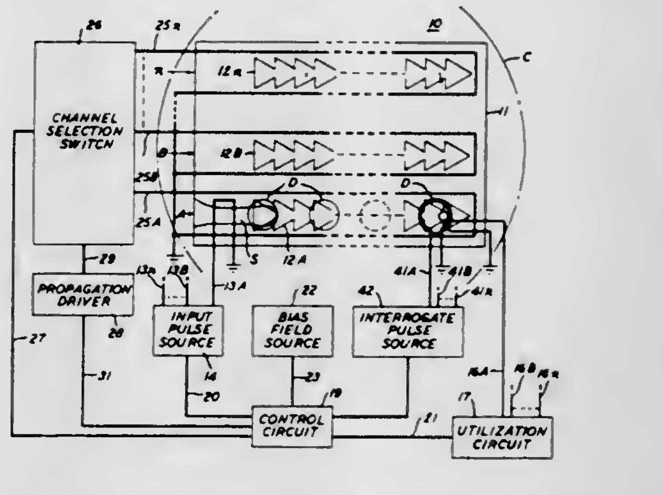


A flip-flop circuit is modified to the extent that its pair of load resistors is replaced by a pair of transistors which functions as voltage-variable resistors and as gating elements. Upon application of suitable logic input signals, the circuit operates as a complete semiconductor memory cell capable of storing the logic information applied thereto for readout at a later time. No additional components are needed, thus permitting a large number of memory cells per unit area to be integrated into a single semiconductor chip.

3,530,444
DOMAIN PROPAGATION DEVICE

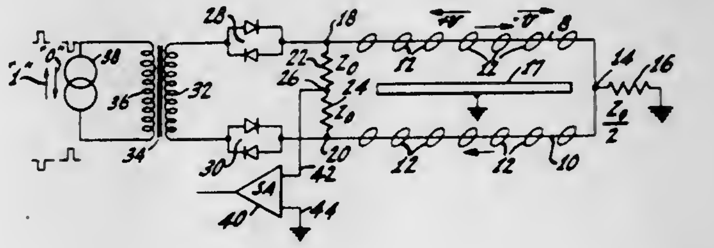
Andrew H. Bobeck, Chatham, Edward Della Torre, Plainfield, and Henry E. D. Scovil, New Vernon, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 1, 1968, Ser. No. 717,616
Int. Cl. G11c *11/14, 19/00*
U.S. Cl. 340—174 14 Claims

Patterns of high permeability wedges contiguous to orthoferrite sheet define in the sheet unidirectional channels for single wall domain movement in response to the alternating expansion and contraction of domains. The expansion and contraction of domains is produced by varying currents in hairpin conductors each encompassing a selected wedge pattern. Domain movement in only the selected channel results. Selected movement of domains in X and Y directions in the sheet is enabled.



3,530,445
RANDOM ACCESS MEMORY WITH QUIET DIGIT-SENSE SYSTEM

Peter K. Hsieh and David Benima, Camden, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Sept. 6, 1968, Ser. No. 758,024
Int. Cl. G11c *7/02*
U.S. Cl. 340—174 15 Claims

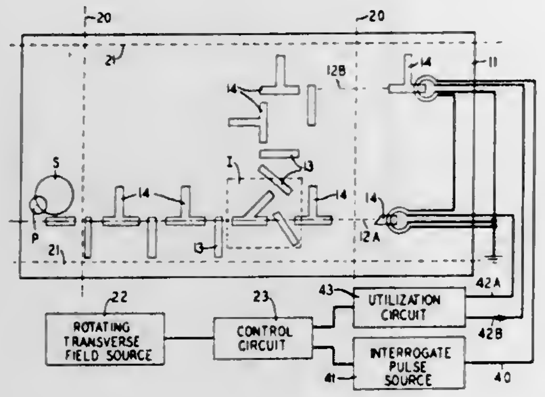


A random-access magnetic memory of a type in which the conductors used during read-out for sensing stored information are also used during write-in for digit or inhibit pulses. Digit-sense conductors are arranged in pairs. The two conductors of a pair have a common terminated end and separate drive-sense ends. A first impedance having a value equal to one-half the characteristic impedance of one conductor is connected from the common terminated end of each pair to a point of reference potential. A second impedance, having a centertap and having a total value equal to twice the characteristic impedance of one conductor, is connected between the separate drive-sense ends of each pair. Digit drive means is connected for supplying balanced push-pull digit drive current pulses to the drive-sense ends of the two conductors of digit-sense conductor pairs. Each of a plurality of differential sense amplifiers has two inputs connected to centertaps of second impedances of two respective digit-sense conductor pairs. The described digit-sense system is shown in 2D, 2½D 2-wire, 3D 3-wire and 2D two-element-per-bit memory organizations.

3,530,446
MAGNETIC DOMAIN FANOUT CIRCUIT

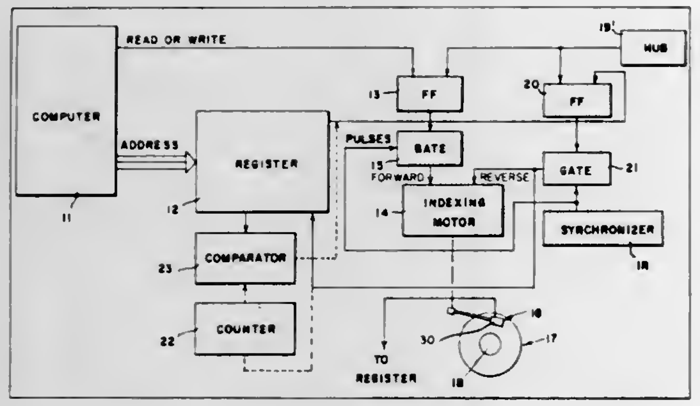
Anthony J. Perneski, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 12, 1968, Ser. No. 759,337
Int. Cl. G11c *11/14, 19/00*
U.S. Cl. 340—174 7 Claims

A single wall domain is advanced in a sheet of magnetic material by means of moving pole patterns in magnetically soft overlays contiguous the sheet. The domain can be made to move along a selected one of first and second intersecting propagation channels defined by those overlays respectively by first and second modifications in a rotating transverse field generating those patterns when the domain is in the intersection between the channels.



3,530,447
TRANSDUCER POSITIONING INDEXER IN MAGNETIC DISC RECORDER

Stephen A. Lambert, Berlin, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.
Filed Dec. 2, 1966, Ser. No. 598,780
Int. Cl. G11b *17/06, 23/42*
U.S. Cl. 340—174.1 8 Claims

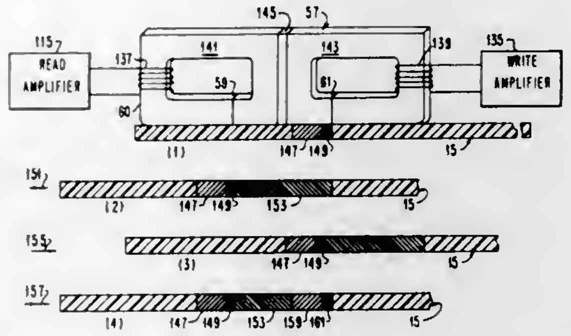


A magnetic disc recorder includes generation of a signal for indexing the recording and reading head. The signal is generated by referencing the head against a hub on the disc itself rather than using a stationary element as a reference. A signal source is also provided for terminating the indexing when the head is positioned at a desired location.

3,530,448
DATA READING, RECORDING, AND POSITIONING SYSTEM

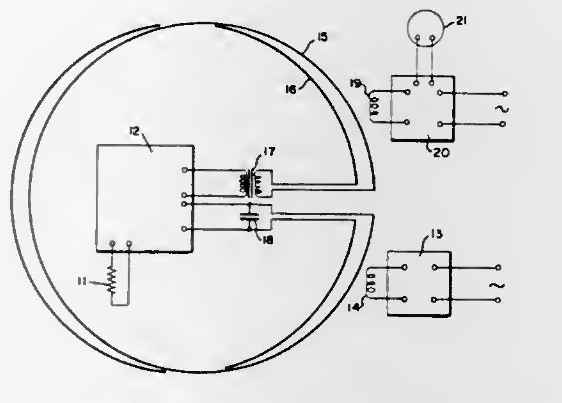
Douglas E. Clancy, George W. Hobgood, Jr., and Frederick T. May, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 15, 1968, Ser. No. 697,735
Int. Cl. G11b *5/06, 5/48, 15/20*
U.S. Cl. 340—174.1 6 Claims

An information recording system for recording quanta of data information on a medium which is adapted for relative motion with recording means wherein sensing means are spaced a fixed distance from the recording means to sense each successive quantum of data information to thereby control the placement for recording of a following quantum of data information on the medium at the distance approximately equal to the distance between the sensing means and the recording means. Additionally, each recorded quantum of data information is utilized to control the relative position of the recording means and the medium for error checking and then to control the relative position of the medium and the recording means for initiation of a subsequent recording cycle.



3,530,449
METHOD AND APPARATUS FOR TRANSFERRING DATA FROM ROTARY BODIES

Svend Prag Andersen, Valby-Copenhagen, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed May 3, 1966, Ser. No. 547,355
Claims priority, application Great Britain, May 4, 1965, 18,747/65
Int. Cl. G08c *19/22*
U.S. Cl. 340—177 12 Claims

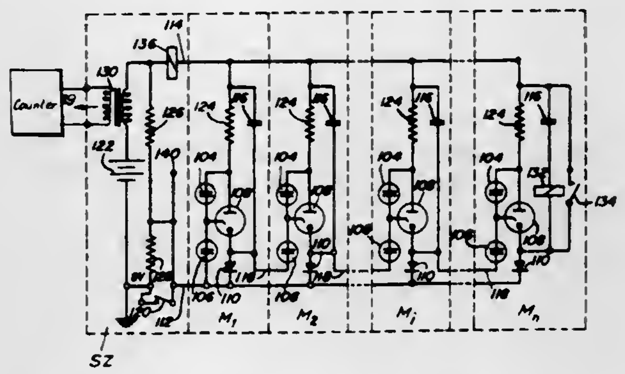


A method of and apparatus for transferring information representative of the measured value of a condition within or on a rotary body to a receiver outside such rotary body is disclosed, wherein the value of such condition is measured within the rotary body, a signal is derived within the rotary body which is representative of the measured value and is converted into a form suitable for inductive transfer therefrom and such converted signals are transferred to a stationary receiver external of the rotary body.

3,530,450
FIRE ALARM SYSTEMS WITH MONITORING DEVICE FOR FIRE ALARMS CONNECTED IN GROUPS TO A CENTRAL STATION

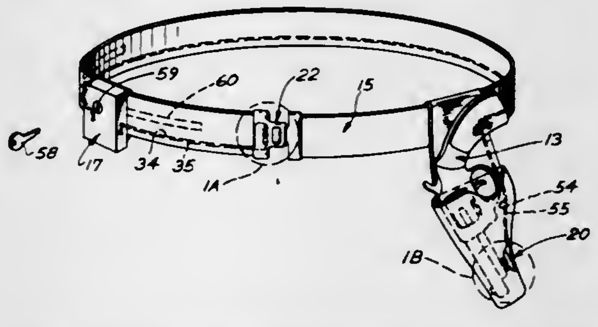
Beat Walthard, Andreas Scheidweiler, and Max Kuhn, Stofa, Switzerland, assignors to Cerberus AG, Mannedorf, Switzerland, a corporation of Switzerland
Filed May 4, 1967, Ser. No. 636,173
Claims priority, application Switzerland, May 9, 1966, 6,703/66
Int. Cl. G08b *29/00, 17/12*
U.S. Cl. 340—214 11 Claims

A fire alarm system including a plurality of individual fire alarms arranged in groups and connected to a central station. In response to a condition test signal, the fire alarms sequentially produce signals indicative of their condition which signals are counted in a system evaluation means which determines which fire alarm of a group is defective.



3,530,451
HOLSTER RADIO ALARM

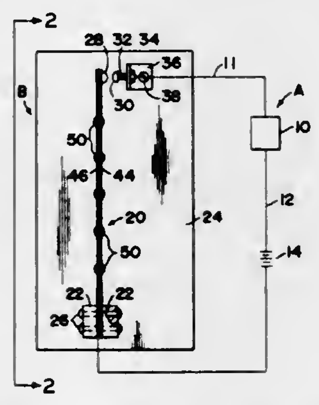
Edward Devine, Chicago, Ill., assignor to Security Systems Inc., a corporation of Illinois
Filed Jan. 20, 1967, Ser. No. 610,615
Int. Cl. G08b *1/08, 13/14*
U.S. Cl. 340—224 6 Claims



An alarm system for signaling a remote, attended station whenever a policeman or security guard draws his revolver or is disarmed. Magnetic reed switches are operated in response to removal of the officer's revolver from its holster or to the disengagement of his gun-belt buckle. The reed switches activate a small radio transmitter carried on the officer's belt, thereby notifying a remote station of the existence of a danger condition.

3,530,452
TEMPERATURE RATE OF CHANGE SENSOR

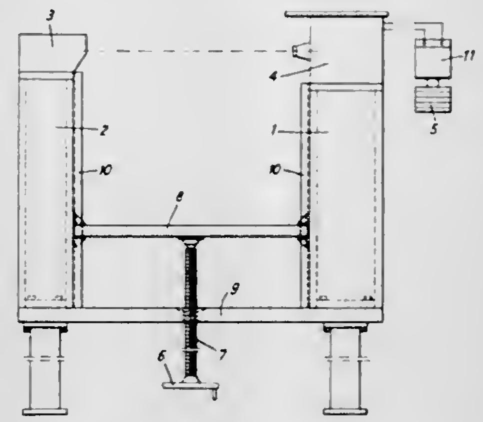
Jan Keizer, Upper Darby, Pa., assignor, by mesne assignments, to Gulf + Western Industries, New York, N.Y., a corporation of New York
Filed July 28, 1967, Ser. No. 656,784
Int. Cl. G08b *17/06;* **H01h** *37/46*
U.S. Cl. 340—227.1 10 Claims



The specification discloses an apparatus for giving an indication when the rise in ambient temperature exceeds a predetermined rate. Two specific embodiments of the invention are disclosed. The first comprises an elongated, laminated composite member mounted in cantilever fashion and arranged so that movement of its free end closes an electric circuit. The member is formed from two strips of dissimilar materials joined together throughout their length. The materials are chosen so as to have relatively equal coefficients of thermal expansion but substantially different coefficients of thermal conductivity. Consequently, during a gradual temperature rise both materials will effectively expand an equal amount and the free end of the member will not move; however, upon a rapid temperature rise the material having the highest coefficient of thermal conductivity will heat up faster and, correspondingly, expand faster. This produces a lateral deflection of the free end of the member to close the circuit. The second embodiment is generally the same as the first in construction and operation; however, the sensing element is coiled into a flat spiral with the outer end fixed and the inner end arranged for actuating an alarm circuit.

3,530,453
SNOWFALL ALARM

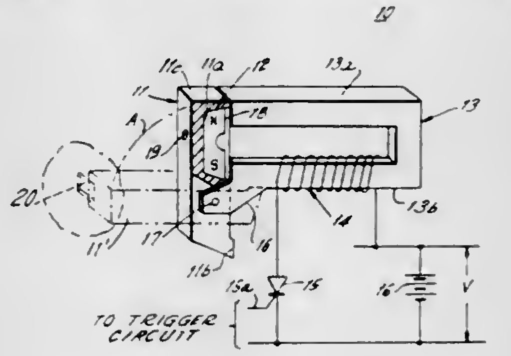
Denis Rossier, Vers-Ensier, Troistorrents, Valais, Switzerland
Filed Apr. 11, 1968, Ser. No. 720,697
Claims priority, application Switzerland, Apr. 17, 1967, 5,433/67
Int. Cl. G08b *21/00*
U.S. Cl. 340—234 4 Claims



A photocell and light source cooperatively mounted at opposite sides of a vertically adjustable table on which the falling snow piles up. An alarm is given when the snow on the table cuts off the light beam.

3,530,454
DROP ANNUNCIATOR WITH PIVOTALLY-MOUNTED TARGET INDICATOR BEARING A PERMANENT MAGNET

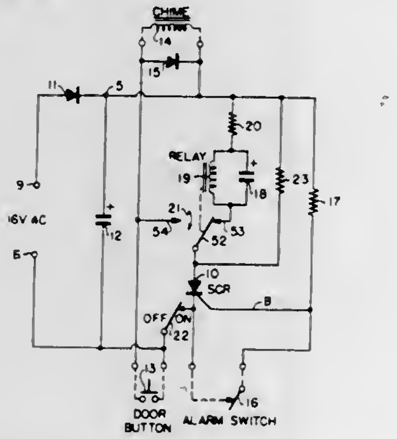
Stanley E. Zocholl, Holland, Pa., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Oct. 9, 1967, Ser. No. 673,716
Int. Cl. G08b *21/00*
U.S. Cl. 340—253 9 Claims



A drop annunciator containing a stationary magnetic yoke which surrounds a pivotally-mounted non-magnetic armature. The non-magnetic armature has a permanent magnet fixed thereto which is movable from an upright position in which it is magnetically sealed to the yoke to a horizontal position in which it is retained by gravity. A winding on the yoke is energized through a controlled rectifier to create a magnetic field in the yoke which repels the permanent magnet in the rotatable member. When the rotatable member drops, its top can be observed through a window in the housing containing the drop annunciator.

3,530,455
DOOR CHIME ALARM SYSTEM

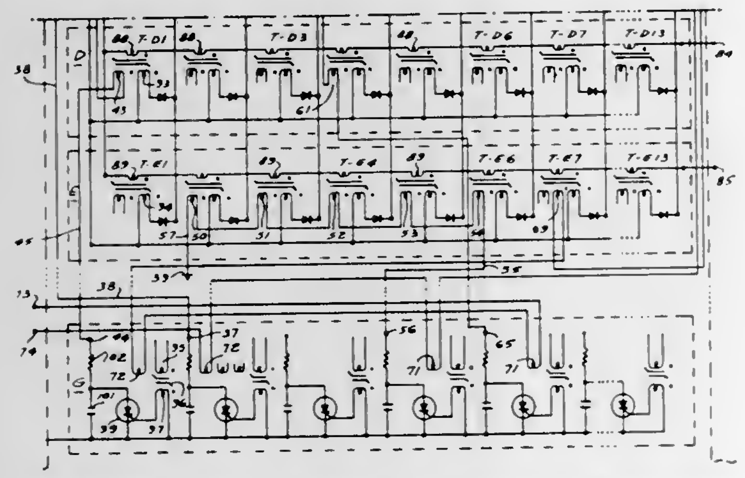
Erhard O. Ressler, West Chester, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 624,968
Int. Cl. G08b *13/08*
U.S. Cl. 340—274 **1 Claim**



The invention is a system, readily adapted to conventional bell or door chime circuits, which embodies appropriate sensors and electronic control circuitry actuated by a circuit make or break or by an environmental thermal condition to trigger one or more alarm signals so that they will operate continuously until the circuit is reset. The system thereby provides for an alarm to signal any one of a plurality of conditions to which an occupant of a dwelling can respond.

3,530,456
MATRIX STORAGE SYSTEM

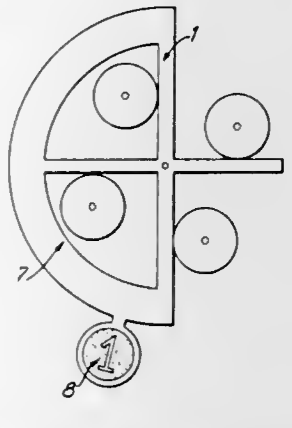
Charles J. Holloman, Stamford, Conn., assignor to Trans-Lux Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 601,071
Int. Cl. G08b *23/00;* **G09b** *13/00*
U.S. Cl. 340—324 **6 Claims**



A storage matrix system for representing selectable points of a character for display in accordance with binary coded information utilizing a multiplicity of magnetizable cores each of which is provided with a plurality of individual windings which are selectively energized in serial fashion over a plurality of rows and columns from a single input terminal and a separate readout winding for each magnetic core and means to energize the readout windings to display the information in the individual cores.

3,530,457
METHOD AND APPARATUS FOR DECODING

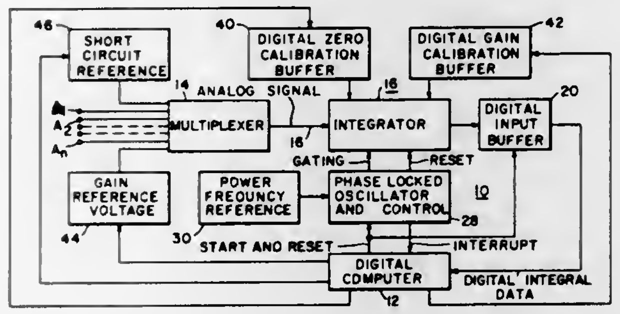
Alexandre Nissen, Boulogne-Billancourt, France, assignor to Videon, Boulogne-Billancourt, France, a corporation of France
Filed Feb. 6, 1967, Ser. No. 614,322
Claims priority, application France, Feb. 7, 1966, 48,600
Int. Cl. G08b *5/22*
U.S. Cl. 340—324 **4 Claims**



An apparatus for decoding coded information chiefly information transmitted through the binary code relying on a number of rotary cams corresponding to the number of bits or indicia of the said code and adapted to rotate round the same axis or round parallel axes so as to release for any predetermined relative position of the cams one and only one lever of a number of levers depending on the base of the code used, the released lever providing for a visualization of a corresponding digit, for instance through projection on a screen of said digit.

3,530,458
ANALOG TO DIGITAL CONVERSION SYSTEM HAVING IMPROVED ACCURACY

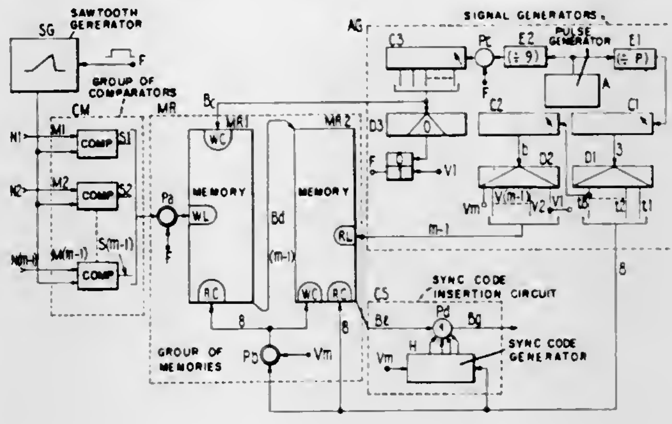
Frank G. Willard, Monroeville, Francis T. Thompson, Penn Hills Township, Verona County, and Clyde A. Booker, Jr., Churchill, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1965, Ser. No. 505,532
Int. Cl. H03k *13/20*
U.S. Cl. 340—347 **4 Claims**



An analog to digital conversion system for a computer includes an integrator which integrates an input analog signal over an integrating period equal to the steady-state period of the supply power waveform to minimize noise error in the integrator digital output. A phase locked oscillator controls the length of the integrating period. Error due to gain or zero drift in the system or to a change in the length of the integrating period is substantially offset by a recalibration control including the computer which provides control over the gain and zero characteristics of the system.

3,530,459
ANALOG-TO-DIGITAL MULTIPLEX CODER

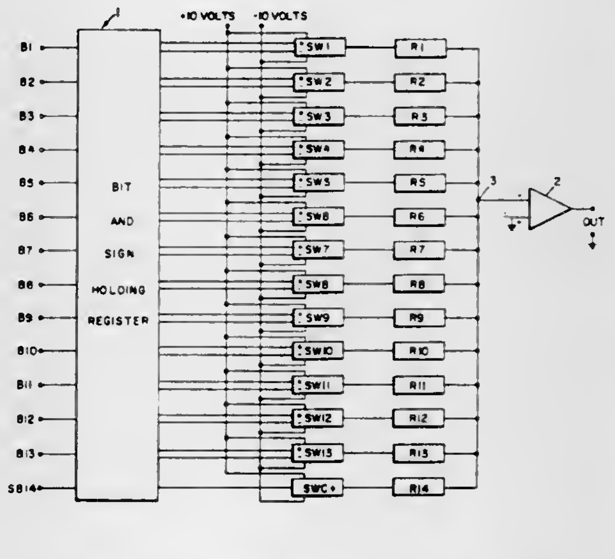
André Edouard Joseph Chatelon, Montrouge, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,035
Claims priority, application France, July 21, 1965, 25,372
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **10 Claims**



A multichannel PCM coder in which a single increasing amplitude reference signal having a duration substantially equal to and coincident with the duration of a frame of the multichannel signal is simultaneously compared with the analog signal in each channel and when equal a control signal is produced. Simultaneously with the reference signal, code groups are generated and the control pulse causes an associated code group to be stored in a part of a first register designated for that channel. At the end of the reference signal, all the code groups of the different channels are instantaneously transferred to a second register from which they are fed out serially while the first register is being loaded.

3,530,460
DIGITAL TO ANALOG CONVERTER HAVING DUAL POLARITY SWITCHING MEANS AND WEIGHTED RESISTOR LADDER

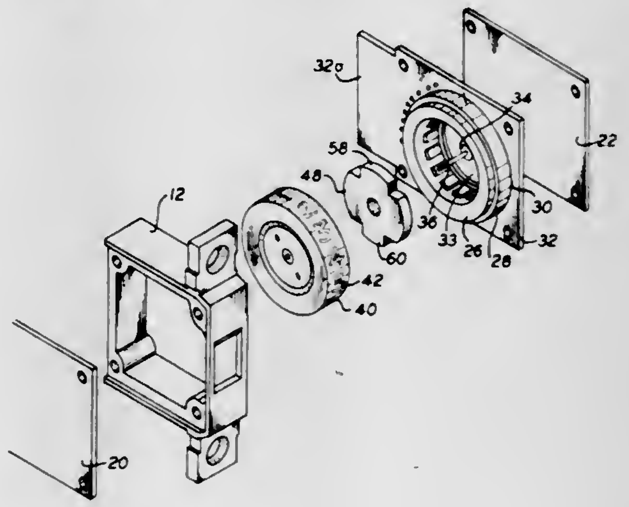
Herman E. Sheffield, Jr., Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,266
Int. Cl. H03k *13/04*
U.S. Cl. 340—347 **1 Claim**



A bit and sign holding register having 13 input bits and 1 sign bit is connected through a similar number of dual polarity switching circuits into a weighted resistor ladder add eventually into an operational amplifier. The noninverting input of the operational amplifier is grounded whereas the inverting input, near ground, is connected to the summing junction of the resistor ladder, thus allowing the output of the amplifier to swing at minus one volt per milliamp of inverting input current and directly relate to the value of the particular weighted resistors.

3,530,461
ELECTROMAGNETIC INDICATING WHEEL APPARATUS

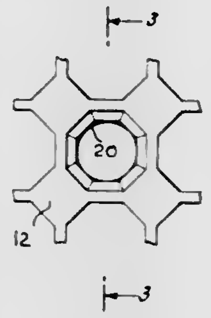
Stanley Steinberg, Plainview, N.Y., assignor to Vernitron Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1969, Ser. No. 818,506
Int. Cl. G08b *5/22*
U.S. Cl. 340—378 **3 Claims**



The invention pertains to an improved electromagnetic indicator incorporating a novel two-pole magnetic rotor. The magnetic rotor has two poles of different arcuate widths or extent for insuring that the poles of the rotor properly align, lock and detent to stator salient pole when it is energized.

3,530,462
CHARACTER DISPLAY MODULE HAVING OCTAGONAL LAMP SOCKETS

Herbert J. Hampel, Philadelphia, Pa., assignor to Ultronic Systems Inc., a corporation of Delaware
Filed June 18, 1969, Ser. No. 834,431
Int. Cl. G09f *9/14*
U.S. Cl. 340—381 **6 Claims**

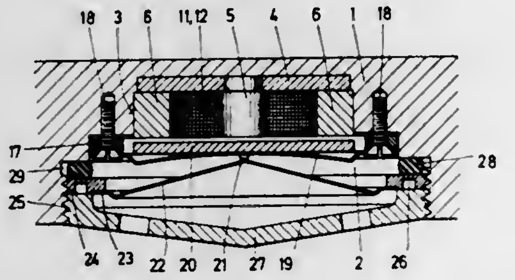


A member is provided with a plurality of transversely extending bores arranged in rows and columns. Each bore has a cylindrical section which in cross section defines a regular octagon. The inner surfaces of each cylindrical section are coated with light reflecting material. A separate tubular lamp can be disposed in each bore. When certain of these lamps are selectively energized, one or more characters are formed which can be viewed from ends of the bores which expose the lit and unlit lamps.

3,530,463

BUZZER HAVING SPRING BLADE VIBRATING AT NATURAL FREQUENCY

Paolo Spadini and Manfred Pekari, La Chaux-de-Fonds, Switzerland, assignors to Paolo Spadini, La Chaux-de-Fonds/NE, Switzerland
Filed June 16, 1969, Ser. No. 833,255
Claims priority, application Switzerland, June 17, 1968, 8,966/68, 8,972/68
Int. Cl. G08b *3/10*
U.S. Cl. 340—384 **15 Claims**

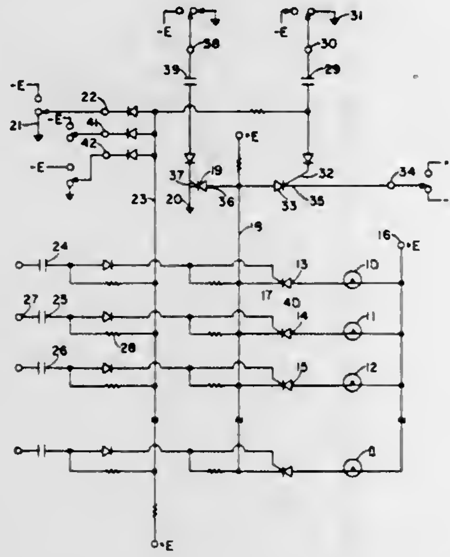


The buzzer comprises an elongated spring blade rigidly fixed at the two ends to a support. An electrodynamic transducer having an energizing coil in the input circuit of a transistorized amplifier and a motor coil in the output circuit of the amplifier causes the spring blade to vibrate at a natural frequency and it entertains that vibration. When the spring blade vibrates, it strikes against a membrane which produces the audible sounds of the buzzer. Screw means enable adjusting the distance between the blade and the membrane.

3,530,464

CENTRAL DISPLAY SYSTEM CONTROL CIRCUIT

Robert E. Young, Houston, Tex., assignor, by mesne assignments, to Dresser Systems, Inc., Houston, Tex., a corporation of Delaware
Filed Apr. 27, 1967, Ser. No. 634,327
Int. Cl. G08b *19/00;* **H05b** *37/00*
U.S. Cl. 340—412 **10 Claims**

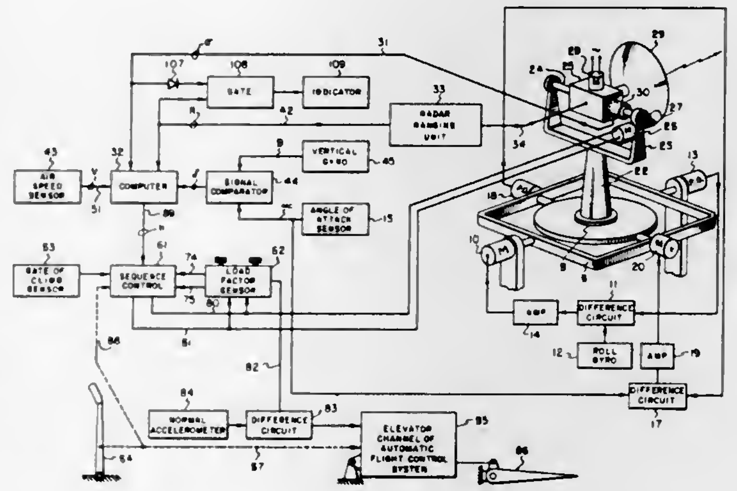


A single "holding" silicon controlled rectifier is connected in series with a common conduction path for a plurality of lamps. Each lamp, in turn, has a silicon controlled rectifier connected in series with it in addition to the common, holding silicon controlled rectifier. The holding silicon controlled rectifier has a control electrode connected to receive a SET pulse to render the holding silicon controlled rectifier conductive, thereby providing continuity in the common conduction path for these lamps whose series-connected silicon controlled rectifiers have been turned on, selectively.

3,530,465

OBSTACLE CLEARANCE SYSTEM FOR AIRCRAFT

Donal R. Treffeisen, Glen Cove, and Joseph E. Zupanick, Westbury, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed July 10, 1957, Ser. No. 672,537
Int. Cl. G01s *9/02*
U.S. Cl. 343—7 **15 Claims**



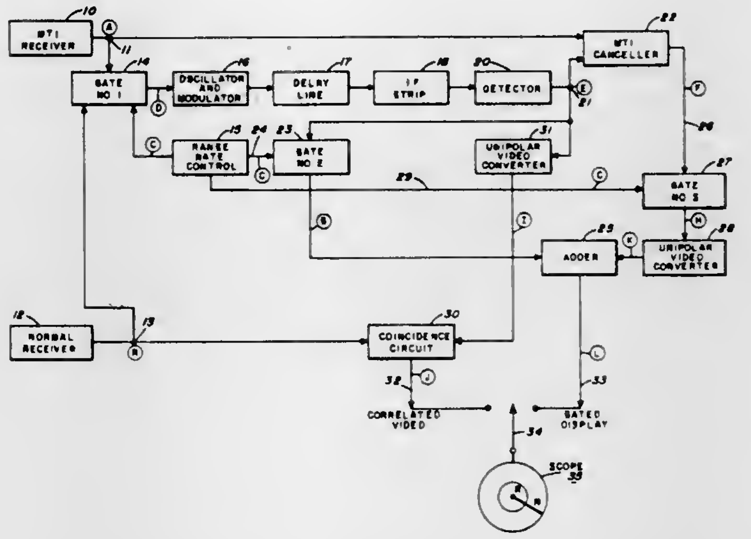
4. In an aircraft guidance system, apparatus comprising radar obstacle ranging means including means for scanning said obstacle through predetermined angles measured relative to the aircraft velocity vector, said radar means producing first and second signals respectively proportional to the range of said obstacle and the elevation of said obstacle as measured relative to said velocity vector, aircraft airspeed sensing means for producing a third signal proportional thereto, aircraft flight path angle sensing means for producing a fourth signal proportional thereto, means adapted to receive said first, second, third, and fourth signals and operative to compute therefrom the constant load factor to which said aircraft would be subjected in tangentially clearing said obstacle, said computer means producing a signal proportional to said computed load factor, reference load factor signal generating means, and means for comparing said computed load factor signal and said reference load factor signal and for producing a command signal upon equality therebetween, a signal comparator having two inputs and producing an output control signal proportional to the difference between the two input signals, switching means for applying said reference load factor signal to one of said inputs of said signal comparator in response to said command signal, means for producing a fifth signal proportional to that component of aircraft acceleration acting in a plane normal to both the aircraft longitudinal axis and the aircraft pitch axis, means for applying said fifth signal to the other of said inputs of said signal comparator, and means for positioning a control surface of said aircraft, said output of said signal comparator being connected to the input of said last-named means.

3,530,466

COMPATIBLE RADAR MTI CORRELATION SYSTEM

Walter Simon, Silver Spring, Md., and William D. Raynor, Manassas, Va., assignors to the United States of America as represented by the Secretary of the Navy
Continuation-in-part of application Ser. No. 668,300, Sept. 13, 1967. This application Jan. 29, 1969, Ser. No. 794,966
Int. Cl. G01s *9/42*
U.S. Cl. 343—7.7 **8 Claims**

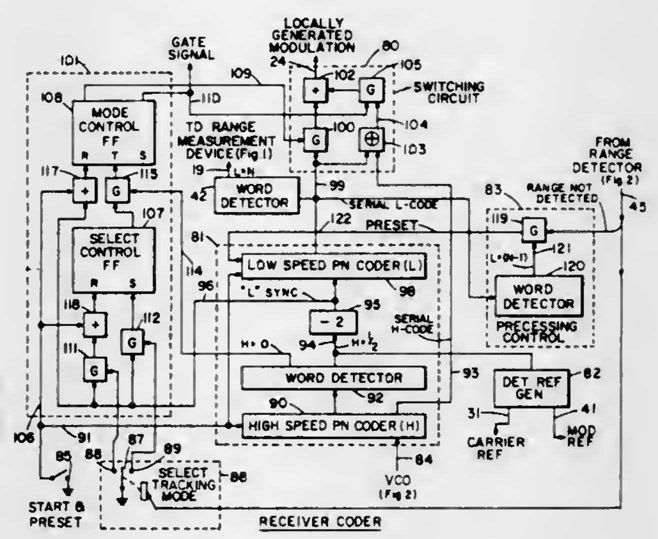
A method for the utilization of a single delay line and existing MTI circuitry for both MTI and video correlation use in systems possessing an MTI capability. Normal video and MTI video are alternately fed to the delay line and then by gating circuits and cancellation circuits both gated MTI video and correlated video outputs are produced.



3,530,467

DUAL-MODE RANGE ACQUISITION SYSTEM

Stanley W. Attwood and Arthur J. Kline, Jr., Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 607,014, Jan. 3, 1967. This application Sept. 30, 1968, Ser. No. 768,612
Int. Cl. G01s *9/06, 9/56*
U.S. Cl. 343—13 **17 Claims**

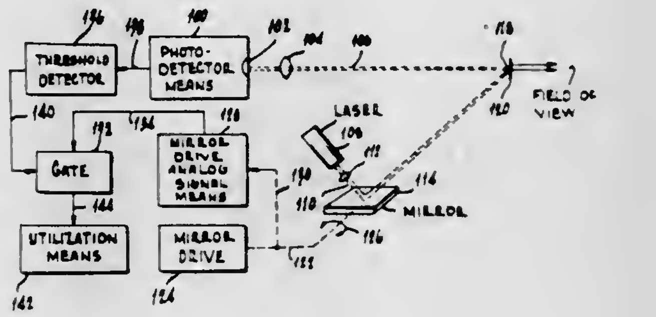


A radar range acquisition system is shown which may use a pseudonoise (PN) code to detect range. In range acquisition the receiver first centers operation on a coarse quanta and simultaneously therewith operates to center on a fine quanta. After coarse range acquisition is obtained, a dual mode is initiated using half-added coarse and fine quanta signals. The receiver then tracks range using the dual signals with a controlled oscillator to adjust fine range with detected coarse range. The coarse quanta is chosen as to avoid Doppler shift in the system. When synchronized, the PN code generators are used to define the quanta in terms of elapsed time with selected ones of the high speed signals being half added with coarse quanta bits.

3,530,468

TRIANGULATION RADAR SYSTEM

William J. Hannan, Pennington, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Feb. 23, 1968, Ser. No. 707,692
Int. Cl. G01s *9/04*
U.S. Cl. 343—15 **4 Claims**

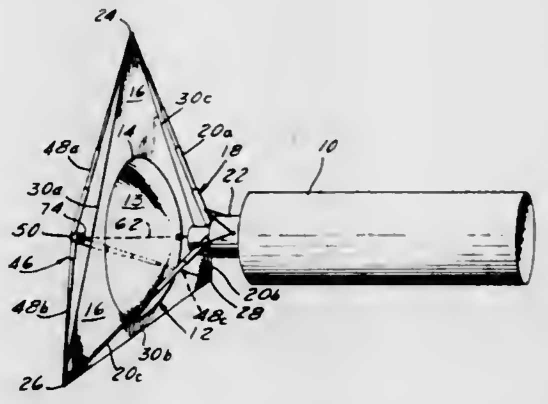


The disclosed triangulation radar system employs electromagnetic radiation in the light frequency spectrum from a laser to measure short ranges with great accuracy. For instance, ranges in the order of tens of feet may be measured with an accuracy of one-half foot or less. This is accomplished by locating a photodetector having a predetermined narrow field of view at a first given point, transmitting a narrow beam of laser radiation from a second point spaced a given distance from the first given point with the transmitted laser beam intersecting the field of view of the photodetector at a third point. By rotating the transmitted laser beam or field of view of the photodetector or both, the position of the third point can be changed in a manner which is determined by the instantaneous angular position of the transmitted laser beam with respect to the field of view. Laser echo signals will be received by the photodetector only when the location of a reflecting object coincides with this third point. Means are provided for measuring the range of an object, indicating this range as an audio tone, and for automatically tracking an object.

3,530,469

ENERGY IMPINGEMENT DEVICE

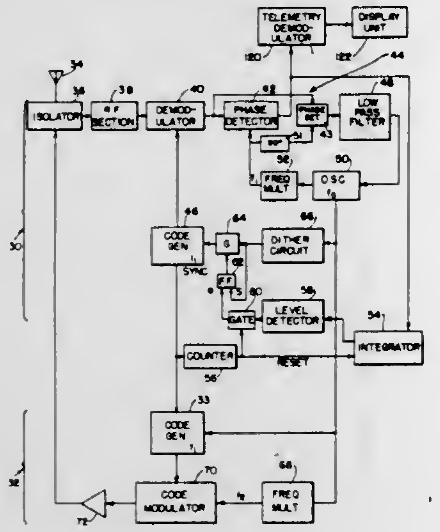
William J. Dailey, Santa Fe Springs, and George W. Morgan, Anaheim, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed June 26, 1968, Ser. No. 740,147
Int. Cl. H01q *15/14, 15/20*
U.S. Cl. 343—18 **23 Claims**



The space-age requires many improved and new devices—including lightweight reflectors, solar-arrays, solar-wings, etc. This disclosure describes a new lightweight structure for these devices. When used as a reflector, it comprises a concave rigidized reflective film, positioned and attached at the center of a planar film of plastic or a planar network of support cables known as a tension-structure. The tension-structure is, in turn, attached to the ends of extended telescopic poles that are mounted in a tripod manner. When the ends of the poles are spread apart, the tension-structure assumes a planar configuration, and supports and positions the reflector in a simple, efficient manner that obviates strains and warping. Thus, the reflector-structure may be transported in a compacted form, and deployed to its desired size in space. The other devices are produced in a similar manner.

3,530,470
RADIO RANGING SYSTEM

Eugene H. Sheftelman, Weston, Andrew S. Griffiths, Auburndale, Arnold M. McCalmont, South Acton, and William H. Smith, Hanover, Mass., assignors to Technical Communications Corporation, Lexington, Mass.
Filed Jan. 25, 1968, Ser. No. 700,599
Int. Cl. G01s *9/56, 9/06*
U.S. Cl. 343—6.5 **15 Claims**

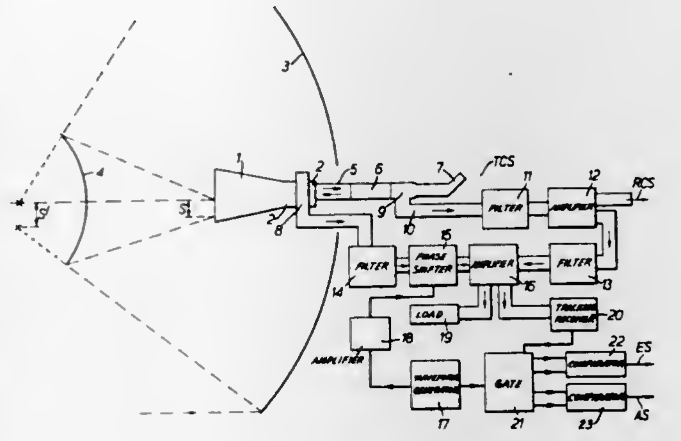


A radio ranging system operates in the medium to high frequency band and employs wide band modulation techniques to minimize interference problems. An initiating station transmits a pseudo-random code word and a transponding station retransmits the same or another code word to the initiating station or to one or more other stations. The distance between the initiating and transponding stations is then determined by measuring the elapsed time between the initial transmission of the code word and receipt of the responding signal. The system may be arranged in a variety of configurations to assist a navigator in accurately determining his position.

3,530,471
AUTOMATIC TRACKING RADIO EQUIPMENTS

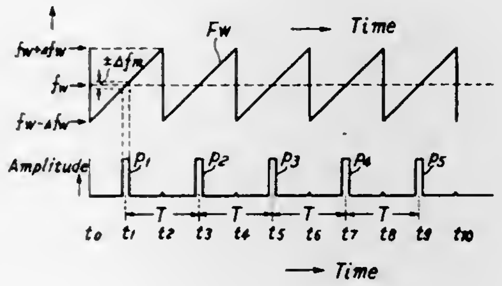
John Richard Mark, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Mar. 25, 1968, Ser. No. 715,606
Claims priority, application Great Britain, Apr. 4, 1967, 15,376/67
Int. Cl. G01s *3/56*
U.S. Cl. 343—118 **8 Claims**

In known satellite tracking radio equipments, conical scanning gives rise to amplitude modulation of the signals, leading to large tracking errors. In this invention conical scanning is effected by providing a wave guide coupler to combine derived signals corresponding to circularly polarised TE_{11} waves and phase shifted TM_{01} waves. The phase shift is cyclically varied by control voltages from a stepped waveform generator. Mutually perpendicular component tracking signals are taken from the coupler to comparators responding to different phase shifts. These signals are used to maintain correct alignment and track the satellite.



3,530,472
CUE SIGNAL COMMUNICATION SYSTEM

Masao Fukata, Yoshikazu Sato, and Shozo Takahashi, Tokyo-to, Japan, assignors to Kokusai Denki Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Jan. 17, 1967, Ser. No. 609,929
Claims priority, application Japan, Aug. 24, 1966, 41/55,270
Int. Cl. H04b *7/00*
U.S. Cl. 343—228 **8 Claims**

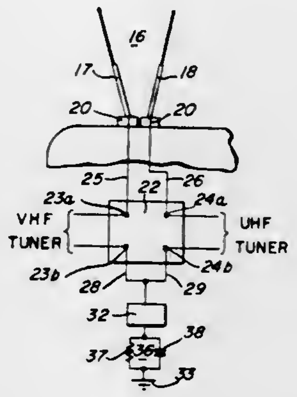


A system is disclosed for transmitting a cue signal or a plurality of cue signals by use of at least one wobbled wave obtained by wobbling a low-frequency sinusoidal wave according to a saw-tooth wave function the number of cycles of which is determined in accordance with the cue signal to be transmitted. The transmitted wobbled wave is applied to a narrow-pass band filter and changed into a pulse train the number of pulses of which is equal to the number of cycles of the saw-tooth wave and the pulses of which have a constant period irrespective of any slight deviation of the wobbling frequency range and/or slight deviation of the center frequency of the narrow-pass band filter. The transmitted cue signal is detected by counting the number of pulses of the pulse train in consideration of the constant period of pulses.

3,530,473
SINGLE MONOPOLE ANTENNA FOR VHF AND UHF TELEVISION

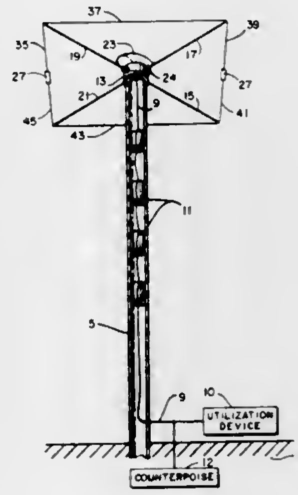
Richard D. Ives, Deerfield, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware
Filed May 17, 1965, Ser. No. 457,254
Int. Cl. H01q *1/24*
U.S. Cl. 343—702 **2 Claims**

A monopole antenna mounted on a portable television receiver is coupled to both VHF and UHF television tuners. Reception of both VHF and UHF is achieved by either separate elongated antennas or a single elongated antenna and isolating means. A conductive body, which forms a portion of a mechanical support for a handle, provides a ground plane for the monopole antenna.



3,530,474
ANTENNA WITH ADJUSTABLE-RATIO DUAL CAPACITIVE LOADING

Donn V. Campbell, Neptune, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed July 2, 1968, Ser. No. 742,023
Int. Cl. H01q *11/12, 9/00*
U.S. Cl. 343—749 **4 Claims**

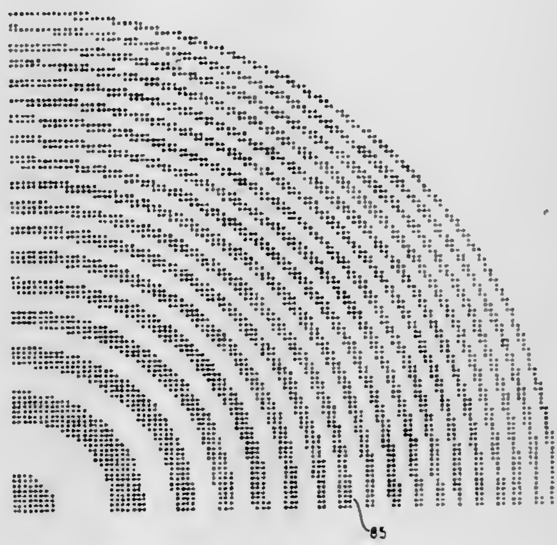


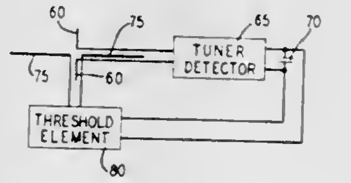
The vertical section of the antenna comprises an inductively loaded coaxial line supported inside a hollow mast. A horizontal array of conductors at the top of said coaxial line provides dual components of top-loading capacity. Each component of capacity is connected to a different one of the conductors of said coaxial line and the ratio of said components of capacity is variable while the total or sum remains constant. Thus the antenna impedance may be changed while holding the antenna tuning fixed.

3,530,475
ACTIVE ZONE PLATE LENS ANTENNA

Warren E. Danielson, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Aug. 26, 1966, Ser. No. 575,429
Int. Cl. H01q *3/26, 15/02*
U.S. Cl. 343—754 **9 Claims**

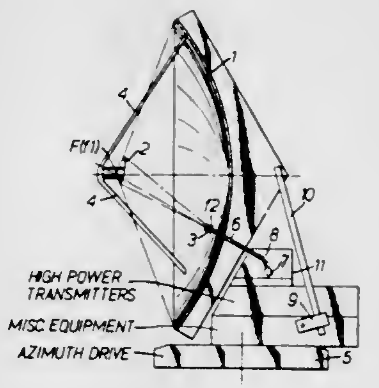
An active zone plate lens antenna is described. This antenna conveniently takes the form of a nominally planar array of scattering elements. Means are also provided for selectively activating certain of these elements to generate the bands or rings of a zone plate antenna. Selection is typically achieved by means of constructive interference of electromagnetic signals from two coherent sources.





3,530,476
MULTIPLE REFLECTOR ANTENNA WITH OFFSET FEED

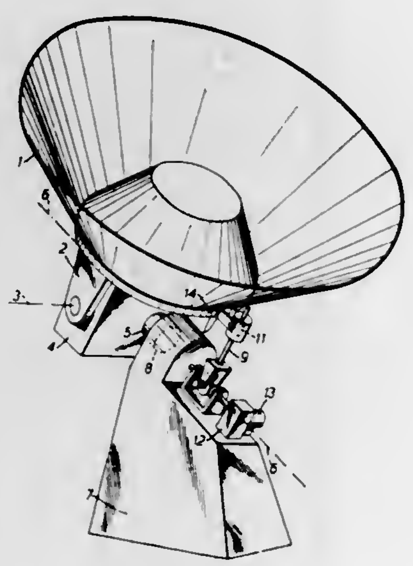
Ivor Albert Ravenscroft, Radlett, England, assignor to Her Majesty's Postmaster General, London, England
Filed June 29, 1967, Ser. No. 650,111
Claims priority, application Great Britain, July 4, 1966, 29,956/66
Int. Cl. H01g *3/12, 19/10, 19/18*
U.S. Cl. 343—761 **9 Claims**



An aerial having a symmetrical paraboloidal main reflector and a sub-reflector having a reflecting surface defined by part of a hyperboloid one focus of which coincides with the main reflector. The aerial also includes a primary feed horn having a phase centre at the other focus of the hyperboloid which is depressed relative to the axis of the main reflector. In a plane containing the axis symmetry of the hyperboloid and of the paraboloid the sub-reflector has an offset, hyperbolic shaped section. In an orthogonal plane, the sub-reflector section is a symmetrical hyperbola.

3,530,477
SCANNING ANTENNA HAVING DRIVE MOTORS FIXED WITH RESPECT TO THE ANTENNA

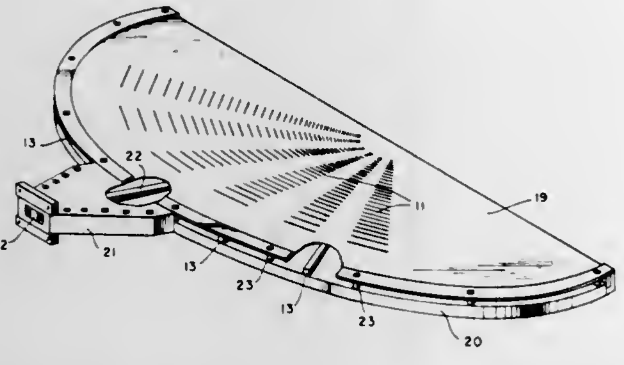
Richard Jarrett, Leigh-on-Sea, and Eric Davenport Gilbert, Chelmsford, England, assignors to The Marconi Company Limited, London, England, a British company
Filed Mar. 25, 1968, Ser. No. 715,607
Claims priority, application Great Britain, Mar. 28, 1967, 14,053/67
Int. Cl. H01q *3/00*
U.S. Cl. 343—765 **4 Claims**



Known nodding scanning aerial arrangements are usually moved in elevation about a pivotal axis of a fixed tower by a jack arrangement whose driving equipment is carried by the aerial. Such arrangements have the disadvantage that the total inertia associated with the aerial is increased by the extra weight of the driving equipment. Furthermore because the driving equipment is on the moving aerial long flexible leads must be used to supply power, and lubrication is difficult. This invention overcomes these disadvantages by driving the aerial by driving equipment mounted on the fixed tower.

3,530,478
FREQUENCY INDEPENDENT LOG PERIODIC SLOT MULTI-MODE ANTENNA ARRAY

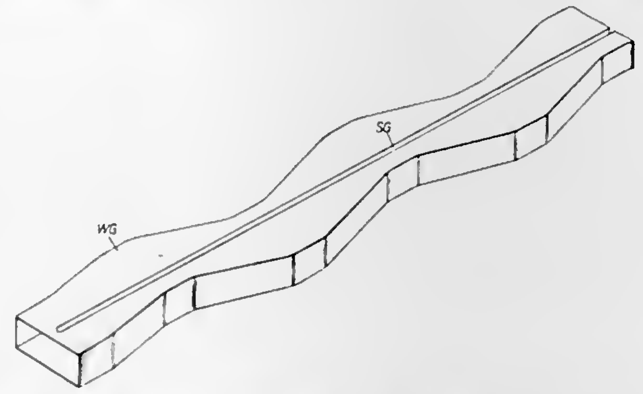
Robert G. Corzine and Joseph A. Mosko, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Mar. 27, 1968, Ser. No. 716,650
Int. Cl. H01q *11/10, 13/10*
U.S. Cl. 343—771 **3 Claims**



A conical antenna array comprising two electrically conductive sheets with rows of slot pairs lying along log-periodically expanding concentric circles, and H-guide type waveguides capable of exciting adjacent rows of slot pairs.

3,530,479
SLOTTED WAVE GUIDE AERIALS

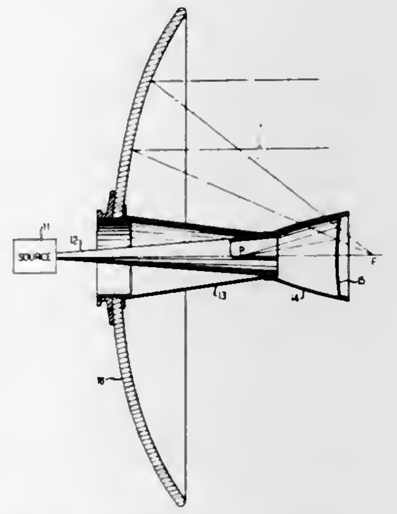
Richard Arthur Waldron, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Original application Mar. 31, 1967, Ser. No. 627,554. Divided and this application Apr. 29, 1968, Ser. No. 724,873
Claims priority, application Great Britain, Mar. 31, 1966, 14,248/66
Int. Cl. H01q *13/10*
U.S. Cl. 343—771 **10 Claims**



The disclosure herein relates to slotted waveguide aerials, i.e. a waveguide having one or more slots in it through which radiation takes place, and discusses known aerials of this type and points out that their bandwidth is undesirably low—about 12% at the most. Aerial arrays of the directional coupler type are disclosed to give a bandwidth of about 15% and bandwidths substantially larger than this are obtainable from leaky waveguide arrays—the latter are difficult and costly to construct and have a low efficiency. The invention disclosed herein provides aerials and aerial arrays which are simple and efficient and have a bandwidth of about 30%. The invention employs a waveguide having a parallel-sided slot in one wall, the distance of the slot from the edges of the wall varying at least approximately sinusoidally along the length of the slot. The sinusoidal variation may be achieved by making the slot straight and the edges of the wall sinusoidal. Aerial arrays incorporating slotted waveguide aerials in accordance with the invention are also disclosed.

3,530,480
CASSEGRAIN ANTENNA HAVING DIELECTRIC SUPPORTING STRUCTURE FOR SUBREFLECTOR

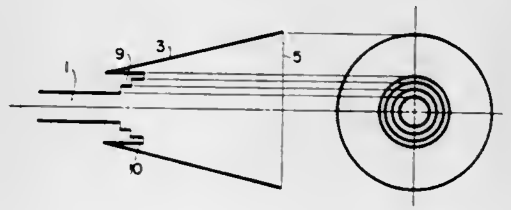
Lief Rongved, Summit, and Henry Zucker, Morristown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed July 3, 1967, Ser. No. 657,719
(Filed under Rule 47(a) and 35 U.S.C. 116)
Int. Cl. H01q *19/14, 13/00*
U.S. Cl. 343—781 **6 Claims**



A Cassegrain antenna is characteristically recognized by the presence of a primary and secondary reflector disposed along a common axis. In such an antenna some structural means must be utilized for supporting the secondary reflector in a predetermined position in space relative to the primary reflector. Although metallic structures, such as struts, have been used for this purpose, they suffer from a number of deficiencies. These deficiencies are overcome by the use of a dielectric support member having a predetermined geometrical configuration.

3,530,481
ELECTROMAGNETIC HORN ANTENNA

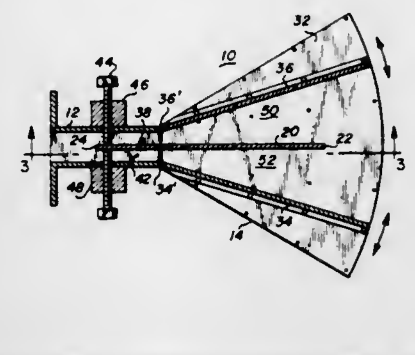
Mitsuo Tanaka, Kokubunji-shi, Kazuo Kaneko, Hachioji-shi, and Masao Kamimura, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan
Filed Dec. 11, 1967, Ser. No. 689,564
Claims priority, application Japan, Jan. 9, 1967, 42/1,429
Int. Cl. H01q *13/00*
U.S. Cl. 343—786 **11 Claims**



The present invention relates to an improved electromagnetic horn antenna having an improved multiplex electromagnetic mode generating structure with a reactance compensable effect comprised by a projecting portion located adjacent to one end of a flaring part of the horn and connecting the horn to a wave guide providing an exciting electromagnetic wave, which projecting portion is of a configuration which renders it possible to decrease side-lobe level by use of the multiplex mode and at the same time to solve problems of impedance mismatching over a broad operating frequency range.

3,530,482
PARTITIONED HORN ANTENNA WITH PATTERN SHAPING ADJUSTMENT

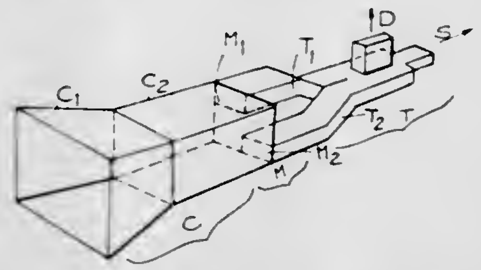
James L. Palmer, Cupertino, Calif., assignor to Advanced Devices Laboratory, Inc., San Jose, Calif., a corporation of California
Filed May 16, 1968, Ser. No. 729,656
Int. Cl. H01q *13/00*
U.S. Cl. 343—786 **8 Claims**



An electromagnetic antenna structure in which a partitioned horn is coupled to the end of a waveguide for radiating electromagnetic energy. The partition across the horn has a tongue extending into waveguide and deflectable perpendicular to itself to differentially change the wave energy respectively delivered to the partitioned horn portions for changing the radiation pattern. For added shaping of the radiation pattern, the horn has variable flare side walls.

3,530,483
MULTIMODE MONOPULSE HORN ANTENNA

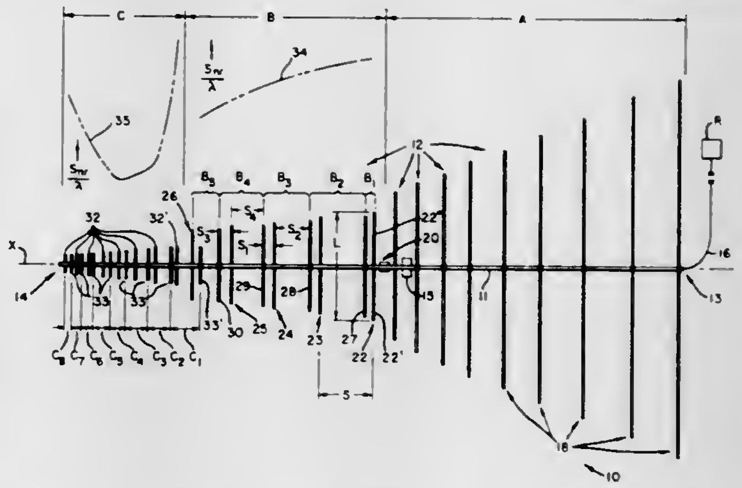
Robert L. Pierrot, Paris, France, asignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 8, 1968, Ser. No. 743,165
Claims priority, application France, July 13, 1967, 114,179
Int. Cl. H01q *13/00*
U.S. Cl. 343—786 **2 Claims**



In order to supply directly signals Σ and $\Delta s + j\Delta g$ or $\Delta g + j\Delta s$, a multimode monopulse source comprises, between a radiating horn for TE_{01}, TE_{02}, TE_{11} and TM_{11} modes and a magic T, a mode converter comprising two guide portions of rectangular section having respective ends opening into diametrally opposed sections of the horn.

3,530,484
BROADBAND LOG PERIODIC ANTENNA WITH PHASE REVERSING PARASITIC ELEMENTS

Normand Barbano, Sunnyvale, and Howard Hochman, Santa Clara, Calif., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,903
Int. Cl. H01q *11/10*
U.S. Cl. 343—792.5 **10 Claims**

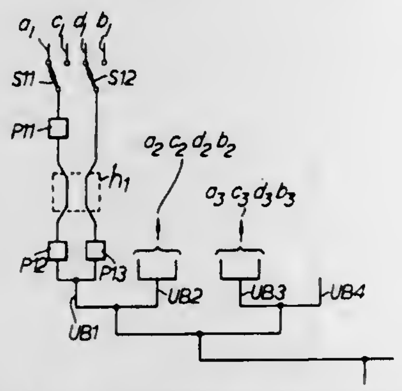


This television antenna comprises three log periodic arrays mounted on one boom in end-to-end relation for receiving television and FM broadcast frequencies in three separate bands. All of the elements in the three arrays lie in the plane of the boom. Each of the two higher frequency arrays comprises a series of log periodic Yagi-Uda cells with each parasitic element functioning as a director for one cell and a reflector for the adjacent cell. The axial locations of the parasitic elements are adjusted to match the impedance of dipoles to the feed line and are independent of the logic periodic dimensions and spacings of the dipoles. Double parasitic elements are located adjacent to the driven elements in the high VHF band to provide a smooth transition in frequency response between adjacent driven elements and insure substantially uniform antenna patterns over the band.

The single boom or longitudinal support for the active and parasitic elements is a hollow split tube, preferably rectangular in cross section, comprised of juxtaposed electrically conductive substantially identical channel members mechanically secured to each other in relation by insulators. These members also constitute balanced feed lines for the antenna elements, being electrically connected at one end to the inner and outer conductors, respectively, of a coaxial insulated cable which extends within the members from the opposite end.

3,530,485
SCANNING AERIAL SYSTEMS AND ASSOCIATED FEEDER ARRANGEMENTS THEREFOR

Matthew Frederick Radford, Essex, England, assignor to The Marconi Company Limited, London, England, a British company
Filed Aug. 16, 1967, Ser. No. 660,951
Claims priority, application Great Britain, Aug. 31, 1966, 38,929/66
Int. Cl. H01q *3/26, 1/50, 21/00*
U.S. Cl. 343—854 **11 Claims**



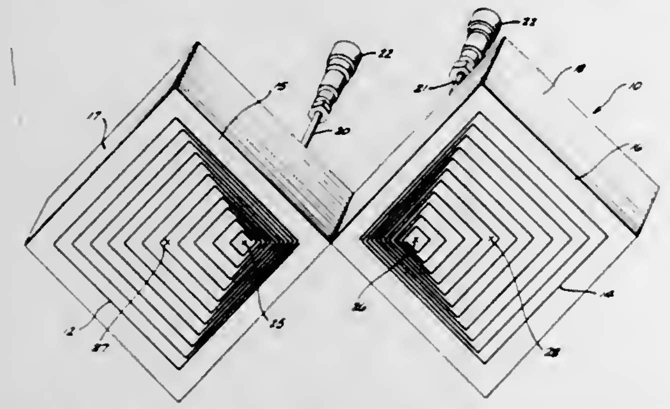
Circular aerial arrays which use electronic rather than mechanical scanning do not normally obtain a good polar diagram. The invention gives a good polar diagram using a number of aerial elements spaced round a circle. The elements are divided into sets and units, each set having the same number of equally spaced elements and each unit consisting of a number of different corresponding elements. Power from a power dividing feeder is switched to the aerial elements of a different unit through switches. The feeder paths include hybrids and phase shifters so that equal powers reach all units. Scanning in elevation as well as azimuth may be achieved using a number of aerial systems coaxially mounted one above the other.

ERRATA

For Classes 5—334 thru 337—159 see:
Patent Nos. 3,530,487 thru 3,530,505

3,530,486
OFFSET-WOUND SPIRAL ANTENNA

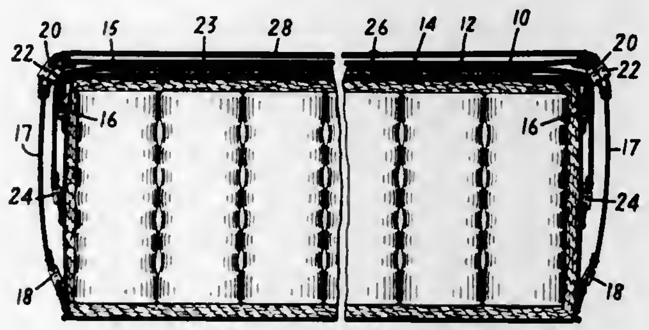
Charles A. Strider, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,116
Int. Cl. H01q *1/38*
U.S. Cl. 343—895 **6 Claims**



The apparatus of the present invention provides an offset-wound spiral antenna element adapted for use in extremely broadband, circularly polarized linear and two-dimensional arrays. Arrays of these elements are capable of maintaining relatively constant beamwidth, gain, input impedance, and sidelobe levels over a frequency range of the order of three octaves in the R-F region of the spectrum. In addition, a two-dimensional array of offset-wound spiral antenna elements of the invention may be used to provide a monopulse tracking system.

3,530,487
BEDCLOTHES

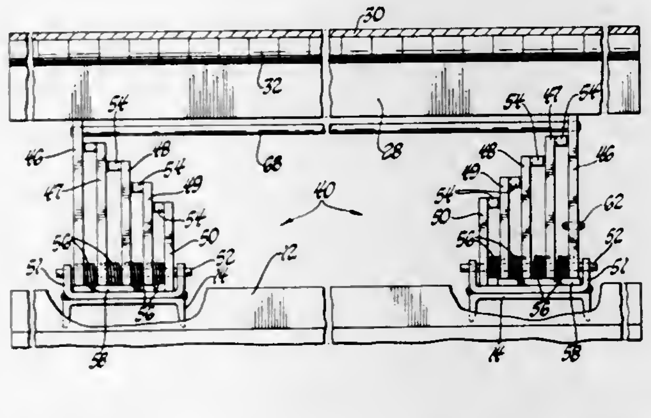
Andrew E. Beer, New York, N.Y., assignor to Venturevest Corp., Morris Plains, N.J., a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,687
Int. Cl. A47g *9/00*
U.S. Cl. 5—334 **13 Claims**



A bed is more readily made up, or remade after use, and the sleeper's comfort is considerably enhanced by the use of bedclothes which are releasably fastened to the mattress, the bottom sheet being releasably fastened about substantially the entire perimeter of the mattress and the top sheet and blanket being releasably fastened to the mattress along the foot end and the major portions of the sides. The top sheet and blanket are normally held in close conformity to the mattress top surface but are rendered displaceable to accommodate the sleeper by elastic elements, such as a band of elastic fabric, interposed between and joining the edges of the top sheet and blanket and mattress.

3,530,488
DOCKBOARD

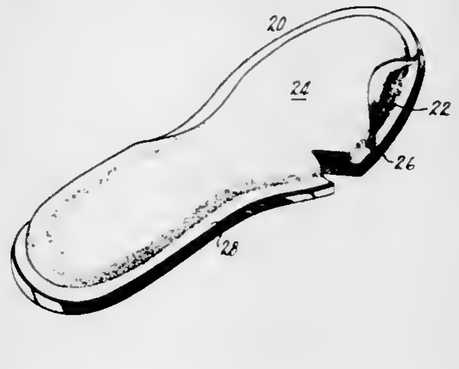
Robert C. Beckwith, Milwaukee, Wis., assignor to Loomis Machine Company, Clare, Mich., a corporation of Michigan
Filed Feb. 11, 1969, Ser. No. 798,385
Int. Cl. B65g *11/00*
U.S. Cl. 14—71 **23 Claims**



A dockboard including a ramp with a lip pivotally connected to the outward end of the ramp and a flange extending downwardly from the ramp. A plurality of plate-like rectangular members are rotatably supported by a shaft and are of different vertical heights and are interconnected by lost motion connections so that upon rotational movement of the longest member, all of the remaining members may be sequentially moved out of the path of movement of the flange on the ramp whereby the ramp may be positioned and the members released so that the member of the appropriate length will be disposed beneath the flange of the ramp to prevent the ramp from moving downwardly any significant amount after a vehicle adjacent the dock, upon which the lip has been disposed, moves away.

3,530,489
FOOTWEAR MANUFACTURE

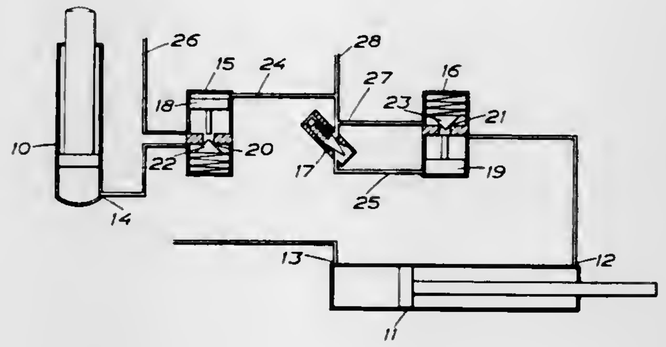
Daniel Appleton, Topsfield, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Aug. 19, 1968, Ser. No. 753,598
Int. Cl. A43b *13/38*
U.S. Cl. 36—44 **4 Claims**



The present invention is directed to a cushion insole unit of particular laminate construction. Specifically, a flexible polyurethane foam interliner is laminated with an extensible, permeable top sheet and a dimensionally stable bottom sheet.

3,530,490
SELF-ADVANCING MINE AND ROOF SUPPORT SYSTEMS

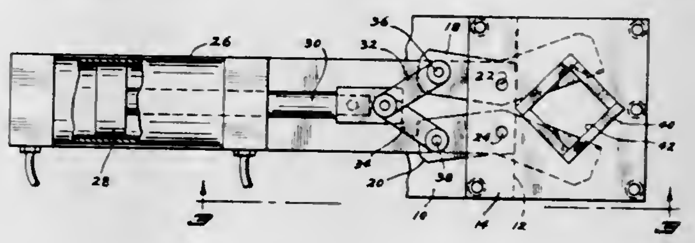
Eric Ward, Shevington, and Deric Anthony Stain, Polesworth, England, assignors to Gullick Limited, Wigan, Lancashire, England, a British company
Filed Sept. 23, 1968, Ser. No. 761,562
Claims priority, application Great Britain, Nov. 8, 1967, 50,847/67
Int. Cl. F15b *11/18, 13/04*
U.S. Cl. 91—170 **3 Claims**



A hydraulic self-advancing mine roof support has hydraulic prop means and a hydraulic ram for advancing the support, said prop means and ram being in a hydraulic system which includes fluid-flow control valves for the release of pressure-fluid from the prop means and the supply of pressure-fluid to the advancing ram for advancing the support and means for delaying operation of the advancing means to advance the support for a predetermined time with respect to the release of hydraulic fluid from the prop means to free the support from between floor and roof to enable it to be advanced.

3,530,491
APPARATUS FOR FORMING FOOD PIECES

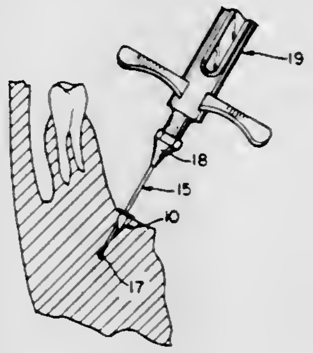
Jack J. Rejsa, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,333
Int. Cl. A21c *11/10*
U.S. Cl. 107—69 **7 Claims**



Prior equipment for cutting off extruded food products such as food bars and candy bars produce sharp or jagged corners which do not present an attractive appearance. Moreover, small pieces tend to break off these sharp corners. This problem is avoided by simultaneously forming the ends of the extruded material as it is cut by means of a forming die located on both the upper and lower surface of the scissors. When the scissors are in a closed position, each die has the form of a cup or pocket bisected by the line of contact between the sharpened edge of the scissors. The bottom of the pocket in each case is parallel with the plane through which the scissors move. The pocket can be square, cylindrical or of other suitable shape. Curved side walls round off the corners of each piece as it is cut.

3,530,492
METHOD AND APPARATUS FOR ADMINISTERING HYPODERMIC INJECTIONS

Jack R. Ferber, 40—18 170th St., Flushing, N.Y. 10058
Filed Dec. 5, 1967, Ser. No. 688,070
Int. Cl. A61m *5/00, 25/00*
U.S. Cl. 128—221 **7 Claims**



A method for administering a hypodermic injection wherein the skin surface is punctured by a sharp-pointed member and blunt-nosed hollow needle is inserted into the puncture to be passed beneath the skin substantially beyond the depth of penetration of the sharp-pointed member. Apparatus for carrying out the method comprises a tubular member having a sharp end for piercing the skin surface and a hollow needle slidably mounted within the first tubular member, the hollow needle including a blunt end for penetrating the underlying tissue and at least one opening in its surface at the blunt end.

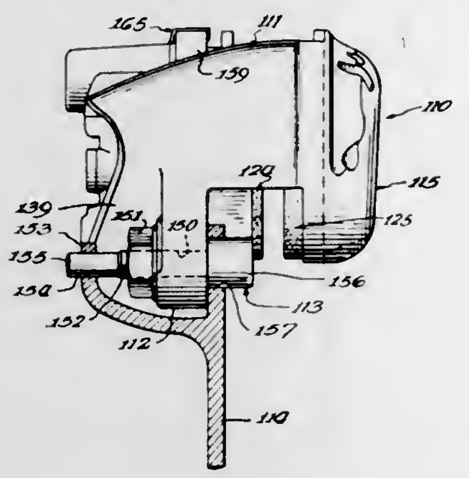
3,530,493
FLOATING FRICTION BRAKE FOR ROTARY DISK

Harold S. Hollnagel, Milwaukee, and Harold E. Hollnagel, Mequon, Wis., assignors to Kelsey-Hayes Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 651,767, July 7, 1967. This application Oct. 2, 1968, Ser. No. 764,420

Int. Cl. F16d *55/224*

U.S. Cl. 188—72.4 **20 Claims**



The brake is singly activated and comprises a dead-side housing member and a live-side housing member mounted in confronting abutting relation, the live-side housing member being floatably mounted by a pair of slide joints defined by a pair of round head socket cap screws threaded into the housing and extending in slidable relation through a butterfly-shaped mounting bracket. The live-side housing member has a load piston mounted therein, and a live friction block is disposed to be engaged by the load piston. The dead-side housing member has a friction block located stationary within it, and the two housing members are rigidly bolted together to provide a central pocket occupied by the friction blocks which are in spaced parallel relationship to receive a rotary disk mounted to operate in a fixed plane. When the brake is actuated by application of hydraulic pressure on the single load piston, both friction blocks are urged into engagement with opposite sides of the rotating disk. A bias spring mounted outboard of the housings normally reacts between the blocks. The floating mounting of the live-side housing member permits lateral adjustment of the brake to compensate for wear on the friction blocks. A further mechanical actuating means, separate and distinct from the hydraulic actuating means, may be provided for operating the brake in the event of failure of the hydraulic actuating means.

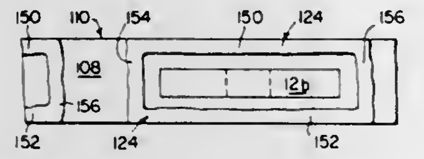
3,530,494
RIBBON OF BANDAGES AND DISPENSER

Vincent J. Baratta, 174 Phelps Lane, North Babylon, N.Y. 11703

Filed Apr. 25, 1968, Ser. No. 723,993

Int. Cl. A61b *19/02;* **B65d** *83/00;* **B65h** *5/28*

U.S. Cl. 206—63.2 **6 Claims**



This invention relates to adhesive bandage strips having a bandage pad secured to an adhesive coating on a surface of the bandage strip and having a backing paper or material to protect the adhesive until the bandage is ready for use, and in particular, this invention contemplates a series of such bandages on a single backing ribbon defined as a carrier ribbon so that each bandage may be easily removed from the carrier ribbon for application. Carrier ribbons may be of indeterminate length, and may be in combination with dispensers particularly adapted for holding the ribbon while a bandage is stripped off. In some forms of the invention, the carrier ribbon is adapted to be coiled spirally about itself and sealed or fastened with a seal around each bandage individually, such seal holding coils of the carrier ribbon together with bandages between them in sterile chambers so that as the leading edge of the carrier ribbon is unreeled, the seal will be broken individually for each separate bandage as desired so that the bandage can be kept sterile until the seal between coiled portions of the carrier ribbon is broken so that the bandage may be stripped off.

3,530,495
UNIVERSAL JOINT CONSTRUCTION

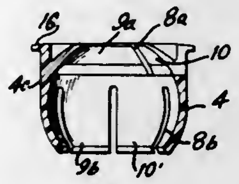
Georg Kindel, Hannover, Germany, assignor to Lemforder Metallwaren AG, Lemforde, Hannover, Germany

Filed Oct. 25, 1968, Ser. No. 770,549

Claims priority, application Germany, Oct. 27, 1967, 1,625,572

Int. Cl. F16c *11/06*

U.S. Cl. 287—87 **1 Claim**



A ball and socket universal joint includes an outer housing which is opened at each end and a hinge pin having a ball portion which is rotatably supported in the housing on a one-piece spherical spring plate or bearing bush. The hinge pin includes a pin portion extending outwardly from the ball head through one end of the housing and the opposite end of the housing is closed by a cover which bears against an upwardly flanged extension of the spring plate within an annular groove formed on the interior bore of the housing directly adjacent this end. The spring plate is generally spherical and has an outer circumference of the housing so that the plate is under some prestressing. The plate extends substantially from one opening of the housing to the other and bears against the ball head surface of the hinge pin. The plate is made of a hard elastic material and is provided with a plurality of slots which extend inwardly from each end and divide each end into a plurality of segments which permit the plate to be sprung into position within the housing.

3,530,496
RECHARGEABLE ALKALINE MANGANESE CELL

Yasuji Amano, Hirakata-shi, Hiromichi Ogawa, Moriguchi-shi, Yoshiyuki Umeo, Kadoma-shi, Tsukasa Ohira, Nara-shi, and Kaoru Murakami, Kadoma-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan, a corporation of Japan

Filed Apr. 16, 1968, Ser. No. 721,750

Claims priority, application Japan, June 26, 1967, 42/41,413

Int. Cl. H01m *43/02*

U.S. Cl. 136—30 **5 Claims**

A rechargeable alkaline manganese cell comprising a positive electrode mainly of manganese dioxide, a negative electrode having a discharge capacity less than that capable of reversing the positive electrode, a separator

between the positive and negative electrode, and an alkaline electrolyte; neither timer nor monitor for discharge voltage being required and the discharge being automatically limited when the discharge capacity of a negative electrode is entirely consumed.

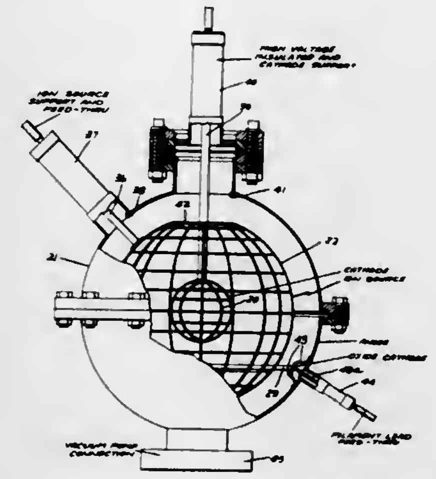
3,530,497
APPARATUS FOR GENERATING FUSION REACTIONS

Robert L. Hirsch and Gene A. Meeks, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware

Filed Apr. 24, 1968, Ser. No. 723,825

Int. Cl. G21b

U.S. Cl. 176—1 **9 Claims**



A generally spherical or cylindrical anode has concentrically positioned therein an ion-source grid and a cathode, both generally spherical or cylindrical and permeable to charged particle flow. The grid is interposed between the anode and cathode, and the cathode is hollow, defining a volume centrally located with respect to all three of the anode, grid and cathode electrodes. This volume is free of tangible structure. A fusion-reacting gas is contained within the volume. A voltage is applied to the three electrodes for establishing a first electric field in the space between the anode and grid and a second electric field in the space between the grid and the cathode. The ion-source grid is at a positive potential with respect to both the anode and cathode. The second electric field is of sufficient magnitude to impart fusion-reacting energies to particles of positive charge introduced into the second space. A thermionic cathode is positioned in the first space between the anode and grid.

3,530,498
ANTIFUNGAL USE OF ORGANOTIN COMPOUNDS

Tatsuo Katsumura, Suita-shi, Yohei Kawakami, Takatsuki-shi, and Hiroshi Tsuji, Kishiwada-shi, Japan, assignors to Nitto Chemical Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Original application Aug. 31, 1964, Ser. No. 393,343, now Patent No. 3,441,580, dated Apr. 29, 1969. Divided and this application Mar. 4, 1968, Ser. No. 730,966

Claims priority, application Japan, Aug. 31, 1963, 38/45,525

Int. Cl. A01n *9/00*

U.S. Cl. 424—288 **3 Claims**

A process is provided for inhibiting the growth on human apparel of fungi and odors due thereto by applying to the locus of the perspiration a compound of the formula $R_3SnO(CH_2CH_2O)_mCH_2CH_2OSnR_3$ wherein R is selected from the group consisting of propyl and butyl, and *m* is an integer greater than 5.

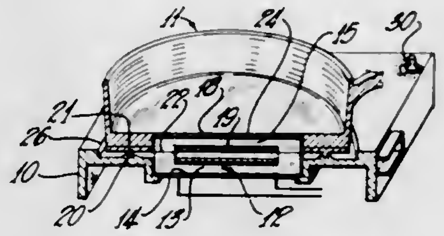
3,530,499
ELECTRICALLY HEATED APPLIANCE UNIT

Charles F. Schroeder, 2317 Valleybrook Drive, Toledo, Ohio 43615

Continuation of application Ser. No. 618,785, Feb. 27, 1967. This application Sept. 29, 1969, Ser. No. 863,679

Int. Cl. H05b *1/02, 5/00*

U.S. Cl. 219—10.49 **9 Claims**



An electrically heated appliance unit heated by a short circuited secondary about a magnetic core passing therethrough. Electrical energization of the magnetic core for the appliance is accomplished on a portion of the magnetic circuit physically separable from the appliance. The appliance is adapted to being controlled in temperature by a communicating temperature sensing element interconnected with preadjustable controls regulating the energy imparted to the magnetic circuit. Features of the construction are rapid heating of the unit, no need for electrical connections to the appliance, and adaptability of the appliance to liquid immersibility for cleaning purposes.

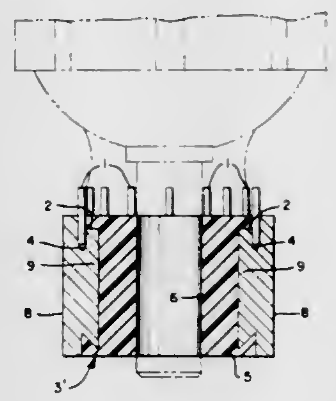
3,530,500
CONTACT FORMING BETWEEN END PORTIONS OF THE ARMATURE WINDING AND THE COMMUTATOR OF A DYNAMOELECTRIC MACHINE

Knut Jensen, Karl-Marx-Stadt, Germany, assignor to Zentrallaboratorium Elektrogerate der Vereinigung Volkseigener Betriebe Elektrogerate, Karl-Marx-Stadt, Germany

Filed July 1, 1968, Ser. No. 741,486

Int. Cl. H01r *39/32*

U.S. Cl. 310—234 **8 Claims**



In a dynamoelectric machine, the end turns of the armature windings are connected to the commutator by connecting elements which, in order to lessen the effect of centrifugal forces on them, are tight-fitted in a recess formed in respective segments in the face of the commutator body and extend axially away from the latter. The commutator has a moulded center portion with an axial opening therein, such center portion partly surrounding the tight-fitted connecting elements to further secure them in position. In another embodiment the connecting elements are turned radially from their initial axial position and extend through radial slots in the commutator. To improve the connection between the commutator segments and the connecting elements, a conducting emulsion can be placed in the recess.

3,530,501

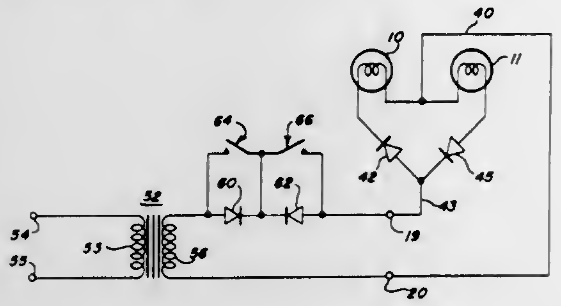
PLURAL VISUAL INDICATOR ASSEMBLY ENERGIZABLE THROUGH TWO INPUT TERMINALS

Peter J. Van Benschoten, Rancho Santa Fe, Calif., assignor to Oak Electro/Netics Corp., a corporation of Delaware

Filed Dec. 11, 1968, Ser. No. 782,972

Int. Cl. H01j *1/60*

U.S. Cl. 315—129 **6 Claims**



Two lamps are mounted within a lamp socket assembly having a single pair of electrical input terminals. A pair of diodes connected between the terminals and the lamps permit selective energization of the lamps with DC voltage, and simultaneous energization with AC voltage connected to the terminals. A power source selectively supplies DC voltage of either polarity or AC voltage to the terminals.

3,530,502

CAPACITOR POTENTIAL DEVICE

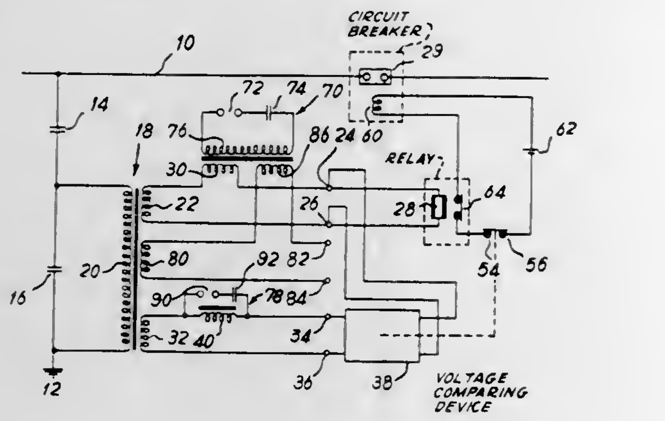
Jun Nishidai, Kyoto, Japan, assignor to Nissin Electric Co., Ltd., Kyoto, Japan, a company of Japan

Filed Dec. 5, 1967, Ser. No. 688,254

Claims priority, application Japan, Dec. 9, 1966, 41/80,818

Int. Cl. H02h *7/16*

U.S. Cl. 317—12 **8 Claims**



A capacitor potential device for distinguishing between fault conditions in a high voltage system line and fault conditions in the secondary circuit of the device itself, to which various burdens (loads) are connected. The device includes a transformer with its primary winding capacitively coupled to the system line and having two or more secondary windings provided with reactors connected across each. The voltage across one of the secondary windings is applied to a burden or load. Means are provided for comparing the voltages induced in the secondary windings and providing a first indication when a fault condition occurs in the system line causing a first relationship between the secondary voltages, and providing a second indication when a fault condition occurs in the secondary circuit itself causing a second relationship between the secondary voltages. The resulting indications or signals are utilized to monitor faults in the system line or in the secondary circuit, and the former can be used to operate a circuit breaker in the system line.

3,530,503

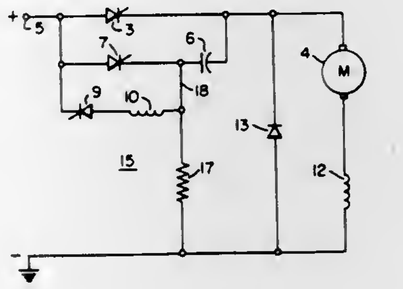
SOLID STATE CHOPPER FOR CONTROLLING LOAD CURRENT

Hendrik C. Appelo, Monroeville, and Brian R. Slattery, Turtle Creek, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 26, 1968, Ser. No. 740,183

Int. Cl. H02p *5/16*

U.S. Cl. 318—301 **7 Claims**



A solid state or static chopper circuit for a traction motor in which a commutating capacitor is connected between the cathodes of main and turn-off thyristors and to ground by a simple resistor to maintain a reverse or turn-off charge on said capacitor during extended "on" times of the main thyristor.

3,530,504

CAPACITIVE COUPLING TYPE HIGH FREQUENCY SWITCH

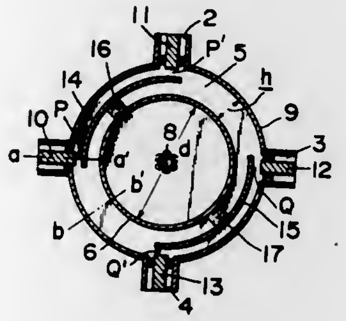
Yoshihiro Konishi, Sagamihara, Japan, assignor to Japan Broadcasting Corporation, Tokyo, Japan

Filed Oct. 9, 1968, Ser. No. 766,272

Claims priority, application Japan, Oct. 20, 1967, 42/67,180

Int. Cl. H03h *7/02;* **H01p** *5/12, 1/10*

U.S. Cl. 333—1 **9 Claims**



A capacitive coupling type high frequency switch applicable as a high power switch in VHF or UHF having excellent cutoff characteristics, in which the switch comprises a ring shaped wave guide of a shape having the cutoff region including the frequency of the wave to be switched, and a plurality of coaxial type signal terminals arranged in rotational symmetry. The terminals to be connected are capacitively coupled via a conductor arranged to move at the inside of the wave guide. In this switching condition, the transmission paths of the electromagnetic waves between the terminals which should not be connected, are made as a cutoff region for the frequencies of the waves to be switched.

3,530,505

CARTRIDGE FUSE HAVING COMPOSITE FUSE LINK INCLUDING RIBBON SECTIONS AND WIRE SECTIONS

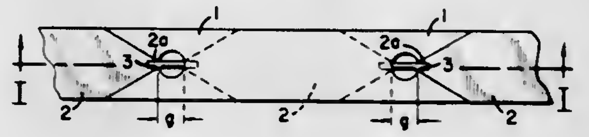
Erwin Salzer, Waban, Mass., assignor to The Chase-Shawmut Company, Newburyport, Mass.

Filed May 23, 1969, Ser. No. 827,325

Int. Cl. H01h *85/08*

U.S. Cl. 337—159 **6 Claims**

A cartridge fuse has a fuse link capable on controlling effectively and precisely the maximum arc voltage occurring incident to interruption as well as imparting to the arc voltage a high degree of stability. The fusible element or fuse link of the fuse includes alternating wire sections and ribbon sections both supported on an insulating support. The ribbon sections decrease progressively in width at the ends thereof adjacent the wire sections and have their smallest width at points of overlap of the ribbon sections by the wire sections, and the ribbon sections have a thickness less than the diameter of the wire sections.



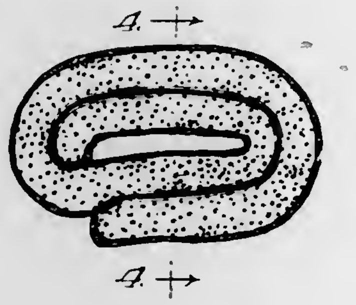
DESIGNS

SEPTEMBER 22, 1970

218,726
SNACK FOOD PRODUCT OR THE LIKE

William E. La Mothe and Gertrude Le Ann Borchers, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware
Filed Jan. 29, 1969, Ser. No. 15,555
Term of patent 14 years
Int. Cl. D1—*01*

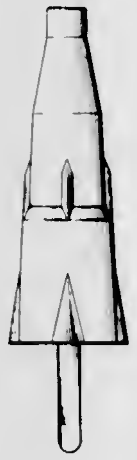
U.S. Cl. D1—13



218,727
FROZEN CONFECTION OR SIMILAR ARTICLE

Courtland D. Ferguson, 8100 Hampden Lane, Bethesda, Md. 20014
Filed Sept. 8, 1969, Ser. No. 19,059
Term of patent 14 years
Int. Cl. D1—*02*

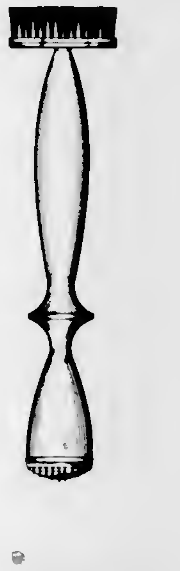
U.S. Cl. D1—22



218,728
COMBINED POKER AND BRUSH FOR A GARBAGE DISPOSER

Jean N. Busse, 113 Windward Island, Clearwater, Fla. 33515
Filed Oct. 13, 1969, Ser. No. 19,519
Term of patent 14 years
Int. Cl. D4—*01*

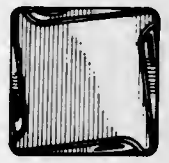
U.S. Cl. D4—6



218,729
POCKET KNIFE OR SIMILAR ARTICLE

Clayton A. Laughlin, Minneapolis, Minn., assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 20, 1968, Ser. No. 13,640
Term of patent 14 years
Int. Cl. D8—*02*

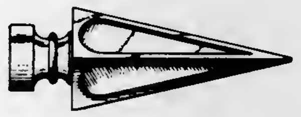
U.S. Cl. D8—99



218,730
DRAPERY ROD FINIAL

Albert C. Nelson, Wallingford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Jan. 6, 1969, Ser. No. 15,227
Term of patent 14 years
Int. Cl. D8—*03*

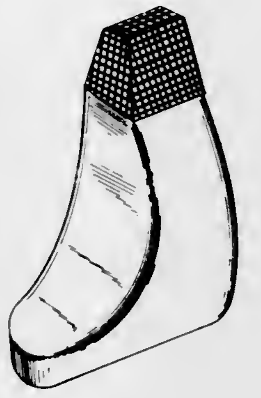
U.S. Cl. D8—211



218,731
BOTTLE

Kathleen Eisermann, Warren, Ohio, assignor to Andrew Matyas, Warren, Ohio
Filed May 13, 1969, Ser. No. 17,139
Term of patent 14 years
Int. Cl. D9—*01*

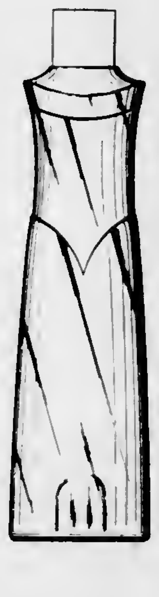
U.S. Cl. D9—63



218,732
COMBINED BOTTLE AND CAP THEREFOR

Livingston C. Douglas, Leonia, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed May 23, 1969, Ser. No. 17,292
Term of patent 14 years
Int. Cl. D9—*01*

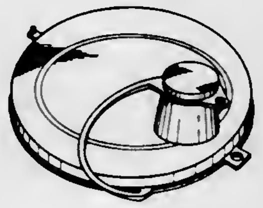
U.S. Cl. D9—117



218,733
COMBINED CAN COVER AND CLOSABLE POURING SPOUT

Peter Innvar, Melville, Michael Loos, Oakdale, and John B. Nicholson, West Islip, N.Y. (all % 26 Grand Ave., Farmingdale, N.Y. 11735)
Filed Dec. 27, 1968, Ser. No. 15,130
Term of patent 14 years
Int. Cl. D9—*02*

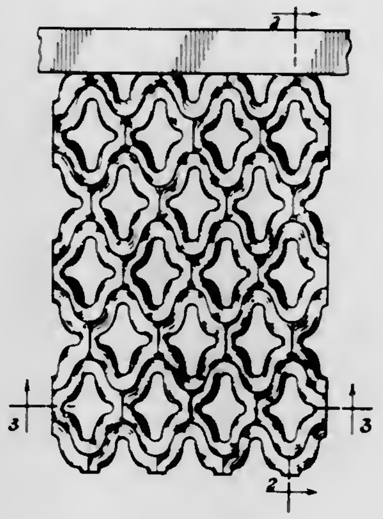
U.S. Cl. D9—275



218,734
GRILLE

Robert T. Bogan, Jr., 3620 High St. NE., Albuquerque, N. Mex. 87107
Original design application Oct. 17, 1968, Ser. No. 14,032, now Patent No. 216,463, dated Jan. 13, 1970. Divided and this application June 2, 1969, Ser. No. 17,859
Term of patent 14 years
Int. Cl. D25—*01*

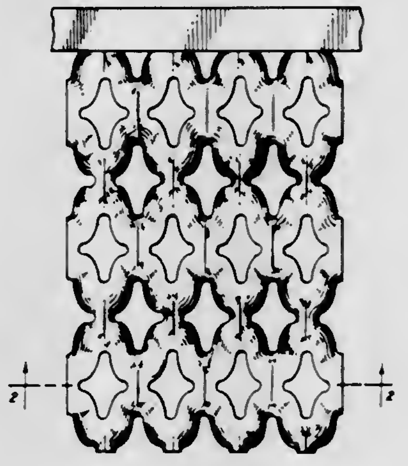
U.S. Cl. D13—1



218,735
GRILLE

Robert T. Bogan, Jr., 3620 High St. NE, Albuquerque, N. Mex. 87107
Original design application Oct. 17, 1968, Ser. No. 14,032, now Patent No. 216,463, dated Jan. 13, 1970. Divided and this application June 16, 1969, Ser. No. 18,582
Term of patent 14 years
Int. Cl. D25—*01*

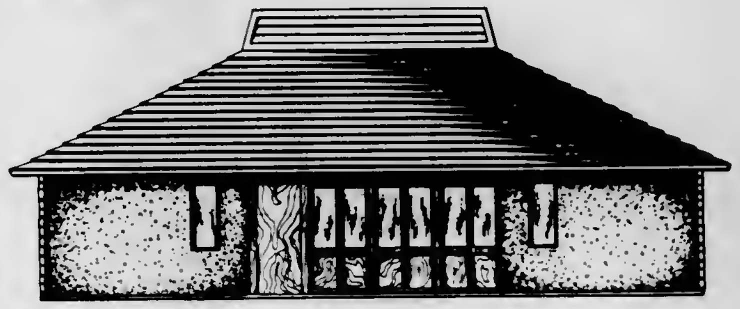
U.S. Cl. D13—1



218,736
HOUSE

Delp Waldo Johnson, 240 Oakview Drive, San Carlos, Calif. 94070
Filed Oct. 3, 1969, Ser. No. 19,409
Term of patent 14 years
Int. Cl. D25—*04*

U.S. Cl. D13—1

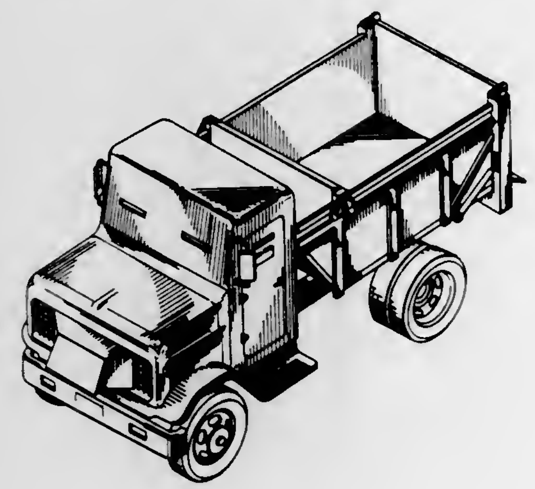


218,737
ARMORED SAND DISPENSING VEHICLE

Marcus J. Dill, Dallas, Tex., assignor to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware

Filed May 16, 1969, Ser. No. 17,184
Term of patent 14 years
Int. Cl. D12—*09*

U.S. Cl. D14—3

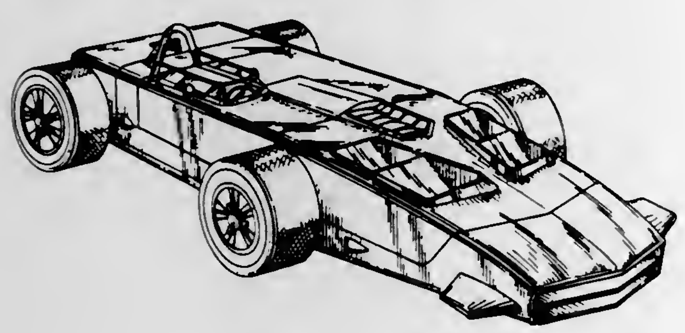


218,738
RACER AUTOMOBILE

William A. Moore and Robert E. Davids, Reno, Nev., assignors to Lear Motors Corporation, Reno, Nev., a corporation of Delaware

Filed July 29, 1969, Ser. No. 18,446
Term of patent 14 years
Int. Cl. D12—*08*

U.S. Cl. D14—3

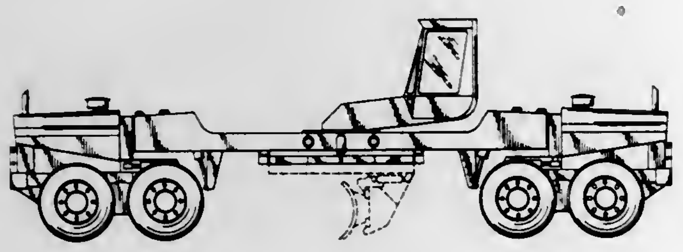


218,739
MOTOR-GRADER MACHINE OR THE LIKE

George W. Swisher, Jr., and Gordon L. Spivey, Oklahoma City, and Don W. Smith, Edmond, Okla., assignors to CMI Corp., Oklahoma City, Okla., a corporation of Oklahoma

Filed Jan. 9, 1969, Ser. No. 15,270
Term of patent 14 years
Int. Cl. D12—*09*

U.S. Cl. D14—3

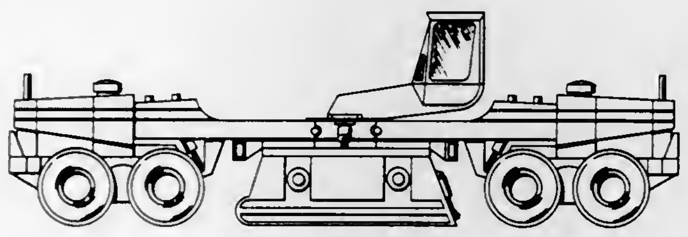


218,740
ROADWAY STABILIZER MACHINE OR THE LIKE

George W. Swisher, Jr., Oklahoma City, Don W. Smith, Edmond, and Gordon L. Spivey, Oklahoma City, Okla., assignors to CMI Corp., Oklahoma City, Okla., a corporation of Oklahoma

Filed Mar. 27, 1969, Ser. No. 16,490
Term of patent 14 years
Int. Cl. D12—*09*

U.S. Cl. D14—3

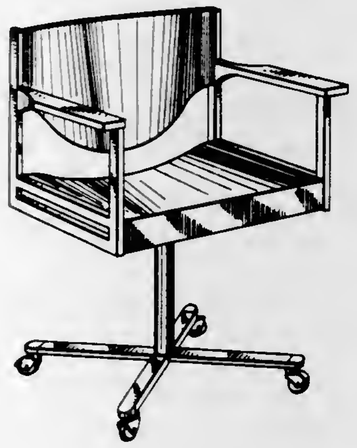


218,741
CHAIR

Walter Müller, Feldbach, and Franz Hero and Karl Odermatt, Uetikon, Switzerland, assignors to Lubke K.G., Rheda, Westphalia, Germany, a corporation of Germany

Filed Aug. 21, 1968, Ser. No. 13,220
Claims priority, application Germany Mar. 27, 1968
Term of patent 7 years
Int. Cl. D6—*01*

U.S. Cl. D15—1

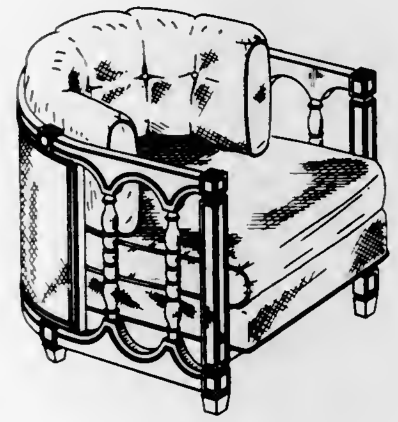


218,742
CHAIR

Morris F. Fisher, 9820 Deerfield Circle, Carmel, Ind. 46032

Filed Oct. 27, 1969, Ser. No. 19,723
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1

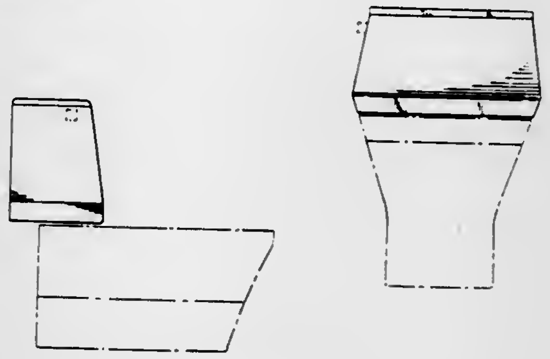


218,743
WATER CLOSET TANK

Burton Harvey, Mansfield, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed May 23, 1969, Ser. No. 17,315
Term of patent 14 years
Int. Cl. D23—*02*

U.S. Cl. D23—66

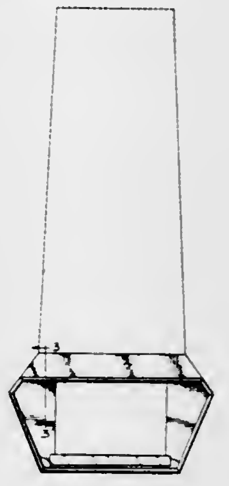


218,744
FIREPLACE

Dannie O. Malafouris, 7945 NE. Alberta, Portland, Oreg. 97218

Filed Dec. 4, 1968, Ser. No. 14,786
Term of patent 14 years
Int. Cl. D23—*03*

U.S. Cl. D23—97

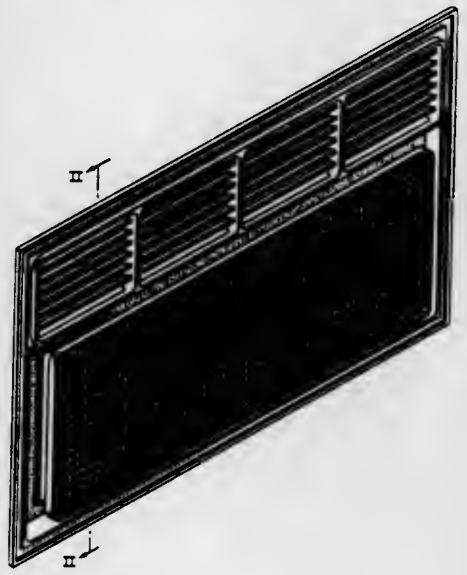


218,745
ROOM AIR CONDITIONER FRONT PANEL

Wallace H. Appel and Clarence F. Graser, Columbus, Ohio, assignors to Westinghouse Electric Corporation, a corporation of Pennsylvania

Filed Sept. 15, 1969, Ser. No. 19,151
Term of patent 14 years
Int. Cl. D23—*04*

U.S. Cl. D23—141

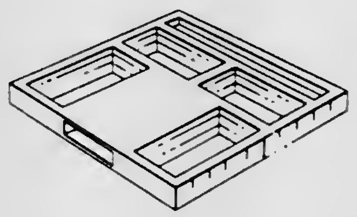


218,746
BASE PLATE FOR A DENTAL ARTICULATOR

Graham Peter Rabey, "Greenbanks" Trout Rise, Loudwater, Hertfordshire, England

Filed Aug. 29, 1969, Ser. No. 18,927
Term of patent 14 years
Claims priority, application Great Britain Mar. 3, 1969
Int. Cl. D24—*01*

U.S. Cl. D24—1

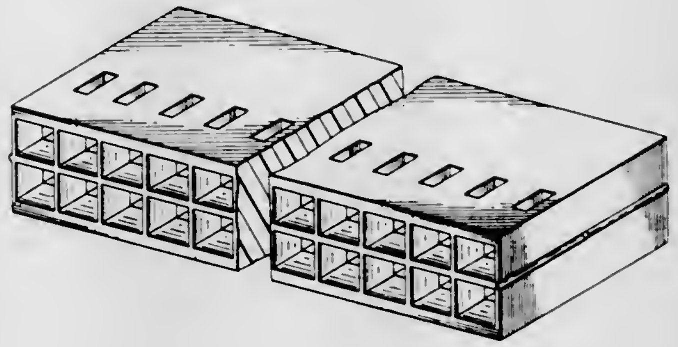


218,747
CONNECTOR BLOCK

Benny Morris Bennett, Harrisburg, and Linn Stephen Lightner, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 19, 1968, Ser. No. 14,527
Term of patent 14 years
Int. Cl. D13—*03*

U.S. Cl. D26—1

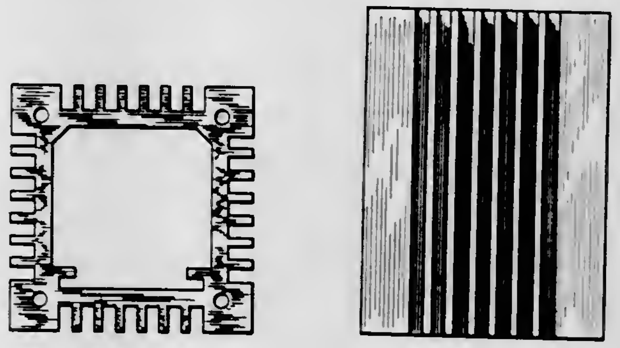


218,748
COMBINED HEAT SINK AND HOUSING FOR A SOLID STATE DEVICE

Gerald R. Ritzow, Racine, Rudolph J. Santo, Mequon, and Eugene R. Schmit, Elm Grove, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed May 26, 1969, Ser. No. 17,331
Term of patent 14 years
Int. Cl. D13—*99*

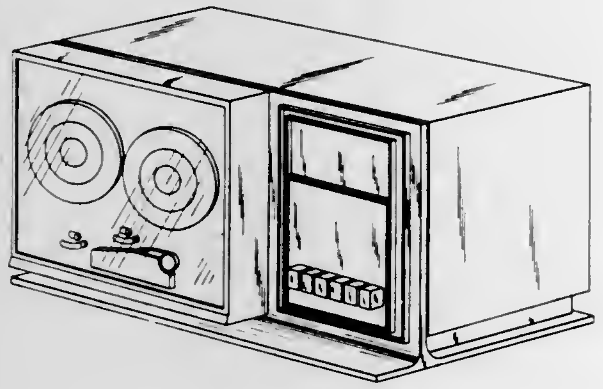
U.S. Cl. D26—1



218,749
DATA RECORDING CONSOLE

Frank Dekker, San Diego, Calif., assignor to Data Science Corporation, San Diego, Calif.
Filed June 23, 1969, Ser. No. 17,824
Term of patent 7 years
Int. Cl. D14—*02*

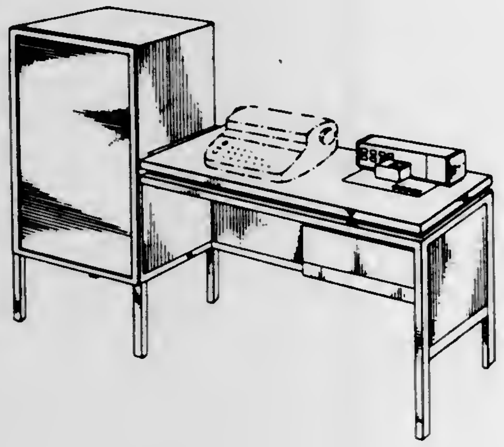
U.S. Cl. D26—5



218,750
DATA PROCESSING CONSOLE

Clarence D. Zierhut, Granada Hills, Calif., assignor to Data Instrument Company, a corporation of California
Filed July 9, 1969, Ser. No. 18,124
Term of patent 14 years
Int. Cl. D14—*02*

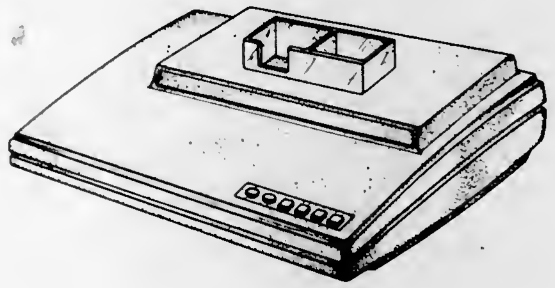
U.S. Cl. D26—5



218,751
AUTOMATIC CASSETTE PROCESSOR

Clarence D. Zierhut, Granada Hills, Calif., assignor to Data Instrument Company, Sepulveda, Calif., a corporation of California
Filed July 9, 1969, Ser. No. 18,119
Term of patent 14 years
Int. Cl. D14—*01*

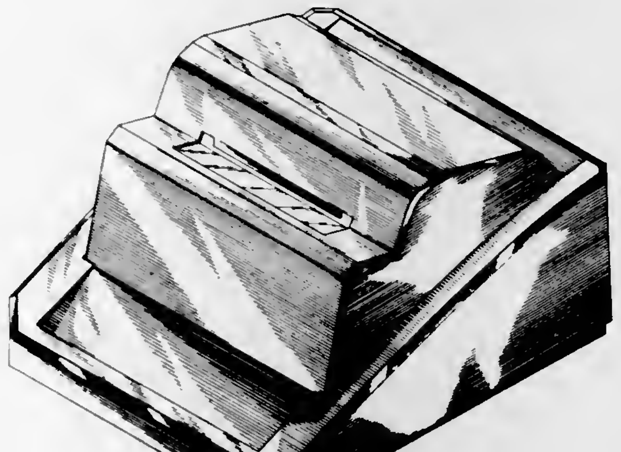
U.S. Cl. D26—14



218,752
ACOUSTICAL COVER FOR A TELETYPE MACHINE

Frederick M. Ingram, Bethlehem, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 17, 1969, Ser. No. 15,808
Term of patent 14 years
Int. Cl. D14—*03*

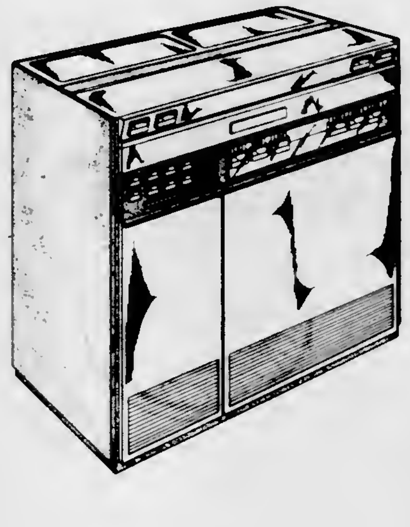
U.S. Cl. D26—14



218,753
TRANSMITTER

Darrel A. Lauer, San Mateo, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 16, 1969, Ser. No. 17,712
Term of patent 14 years
Int. Cl. D14—*04*

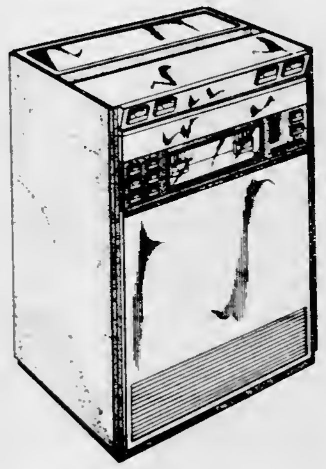
U.S. Cl. D26—14



218,754
TRANSMITTER

Darrel A. Lauer, San Mateo, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed June 16, 1969, Ser. No. 17,733
Term of patent 14 years
Int. Cl. D14—*04*

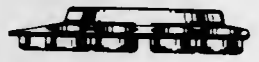
U.S. Cl. D26—14

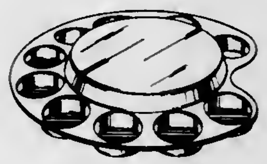


218,755
TELEPHONE DIAL ADVERTISING DEVICE

Robert A. Bennett, Shelton, Conn., assignor to Peter D. Chapdelaine, Newtown, Conn.
Filed June 24, 1969, Ser. No. 17,856
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D26—14

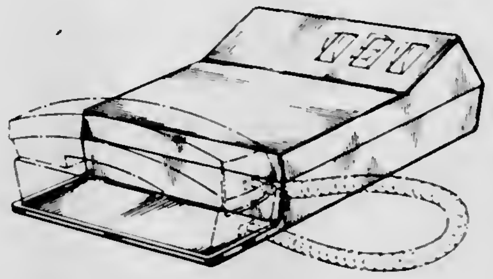




218,756
HOUSING FOR TELEPHONE ANSWERING DEVICE

Joseph B. Federico, Rochester, N.Y., assignor to Ford Industries, Inc., Portland, Oreg., a corporation of Washington
Filed Sept. 4, 1969, Ser. No. 19,014
Term of patent 14 years
Int. Cl. D14—*03*

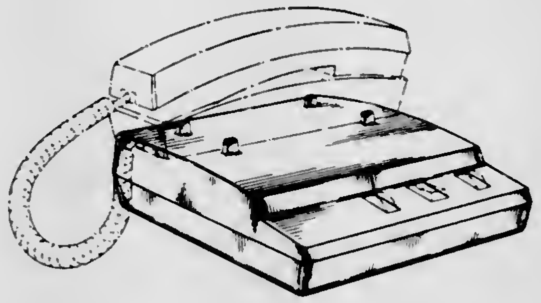
U.S. Cl. D26—14



218,757
HOUSING FOR TELEPHONE ANSWERING DEVICE

Joseph B. Federico, Rochester, N.Y., assignor to Ford Industries, Inc., Portland, Oreg., a corporation of Washington
Filed Sept. 4, 1969, Ser. No. 19,007
Term of patent 14 years
Int. Cl. D14—*03*

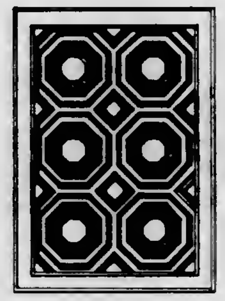
U.S. Cl. D26—14



218,758
DECORATIVE PANEL FOR FURNITURE OR THE LIKE

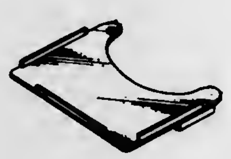
Huey T. Keller, High Point, N.C., assignor to Empire Furniture Corporation, Johnson City, Tenn., a corporation of Virginia
Filed Oct. 18, 1968, Ser. No. 14,053
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—1



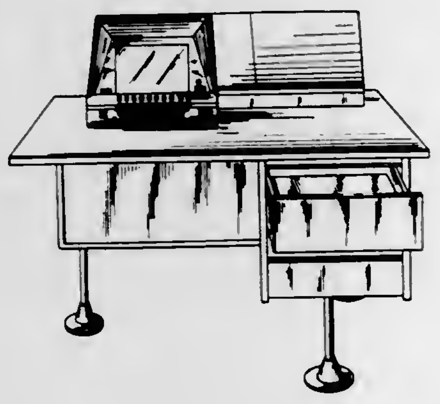
218,759
ATTACHMENT TRAY FOR A WHEELCHAIR

Harry Foster, P.O. Box 2056, San Rafael, Calif. 94902
Filed Feb. 5, 1969, Ser. No. 15,657
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—3



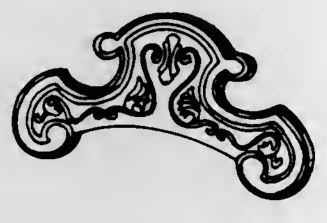
218,760
DESK FOR AUDIOVISUAL TEACHING

Miroslav Jelinek, Prague, Eva Turnovska, Ehrineves, and Jeronym Komurka, Oldrich Vanicek, Bretislav Stejskal, Petr Vlach, and Vladimir Stepan, Prague, Czechoslovakia, assignors to Tesla narodni podnik, Prague, Czechoslovakia, a national corporation of Czechoslovakia
Filed July 29, 1968, Ser. No. 12,955
Claims priority, application Czechoslovakia Jan. 31, 1968
Term of patent 7 years
Int. Cl. D6—*01*
U.S. Cl. D33—7



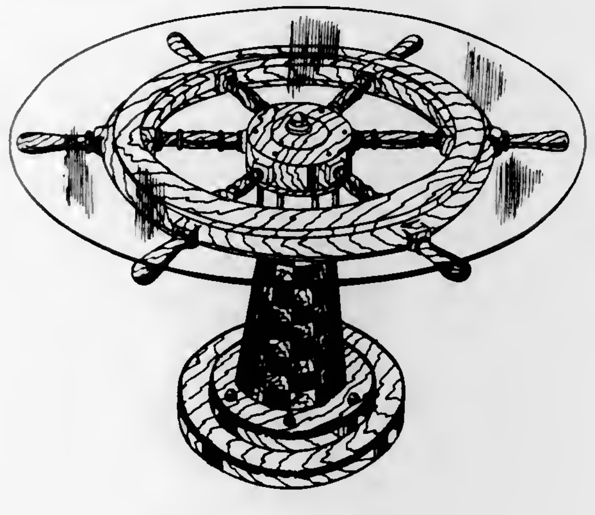
218,761
DECORATIVE ORNAMENT FOR A MIRROR OR THE LIKE

Huey T. Keller, High Point, N.C., assignor to Empire Furniture Corporation, Johnson City, Tenn., a corporation of Virginia
Filed Oct. 18, 1968, Ser. No. 14,054
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—9



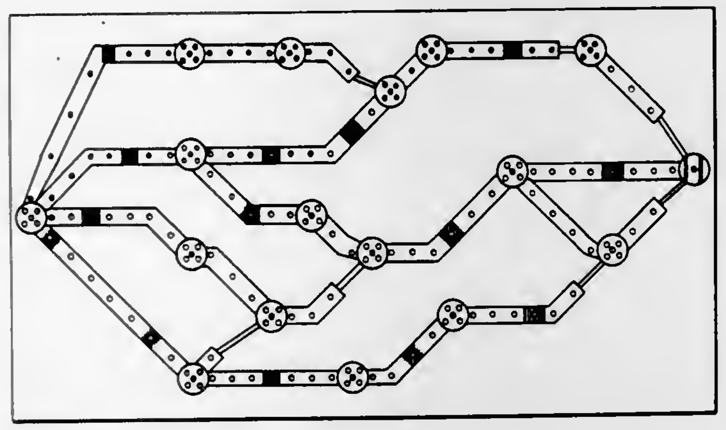
218,762
TABLE OR SIMILAR ARTICLE

William A. Neumann, 160—20 95th St., Howard Beach, N.Y. 11414
Filed Oct. 31, 1969, Ser. No. 19,867
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—14



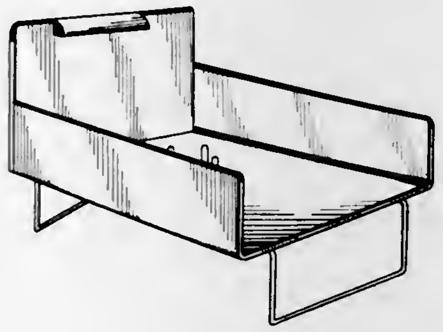
218,763
GAMEBOARD

Kenneth F. Smith, 4517 Twinbrook Road, Fairfax, Va. 22030
Filed Apr. 1, 1969, Ser. No. 16,534
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



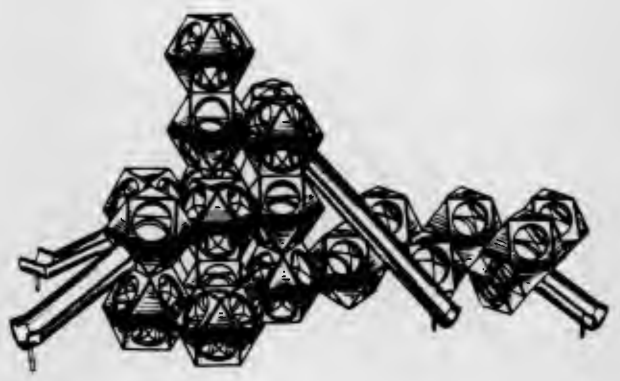
218,764
GAME TARGET

Adolph Abraham, 1357 Barry Ave., Chicago, Ill.
Filed Apr. 14, 1969, Ser. No. 16,745
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



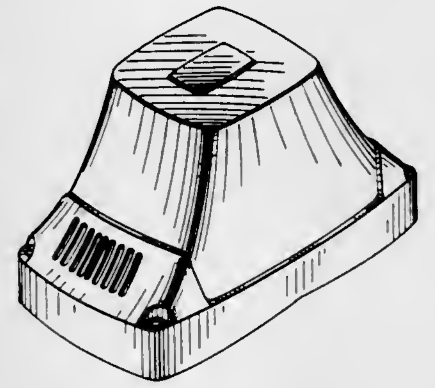
218,765
COMBINED PLAYGROUND CLIMBER AND SLIDE

Richard Dattner, New York, N.Y., assignor to Playstreet, Inc., New York, N.Y., a corporation of New York
Filed July 22, 1969, Ser. No. 18,312
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



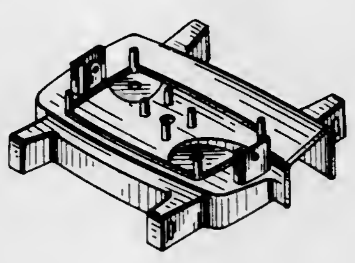
218,766
MOTOR SHROUD FOR ELECTRIC MOWER

Alexander B. Musichuk, Parma, Ohio, assignor to MTD Products Inc., a corporation of Ohio
Filed June 5, 1969, Ser. No. 17,524
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



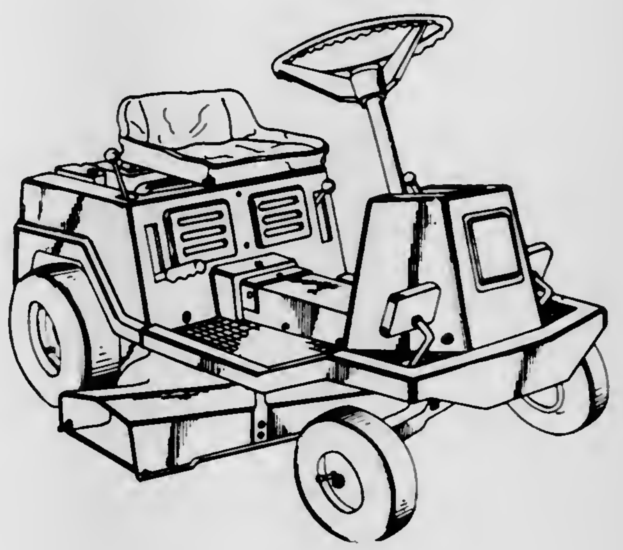
218,767
BLADE HOUSING FOR LAWN MOWER

Roy Paul Hess, Cleveland Heights, Ohio, assignor to MTD Products Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 13, 1969, Ser. No. 17,699
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



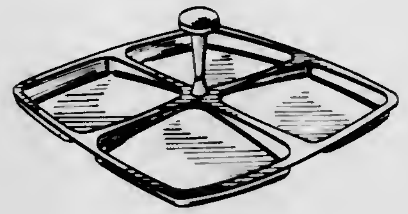
218,768
RIDING-TYPE POWER LAWN MOWER

Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Sept. 10, 1969, Ser. No. 19,083
Term of patent 14 years
Int. Cl. D8—*01*
U.S. Cl. D40—1



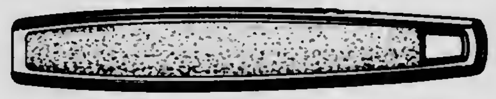
218,769
SERVER OR THE LIKE

Alwin J. Stahel, New Brighton, Minn., assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois
Filed June 18, 1969, Ser. No. 17,759
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



218,770
HANDLE FOR CULINARY TOOL

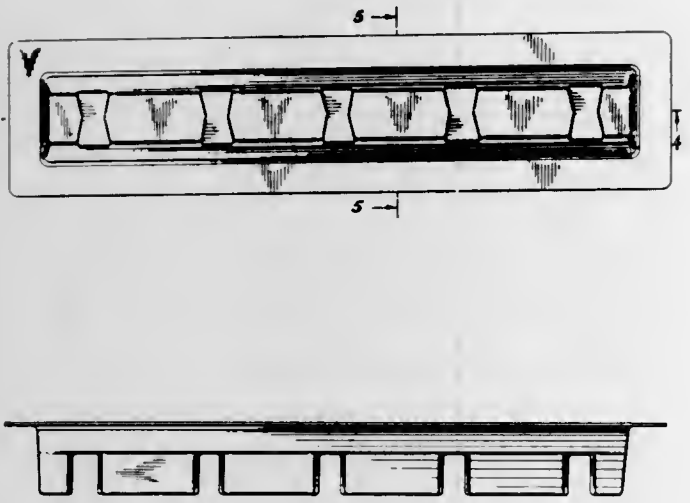
Roger L. Kelly, Arlington Heights, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 8, 1969, Ser. No. 19,467
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—29



218,771
HOLDER FOR BRUSHES OR THE LIKE

Pincus J. Harris, Rye, Port Chester, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Oct. 20, 1969, Ser. No. 19,632
Term of patent 14 years
Int. Cl. D7—*99*

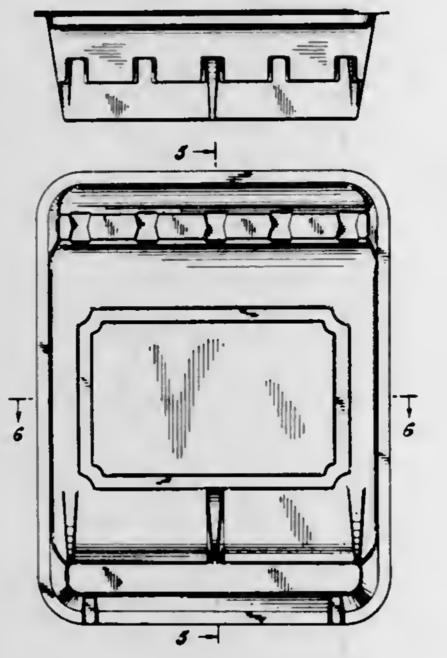
U.S. Cl. D44—29



218,772
HOLDER FOR BRUSHES OR THE LIKE

Pincus J. Harris, Rye, Port Chester, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Oct. 20, 1969, Ser. No. 19,633
Term of patent 14 years
Int. Cl. D7—*99*

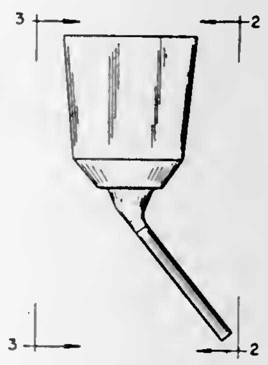
U.S. Cl. D44—29



218,773
FUNNEL

Kenneth O. Sitts, Warren, Mich. 48093
Filed Nov. 24, 1969, Ser. No. 20,244
Term of patent 14 years
Int. Cl. D7—*99*

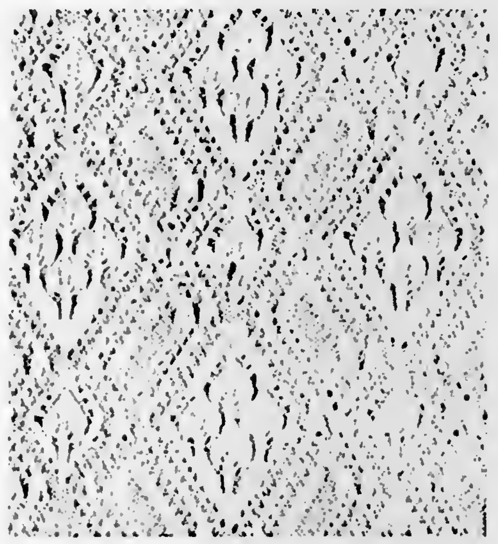
U.S. Cl. D44—29



218,774
KNITTED TEXTILE FABRIC, OR SIMILAR ARTICLE

Robert Hammer, Merrick, N.Y. (℅ Sweater-Bee by Banff, Ltd., 1410 Broadway, New York, N.Y. 10018)
Filed Dec. 16, 1968, Ser. No. 14,969
Term of patent 3½ years
Int. Cl. D5—*02*

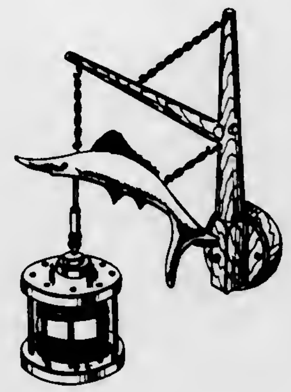
U.S. Cl. D47—2



218,775
LAMP

William A. Neumann, 160—20 95th St., Howard Beach, N.Y. 11414
Filed Oct. 31, 1969, Ser. No. 19,859
Term of patent 14 years
Int. Cl. D26—*02*

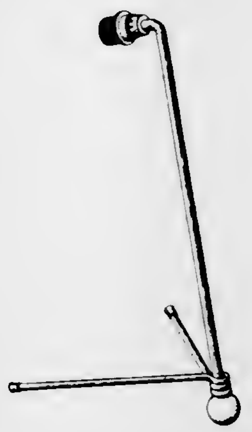
U.S. Cl. D48—4



218,776
LAMP STAND

Edward C. Walker, Woodspeen, Forest Corner, Ringwood, Hampshire, England
Filed June 17, 1969, Ser. No. 17,742
Claims priority, application Great Britain Mar. 10, 1969
Term of patent 14 years
Int. Cl. D26—*02*

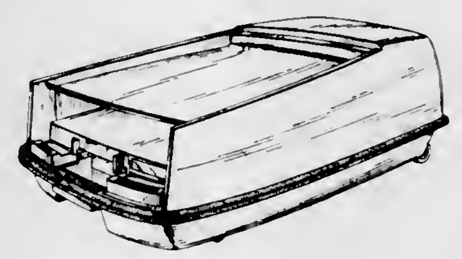
U.S. Cl. D48—20



218,777
CANISTER VACUUM CLEANER OR SIMILAR ARTICLE

George D. La Police, Somerville, and Wayne A. Current, Belleville, N.J., and Craig R. Newburgh, Jamaica, N.Y., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed July 10, 1969, Ser. No. 18,173
Term of patent 14 years
Int. Cl. D15—*07*

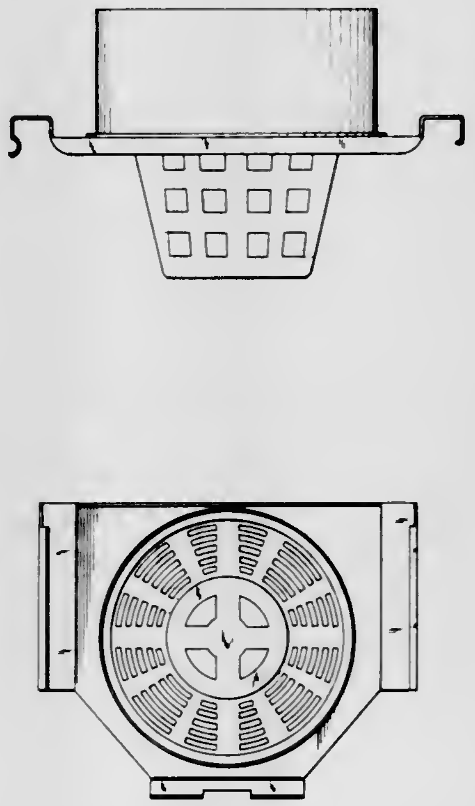
U.S. Cl. D49—14.1



218,778
MOP WRINGER

Juan Gunfaus, Av. J. de Sagrera, S/N., Tarrasa, Barcelona, Spain
Filed Apr. 3, 1969, Ser. No. 16,564
Term of patent 14 years
Int. Cl. D7—*06*

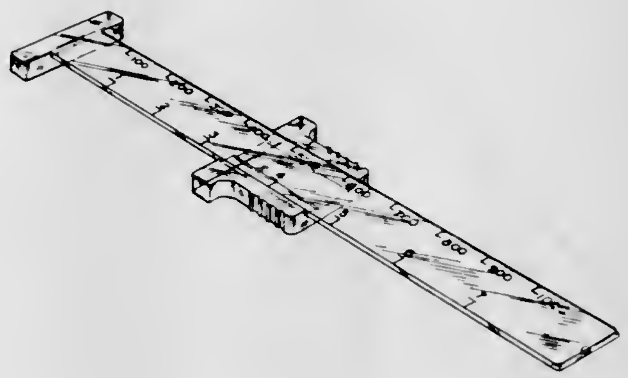
U.S. Cl. D49—29



218,779
PUNCH CARD COUNTING DEVICE

Robert Eugene Nelson, 1832 Fuller Drive, Dallas, Tex. 75228
Filed Jan. 10, 1969, Ser. No. 15,310
Term of patent 14 years
Int. Cl. D10—*08*

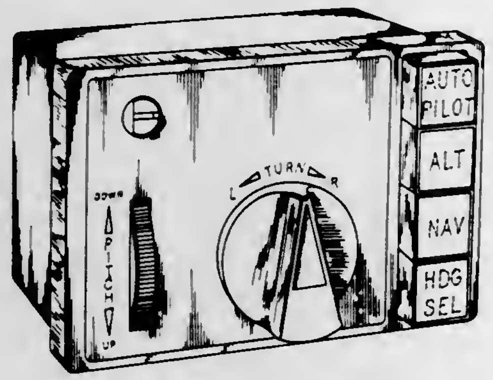
U.S. Cl. D52—6



218,780
AUTOPILOT

Lee J. Vetter, Overland Park, Kans., assignor to King Radio Corporation, a corporation of Kansas
Filed June 26, 1969, Ser. No. 17,900
Term of patent 14 years
Int. Cl. D10—*99*

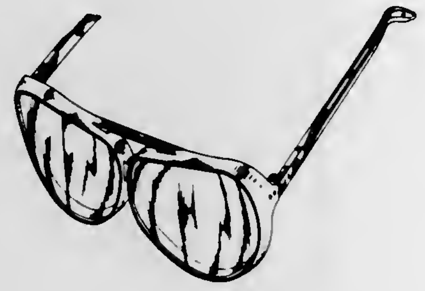
U.S. Cl. D52—6



218,781
PAIR OF SPECTACLES

Jack Bloch, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed July 7, 1969, Ser. No. 18,098
Term of patent 14 years
Int. Cl. D16—*08*

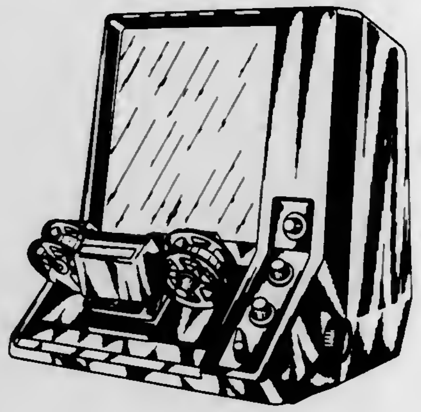
U.S. Cl. D57—1



218,782
PROJECTION VIEWER

Robert E. Kalvitis, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 2, 1969, Ser. No. 17,428
Term of patent 14 years
Int. Cl. D16—*04*

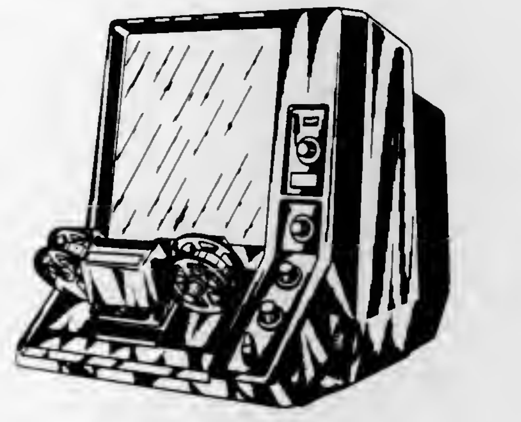
U.S. Cl. D61—1



218,783
COMBINATION FILM VIEWING AND REPRODUCING MACHINE

Robert E. Kalvitis, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 2, 1969, Ser. No. 17,429
Term of patent 14 years
Int. Cl. D16—*99*

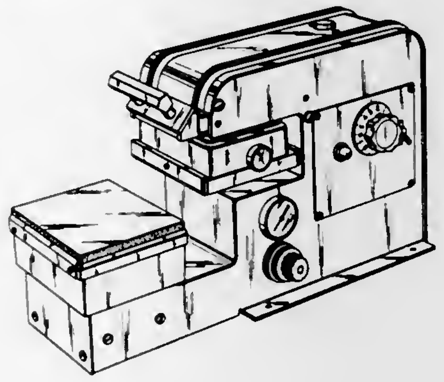
U.S. Cl. D61—1



218,784
PRESS FOR BONDING PLASTIC MATERIAL OR THE LIKE

Theodore R. Finke, Euclid, Ohio, assignor to The Euclid Products Co., Inc., Willoughby, Ohio, a corporation of Ohio
Filed Mar. 28, 1969, Ser. No. 16,501
Term of patent 14 years
Int. Cl. D15—*05*

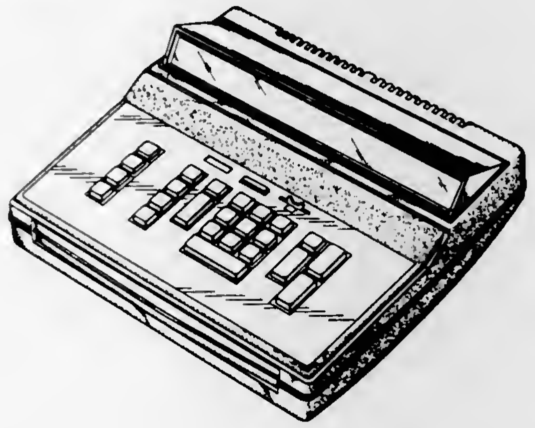
U.S. Cl. D63—1



218,785
CALCULATOR OR SIMILAR ARTICLE

Fred M. Gore, Carrollton, Tex., assignor to NRT Electronics, Inc., Weatherford, Tex., a corporation of Texas
Filed Aug. 21, 1969, Ser. No. 18,796
Term of patent 7 years
Int. Cl. D18—*01*

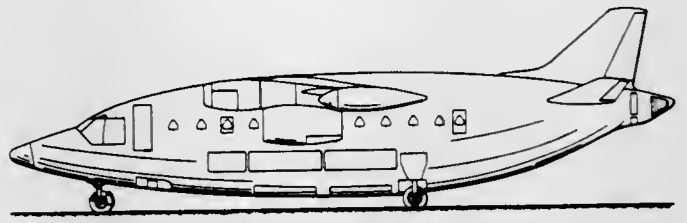
U.S. Cl. D64—11



218,786
VTOL AIRCRAFT

Hans-Luzius Studer, Hamburg, Germany, assignor to Hamburger Flugzeugbau GmbH
Filed Mar. 28, 1969, Ser. No. 16,496
Term of patent 14 years
Int. Cl. D12—*07*

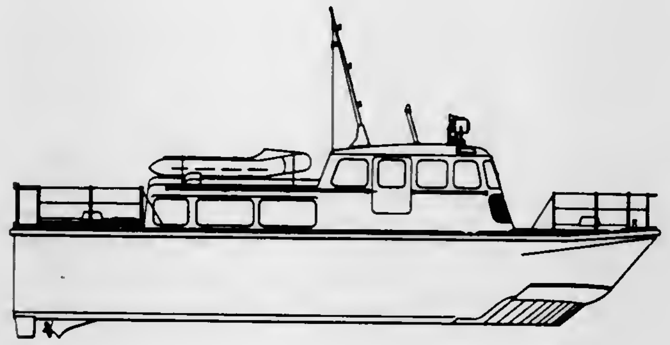
U.S. Cl. D71—1



218,787
AIR-CUSHION VEHICLE

David William Nicholas, Romsey, and Patrick Michael Kidd, Southampton, England, assignors to Hovermarine Limited, Southampton, England, a British company
Filed May 7, 1969, Ser. No. 17,057
Term of patent 14 years
Claims priority, application Great Britain Dec. 16, 1968
Int. Cl. D12—*06*

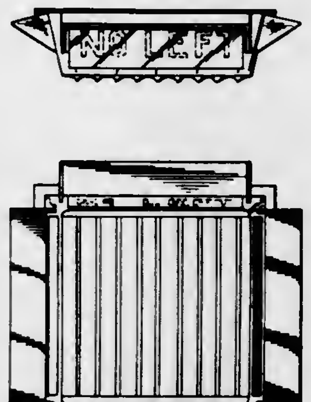
U.S. Cl. D71—1



218,788
HOUSING FOR AN AUTOMOTIVE TRAFFIC SIGNAL

Jack A. Press, Jr., 3590 Rockerman Road, Miami, Fla. 33133
Filed July 1, 1968, Ser. No. 12,566
Term of patent 14 years
Int. Cl. D29—*99*

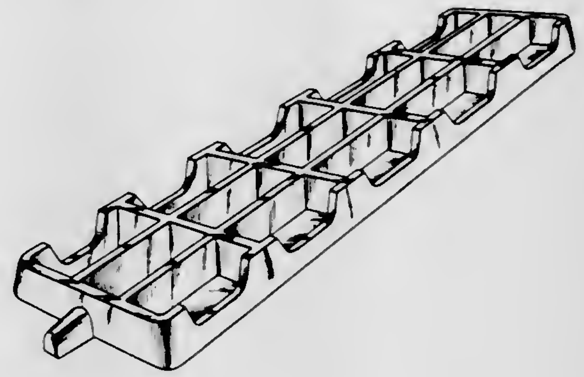
U.S. Cl. D72—1



218,789
DISPLAY TRAY FOR SHOW CASES OR THE LIKE

James C. Ferguson, Roselle Park, N.J., assignor to Fairmont Electronics Inc., Holyoke, Mass.
Filed Mar. 13, 1969, Ser. No. 16,234
Term of patent 14 years
Int. Cl. D6—*01*

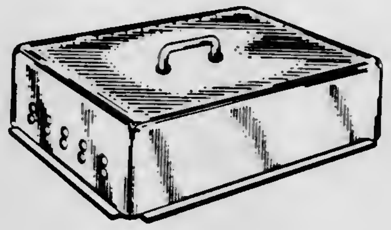
U.S. Cl. D80—9



218,790
COMBINED HEATER AND COVER FOR A STEAM TABLE PAN OR THE LIKE

Billy L. Kennedy, 111 Vine, Yukon, Okla.
Filed Jan. 17, 1969, Ser. No. 15,398
Term of patent 14 years
Int. Cl. D7—*04*

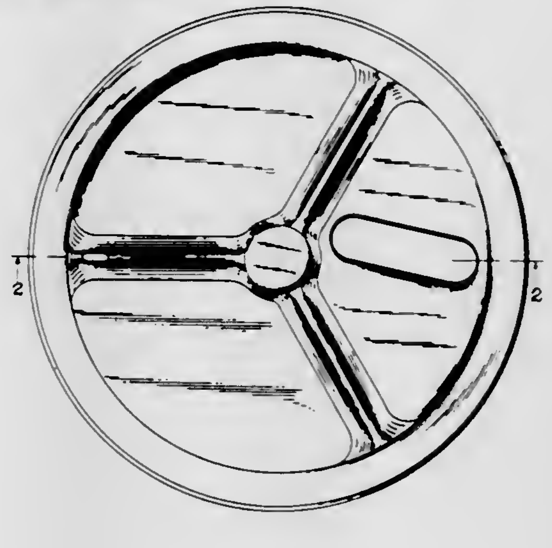
U.S. Cl. D81—10



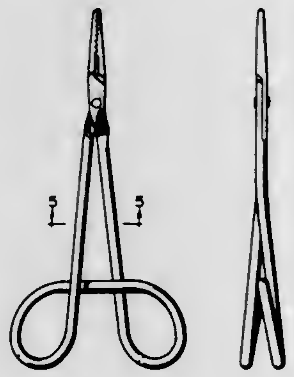
218,791
COMBINATION ADAPTOR RING, BOWL AND SPIDER SUPPORT FOR AN ELECTRIC HEATING ELEMENT

Donald M. Cunningham, Pittsburgh, Pa., assignor to Emerson Electric Co., St. Louis, Mo.
Filed May 19, 1969, Ser. No. 17,224
Term of patent 14 years
Int. Cl. D7—*02*

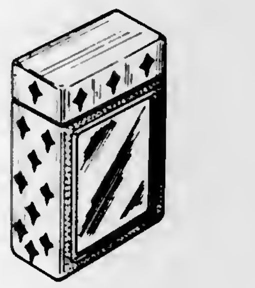
U.S. Cl. D81—25



218,792
HEMOSTAT
Theodore G. Blomberg, 3715 W. 9th St.,
Winthrop Harbor, Ill. 60096
Filed Apr. 30, 1969, Ser. No. 16,959
Term of patent 14 years
Int. Cl. D24—*03*
U.S. Cl. D83—1



218,793
CIGARETTE CASE
Daniel T. Rushlow, 4194 Biddle St.,
Wayne, Mich. 48184
Filed Apr. 14, 1969, Ser. No. 16,739
Term of patent 7 years
Int. Cl. D27—*06*
U.S. Cl. D85—2



LIST OF PATENTEES
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NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Akashi, Tsuneo, Takahashi, Masao, and Ohno, Tomeji, to Nippon Electric Company, Limited. Piezoelectric ceramic composition. 3,530,072, Cl. 252-62.9
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Alburger, James R. Tracer processes employing ultraviolet absorber materials. 3,530,295, Cl. 250-71.
Aldrich, Paul E., and Hermann, Edward C., to Du Pont de Nemours, E. I., and Company. Pharmaceutically active 4-phenylbicyclo[2.2.2]-octane and oct-2-ene-1-carboxamides and derivatives thereof. 3,530,165, Cl. 260-479.
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Andreaggi, Joseph R., to Weston Instruments, Inc. Moving coil instrument having a magnetic detent mechanism. 3,530,380, Cl. 324-132.
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Antell, George Richard, to International Standard Electric Corporation. Method of producing gallium arsenide devices. 3,530,015, Cl. 148-188.
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- Gregory, James T., to Essex International, Inc. Multiple connector. 3,530,424, Cl. 339-91.
- Greif, Norman L., Levy, Sheldon, Perlberg, Willia, and Schwarz, Milton H., to Revlon, Inc. Conditioning hair with quaternized homopolymers. 3,530,215, Cl. 424-70.
- Greiner, Harold Frederic, and Meyer, Walter William, to Sealol, Inc. Shaft seal. 3,529,839, Cl. 277-91.
- Greuter, Andre, and Korum, Arpad, to Gesellschaft zur Forderung der Forschung an der Eidgenossischen Technischen Hochschule. Electrodynamic snap-acting actuator. 3,530,415, Cl. 335-188.
- Gribova, Irina Alexandrovna: *See—*
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- Grimoldi, Ranaldo H., Clarke, James E., Bastian, Alfred F., and Dougherty, Anthony J., to Kaiser Steel Corporation. Method for making channel structure. 3,529,346, Cl. 29-475.
- Grimwood, Geoffrey Luther, to Broadbent, Thomas & Sons Limited. Control for induction motors. 3,530,351, Cl. 318-229.
- Grist, Franklin James, to Miller Electric Manufacturing Co. Adjustable arc welding power supply system. 3,530,359, Cl. 321-5.
- Grosholz, James R., to Air-Shields, Inc. Portable incubator for infants. 3,529,590, Cl. 128-1.
- Grossman, Abraham, to Panascope, Inc., mesne. Fenestration device incorporating linearly movable and tiltable sash. 3,529,381, Cl. 49-183.
- Grove, Newell Clark, to Barber-Colman Company. Method and apparatus for regulating batch-type heat treating units. 3,529,811, Cl. 263-10.
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- Gryctko, Carl E., to I-T-E Imperial Corporation. Circuit breaker stack including auxiliary alarm switch. 3,530,412, Cl. 335-8.
- Gschwandtner, Eric, to Wurlitzer Company, The. Derivative synthesis of musical instrument tones by means of nonlinear transfer function device. 3,530,225, Cl. 84-1.13
- Guerra, Raymond, McElyea, Gerald W., Cullom, John H., and Ley, Gordon S., to Westinghouse Electric Corporation. Light amplifier system. 3,530,388, Cl. 330-4.3
- Guhl, Heinrich, to Transistor A.G. Circuit for regulating the shaft speed of a commutator-type motor. 3,530,352, Cl. 318-327.
- Guim, Raul. Sterilizing device for telephone handsets. 3,530,261, Cl. 179-185.
- Guinet, Paul Alfred Eugene, and Morel, Jean Marius Ernest, to Poulence-Rhone S.A. Organosilicon polymers containing oxyalkylene residues. 3,530,159, Cl. 260-448.2
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- Gunther, Frank A., and Smith, Peter B., to Dynamics Corporation of America. Automatic load control for generator engine sets. 3,530,300, Cl. 307-33.
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- Guye-Vuilleme, Jean-Frederic, and Prusha, George J. Ciba Limited Differential amplifier system. 3,530,132, Cl. 330-69.
- Guyot, Pierre, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Adjustment device for the flow of a liquid propellant into a hypergolic reaction system. 3,529,420, Cl. 60-39.74
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- Hager, Nathaniel E., Jr., to Armstrong Cork Company. . 3,529,473, Cl.
- Hagerty, Charles Du Bois, and Litschi, Gerold, to Grace, W. R., & Co., mesne. Apparatus for storing, supplying and severing. 3,529,504, Cl. 83-464.
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- Haley, Ernest K. Multiple drill spindle shifting mechanism. 3,529,496, Cl. 77-24.
- Hall, George A., Jr., to Westinghouse Electric Corporation. Manual-automatic transfer device for pneumatic control systems. 3,529,802, Cl. 251-26.
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- Neradka, Vincent F., to United States of America, Navy, mesne. AC vortex rate sensor. 3,529,613, Cl. 137-81.5
- Neset, Stuart L. Pipe device. 3,529,604, Cl. 131-195.
- Newell, Harold R., to Mesur-Matic Electronics Corporation. Wobble coil stepping motor. 3,530,318, Cl. 310-49.
- Newell, Harold R., to Mesur-Matic Electronics Corporation. Step motor with variable tilt. 3,530,322, Cl. 310-82.
- Newell, Harold R., to Mesur-Matic Electronics Corporation. Energy transfer means for stepping motors. 3,530,347, Cl. 318-138.
- Newman, Howard, and Angier, Robert Bruce, to American Cyanamid Company. Substituted benzothiophendione compounds. 3,530,146, Cl. 260-330.5
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- Nishihara, Tomio. Method for solubilization of collagen fibers with proteolytic enzymes. 3,530,037, Cl. 195-6.
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- Nukiyama, Daizo, and Miyazaki, Noriyuki. Oscillator. 3,530,403, Cl. 331-156.
- Nussbaum, Otto J. Refrigeration system for widely varying ambient conditions. 3,529,432, Cl. 62-196.
- Nutter, Walter, Shaw, Jack, and Judson, Brian, to T.M.M. (Research) Limited. Means for stripping textile carding flats. 3,529,326, Cl. 19-109.
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- Ottinger, James A., to General Electric Company. Electric toaster construction. 3,530,279, Cl. 219-542.
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- Quermann, Thomas R., to Sperry Rand Corporation. Gyroscopic rotor suspension. 3,529,477, Cl. 74-5.
- Quik, Willem C. J., and van Weeren, Pieter A., to Shell Oil Company. Process for the catalytic conversion of hydrocarbons with steam. 3,530,194, Cl. 260-672.
- Quin, Frank S. Underwater temperature detecting device. 3,529,568, Cl. 116-114.5
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- Quissek, Manfred, to Aktiengesellschaft Brown, Boveri & Cie. Control device for feed systems of electro-filters. 3,529,404, Cl. 55-105.
- Raddatz, Dwight B., to Ball Corporation. Electrode connector for electric furnace. 3,530,222, Cl. 13-16.
- Radford, Matthew Frederick, to Marconi Company, The. Scanning aerial systems and associated feeder arrangements therefor. 3,530,485, Cl. 343-854.
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- Rae, William. Key operated locking device for linear transmission mechanisms. 3,529,452, Cl. 70-240.
- Ragir, Meyer J., to Selfix, Inc. Vinyl peg board laminates bonded by amine curing epoxy adhesive in a binary solvent. 3,530,032, Cl. 161-113.
- Rairden, John R., III, to General Electric Company. Thin film resistor-conductor system employing α- tungsten resistor films. 3,529,350, Cl. 29-626.
- Rapp, Gunter, and Blasko, Heinz, to Maschinenbau Rapp & Seidt. Device for unscrewing moulded screw-parts from dies. 3,529,319, Cl. 18-2.
- Rasa Kasei Kabushiki Kaisha: *See—*
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- Rasenberger, Otto, to Messrs. Schuler, L., GmbH. Feed apparatus for presses or the like. 3,529,542, Cl. 100-215.
- Rausch, Roger A., to Honeywell Inc. Pulse frequency converter. 3,529,612, Cl. 137-815.
- Rausing, Hans Anders, to AB Tetra Pak. Method of molding a lined hollow body utilizing foamable polystyrene particles and an inflatable inner mold. 3,530,208, Cl. 264-45.
- Ravenscroft, Ivor Albert, to Postmaster General, Her Majesty's. Multiple reflector antenna with offset feed. 3,530,476, Cl. 343-761.
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- Reed, Wendell E., to International Harvester Company. Gas turbine engine and control system. 3,529,419, Cl. 60-39.16
- Reeder, Earl, and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. Process for producing certain intermediates for 1,4-benzodiazepines. 3,530,139, Cl. 260-294.8
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- Reiffin, Martin G. Motional feedback amplifier systems. 3,530,244, Cl. 179-1.

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Savides, Christos, to American Cyanamid Company. Synergistic flame-retardant compositions. 3,530,090, Cl. 260-45.8

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Schumacher, Ernst E. Method and means for controlling the addition of replenisher to automatic photographic-film processors. 3,529,529, Cl. 95-89.

Schumann, Wolfgang A. Device for removal of ash and slag from a furnace for the burning of waste or the like. 3,529,559, Cl. 110-165.

Schutte, Richard W., and Roberts, Clifford J., Jr., to Scott Paper Company. Laminated sheet material and methods of making such material. 3,530,023, Cl. 156-290.

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Schwarm, Edward G., to Culver-Stearns Manufacturing Company, Inc., mesne. Magneto systems. 3,530,366, Cl. 322-28.

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- Wick, Arnold, to Ciba Limited. Acylated dibenzo naphthacridine-5,11,16- triones. 3,530,135, Cl. 260-274.
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- Wickings, John Arthur, Percy, Eric James, and Rosevear, David John, to BP Chemicals (U.K.) Limited. Synthetic lubricants. 3,530,070, Cl. 252-56.
- Wiebe, Alwyn Frederick, to American Cyanamid Company. Photochromic compositions. 3,530,075, Cl. 252-300.
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- Wilkins, William Burdette, to Comstruct, Inc. Wall-to-floor connector beam. 3,529,393, Cl. 52-731.
- Wilkins, William Burdette, to Comstruct, Inc. Modular wall corner connector. 3,529,394, Cl. 52-731.
- Wilkinson, Cecil H., Jr. Planetary grinding mill. 3,529,780, Cl. 241-134.
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TO WHOM

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Hays, Fred E. Steam-vacuum generator for rug and upholstery cleaning. Re. 26,950, 9–22–70, Cl. 15—321.
Vaccaro, Angelo, to Celanese Corp. Method and apparatus for feeding and coating a web. Re. 26,951, 9–22–70, Cl. 118—6.
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Bennett, Robert A., to P. D. Chapdelaine. Telephone dial advertising device. 218,755, 9–22–70, Cl. D26—14.
Bloch, Jack, to Foster Grant Co., Inc. Pair of spectacles. 218,781, 9–22–70, Cl. D57—1.
Blomberg, Theodore G. Hemostat. 218,792, 9–22–70, Cl. D83—1.
Bogan, Robert T., Jr. Grille. 218,734, 9–22–70, Cl. D13—1.
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Federico, Joseph B., to Ford Industries, Inc. Housing for telephone answering device. 218,756, 9–22–70, Cl. D26—14.
Ferguson, Courtland D. Frozen confection or similar article. 218,727, 9–22–70, Cl. D1—22.
Ferguson, James C., to Fairmont Electronics Inc. Display tray for show cases or the like. 218,789, 9–22–70, Cl. D80—9.
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Lauer, Darrel A., to Ampex Corp. Transmitter. 218,754, 9–22–70, Cl. D26—14.
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Design Patents

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A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION

U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 22, 1970 Volume 878 Number 4

TRADEMARKS
NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 89,518 ("H. UPMANN" AND DESIGN), Menendez Garcia y Compania Limitada, Cigars, **filed** July 9, 1970, D.C., S.D. Fla. (Miami), Doc. 70–1012–C–WM, *Jose M. Garcia et al.* v. *Mario Herran.*

Reg. No. 201,694 (CADILLAC), General Motors Corporation, Automobiles; **Reg. No. 201,708** (CROWN AND SHIELD DESIGN), same; **Reg. No. 647,241** (CADILLAC), same, Maintenance and repair service for automotive vehicles, parts, and accessories; **Reg. No. 658,918** (DESIGN OF EMBLEM), same, **filed** July 6, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1462–R, *General Motors Corporation* v. *California Cadillac Leasing Inc.*

Reg. No. 201,708. (See Reg. No. 201,694.)

Reg. No. 647,241. (See Reg. No. 201,694.)

Reg. No. 658,918. (See Reg. No. 201,694.)

Reg. No. 744,348 (AMETEK), Ametek, Inc., Electric motors, electric motor actuators and synchro transducers; **Reg. No. 744,381**, same, Springs, spring motors, spring motor reels, metal stampings for machine parts, and centrifugal drying machines; **Reg. No. 744,391**, same, Laundry washing machines, laundry ironers and laundry folding machines; **Reg. No. 744,422**, same, Pressure gauges, wire terminal and material pull testers, mechanical force gauges, material testing machines and accessories, beverage measuring dispensers, ammeters, voltmeters, thermometers, process control and recording instruments, and timing and pressure actuated mechanisms for opening parachutes; **Reg. No. 744,507**, same, Air volume controllers for water pressure systems, and industrial type fans; **Reg. No. 744,712** (AMETEK AND A DESIGN), same, Electric motors and electric motor actuators and synchro transducers; **Reg. No. 744,750**, same, Springs, spring motors, spring motor reels, metal stampings for machine parts, and centrifugal drying machines; **Reg. No. 744,761**, same, Laundry washing machines, laundry liquid extracting machines, laundry washer-extractors, laundry ironers and laundry folding machines; **Reg. No. 744,769**, same, Pressure gauges, wire terminal and material pull testers, mechanical force gauges, material testing machines and accessories, beverage measuring dispensers, ammeters, voltmeters, thermometers, process control and recording instruments, temperature control instruments, and timing and pressure actuated mechanisms for opening parachutes; **Reg. No. 744,809** (AMETEK), same, Liquid filtering apparatus and filter cloth therefor; **Reg. No. 744,810** (AMETEK AND A DESIGN), same; **Reg. No. 744,829**, same, Air volume controllers for water pressure systems, and industrial type fans, **filed** Mar. 10, 1969, D.C., N.D. Ohio (Cleveland), Doc. C–69–182, *Ametek, Inc.* v. *Amtec, Inc., Robert Bennett, Jr. and John Melther, Jr.* Plaintiff Ametek, Inc. is owner of trademarks, defendants enjoined from further infringement, May 25, 1970.

Reg. No. 744,381. (See Reg. No. 744,348.)

Reg. No. 744,391. (See Reg. No. 744,348.)

Reg. No. 744,422. (See Reg. No. 744,348.)

CONDITION OF TRADEMARK APPLICATIONS AS OF JULY 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	20, 113
Date of oldest new application	June 27, 1969
Date of oldest amended application (filing date)	January 28, 1966

C. M. WENDT, Director, Trademark Examining Operation **TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION**	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	12-15-69	8-25-67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-13-69	1-28-66
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	1-2-70	12-26-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-27-69	12-19-66
Renewals (All Classes)	6-24-70	....
Sec. 12(c) Publications (All Classes)	7-2-70	....

Applications filed during the month of July 1970—2,728

Registrations Issued .... 439—No. 899,001 to No. 899,439
Renewals Issued 120

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 744,507. (See Reg. No. 744,348.)

Reg. No. 744,712. (See Reg. No. 744,348.)

Reg. No. 744,750. (See Reg. No. 744, 348.)

Reg. No. 744,761. (See Reg. No. 744,348.)

Reg. No. 744,769. (See Reg. No. 744,348.)

Reg. No. 744,809. (See Reg. No. 744,348.)

Reg. No. 744,810. (See Reg. No. 744,348.)

Reg. No. 744,829. (See Reg. No. 744,348.)

Reg. No. 757,835 (REPRESENTATION OF MALE CHEF WITH HAT AND CANE), Kentucky Fried Chicken, Inc., Freshly prepared chicken and gravy, packaged and sold in retail trade; **Reg. No. 805,773** (COLONEL SANDERS' RECIPE), Kentucky Fried Chicken Corporation, Restaurant services; **Reg. No. 806,104** (HUMAN HEAD DESIGN), same; **Reg. No. 807,043** (HUMAN FIGURE WITH CHEF'S HAT AND CANE), same; **Reg. No. 810,835** (HUMAN HEAD DESIGN), same, Fried chicken, cooked and frozen; cooking sauce, gravy, gravy base mix, and an herb and spice mix; chicken parts (gizzards and livers); fish and shrimp; biscuits, baked beans; Bar-B-Q (chicken and pork); prepared potatoes; salads; maple syrup; and candy; **Reg. No. 813,559** (COL. SANDERS' RECIPE KENTUCKY FRIED CHICKEN), same, Frozen and fresh prepared chicken and gravy, packaged and sold in retail trade, prepared potatoes, chicken parts (gizzards and livers), fish and shrimp, biscuits, baked beans, barbecue (chicken and pork), and salads; **Reg. No. 814,610** (COL. SANDERS' RECIPE), same, Fried chicken, cooked and frozen; cooking sauce, gravy, gravy base mix, and an herb and spice mix; prepared potatoes; chicken parts (gizzards and livers), fish and shrimp; biscuits; baked beans; Bar-B-Q (chicken and pork), salads; maple syrup; and candy; **Reg. No. 838,062** (COLONEL SANDERS' RECIPE KENTUCKY FRIED CHICKEN), Restaurant services; **Reg. No. 846,026** (MAN DRESSED IN WHITE SUIT), same, **filed** Jan. 9, 1970, D.C., E.D. Mich. (Detroit), Doc. 34222, *Kentucky Fried Chicken Corp.* v. *Colonel's Fried Chicken, Inc.* Summary judgment in favor of plaintiff, permanent injunction, June 24, 1970.

Reg. No. 774,455 (NARRAGANSETT), Narragansett Gymnasium Equipment Company, Basketball backstops and basketball goals (Class 22); Gymnasium seats (Class 32); **2,786,677**, Noonan and Harper, FOLDABLE BASKETBALL BACKSTOP, **filed** Nov. 25, 1969, D.C., E.D. Mo. (St. Louis), Doc. N69C29, *Jackes-Evans Manufacturing Company* v. *Narragansett Gymnasium Equipment Corp.* Consent judgment, patents in suit valid and infringed and granting plaintiff permanent injunction; dismissing plaintiff's breach of contract against defendant with prejudice, June 15, 1970.

Reg. No. 805,773. (See Reg. No. 757,835.)

Reg. No. 806,101. (See Reg. No. 757,835.)

Reg. No. 807,043. (See Reg. No. 757,835.)

Reg. No. 810,835. (See Reg. No. 757,835.)

Reg. No. 813,559. (See Reg. No. 757,835.)

Reg. No. 814,610. (See Reg. No. 757,835.)

Reg. No. 838,062. (See Reg. No. 757,835.)

Reg. No. 846,026. (See Reg. No. 757,835.)

Reg. No. 855,441 (AM), American Motors Corporation, Automobiles and structural parts thereof, **filed** Dec. 13, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2395, *Sidney M. Fields, doing business as Fields International* v. *American Motors Corporation.* Judgment, case dismissed, June 25, 1970.

2,786,677. (See Reg. No. 774,455.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 281,301. Cenco Medical/Health Supply Corp., Chicago, Ill. assignee of Mills Hospital Supply Co., Skokie, Ill. Filed Sept. 27, 1967.

MILLCREST

Class 2—Receptacles

For Hamper Bags (Int. Cl. 20).

Class 39—Clothing

For Surgical Gowns and Suits, Nurses' Gowns, Patients' Gowns, Laboratory Coats and Aprons (Int. Cl. 25).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Mattress Pads and Covers, Toweling, Curtains, and Sheets (Int. Cl. 24).

Class 44—Dental, Medical, and Surgical Appliances

For Hospital Supplies—Namely, Bedding and Elastic Bandages (Int. Cl. 10).

First use at least as early as Aug. 13, 1957.

Class 29—Brooms, Brushes, and Dusters

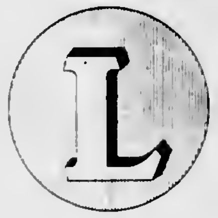
For Cleaning Brushes, Brooms, and Squeeze Mops (Int. Cl. 21).

Class 52—Detergents and Soaps

For Carpet and Upholstery Shampoo (Int. Cl. 3).

First use on or about Jan. 1, 1950; in commerce on or about Mar. 15, 1968.

SN 299,719. Thompson-Hayward Chemical Company, Kansas City, Kans., assignee of Leffingwell Chemical Company. Brea, Calif. Filed June 5, 1968.



The drawing is lined for the color red, but color is not claimed as a feature of the mark.

Class 5—Adhesives

For Adhesives—Namely, Thermosetting Resins for Industrial Use (Int. Cl. 1).
First use July 1956.

Class 6—Chemicals and Chemical Compositions

For Chemical Compositions—Namely, Hardeners for Thermosetting Resins and Spreaders and Stickers for Foliar Sprays (Int. Cl. 1).
First use at least as early as October 1954.

Class 10—Fertilizers

For Fertilizers—Namely, Plant Nutrients (Int. Cl. 1).
First use March 1952.

SN 300,327. S.A. Brush Company Limited, Albert Park, South Australia, Australia. Filed June 13, 1968.

SABCO

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Carpet Sweepers (Int. Cl. 21).

SN 305,031. Willy A. Bachofen, Basel, Switzerland. Filed Aug. 13, 1968.

DYNO

Owner of Swiss Reg. No. 226,805, dated Aug. 15, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Grinding Mills and Pulverizers for Dyes and Pharmaceuticals, Especially for the Dispersion of Suspensions; Shaker-Mixers for the Chemical, Pharmaceutical, and Foodstuff Industries (Int. Cl. 7).

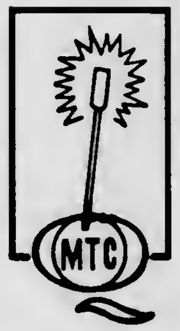
Class 31—Filters and Refrigerators

For Filters for the Chemical, Pharmaceutical, Foodstuff and Paper Manufacturing Industries, as well as for the Purification of Sewage (Int. Cl. 11).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Hot Air Dryers for the Chemical, Pharmaceutical and Foodstuff Industries, Especially for Drying Suspensions (Int. Cl. 11).

SN 309,275. McHugh Thermodynamics Corporation, Trevose, Pa. Filed Oct. 9, 1968.



Class 21—Electrical Apparatus, Machines, and Supplies

For High Temperature Thermocouple Wires (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Thermocouples and Thermocouple Accessories—Namely, Heads, Blocks, Compensating Lead Wires, Plugs and Jacks (Int. Cl. 9).

First use June 21, 1962.

SN 311,637. Professional Chemists, Inc., Cedar Rapids, Iowa. Filed Nov. 8, 1968.

PRO WAY

Class 4—Abrasives and Polishing Materials

For Auto, Chrome, Floor, Wood, Woodwork, Furniture, Metal, Glass, Ceramic and Plastic Polishes; Auto, Floor, and Furniture Waxes (Int. Cl. 3).

Class 6—Chemicals and Chemical Compositions

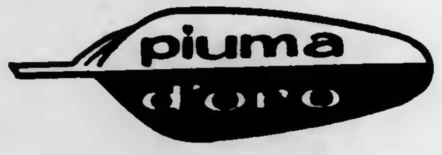
For Dust-Absorbing Compositions for Application to Dust Mops and Dust Clothes; Fabric Softeners; Chemical Compounds for Application to Rugs; Carpets and Upholstery To Repel Stains Therefrom; Air Fresheners (Int. Cls. 3, 4, and 5).

Class 52—Detergents and Soaps

For Auto Body and White Wall Cleaners; Floor, Wall, Woodwork, Fixtures, Vinyl and Glass Cleaners; Floor Wax Strippers; Rug, Carpet and Upholstery Spot Removers; Auto Body and Cold Water Washes; Rug and Carpet Shampoos (Int. Cl. 3).

First use on or about July 3, 1967.

SN 320,209. Lelio Furlan Rossi, Barcelona, Spain. Filed Feb. 27, 1969.



The Italian words "Piuma d'Oro" mean in English "feather of Gold." Owner of Spanish Reg. Nos. 440,805, dated July 22, 1965; 440,806, dated Mar. 10, 1967; and 522,901, dated June 26, 1968.

Class 1—Raw or Partly Prepared Materials

For Suede, Astrakan Sheepskin, Leather, Doeskin, Moroccan Suede, and All kinds of Hides (Int. Cl. 18).

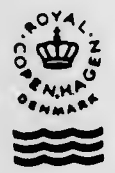
Class 20—Linoleum and Oiled Cloth

For Linoleum (Int. Cl. 27).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Lace Curtains, Table Cloths, Towels and Blankets; Carpets, Rugs and Tapestry; and Fabrics, Particularly Synthetic Fabrics Imitating Skin and Leather, for Use in Making Apparel and Furnishings (Int. Cls. 18, 24, and 27).

SN 322,845. Den Kongelige Porcelainsfabrik A/S, d.b.a. Royal Copenhagen Porcelain Manufactory Ltd., Copenhagen, Denmark. Filed Mar. 26, 1969.



The words "Copenhagen" and "Denmark" are disclaimed apart from the mark as shown and with no derogation to the common law rights. Owner of U.S. Reg. Nos. 30,487, 125,799, and 870,475.

Class 30—Crockery, Earthenware, and Porcelain

For Decorative Plates— Namely, Christmas Plates, Commemorative Plates and Tourist Plates; Tourist Souvenirs—Namely, Plaques, Bowls and Vases With Special Danish Motifs and/or Animal or Bird Motifs, and Mugs; All of the Foregoing Made of Porcelain, Faience, Stoneware or Other Ceramic Material (Int. Cl. 21).

Class 50—Merchandise Not Otherwise Classified

For Figurines and Animal Statues; Reliefs and Other Wall Decorations Made in One Piece or Made Up by Tiles, Decorated With Colored Glaze and/or Pictures; All of the foregoing Made of Porcelain, Faience, Stonewars or Other Ceramic Materials; Garden Ornaments—Namely, Stoneware Figurines and Stonefare Reliefs for Outdoor Display (Int. Cl. 21).
First use Jan. 1, 1923; in commerce Jan. 23, 1923.

SN 323,621. Josef Scigliano, d.b.a. Josef of Rome, San Francisco, Calif. Filed Apr. 4, 1969.

JOSEF OF ROME

Applicant disclaims the exclusive right to the words "of Rome" except as used in the mark as applied for.

Class 40—Fancy Goods, Furnishings, and Notions

For Wigs, Wiglets, Falls, and Eyelashes (Int. Cls. 3 and 26).
First use as early as Feb. 15, 1966.

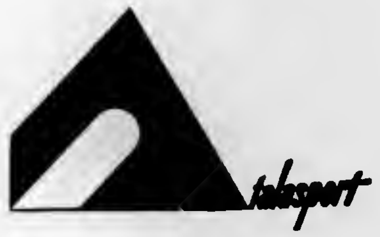
Class 52—Detergents and Soaps

For Wig Cleaner (Int. Cl. 3).
First use as early as June 1, 1966.

Class 107—Education and Entertainment

For Lecturing, Teaching and Demonstrating Hair Styles (Int. Cl. 41).
First use as early as Dec. 1, 1955.

SN 324,114. Atalasport S.a.S. Fabbrica Articoli Sportivi, Padova, Italy. Filed Apr. 10, 1969.



Priority claimed under Sec. 44(d) on Italian application filed Oct. 16, 1968; Reg. No. 234,829, dated Jan. 10, 1969.

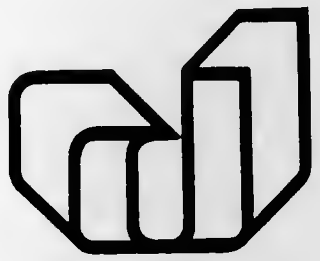
Class 22—Games, Toys, and Sporting Goods

For Sport Apparatus—Namely, Football Shoes, Track Shoes, Boxing Shoes, Hockey Shoes, Roller Skates, Footballs, Soccer Balls, Rugby Balls, Basketballs, Volley Balls, and Tennis racquets (Int. Cls. 25 and 28).

Class 39—Clothing

For Sport Footwear—Namely, After-Ski Shoes, Knitted Shirts, Jerseys, Socks, Gloves, Jackets, Underwear; and Tennis Wear—Namely, Shorts, Skirts, and Jerseys (Int. Cl. 25).

SN 328,039. Data Dimensions, Inc., Stamford, Conn. Filed May 22, 1969.



The mark consists of a stylized lowercase letter "d."

Class 100—Miscellaneous

For Computer Time Sharing Services (Int. Cl. 42).

Class 101—Advertising and Business

For Data Processing—Namely, Consulting, Programming, Systems Management, and Personnel Placement (Int. Cl. 35).

First use Mar. 19, 1969.

SN 330,038. Raybestos-Manhattan, Inc., Passaic, N.J. Filed June 16, 1969.

NOVATEX

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

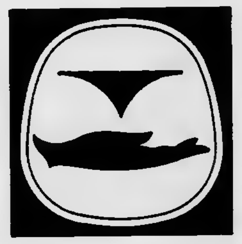
For Asbestos and Binder Reinforced Asbestos Textile Fabrics for Fabrication Into Other Products (Int. Cl. 17).

Class 43—Thread and Yarn

For Asbestos Yarns (Int. Cl. 17).

First use Apr. 24, 1969.

SN 334,914. United States Borax & Chemical Corporation, Los Angeles, Calif. Filed Aug. 11, 1969.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Soap Dispensers (Int. Cl. 21).
First use Oct. 8, 1965.

Class 52—Detergents and Soaps

For Powdered Hand Soap (Int. Cl. 3).
First use July 17, 1969.

SN 338,075. Johanna Farms, Inc., Flemington, N.J. Filed Sept. 17, 1969.

INSTANT COOL

Class 45—Soft Drinks and Carbonated Waters

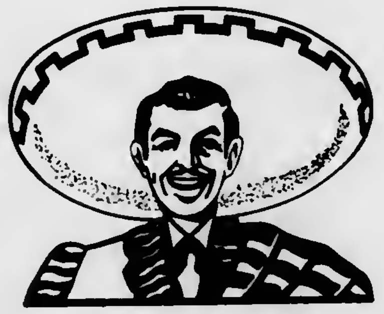
For Dietetic Fruit Flavored Drinks Containing Water (Int. Cl. 5).

Class 46—Foods and Ingredients of Foods

For Dietetic, Artificially Colored and Sweetened Iced Tea (Int. Cl. 5).

First use May 15, 1969.

SN 344,960. El Chico Corporation, Dallas, Tex. Filed Dec. 1, 1969.



The portrait shown on the drawing is fanciful and is not a portrait of any known living individual. Owner of Reg. Nos. 577,690, 578,650, and others.

Class 46—Foods and Ingredients of Foods

For Canned and Frozen Meats, Vegetables and Meat and/or Fish Sauces (Int. Cls. 29 and 30).
First use at least as early as Mar. 31, 1948.

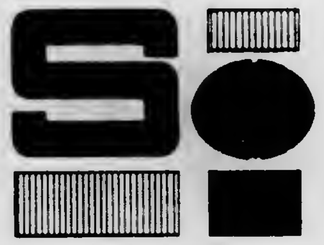
Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).
In or prior to October 1940.

Class 101—Advertising and Business

For Services to Others Involving the Establishment and Operation of Restaurants (Int. Cl. 35).
First use in or prior to October 1946.

SN 345,232. Syscon International, Inc., South Bend, Ind. Filed Dec. 4, 1969.



The drawing is lined for the color red.

Class 21—Electrical Apparatus, Machines, and Supplies

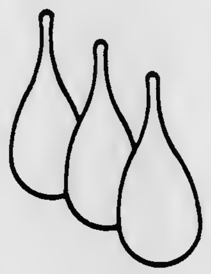
For Subminiature IF Transformers and Coils, Subminiature High Frequency Transformers, Subminiature Variable Inductors, Solenoid-wound R-F Chokes, Microminiature R-F Chokes, IF Transformers and Transformer Kits, Miniature Electrical Circuits, Filters, and Networks (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Non-Contact Surface Temperature Sensors, Light Contact Surface Temperature Sensors, Heavy Contact Surface Temperature Sensors, General Purpose Laboratory and Service Portable Pyrometers, General Purpose Portable Foundry Type Pyrometers, Indicating/Controlling Pyrometers (Int. Cl. 9).

First use Oct. 1, 1969.

SN 345,539. Morton International, Inc., Chicago, Ill. Filed Dec. 8, 1969.



Owner of Reg. Nos. 750,365 and 857,749.

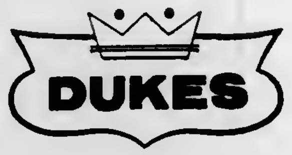
Class 6—Chemicals and Chemical Compositions

For Salt for Recharging Water Softeners (Int. Cl. 1).
First use on or about Dec. 6, 1960.

Class 52—Detergents and Soaps

For Cleaning Preparation for Removing Iron and Rust Deposits From Water Softeners (Int. Cl. 3).
First use on or about Oct. 11, 1967.

SN 354,540. Dukes Hydraulics, Inc., Schiller Park, Ill. Filed Mar. 19, 1970.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Hydraulic Valves (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Hydraulic Cylinders (Int. Cl. 7).

First use June 1957.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 329,343. Dentsply International Inc., York, Pa. Filed June 6, 1969.

ULTRA-VEST

For Gypsum Base Investment Material for Making Mold Primarily for Use by the Jewelry Industry (Int. Cl. 1).
First use Apr. 15, 1964.

SN 331,919. Manley Bros., Chesterton, Ind. Filed July 7, 1969.

NI-FREE

For Treated Sand for General Use (Int. Cl. 19).
First use June 20, 1969.

SN 335,765. The Lackawanna Leather Co., Hackettstown, N.J. Filed Aug. 20, 1969.

MASSAGED FEATHERSOFT

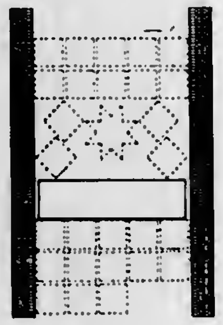
Applicant hereby disclaims exclusive use of the word "Massaged" apart from the mark as shown. Owner of Reg. No. 662,402.
For Leather (Int. Cl. 18).
First use May 27, 1969.

SN 338,568. Hooker Chemical Corporation, Niagara Falls, N.Y. Filed Sept. 22, 1969.

FRABS

For Synthetic Resins Having Flame-Retardant Properties (Int. Cl. 1).
First use Dec. 12, 1967.

SN 338,697. The Stearns & Foster Company, Cincinnati, Ohio. Filed Sept. 23, 1969.



For Quilting Cotton (Int. Cl. 22).
First use July 19, 1928.

SN 338,781. Hercules Incorporated, Wilmington, Del. Filed Sept. 24, 1969.

PEXATE

Owner of Reg. No. 329,419.
For Synthetic Resins (Int. Cl. 1).
First use July 22, 1969.

SN 338,782. Hercules Incorporated, Wilmington, Del. Filed Sept. 24, 1969.

VINSALYN

Owner of Reg. No. 303,219.
For Synthetic Resins (Int. Cl. 1).
First use Apr. 24, 1969.

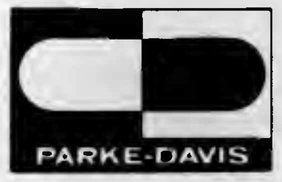
SN 349,879. Masonite Corporation, Chicago, Ill. Filed Jan. 28, 1970.

FIBREX

For Decorative Wood Bark for Use as a Mulch, Potting Soil or Ground Cover (Int. Cl. 31).
First use Jan. 19, 1970.

Class 2—Receptacles

SN 317,188. Parke, Davis & Company, Detroit, Mich. Filed Jan. 22, 1969.



Applicant disclaims representation of the capsule separate from the mark. Owner of Reg. Nos. 817,676 and 846,157.
For Empty Gelatin Capsules for Pharmaceutical Preparations (Int. Cl. 5).
First use on or before Nov. 8, 1968.

Class 4—Abrasives and Polishing Materials

SN 350,467. The Drackett Company, Cincinnati, Ohio. Filed Feb. 4, 1970.

CHAN

Owner of Reg. No. 756,872.
For Cleaning and Self-Polishing Waxes for Floors, Furniture, Walls, Varnished or Painted Surfaces, Metal Surfaces, and Automobiles (Int. Cl. 3).
First use Mar. 1, 1923.

Class 5—Adhesives

SN 317,160. Sud-Chemie A.G., Munich, Germany. Filed Jan. 21, 1969.

GEKO

Owner of German Reg. No. 759,761, dated Sept. 9, 1953.
For Molding Sand Binders and Core Binders (Int. Cl. 1).

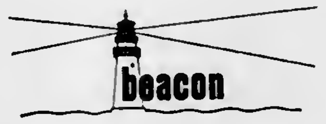
SN 330,136. Gerald J. Hopkins, Manhattan Beach, Calif. Filed June 16, 1969.

ZIPP-IT EGG TAPE

No registration rights are claimed for the word "Tape" apart from the mark as shown, but applicant waives none of his common law rights therein.
For Adhesive Tape Wrapped About an Egg for Removing the Shell Therefrom (Int. Cl. 17).
First use on or about May 14, 1968.

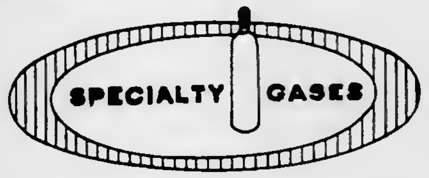
Class 6—Chemicals and Chemical Compositions

SN 260,097. Texize Chemicals, Inc., Greenville, S.C. Filed 12–5–66.



Owner of Reg. Nos. 517,982 and 853,936.
For Household Laundry Starch (Int. Cl. 3).
First use May 2, 1957.

SN 276,513. Air Products and Chemicals, Inc., Allentown, Pa. Filed July 21, 1967.



No claim is made to the representation of the container and the term "Specialty Gases" except in connection with the composite mark as shown. The drawing is lined for the color red, but the particular color is not claimed as a feature of the mark.
For Gases and Volatile Chemicals for Industrial, Scientific and Research Use, Particularly Standard Industrial Gases, High Purity Research Gases, Calibration Gas Standards, Forming and Doping Gases, Comprising Principally One or More of the Following General Classes: Compressed Elemental Gases, Saturated and Unsaturated Hydrocarbons, Halogens, Halides, Hydrohalides, Halocarbons, Halocarbonyls; Ammonia; Oxides of Carbon, Oxides of Hydrogen, Oxides of Sulfur; Alkylene Oxides; Volatile Mixed Binary and Ternary Compounds of One or More of the Elements Nitrogen, Sulfur and Halogen; Natural Gas Mixtures; Metal Carbonyls (Int. Cl. 1).
First use on or about Apr. 19, 1967.

SN 296,776. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

For Surface Active Agents (Int. Cl. 1).
First use Nov. 14, 1967.

SN 317,277. R. A. Chemical Corp., Brooklyn, N.Y. Filed Jan. 23, 1969.

RACRYL

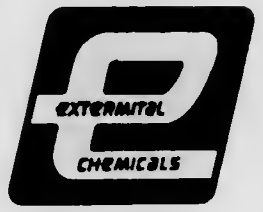
For Chemical Compositions—Namely, Acrylic Polymer Emulsions, for Use as Leather Finishes (Int. Cl. 1).
First use Dec. 1, 1960.

SN 319,216. West Chemical Products, Inc., Long Island City, N.Y. Filed Feb. 14, 1969.

WEST-AIRE

Owner of Reg. Nos. 723,244, 867,448, and others.
For Aerosol Deodorants and Germicidal Air-Sanitizer Deodorants (Int. Cl. 5).
First use Dec. 13, 1968.

SN 320,257. Extermital Chemicals, Inc., Dayton, Ohio. Filed Feb. 27, 1969.



The mark consists in part of a fanciful "e." The word "Chemicals" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 857,312, 868,584, and 868,585.
For Insecticides (Int. Cl. 5).
First use July 15, 1968; during 1937, as to "Extermital."

SN 327,468. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany. Filed May 16, 1969.

POLIGEN

Owner of German Reg. No. 629,256, dated Dec. 1, 1942.
For Resin Dispersions and Emulsions Used as Ingredients of Wax Emulsions (Int. Cl. 1).

SN 328,573. Nalco Chemical Company, Chicago, Ill. Filed May 28, 1969.

NAL·CO·BOND

Owner of Reg. No. 769,798.
For Surface Sizing Preparation Used in the Manufacture of Paper (Int. Cl. 1).
First use Apr. 21, 1969.

SN 343,066. Allied Chemical Corporation, New York, N.Y. Filed Nov. 10, 1969.

HT-102

For Additive for Metal Plating Chemicals, Including Copper Fluoborate Plating Solution (Int. Cl. 1).
First use Sept. 19, 1969.

SN 343,656. Carolina Biological Supply Company, Burlington, N.C. Filed Nov. 17, 1969.

PROTOSLO

For Liquid for Retarding the Movement of Protozoa (Int. Cl. 1).
First use Aug. 24, 1968.

SN 346,244. Hallmark Chemical Corporation, Dallas, Tex. Filed Dec. 15, 1969.

PYTROL

For Curing Compositions (Int. Cl. 1).
First use September 1968.

SN 347,462. American Metal Climax, Inc., d.b.a. Southwest Potash Corporation, New York, N.Y. Filed Dec. 31, 1969.

TECH-NITE

For Nitrate of Potash (Int. Cl. 1).
First use Nov. 14, 1969.

SN 348,874. American Hospital Supply Corporation, Evanston, Ill. Filed Jan. 19, 1970.

TETRA-FORM

For Diagnostic Reagent of Freeze Dried Human Serum for Clinical Testing (Int. Cl. 1).
First use on or before Oct. 15, 1968.

SN 349,492. Monsanto Company, St. Louis, Mo. Filed Jan. 23, 1970.

SANTOMELT

For Chemical Preparations for Melting Snow and Ice (Int. Cl. 1).
First use Nov. 18, 1969.

SN 349,611. Farbwerke Hoechst Aktiengesellschaft vormals Meister, Lucius & Bruning, Frankfort am Main, Germany. Filed Jan. 26, 1970.

MELUSTRAL

Owner of German Reg. No. 630,118, dated Sept. 26, 1951.
For Dyes and Pigments (Int. Cl. 2).

SN 349,649. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Jan. 26, 1970.

NOOD

For Soil Sterilant Type Weed Killer (Int. Cl. 5).
First use at least as early as May 28, 1969.

SN 349,658. Liquid Paper Corporation, Dallas, Tex. Filed Jan. 26, 1970.

ART OUT

Owner of Reg. Nos. 652,928 and 862,236.
For Opaqueing Solution for Covering or Painting Out Mistakes Made on Paper (Int. Cl. 16).
First use on or before Aug. 1, 1964.

SN 348,753. The Cello Chemical Company, Baltimore, Md. Filed Jan. 16, 1970.

CELLO-MIST

For Room Deodorants and Air Fresheners (Int. Cl. 5).
First use on or about Oct. 28, 1965.

SN 349,782. Moyer Chemical Company, San Jose, Calif. Filed Jan. 27, 1970.

WEEDFILM

For Chemical Preparations for Use as Adjuvants for Herbicides To Promote Uniform Spreading and Penetration Thereof (Int. Cl. 1).
First use on or about November 1969.

SN 350,266. Hysan Products Company, Chicago, Ill. Filed Feb. 2, 1970.

MEDICIDE

For Aerosol Disinfectant and Deodorant (Int. Cl. 5).
First use Jan. 20, 1966.

SN 350,687. Certified Laboratories, Inc., Fort Worth, Tex. Filed Feb. 6, 1970.

SABRECIDE

For Insecticide (Int. Cl. 5).
First use June 1965.

SN 350,691. Certified Laboratories, Inc., Fort Worth, Tex. Filed Feb. 6, 1970.

WAS-16

For Anti-Sticking Agent (Int. Cl. 1).
First use Jan. 2, 1967.

SN 351,942. Hysan Products Company, Chicago, Ill. Filed Feb. 20, 1970.

RESIST

For Aerosol Spray Disinfectant and Deodorant (Int. Cl. 5).
First use Jan. 21, 1970.

SN 352,142. International Salt Company, Clarks Summit, Pa. Filed Feb. 24, 1970.

STERLING SALT BUTTONS

Applicant disclaims "Salt" apart from the mark as shown. Owner of Reg. Nos. 539,172, 673,345, and others.
For Rock Salt, for Chemical and Industrial Use (Int. Cl. 1).
First use on or about Jan. 12, 1970.

SN 352,143. International Salt Company, Clarks Summit, Pa. Filed Feb. 24, 1970.

STERLING SALT CRYSTALS

Applicant disclaims "Salt Crystals" apart from the mark as shown. Owner of Reg. Nos. 539,172, 755,277, and others.
For Rock Salt, for Chemical and Industrial Use (Int. Cl. 1).
First use on or about Jan. 12, 1970.

SN 352,540. E. A. Thompson Co. Inc., San Francisco, Calif. Filed Feb. 26, 1970.

SPORTSEAL

For Chemical Waterproofing Compound (Int. Cl. 1).
First use Aug. 28, 1969.

SN 352,689. Union Carbide Corporation, New York, N.Y. Filed Feb. 27, 1970.

SEVIMOL

Owner of Reg. Nos. 671,672 and 892,295.
For Carbaryl Insecticides (Int. Cl. 5).
First use on or about Feb. 2, 1970.

SN 352,879. Standard Chemical Products, Inc., Hoboken, N.J. Filed Mar. 2, 1970.

STANDAMOX

For Amine Oxide Surfactants (Int. Cl. 1).
First use on or about March 1966.

SN 352,880. Standard Chemical Products, Inc., Hoboken, N.J. Filed Mar. 2, 1970.

STANDAPHOS

For Highly Active Anionic Surfactant Partial Organic Esters of Phosphoric Acid (Int. Cl. 1).
First use on or about November 1967.

SN 353,043. The Dow Chemical Company, Midland, Mich. Filed Mar. 4, 1970.

DURSBAN M

Owner of Reg. No. 798,452.
For Insecticides (Int. Cl. 5).
First use Aug. 8, 1968; Oct. 4, 1962, as to "Dursban."

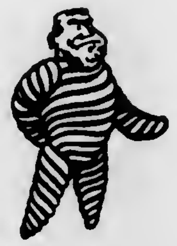
SN 361,214. The Chemtech Corporation, Cincinnati, Ohio. Filed June 1, 1970.

NUCLO-ADD

For Nucleating Agents for Use in the Production of Ammonium Nitrate Fertilizers and Explosive Grade Ammonium Nitrate (Int. Cl. 1).
First use Feb. 14, 1970.

Class 7 — Cordage

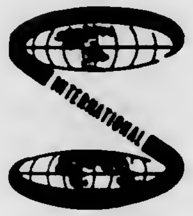
SN 337,629. Armco Steel Corporation, Middletown, Ohio. Filed Sept. 11, 1969.



For Wire Rope Slings and Wire Rope (Int. Cl. 6).
First use Aug. 29, 1969.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 324,526. Stuart Distributing Company, Inc., d.b.a. Stuart Quality Products, Baltimore, Md. Filed Apr. 14, 1969.



For Pellet Rifles, Tins of Lead Pellets, Leather Cartridge Belts, and Slings (Int. Cl. 13).
First use on or about Nov. 29, 1968.

SN 330,091. Baschieri & Pellagri S.p.A., Bologna, Italy. Filed June 16, 1969.

MACH

Priority claimed under Sec. 44(d) on Italian application, filed Dec. 18, 1968; Reg. No. 239,471, dated Feb. 25, 1970.
For Hunting Firearm Ammunition (Int. Cl. 13).

Class 11 — Inks and Inking Materials

SN 325,354. Elliott Business Machines, Inc., Randolph Township, Mass. Filed Apr. 23, 1969.

DURAHEAD

For Pad Type Applicator for Applying Ink to Stencils (Int. Cl. 16).
First use Sept. 23, 1968.

SN 343,139. Lawter Chemicals, Inc., Chicago, Ill. Filed Nov. 10, 1969.

SOLVAR

For Printing Ink Vehicle (Int. Cl. 1).
First use Oct. 8, 1969.

Class 12 — Construction Materials

SN 312,670. General Electric Company, Schenectady, N.Y. Filed Nov. 20, 1968.

TEXTOLITE

For Paper Base Plastic Laminate for Use on Table Tops, Furniture and Wall Panelling (Int. Cl. 19).
First use at least as early as 1939.

SN 320,028. Harry T. Campbell Sons' Corporation, Towson, Md. Filed Feb. 25, 1969.

ROLL 'N SEAL

For Black Top Sealer With an Asphalt Acrylic Emulsion Polymer (Int. Cl. 19).
First use Jan. 30, 1969.

SN 320,709. The Cincinnati Milling Machine Co., Cincinnati, Ohio. Filed Mar. 4, 1969.

CIMGLAS

For Fiberglass Reinforced Polyester Resin Molding (Int. Cl. 1).
First use prior to Jan. 15, 1969.

SN 327,945. Masonite Corporation, Chicago, Ill. Filed May 21, 1969.

ROYALTILE

Owner of Reg. No. 668,876.
For Construction Board—Namely, a Decorative Coated Hardboard, Fiber Board, Composite Board, Particleboard and Synthetic Lumber or Artificial Lumber for Various Construction Purposes (Int. Cl. 19).
First use Apr. 19, 1969.

SN 331,069. Reynolds Metals Company, Richmond, Va. Filed June 26, 1969.

RHINO RIB

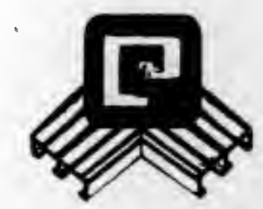
Applicant claims the exclusive right to use the word "Rib" as a part of its mark, but not otherwise.
For Metal Sheet Roofing and Siding (Int. Cl. 6).
First use at least as early as Jan. 10, 1969.

SN 333,976. Long's Fence Company, Incorporated, North Gambrills, Md. Filed July 30, 1969.

SILK -N- SMOOTH

For Wire Kennel Enclosures (Int. Cl. 6).
First use September 1967.

SN 334,249. Panel-Loc System, Inc., Dover, N.J. Filed Aug. 1, 1969.



The representation of the goods is disclaimed apart from the mark as shown.
For Interlocking Construction Members, Made of Various Extruded Materials, for Use in Fabricating Wall Panels, Floors, Roofs, Leaders, Gutters, Shutters, Doors, Windows, Hatch Covers, Stairwells, and the Like (Int. Cl. 19).
First use Jan. 20, 1969.

SN 340,700. Aeronca, Inc., Pineville, N.C. Filed Oct. 15, 1969.

DUALITE

For Metal Faced Panels With Polyurethane Cores (Int. Cl. 19).
First use May 18, 1966.

SN 346,865. Chicago Fire Brick Company, Chicago, Ill. Filed Dec. 22, 1969.

MULTIPLEX

For Refractory Bricks, Castable Refractory Mix, and Plastic Refractory Material All Used in Constructing the Inner Walls of Furnaces (Int. Cl. 19).
First use Nov. 6, 1969.

SN 347,176. Rite Therm Inc., East Palestine, Ohio. Filed Dec. 29, 1969.

EXO-PATCH

For Exothermic Refractory Material—Namely, a Thermite-Type Reaction of Aluminum and Iron Oxide Forming a Eutectic, Attacking, Intergranular Slag That Is Applied in a Fluidized Mass to a Refractory Surface and Thereby Bonded Thereto (Int. Cl. 1).
First use at least as early as September 1967.

SN 347,784. Protex Industries, Inc., Denver, Colo. Filed Jan. 5, 1970.

PROTALICO

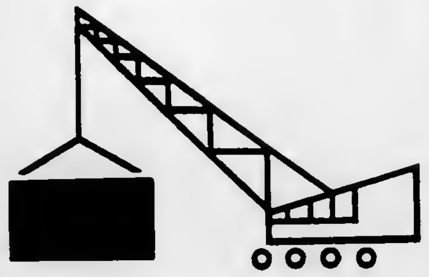
For Grouting, Patching and Topping Agent for Concrete (Int. Cl. 19).
First use September 1967.

SN 348,278. Evans Products Company, Portland, Oreg. Filed Jan. 12, 1970.

EVANSHAKE

For Shakes (Int. Cl. 19).
First use at least as early as November 1969.

SN 354,676. Stirling Homex Corporation, Avon, N.Y. Filed Mar. 19, 1970.



For Factory-Constructed Building Modules (Int. Cl. 19).
First use March 1969.

SN 356,775. Swiss Laboratory, Inc., Bedford Heights, Ohio. Filed Apr. 13, 1970.

BLACK JACK

For Flexible Mender for Repairing and Sealing Materials for Industrial, Railroad and Marine Applications as Well as Putty (Int. Cl. 19).
First use Mar. 19, 1961.

SN 364,342. Scovill Manufacturing Company, Waterbury, Conn. Filed July 6, 1970.

PF-C100'

Owner of Reg. No. 824,315.
For Prefinished Window Units (Int. Cl. 19).
First use May 22, 1970.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 313,593. Mahasi Corporation, Spartanburg, S.C. Filed Dec. 4, 1968.

THE CHALET

The word "The" is disclaimed apart from the mark as a whole.
For Food Cooking Equipment, Such as Cooking Dishes, Burners, Food Containers, and Trays (Int. Cls. 6 and 11).
First use Sept. 5, 1968.

SN 314,240. Loxem Manufacturing Corporation, Midland Park, N.J. Filed Dec. 11, 1968.

STA-LOC

For Chain Locks for Doors (Int. Cl. 6).
First use at least as early as 1963.

SN 315,747. Ethylene Corporation, Murray Hill, N.J. Filed Jan. 3, 1969.

FLEXIJOINT

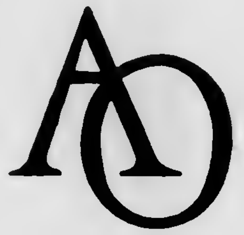
For Composite Type Pipe Coupling Formed of Metal Castings and Synthetic Resinous Components (Int. Cl. 6).
First use on or about July 1, 1966.

SN 327,244. E.B.V. Systems, Inc., Warwick, R.I. Filed May 14, 1969.

ebv
SYSTEMS INC.

For Valves, Valve Actuators and Control Systems (Int. Cl. 6).
First use Mar. 26, 1969.

SN 335,655. American Optical Corporation, Southbridge, Mass. Filed Aug. 19, 1969.



Owner of Reg. Nos. 268,217 and 855,168.
For Hardware and Plumbing—Namely, Nuts, Frame Hinges, Frame Rivets, and Screws (Int. Cl. 6).
First use as early as 1895.

SN 336,304. Arcoa, Inc., Phoenix, Ariz. Filed Aug. 26, 1969.

Applicant disclaims right to exclusive use of the term "One-Way" apart from the mark as shown. Owner of Reg. No. 827,358.
For Rental Truck Key Chains (Int. Cl. 6).
First use Feb. 3, 1969.

SN 336,443. Huck Manufacturing Company, Detroit, Mich. Filed Aug. 27, 1969.

KRIMPNUT

Owner of Reg. No. 874,552.
For Nuts (Int. Cl. 6).
First use Apr. 25, 1969.

SN 336,444. Huck Manufacturing Company, Detroit, Mich. Filed Aug. 27, 1969.

KRIMPIN

Owner of Reg. No. 874,552.
For Bolts (Int. Cl. 6).
First use Apr. 25, 1969.

SN 344,974. Spotnails, Inc., Long Island City, N.Y. Filed Dec. 1, 1969.

SPOTCOIL

Owner of Reg. No. 844,379.
For Nails in Collated Form (Int. Cl. 6).
First use July 8, 1969.

SN 344,975. Spotnails, Inc., Long Island City, N.Y. Filed Dec. 1, 1969.

SPOTCARTRIDGES

Owner of Reg. No. 844,379.
For Fasteners (Int. Cl. 6).
First use July 8, 1969.

SN 350,427. Semblex Corporation, Elmhurst, Ill. Filed Feb. 4, 1970.

semblex corporation

For Cold-Formed and Warm-Formed Metal Parts—Namely, Threaded and Unthreaded, Standard and Non-Standard Bolts and Screws (Int. Cl. 6).
First use on or before Mar. 4, 1969.
Subj. to Intf. with SN 330,853.

SN 364,535. Sarco Company, Inc., Allentown, Pa. Filed July 7, 1970.

SARCO

Owner of Reg. Nos. 186,041 and 187,188.
For Traps, Strainers, and Parts Thereof and Fittings for Steam, Gas, Water, and Oil (Int. Cl. 6).
First use at least as early as July 1, 1924.

Class 14 — Metals and Metal Castings and Forgings

SN 355,632. Electro-Extraction, Inc., Wylie, Tex. Filed Apr. 1, 1970.

COP-A-NODES

For Metal Pellets and Scrap Containing Copper or Copper Alloys and Used for Metal Goods Including Metal Castings and Forgings and by Refineries and Mills for Melting to Ingots (Int. Cl. 6).
First use July 15, 1969.

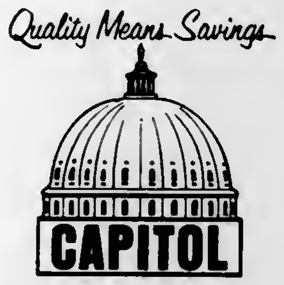
Class 15 — Oils and Greases

SN 326,535. Kinzie Candles, Inc., Lyons, Colo. Filed May 6, 1969.

KINZIE KANDLES
Antiques to Burn

No claim is made to the word "Kandles."
For Candles (Int. Cl. 4).
First use on or about Sept. 15, 1968.

SN 327,470. Capitol Oil & Grease Company, Inc., Laguna Hills, Calif. Filed May 16, 1969.



AMALGA-LUBE

For Lubricating Oils and Greases (Int. Cl. 4).
First use May 9, 1969.

SN 339,259. Walkers (Century Oils) Limited, Hanley, Stoke-on-Trent, England. Filed Sept. 29, 1969.

AQUACENT

Owner of British Reg. No. 857,760, dated Dec. 12, 1963.
For Hydraulic Oils for Machinery (Int. Cl. 4).

Class 16 — Protective and Decorative Coatings

SN 331,682. Whitford Corporation, West Chester, Pa. Filed July 3, 1969.

XYLAN

For Fluorocarbon or Fluoropolymer Based Coating Material in Liquid Form Particularly Adapted for Coating Most Metals, Ceramics, Plastics, Wood, Paper, Rubber, and Many Other Substrates and Having Low Friction, Wear Resistant, High Temperature Release, and Corrosion Resistant Properties (Int. Cl. 2).
First use June 24, 1969.

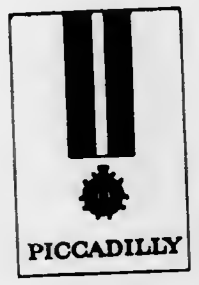
SN 348,213. Hercules Equipment & Rubber Co., Inc., San Francisco, Calif. Filed Jan. 12, 1970.

HSG company

For Paint-Like Surface Coating Compositions for Industrial and Commercial Use for the Prevention of Surface Deterioration, Corrosion and Chemical Attack of Acids, Salts, and Basic Substances on Metal, Wood, Masonry or Other Surfaces, and for Decorative Purposes (Int. Cl. 2).
First use Dec. 12, 1969.

Class 17 — Tobacco Products

SN 335,743. Carreras Limited, Basildon, Essex, England. Filed Aug. 20, 1969.



Owner of British Reg. No. 905,312, dated Feb. 9, 1967; and U.S. Reg. Nos. 769,830 and 769,831.
For Cigarettes (Int. Cl. 34).

SN 362,646. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed June 15, 1970.

MR. TIPSTER

Owner of Reg. Nos. 780,873 and 889,960.
For Cigars (Int. Cl. 34).
First use Mar. 3, 1970.

Class 18 — Medicines and Pharmaceutical Preparations

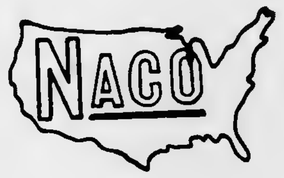
SN 337,544. Health Guardian Corporation, Monroe, Wis. Filed Sept. 10, 1969.

TOUCHE

For Liquid for Feminine Hygiene (Int. Cl. 5).
First use Nov. 18, 1955.
Subj. to Intf. with SN 308,669.

Class 19 — Vehicles

SN 341,051. Perfect Equipment Corporation, Murfreesboro, Tenn. Filed Oct. 17, 1969.



Applicant disclaims a representation of an outline map of the United States, apart from the mark as shown.
For Wheel-Balancing Weights (Int. Cl. 12).
First use Sept. 8, 1969.

SN 349,421. The Bada Company, Pasadena, Calif. Filed Jan. 23, 1970.

KROMLINE

For Wheel Balancing Weights for Vehicle Wheels (Int. Cl. 12).
First use July 1965.

Class 20 — Linoleum and Oiled Cloth

SN 360,209. PPG Industries, Inc., Pittsburgh, Pa. Filed May 19, 1970.

MAESTRO-TEX

For Wall Coverings (Int. Cl. 27).
First use at least as early as July 10, 1969.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 325,825. Addressograph-Multigraph Corporation, Cleveland, Ohio. Filed Apr. 29, 1969.

AMCD

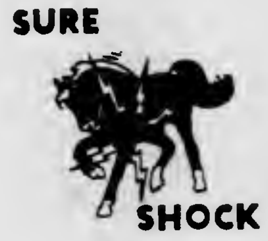
For Electrophotographic Copying Machines, Accessories Therefor and Parts Thereof (Int. Cl. 9).
First use Dec. 20, 1968.

SN 343,790. Nevco Scoreboard Company, Greenville, Ill. Filed Nov. 14, 1969.

NEVCO

For Combination Electric Timer and Scoreboard for Basketball, Football, and Other Games (Int. Cl. 9).
First use Feb. 15, 1934.

SN 350,385. Fi-Shock, Inc., Knoxville, Tenn. Filed Feb. 3, 1970.



No claim is made for the words "Sure Shock" apart from the mark as shown.
For Electric Fence Controllers (Int. Cl. 9).
First use Jan. 23, 1969.

SN 351,050. North American Philips Corporation, New York, N.Y. Filed Feb. 10, 1970.

Norelco

For Strobe Beacons (Int. Cl. 11).
First use at least as early as Dec. 8, 1969.

SN 352,889. U & I, Inc., Denver, Colo. Filed Mar. 2, 1970.

THE BUG

For Electric Shock Devices for Training Animals (Int. Cl. 9).
First use December 1969.

SN 355,148. North American Philips Corporation, New York, N.Y. Filed Mar. 26, 1970.

AUTODAPTOR

For Car D.C. Converter for the Playing of Tape Recorders (Int. Cl. 9).
First use Feb. 27, 1970.

SN 355,169. Union Carbide Corporation, New York, N.Y. Filed Mar. 26, 1970.

JR. COMMANDER

Owner of Reg. No. 878,566.
For Electric Flashlights (Int. Cl. 11).
First use on or about Feb. 2, 1970.

SN 355,911. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Apr. 1, 1970.

CHROMA-MATIC

For Television Cameras for Recording Video and Audio Information (Int. Cl. 9).
First use Feb. 21, 1970.

SN 356,010. Avnet, Inc., Pawtucket, R.I. Filed Apr. 6, 1970.

DURAFOIL

For Electrical Cable (Int. Cl. 9).
First use on or about Sept. 15, 1969.

SN 356,224. Ronk Electrical Industries, Inc., Nokomis, Ill. Filed Apr. 7, 1970.

Roto-Load-Center

Owner of Reg. No. 850,125.
For Electrical Metering and Distribution Center for Farm and Home (Int. Cl. 9).
First use Oct. 3, 1969.

SN 361,243. RCA Corporation, New York, N.Y. Filed June 1, 1970.

SelectaVision

For Television Tape Recorders (Int. Cl. 9).
First use on or about May 12, 1970.

SN 361,244. RCA Corporation, New York, N.Y. Filed June 1, 1970.

SELECTAVISION

For Television Tape Recorders (Int. Cl. 9).
First use on or about May 12, 1970.

SN 362,627. Roach-Appleton Manufacturing Company, South Bend, Ind. Filed June 15, 1970.

BRIEGEL

For Indentor Tools for Applying Electrical Connectors, and Jaws and Replacement Points for Such Tools (Int. Cl. 8).
First use June 1934.

Class 22 — Games, Toys, and Sporting Goods

SN 302,316. Hasbro Industries, Inc., Pawtucket, R.I. by change of name from Hassenfeld Bros. Inc., Pawtucket, R.I. Filed July 9, 1968.

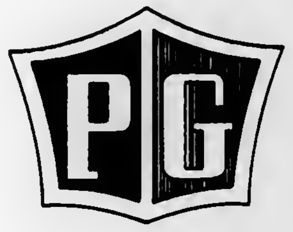
The word "Watches" is disclaimed separate and apart from the mark as shown, without prejudice to applicant's common law rights therein.
For Toy Set Comprising Components for Making Unusual Watch Design (Int. Cl. 28).
First use on or about Feb. 28, 1968.

SN 318,237. Spectra Sports, Inc., San Francisco, Calif. Filed Feb. 3, 1969.

MOGUL-FLEX

For Bicycle-Like Skiing Device Comprising a Seating Apparatus Mounted on Skis (Int. Cl. 28).
First use Dec. 16, 1968.

SN 320,175. Professional Golf Company, Chattanooga, Tenn. Filed Feb. 26, 1969.



The drawing is lined for the color red.
For Golf Equipment—Namely, Golf Clubs, Golf Bags, Golf Balls and Golf Gloves (Int. Sl. 28).
First use Oct. 15, 1965; as early as 1932 as to "PGC."

SN 322,005. J. Swedlin, Inc., d.b.a. Gund Manufacturing Co., Brooklyn, N.Y. Filed Mar. 17, 1969.

BabyGund

Applicant disclaims "Baby" and no claim of exclusive right is made thereto. Owner of Reg. Nos. 441,879 and 746,186.
For Stuffed Toys (Int. Cl. 28).
First use May 2, 1968.

SN 323,608. Universal Bowling & Golf Corp., Chicago, Ill. Filed Apr. 3, 1969.

DISTANCE KING

For Golf Balls (Int. Cl. 28).
First use on or about Mar. 24, 1969.

SN 324,481. The Ohio Art Company, Bryan, Ohio. Filed Apr. 14, 1969.

SKETCH-A-TUNE

For Toy Music Devices (Int. Cl. 28).
First use Mar. 17, 1969.

SN 325,761. Leisure Dynamics, Inc., Minneapolis, Minn. Filed Apr. 28, 1969.

LEISURE DYNAMICS

For Hobby Craft Type Toys in the Form of Racing Car and Airplane Models and Parts and Accessories Therefor (Int. Cl. 28).
First use Mar. 17, 1969.

SN 326,625. Brockman & Barton, Maryland Heights, Mo. Filed May 7, 1969.

"WASHEE BALL"

The word "Ball" is disclaimed apart from the mark.
For Golf Ball Washing Device (Int. Cl. 28).
First use November 1967.

SN 327,232. Casamar, S.A., Panama, Republic of Panama. Filed May 14, 1969.

SUPER 7

Owner of Panamanian Reg. No. 10,500, dated June 25, 1968.
For Fishing Nets (Int. Cl. 22).

SN 333,434. Playskool, Inc., Chicago, Ill. Filed July 24, 1969.

TYKE PACK HORSE

No claim of exclusive right is made to "Horse" for the goods recited.
For Toy Wooden Horse With Casters on the Legs (Int. Cl. 28).
First use Mar. 15, 1969.

SN 339,665. Eldon Industries, Inc., Hawthorne, Calif. Filed Oct. 3, 1969.

ROBBIE ROBOT

The term "Robot" is disclaimed apart from the mark as shown.
For Toy Robot (Int. Cl. 28).
First use Apr. 23, 1969.

SN 345,114. Trim-Line Inc., Chicago, Ill. Filed Dec. 3, 1969.

TRIM-LINE

For Exercise Devices in the Form of Elastic Bands (Int. Cl. 28).
First use on or about Nov. 4, 1969.

SN 345,251. Mattel, Inc., Hawthorne, Calif. Filed Dec. 4, 1969.

MAGICIAN'S MIRACLES

Applicant makes no claim to the exclusive rights in the word "Magician's" apart from the mark.
For Toy Equipment for Performing Magical Effects (Int. Cl. 28).
First use Oct. 30, 1969.

SN 345,554. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

JILLIONS OF JEWELS

Applicant makes no claim of exclusive right to the word "Jewels" apart from the mark.
For Toy Jewelry Making Kit (Int. Cl. 28).
First use Oct. 9, 1969.

SN 345,555. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

TWINKLE STONES

Applicant makes no claim of exclusive right to the word "Stones" apart from the mark. Owner of Reg. No. 869,357.
For Toy Jewelry Kit. (Int. Cl. 28).
First use Oct. 9, 1969.

SN 345,558. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

SQUARE WHERE

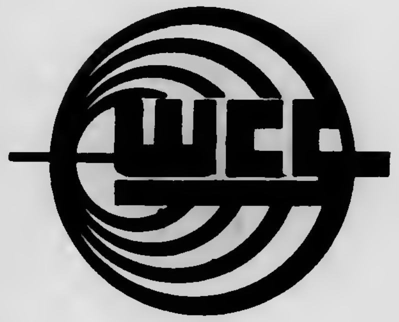
For Puzzle Comprised of Multiplicity of Block Parts Adapted To Be Arranged in Specific Designs (Int. Cl. 28).
First use Oct. 29, 1969.

SN 345,563. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

SPEEDWAY TRAIL

Applicant makes no claim of exclusive right to the word "Speedway" apart from the mark.
For Accessories for Toy Miniature Automobiles Comprising Track and Building Structures (Int. Cl. 28).
First use Nov. 11, 1969.

SN 345,707. Worldwide Computer Services Inc., Hartsdale, N.Y. Filed Dec. 9, 1969.



For Computer and Educational Games (Int. Cl. 28).
First use Jan. 15, 1969.

SN 346,047. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 12, 1969.

ZAPPER

For Artificial Fish Lures (Int. Cl. 28).
First use Aug. 13, 1969.

SN 346,203. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 15, 1969.

FIDGET

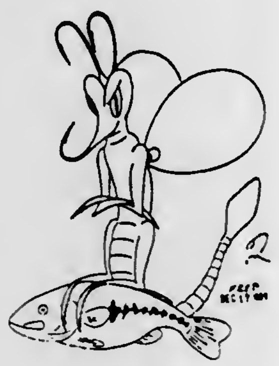
For Artificial Fish Lures (Int. Cl. 28).
First use Aug. 13, 1969.

SN 346,204. Fred Arbogast Company, Inc., Akron, Ohio. Filed Dec. 15, 1969.

RUFFLER

For Artificial Fish Lures (Int. Cl. 28).
First use Aug. 13, 1969.

SN 346,498. Oklebug Distributing Company, Tulsa, Okla. Filed Dec. 17, 1969.



For Fishing Tackle (Int. Cl. 28).
First use July 8, 1969.

SN 346,568. Mattel, Inc., Hawthorne, Calif. Filed Dec. 18, 1969.

HEXAGON SENSE-A-GONE

Applicant makes no claim of exclusive right to the word "Hexagon" apart from the mark.
For Puzzle Comprised of Multiplicity of Fitted Pieces Adapted To Be Arranged in Specific Designs (Int. Cl. 28).
First use Oct. 24, 1969.

SN 346,956. Eddie Pope & Co., Inc., Altadena, Calif. Filed Dec. 22, 1969.

SCHOOLIE

For Fishing Lures (Int. Cl. 28).
First use on or about Aug. 28, 1969.

SN 350,360. Duane G. Rauenhorst, d.b.a. Slayton Tackle Manufacturing Company, Slayton, Minn. Filed Feb. 3, 1970.

G|O
G|O

For Fishing Tackle—Namely Fishing Lures (Int. Cl. 28).
First use Jan. 22, 1970.

SN 352,032. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Feb. 24, 1970.

THINKING MAN'S FOOTBALL

Applicant claims no registration rights in the word "Football" as the name of a game. Owner of Reg. No. 832,460.
For Apparatus Sold as a Unit for Playing a Game (Int. Cl. 28).
First use Jan. 21, 1970.

SN 358,387. Mattel, Inc., Hawthorne, Calif. Filed Apr. 30, 1970.

6-PACK TO GO

For Toy Automobile Set Including a Group of Automobiles in a Kit (Int. Cl. 28).
First use Mar. 10, 1970.

SN 359,673. Child's World, Inc., Columbus, Ohio. Filed May 14, 1970.

CIRCUS WORLD

For Toy Automobiles and Dolls (Int. Cl. 28).
First use May 2, 1970.

SN 359,680. Mattel, Inc., Hawthorne, Calif. Filed May 14, 1970.

LAGUNA OVAL

For Toy Automobile Set Containing an Automobile, Track, Track Joiners, and a Battery Charger (Int. Cl. 28).
First use Feb. 17, 1970.

SN 359,681. Mattel, Inc., Hawthorne, Calif. Filed May 14, 1970.

SKY SHOW

For Toy Kit Containing an Automobile for Launching Airplanes, Tracks, Airplanes, and Track Joiners (Int. Cl. 28).
First use Feb. 17, 1970.

SN 361,230. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

SPEED PATROL

For Toy Automobile Racing Set (Int. Cl. 28).
First use Apr. 21, 1970.

SN 361,233. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

SCREAMIN' MEANIE

For Toy Top (Int. Cl. 28).
First use Apr. 21, 1970.

SN 361,234. Mattel, Inc., Hawthorne, Calif. Filed June 1, 1970.

TILTIN' STILT

For Toy Top (Int. Cl. 28).
First use Apr. 21, 1970.

SN 361,441. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

COLOR-OVERS

For Toy Drawing Set (Int. Cl. 28).
First use Mar. 25, 1970.

SN 361,442. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

BLOKE BUSTER

For Toy Automobile (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,445. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

SPEED RUN

For Toy Automobile Racing Set (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,451. Mattel, Inc., Hawthorne, Calif. Filed June 2, 1970.

KICKIN'-CHICKEN

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Apr. 3, 1970.

SN 361,695. Childcraft Education Corp., New York, N.Y. Filed June 4, 1970.

CC
CHILDCRAFT

Owner of Reg. Nos. 584,287 and 712,499.
For Playground Equipment—Namely, Climbing Houses and Ladders, Climbing Net, Ladders, Tumbling and Gymnasium Mats, Ladder Box, Walking and Balance Boards, Rocking Boats, Rock and Row Boats, Nesting Bridges, Kegs, Climbing Fences, Saw Horses, Portable Turning Bars, Swinging Gates, Hollow Blocks, Slides, Swings, and Sand Boxes and Tables; Sets of Various Shaped Molds for Sand Play, Children's Sand Tools—Namely, Shovels, Pails, Cans, and Carts; Metal Toy Trucks, Dump Trucks, Scrapers, Steam Shovels, Excavators; Sporting Goods—Namely, Rubber Balls of All Types, Baseballs, Softballs, Baseball Bats, Punching Bags, Boxing Gloves, Bat Tennis and Table Tennis Balls, Bats, Nets and Tables, Quoit Sets; Card Games, Board Games With Moving Pieces, Simulated Athletic Games, Word and Sentence Building Games, Checkers; Toy Chemistry Sets, Wood and Metal Toy Construction Sets; Toy Building Blocks of All Types and Shapes, Wooden Trains, Train Signals, Boats, Airplanes, Autos, Jig-Saw and Picture Puzzles, Racks for the Storing of Puzzles, Children's Tricycles, Wagons, Wheelbarrows, Push Trucks, Locomotives, and Trucks; Wood and Rubber Toy Figures of Vehicles, People, and Animals; Dolls' Toy Hand Puppets, Doll Carriages, Doll Furniture—Namely, Beds, Cradles, Dressers, Rockers, Chest of Drawers, Dolls' Bottle Sterilizing Kits; Toy Tables, Kitchen Utensils, Dishes, Stoves, Sinks, Cabinets, Refrigerator, Ironing Boards, Iron, Baskets, Cleaning Tools, Laundry Appliances; Play Stores and Equipment—Namely, Cash Registers, Telephones, Switchboards, Scales, Change Makers, Rubber Fruits and Vegetables, Carts, Milk Bottles, Barber Shop Equipment, Play Money; Toy Blackboards, Children's Looms, Gear Models To Be Used as Toys, Children's Microscope Sets (Int. Cls. 12, 16, and 28).
First use Sept. 1949.

SN 363,832. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

CALIFORNIA 500

For Toy Automobile Racing Set (Int. Cl. 28).
First use May 18, 1970.

SN 363,833. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

SUPER NATIONALS

For Toy Automobile Racing Set (Int. Cl. 28).
First use May 18, 1970.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 314,354. Marolf Hygienic Equipment, Inc., Clearwater, Fla. Filed Dec. 12, 1968.

MOF MAROLF FLORIDA

Applicant disclaims the term "Florida."
For Sewage Treatment Plants and Repair Parts Therefor (Int. Cl. 11).
First use May 9, 1968.

SN 319,825. Baker Manufacturing Company, Evansville, Wis. Filed Mar. 13, 1969.

SNAPPY

For Pitless Well Adapters, Parts and Accessories Thereof, for Use in Water Well Systems and the Like (Int. Cl. 7).
First use Nov. 15, 1966.

SN 333,785. Wilson & Co., Inc., Chicago, Ill. Filed July 28, 1969.

PIG MAMA

For Conveyor-Mounted Automatic Feeder for Livestock (Int. Cl. 7).
First use May 1967.

SN 343,765. The Southern Supply Co., Dallas, Tex. Filed Nov. 17, 1969.

DALTEX
QUALITY

The word "Quality" is disclaimed apart from the mark as shown.
For Agricultural Implements and Suplies Therefor and Tractor Specialties and Attachments, to-wit: Sweeps, Harrows, Shovels, Steels, Hoes, Points, Chisels, Spikes, Furrowers, Burster Blades, Bull Tongues, Go-Devil Knives, Fertilizer Applicators, Disc Blades, Disc Scrapers, Chisel Plows, Grease Guns, Grease Dispensers (Int. Cl. 7).
First use July 1913.

SN 356,239. Babson Bros. Co., Oak Brook, Ill. Filed Apr. 8, 1970.

SURGE

Owner of Reg. Nos. 201,871, 583,444, and others.
For Liquid Spray Apparatus (Int. Cl. 7).
First use on or about November 1962.

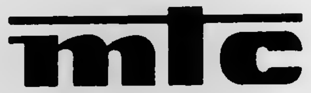
Class 26—Measuring and Scientific Appliances

SN 274,311. Daiichi Seiko Kabushiki Kaisha, Arakawa-ku, Tokyo-to, Japan. Filed June 20, 1967.

ADD-O-CHECK

Owner of Japanese Reg. No. 855,026, dated May 2, 1970.
For Adding Machines (Int. Cl. 9).

SN 295,656. Measurement Technology Corporation, Canoga Park, Calif. Filed Apr. 15, 1968.



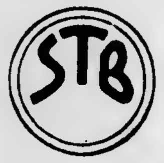
For Antenna Pattern Recorders, Digital Computer Interactive Terminals, Digital Code Converters, RF and Microwave Ratiometers, Radar Target Reflection Analyzers, Logarithmic Converters and Analog Signal Recorders (Int. Cl. 9).
First use Aug. 1, 1967.

SN 308,816. William K. Rosenberry, d.b.a. Zeta Research, Lafayette, Calif. Filed Oct. 3, 1968.

ZETA

For Electronic Signal Generating, Signal Processing, Data Acquisition and Data Processing Equipment—Namely, Clock Generators, Counters, Time Interval Meters and Time Analyzers (Int. Cl. 9).
First use Aug. 22, 1967.

SN 315,152. Fabrique d'Horlogerie de Saint-Blaise S.A., Neuchatel, Switzerland. Filed Dec. 24, 1968.



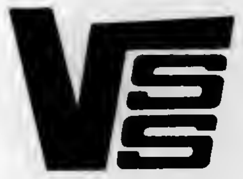
Owner of Swiss Reg. No. 232,258, dated May 24, 1968.
For Printing Timer, Somewhat in the Nature of a Timeclock, for Automatically Verifying and Recording the Arrival and Departure of Pigeons (Int. Cl. 9).

SN 322,153. Double A Products Co., Manchester, Mich. Filed Mar. 19, 1969.

VISI-LOGIC

For Fluid Logic Industrial Control Relays and Fluidics Systems Incorporating Such Relays (Int. Cl. 9).
First use Dec. 4, 1968.

SN 326,810. Visual Security Systems, Inc., Hanover, N.J. Filed May 8, 1969.



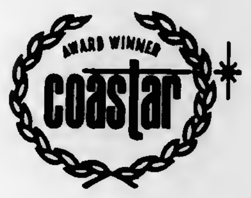
For Security Systems Comprised of Visual Surveillance Cameras, Closed Circuit Television Monitors, Wireless and Wired Remote Controlled Ultrasonic Alarms and Automatic Telephone Dial Systems, Visual Oscillating Cameras, and Hidden Camera Security Systems (Int. Cl. 9).
First use on or about Jan. 22, 1969.

SN 327,056. Lucien Sauterau, Paris, France. Filed May 12, 1969.

OLNIC

Owner of French Reg. No. 749,653, dated Oct. 31, 1968.
For Drafting Tables and Drafting Machines (Int. Cl. 16).

SN 329,025. Coast Photo Manufacturing Co. Inc., Jamaica, N.Y. Filed June 4, 1969.



Applicant disclaims the words "Award Winner."
For Camera Accessories, Camera Equipment and Supplies—Namely, Tripods, Electric Strobes, Consul Bags, Dark Room Rubberized Changing Bag, and Camera Lens Pouches (Int. Cl. 9).
First use May 15, 1968.

SN 331,082. Wang Laboratories, Inc., Tewksbury, Mass. Filed June 26, 1969.

FAST

For Computer Terminal (Int. Cl. 9).
First use Jan. 23, 1969.

SN 332,629. Rosemount Engineering Company, Minneapolis, Minn. Filed July 15, 1969.

ROSEMOUNT

For Data Sensing Instruments for Aircraft—Namely, Total Temperature Sensors, Pitot and Pitot Static Tubes; Resistance Temperature Sensors; Resistance Bridges; Ice Detectors; and Transmitters for Receiving Signals From Sensors Sensing Physical Data and Transmitting the Signals to Readout Equipment (Int. Cl. 9).
First use at least as early as Oct. 10, 1967.

SN 332,695. Consolidated Airborne Systems, Inc., Carle Place, N.Y. Filed July 16, 1969.

PENNYCAP

For Capacitance Fuel Gaging System (Int. Cl. 9).
First use March 1968.

SN 334,230. Hills-McCanna Company, Carpentersville, Ill. Filed Aug. 1, 1969.

PIGGYPAK

For Chemical Feed Systems for Liquids Based on Metering Pumps (Int. Cl. 7).
First use in or about July 1968.

SN 337,250. Azoplate Corporation, Murray Hill, N.J. Filed Sept. 8, 1969.

ENCO

For Lithographic Plate Processors (Int. Cl. 9).
First use Aug. 8, 1969.

SN 337,273. Consolidated Airborne Systems, Inc., Carle Place, N.Y. Filed Sept. 8, 1969.

PENNYTEMP

For Gas Turbine Engine Exhaust Gas Temperature Indicator (Int. Cl. 9).
First use Aug. 1, 1969.

SN 337,324. Kalvar Corporation, New Orleans, La. Filed Sept. 8, 1969.

KDR

For High Speed Vesicular Photographic Film (Int. Cl. 1).
First use at least as early as Nov. 2, 1968.

SN 340,619. Sperry Rand Corporation, Philadelphia, Pa. Filed Oct. 13, 1969.

UNISERVO

For Magnetic Tape Transports for Transporting Magnetic Recording Tape for Recording Data on the Tape or Reading Data Recorded on the Tape and Control Units Therefor (Int. Cl. 9).
First use Mar. 30, 1951.

SN 342,685. Wheaton Glass Company, Millville, N.J. Filed Nov. 4, 1969.

BIOSTIR

For Magnetic Stirrers for Laboratory Applications (Int. Cl. 9).
First use August 1969.

SN 343,125. Hurco Manufacturing Company, Inc., Indianapolis, Ind. Filed Nov. 10, 1969.

AUTOBEND

For System Employed on Press Brakes for Locating the Work Piece (Int. Cl. 9).
First use Apr. 22, 1969.

SN 343,156. Paco Enterprises, Christiansted, Virgin Islands. Filed Nov. 10, 1969.

VIRGIN KISSMETER

The word "Kissmeter" is disclaimed apart from the mark as shown.
For High Sensitivity Ohmeter Used for Measuring Body Contact Resistance (Int. Cl. 9).
First use Sept. 4, 1969.

SN 345,911. B & K Instruments, Inc., Cleveland, Ohio. Filed Dec. 11, 1969.

UNI-GAIN

For Electrical and Electronic Measuring Devices—Namely, Accelerometers (Int. Cl. 9).
First use Oct. 28, 1969.

SN 345,920. Computer Transceiver Systems, Inc., Upper Saddle River, N.J. Filed Dec. 11, 1969.

EXECUPORT

For Digital Data Terminals (Int. Cl. 9).
First use May 1969.

SN 347,584. Bell Research Inc., Chester, W. Va. Filed Jan. 2, 1970.

PYRO MINI BAR

For Ceramic Test Blocks for Furnaces (Int. Cl. 9).
First use Sept. 20, 1969.

SN 348,014. Canoga Controls Corporation, Canoga Park, Calif. Filed Jan. 8, 1970.

PROXIMITOR

For Vehicle Detection Systems for Use in Traffic Signal Actuation Vehicle Counting, Traffic Surveillance, Parking Control and Similar Applications (Int. Cl. 9).
First use Aug. 12, 1969.

SN 352,878. Sperry Rand Corporation, New York, N.Y. Filed Mar. 2, 1970.

OPMAG

For Magnetometers for Determining the Strength of Unidirectional Magnetic Fields (Int. Cl. 9).
First use Oct. 9, 1969.

SN 354,257. Applied Systems Corporation, Rockville, Md. Filed Mar. 17, 1970.

NITEYE

For Hand Held Viewer for Night Time and Low Light Level Viewing (Int. Cl. 9).
First use Dec. 4, 1969.

SN 357,030. ESB Incorporated, Philadelphia, Pa. Filed Apr. 16, 1970.

HI-LINE

Owner of Reg. No. 571,183.
For Goggles (Int. Cl. 9).
First use Mar. 26, 1970.

SN 364,534. Sarco Company, Inc., Allentown, Pa. Filed July 7, 1970.

SARCO

Owner of Reg. Nos. 186,041 and 187,188.
For Temperature Regulators, Recording Thermometers, and Indicating Thermometers and Parts Thereof (Int. Cl. 9).
First use at least as early as July 1, 1924.

Class 27 — Horological Instruments

SN 330,698. Baumritter Corporation, New York, N.Y. Filed June 23, 1969.

ETHAN ALLEN

"Ethan Allen" is the name of the early American patriot who is now deceased. Owner of Reg. Nos. 381,746 and 737,146.
For Clocks (Int. Cl. 14).
First use During October 1966.

SN 343,264. Eisenstadt Manufacturing Company, St. Louis, Mo. Filed Nov. 12, 1969.

TORINO

For Watches (Int. Cl. 14).
First use June 23, 1969.

Class 28 — Jewelry and Precious-Metal Ware

SN 333,775. Melvin Taubman, d.b.a. Melson Jewelry Co., New York, N.Y. Filed July 28, 1969.

EARRINGS BY D'EARRING

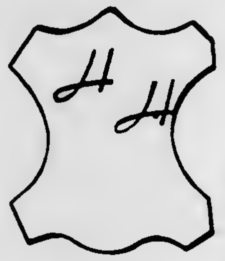
Applicant disclaims the word "Earring" apart from the mark as shown.
For Precious and Semi-Precious Jewelry (Int. Cl. 14).
First use December 1968.

SN 353,553. Poole Silver Co., Inc., Taunton, Mass. Filed Mar. 9, 1970.

BEAU-REGARDE

For Holloware Made in Whole or in Part of Precious Metal (Int. Cl. 14).
First use on or about Sept. 6, 1969.

SN 355,035. Hinterland Handcrafts Limited, Bancroft, Ontario, Canada. Filed Mar. 25, 1970.



For Jewelry (Int. Cl. 14).
First use May 27, 1966.

SN 361,227. Lovebright Diamond Company, Inc., New York, N.Y. Filed June 1, 1970.

LOVEBRIGHT

For Diamond Rings (Int. Cl. 14).
First use Dec. 1, 1943.

SN 361,440. Marvella, Inc., New York, N.Y. Filed June 2, 1970.

PUTTING ON THE DOG

For Necklaces (Int. Cl. 14).
First use May 22, 1970.

SN 361,650. Buccellati Silver, Ltd., New York, N.Y. Filed June 4, 1970.

BORGIA

For Sterling Silver Flatware (Int. Cl. 8).
First use Apr. 6, 1970.

SN 362,121. Marvella, Inc., New York, N.Y. Filed June 9, 1970.

GRAND ILLUSION

For Jewelry (Int. Cl. 14).
First use at least as early as during September 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 318,478. Wilen Manufacturing Co., Inc., Atlanta, Ga. Filed Feb. 5, 1969.

FAN-TASTIC MOP

Applicant disclaims the word "Mop" apart from the mark as shown without waiving any of its common law rights therein.
For Floor Cleaning Instruments—Namely, Mops (Int. Cl. 21).
First use Nov. 19, 1968.

SN 341,709. Treville Inc., Clifton, N.J. Filed Oct. 24, 1969.

PATRICIAN

For Brushes (Int. Cl. 21).
First use Oct. 11, 1968.

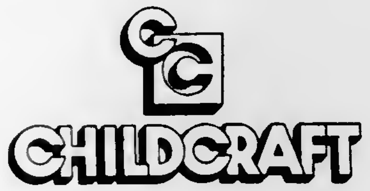
Class 32 — Furniture and Upholstery

SN 274,084. Mobay Chemical Company, Pittsburgh, Pa. Filed June 16, 1967.

CUSHION-CLOUD

Owner of Reg. No. 812,624.
For Bedding—Namely, Mattresses and Box Springs (Int. Cl. 20).
First use July 5, 1966.

SN 361,694. Childcraft Education Corp., New York, N.Y. Filed June 4, 1970.



Owner of Reg. Nos. 584,287 and 712,499.
For Furniture—Namely, Coat Lockers, Block Cabinets With and Without Doors, Wood Tables, Folding Tables, Stacking Tables, Wood Chairs, Stacking Chairs, Wood and Metal Chairs, Rockers, Clothes Racks, Chest of Drawers, Dressers, Storage Cabinet, Toy Mobiles, Book Mobiles, Book Shelves, Portable Block Cabinet, Library Display Unit, Book Display Racks, Room Dividers, Screens, Easels (Adjustable and Stationary), Double and Single Easels, Aluminum Easels, Wall Easels, Wall Storage Units, Beds, Stacking Cots, Folding Cots, Desks, Water Tables, Work Tables, Cabinets for Housing Tools and the Like, and Tool Boards (Int. Cl. 20).
First use Feb. 24, 1970; Mar. 4, 1946 as to the mark "Childcraft."

SN 362,003. Directional Industries, Incorporated, New York, N.Y. Filed June 8, 1970.

ATHENA

For Upholstered Furniture—Namely, Arm Chairs Club Chairs, Chairs, Convertible Chairs, Couches, Lounges, Ottomans, Sofas and Sofabeds (Int. Cl. 20).
First use on or about May 15, 1970.

Class 33 — Glassware

SN 348,273. Delta Products, Inc., Baltimore, Md. Filed Jan. 12, 1970.

DELTA-SEAL

For Insulating Glass (Int. Cl. 19).
First use on or about Oct. 7, 1969.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 309,461. Konus-Kessel Gesellschaft fur Warmetechnik m.b.H. & Co. KG, In der Ketschau, Hockenheim, Germany. Filed Oct. 11, 1968.

KONUS

The term "Konus" is a German word Meaning "Cone."
For Boiler for Heating of Heat-Transfer Media (Int. Cl. 11).
First use May 1962; in commerce November 1964.

SN 320,140. Foster Wheeler Corporation, Livingston, N.J. Filed Feb. 26, 1969.

MONO-WALL

For Steam Generators and Parts Thereof (Int. Cl. 11).
First use as early as Feb. 7, 1964.

SN 324,499. Dart Industries Inc., Los Angeles, Calif. by change of name from Rexall Drug and Chemical Company, d.b.a. The West Bend Company, Los Angeles, Calif. Filed Apr. 14, 1969.

Vapor All

The word "Vapor" is disclaimed apart from the mark as shown. Owner of Reg. No. 382,429.
For Portable Electric Humidifier for Domestic and Office Use (Int. Cl. 11).
First use August 1967.

SN 325,173. Combustion Engineering, Inc., Tulsa, Okla. Filed Apr. 22, 1969.

SAF-HEAT

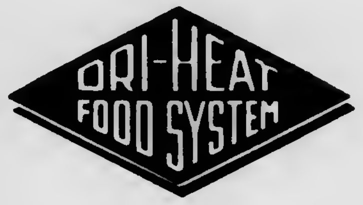
For Safety Units for Application to Existing Industrial Oil and Gas Fired Equipment Which Prevent Such Equipment From Accidentally Igniting Adjacent Flammable Matter (Int. Cl. 11).
First use on or about June 1, 1968.

SN 329,846. Fasco Industries, Inc., Rochester, N.Y. Filed June 12, 1969.

TRANSFLO

For Electric Motor Driven Blowers and Motor-Blower Combinations for Effecting Cooling and for Ventilating, and, Generally, for Movement of Air (Int. Cl. 7).
First use Dec. 13, 1968.

SN 330,127. Franklin Products, Corp., Chicago, Ill. Filed June 16, 1969.



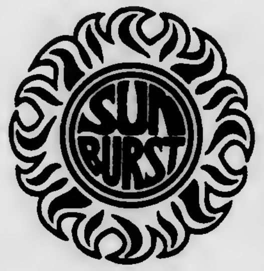
Applicant disclaims the words "Food System" apart from the mark as shown. Owner of Reg. No. 837,940.
For Food Warming Ovens and Parts Thereof—Namely, Oven Stands, Oven Traycarts, Plate Holders, and Plate Covers (Int. Cl. 11).
First use Dec. 5, 1950.

SN 350,272. Kabel- und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany. Filed Feb. 2, 1970.

POLYARC

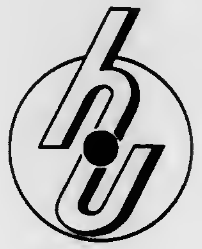
For Multi-Electrode Welding Torch (Int. Cl. 9).
First use Nov. 21, 1969; in commerce Nov. 21, 1969.

SN 352,470. Glaser Products Corporation, St. Louis, Mo. Filed Feb. 26, 1970.



For Barbecue Grills (Int. Cl. 11).
First use September 1969.

SN 354,311. Hydraulics Unlimited Mfg. Co., Eaton, Colo. Filed Mar. 17, 1970.



Owner of Reg. No. 597,602.
For Weed Burners (Int. Cl. 11).
First use Feb. 10, 1961.

SN 354,313. Hydraulics Unlimited Mfg. Co., Eaton, Colo. Filed Mar. 17, 1970.

SILVER JET

For Weed Burners (Int. Cl. 11).
First use Mar. 5, 1959.

SN 354,625. Hydraulics Unlimited Mfg. Co., Eaton, Colo. Filed Mar. 19, 1970.

Silver Jet

For Weed Burners (Int. Cl. 11).
First use Mar. 5, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 351,305. Carlisle Corporation, Carlisle, Pa. Filed Feb. 13, 1970.

Sureflex

For Natural and Synthetic Rubber Hose (Int. Cl. 17).
First use Jan. 23, 1963.

SN 351,354. Conti Rubber Products, Inc., Carteret, N.J. Filed Feb. 13, 1970.

CRP-IMPERATOR

For Sandblast Hose (Int. Cl. 17).
First use Jan. 1, 1963.

SN 356,062. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Apr. 6, 1970.

SAND BUGGER

For Resilient Vehicle Tires (Int. Cl. 12).
First use Mar. 24, 1970.

SN 356,094. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Apr. 6, 1970.

WINTERMARK G/P

For Tires (Int. Cl. 12).
First use Feb. 4, 1970.

SN 356,140. Reichman, Inc., d.b.a. Chase Tire Co., Baltimore, Md. Filed Apr. 6, 1970.

LARAMIE

For Vehicle Tires (Int. Cl. 12).
First use Feb. 27, 1970.

SN 356,761. W. S. Shamban & Co., Los Angeles, Calif. Filed Apr. 13, 1970.

DELTASEAL

For Seals for Hydraulic and Pneumatic Devices (Int. Cl. 17).
First use Feb. 9, 1970.

SN 357,124. Sacomo Sierra Inc., Carson City, Nev. Filed Apr. 16, 1970.

OU

For Seal Ring for Machinery (Int. Cl. 17).
First use Jan. 2, 1970.

SN 357,213. The Hercules Tire & Rubber Company, Findlay, Ohio. Filed Apr. 17, 1970.

HERCUBELT

For Pneumatic Tires and Tubes (Int. Cl. 12).
First use Feb. 20, 1970.

SN 357,215. The Hercules Tire & Rubber Company, Findlay, Ohio. Filed Apr. 17, 1970.

HERCUGLAS

For Pneumatic Tires and Tubes (Int. Cl. 12).
First use Feb. 20, 1970.

SN 358,297. The B. F. Goodrich Company, Akron, Ohio. Filed Apr. 29, 1970.

STOMPER

For Pneumatic Tires (Int. Cl. 12).
First use Apr. 20, 1970.

SN 358,311. The Kelly-Springfield Tire Company, Cumberland, Md. Filed Apr. 29, 1970.

POWER MARK

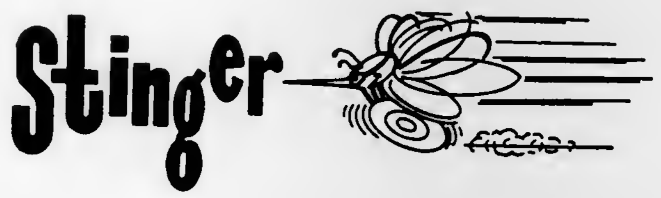
For Tires (Int. Cl. 12).
First use Mar. 2, 1970.

SN 358,476. Reichman, Inc., d.b.a. Chase Tire Co., Baltimore, Md. Filed Apr. 30, 1970.

LARAMIE TRAILBOSS

For Vehicle Tires (Int. Cl. 12).
First use Mar. 17, 1970.

SN 358,707. Dean Tire & Rubber Company, Inc., Louisville, Ky. Filed May 4, 1970.



For Rubber Tires for Automotive Vehicles (Int. Cl. 12).
First use May 1, 1968.

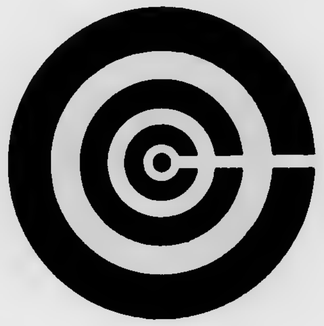
SN 358,708. Dean Tire & Rubber Company, Inc., Louisville, Ky. Filed May 4, 1970.

Stinger

For Rubber Tires for Automotive Vehicles (Int. Cl. 12).
First use May 1, 1968.

Class 36 — Musical Instruments and Supplies

SN 335,694. The Greatest Book, Inc., d.b.a. Creative Sound Productions, Los Angeles, Calif. Filed Aug. 19, 1969.



For Phonograph Record Albums (Int. Cl. 9).
First use Nov. 3, 1966.

SN 357,222. Arnold Lazarus, San Francisco, Calif. Filed Apr. 17, 1970.

FRAP

For Microphone and Amplifier for Musical Instruments (Int. Cl. 9).
First use Aug. 27, 1969.

SN 357,354. General Time Corporation, Phoenix, Ariz. Filed Apr. 20, 1970.

CONDUCTOR

For Metronomes (Int. Cl. 9).
First use Sept. 25, 1968.

Class 37 — Paper and Stationery

SN 318,437. Letraset U.S.A., Inc., Mountain View, Calif. Filed Feb. 5, 1969.

LETRAFILM

For Plastic Sheet Materials Bearing Coatings of Adhesives for Use in the Graphic Arts (Int. Cl. 16).
First use on or before Apr. 2, 1965.

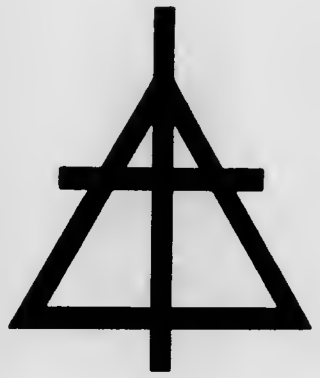
Class 38 — Prints and Publications

SN 314,186. Richard Clarke Associates, Inc., New York, N.Y. Filed Dec. 11, 1968.

contact

For Employment Information Bulletin (Int. Cl. 16).
First use Mar. 1, 1968.

SN 317,790. Christian Reformed Church, Grand Rapids, Mich. Filed Nov. 22, 1968.



For Religious Prints and Publications, Specifically a Magazine and Brochures (Int. Cl. 16).
First use July 10, 1968.

SN 334,337. International Fraternity of Delta Sigma Pi, Oxford, Ohio. Filed Aug. 4, 1969.

The DELTASIG
OF DELTA SIGMA PI

For Monthly Magazine (Int. Cl. 16).
First use in or about November 1950.

SN 335,482. Year Book Medical Publishers, Inc., Chicago, Ill. Filed Aug. 15, 1969.

DISEASE-A-MONTH

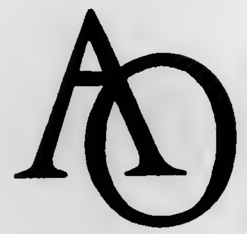
For Monthly Booklet (Int. Cl. 16).
First use Nov. 11, 1954.

SN 335,484. Year Book Medical Publishers, Inc., Chicago, Ill. Filed Aug. 15, 1969.

CURRENT PROBLEMS IN SURGERY

For Monthly Booklet (Int. Cl. 16).
First use Jan. 24, 1964.

SN 335,667. American Optical Corporation, Southbridge, Mass. Filed Aug. 19, 1969.



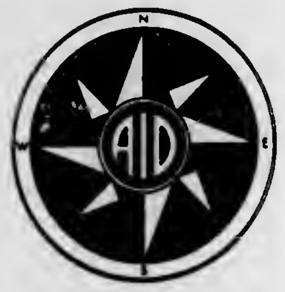
Owner of Reg. Nos. 268,217, 855,168, and others.
For Ophthalmic Lens Charts (Int. Cl. 16).
First use as early as 1940.

SN 336,417. Chilton Company, Philadelphia, Pa. Filed Aug. 27, 1969.

DISTRIBUTION WORLD WIDE

Owner of Reg. Nos. 424,711, 797,505, and 864,284.
For Periodical Publication in the Nature of a Business or Trade Magazine (Int. Cl. 16).
First use June 16, 1969.

SN 360,618. A.I.D. Associates, Inc., Dallas, Tex. Filed May 25, 1970.



For Maps (Int. Cl. 16).
First use at least as early as February 1966.

SN 360,717. Coral Ridge Properties, Inc., Coral Springs, Fla. Filed May 25, 1970.

The Coral Springs
CHRONICLE

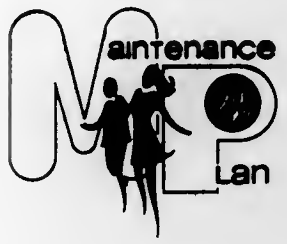
For Newspaper (Int. Cl. 16).
First use April 1967.

SN 361,072. The New American Library, Inc., New York, N.Y. Filed May 28, 1970.

PLUME

For Books (Int. Cl. 16).
First use Apr. 15, 1970.

SN 361,081. Weight Watchers International, Inc., Great Neck, N.Y. Filed May 28, 1970.



Applicant disclaims the word "Plan" apart from the mark as shown. Owner of Reg. Nos. 835,319, 885,081, and others.
For Handbooks, Booklets, Pamphlets, Bulletins and Members' Guides (Int. Cl. 16).
First use Apr. 13, 1970.

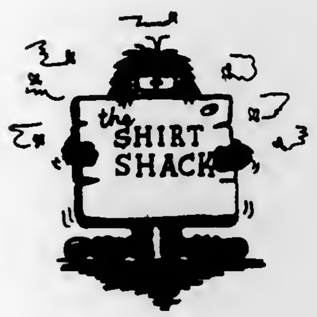
Class 39 — Clothing

SN 310,785. Kishu's East-West Fashions, Ltd., Kowloon, Hong Kong. Filed Oct. 29, 1968.

kishu's
East-West Fashions

The word "Fashions" is disclaimed apart from the mark as shown.
For Ladies' and Men's Suits, Jackets, Shirts, Skirts, Pullovers, Blouses, Slacks, Sweaters, Trousers, Shells, Dresses, Pants, Gloves and Combinations of the Same (Int. Cl. 25).
First use July 9, 1962; in commerce Sept. 5, 1962.

SN 326,133. John E. Roseboom, d.b.a. The Shirt Shack, Daytona Beach, Fla. Filed May 1, 1969.



No claim is made to the word "Shirt" apart from the mark as shown.
For Tee Shirts and Sweatshirts (Int. Cl. 25).
First use on or about Aug. 25, 1963.

SN 333,772. Tamraz Incorporated, Chicago, Ill. Filed July 28, 1969.

FACES OF EVE

For Clothing—Namely, Scarves (Int. Cl. 25).
First use June 9, 1969.

SN 336,936. Interco Incorporated, St. Louis, Mo. Filed Sept. 3, 1969.

JAMA
di Roma

Applicant disclaims the words "Di Roma" apart from the mark as a whole.
For Women's Shoes (Int. Cl. 25).
First use Sept. 5, 1968.

SN 343,313. Herbert Levine, Inc., New York, N.Y. Filed Nov. 12, 1969.

BETH'S BOUTIQUE

The word "Boutique" is disclaimed apart from the mark as shown.
For Women's and Misses Footwear—Namely, Shoes, Boots, Sandals, and Stocking Shoes (Int. Cl. 25).
First use Nov. 7, 1969.

SN 343,314. Herbert Levine, Inc., New York, N.Y. Filed Nov. 12, 1969.

BETH'S BOOTERY

The word "Bootery" is disclaimed apart from the mark as shown.
For Women's and Misses Footwear—Namely, Shoes, Boots, Sandals, and Stocking Shoes (Int. Cl. 25).
First use Nov. 7, 1969.

SN 346,448. R. G. Barry Corporation, Columbus, Ohio. Filed Dec. 17, 1969.

EVA SONNINO

"Eva Sonnino" is the name of a living individual whose consent is of record.
For Slippers, Sandals, and Scuffs (Int. Cl. 25).
First use Nov. 10, 1969.

SN 351,779. Atlas Underwear Corporation, Piqua, Ohio. Filed Feb. 19, 1970.

DRYPLY

Owner of Reg. No. 802,304.
For Men's, Women's, and Children's Hosiery (Int. Cl. 25).
First use Feb. 2, 1970.

SN 351,785. Blue Star Shoes, Inc., Lawrence, Mass. Filed Feb. 19, 1970.

HONOR GUARD

For Children's Shoes (Int. Cl. 25).
First use Jan. 22, 1962.

SN 351,934. Alfred J. Hamberg, d.b.a. Rainwear Company of America, New York, N.Y. Filed Feb. 20, 1970.

THE "AQUA-QUEEN"

For Ladies' Raincoats (Int. Cl. 25).
First use Jan. 15, 1970.

SN 352,311. Alyssa Originals, Inc., New York, N.Y. Filed Feb. 25, 1970.

ALYSSA

For Children's Dresses (Int. Cl. 25).
First use Apr. 4, 1955.

SN 353,288. Crest Uniform Co., Inc., New York, N.Y. Filed Mar. 6, 1970.

K-LETE

For Waitresses', Beauticians', and Nurses' Uniforms (Int. Cl. 25).
First use Nov. 3, 1969.

SN 361,913. Charles H. Bacon Company, Inc., Lenoir City, Tenn. Filed June 8, 1970.

STEWARDESS

For Hosiery (Int. Cl. 25).
First use June 4, 1970.

SN 362,450. Hanes Corporation, Winston-Salem, N.C. Filed June 12, 1970.

FANCY FULL

For Hosiery and Panty Hose (Int. Cl. 25).
First use Apr. 23, 1970.

SN 362,602. International Playtex, Inc., New York, N.Y. Filed June 15, 1970.

COMFORTIME

For Girdles, Brassieres, and Lingerie (Int. Cl. 25).
First use June 5, 1970.

SN 363,225. Johnny Carson Apparel, Inc., Buffalo, N.Y. Filed June 22, 1970.

JOHNNY CARSON

"Johnny Carson" is the name of a living individual whose consent is of record.
For Men's Wearing Apparel—Namely, Men's Suits (Int. Cl. 25).
First use Feb. 2, 1970.

SN 363,234. International Playtex Corporation, New York, N.Y. Filed June 22, 1970.

UNBELIEVABLE

For Girdles, Brassieres, and Lingerie (Int. Cl. 25).
First use June 11, 1970.

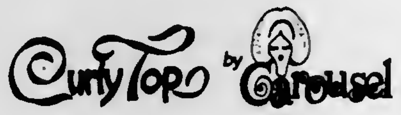
SN 363,710. The Lovable Company, Atlanta, Ga. Filed June 26, 1970.

LOVABLE LUVVIES

For Panty Hose (Int. Cl. 25).
First use June 9, 1970.

Class 40—Fancy Goods, Furnishings, and Notions

SN 331,328. Carousel Fashions, Inc., Brooklyn, N.Y. Filed June 30, 1969.



Applicant disclaims the portion of the mark "Curly Top" separate and apart from the mark as shown.
For Wigs (Int. Cl. 26).
First use Feb. 13, 1968.

SN 362,087. Suzanne Fashion Wigs, Inc., Lawrence, Mass. Filed June 8, 1970.

PARADOX

For Wigs and Hairpieces (Int. Cl. 26).
First use May 12, 1970.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 336,912. Armstrong Cork Company, Lancaster, Pa. Filed Sept. 3, 1969.

Armstrong

For Carpets and Rugs (Int. Cl. 27).
First use Feb. 9, 1968.

SN 338,545. Dan River Mills, Incorporated, Danville, Va. Filed Sept. 22, 1969.

DANCRUISE

For Textile Fabrics in the Piece of Cotton or Synthetic Fibers or Any Combinations Thereof (Int. Cl. 24).
First use Aug. 14, 1969.

SN 342,279. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

KLO KANYL

Owner of Reg. No. 511,954.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Mar. 16, 1948.

SN 342,280. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

AMBROSIA

Owner of Reg. No. 509,958.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as June 6, 1938.

SN 342,283. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

LALIQUE

Owner of Reg. No. 516,783.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Nov. 1, 1925.

SN 342,285. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

DEL ROBIA

Owner of Reg. No. 264,107.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as July 22, 1929.

SN 363,228. Deering Milliken, Inc., New York, N.Y. Filed June 22, 1970.

EARLY AUTUMN

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Apr. 26, 1966.

SN 363,607. Avondale Mills, Sylacauga, Ala. Filed June 25, 1970.

AVONDALE

Owner of Reg. No. 534,953.
For Woven and Knitted Fabrics in the Piece Composed of Natural Fibers, Synthetic Fibers or Combinations or Blends Thereof (Int. Cl. 24).
First use at least as early as June 1, 1907.

Class 44—Dental, Medical, and Surgical Appliances

SN 328,035. The Burdick Corporation, Milton, Wis. Filed May 22, 1969.

LECTRO-PADS

For Electrolyte-Impregnated Pads for Use With Physiological Signal Diagnostic and Monitoring Equipment (Int. Cl. 10).
First use July 1958.

SN 329,437. Centre d'Etudes et de Diffusion des Implants Aiguilles, Paris, France. Filed June 9, 1969.

CEDIN

For Implants and Dental Pins (Int. Cl. 5).
First use Oct. 31, 1962; in commerce Jan. 20, 1963.

SN 348,763. Consolidated Dental Services Company, New Orleans, La. Filed Jan. 16, 1970.

CODESCO

For Zirconium Phrophy Paste for Cleaning Teeth; Dental Gold Alginate for Use by Dentists in Impressions, and Needles (Int. Cls. 5 and 10).
First use Jan. 21, 1969.

SN 349,553. Propper Manufacturing Co., Inc., Long Island City, N.Y. Filed Jan. 26, 1970.

PROPPER PULSE

Applicant disclaims the word "Pulse" apart from the mark as shown. Owner of Reg. Nos. 605,851 and 868,379.
For Sphygmomanometers (Int. Cl. 10).
First use July 1969.

SN 349,584. Chesebrough-Pond's Inc., d.b.a. Ballo Thermometer Co., New York, N.Y. Filed Jan. 26, 1970.

BALLO

For Clinical Thermometers (Int. Cl. 9).
First use 1964.

SN 360,935. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 27, 1970.

RESTON

Owner of Reg. No. 793,452.
For Self-Adhering Foam Useful for Cushioning Casts and Splints (Int. Cl. 5).
First use Apr. 20, 1970.

Cla.s 46—Foods and Ingredients of Foods

SN 302,944. Industrias Empacadoras Dominicanas, C. por A., Santo Domingo, Dominican Republic. Filed July 17, 1968.

Jajá

For Foods—Namely, Canned Vegetables (Int. Cl. 29).
First use on or about Feb. 7, 1964; in commerce on or about Apr. 4, 1964.

SN 316,256. Tropical Marine, Inc., San Pedro, Calif. Filed Jan. 9, 1969.

MAR TROP

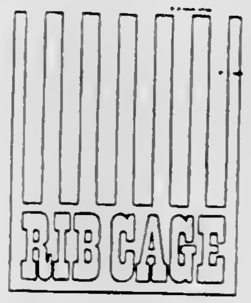
For Fresh Frozen Shellfish (Int. Cl. 29).
First use as early as Nov. 18, 1968.

SN 317,149. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Jan. 21, 1969.

SONY

Owner of U.S. Reg. Nos. 691,940, 824,847, and others.
For Chocolate Candy (Int. Cl. 30).
First use June 11, 1968; in commerce June 11, 1968.

SN 319,959. Rib Cage International, Inc., Denver, Colo. Filed Feb. 24, 1969.



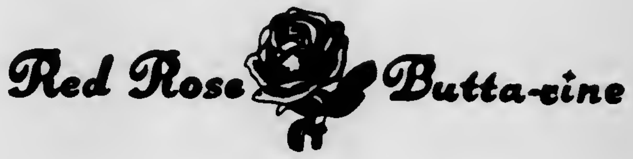
For Barbecue Sauces (Int. Cl. 30).
First use Aug. 15, 1968.

SN 326,431. Kenneth C. Rankin, d.b.a. Marketing and Distribution Co., San Francisco, Calif. Filed May 5, 1969.

READY FIX

For Frozen French Fried Potatoes (Int. Cl. 29).
First use Mar. 31, 1969.

SN 326,445. Joseph E. Shafran, d.b.a. Joseph Shafran, Philadelphia, Pa. Filed May 5, 1969.



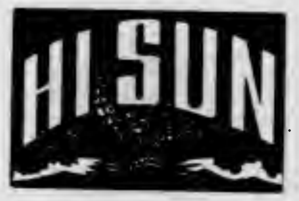
Applicant disclaims the word "Butta-Rine" apart from the mark as shown. Owner of Reg. No. 142,174.
For Margarine (Int. Cl. 29).
First use on or about Jan. 2, 1929.

SN 328,259. Francis B. Arries, Pengilly, Minn. Filed May 26, 1969.

MR. STUFFY

For Baked Product—Namely, Buns (Int. Cl. 30).
First use Aug. 8, 1968.

SN 328,585. Raney Packers, Porterville, Calif. Filed May 28, 1969.



The drawing is lined for blue and orange, but color is not claimed as a feature of the mark.
For Fresh Citrus Fruit (Int. Cl. 31).
First use November 1968.

SN 332,937. Gaymont Laboratories, Inc., Chicago, Ill. Filed July 18, 1969.

SCOTTAGE

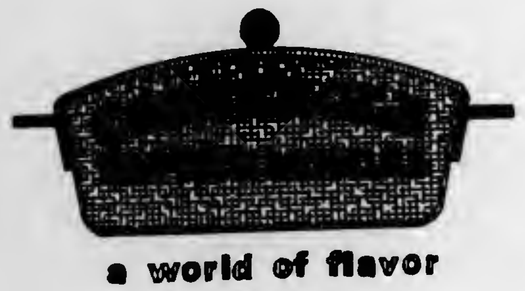
For Cottage Cheese With Skim Milk Dressing (Int. Cl. 29).
First use Oct. 15, 1968.

SN 337,603. Weight Watchers International, Inc., Great Neck, N.Y. Filed Sept. 10, 1969.

WEIGHT WATCHERS

Owner of Reg. Nos. 715,515, 868,745, and others.
For Non-Fat Dry Milk, Dried Bouillon and Frozen Vegetable (Int. Cl. 29).
First use June 13, 1969.

SN 340,399. International Casserole House and/or Casserole International, San Jose, Calif. Filed Oct. 10, 1969.



The word "Flavor" is disclaimed. The drawing is lined for the colors red and yellow.
For Frozen Casseroles—Namely, Tuna Newburg and Shrimp Creole (Int. Cl. 29).
First use Aug. 4, 1969.

SN 340,458. Ady-Ruth Acres, Stoughton, Wis. Filed Oct. 13, 1969.

ADY-RUTH ACRES

For Fresh Apples (Int. Cl. 31).
First use Sept. 15, 1969.

SN 342,251. Fearn International Inc., Franklin Park, Ill. Filed Oct. 31, 1969.

LE GOÛT

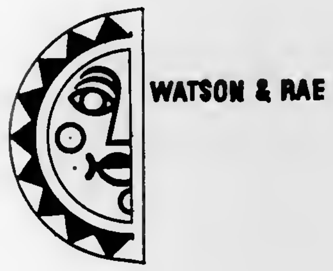
Owner of Reg. Nos. 356,081, 521,723, and 554,864.
For Canned Soups, Soup Bases, Consomme and Soup Concentrates; Gravies and Gravy Bases; Beef and Barbecue Sauce; Beef in Cream Sauce; Barbecue Sauce; Spaghetti Sauce; Cream, Tomato, Mushroom and Onion Sauces; Stroganoff, Newburg, Hollandaise, Creole and Instant Sauces; Chili Con Carne; Corned Beef Hash, Corn and Pepper Relish; Beef Stock Seasoned for Au Jus; Meat Binders or Extenders; Meat Tenderizers; Gelatin and Desserts, Flavored Powder Mixes for Making Puddings and Pie Fillings (Int. Cls. 29 and 30).
First use August 1937 on canned soups.

SN 353,139. Pet Incorporated, St. Louis, Mo. Filed Mar. 5, 1970.

CHE-HEES

For Cheese-Flavored Snacks of a Corn Meal Nature (Int. Cl. 29).
First use July 1, 1966.

SN 355,170. Watson & Rae S.A., San Jose, Costa Rica. Filed Mar. 26, 1970.



For Vegetables and Fruit in Jars and Cans, Marmalade, Chutney, and Coconut Chips (Int. Cls. 29 and 30).
First use Apr. 15, 1969; in commerce Apr. 15, 1969.

SN 355,224. General Foods Corporation, White Plains, N.Y. Filed Mar. 27, 1970.

INNER WARMTH

For Instant Breakfast Drink (Int. Cl. 5).
First use Mar. 5, 1970.

SN 355,623. Consolidated Foods Corporation, d.b.a. Popsicle Industries, Englewood, N.J. Filed Apr. 1, 1970.

COTTAGE

For Frozen Confections and Liquid Concentrates for Making the Same (Int. Cl. 30).
First use Mar. 10, 1970.

SN 356,133. Plantain Products Company, Inc., Tampa, Fla. Filed Apr. 6, 1970.

Chifles

The drawing is lined for the color red.
For Plantain Chips (Int. Cl. 29).
First use Mar. 27, 1963.

SN 361,726. Horlicks Corporation, Racine, Wis. Filed June 4, 1970.

BOOST

Owner of Reg. No. 390,003.
For Food Treat for Dogs (Int. Cl. 31).
First use Apr. 6, 1970.

SN 361,727. Horlicks Corporation, Racine, Wis. Filed June 4, 1970.

TRAINERS BOOST

Owner of Reg. No. 728,939.
For Food Treat for Dogs (Int. Cl. 31).
First use Apr. 6, 1970.

SN 362,308. Acme Markets, Inc., Philadelphia, Pa. Filed June 11, 1970.

ACME

Owner of Reg. Nos. 738,784, 767,649, and others.
For Coffee (Int. Cl. 30).
First use since May 1962; since Dec. 14, 1955, as to "Acme."

SN 362,451. Heggblade-Marguleas Co., Bakersfield, Calif. Filed June 12, 1970.

SUN GIANT

For Fresh Fruits and Vegetables, Edible Nuts, Shelled and Unshelled Roasted and Salted, Flavored and Processed (Int. Cls. 29 and 31).
First use May 15, 1970.

SN 363,231. General Mills, Inc., Minneapolis, Minn. Filed June 22, 1970.

HOMEMAKER HELPER

Owner of Reg. No. 891,676.
For Packaged Casserole Food Products Consisting Mainly of Noodles and a Sauce Mix (Int. Cl. 30).
First use on or about June 12, 1970.

SN 363,484. Edlo Enterprises Inc., San Francisco, Calif. Filed June 24, 1970.

LITE N' TRIM

Owner of Reg. Nos. 550,505, 892,172, and others.
For Low Fat Milk (Int. Cl. 29).
First use June 12, 1970.

SN 363,485. Edlo Enterprises Inc., San Francisco, Calif. Filed June 24, 1970.

LITE N' SLIM

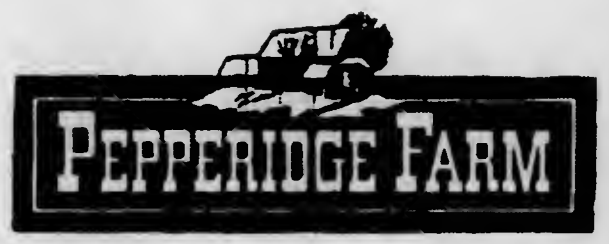
Owner of Reg. Nos. 604,012, 608,411, and 680,114.
For Low Fat Milk (Int. Cl. 29).
First use June 17, 1970.

SN 363,486. Edlo Enterprises Inc., San Francisco, Calif. Filed June 24, 1970.

SLIM TIME

Owner of Reg. Nos. 604,012, 892,172, and others.
For Low Fat Milk and Ice Milk (Int. Cl. 29).
First use June 17, 1970.

SN 363,618. Pepperidge Farm, Incorporated, Camden, N.J. Filed June 25, 1970.



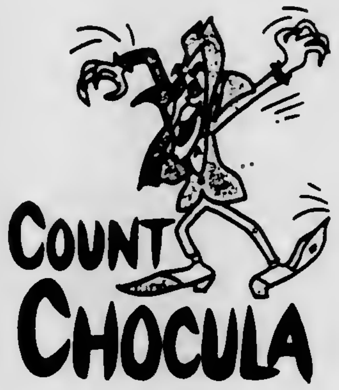
Owner of Reg. Nos. 360,512, 801,036, and others.
For Soups, Frozen and Unfrozen Biscuits, Bread, Cake, Coffee Cake, Cookies, Muffins, Pastries, Pie, Rolls, Bread Crumbs, Melba Toast, Stuffing (Dried Bread and Seasoning Mixture), Cracked Wheat Flour, and Corn Meal (Int. Cls. 29 and 30).
First use Nov. 15, 1967; Sept. 1, 1937, as to "Pepperidge Farm"; July 31, 1941, in a different form.

SN 363,706. General Mills, Inc., Minneapolis, Minn. Filed June 26, 1970.

BUCK-O'S

For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about May 25, 1970.

SN 363,810. General Mills, Inc., Minneapolis, Minn. Filed June 29, 1970.



For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about May 25, 1970.

SN 363,811. General Mills, Inc., Minneapolis, Minn. Filed June 29, 1970.

FRANKENBERRY

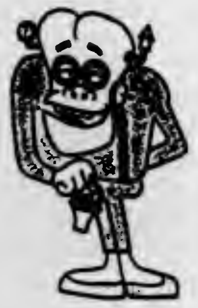
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about May 25, 1970.

SN 363,812. General Mills, Inc., Minneapolis, Minn. Filed June 29, 1970.

FRANKEN BERRY

For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about May 27, 1970.

SN 363,813. General Mills, Inc., Minneapolis, Minn. Filed June 29, 1970.



For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about May 25, 1970.

Class 48 — Malt Beverages and Liquors

SN 303,057. Little Switzerland Brewing Co., Huntington, W. Va. Filed July 18, 1968.

CHARGE

For Beer (Int. Cl. 32).
First use Apr. 17, 1968.

Class 49 — Distilled Alcoholic Liquors

SN 363,821. Charles Jacquin et Cie., Inc., d.b.a. Saxony Distillers Co., Philadelphia, Pa. Filed June 29, 1970.

SAXONY

Owner of Reg. No. 773,797.
For Whiskey, Gin, Vodka, and Rum (Int. Cl. 33).
First use Oct. 31, 1969.

Class 50 — Merchandise Not Otherwise Classified

SN 318,725. AAA Enterprises, Inc., Atlanta, Ga. Filed Feb. 10, 1969.

BONANZA

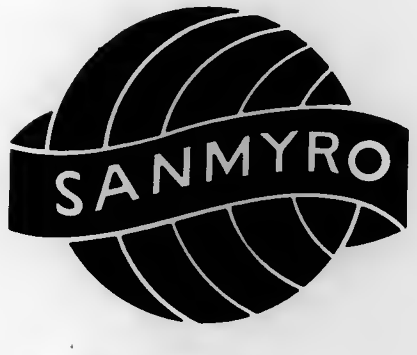
Owner of Reg. No. 740,641.
For Decorator Kits for Furnishing Mobile Homes: Specifically Consisting of Floor Planters, Coffee Table Greenery, Ash Trays, Sofa Cushions, Bed Spreads, Pillows, Flower Arrangements, Fruit Arrangements, Beverage Set, Trash Baskets, Place Mats, and Bath Mats (Int. Cl. 20).
First use at least since Dec. 18, 1968.

SN 327,159. National Aquarium Supplies & Accessories, Inc., Orange, N.J. Filed May 13, 1969.

DECRO-CORNERS

For Three Dimensional, Decorative Appliques for Aquaria (Int. Cl. 16).
First use Oct. 25, 1968.

SN 332,279. Panation Trade Company Inc., New York, N.Y. Filed July 10, 1969.



For Ceramic Figurines (Int. Cl. 21).
First use Jan. 1, 1957.

SN 332,722. Johns-Manville Corporation, New York, N.Y. Filed July 16, 1969.

SPILLGUARD

For Sheet Material Having Flotation Means and Adapted To Be Formed Into Floating Barriers for Controlling the Spread of Oil and the Like Lost or Dumped on Water (Int. Cl. 20).
First use Apr. 14, 1969.

SN 334,398. Streater Industries, Inc., Albert Lea, Minn. Filed Aug. 4, 1969.

SIGN-LOK

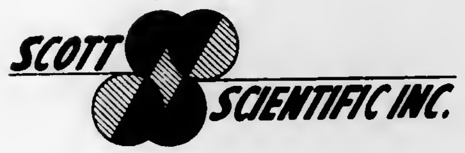
For Price Tag Sign Post Sockets of the Type Which Is Mountable on Merchandise Display Cases or Fixtures (Int. Cl. 20).
First use July 21, 1969.

SN 335,880. Krapf Business Systems, Inc., Rochester, N.Y. Filed Aug. 21, 1969.

MAGNATAG

For Plastic Strips Backed With a Magnetic Material To Form Labels, Markers, Signs, Hooks, Holders, Nameplates, Emblems, Identifications, Charts, Schedule Boards, Directories, Rosters, and Shelf and Drawer Labels (Int. Cl. 16).
First use Nov. 5, 1968.

SN 336,870. Scott Scientific, Inc., Fort Collins, Colo. Filed Sept. 2, 1969.



The lining shown on the drawing is for shading purposes only and does not represent color. The word "Inc." is disclaimed apart from the mark as shown.
For Mineralogical Specimens for Collectors Use and for Use as Instructional Materials (Int. Cl. 16).
First use June 1, 1969.

SN 343,643. The Akro Corporation, Canton, Ohio. Filed Nov. 17, 1969.

MR. INSIDE

Owner of Reg. No. 703,328.
For Carpet Bonded to Vinyl Mats (Int. Cl. 27).
First use on or about Aug. 12, 1969.

SN 343,644. The Akro Corporation, Canton, Ohio. Filed Nov. 17, 1969.

MRS. INSIDE

Owner of Reg. No. 774,657.
For Carpet Bonded to Vinyl Mats (Int. Cl. 27).
First use on or about Aug. 12, 1969.

SN 344,565. National Soda Straw Company, Chicago, Ill. Filed Nov. 25, 1969.

NOISY BENDERS

For Drinking Straws (Int. Cl. 20).
First use on or about Jan. 16, 1969.

SN 345,425. Anne M. Santo, Yonkers, N.Y. Filed Dec. 5, 1969.

YANK-EEZ

For Boot Jack (Int. Cl. 21).
First use Nov. 19, 1969.

SN 347,132. Western Litho Plate & Supply Co., d.b.a. Western Litho Plate and Supply Co., St. Louis, Mo. Filed Dec. 24, 1969.

JET

For Lithographic Plates (Int. Cl. 16).
First use July 25, 1969.

SN 362,321. The Hopp Press, Inc., New York, N.Y. Filed June 11, 1970.

PATHFINDER

For Store Directory Signs (Int. Cl. 16).
First use on or about May 3, 1965.

SN 363,134. Lundeen Hanger, Inc., Minneapolis, Minn. Filed June 19, 1970.

SLACKER

For Garment Hangers (Int. Cl. 26).
First use September 1969.

SN 364,108. Kneel-O-Matic, Lima, Ohio. Filed July 1, 1970.

KNEEL-O-MATIC

For Portable Kneeling Pads (Int. Cl. 20).
First use Sept. 15, 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 317,550. Lucille Garfield, d.b.a. Samantha Cosmetics, Beverly Hills, Calif. Filed Jan. 27, 1969.

SAMANTHA

For Eyebrow Color and Pencil, Eye Shadow, Mascara, Liquid and Cake Eyeliner, Rouge, Face Powder, Lip Gloss, Lipstick, Hand, Face and Body Creams and Lotions, Cosmetic Cleansing Creams, Moisture Creams and Lotions, Skin Fresheners, and Astringents (Int. Cl. 3).
First use Nov. 21, 1968.

SN 328,403. Samuel Bonat & Bro., Inc., West Paterson, N.J. Filed May 27, 1969.

BODY BY BONAT

The word "Body" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 402,853, 779,595, and others.
For Permanent Waving Solution (Int. Cl. 3).
First use May 7, 1969.

SN 343,520. Chesebrough-Pond's Inc., New York, N.Y. Filed Nov. 14, 1969.

SPECIAL CARE

For Hair Conditioner (Int. Cl. 3).
First use Oct. 29, 1969.

SN 350,478. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. Filed Feb. 4, 1970.

ROLL'N-GO

For Setting Gel (Int. Cl. 3).
First use Mar. 28, 1967.

SN 361,237. Miles Laboratories, Inc., Elkhart, Ind. Filed June 1, 1970.

VIVASE

For Denture Cleanser (Int. Cl. 3).
First use on or before Mar. 24, 1970.

SN 361,455. Tussy Cosmetics, Inc., New York, N.Y. Filed June 2, 1970.

ASTROSCENT

For Cologne for Men and Women (Int. Cl. 3).
First use Apr. 23, 1970.

SN 363,814. The Gillette Company, Boston, Mass. Filed June 29, 1970.

FACE SAVER

Owner of Reg. No. 723,372.
For Lather Forming Shaving Preparation (Int. Cl. 3).
First use Mar. 26, 1970.

Class 52 — Detergents and Soaps

SN 205,215. Yardley of London, Inc., New York, N.Y., assignee, by mesne assignment, of Yardley of London, Inc., Totowa, N.J. Filed Oct. 30, 1964.

YARDLEY
SAVON GLACÉ

Applicant disclaims any exclusive right in the word "Savon." The French word "Savon" means "soap." Owner of Reg. Nos. 370,545, 727,573, and 764,428.
For Toilet Soap (Int. Cl. 3).
First use Sept. 21, 1964.

SN 325,790. Stanley Home Products, Inc., Westfield, Mass. Filed Apr. 28, 1969.

FIRST MATE

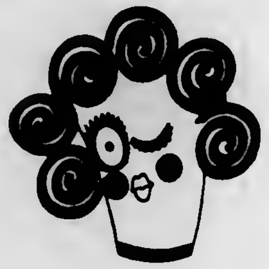
For Germicidal Cleaner for Use on Bathroom Fixtures, Appliances, Chrome, Wall Tile, Porcelain Surfaces, Painted Woodwork, Painted Walls, Metal Cabinets, and the Like (Int. Cl. 3).
First use Jan. 12, 1967.

SN 326,194. Cetylite Industries, Inc., Long Island City, N.Y. Filed May 2, 1969.

DeeFog

Owner of Reg. No. 776,779.
For Anti-Fogging and Cleaning Compound for Use on Mirrors, Optical Lenses, Eyeglasses, Scopes, and Automobile Windshields (Int. Cl. 3).
First use Jan. 7, 1963.

SN 328,796. Allentown Scientific Associates, Inc., Allentown, Pa. Filed June 2, 1969.



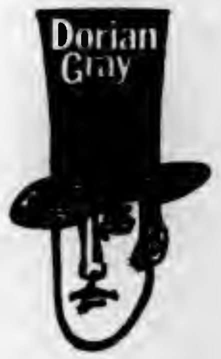
For Wig Cleaning Preparations (Int. Cl. 3).
First use Oct. 15, 1968.

SN 351,600. Armour-Dial, Inc., Chicago, Ill. Filed Feb. 17, 1970.

TIME CAPSULES

For Liquid Detergent for Household Use (Int. Cl. 3).
First use on or prior to Jan. 15, 1970.

SN 354,878. Noxell Corporation, Baltimore, Md. Filed Mar. 23, 1970.



"Dorian Gray" is a fictitious name.
For Hair Shampoo (Int. Cl. 3).
First use Feb. 18, 1970.

SN 363,616. Kimberly-Clark Corporation, Neenah, Wis. Filed June 25, 1970.

DELSEY

Owner of Reg. Nos. 354,948, 610,924, and 869,871.
For Cleaning Preparation for Toilet Bowls (Int. Cl. 3).
First use May 22, 1970.

SN 363,800. Colgate-Palmolive Company, New York, N.Y. Filed June 29, 1970.

A LITTLE HELP

Owner of Reg. Nos. 650,240, 872,322, and others.
For Hair Shampoo (Int. Cl. 3).
First use May 22, 1970.

SN 364,345. Sterling Drug Inc., New York, N.Y. Filed July 6, 1970.

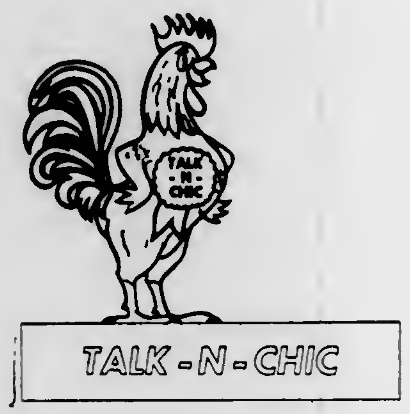
SCENE

For General Cleaning Preparation for Use in Cleaning Glass, Porcelain, Tile, Chrome, and Similar Surfaces (Int. Cl. 3).
First use Aug. 26, 1968.

SERVICE MARKS

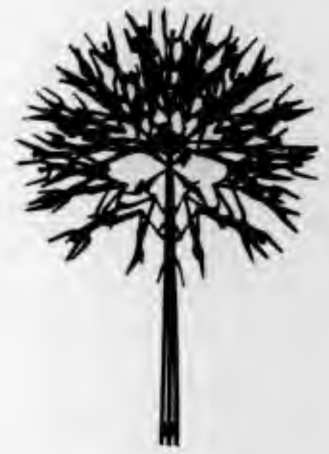
Class 100 — Miscellaneous

SN 289,874. Pete Castelli, d.b.a. Talk-N-Chic Co., Alton, Ill. Filed Jan. 30, 1968.



For Restaurant Services (Int. Cl. 42).
First use Feb. 27, 1965.

SN 291,396. The Howard Research and Development Corporation, Columbia, Md. Filed Feb. 19, 1968.



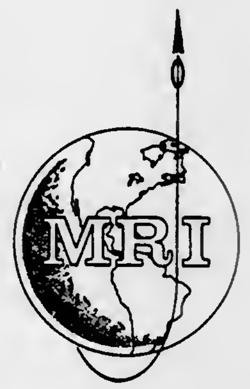
For Land and Community Development Services for Others (Int. Cl. 42).
First use Oct. 7, 1967.

SN 302,463. Urban Systems, Incorporated, Santa Monica, Calif. Filed July 10, 1968.

U S
I

For Consulting Services in Connection With Land-Use Planning for Public and Private Metropolitan Land (Int. Cl. 42).
First use Dec. 19, 1967.

SN 309,277. Mechanics Research, Inc., El Segundo, Calif. Filed Oct. 9, 1968.



For Consulting Services in the Engineering Fields of Structures, Structural Dynamics, Experimental Mechanics, Computer Sciences, Aerodynamics, Thermodynamics, Hydrodynamics, Guidance and Control, Electronics and Communication, Mechanical Design and Marine Sciences (Int. Cl. 42).
First use on or about Jan. 15, 1968.

SN 315,364. Photo Magnetic Systems, Inc., Beltsville, Md. Filed Dec. 30, 1968.

COMPUT-A-PHONE

For Rental of Programmable Translator Equipment To Allow a Telephone User To Use Telephone Equipment for Communication Linkage With Remote Central Computers (Int. Cl. 42).
First use September 1965.

SN 316,122. Randolph G. Owsley, Jr., Kansas City, Mo. Filed Jan. 8, 1969.

RANDY'S RANCH

For Restaurant Services (Int. Cl. 42).
First use Nov. 26, 1968.

SN 319,700. Dresser Industries, Inc., Dallas, Tex. Filed Feb. 20, 1969.

EPILOG

For Well Logging Services, Particularly To Measuring and Providing Logs of Characteristic Properties of Earth Formations of Surrounding Earth Boreholes (Int. Cl. 42).
First use on or about Dec. 14, 1968.

SN 320,891. American Express Company, New York, N.Y. Filed Mar. 5, 1969.

AM-EX EXPRESS RESERVATIONS

Applicant disclaims the words "Express Reservations."
Owner of Reg. Nos. 526,406, 526,407, and 838,067.
For Motel and Hotel Reservation Services—Namely, the Making and Cancelling of Hotel and Motel Room Reservations by a Network of Electronic Computers (Int. Cl. 42).
First use Jan. 6, 1969.

SN 321,812. LNG Services, Pittsburgh, Pa. Filed Mar. 14, 1969.

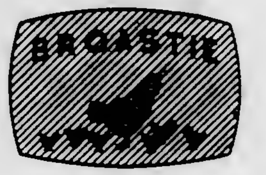
For Consultant Services in the Fields of Energy, Cryogenic and Space and Ocean Science Technology (Int. Cl. 42).
First use in or about April 1968.

SN 322,846. Dory, Ltd., Inc., Des Plaines, Ill. Filed Mar. 26, 1969.

Mr. Pipp's
Fish & Chips

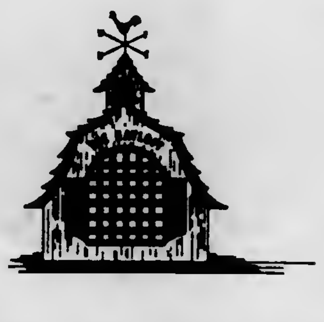
Applicant disclaims the phrase "Fish & Chips" apart from the mark as shown and without prejudice to any common law rights.
For Restaurant Services (Int. Cl. 42).
First use Nov. 25, 1968.

SN 324,577. Orby Brumell, Montreal, Quebec, Canada. Filed Apr. 15, 1969.



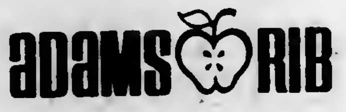
The drawing is lined for the colors brown and yellow.
Owner of Canadian Reg. No. 160,034, dated Dec. 13, 1968.
For Restaurant Services (Int. Cl. 42).

SN 327,897. Hayloft, Inc., Jackson, Miss. Filed May 21, 1969.



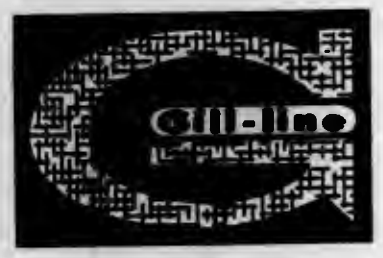
The drawing is lined for the colors red and yellow, however, color is not claimed as a feature of the mark. Owner of Reg. No. 878,382.
For Restaurant Services (Int. Cl. 42).
First use Feb. 6, 1969.

SN 328,157. Claudiagay's Enterprises, Inc., Oklahoma City, Okla. Filed May 23, 1969.



For Restaurant Services (Int. Cl. 42).
First use Nov. 20, 1968.

SN 328,844. Gill Studios, Inc., Lenexa, Kans. Filed June 2, 1969.



The Stylized "G" is lined for gold, but no claim is made to color.
For Designing and Printing Art Work to Order and/or specification of others (Int. Cl. 42).
First use January 1963.

SN 328,845. Gill Studios, Inc., Lenexa, Kans. Filed June 2, 1969.

Gill-line

For Designing and Printing Art Work to Order and/or Specification of Others (Int. Cl. 42).
First use January 1963.

SN 331,411. Montgomery Area Chamber of Commerce, Montgomery, Ala. Filed June 30, 1969.

tele host

For Visitor Information Service for Motoring Public (Int. Cl. 42).
First use May 1, 1969.

SN 331,629. Luigi's, Inc., Camp Hill, Pa. Filed June 25, 1969.

The pictorial representation of a pizza, the word "Pizza," and the wording "Pizza and Spaghetti House," separate and apart from the mark as shown, are disclaimed.
For Restaurant Services (Int. Cl. 42).
First use May 15, 1969.

SN 333,762. Snoopy's Restaurants, Inc., Houston, Tex. Filed July 28, 1969.

SNOOPY'S

For Restaurant Services (Int. Cl. 42).
First use Apr. 29, 1969.
Subj. to Intf. with SN 352,310.

SN 334,046. The Chicken Coop, Inc., Hartford, Conn. Filed July 31, 1969.

THE CHICKEN COOP

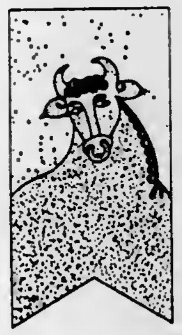
For Restaurant Services (Int. Cl. 42).
First use on or before Jan. 1, 1964.
Subj. to Intf. with SN 336,416.

SN 334,865. Restaurant Industries, Inc., d.b.a. Delly's, Bethesda, Md. Filed Aug. 8, 1969.

DELLY'S

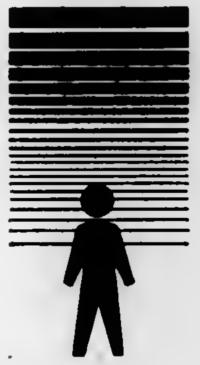
For Restaurant Services (Int. Cl. 42).
First use Oct. 1, 1968.

SN 334,976. Burgundy Bull, Inc., Edina, Minn. Filed Aug. 11, 1969.



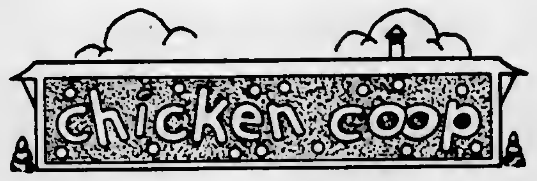
For Restaurant Services (Int. Cl. 35).
First use Oct. 10, 1968.

SN 334,980. Cambridge Technology Inc., Newton Upper Falls, Mass. Filed Aug. 11, 1969.



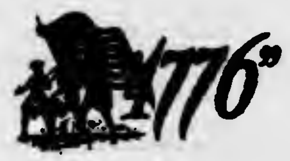
For Consultation and Research and Development Services in the Fields of Aerosol Physics and Atmospheric Pollution (Int. Cl. 42).
First use on or before Dec. 30, 1966.

SN 336,416. Chicken Coop Corp., Scranton, Pa. Filed Aug. 27, 1969.



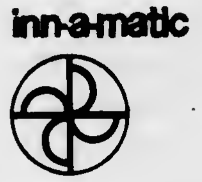
For Restaurant Services (Int. Cl. 42).
First use June 1, 1969.
Subj. to Intf. with SN 334,046.

SN 337,032. First Restaurant Corporation, White Plains, N.Y. Filed Sept. 4, 1969.



For Restaurant Services (Int. Cl. 42).
First use July 4, 1969.

SN 341,449. Dutch Inns of America, Inc., Miami, Fla. Filed Oct. 20, 1969.



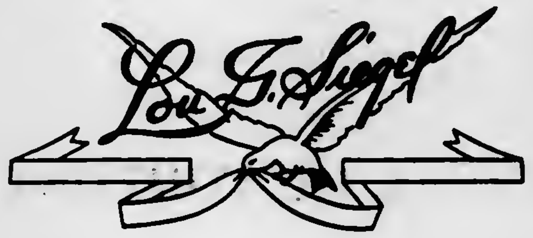
For Motel Reservation Services (Int. Cl. 42).
First use Aug. 17, 1969.

SN 343,174. Lou G. Siegel, Inc., New York, N.Y. Filed Nov. 10, 1969.

Lou G. Siegel

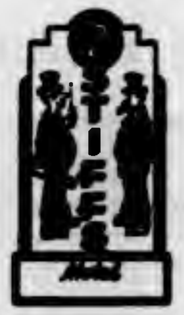
"Lou G. Siegel" is the founder of the business, now deceased.
For Restaurant and Catering Services (Int. Cl. 42).
First use 1917.

SN 343,175. Lou G. Siegel, Inc., New York, N.Y. Filed Nov. 10, 1969.



"Lou G. Siegel" is the founder of the business, now deceased.
For Restaurant and Catering Services (Int. Cl. 42).
First use 1917.

SN 343,874. Two Stiffs Company, Reno, Nev. Filed Nov. 18, 1969.



The drawing is lined for the colors red and blue, but no claim is made to color. No registration rights are claimed for the word "Motel" apart from the mark shown in the drawing, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Motel Services (Int. Cl. 42).
First use 1939.

SN 352,310. Snoopy's Pizza Parlors, Inc., Wilmington, N.C. Filed Feb. 25, 1970.

Snoopy's

For Restaurant Services (Int. Cl. 42).
First use Nov. 1, 1967.
Subj. to Intf. with SN 333,762.

SN 360,934. Marriott Corporation, Washington, D.C. Filed May 27, 1970.

Marriott

Owner of Reg. Nos. 815,612, 840,991, and others.
For Hotel and Restaurant Services (Int. Cl. 42).
First use at least as early as January 1957.

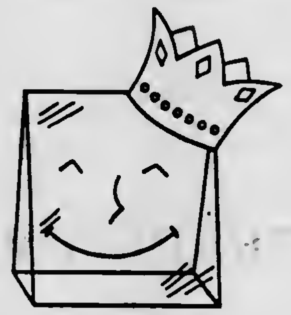
Class 101 — Advertising and Business

SN 283,331. Fashion Model of the Year, Inc., New York, N.Y. Filed Oct. 25, 1967.

MODEL
OF THE YEAR

For Publicity Services in Promoting Sale of Goods and Services of Others by Way of Beauty Model Pageants and Contests Presented Live as Well as on Television From Time to Time (Int. Cl. 35).
First use on or about Aug. 30, 1967.
Subj. to Intf. with SN 336,268.

SN 290,746. Package-King, Inc., Chicago, Ill. Filed Feb. 9, 1968.



For Packaging Services (Int. Cl. 35).
First use Feb. 14, 1962.

SN 301,734. Family Pharmacy, Inc., Greenville, Ill. Filed July 1, 1968.

FAMILY PHARMACY

Applicant disclaims the word "Pharmacy" apart from the mark as shown.
For Management and Consulting Services Re Operations of Drug Stores and Drug Departments; and Pharmacy Services Including Prescription Services, Sales of Any Items and Like Items of Drug Store Operations (Int. Cl. 35).
First use Nov. 15, 1961.

SN 314,053. Chi-Pitts Corporation, Kent, Ohio. Filed Dec. 10, 1968.

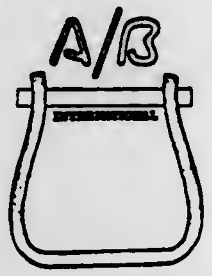
CHI-PITTS

For Manufacturers Representative Services Including Marketing, Advertising, Order Taking, Promotional Displays and Solicitation of Sales for Manufacturers and the Consultation With Prospective Purchasers as to Sources, Direction of Inquiries of Prospective Purchasers to Sources Capable of Manufacturing Various and Sundry Products (Int. Cl. 35).
First use on or about Oct. 1, 1968.

SN 314,582. Master Key Offices, Inc., Pacific Palisades, Calif. Filed Dec. 16, 1968.

Applicant disclaims the word Component "Office" apart from the mark as shown. The drawing is lined for gold.
For Real Estate Brokerage and Rental Services (Int. Cl. 35).
First use Oct. 1, 1968.

SN 318,729. Agri-Business International, Inc., Denver, Colo. Filed Feb. 10, 1969.



Applicant disclaims exclusive rights in and to the term "International" apart from the mark as used without in any way operating as a disclaimer of its common-law rights to the term.
For Retail Farm and Ranch Equipment Mail Order Services (Int. Cl. 35).
First use Oct. 15, 1968.

SN 319,170. Kentrade-A-Way, Inc., Grand Rapids, Mich. Filed Feb. 14, 1969.

KENTRADE-A-WAY

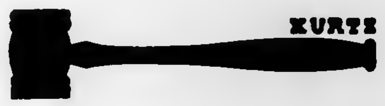
For Real Estate Brokerage Services—Namely, Selling and/or Trading Real Estate (Int. Cl. 35).
First use Dec. 14, 1968.

SN 319,393. ISC Industries, Inc., Kansas City, Mo., assignee of Tax Masters Inc., Kansas City, Mo. Filed Feb. 17, 1969.

TAX MASTERS

For Income Tax Services (Int. Cl. 35).
First use Jan. 26, 1969.
Subj. to Intf. with SN 329,512.

SN 321,240. George M. Kurtz, d.b.a. Kurtz Auction and Realty Company, Sturgis, Ky. Filed Mar. 10, 1969.



For Auctioneering and Real Estate Brokerage Services (Int. Cl. 35).
First use 1952.

SN 322,875. Kustom Electronics, Incorporated, Chanute, Kans. Filed Mar. 26, 1969.

KUSTOM MUSIC CENTER

The words "Music Center" are disclaimed apart from the mark. Owner of Reg. Nos. 844,110 and 883,687.
For Retail Music Store Services (Int. Cl. 35).
First use in or about December 1968.

SN 325,948. Autocomp Incorporated, Bethesda, Md. Filed Apr. 30, 1969.

AUTOCOMP

For Application of Computer Software Systems and Computer Programming Services for Information Retrieval and the Production of Computerized Photocomposition, for Others (Int. Cl. 35).
First use Oct. 31, 1966.

SN 327,266. The Franklin Mint, Inc., Yeadon, Pa. Filed May 14, 1969.

GOING PLACES

For Promoting the Sale of Goods or Services of Others Through Providing Materials and Advertising Matter Designed for a Promotional Contest (Int. Cl. 35).
First use Apr. 18, 1969.

SN 327,888. Glendinning Companies, Inc., Westport, Conn. Filed May 21, 1969.

WHEEL OF FORTUNE

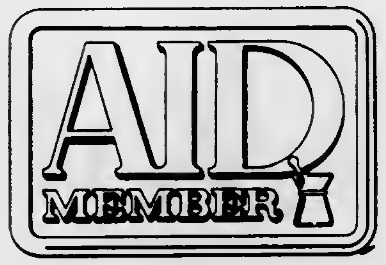
For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designs for Promotional Games (Int. Cl. 35).
First use Apr. 23, 1969.
Subj. to Intf. with SN 349,143.

SN 329,512. Severt B. Reither, Sunland, Calif. Filed June 9, 1969.

TAXMASTERS

For Accounting and Bookkeeping Services (Int. Cl. 35).
First use July 24, 1968.
Subj. to Intf. with SN 315,405 and SN 319,393.

SN 333,888. AID, Portland, Maine. Filed July 30, 1969. COLLECTIVE MARK.



Applicant disclaims the term "Member" apart from the mark as shown.
For Retail Drugstore Services (Int. Cl. 35).
First use at least as early as June 26, 1969.

SN 338,905. General Computer Management Corporation, Bethesda, Md. Filed Sept. 25, 1969.

COMPU-CARE

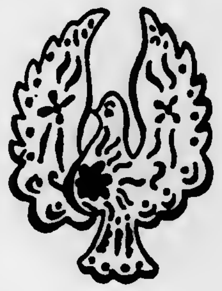
For Computerized Management Information Services for Extended Health Care Facilities (Int. Cl. 35).
First use on or before Mar. 31, 1969.
Subj. to Intf. with SN 341,791.

SN 340,302. Wallichs Music City, Inc., Hollywood, Calif. Filed Sept. 18, 1969.

MUSIC CITY

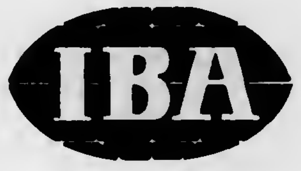
For Retail Music Store Services (Int. Cl. 35).
First use June 1940.

SN 346,721. The Christmas Dove, Rockport, Mass. Filed Dec. 19, 1969.



For Retail Gift Store Services (Int. Cl. 35).
First use June 25, 1965.

SN 361,535. IBA, Inc., Cincinnati, Ohio. Filed June 3, 1970.



For Employment Agency Services (Int. Cl. 35).
First use May 17, 1970.

SN 361,944. Ralston Purina Company, St. Louis, Mo. Filed June 8, 1970.

PET DEN

Applicant makes no claim to the word "Pet" apart from the mark as shown, and waives none of its common law rights therein.
For Pet Store Services (Int. Cl. 35).
First use Apr. 16, 1970.

SN 362,628. Van Electronics Corporation, New York, N.Y. Filed June 15, 1970.

VANTRON

For Mobile Marketing of Home Electronics Products (Int. Cl. 35).
First use Aug. 1, 1969.

SN 363,389. Lever Brothers Company, New York, N.Y. Filed June 23, 1970.

CIRCLE POINTS

For Providing of Premium Certificates to Consumers, and the Redeeming of Such Certificates for Selected Items of Merchandise (Int. Cl. 35).
First use May 1970.

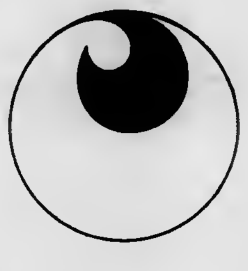
Class 102 — Insurance and Financial

SN 272,293. Northwestern Refining Co., St. Paul Park, Minn. Filed May 24, 1967.

SARC

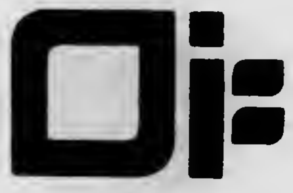
For Financial Credit Services (Int. Cl. 36).
First use Nov. 1, 1966.

SN 318,183. Clendenin Corporation, Silver Spring, Md. Filed Feb. 3, 1969.



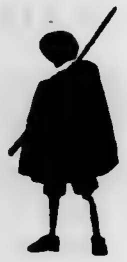
For General Investment Advisory Business (Int. Cl. 36).
First use Dec. 26, 1968.

SN 326,787. O'Neil Institutional Fund, Beverly Hills, Calif. Filed May 8, 1969.



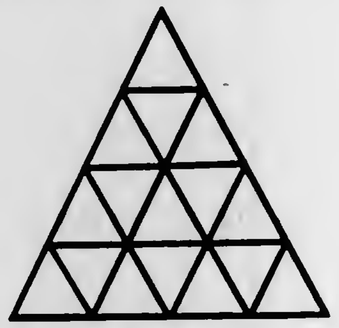
The mark Consists of the Letters "OIF" in Fanciful Form.
For Mutual Fund Investment Services—Namely, Investing the Funds of Others (Int. Cl. 36).
First use Dec. 20, 1968.

SN 329,753. Pilgrim Fund Inc., Tenafly, N.J. Filed June 11, 1969.



For Mutual Investment Services (Int. Cl. 36).
First use Aug. 14, 1968.

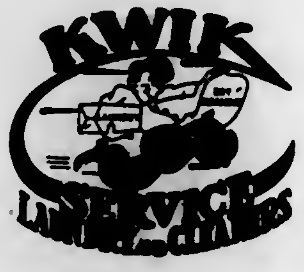
SN 346,187. Shadur, La Vine & Gallop, Inc., Encino, Calif. Filed Dec. 15, 1969.



For Evaluation and Assistance in Analysis of Profit Sharing and Pension Plans, Tax Sheltered Programs, Estate Planning, Employee Benefit Programs, Employee Communications, Business Insurance, and Investment Planning (Int. Cl. 36).
First use Sept. 11, 1968.

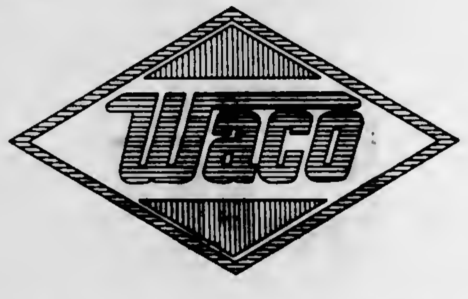
Class 103 — Construction and Repair

SN 318,198. Kwik Service Cleaners and Laundry, Inc., Jackson, Miss. Filed Feb. 3, 1969.



All words with the exception of "Kwik," including "Laundry," "Dry Cleaning," "Service," and "Laundry and Cleaners," are disclaimed apart from the mark as shown.
For Laundry and Dry Cleaning Services (Int. Cl. 37).
First use July 1, 1959.

SN 320,203. Waco Oil and Refining Company, Covington, Ky. Filed Feb. 26, 1969.



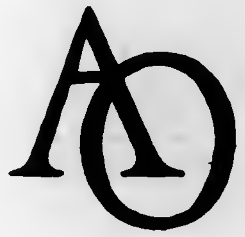
The mark is lined for the colors blue and red, but such colors do not form a part of the mark.
For Filling Station Services (Int. Cl. 37).
First use Dec. 19, 1967.

SN 333,529. Bumper Chrome Specialists, Inc., Grosse Pointe Woods, Mich. Filed July 25, 1969.

SPOT CHROME

For Repair of Chrome Plated Vehicle Bumpers (Int. Cl. 37).
First use May 1963.

SN 335,673. American Optical Corporation, Southbridge, Mass. Filed Aug. 19, 1969.



Owner of Reg. Nos. 268,217, 855,168, and others.
For Repair Service—Namely, Ophthalmic Frame and Instrument Repair; and Custom Office Layout Service (Int. Cl. 37).
First use as early as 1912.

SN 345,568. Plaskolite, Inc., Columbus, Ohio. Filed Dec. 8, 1969.

For Constructing and Resurfacing Tennis Courts and Other Recreation Surfaces, Such as Running Tracks and Playground Areas (Int. Cl. 37).
First use Oct. 15, 1969.

SN 361,060. E. L. Bruce Co., Inc., d.b.a. Bruce Terminix and Bruce Terminix Termite & Pest Control, Memphis, Tenn. Filed May 28, 1970.

4-WAY PRECISION PEST CONTROL

Without Waiver of any of its common law rights applicant disclaims exclusive right to use of the words "Pest Control" except in combination with the mark as shown.
For Termite and Other Household Pest Control Services (Int. Cl. 37).
First use July 1, 1969.

Class 104 — Communication

SN 331,910. Kaiser Broadcasting Corporation, Oakland, Calif. Filed July 7, 1969.

FOG HORN SOUND

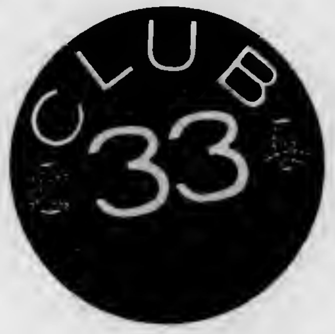
The mark essentially comprises two tones sounded one after the other, both tones being of low pitch and harsh or hoarse quality, but the first tone being somewhat higher in pitch than the second.
For Radio Broadcasting Services (Int. Cl. 38).
First use Mar. 1, 1963.

Class 105 — Transportation and Storage

SN 298,164. USCO Services, Inc., Port Clinton, Ohio. Filed May 14, 1968.

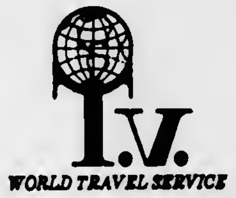
The drawing is lined for the color yellow, but color is not claimed as an essential feature of the mark. Applicant waives no common law rights to color.
For Public Warehousing Services (Int. Cl. 39).
First use March 1968, or earlier.

SN 306,027. Vingresor/Club 33 A.B., Stockholm, Sweden. Filed Aug. 27, 1968.



The words "Ungdomsresor Av Klass" mean "high grade travel for youth." Applicant disclaims the words "Ungdomsresor Av Klass" apart from the mark as shown. Owner of Swedish Reg. No. 105,034, dated Jan. 25, 1963.
For Travel Agency Services and Arrangement of Conducted Tours (Int. Cl. 39).

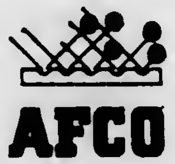
SN 330,644. Top Value Enterprises, Inc., Dayton, Ohio. Filed June 20, 1969.



Applicant disclaims the term "World Travel Service" apart from the mark as shown. Owner of Reg. No. 624,485.
For Travel Agency Services (Int. Cl. 39).
First use May 25, 1969.

Class 106 — Material Treatment

SN 318,014. The Wheelbrator Corporation, Gardena, Calif. Filed Jan. 31, 1969.



For Surface Treatment of Parts With Metal Shot and Abrasives (Int. Cl. 40).
First use Feb. 1, 1967.

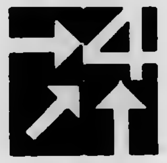
SN 318,182. Galeski Photo Center, Inc., Richmond, Va. Filed Feb. 3, 1969.

PHOTO/PAK

For Processing and Developing of Photographic Film (Int. Cl. 40).
First use Apr. 10, 1968.

Class 107 — Education and Entertainment

SN 359,572. Psychological Associates, Inc., St. Louis, Mo. Filed May 13, 1970.



For Conducting Educational Seminars on Job Tasks and Techniques (Int. Cl. 41).
First use Feb. 15, 1970.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 343,810. American Association for the Advancement of Science, Washington, D.C. Filed Nov. 18, 1969.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

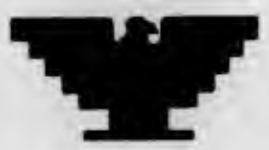
For Indicating Membership in Applicant.
First use Dec. 31, 1848.

SN 356,332. Consulting Engineers Council, Washington, D.C. Filed Apr. 9, 1970.

CONSULTING ENGINEERS COUNCIL

Owner of Reg. No. 806,533.
For Indicating Membership in Applicant Association.
First use July 29, 1957.

SN 357,444. United Farm Workers Organizing Committee, Delano, Calif. Filed Apr. 20, 1970.

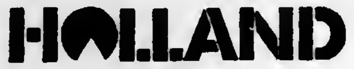


For Indicating Membership in Applicant Association.
First use Mar. 1, 1963.

CERTIFICATION MARKS

Class A — Goods

SN 320,656. Stichting Holland Cheese Exporters Association, The Hague, Netherlands. Filed Mar. 3, 1969.

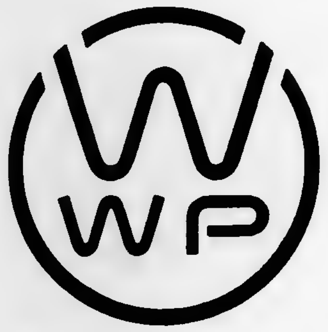


The mark certifies regional origin. The drawing is lined for the colors blue and red. Owner of Reg. No. 617,958.

For Cheese.

First use July 1, 1968; in commerce July 1, 1968.

SN 360,943. Western Wood Products Association, Portland, Oreg. Filed May 27, 1970.



The mark certifies that the goods comply with the applicable standards of wood species, grade, sizes and manufacture required by the grading rules of applicant.

For Lumber.

First use May 1964.

Class B — Services

SN 362,083. Sports Car Club of America, Incorporated, Westport, Conn. Filed June 8, 1970.

TRANS-AM

The mark certifies that the sport car racing event is sanctioned by applicant as a designated category of event in accordance with rules prescribed by applicant.

For Organizing, Promoting, and Operating Sports Car Racing Events.

First use at least as early as Dec. 14, 1966.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

899,001. MOOSE BRAND CHRISTMAS TREES AND DESIGN. Donald Reed Craul, d.b.a. Maple Hill Farms. SN 326,465. Pub. 7–7–70. Filed 5–5–69.

899,002. FYRON AND DESIGN. Pat Barrett, d.b.a. Barrett Enterprises. SN 331,853. Pub. 7–7–70. Filed 7–7–69.

899,003. MIKKEL. Mikkelsens, Inc. SN 335,245. Pub. 7–7–70. Filed 8–13–69.

899,004. N–71. FMC Corporation. SN 338,765. Pub. 7–7–70. Filed 9–24–69.

899,005. MAYER AND DESIGN. J. Mayer & Sohn-Cornelius Heyl Lederfabrik AG. SN 345,084. Pub. 7–7–70. Filed 12–2–69.

899,006. COROILLERA. W. D. Byron & Sons, Inc. SN 345,437. Pub. 7–7–70. Filed 12–5–69.

899,007. HOPI. Fred Rueping Leather Company. SN 345,502. Pub. 7–7–70. Filed 12–5–69.

899,008. EPSYN EPDM AND DESIGN. Copolymer Rubber & Chemical Corporation. SN 345,607. Pub. 7–7–70. Filed 12–8–69.

Class 2 — Receptacles

899,009. STOW-N-GO. Dart Industries Inc., d.b.a. Tupperware. SN 328,831. Pub. 7–7–70. Filed 6–2–69.

899,010. CUP AND CIRCLE DESIGN. Nyman Mfg. Co. SN 330,297. Pub. 7–7–70. Filed 6–17–69.

899,011. DUSTSORB. Lee S. Pemberton, Jr., d.b.a. Dusorb Products Company. SN 330,768. Pub. 7–7–70. Filed 6–23–69.

899,012. HI-TEX. Continental Can Company, Inc. SN 336,421. Pub. 7–7–70. Filed 8–27–69.

899,013. MISCELLANEOUS DESIGN. Qonaar Corporation, by change of name from Duncan Industries, Inc. MULTIPLE CLASS (Classes 2, 25, and 26). SN 351,746. Pub. 7–7–70. Filed 2–19–70.

899,014. STRIPER. Forrest B. Stannard. SN 352,679. Pub. 7–7–70. Filed 2–27–70.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

899,015. US LUGGAGE AND DESIGN. United States Luggage Corp., by change of name from United States Trunk Company, Inc. SN 315,967. Pub. 7–7–70. Filed 1–6–69.

899,016. COMFOR-TOTE. New Concepts, Inc. SN 335,462. Pub. 7–7–70. Filed 8–15–69.

899,017. PIC-POCKET. Dante, Inc. SN 336,428. Pub. 7–7–70. Filed 8–27–69.

899,018. INSIDE STORY. Sirco International Corp. SN 338,814. Pub. 7–7–70. Filed 9–24–69.

Class 4 — Abrasives and Polishing Materials

899,019. LEMON KIST AND DESIGN. The Cello Chemical Company. SN 322,965. Pub. 7–7–70. Filed 3–27–69.

899,020. MISCELLANEOUS DESIGN. South Eastern Cordage Co. SN 331,778. Pub. 7–7–70. Filed 7–3–69.

Class 5 — Adhesives

899,021. UPTIGHT ETC. AND DESIGN. Genie Industries, Inc. SN 333,123. Pub. 7–7–70. Filed 7–22–69.

899,022. CREST-O-SEAL. United Artists Theatre Circuit, Inc. SN 340,959. Pub. 7–7–70. Filed 10–16–69.

Class 6 — Chemicals and Chemical Compositions

899,023. ZINC-AL. Lea-Ronal, Inc. SN 313,775. Pub. 7–7–70. Filed 12–6–68.

899,024. OCP–7. Milchem Incorporated. SN 332,504. Pub. 7–7–70. Filed 7–14–69.

899,025. LANOSIZE. R.I.T.A. Chemical Corporation. SN 335,258. Pub. 7–7–70. Filed 8–13–69.

899,026. LICOMER. Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. SN 340,538. Pub. 7–7–70. Filed 10–13–69.

899,027. K-O-K. K-O-K Cleanser Company. SN 341,749. Pub. 7–7–70. Filed 10–27–69.

899,028. TRUSHADE. Technic, Inc. SN 342,185. Pub. 7–7–70. Filed 10–30–69.

899,029. LEPTON. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 343,489. Pub. 7–7–70. Filed 11–14–69.

899,030. PROTECT. Gulf Oil Corporation. SN 351,755. Pub. 7–7–70. Filed 2–19–70.

899,031. KASIL SS. Philadelphia Quartz Company. SN 355,844. Pub. 7–7–70. Filed 4–3–70.

899,032. MISCELLANEOUS DESIGN. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 355,987. Pub. 7–7–70. Filed 4–6–70.

899,033. BAIRCAT. Baird Chemical Industries, Inc. SN 356,329. Pub. 7–7–70. Filed 4–9–70.

Class 7 — Cordage

899,034. WM PENN AND DESIGN. Columbian Rope Company. SN 330,908. Pub. 7–7–70. Filed 6–25–69.

899,035. NYLOPROP. Metaverpa N.V. SN 333,160. Pub. 7–7–70. Filed 7–22–69.

Class 8 — Smokers' Articles, Not Including Tobacco Products

899,036. BYRON AND DESIGN. Hirota Glass Co., Ltd. SN 326,764. Pub. 7–7–70. Filed 5–8–69.

899,037. JEANTET. Bernard Hochstein. SN 343,973. Pub. 7–7–70. Filed 11–19–69.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

899,038. TURB-A-FOG. Forrest G. Scott. MULTIPLE CLASS (Classes 9 and 23). SN 326,280. Pub. 6–30–70. Filed 5–5–69.

899,039. ACCRO. Colt's Inc. SN 336,088. Pub. 7–7–70. Filed 8–25–69.

899,040. PERMA-TIMING. Colt's Inc. SN 336,090. Pub. 7–7–70. Filed 8–25–69.

899,041. OVERLAND. Firearms International Corporation (New Jersey corporation), assignee of Firearms International Corporation (Delaware corporation). SN 336,283. Pub. 7–7–70. Filed 8–12–69.

899,042. GALLERY. Firearms International Corporation (New Jersey corporation), assignee of Firearms International Corporation (Delaware corporation). SN 336,284. Pub. 7–7–70. Filed 8–12–69.

899,043. GAUCHO. Firearms International Corporation (New Jersey corporation), assignee of Firearms International Corporation (Delaware corporation). SN 336,633. Pub. 7–7–70. Filed 8–29–69.

Class 11 — Inks and Inking Materials

899,044. CRYSTAL-AIRE. Bowers Printing Ink Company. SN 327,351. Pub. 7–7–70. Filed 5–15–69.

Class 12 — Construction Materials

899,045. FARMASTER. Farmaster Products, Inc. SN 314,330. Pub. 7–7–70. Filed 12–12–68.

899,046. INSERT-A-PANEL. Stratco Inc. SN 320,190. Pub. 7–7–70. Filed 2–26–69.

899,047. CARI. Bau-Stahlgewebe G.m.b.H. SN 330,693. Pub. 7–7–70. Filed 6–23–69.

899,048. SNAPLUGS. Burke Concrete Accessories, Inc. SN 342,932. Pub. 7–7–70. Filed 11–7–69.

899,049. QUADRETTE. Johns-Manville Corporation. SN 343,304. Pub. 7–7–70. Filed 11–12–69.

899,050. CHITT. Hemi Industries, Ltd. SN 344,617. Pub. 7–7–70. Filed 11–26–69.

899,051. KAL-LINE. Kaiser Aluminum & Chemical Corporation. SN 344,717. Pub. 7–7–70. Filed 11–26–69.

899,052. MURA-CORK. Russ Stonier, Inc. SN 344,888. Pub. 7–7–70. Filed 11–28–69.

899,053. SOMFY. Societe d'Outillage et de Mecanique du Faucigny. SN 345,986. Pub. 7–7–70. Filed 12–11–69.

899,054. KICK-STRIP. GAF Corporation. SN 347,917. Pub. 7–7–70. Filed 1–7–70.

899,055. GOLDEN T. T.G. & Y. Stores Company. SN 348,361. Pub. 7–7–70. Filed 1–12–70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

899,056. STORMTITE. Stoneman Engineering & Manufacturing Co. SN 275,317. Pub. 7–7–70. Filed 7–3–67.

899,057. VISCO JET AND DESIGN. The Lee Company. SN 336,251. Pub. 7–7–70. Filed 8–15–69.

899,058. LEEJET BENDER AND DESIGN. The Lee Company. SN 336,253. Pub. 7–7–70. Filed 8–15–69.

899,059. INTRA-WALL. Cyclops Corporation. SN 341,635. Pub. 7–7–70. Filed 10–24–69.

899,060. EMC. Elyria Manufacturing Corp. SN 342,152. Pub. 7–7–70. Filed 10–30–69.

899,061. CHANNEL-FLOW. Hancor, Inc. SN 347,266. Pub. 7–7–70. Filed 12–29–69.

899,062. MAXIGRIP. Flexigrip, Inc. SN 348,415. Pub. 7–7–70. Filed 1–13–70.

899,063. NIBCO AND DESIGN. Nibco, Inc. SN 348,567. Pub. 7–7–70. Filed 1–14–70.

899,064. VEGA. Shepherd Casters, Inc. SN 355,992. Pub. 7–7–70. Filed 4–6–70.

899,065. ROBIN. Robinson Industries, Inc. SN 356,462. Pub. 7–7–70. Filed 4–10–70.

899,066. ROBIN DESIGN. Robinson Industries, Inc. SN 356,923. Pub. 7–7–70. Filed 4–15–70.

Class 15 — Oils and Greases

899,067. HALF HALF. Gulf Oil Corporation. SN 343,401. Pub. 7–7–70. Filed 11–13–69.

899,068. OZARK AND DESIGN. Ozark Petroleum Company, Inc. SN 347,773. Pub. 7–7–70. Filed 1–5–70.

Class 16 — Protective and Decorative Coatings

899,069. PRO-SPREAD. Paint Producers Inc. SN 338,426. Pub. 7–7–70. Filed 9–19–69.

899,070. TEK-NEEK. The O'Brien Corporation. SN 338,805. Pub. 7–7–70. Filed 9–24–69.

Class 17 — Tobacco Products

899,071. WORLD LEADER. Rothmans of Pall Mall Limited. SN 322,744. Pub. 7–7–70. Filed 3–25–69.

899,072. PETER STUYVESANT GOLD ETC. AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 323,127. Pub. 7–7–70. Filed 3–28–69.

899,073. PETER STUYVESANT AND DESIGN. Rembrandt Tobacco Corporation (Overseas) Limited. SN 326,436. Pub. 7–7–70. Filed 5–5–69.

899,074. SALUDOS. Alvaro Gonzalez Gonzalez, d.b.a. Fabrica de Tabacos Alvaro. SN 326,934. Pub. 7–7–70. Filed 5–9–69.

899,075. ALVARITOS. Alvaro Gonzalez Gonzalez, d.b.a. Fabrica de Tabacos Alvaro. SN 326,937. Pub. 7–7–70. Filed 5–9–69.

899,076. MEXICAN MAN (DESIGN). N.V. Sigarettenfabriek E. Laurens "Le Khedive." SN 328,571. Pub. 7–7–70. Filed 5–28–69.

899,077. CD CORPS DIPLOMATIQUE AND DESIGN. Algemeene Tabakonderneming "Alto," N.V. SN 329,674. Pub. 7–7–70. Filed 6–11–69.

899,078. HHS. Corral, Wodiska y Ca. SN 335,323. Pub. 7–7–70. Filed 8–14–69.

899,079. GOLDEN HELMET. Douwe Egberts Koninklijke Tabaksfabriek - Koffiebranderijen - Theehandel N.V. SN 353,458. Pub. 7–7–70. Filed 3–9–70.

899,080. CHERE. Havatampa Cigar Corporation. SN 354,426. Pub. 7–7–70. Filed 3–18–70.

Class 18 — Medicines and Pharmaceutical Preparations

899,081. SOLDACTONE. G. D. Searle & Co. SN 333,443. Pub. 7–7–70. Filed 7–24–69.

899,082. TGA. Partner Industries of America, Inc., d.b.a. Able Laboratories. SN 333,744. Pub. 7–7–70. Filed 7–28–69.

899,083. TECTO. Duke Laboratories, Inc. SN 333,822. Pub. 7–7–70. Filed 7–29–69.

899,084. ANCOBON. Hoffmann-La Roche Inc. SN 333,924. Pub. 7–7–70. Filed 7–30–69.

899,085. DOXIUM. Laboratoires Om S.A. SN 336,460. Pub. 7–7–70. Filed 8–27–69.

899,086. ESTRATEST. Reid-Provident Laboratories Inc. SN 345,572. Pub. 7–7–70. Filed 12–8–69.

899,087. AQUA-VITA. Dillman Laboratories, Ltd. SN 354,074. Pub. 7–7–70. Filed 3–16–70.

Class 19 — Vehicles

899,088. MCM AND DESIGN. M-Line, Inc., assignee of M.C.M. Mfg. Co., Inc. MULTIPLE CLASS (Classes 19 and 23). SN 265,834. Pub. 7–7–70. Filed 3–2–67.

899,089. THE PRESIDENTIAL AND SHIELD DESIGN. Coleman Sailing Manufacturing Company, Inc. SN 318,164. Pub. 7–7–70. Filed 2–3–69.

899,090. CL DESIGN. Croce & Lofthouse Sailcraft Ltd. SN 318,168. Pub. 7–7–70. Filed 2–3–69.

899,091. LIQUIPORTER. Talbot-Carlson, Inc. SN 330,020. Pub. 7–7–70. Filed 6–13–69.

899,092. ALCORT. American Machine & Foundry Company. SN 336,254. Pub. 7–7–70. Filed 6–9–69.

899,093. LO-WING. Mallard Coach Corporation. SN 339,576. Pub. 7–7–70. Filed 10–2–69.

899,094. LUND. Lund Metalcraft, Inc. SN 341,670. Pub. 7–7–70. Filed 10–24–69.

899,095. WARRIOR AND DESIGN. Thunderbird Products Corporation. SN 342,675. Pub. 7–7–70. Filed 11–4–69.

899,096. ESPRIT. General Motors Corporation. SN 343,108. Pub. 7–7–70. Filed 11–10–69.

899,097. SCAMP. Lund Metalcraft, Inc. SN 351,763. Pub. 7–7–70. Filed 2–19–70.

899,098. GREMLIN. American Motors Corporation. SN 353,358. Pub. 7–7–70. Filed 3–9–70.

Class 21 — Electrical Apparatus, Machines, and Supplies

899,099. ULTRA-CELL. Sensor Technology, Inc. SN 289,370. Pub. 7–7–70. Filed 1–12–68.

899,100. SANI-FILTER. Lamb Enterprises, Inc. SN 307,487. Pub. 7–7–70. Filed 9–16–68.

899,101. ARMOR-CLAD. General Electric Company. SN 308,485. Pub. 7–7–70. Filed 9–30–68.

899,102. AJ DESIGN. Anderson Jacobson, Inc. SN 312,736. Pub. 7–7–70. Filed 11–21–68.

899,103. PRINCETON. Columbia Broadcasting System, Inc. SN 314,321. Pub. 7–7–70. Filed 12–12–68.

899,104. VIBROLUX. Columbia Broadcasting System, Inc. SN 314,322. Pub. 7–7–70. Filed 12–12–68.

899,105. VIBRO CHAMP. Columbia Broadcasting System, Inc. SN 314,323. Pub. 7–7–70. Filed 12–12–68.

899,106. G GOODWAY COPY CENTER AND DESIGN. Goodway Copy Centers, Inc. MULTIPLE CLASS (Classes 21, 23, 26, 27, and 32). SN 316,163. Pub. 7–7–70. Filed 1–9–69.

899,107. NAVALERT. Tideland Signal Corporation. SN 317,476. Pub. 7–7–70. Filed 1–24–69.

899,108. PMI AND DESIGN. Pioneer Magnetics Incorporated. MULTIPLE CLASS (Classes 21 and 26). SN 322,616. Pub. 7–7–70. Filed 3–24–69.

899,109. CRESKENE. Crescent Insulated Wire and Cable Co. SN 323,266. Pub. 7–7–70. Filed 4–1–69.

899,110. RCA. RCA Corporation, by change of name from Radio Corporation of America. SN 324,564. Pub. 7–7–70. Filed 4–15–69.

899,111. RCA. RCA Corporation, by change of name from Radio Corporation of America. SN 324,565. Pub. 7–7–70. Filed 4–15–69.

899,112. ROLTEC. Roltec, Inc. SN 328,898. Pub. 7–7–70. Filed 6–2–69.

899,113. L AND DESIGN. Lectrohm, Inc. SN 341,983. Pub. 7–7–70. Filed 10–29–69.

899,114. NOMA WORLD-WIDE ETC. AND GLOBE AND BULB DESIGN. Noma-World Wide Inc. SN 342,175. Pub. 7–7–70. Filed 10–30–69.

899,115. ADAM-EQUIPPED ETC. AND DESIGN. Burton Instrumentation, Inc. SN 342,407. Pub. 7–7–70. Filed 11–3–69.

899,116. MAXI-BRUTE. Berkey/Colortran Mfg., Inc. SN 344,049. Pub. 7–7–70. Filed 11–20–69.

899,117. ELUMATIC. Commissariat a l'Energie Atomique. SN 345,138. Pub. 7–7–70. Filed 12–3–69.

899,118. ARSM AND DESIGN. American Corporation. SN 345,581. Pub. 7–7–70. Filed 12–8–69.

Class 22 — Games, Toys, and Sporting Goods

899,119. MARKER. Hannes Marker Sicherheits-Skibindungen Kommanditgesellschaft, assignee of Hannes Marker Sicherheits-Skibindungen Vertriegs GmbH. SN 278,386. Pub. 7–7–70. Filed 8–16–67.

899,120. WILSON JET. Wilson Sporting Goods Co. SN 319,009. Pub. 7–7–70. Filed 2–12–69.

899,121. NATIONAL TOURNAMENT. National Billiard Chalk Company. SN 320,072. Pub. 7–7–70. Filed 2–25–69.

899,122. SKOR-MOR. Skor-Mor Corporation. SN 321,083. Pub. 7–7–70. Filed 3–7–69.

899,123. TUBE-STA'. Tube-Sta Enterprises. SN 321,553. Pub. 7–7–70. Filed 3–12–69.

899,124. CLEO 9 LIVES AND CAT DESIGN. Harold J. Searer, d.b.a. Searer Rubber Company. SN 323,373. Pub. 7–7–70. Filed 4–1–69.

899,125. CASWELL. Caswell Equipment Company, Inc. SN 326,629. Pub. 7–7–70. Filed 5–7–69.

899,126. DADO ETC. AND DESIGN. Milo Products Corporation. SN 326,674. Pub. 7–7–70. Filed 5–7–69.

899,127. HANDSEE (DESIGN). Twinpak Ltd. SN 328,369. Pub. 7–7–70. Filed 5–26–69.

899,128. TROJAN. Columbia Industries, Inc. SN 328,824. Pub. 7–7–70. Filed 6–2–69.

899,129. KEEL FLY AND DESIGN. Keel Fly Co. SN 329,366. Pub. 7–7–70. Filed 6–6–69.

899,130. GRIP RITE. Eaton Yale & Towne Inc. SN 329,704. Pub. 7–7–70. Filed 6–11–69.

899,131. GOLDEN T. T.G. & Y. Stores Company. SN 330,018. Pub. 7–7–70. Filed 6–13–69.

899,132. KEEL-GUARD. Keel-Guard Lures, Inc. SN 330,751. Pub. 7–7–70. Filed 6–23–69.

899,133. RAIDER. Lang Lunker Lure Company. SN 330,838. Pub. 7–7–70. Filed 6–24–69.

899,134. PRO IMAGE GOLF TRAINER PI AND DESIGN. Professional Images Corporation. SN 330,847. Pub. 7–7–70. Filed 6–24–69.

899,135. BECKLEY RALSTON. American Steel Box Corp. SN 331,141. Pub. 7–7–70. Filed 6–27–69.

899,136. TRIK STIK. Dell Plastics Company, Inc. SN 331,353. Pub. 7–7–70. Filed 6–30–69.

899,137. BUCKSHOT AND DESIGN. McClellan Industries, Inc. SN 335,595. Pub. 7–7–70. Filed 8–18–69.

899,138. REDISLIP. Standard Packaging Corporation. SN 335,617. Pub. 7–7–70. Filed 8–18–69.

899,139. XRG–1 REENTRY. Mattel, Inc. SN 338,479. Pub. 7–7–70. Filed 9–22–69.

899,140. CRATER COLONY. Mattel, Inc. SN 354,090. Pub. 7–7–70. Filed 3–16–70.

899,141. DIAMOND. The United States Playing Card Company. SN 355,006. Pub. 7–7–70. Filed 3–25–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

899,038. (See Class 9 for this trademark.)

899,088. (See Class 19 for this trademark.)

899,106. (See Class 21 for this trademark.)

899,142. LECTRO LOADER. Seibert & Sons, Inc. SN 259,343. Pub. 7–7–70. Filed 11–23–66.

899,143. SIGMA. Yeomans Brothers Company. SN 267,572. Pub. 3–26–68. Filed 3–24–67.

899,144. MISAL. M.I.S.A.L.—Macchine Industriali Societa Accomandita Leto. SN 291,625. Pub. 7–7–70. Filed 2–21–68.

899,145. CIRCOOL. Graymills Corporation. SN 294,043. Pub. 7–7–70. Filed 3–25–68.

899,146. SAURER ALLMA AND DESIGN. Adolph Saurer Limited. SN 296,628. Pub. 7–7–70. Filed 4–26–68.

899,147. FREDDY. Paul Delapena Limited. SN 305,817. Pub. 7–7–70. Filed 8–23–68.

899,148. ANKERWERK NURNBERG AND DESIGN. Ankerwerk Nurnberg GmbH. SN 307,724. Pub. 7–7–70. Filed 9–19–68.

899,149. HUSKEE AND DESIGN. TSC Industries, Inc., assignee of TSC Industries, Inc., d.b.a. Tractor Supply Co. SN 313,140. Pub. 4–7–70. Filed 11–26–68.

899,150. TWIN CIRCLE DESIGN. Barreiros Diesel, S.A. SN 317,269. Pub. 7–7–70. Filed 6–19–68.

899,151. MAUN. Maun Industries Limited. SN 318,794. Pub. 7–7–70. Filed 2–10–69.

899,152. TANKLEG. W. J. Wallace Systems, Inc. SN 319,407. Pub. 7–7–70. Filed 2–17–69.

899,153. SANI-CELL. BIO_2 Systems, Inc. SN 325,830. Pub. 7–7–70. Filed 4–29–69.

899,154. NOVAMETIC. Hermetic Pumpen G.m.b.H. SN 327,759. Pub. 7–7–70. Filed 5–20–69.

899,155. STOPSHOP. Cedar Rapids Engineering Company. SN 327,854. Pub. 7–7–70. Filed 5–21–69.

899,156. GAY BLADES. J. Wiss & Sons Co. SN 329,298. Pub. 7–7–70. Filed 6–5–69.

899,157. BOKUM. Bokum Tool Company, Inc. SN 330,903. Pub. 7–7–70. Filed 6–25–69.

899,158. SULBY. The Sulby Engineering Development Company Limited. SN 332,165. Pub. 7–7–70. Filed 7–9–69.

899,159. TRANSMISSION CONCEPTS AND DESIGN. William J. Tugend, Jr., d.b.a. Transmission Concepts. SN 333,009. Pub. 7–7–70. Filed 7–18–69.

899,160. ADD-POW'R. M & W Gear Company. SN 333,728. Pub. 7–7–70. Filed 7–28–69.

899,161. S AND DESIGN. Kockum Industries, Inc. SN 334,592. Pub. 7–7–70. Filed 8–6–69.

899,162. CRODON. Chromium Corporation of America. SN 335,290. Pub. 7–7–70. Filed 8–14–69.

899,163. KING ARTHUR. Oneida Ltd. SN 336,154. Pub. 7–7–70. Filed 8–25–69.

899,164. SHANGRI-LA. Oneida Ltd. SN 336,157. Pub. 7–7–70. Filed 8–25–69.

899,165. SPRING MOOD. Oneida Ltd. SN 336,158. Pub. 7–7–70. Filed 8–25–69.

899,166. SALERNO. Oneida Ltd. SN 336,159. Pub. 7–7–70. Filed 8–25–69.

899,167. TRIPOLI. Oneida Ltd. SN 336,160. Pub. 7–7–70. Filed 8–25–69.

899,168. WILDWOOD. Oneida Ltd. SN 336,161. Pub. 7–7–70. Filed 8–25–69.

899,169. KIECKHEFER. A. Kieckhefer Elevator Company. SN 336,455. Pub. 7–7–70. Filed 8–27–69.

899,170. MELISSA. Oneida Ltd. SN 336,843. Pub. 7–7–70. Filed 9–2–69.

899,171. MONTE CARLO. Oneida Ltd. SN 336,844. Pub. 7–7–70. Filed 9–2–69.

899,172. KVAL AND DESIGN. Kvalheim Machinery Company. SN 337,330. Pub. 7–7–70. Filed 9–8–69.

899,173. "SURE-LOCK." Vaughan & Bushnell Manufacturing Company. SN 346,134. Pub. 7–7–70. Filed 12–12–69.

899,174. CARPETEER. Functional Systems Corporation. SN 346,475. Pub. 7–7–70. Filed 12–17–69.

899,175. TRABAL AND DESIGN. Don Jaime Trabal Font. SN 346,614. Pub. 7–7–70. Filed 12–18–69.

899,176. BIDENT. Pengo Corporation. SN 346,772. Pub. 7–7–70. Filed 12–19–69.

899,177. ENERJET. Enerjet, Inc. SN 346,880. Pub. 7–7–70. Filed 12–22–69.

899,178. WELLVAC. Griffin Wellpoint Corporation. SN 347,924. Pub. 7–7–70. Filed 1–7–70.

899,179. PATRICK HENRY. General Mills, Inc. SN 351,373. Pub. 7–7–70. Filed 2–16–70.

899,180. VIA ROMA. General Mills, Inc. SN 351,374. Pub. 7–7–70. Filed 2–16–70.

899,181. ADJUSTO-STOP. Davis and Furber Machine Company. SN 352,019. Pub. 7–7–70. Filed 2–24–70.

899,182. DELI-DYKES. E.T.M. Corporation. SN 352,723. Pub. 7–7–70. Filed 3–2–70.

899,183. DELI-VAC. E.T.M. Corporation. SN 352,724. Pub. 7–7–70. Filed 3–2–70.

899,184. ELANCO. Eli Lilly and Company. SN 353,694. Pub. 7–7–70. Filed 3–11–70.

Class 24 — Laundry Appliances and Machines

899,185. GOLDEN T. T.G. & Y. Stores Company. SN 339,367. Pub. 7–7–70. Filed 9–30–69.

899,186. NEEDLEBOARD. American Pressboard Co., Inc. SN 347,381. Pub. 7–7–70. Filed 12–30–69.

Class 25 — Locks and Safes

899,013. (See Class 2 for this trademark.)

Class 26 — Measuring and Scientific Appliances

899,013. (See Class 2 for this trademark.)

899,106. (See Class 21 for this trademark.)

899,108. (See Class 21 for this trademark.)

899,187. PROMARINE. Rebikoff Underwater Products, Inc., assignee of Dimitri Rebikoff. SN 309,099. Pub. 7–7–70. Filed 10–7–68.

899,188. AGA. AGA Aktiebolag. SN 315,864. Pub. 7–7–70. Filed 1–6–69.

899,189. KADIMA AND DESIGN. Industrias del Celuloide, S.A. SN 321,224. Pub. 7–7–70. Filed 3–10–69.

899,190. TELEVUE. Televue, Inc. SN 323,860. Pub. 7–7–70. Filed 4–7–69.

899,191. 432. Robertson Photo-Mechanix, Inc. SN 325,224. Pub. 7–7–70. Filed 4–22–69.

899,192. BOHN ADDMATIC. Victoreen Leece Neville, Inc. SN 328,807. Pub. 7–7–70. Filed 6–2–69.

899,193. EDUQUIP. Eduquip, Inc. SN 329,037. Pub. 7–7–70. Filed 6–4–69.

899,194. THERM-O-DISC. Therm-O-Disc, Incorporated. SN 331,447. Pub. 7–7–70. Filed 6–30–69.

899,195. KAL-STAT-L. Kalvar Corporation. SN 335,234. Pub. 7–7–70. Filed 8–13–69.

899,196. COBELDA. Societe Anonyme Belge de Constructions Aeronautiques "S.A.B.C.A." SN 338,971. Pub. 7–7–70. Filed 9–26–69.

899,197. COBELDA AND DESIGN. Societe Anonyme Belge de Constructions Aeronautiques "S.A.B.C.A." SN 338,972. Pub. 7–7–70. Filed 9–26–69.

899,198. POTENTIOTROL. Barber-Colman Company. SN 339,412. Pub. 7–7–70. Filed 10–1–69.

899,199. SUPER JIFFY. Simplicity Pattern Co., Inc. SN 348,455. Pub. 7–7–70. Filed 1–13–70.

899,200. TRU-TONE. American Optical Corporation. SN 351,644. Pub. 7–7–70. Filed 2–18–70.

899,201. NIKE. A.J.S. Incorporated. SN 354,563. Pub. 7–7–70. Filed 3–19–70.

Class 27 — Horological Instruments

899,106. (See Class 21 for this trademark.)

899,202. THE 24 GRANDCHILD AND CLOCK DESIGN. Harry W. Neal. SN 340,811. Pub. 7–7–70. Filed 10–15–69.

Class 28 — Jewelry and Precious-Metal Ware

899,203. KU-FU. Margaret Kunz, d.b.a. Studio of Ku-Fu. SN 319,172. Pub. 7–7–70. Filed 2–14–69.

899,204. SB AND DESIGN. Sarcona Brothers Company. SN 325,230. Pub. 7–7–70. Filed 4–22–69.

Class 29 — Brooms, Brushes, and Dusters

899,205. BRUSHOFF. Alliance Sales (Western) Ltd. SN 297,747. Pub. 7–7–70. Filed 5–9–68.

899,206. POLYREL. The Wooster Brush Company. SN 348,377. Pub. 7–7–70. Filed 1–12–70.

899,207. MAGNA-MAGIC. Sears, Roebuck and Co. SN 348,688. Pub. 7–7–70. Filed 1–15–70.

Class 30 — Crockery, Earthenware, and Porcelain

899,208. CASA PUPO AND DESIGN. Artesania Limited. MULTIPLE CLASS (Classes 30 and 33). SN 270,110. Pub. 7–7–70. Filed 4–27–67.

Class 31 — Filters and Refrigerators

899,209. M/B - MASTER - BILT. Master-Bilt Refrigeration Manufacturing Company. SN 322,311. Pub. 7–7–70. Filed 3–20–69.

Class 32 — Furniture and Upholstery

899,106. (See Class 21 for this trademark.)

899,210. BO-PEEP. Pyramid International, Inc. SN 348,332. Pub. 6–2–70. Filed 1–12–70.

899,211. CIRCA 75. Henredon Furniture Industries, Incorporated. SN 350,263. Pub. 7–7–70. Filed 2–2–70.

Class 33 — Glassware

899,208. (See Class 30 for this trademark.)

899,212. REDIVIEW. Hartford Glass Co., Inc. SN 343,284. Pub. 7–7–70. Filed 11–12–69.

899,213. PLATEAU. Anchor Hocking Corporation. SN 344,662. Pub. 7–7–70. Filed 11–26–69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

899,214. SIDEWINDER. Johns-Manville Corporation, assignee of Vulcan Electrics Proprietary Limited. SN 292,830. Pub. 7–7–70. Filed 3–8–68.

899,215. W AND DESIGN. P. M. Wright Electrical Co. Ltd. SN 301,869. Pub. 7–7–70. Filed 7–2–68.

899,216. ANTI-PHANTOM. Sendlinger Optische Glaswerke GmbH. SN 306,950. Pub. 7–7–70. Filed 9–9–68.

899,217. DAY & NIGHT. Carrier Corporation. SN 345,917. Pub. 7–7–70. Filed 12–11–69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

899,218. GLOBETROTTER. The Firestone Tire & Rubber Company. SN 338,648. Pub. 7–7–70. Filed 9–22–69.

899,219. IF IT'S ROUND AND ROLLS . . . WE HAVE IT! Fulton Tire, Inc. MULTIPLE CLASS (Classes 35 and 101). SN 347,133. Pub. 6–30–70. Filed 12–29–69.

Class 36 — Musical Instruments and Supplies

899,220. MUSONIC. Musonic, Inc. SN 326,409. Pub. 7–7–70. Filed 5–5–69.

899,221. YEW. A.A. Records, Inc., d.b.a. Golden Records. SN 354,254. Pub. 7–7–70. Filed 3–17–70.

Class 37 — Paper and Stationery

899,222. T (DESIGN). Transamerica Corporation. SN 297,720, Pub. 7–7–70. Filed 5–8–68.

899,223. BYWESCO. Byron Weston Company. SN 336,203. Pub. 7–7–70. Filed 8–25–69.

899,224. MALIBU. The Gillette Company, d.b.a. The Paper Mate Company. SN 336,691. Pub. 7–7–70. Filed 8–29–69.

899,225. SER SERCO ETC. AND DESIGN. S. E. Rykoff & Co. SN 352,736. Pub. 7–7–70. Filed 3–2–70.

Class 38 — Prints and Publications

899,226. ISA INSTRUMENT SOCIETY OF AMERICA AND DESIGN. Instrument Society of America. SN 310,665. Pub. 7–7–70. Filed 10–28–68.

899,227. ISA INSTRUMENT SOCIETY OF AMERICA AND DESIGN. Instrument Society of America. SN 310,667. Pub. 7–7–70. Filed 10–28–68.

899,228. IMAGE TECHNOLOGY. Society of Photographic Scientists and Engineers. SN 326,557. Pub. 7–7–70. Filed 5–6–69.

899,229. WIEDEPOINT. The Warner & Swasey Company. SN 330,227. Pub. 7–7–70. Filed 6–16–69.

899,230. PHARMACY TIMES. Pharmacy Times, Inc. SN 331,576. Pub. 7–7–70. Filed 7–2–69.

899,281. AO NEWS. American Optical Corporation. SN 335,838. Pub. 7–7–70. Filed 8–21–69.

899,232. HOT WHEELS AND DESIGN. Mattel, Inc. SN 339,507. Pub. 7–7–70. Filed 10–2–69.

899,233. DST. Psychological Associates, Inc. SN 340,733. Pub. 7–7–70. Filed 10–15–69.

899,234. STRAIGHT ARROW PUBLISHERS, INC. AND DESIGN. Straight Arrow Publishers, Inc. SN 346,582. Pub. 7–7–70. Filed 12–18–69.

899,235. ASTERIX. Dargaud S.A. SN 346,370. Pub. 7–7–70. Filed 12–16–69.

899,236. A GOOD LIFE AS WELL AS A GOOD LIVING. Farm Journal, Inc. SN 352,627. Pub. 7–7–70. Filed 2–27–70.

Class 39 — Clothing

899,237. CANDEE CANE AND DESIGN. Jayvee Brand, Incorporated. SN 193,280. Pub. 6–14–66. Filed 5–12–64.

899,238. SNAP-ON SNAX. Geraldine Badger. SN 324,394. Pub. 7–7–70. Filed 4–14–69.

899,239. THE SMOOTHER. The Strouse, Adler Company. SN 325,632. Pub. 7–7–70. Filed 4–25–69.

899,240. EL BANDIDO BY CERVANTES. Rudy Cervantes Neckwear, Inc. SN 326,911. Pub. 7–7–70. Filed 5–9–69.

899,241. YOUNG CALIFORNIANS. Broadway-Hale Stores, Inc. SN 327,850. Pub. 7–7–70. Filed 5–21–69.

899,242. BRYSON. Independent Retailers Syndicate, Inc. SN 329,985. Pub. 7–7–70. Filed 6–13–69.

899,243. LOVEMIT ETC. AND DESIGN. Psychosync, Inc. SN 330,007. Pub. 7–7–70. Filed 6–13–69.

899,244. STICK-TOGETHERS. Ruth Scharf, Ltd. SN 332,258. Pub. 7–7–70. Filed 7–10–69.

899,245. THREE SUNS AND DESIGN. Kidets, Inc. SN 332,492. Pub. 7–7–70. Filed 7–14–69.

899,246. THE BUM SHIRT. Manhattan Industries, Inc. SN 333,586. Pub. 7–7–70. Filed 7–25–69.

899,247. COUNTRY BUMPKINS. Intercontinent Shoe Corporation. SN 333,831. Pub. 7–7–70. Filed 7–29–69.

899,248. BUSY BEA AND DESIGN. Knoxville Glove Company. SN 334,594. Pub. 7–7–70. Filed 8–6–69.

899,249. ROTHMOOR. Rothmoor Corporation. SN 334,619. Pub. 7–7–70. Filed 8–6–69.

899,250. CANDY COTTON AND DESIGN. Wembley, Inc. SN 334,654. Pub. 7–7–70. Filed 8–6–69.

899,251. REMI AND DESIGN. American Ski Corp. SN 334,683. Pub. 7–7–70. Filed 8–7–69.

899,252. WISE ROBES OF DISTINCTION AND DESIGN. Pollak Leather, Inc. SN 334,740. Pub. 7–7–70. Filed 8–7–69.

899,253. MARTELL. Martin's. SN 335,361. Pub. 7–7–70. Filed 8–14–69.

899,254. CRADLE CROWD. Broadway-Hale Stores, Inc. MULTIPLE CLASS (Classes 39 and 42). SN 335,638. Pub. 7–7–70. Filed 8–19–69.

899,255. ELASTO-MOC. Penobscot Shoe Company. SN 335,772. Pub. 7–7–70. Filed 8–20–69.

899,256. PRETTI-FITS. Wiscassett Mills Company. SN 336,041. Pub. 7–7–70. Filed 8–22–69.

899,257. CIRAIN. Oxford Industries, Inc. SN 336,710. Pub. 7–7–70. Filed 8–29–69.

899,258. DOWN CLUB. Freeland Shirt Co., Inc. SN 337,443. Pub. 7–7–70. Filed 9–9–69.

899,259. MACINTOSH ETC. AND DESIGN. Chas. Macintosh and Company Limited. SN 337,566. Pub. 7–7–70. Filed 9–10–69.

899,260. PININFARINA. Gruppo Finanziario Tessile Societa in Accomandita Semplice di Fratelli Rivetti & C. SN 337,758. Pub. 7–7–70. Filed 9–11–69.

899,261. FORWARD FASHIONS. Forward Fashions, Inc. SN 338,145. Pub. 7–7–70. Filed 9–17–69.

899,262. NAN REED PETITES AND DESIGN. Cobbs Corner Casuals, Inc. SN 338,225. Pub. 7–7–70. Filed 9–18–69.

899,263. WESTHOUSE JRS. WHITE STAG AND DESIGN. White Stag Manufacturing Co. SN 338,511. Pub. 7–7–70. Filed 9–22–69.

899,264. CHANGEABOUTS WHITE STAG AND DESIGN. White Stag Manufacturing Co. SN 338,512. Pub. 7–7–70. Filed 9–22–69.

899,265. GEOFFREY BEENE. Geoffrey Beene, Inc. SN 338,649. Pub. 7–7–70. Filed 9–22–69.

899,266. DEVILIQUE. Alba-Waldensian, Inc. SN 338,865. Pub. 7–7–70. Filed 9–25–69.

899,267. FRANK NOONE SHOES FOR MEN AND DESIGN. Frank Noone Shoe Co., Inc. SN 339,351. Pub. 7–7–70. Filed 9–30–69.

899,268. FENCE POSTS. The Williamson-Dickie Manufacturing Company. SN 339,618. Pub. 7–7–70. Filed 10–2–69.

899,269. DISTINO AND ROMAN COLUMNS DESIGN. Globe Footwear Corp. SN 339,882. Pub. 7–7–70. Filed 10–6–69.

899,270. STONY BROOK AND SHIELD DESIGN. David Crystal, Inc., assignee of Stony Brook Casuals, Inc. SN 340,437. Pub. 7–7–70. Filed 10–10–69.

899,271. HOLD EVERYTHING. Exquisite Form Industries, Inc., by change of name and assignment from Exquisite Form Industries, Inc. SN 341,272. Pub. 7–7–70. Filed 10–21–69.

899,272. TODAY'S LOOK. Exquisite Form Industries, Inc., by change of name and assignment from Exquisite Form Industries, Inc. SN 341,273. Pub. 7–7–70. Filed 10–21–69.

899,273. BIT PARTS. Caressa, Inc. SN 342,021. Pub. 7–7–70. Filed 10–29–69.

899,274. QUAIL HOLLOW. Chadbourn Inc. MULTIPLE CLASS (Classes 39 and 43). SN 342,346. Pub. 7–7–70. Filed 11–3–69.

899,275. TUF-DOG ETC. AND DOG AND WELDING BOX DESIGN. Kirschner Gloves, Inc. SN 342,976. Pub. 7–7–70. Filed 11–7–69.

899,276. THOM THRIFTS. Melville Shoe Corporation. SN 343,223. Pub. 7–7–70. Filed 11–12–69.

899,277. SHIELD DESIGN. David Crystal, Inc., assignee of Stony Brook Casuals, Inc. SN 340,438. Pub. 6–30–70. Filed 10–10–69.

899,278. STAGE 2. Oxford Industries, Inc. SN 344,012. Pub. 7–7–70. Filed 11–19–69.

899,279. WHISPER-STRETCH. Herman Geist Inc. SN 344,288. Pub. 7–7–70. Filed 11–24–69.

899,280. PERISCOPE 21. Lanz Originals, Inc. SN 344,932. Pub. 7–7–70. Filed 12–1–69.

899,281. CRITIQUES AND DESIGN. Westland Shoe Corp. SN 347,367. Pub. 7–7–70. Filed 12–29–69.

899,282. BRITE GLO. Wellco Enterprises, Inc. SN 347,662. Pub. 7–7–70. Filed 1–2–70.

899,283. FUN GLO. Wellco Enterprises, Inc. SN 347,664. Pub. 7–7–70. Filed 1–2–70.

899,284. FOURTH EDITION. Nan-Flower Lingerie, Inc. SN 347,953. Pub. 7–7–70. Filed 1–7–70.

899,285. JOYCE HERE AND NOW. The United States Shoe Corporation. SN 353,388. Pub. 7–7–70. Filed 3–9–70.

Class 40 — Fancy Goods, Furnishings, and Notions

899,286. WAIF. Abbott Tresses, Inc. SN 340,343. Pub. 7–7–70. Filed 10–10–69.

899,287. DENISE. Darly Products, Inc. SN 340,520. Pub. 7–7–70. Filed 10–13–69.

899,288. DOREEN. Darly Products, Inc. SN 340,521. Pub. 7–7–70. Filed 10–13–69.

899,289. MEI LING. Darly Products, Inc. SN 340,522. Pub. 7–7–70. Filed 10–13–69.

899,290. ANNETTE. Darly Products, Inc. SN 340,779. Pub. 7–7–70. Filed 10–15–69.

899,291. LADY GERALDINE. Jerrax Imports, Inc. SN 340,922. Pub. 7–7–70. Filed 10–16–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

899,254. (See Class 39 for this trademark.)

899,292. STADIUM. Reeves Brothers, Inc. SN 327,780. Pub. 7–7–70. Filed 5–20–69.

899,293. ROYAL MANOR. Independent Retailers Syndicate, Inc. SN 329,726. Pub. 7–7–70. Filed 6–11–69.

899,294. BRYSON. Independent Retailers Syndicate, Inc. SN 329,986. Pub. 7–7–70. Filed 6–13–69.

899,295. ZAGGERI. Waumbec Mills, Incorporated. SN 332,387. Pub. 7–7–70. Filed 7–11–69.

899,296. GLAMOR-FLEX. Glamorize Foundations, Inc. SN 333,560. Pub. 7–7–70. Filed 7–25–69.

899,297. ASTON. E. T. Barwick Industries, Inc. SN 334,002. Pub. 7–7–70. Filed 7–31–69.

899,298. CHINA-MATE LINENS. Zell Bros., Inc. SN 334,267. Pub. 7–7–70. Filed 8–1–69.

899,299. COMMERCIALON. J & J Industries, Inc. SN 335,452. Pub. 7–7–70. Filed 8–14–69.

899,300. SPORTFACE. J. P. Stevens & Co., Inc. SN 335,478. Pub. 7–7–70. Filed 8–15–69

899,301. POLY NEEDL BAC. Amoco Fabrica Company, assignee of Avisun Corporation. SN 336,403. Pub. 7–7–70. Filed 8–27–69.

899,302. THE FRIMPS. Celanese Corporation. SN 340,509. Pub. 7–7–70. Filed 10–13–69.

899,303. DESIGNS FOR LIVING. E. T. Barwick Industries, Inc. SN 352,408. Pub. 7–7–70. Filed 2–26–70.

899,304. SUMMAKOOL. Deering Milliken, Inc. SN 355,078. Pub. 7–7–70. Filed 3–26–70.

Class 43 — Thread and Yarn

899,274. (See Class 39 for this trademark.)

899,305. DAMART-THERMAWEAR. Bolfra, Societe Anonyme. SN 345,058. Pub. 7–7–70. Filed 12–2–69.

899,306. BRILLYARN. Ledal di Leone Sacerdote & C. S.a.s. SN 352,902. Pub. 7–7–70. Filed 3–3–70.

899,307. CAROLINEN. Texlin Corporation. SN 353,142. Pub. 7–7–70. Filed 3–5–70.

Class 44 — Dental, Medical, and Surgical Appliances

899,308. MAGIFLEX. American Cyanamid Company. SN 338,337. Pub. 7–7–70. Filed 9–19–69.

Class 45 — Soft Drinks and Carbonated Waters

899,309. MANGO-AKI. PepsiCo, Inc. SN 339,818. Pub. 7–7–70. Filed 10–6–69.

899,310. DELL'S. Dell Products Corp. SN 340,530. Pub. 7–7–70. Filed 10–13–69.

Class 46 — Foods and Ingredients of Foods

899,311. VIP (IN CIRCLE DESIGN). VIP Foods, Inc. SN 248,071. Pub. 10–11–66. Filed 6–14–66.

899,312. V.I.P. VIP Foods, Inc., assignee of S and W Fine Foods, Inc. SN 250,521. Pub. 10–11–66. Filed 7–18–66.

899,313. CREOLE FRENCH. Anderson, Clayton & Co. SN 304,661. Pub. 7–7–70. Filed 8–8–68.

899,314. FLOMOLAS. Agway, Inc. SN 331,985. Pub. 7–7–70. Filed 7–8–69.

899,315. MISCELLANEOUS DESIGN. Sunkist Growers, Inc. SN 340,839. Pub. 7–7–70. Filed 10–15–69.

899,316. DAIRY DINNER. Ralston Purina Company. SN 343,472. Pub. 7–7–70. Filed 11–14–69.

899,317. STAGE. Stage Delicatessen & Restaurant, Inc. SN 345,874. Pub. 7–7–70. Filed 12–10–69.

899,318. COUNTRY'S DELIGHT. Certified Grocers of Illinois, Inc. SN 346,223. Pub. 7–7–70. Filed 12–15–69.

899,319. MISCELLANEOUS DESIGN. Stage Delicatessen & Restaurant, Inc. SN 346,409. Pub. 7–7–70. Filed 12–16–69.

899,320. KIT-N-CABOODLE. Armour-Dial, Inc. SN 348,628. Pub. 7–7–70. Filed 1–15–70.

899,321. THREE COURSE. Armour-Dial, Inc. SN 348,634. Pub. 7–7–70. Filed 1–15–70.

899,322. MINI-CLAIRS. ITT Continental Baking Company. SN 348,736. Pub. 7–7–70. Filed 1–16–70.

899,323. SERV. Mitchell Foods, Inc. SN 348,785. Pub. 7–7–70. Filed 1–16–70.

899,324. WESTERN VALLEY AND DESIGN. Chambossé Brokerage Co., d.b.a. Chambro. SN 348,828. Pub. 7–7–70. Filed 1–19–70.

899,325. DOLLY PAK AND DESIGN. Dolly Madison Industries, Inc. SN 348,848. Pub. 7–7–70. Filed 1–19–70.

899,326. CRYSTAL DESIGN. Diamond Crystal Salt Company. SN 349,068. Pub. 7–7–70. Filed 1–20–70.

899,327. CALMA AND DESIGN. Hag AG Bremen. SN 349,179. Pub. 7–7–70. Filed 1–21–70.

899,328. GOURMET. Beatrice Foods Co. SN 349,319. Pub. 7–7–70. Filed 1–22–70.

899,329. TRADEWINDS. Tradewinds Company. SN 349,707. Pub. 7–7–70. Filed 1–26–70.

899,330. GARDEN STYLE DELIGHTS. Weidner Canning Company, Inc. SN 349,714. Pub. 7–7–70. Filed 1–26–70.

899,331. LOVE IT'S. The Donruss Company. SN 349,754. Pub. 7–7–70. Filed 1–27–70.

899,332. PERFIC-PAX. General Foods Corporation. SN 349,857. Pub. 7–7–70. Filed 1–28–70.

899,333. BONNIE JO. Bonnie Jo Candies. SN 350,211. Pub. 7–7–70. Filed 2–2–70.

899,334. COUNTERWEIGHT. General Mills, Inc. SN 350,358. Pub. 7–7–70. Filed 2–3–70.

899,335. DEMI. Carter-Wallace, Inc. SN 350,645. Pub. 7–7–70. Filed 2–6–70.

899,336. MARGIE. Carter-Wallace, Inc. SN 350,649. Pub. 7–7–70. Filed 2–6–70.

899,337. BETTER HALF. Carter-Wallace, Inc. SN 350,806. Pub. 7–7–70. Filed 2–9–70.

899,338. MAR-LOW. Carter-Wallace, Inc. SN 350,807. Pub. 7–7–70. Filed 2–9–70.

899,339. THE GRUMPY DOG. Ralston Purina Company. SN 351,765. Pub. 7–7–70. Filed 2–19–70.

899,340. FACS. Pet Incorporated. SN 352,297. Pub. 7–7–70. Filed 2–25–70.

899,341. ZEVO WHIP. Zevo, Inc. SN 353,837. Pub. 7–7–70. Filed 3–12–70.

899,342. T'RIFF. Ralston Purina Company. SN 355,580. Pub. 7–7–70. Filed 4–1–70.

899,343. KATRINA. Ralston Purina Company. SN 355,582. Pub. 7–7–70. Filed 4–1–70.

899,344. HERO. Ralston Purina Company. SN 355,586. Pub. 7-7-70. Filed 4-1-70.

899,345. PLENTY. Ralston Purina Company. SN 355,587. Pub. 7-7-70. Filed 4-1-70.

899,346. NAVARRO. Eskimo Pie Corporation. SN 356,335. Pub. 7-7-70. Filed 4-9-70.

Class 47 — Wines

899,347. MARDI GRAS AND DESIGN. Puerto Rico Distillers, Inc. SN 348,484. Pub. 7-7-70. Filed 1-14-70.

Class 48 — Malt Beverages and Liquors

899,348. UNIVERSITY CLUB. Miller Brewing Company. SN 353,073. Pub. 7-7-70. Filed 3-4-70.

Class 49 — Distilled Alcoholic Liquors

899,349. JAMESON. John Jameson & Son, Limited. SN 330,390. Pub. 7-7-70. Filed 6-18-69.

899,350. IRELAND'S GREETING. The Irish Whiskey Blending Co. Ltd. SN 340,667. Pub. 7-7-70. Filed 10-14-69.

899,351. TAKE-A-LONG. Hiram Walker & Sons, Inc. SN 346,705. Pub. 7-7-70. Filed 12-19-69.

Class 50 — Merchandise Not Otherwise Classified

899,352. CARROUSEL FOUNTAIN. Unique Fountain Displays, Inc. SN 323,488. Pub. 7-7-70. Filed 4-2-69.

899,353. KAR-GARD. Veped Traffic Controls, Inc. SN 341,233. Pub. 7-7-70. Filed 10-20-69.

899,354. STICK-E-BAK AND DESIGN. Perfex Corporation. SN 342,758. Pub. 7-7-70. Filed 11-5-69.

899,355. "BIRDS OFF" MESH AND BIRDS DESIGN. French Textiles Company. SN 342,967. Pub. 7-7-70. Filed 11-7-69.

899,356. THERMIVIT. Bro-Dart Industries. SN 343,075. Pub. 7-7-70. Filed 11-10-69.

899,357. LC II. Durolith Corporation. SN 352,722. Pub. 7-7-70. Filed 3-2-70.

Class 51 — Cosmetics and Toilet Preparations

899,358. SYLVIE. C.L.I. Cosmetics, Inc. SN 338,221. Pub. 7-7-70. Filed 9-18-69.

899,359. PEN PAL. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 339,628. Pub. 7-7-70. Filed 10-3-69.

899,360. BRONCO. A. H. Robins Company, Incorporated. SN 342,902. Pub. 7-7-70. Filed 11-6-69.

899,361. QUARTZ. Les Parfums de Molyneux. SN 345,834. Pub. 7-7-70. Filed 12-10-69.

899,362. TRIPLE LANOLIN. Vienna Beauty Products Co. SN 346,005. Pub. 7-7-70. Filed 12-11-69.

899,363. AISLE 30. Hunt-Wesson Foods, Inc. SN 346,742. Pub. 7-7-70. Filed 12-19-69.

899,364. STIM-U-DENT. Johnson & Johnson. SN 347,276. Pub. 7-7-70. Filed 12-29-69.

899,365. DEODOPHYLL. Carter-Wallace, Inc. SN 348,724. Pub. 7-7-70. Filed 1-16-70.

899,366. STRAIGHT. Carter-Wallace, Inc. SN 348,726. Pub. 7-7-70. Filed 1-16-70.

899,367. PRETTY PAWS. Johnson & Johnson. SN 349,549. Pub. 7-7-70. Filed 1-26-70.

899,368. THE MANAGER. Chesebrough-Pond's Inc. SN 349,585. Pub. 7-7-70. Filed 1-26-70.

899,369. NOTHING ON. Chesebrough-Pond's Inc. SN 349,586. Pub. 7-7-70. Filed 1-26-70.

899,370. "HAIR-SUCCESS." E. T. Browne Drug Company, Inc. SN 350,338. Pub. 7-7-70. Filed 2-2-70.

899,371. ENVIRONMENT. Chesebrough-Pond's Inc. SN 350,720. Pub. 7-7-70. Filed 2-6-70.

899,372. STIMUDERM. Johnson & Johnson. SN 353,006. Pub. 7-7-70. Filed 3-4-70.

899,373. LORESS. Johnson & Johnson. SN 353,008. Pub. 7-7-70. Filed 3-4-70.

899,374. SUNSCENT. Carter-Wallace, Inc. SN 355,563. Pub. 7-7-70. Filed 4-1-70.

899,375. LIFEBUOY. Lever Brothers Company. SN 355,570. Pub. 7-7-70. Filed 4-1-70.

Class 52 — Detergents and Soaps

899,359. (See Class 51 for this trademark.)

899,376. BRENDA. Hunt Oil Company. SN 333,406. Pub. 7-7-70. Filed 7-24-69.

899,377. SPRAY BRITE. Shearer Offerman Company. SN 340,831. Pub. 7-7-70. Filed 10-15-69.

899,378. FC DESIGN. Twinoak Products, Inc. SN 343,186. Pub. 7-7-70. Filed 11-10-69.

899,379. SOAK-EZE. Calgon Corporation. SN 345,714. Pub. 7-7-70. Filed 12-9-60.

899,380. SENTRY. Sentry Hardware Corporation. SN 347,530. Pub. 7-7-70. Filed 12-31-69.

899,381. ABSORBIT. Economics Laboratory, Inc. SN 348,515. Pub. 7-7-70. Filed 1-14-70.

899,382. CHERISH. Lever Brothers Company. SN 355,569. Pub. 7-7-70. Filed 4-1-70.

899,383. AT LAST. Colgate-Palmolive Company. SN 355,711. Pub. 7-7-70. Filed 4-2-70.

899,384. DYNAMO. Colgate-Palmolive Company. SN 355,713. Pub. 7-7-70. Filed 4-2-70.

899,385. HEVI-CLEAN. Con-Stan Industries, Inc. SN 355,958. Pub. 7-7-70. Filed 4-6-70.

Service Marks

Class 100 — Miscellaneous

899,386. BEEFY KING ETC. AND DESIGN. Beefy King International Inc., assignee of Beefy King, Inc. SN 289,962. Pub. 6-3-69. Filed 1-31-68.

899,387. LARRY'S URENTA LUGGAGE CARRIER. Lawrence E. Gilbreath. SN 311,365. Pub. 7-7-70. Filed 11-5-68.

899,388. VICKERS TC. Sperry Rand Corporation. SN 312,083. Pub. 7-7-70. Filed 11-13-68.

899,389. DUTCHLAND DAIRY'S MORE THAN A DAIRY. B/G Foods, Inc. SN 316,558. Pub. 7-7-70. Filed 1-15-69.

899,390. BLACK HILLS CHIROPRACTIC CENTER ETC. AND DESIGN. R. C. Erdmann. SN 319,151. Pub. 7-7-70. Filed 2-14-69.

899,391. CP AND CIRCLE DESIGN. Consumers Power Company. SN 319,586. Pub. 7-7-70. Filed 2-19-69.

899,392. KC'S ROLL'N PIZZA MAN AND DESIGN. B & H of Madison, Inc. SN 319,800. Pub. 7-7-70. Filed 2-24-69.

899,393. WOLF AND PIE SLICE (DESIGN). Longhitano's Restaurant, Inc. SN 328,871. Pub. 7-7-70. Filed 6-2-69.

899,394. MC CARTHY'S AND DESIGN. Harrison Enterprises, Inc. SN 329,240. Pub. 7-7-70. Filed 6-5-69.

899,395. CAPT. PETE'S. Robert R. Lochamy, d.b.a. Capt. Pete's Fish and Chips. SN 330,395. Pub. 7-7-70. Filed 6-18-69.

899,396. EDI-DATA. Midwest Software, Inc. SN 330,525. Pub. 7-7-70. Filed 6-19-69.

899,397. KF AND FANCIFUL FISH DESIGN. Kingfish, Inc. SN 332,563. Pub. 7-7-70. Filed 6-16-69.

899,398. OLIVER'S PUB. Oliver's Pubs, Inc. SN 334,788. Pub. 7-7-70. Filed 8-8-69.

899,399. STOWS AND DESIGN. American Snacks, Inc. SN 336,303. Pub. 7-7-70. Filed 8-26-69.

899,400. KAY'S KASTLES AND DESIGN. Kay's Ice Cream, Inc. SN 333,276. Pub. 7-14-70. Filed 7-23-69.

899,401. MISCELLANEOUS DESIGN. American Bureau of Shipping. SN 336,660. Pub. 7-7-70. Filed 8-29-69.

899,402. CROWNING GLORY. Regis Corporation. SN 338,490. Pub. 7-7-70. Filed 9-22-69.

899,403. ROY ROGERS ROAST BEEF SANDWICH AND DESIGN. Marriott Corporation. MULTIPLE CLASS (Classes 100 and 101). SN 341,877. Pub. 7-7-70. Filed 10-27-69.

899,404. TACO BELL IS A NICE PLACE TO EAT. Taco Bell, Inc. SN 343,636. Pub. 7-7-70. Filed 11-17-69.

899,405. MISCELLANEOUS DESIGN. Taco Bell, Inc. SN 343,637. Pub. 7-7-70. Filed 11-17-69.

899,406. TRANSYSTEMS. Transystems, Inc. SN 347,380. Pub. 7-7-70. Filed 12-30-69.

899,407. CAMEL DESIGN. Marriott Corporation. SN 352,296. Pub. 7-7-70. Filed 2-25-70.

Class 101 — Advertising and Business

899,219. (See Class 35 for this trademark.)

899,403. (See Class 100 for this trademark.)

899,408. NATIONAL EXECUTIVE SERVICES, INC. National Executive Services, Inc. SN 305,960. Pub. 7-7-70. Filed 8-26-68.

899,409. ACS AMERICAN COMPUTER SERVICE AND DESIGN. American Computer Service Corporation. SN 308,262. Pub. 7-7-70. Filed 9-26-68.

899,410. GOLF-O-TEL. Golf-O-Tels, Inc. SN 308,289. Pub. 7-7-70. Filed 9-26-68.

899,411. FLIGHT 485. Oti Services, Inc. SN 324,831. Pub. 7-7-70. Filed 4-17-69.

899,412. SALLY WALLACE. John Van Drill, d.b.a. The Sally Wallace Bridal Consultants Round Table. SN 327,184. Pub. 7-7-70. Filed 5-13-69.

899,413. COMPUTA-HOME AND CH DESIGN. Consultronics Institute, Inc. SN 329,227. Pub. 7-7-70. Filed 6-5-69.

899,414. FLOWER DESIGN. Morning Fresh Dairy, Inc. SN 334,280. Pub. 7-7-70. Filed 8-4-69.

899,415. TFA AND DESIGN. Dan Gray, d.b.a. Time Finance Adjusters. SN 334,902. Pub. 6-30-70. Filed 8-8-69.

899,416. THE JEAN JACK AND HUMANS DESIGN. FM Enterprises, Inc. SN 335,502. Pub. 7-7-70. Filed 8-18-69.

899,417. MISS METROPOLITAN WASHINGTON D.C. American Pagents, Inc., assignee of Miss District of Columbia, Inc. SN 344,193. Pub. 7-7-70. Filed 11-21-69.

899,418. "THE SEVEN C'S." Jones & Byrd Incorporated. SN 356,461. Pub. 7-7-70. Filed 4-10-70.

Class 102 — Insurance and Financial

899,419. MISCELLANEOUS DESIGN. Principal Group Ltd. SN 278,126. Pub. 7-7-70. Filed 8-11-67.

899,420. COUNTRY COMPANIES. Country Life Insurance Company and Country Mutual Insurance Company (joint owners). SN 320,799. Pub. 7-7-70. Filed 3-5-69.

899,421. NECESSITY CARD. Medicredit, Inc. SN 328,877. Pub. 7-7-70. Filed 6-2-69.

899,422. NECESSITY SYSTEMS. Medicredit, Inc. SN 328,878. Pub. 7-7-70. Filed 6-2-69.

899,423. VIDEO FORUM. Institutional Investor Systems, Inc. SN 335,920. Pub. 7-7-70. Filed 8-22-69.

899,424. GENERAL BANCORP AND DESIGN. General Bancorp. SN 341,745. Pub. 7-7-70. Filed 10-27-69.

899,425. VAL-U-GROUP. Continental Assurance Company. SN 352,560. Pub. 7-7-70. Filed 2-27-70.

Class 103 — Construction and Repair

899,426. MINI-WAIT. Galles Motor Company. SN 326,815. Pub. 7-7-70. Filed 5-8-69.

899,427. ROBERTSON STOL AND DESIGN. Robertson Aircraft Corporation. SN 329,009. Pub. 7-7-70. Filed 6-3-69.

899,428. MISCELLANEOUS DESIGN. A. E. Anderson Construction Corporation. SN 329,052. Pub. 7-7-70. Filed 6-4-69.

Class 104 — Communication

899,429. WORLDFAX. ITT World Communications Inc. SN 337,228. Pub. 7-7-70. Filed 9-8-69.

Class 105 — Transportation and Storage

899,430. T (DESIGN). Transamerica Corporation. SN 297,719. Pub. 7-7-70. Filed 5-8-68.

899,431. PLANNED WITH INTEGRITY . . . BACKED WITH PERFORMANCE ETC. AND PACKAGE DESIGN. Cartan Travel Bureau, Inc. SN 315,148. Pub. 7-7-70. Filed 12-24-68.

899,432. PLANNED WITH INTEGRITY . . . BACKED WITH PERFORMANCE. Cartan Travel Bureau, Inc. SN 315,149. Pub. 7-7-70. Filed 12-24-68.

899,433. ADMIRAL TRAVEL. Admiral Travel Service, Inc. SN 324,784. Pub. 7-7-70. Filed 4-17-69.

Class 107 — Education and Entertainment

899,434. EPHPHETA. Gaston Oral School for Hearing Impaired Children. SN 311,364. Pub. 7-7-70. Filed 11-5-68.

899,435. THE BUFFALO BILLS QUARTET. F. Wayne Ward. SN 324,617. Pub. 7-7-70. Filed 4-15-69.

899,436. KENLEY PLAYERS. Kenley Players, Inc. SN 324,722. Pub. 7-7-70. Filed 4-16-69.

899,437. PILOTS AND WINGED WHEEL DESIGN. Pacific Northwest Sports, Inc. SN 329,504. Pub. 7-7-70. Filed 6-9-69.

899,438. COMPUTER COLLEGE OF TECHNOLOGY CCT AND DESIGN. Computer College of Technology, Inc. SN 332,919. Pub. 7-7-70. Filed 7-18-69.

899,439. MAIN STREET, U.S.A. Walt Disney Productions. SN 352,422. Pub. 7-7-70. Filed 2-26-70.

TRADEMARK REGISTRATIONS RENEWED

254,455. SYMBOL—REPRESENTATION OF SCREENS. Cl. 23 (Int. Cl. 7). 3–26–29.
272,070. PINOCCHIO. Cl. 22 (Int. Cl. 28). 6–24–30.
272,452. "EEL-BECK" AND DESIGN. Cl. 46 (Int. Cl. 30). 7–8–30.
272,464. "MARY COLEMAN'S DAINTY MAID" ETC. Cl. 18 (Int. Cl. 5). 7–8–30.
272,576. "MARY COLEMAN'S DAINTY MAID" ETC. Cl. 44 (Int. Cl. 10). 7–8–30.
272,601. SUPERMAL. Cl. 23 (Int. Cl. 7). 7–8–30.
272,789. SYMPHONIC. Cl. 16 (Int. Cl. 2). 7–15–30.
272,855. 1806. Cl. 52 (Int. Cl. 3). 7–15–30.
272,868. "DEMPSTER" AND DESIGN. Cl. 2 (Int. Cl. 6). 7–15–30.
273,986. BURTON-TAYLOR. Cl. 39 (Int. Cl. 25). 8–19–30.
274,812. COMET. Cl. 46 (Int. Cl. 30). 9–9–30.
275,229. "FLS" AND DESIGN. Cl. 26 (Int. Cl. 9). 9–16–30.
275,339. JEWEL. Cl. 4 (Int. Cl. 3). 9–23–30.
275,917. YELASKA. Cl. 42 (Int. Cl. 24). 10–7–30.
276,060. TURANA. Cl. 42 (Int. Cl. 24). 10–7–30.
276,061. ERMINA. Cl. 42 (Int. Cl. 24). 10–7–30.
276,104. SAVOSS. Cl. 18 (Int. Cl. 5). 10–7–30.
276,193. BENITA. Cl. 42 (Int. Cl. 24). 10–14–30.
276,309. CELANDA. Cl. 39 (Int. Cl. 25). 10–14–30.
276,809. DOT. Cl. 13 (Int. Cl. 26). 10–28–30.
276,810. REPRESENTATION OF DOT. Cl. 13 (Int. Cl. 26). 10–28–30.
277,217. FLYING CLOUD. Cl. 46 (Int. Cl. 29). 11–11–30.
277,267. YALE. Cl. 13 (Int. Cl. 6). 11–11–30.
277,426. PART OF PIPE ORANGE BAND. Cl. 13 (Int. Cl. 6). 11–11–30.
277,537. ORIOLA. Cl. 42 (Int. Cl. 24). 11–18–30.
277,730. THE CONNECTICUT MOTORIST. Cl. 38 (Int. Cl. 16). 11–25–30.
278,461. "DOW" WITHIN DIAMONDS SHAPED DESIGN. Cl. 14 (Int. Cl. 6). 12–16–30.
278,789. SEASIDE. Cl. 46 (Int. Cl. 29). 12–30–30.
444,079. UNIMAX. Cl. 21 (Int. Cl. 9). 7–11–50.
444,105. PRINT-FIX. Cl. 23 (Int. Cl. 16). 7–25–50.
444,350. STEROSAN. Cl. 18 (Int. Cl. 5). 12–5–50.
444,863. NATIONAL. Cl. 36 (Int. Cl. 15). 12–19–50.
513,278. SIEGFRIED. Cl. 18 (Int. Cl. 5). 8–9–49.
522,748. BAROSCRIBE. Cl. 26 (Int. Cl. 9). 3–21–50.
523,711. OLD LONDON. Cl. 46 (Int. Cls. 29 and 30). 4–11–50.
524,069. FASTRAVERSE. Cl. 23 (Int. Cl. 7). 4–18–50.
524,452. TRANS WORLD. Cl. 39 (Int. Cl. 25). 4–25–50.
524,690. LA COCINERA. Cl. 46 (Int. Cl. 30). 5–2–50.
526,840. KORDITE. Cl. 7 (Int. Cl. 22). 6–13–50.
527.092. HILO-CHROME. Cl. 12 (Int. Cl. 19). 7–4–50.
527,115. SUREWELD. Cl. 14 (Int. Cl. 6). 7–4–50.
527,124. RED SEAL AND DESIGN. Cl. 17 (Int. Cl. 34). 7–4–50.
527,146. AMC. Cl. 23 (Int. Cl. 7). 7–4–50.
527,217. QUODDY MOCCASINS AND DESIGN. Cl. 19 (Int. Cl. 25). 7–4–50.
527,302. FIGURE OF A SCOTCH BOY. Cl. 5 (Int. Cls. 16 and 17). 7–4–50.
527,470. DOROTHY MURIEL'S. Cl. 46 (Int. Cl. 30). 7–11–50.
527.507. UNIVERSAL. Cl. 21 (Int. Cl. 9). 7–11–50.
527.546. SUN-E-DAY. Cl. 21 (Int. Cl. 11). 7–11–50.
527,664. DORR. Cl. 23 (Int. Cl. 7). 7–18–50.,
527.840. KLONDIKE KID. Cl. 1 (Int. Cl. 18). 7–18–50.
528,268. STROMBERG-CARLSON. Cl. 21 (Int. Cl. 9). 8–1–50.
528.322. TEMFLEX. Cl. 21 (Int. Cl. 17). 8–1–50.
528.572. DUBBS. Cl. 23 (Int. Cl. 7). 8–8–50.
528,610. DUMORE. Cl. 23 (Int. Cl. 7). 8–8–50.
528,648. PBP AND DESIGN. Cl. 38 (Int. Cl. 16). 8–8–50.
528,758. BULWARK CUT PLUG AND DESIGN. Cl. 17 (Int. Cl. 34). 8–8–50.
528,792. SPATOLA. Cl. 47 (Int. Cl. 33). 8–8–50.
528,942. INDIAN WEAVE EMBOSSED. Cl. 37 (Int. Cl. 16). 8–15–50.
529,170. BALARSEN. Cl. 18 (Int. Cl. 5). 8–15–50.
529,449. CUMITAN. Cl. 18 (Int. Cl. 5). 8–22–50.
529,800. NEKOT. Cl. 46 (Int. Cl. 29). 8–29–50.
529,880. ZEE LINE AND DESIGN. Cl. 23 (Int. Cl. 8). 8–29–50.
529,902. MULTI-POWER. Cl. 21 (Int. Cl. 9). 8–29–50.
530,022. HARPER. Cl. 39 (Int. Cl. 25). 8–29–50.
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774,334. RHEUMA-FAX. Cl. 6.
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799,559. NORVIC OF ENGLAND. Cl. 39. 11–30–65.
865,096. WINNER'S CIRCLE. Cl. 51. 2–18–69.
874,215. FARMALON. Cl. 23. 8–5–69.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

789,871. KROP KING. Cl. 7. 5–25–65. J-M Trading Corp., Chicago, Ill. Corrected: In the statement, column 1, line 1, "Corporation" should be deleted and *Corp.* should be inserted.

790,140. MISCELLANEOUS DESIGN. Cl. A. 5–25–65. The Wool Bureau, Incorporated, New York, N.Y. Corrected: In the statement, column 1, line 1, "Inc." should be deleted and *Incorporated* should be inserted.

880,013. DE SICA. Cl. 39. 11–4–69. Hampton Shirt Co., Inc., New York, N.Y. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *North Carolina* should be inserted.

882,474. WHITNON. Cl. 23. 12–16–69. Heli-Coil Corporation, Danbury, Conn. Corrected: In the statement, column 1, line 1, "Connecticut" should be deleted and *Delaware* should be inserted.

885,208. PORTRAIT OF MAN'S FACE. Cl. 100. 1–27–70. Peter Max, New York, N.Y. Corrected: In the statement, column 1, line 2, "Riverdale" should be deleted and *Riverside* should be inserted.

893,138. DUOMATIC. Cl. 13. 6–23–70. Monogram Industries, Inc., Los Angeles, Calif. Corrected: In the heading, "338,241" should be deleted and *338,160* should be inserted.

893,272. KOOL-PAC. Cl. 31. 6–23–70. Flambeau Plastics Corporation, Baraboo, Wis. Corrected: In the heading, "332,428" should be deleted and *322,428* should be inserted.

894,095. MICRODYNE. Cl. 26. 7–7–70. Microdyne, Inc., Rolling Meadows, Ill. Corrected: In the statement, column 2, line 7, after "tors," *special purpose digital and analog computers* should be inserted.

894,569. REPRONAR. Cl. 26. 7–14–70. Honeywell Inc., Minneapolis, Minn. Corrected: In the statement, column 2, line 1, the comma should be deleted and in line 2, after "duplicate" a comma should be inserted.

894,886. P POVITE AND DESIGN. Cl. 6. 7–21–70. Poviet Producten, N.V., Amsterdam, Netherlands. Corrected: In the statement, column 2, line 1, before "grouping" *laboratory reagents for* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

539,688. DAD'S AND DESIGN. Cl. 46. Dad's Cookie Company. 3–20–51. New Cert. Sec. 7(c) to Dad's Cookie Company, Inc., Buffalo, N.Y.

737,941. DUDLEY. Cl. 39. Litt-Gluck Co. 9–18–62. New Cert. Sec. 7(c) to Dudley Casuals, Inc., New York, N.Y.

776,233. OFF HAND CASUALS. Cl. 39. Dudley Casuals Inc. 9–1–64. New Cert. Sec. 7(c) to Dudley Casuals, Inc., New York, N.Y .

795,008. MARK MORRIS ASSOCIATES, INC. AND DESIGN. Cls. 12, 38 and 46. Mark Morris Associates, Inc. 8–31–65. New Cert. Sec. 7(c) to Riviana Foods Inc., Houston, Tex.

830,250. TODDY-TYME. Cl. 46. James Cordon Davis, d.b.a. Davis Packing Co. 6–13–67. New Cert. Sec. 7(c) to George L. Wainwright, Jr., Wilson, N.C.

860,572. GEN-LINE. Cl. 35. Aristovoulos George Petzetakis, 11–19–68. New Cert. Sec. 1(c) to The General Tire & Rubber Company, Akron, Ohio.

871,369. DRI-GUARD. Cl. 39. Harold J. Ralph, d.b.a. H. J. Ralph Co. 6–17–69. New Cert. Sec. 7(c) to Consolidated Cover Co., Sunnyvale, Calif.

874,812. ORPHALAC. Cl. 46. Mark Morris Associates. 8–12–69. New Cert. Sec. 7(c) to Riviana Foods Inc., Houston, Tex.

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(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

A. A. Records, Inc., d.b.a. Golden Records, New York, N.Y. 899,221, pub. 7–7–70. Cl. 36.
AGA Aktiebolag, Lidingo, Sweden. 899,188, pub. 7–7–70. Cl. 26.
A. J. S. Inc., York, Pa. 899,201, pub. 7–7–70. Cl. 26.
Abbott Tresses, Inc., Pittsburgh, Pa. 899,286, pub. 7–7–70. Cl. 40.
Acme Mfg. Co., Detroit, Mich. 527,146. ren. 9–22–70. Cl. 23.
Admiral Travel Service, Inc., Philadelphia, Pa. 899,433, pub. 7–7–70. Cl. 105.
Adventure Line Mfg. Co., Inc., Parsons, Kans. 774,430, canc. Cl. 19.
Aeroquip Corp., Jackson, Mich. 535,733, ren. 9–22–70. Cl. 26.
Agway, Inc., Dewitt, N.Y. 899,314, pub. 7–7–70. Cl. 46.
Alba-Waldensian, Inc., Valdese, N.C. 899,266, pub. 7–7–70. Cl. 39.
Alcolac Chemical Corp., Baltimore, Md. 531,543, ren. 9–22–70. Cl. 18.
Algemeene Tabakonderneming "Alto," Turnhout, Belgium. 899,077, pub. 7–7–70. Cl. 17.
Allen Products Co., Inc., Allentown, Pa. 774,413, canc. Cl. 18.
Alliance Sales (Western) Ltd., Vancouver, British Columbia, Canada. 899,205, pub. 7–7–70. Cl. 29.
Ambac Industries, Inc., Pittsburgh, Pa. 522,743, ren. 9–22–70. Cl. 26.
American Biltrite Rubber Co., Inc., Chelsea, Mass. 774,535, canc. Cl. 35.
American Bitumuls & Asphalt Co., San Francisco, Calif. 774,358, canc. Cl. 12.
American Bureau of Shipping, New York, N.Y. 899,401, pub. 7–7–70. Cl. 100.
American Can Co., New York, N.Y. 774,574, canc. Cl. 38.
American Computer Service Corp., Cincinnati, Ohio. 899,409, pub. 7–7–70. Cl. 101.
American Corp., Waltham, Mass. 899,118, pub. 7–7–70. Cl. 21.
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American Motors Corp., Kenosha, Wis. 899,098, pub. 7–7–70. Cl. 19.
American Optical Corp., Southbridge, Mass. 899,200, pub. 7–7–70. Cl. 26.
American Optical Corp., Southbridge, Mass. 899,231, pub. 7–7–70. Cl. 28.
American Pageants, Inc., from Miss District of Columbia, Inc., Washington, D.C. 899,417, pub. 7–7–70. Cl. 101.
American Pressboard Co., Inc., New York, N.Y. 899,186, pub. 7–7–70. Cl. 24.
American Ski Corp., Westwood, Mass. 899,251, pub. 7–7–70. Cl. 39.
American Snacks, Inc., Chelsea, Mass. 899,399, pub. 7–7–70. Cl. 100.
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American Steel Box Corp., Chicago, Ill. 899,135, pub. 7–7–70. Cl. 22.
American Surgical Steel, Inc., Metairie, La. 774,366, canc. Cl. 13.
American Thread Co., The, New York, N.Y. 774,663, canc. Cl. 43.
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Anderson, Clayton & Co., Dallas, Tex. 899,313, pub. 7–7–70. Cl. 46.
Anderson Jacobson, Inc., Mountain View, Calif. 899,102, pub. 7–7–70. Cl. 21.
Ankerwerk Nurnberg GmbH, Nuremberg (Bavaria), Germany. 899,148, pub. 7–7–70. Cl. 23.
Anthony Pools, Inc., South Gate, Calif. 774,365, canc. Cl. 13.
Armour Pharmaceutical Co., Chicago, Ill. 774,412, canc. Cl. 18.
Armour-Dial, Inc., Chicago, Ill. 899,320–1, pub. 7–7–70. Cl. 46.
Artesania Ltd., London S.W. 1, England. 899,208, pub. 7–7–70. Multiple Class (Classes 30 and 33).
Automatic Buffers, Inc., Seattle, Wash. 774,488, canc. Cl. 23.
Avisun Corp.: *See—*
  Amoco Fabrics Co.
Avnet, Inc., Pawtucket, R.I. 529,902, ren. 9–22–70. Cl. 21.
Avon Products, Inc., New York, N.Y. 899,359, pub. 7–7–70. Multiple Class (Classes 51 and 52).
B & H of Madison, Inc., Madison, Wis. 899,392, pub. 7–7–70. Cl. 100.
B/G Foods, Inc., Chicago, Ill. 899,389, pub. 7–7–70. Cl. 100.
Badger, Geraldine, Bronx, N.Y. 899,238, pub. 7–7–70. Cl. 39.
Badische Anilin- & Soda-Fabrik, Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 899,029, pub. 7–7–70. Cl. 6.
Baird Chemical Industries, Inc., Fair Lawn, N.J. 899,033, pub. 7–7–70. Cl. 6.
Balfour, Guthrie & Co., Ltd., San Francisco, Calif. 277,217, ren. 9–22–70. Cl. 46.
Barber-Colman Co., Rockford, Ill. 899,198, pub. 7–7–70. Cl. 26.
Barreiros Diesel, S.A., Villaverde, Madrid, Spain. 899,150, pub. 7–7–70. Cl. 23.
Barrett, Pat, d.b.a. Barrett Enterprises, Carbondale, Colo. 899,002, pub. 7–7–70. Cl. 1.
Barwick, E. T., Industries, Inc., Chamblee, Ga. 899,297, pub. 7–7–70. Cl. 42.
Barwick, E. T., Industries, Inc., Chamblee, Ga. 899,303, pub. 7–7–70. Cl. 42.
Bau-Stahlgewebe G.m.b.H., Duesseldorf-Oberkassel, Germany. 899,047, pub. 7–7–70. Cl. 12.
Beatrice Foods Co., Chicago, Ill. 899,328, pub. 7–7–70. Cl. 46.
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  Beefy King International Inc.
Beefy King International Inc., from Beefy King, Inc., Orlando, Fla. 899,386, pub. 6–3–69. Cl. 100.
Beene, Geoffrey, Inc., New York, N.Y. 899,265, pub. 7–7–70. Cl. 39.
Bell & Gossett Co., Morton Grove, Ill. 774,496, canc. Cl. 26.
Berkey/Colortran Mfg., Inc., Burbank, Calif. 899,116, pub. 7–7–70. Cl. 21.
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Blue Bell, Inc., Greensboro, N.C. 774,631, canc. Cl. 39.
Bokum Tool Co., Inc., Madison Heights, Mich. 899,157, pub. 7–7–70. Cl. 23.
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Borg-Warner Corp., Chicago, Ill. 774,312, canc. Cl. 2.
Bowers Printing Ink Co., Chicago, Ill. 899,044, pub. 7–7–70. Cl. 11.
Bowman Feed Products, Inc., Holland, Mich. 774,691, canc. Cl. 46.
Brigham's, Inc., Arlington, Mass. 527,470, ren. 9–22–70. Cl. 46.
Bristol Mfg. Corp., Bristol, R.I. 535,060, ren. 9–22–70. Cl. 39.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 899,241, pub. 7–7–70. Cl. 39.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 899,254, pub. 7–7–70. Multiple Class (Classes 39 and 42).
Bro-Dart Industries, Newark, N.J. 899,356, pub. 7–7–70. Cl. 50.
Brown Shoe Co., Inc., St. Louis, Mo. 774,583, canc. Cl. 39.
Browne, E. T., Drug Co., Inc., East Newark, N.J. 899,370, pub. 7–7–70. Cl. 51.
Burke Concrete Accessories, Inc., Burlingame, Calif. 899,048, pub. 7–7–70. Cl. 12.
Burton Instrumentation, Inc., Fort Collins, Colo. 899,115, pub. 7–7–70. Cl. 21.
Byron, W. D., & Sons, Inc., Williamsport, Md. 899,006, pub. 7–7–70. Cl. 1.
C.L.I. Cosmetics, Inc., Brooklyn, N.Y. 899,358, pub. 7–7–70. Cl. 51.
Cadle-Larned Publishing Corp., Greenwich, Conn. 774,740, canc. Cl. 38.
Calgon Corp., Pittsburgh, Pa. 899,379, pub. 7–7–70. Cl. 52.
California Bean Growers Association, Oxnard, Calif. 278,789, ren. 9–22–70. Cl. 46.
California Chemical Co., San Francisco, Calif. 774,572, canc. Cl. 38.
California Institutional Supply Co. Inc., Hollywood, Calif. 774,426, canc. Cl. 18.
Callahan, Thomas R., New York, N.Y. 774,600, canc. Cl. 39.
Cal*Royal, Inc., City of Industry, Calif. 774,364, canc. Cl. 13.
Canaveral Council of Technical Societies, Cape Canaveral, Fla. 774,573, canc. Cl. 38.
Caressa, Inc., Miami, Fla. 899,273, pub. 7–7–70. Cl. 39.
Carrier Corp., Syracuse, N.Y. 899,217, pub. 7–7–70. Cl. 34.
Cartan Travel Bureau, Inc., Chicago, Ill. 899,431–2, pub. 7–7–70. Cl. 105.
Carter-Wallace, Inc., New York, N.Y. 899,335–8, pub. 7–7–70. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 899,365–6, pub. 7–7–70. Cl. 51.
Carter-Wallace, Inc., New York, N.Y. 899,374, pub. 7–7–70. Cl. 51.
Carter's Ink Co., The, Cambridge, Mass. 774,553, canc. Cl. 37.
Caswell Equipment Co., Inc., Minneapolis, Minn. 899,125, pub. 7–7–70. Cl. 22.
Cedar Rapids Engineering Co., Cedar Rapids, Iowa. 899,155, pub. 7–7–70. Cl. 23.
Celanese Coatings Co., New York, N.Y. 534,577, ren. 9–22–70. Cl. 16.

Celanese Corp., New York, N.Y. 276,309, ren. 9–22–70. Cl. 39.
Cello Chemical Co., The, Baltimore, Md. 899,019, pub. 7–7–70. Cl. 4.
Certified Grocers of Illinois, Inc., Chicago, Ill. 899,318, pub. 7–7–70. Cl. 46.
Cervantes, Rudy, Neckwear, Inc., Los Angeles, Calif. 899,240, pub. 7–7–70. Cl. 39.
Chadbourn Inc., Charlotte, N.C. 899,274, pub. 7–7–70. Multiple Class (Classes 39 and 43).
Chambosse Brokerage Co., d.b.a. Chambro, Los Alamitos, Calif. 899,324, pub. 7–7–70. Cl. 46.
Chemetron Corp., Chicago, Ill. 527,115, ren. 9–22–70. Cl. 14.
Chesebrough-Pond's Inc., New York, N.Y. 899,368–9, pub. 7–7–70. Cl. 51.
Chesebrough-Pond's Inc., New York, N.Y. 899,371, pub. 7–7–70. Cl. 51.
Christian, Dale, d.b.a. D. C. Stamp Co., Omaha, Nebr. 774,486, canc. Cl. 23.
Chromium Corp. of America, Waterbury, Conn. 899,162, pub. 7–7–70. Cl. 23.
Cincinnati Mine Machinery Co., The, Cincinnati, Ohio. 533,490, ren. 9–22–70. Cl. 23.
City Stores Co., New York, N.Y. 774,585, canc. Cl. 39.
Cleanese Corp., New York, N.Y. 899,302, pub. 7–7–70. Cl. 42.
Cleveland Container Corp., Cleveland, Ohio. 774,316, canc. Cl. 2.
Cobbs Corner Casuals, Inc., New York, N.Y. 899,262, pub. 7–7–70. Cl. 39.
Coleman Sailing Mfg. Co., Inc., Morgantown, Ky. 899,089, pub. 7–7–70. Cl. 19.
Colgate-Palmolive Co., New York, N.Y. 272,855, ren. 9–22–70. Cl. 52.
Colgate-Palmolive Co., New York, N.Y. 899,383–4, pub. 7–7–70. Cl. 52.
Colt's Inc., Hartford, Conn. 899,039–40, pub. 7–7–70. Cl. 9.
Columbia Broadcasting System, Inc., New York, N.Y. 899,103–5, pub. 7–7–70. Cl. 21.
Columbia Industries, Inc., San Antonio, Tex. 899,128, pub. 7–7–70. Cl. 22.
Columbian Rope Co., Auburn, N.Y. 899,034, pub. 7–7–70. Cl. 7.
Commissariat a l'Energie Atomique, Paris, France. 899,117, pub. 7–7–70. Cl. 21.
Computer College of Technology, Inc., Miami Beach, Fla. 899,438, pub. 7–7–70. Cl. 107.
Connecticut Motor Club (Inc.), Hamden, Conn. 277,730, ren. 9–22–70. Cl. 38.
Con-Stan Industries, Inc., El Monte, Calif. 899,385, pub. 7–7–70. Cl. 52.
Consultronics Institute, Inc., Columbia, S.C. 899,413, pub. 7–7–70. Cl. 101.
Consumers Power Co., Jackson, Mich. 899,391, pub. 7–7–70. Cl. 100.
Continental Assurance Co., Chicago, Ill. 899,425, pub. 7–7–70. Cl. 102.
Continental Can Co., Inc., New York, N.Y. 535,281, ren. 9–22–70. Cl. 37.
Continental Can Co., Inc., New York, N.Y. 899,012, pub. 7–7–70. Cl. 2.
Continental Coatings Corp., New York, N.Y. 774,388, canc. Cl. 16.
Corn Products Co., New York, N.Y. 774,689, canc. Cl. 46.
Corpolymer Rubber & Chemical, Baton Rouge, La. 899,008, pub. 7–7–70. Cl. 1.
Corral, Wodiska y Ca., Tampa, Fla. 899,078, pub. 7–7–70. Cl. 17.
Country Life Insurance Co. and Country Mutual Insurance Co., Bloomington, Ill. 899,420, pub. 7–7–70. Cl. 102.
Courtaulds (Canada) Ltd., Cornwall, Ontario, Canada. 774,655, canc. Cl. 42.
Coviello, Vincent F., d.b.a. Vincove Winery, Paterson, N.J. 533,235, ren. 9–22–70. Cl. 47.
Cowman-Campbell Paint Co., Inc., Seattle, Wash. 535,670, ren. 9–22–70. Cl. 15.
Craul, Donald Reed, d.b.a. Maple Hill Farms, Wellsboro, Pa. 899,001, pub. 7–7–70. Cl. 1.
Crescent Insulated Wire and Cable Co., Trenton, N.J. 899,109, pub. 7–7–70. Cl. 21.
Croce & Lofthouse Sailcraft Ltd., West Hill, Ontario, Canada. 899,090, pub. 7–7–70. Cl. 19.
Crompton Co., New York, N.Y. 534,190, ren. 9–22–70. Cl. 42.
Crompton Co., New York, N.Y. 534,242, ren. 9–22–70. Cl. 42.
Crompton Co., New York, N.Y. 535,172, ren. 9–22–70. Cl. 42.
Crystal, David, Inc., from Stony Brook Casuals, Inc., New York, N.Y. 899,270, pub. 7–7–70. Cl. 39.
Crystal, David, Inc., from Stony Brook Casuals, Inc., New York, N.Y. 899,277, pub. 6–30–70. Cl. 39.
Cyclops Corp., Pittsburgh, Pa. 899,059, pub. 7–7–70. Cl. 13.
D & D Stores, Inc., Hartford, Conn. 534,739, ren. 9–22–70. Cl. 46.
Dad's Cookie Co., to Dad's Cookie Co., Inc., Buffalo, N.Y. 539,688, new cert. 7(c), 9–22–70. Cl. 46.
Dainty Maid, Inc., Middlefield, Conn. 272,464, ren. 9–22–70. Cl. 18.
Dainty Maid, Inc., Middlefield, Conn. 272,576, ren. 9–22–70. Cl. 44.
Dante, Inc., New York, N.Y. 899,017, pub. 7–7–70. Cl. 3.
Dargaud S.A., Neuilly-sur-Seine (Hauts de Seine), France. 899,235, pub. 7–7–70. Cl. 38.
Darly Products, Inc., New York, N.Y. 899,287–90, pub. 7–7–70. Cl. 40.
Dart Industries Inc., d.b.a. Tupperware, Los Angeles, Calif. 899,009, pub. 7–7–70. Cl. 2.
Davies Publishing Co., Chicago, Ill. 774,556, canc. Cl. 38.
Davis and Furber Machine Co., North Andover, Mass. 899,181, pub. 7–7–70. Cl. 23.
Davis, James Cordon, d.b.a. Davis Packing Co., to George L. Wainwright, Jr., Wilson, N.C. 830,250, new cert. 7(c), 9–22–70. Cl. 46.
Deere & Co., Moline, Ill. 531,973, ren. 9–22–70. Cl. 23.
Deering Milliken, Inc., New York, N.Y. 899,304, pub. 7–7–70. Cl. 42.
Delapena, Paul, Ltd., Worcester, England. 899,147, pub. 7–7–70. Cl. 23.
Dell Plastics Co., Inc., Brooklyn, N.Y. 899,136, pub. 7–7–70. Cl. 22.
Dell Products Corp., Hillside, N.J. 899,310, pub. 7–7–70. Cl. 45.
Dempster Industries Inc., Beatrice, Nebr. 272,868, ren. 9–22–70. Cl. 2.
Diamond Crystal Salt Co., St. Clair, Mich. 899,326, pub. 7–7–70. Cl. 46.
Dillman Laboratories, Ltd., Chicago, Ill. 899,087, pub. 7–7–70. Cl. 18.
Disney, Walt, Productions, Burbank, Calif. 272,070, ren. 9–22–70. Cl. 22.
Disney, Walt, Productions, Burbank, Calif. 899,439, pub. 7–7–70. Cl. 107.
Disston, Henry, & Sons, Inc., Philadelphia, Pa. 406,291, canc. Cl. 23.
District of Columbia National Bank, Washington, D.C. 774,726, canc. Cl. 102.
Donruss Co., The, Memphis, Tenn. 899,331, pub. 7–7–70. Cl. 46.
Dorr-Oliver Inc., Stamford, Conn. 527,664, ren. 9–22–70. Cl. 23.
Doughtie, Eugenia, Houston, Tex. 774,459, canc. Cl. 22.
Douwe Egberts Koninklijke Tabaksfabriek Koffiebranderijen-Theehandel N.V., Joure, Netherlands. 899,079, pub. 7–7–70. Cl. 17.
Dow Chemical Co., The, Wilmington, Del. 278,461, ren. 9–22–70. Cl. 14.
Dudley Casuals Inc., to Dudley Casuals, Inc., New York, N.Y. 776,233, new cert. Cl. 39.
Duke Laboratories, Inc., South Norwalk, Conn. 899,083, pub. 7–7–70. Cl. 18.
Dumore Co., The, Racine, Wis. 528,610, ren. 9–22–70. Cl. 23.
Duncan Industries, Inc.: *See*—
  Qonaar Corp.
Dunkelberger, Richard C., Shoemakersville, Pa. 774,690, canc. Cl. 46.
Durolith Corp., Easton, Md. 899,357, pub. 7–7–70. Cl. 50.
Dyer, D. L., Kansas City, Mo. 407,587, canc. Cl. 37.
Dynamation, Inc., Narberth, Pa. 774,498, canc. Cl. 26.
E.T.M. Corp., Monrovia, Calif. 899,182–3, pub. 7–7–70. Cl. 23.
Eastpac Paper Converting Co., San Francisco, Calif. 774,548, canc. Cl. 37.
Eaton Yale & Towne, Inc., Cleveland, Ohio. 277,267, ren. 9–22–70. Cl. 13.
Eaton Yale & Towne Inc., Cleveland, Ohio. 899,130, pub. 7–7–70. Cl. 22.
Eclipse Sleep Products, Inc., Brooklyn, N.Y. 534,160, ren. 9–22–70. Cl. 32.
Economics Laboratory, Inc., St. Paul, Minn. 899,381, pub. 7–7–70. Cl. 52.
Eduquip, Inc., Dorchester, Mass. 899,193, pub. 7–7–70. Cl. 26.
Elyria Mfg. Corp., Elyria, Ohio. 899,060, pub. 7–7–70. Cl. 13.
Endo Laboratories, Inc., Garden City, N.Y. 529,170, ren. 9–22–70. Cl. 18.
Endo Laboratories, Inc., Garden City, N.Y. 529,449, ren. 9–22–70. Cl. 18.
Enerjet, Inc., Seymour, Ind. 899,177, pub. 7–7–70. Cl. 23.
Erdmann, R. C., Rapid City, S. Dak. 899,390, pub. 7–7–70. Cl. 100.
Eskimo Pie Corp., Richmond, Va. 899,346, pub. 7–7–70. Cl. 46.
Evans, John R., & Co., Camden, N.J. 527,840, ren. 9–22–70. Cl. 1.
Evans-Aristocrat Industries, Inc., Elizabeth, N.J. 532,170, ren. 9–22–70. Cl. 3.
Exquisite Form Industries, Inc., from Exquisite Form Industries, Inc., New York, N.Y. 899,271–2, pub. 7–7–70. Cl. 39.
FM Enterprises, Inc., Washington, D.C. 899,416, pub. 7–7–70. Cl. 101.
F & M Scientific Corp., Avondale, Pa. 774,330, canc. Cl. 6.
FMC Corp., New York, N.Y. 899,004, pub. 7–7–70. Cl. 1.
Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 532,051, ren. 9–22–70. Cl. 37.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany 774,397, canc. Cl. 16.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt/Main, Germany. 899,026, pub. 7–7–70. Cl. 6.
Farm Journal, Inc., Philadelphia, Pa. 899,236, pub. 7–7–70. Cl. 38.
Farmaster Products, Inc., Shenandoah, Iowa. 899,045, pub. 7–7–70. Cl. 12.
Federated Department Stores Inc., d.b.a. Wm. Filene's Sons Co., Boston, Mass. 774,639, canc. Cl. 39.
Fidelitone, Inc, Chicago, Ill. 530,559, ren. 9–22–70. Cl. 23.
Fidelitone, Inc., Chicago, Ill. 530,848, ren. 9–22–70. Cl. 36.
Fieldcrest Mills, Inc., Spray, N.C. 774,656, canc. Cl. 42.
Firearms International Corp., from Firearms International Corp., Washington, D.C. 899,041–3, pub. 7–7–70. Cl. 9.
Firestone Tire & Rubber Co., The, Akron, Ohio. 899,218, pub. 7–7–70. Cl. 35.
Firma Dr. Walter U. Schmitt GmbH., Schwabisch Gmund, Germany. 774,675, canc. Cl. 44.
Flambeau Plastics Corp., Baraboo, Wis. 893,272, cor. Cl. 31.
Flexigrip, Inc., Orangeburg, N.Y. 899,062, pub. 7–7–70. Cl. 13.
Font, Don J. T., Mataro, Barcelona, Spain. 899,175, pub. 7–7–70. Cl. 23.

Food Specialties, Inc., Indianapolis, Ind. 533,499, ren. 9–22–70. Cl. 46.
Forward Fashions, Inc., Boston, Mass. 899,261, pub. 7–7–70. Cl. 39.
Franklin Mfg. Co., Webster City, Iowa. 527,546, ren. 9–22–70. Cl. 21.
Freeland Shirt Co., Inc., Freeland, Pa. 899,258, pub. 7–7–70. Cl. 39.
French Textiles Co., Clifton, N.J. 899,355, pub. 7–7–70. Cl. 50.
Fulton Tire, Inc., Wheeling, W. Va. 899,219, pub. 6–30–70. Multiple Class (Classes 35 and 101).
Functional Systems Corp., Santa Clara, Calif. 899,174, pub. 7–7–70. Cl. 23.
GAF Corp., New York, N.Y. 899,054, pub. 7–7–70. Cl. 12.
Galles Motor Co., Albuquerque, N. Mex. 899,426, pub. 7–7–70. Cl. 103.
Gaston Oral School for Hearing Impaired Children, Gastonia, N.C. 899,434, pub. 7–7–70. Cl. 107.
Geigy Chemical Corp., Ardsley, N.Y. 444,350, ren. 9–22–70. Cl. 18.
Geist, Herman, Inc., Boston, Mass. 899,279, pub. 7–7–70. Cl. 39.
General American Transportation Corp., Chicago, Ill. 774,371–2, canc. Cl. 13.
General Bancorp, Fresno, Calif. 899,424, pub. 7–7–70. Cl. 102.
General Electric Co., Plainville, Conn. 899,101, pub. 7–7–70. Cl. 21.
General Foods Corp., White Plains, N.Y. 899,332, pub. 7–7–70. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 899,179–80, pub. 7–7–70. Cl. 23.
General Mills, Inc., Minneapolis, Minn. 899,334, pub. 7–7–70. Cl. 46.
General Motors Corp., Detroit, Mich. 899,096, pub. 7–7–70. Cl. 19.
Genie Industries, Inc., Kansas City, Mo. 899,021, pub. 7–7–70. Cl. 5.
Gilbreath, Lawrence E., West Keansburg, N.J. 899,387, pub. 7–7–70. Cl. 100.
Gillette Co., The, d.b.a. The Paper Mate, Boston, Mass. 899,224, pub. 7–7–70. Cl. 37.
Givaudan Corp., Clifton, N.J. 530,810, ren. 9–22–70. Cl. 6.
Givaudan Corp., Clifton, N.J. 532,005, ren. 9–22–70. Cl. 6.
Given Brothers, Inc., El Paso, Tex. 774,606, canc. Cl. 39.
Glamorise Foundations, Inc., New York, N.Y. 899,296, pub. 7–7–70. Cl. 42.
Glen Raven Mills, Inc., Glen Raven, N.C. 534,076, ren. 9–22–70. Cl. 39.
Globe Footwear Corp., Union, N.J. 899,269, pub. 7–7–70. Cl. 39.
Golf-O-Tels, Inc., Myrtle Beach, S.C. 899,410, pub. 7–7–70. Cl. 101.
Gonzalez, Alvaro Gonzalez, d.b.a. Fabrica de Tabacos Alvaro, La Laguna de Tenerife, Islas Canarias, Spain. 899,074–5, pub. 7–7–70. Cl. 17.
Good Humor Corp., Brooklyn, N.Y. 774,688, canc. Cl. 46.
Goodman, H., & Sons, Inc., New York, N.Y. 774,645, canc. Cl. 40.
Goodway Copy Centers, Inc., Philadelphia, Pa. 899,106, pub. 7–7–70. Multiple Class (Classes 21, 23, 26, 27, and 32).
Gray, Dan, d.b.a. Time Finance Adjusters, Fort Worth, Tex. 899,415, pub. 6–30–70. Cl. 101.
Greentree's, Inc., Richmond, Va. 774,580, canc. Cl. 39.
Griffin Wellpoint Corp., New York, N.Y. 899,178, pub. 7–7–70. Cl. 23.
Grumbacher, M., Inc., New York, N.Y. 272,789, ren. 9–22–70. Cl. 16.
Gruppo Finanziario Tessile Societa in Accomandita Semplice di Fratelli Rivetti & C. 899,260, pub. 7–7–70. Cl. 39.
Guild Wine Co., Lodi, Calif. 531,057, ren. 9–22–70. Cl. 47.
Gulf Oil Corp., Pittsburgh, Pa. 899,030, pub. 7–7–70. Cl. 6.
Gulf Oil Corp., Pittsburgh, Pa. 899,067, pub. 7–7–70. Cl. 15.
Hag AG Bremen, Bremen, Germany. 899,327, pub. 7–7–70. Cl. 46.
Hampton Shirt Co., Inc., New York, N.Y. 880,013, cor. Cl. 39.
Hancor, Inc., Findlay, Ohio. 899,061, pub. 7–7–70. Cl. 13.
Hannes Marker Sicherheits-Skibindungen Kommanditgesellschaft, from Hannes Marker Sicherheits-Skibindungen Vertriegs GmbH, Garmisch-Partenkirchen, Germany. 899,119, pub. 7–7–70. Cl. 22.
Harbour Islanders, Ltd., New York, N.Y. 774,771, canc. Cl. 51.
Harper Shirt Co., Inc., New York, N.Y. 530,022, ren. 9–22–70. Cl. 39.
Harrison Enterprises, Inc., Litchfield, Minn. 899,394, pub. 7–7–70. Cl. 100.
Harrison, Thomas, d.b.a. Al Harrison Co., Distributors, Nogales, Ariz. 774,724, canc. Cl. 101.
Hartford Glass Co., Inc., Hartford City, Ind. 899,212, pub. 7–7–70. Cl. 33.
Havatampa Cigar Corp., Tampa, Fla. 899,080, pub. 7–7–70. Cl. 17.
Haythornthwaite & Sons Ltd., Burnley, England. 533,396, ren. 9–22–70. Cl. 42.
Hi-Command Products, Inc., Los Altos, Calif. 774,654, canc. Cl. 42.
Hiram Walker & Sons, Inc., Detroit, Mich. 899,351, pub. 7–7–70. Cl. 49.
Hirota Glass Co., Ltd., Tokyo, Japan. 899,036, pub. 7–7–70. Cl. 8.
Hehr Mfg. Co., Los Angeles, Calif. 774,557, canc. Cl. 38.
Heli-Coil Corp., Danbury, Conn. 882,474, cor. Cl. 23.
Hemi Industries, Ltd., Southbridge, Mass. 899,050, pub. 7–7–70. Cl. 12.
Hendrick Mfg. Co., Carbondale, Pa. 254,455, ren. 9–22–70. Cl. 23.
Henredon Furniture Industries, Inc., Morganton, N.C. 899,211, pub. 7–7–70. Cl. 32.
Hermetic Pumpen G.m.b.H., Hamburg 39, Germany. 899,154, pub. 7–7–70. Cl. 23.
Hochstein, Bernard, New York, N.Y. 899,037, pub. 7–7–70. Cl. 8.
Hoffmann-La Roche Inc., Nutley, N.J. 899,084, pub. 7–7–70. Cl. 18.
Hollister Inc., Chicago, Ill. 533,813, ren. 9–22–70. Cl. 37.
Honeywell Inc., Minneapolis, Minn. 894,569, cor. Cl. 26.
Hoskins Mfg. Co., Detroit, Mich. 774,375, canc. Cl. 14.
Hunt Oil Co., Dallas, Tex. 899,376, pub. 7–7–70. Cl. 52.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 899,363, pub. 7–7–70. Cl. 51.
ITT Continental Baking Co., Rye, N.Y. 899,322, pub. 7–7–70. Cl. 46.
ITT World Communications Inc., New York, N.Y. 899,429, pub. 7–7–70. Cl. 104.
Imbs, J. F., Milling Co., St. Louis, Mo. 272,452, ren. 9–22–70. Cl. 46.
Imperial Tobacco Group Ltd., Bristol, England. 528,758, ren. 9–22–70. Cl. 17.
Incinerator Institute of America, New York, N.Y. 774,730, canc. Cl. A.
Independent Retailers Syndicate, Inc., New York, N.Y. 899,242, pub. 7–7–70. Cl. 39.
Independent Retailers Syndicate, Inc., New York, N.Y. 899,293–4, pub. 7–7–70. Cl. 42.
Industrias Del Celuloide, S.A., Coslada, Madrid, Spain. 899,189, pub. 7–7–70. Cl. 26.
Institutional Investor Systems, Inc., New York, N.Y. 899,423, pub. 7–7–70. Cl. 102.
Instrument Society of America, Pittsburgh, Pa. 899,226–7, pub. 7–7–70. Cl. 38.
Intercontinent Shoe Corp., New York, N.Y. 899,247, pub. 7–7–70. Cl. 39.
Irish Whiskey Blending Co. Ltd., The, Waterford, Ireland. 899,350, pub. 7–7–70. Cl. 49.
J & J Industries, Inc., Dalton, Ga. 899,299, pub. 7–7–70. Cl. 42.
J-M Trading Corp., Chicago, Ill. 789,871, cor. Cl. 7.
Jameson, John, & Son, Ltd., Dublin, Ireland. 899,349, pub. 7–7–70. Cl. 49.
Janie Originals, Inc., New York, N.Y. 774,640, canc. Cl. 39.
Jayvee Brand, Inc., Lake Oswego, Oreg. 899,237, pub. 6–14–66. Cl. 39.
Jeffrey Mfg. Co., The, Columbus, Ohio. 272,601, ren. 9–22–70. Cl. 23.
Jerrax Imports, Inc., New York, N.Y. 899,291, pub. 7–7–70. Cl. 40.
Jewel Paint & Varnish Co., Chicago, Ill. 275,339, ren. 9–22–70. Cl. 4.
Johns-Manville Corp., New York, N.Y. 899,049, pub. 7–7–70. Cl. 12.
Johns-Manville Corp., New York, N.Y., from Vulcan Electrics Proprietary Ltd., Burwood, Victoria, Australia. 899,214, pub. 7–7–70. Cl. 34.
Johnson & Johnson, New Brunswick, NJ. 899,364, pub. 7–7–70. Cl. 51.
Johnson & Johnson, New Brunswick, N.J. 899,367, pub. 7–7–70. Cl. 51.
Johnson & Johnson, New Brunswick, N.J. 899,372–3, pub. 7–7–70. Cl. 51.
Jones & Byrd Inc., Minneapolis, Minn. 899,418, pub. 7–7–70. Cl. 101.
Joy Imports Inc, New York, NY. 774,599, canc. Cl. 39.
KDI Corp., Cincinnati, Ohio. 774,452, canc. Cl. 21.
K-O-K Cleanser Co., Columbus, Ohio. 899,027, pub. 7–7–70. Cl. 6.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 527,092, ren. 9–22–70. Cl. 12.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 899,051, pub. 7–7–70. Cl. 12.
Kalvar Corp., New Orleans, La. 899,195, pub. 7–7–70. Cl. 26.
Karnak Chemical Corp., Clark, N.J. 531,460, ren 9–22–70. Cl. 16.
Kaylor, Harry W., Dunkirk, Md. 530,395, ren. 9–22–70. Cl. 10.
Kaynee Co., The, Greenville, S.C. 774,588, canc. Cl. 39.
Kay's Ice Cream, Inc., Chattanooga, Tenn. 899,400, pub. 7–14–70. Cl. 100.
Keel Fly Co., Traverse City, Mich. 899,129, pub. 7–7–70. Cl. 22.
Keel-Guard Lures, Inc., Mansfield, Ohio. 899,132, pub. 7–7–70. Cl. 22.
Kenley Players, Inc., Brecksville, Ohio. 899,436, pub. 7–7–70. Cl. 107.
Kidets, Inc., Hialeah, Fla. 899,245, pub. 7–7–70. Cl. 39.
Kieckhefer, A., Elevator Co., Milwaukee, Wis. 899,169, pub. 7–7–70. Cl. 23.
Kilty Products, Inc., Rye, N.Y. 774,720, canc. Cl. 52.
Kingfish, Inc., Louisville, Ky. 899,397, pub. 7–7–70. Cl. 100.
Kirschner Gloves, Inc., Oconto, Wis. 899,275, pub. 7–7–70. Cl. 39.
Klauer Mfg. Co., Dubuque, Iowa. 532,126, ren. 9–22–70. Cl. 23.
Klein, Joseph M., Inc., New York, N.Y. 774,614, canc. Cl. 39.
Knoxville Glove Co., Knoxville, Tenn. 899,248, pub. 7–7–70. Cl. 39.
Kockum Industries, Inc., Talladega, Ala. 899,161, pub. 7–7–70. Cl. 23.
Koehring Co., Milwaukee, Wis. 524,069, ren. 9–22–70. Cl. 23.
Krentler, Walter L., d.b.a. X–3000 Products Co., Detroit, Mich. 774,384, canc. Cl. 16.
Kunz, Margaret, d.b.a. Studio of Ku-Fu, Grand Junction, Colo. 899,203, pub. 7–7–70. Cl. 28.
Kvalheim Machinery Co., Petulama, Calif. 899,172, pub. 7–7–70. Cl. 23.

Laboratoires Om S.A., Geneva, Switzerland. 899,085, pub. 7–7–70. Cl. 18.
Lamb Enterprises, Inc., Toledo, Ohio. 899,100, pub. 7–7–70. Cl. 21.
Lance, Inc., Charlotte, N.C. 529,800, ren. 9–22–70. Cl. 46.
Lang Lunker Lure Co., Ingleside, Ill. 899,133, pub. 7–7–70. Cl. 22.
Lanz Originals, Inc., Los Angeles, Calif. 899,280, pub. 7–7–70. Cl. 39.
Law, William J., d.b.a. National Distributors Co., Palo Alto, Calif. 774,682, canc. Cl. 46.
Lea-Ronal, Inc., Freeport, N.Y. 899,023, pub. 7–7–70. Cl. 6.
Lectrohm Inc., Chicago, Ill. 899,113, pub. 7–7–70. Cl. 21.
Ledal di Leone Sacerdote & C. S.a.s., Brandizzo, Turin, Italy. 899,306, pub. 7–7–70. Cl. 43.
Lee Co., The, Westbrook, Conn. 899,057–8, pub. 7–7–70. Cl. 13.
Les Parfums de Dana, Inc., New York, N.Y. 535,318, ren. 9–22–70. Cl. 51.
Les Parfums de Molyneux, Neuilly-sur-Seine, Hauts-de-Seine, France. 899,361, pub. 7–7–70. Cl. 51.
Lever Brothers Co., New York, N.Y. 899,375, pub. 7–7–70. Cl. 51.
Lever Brothers Co., New York, N.Y. 899,382, pub. 7–7–70. Cl. 52.
Levy, Henry C., Brooklyn, N.Y. 774,743, canc. Cl. 42.
Lilly, Eli, and Co., Indianapolis, Ind. 899,184, pub. 7–7–70. Cl. 23.
Lite Alert, Inc., Dallas, Tex. 774,440, canc. Cl. 21.
Litt-Gluck Co., to Dudley Casuals, Inc., New York, N.Y. 737,941, new cert. 7(c). Cl. 39.
Lochamy, Robert R., d.b.a. Capt. Pete's Fish & Chips, Birmingham, Ala. 899,395, pub. 7–7–70. Cl. 100.
Longhitano's Restaurant, Inc. Southampton, Pa. 899,393, pub. 7–7–70. Cl. 100.
Lund Metalcraft, Inc., New York Mills, Minn. 899,094, pub. 7–7–70. Cl. 19.
Lund Metalcraft, Inc., New York Mills, Minn. 899,097, pub. 7–7–70. Cl. 19.
M.I.S.A.L.-Macchine Industriali Societá Accomandita Leto, Milan, Italy. 899,145, pub. 7–7–70. Cl. 23.
M & W Gear Co., Gibson City, Ill. 899,160, pub. 7–7–70. Cl. 23.
Macintosh, Chas., & Co. Ltd., Oldham, England. 899,259, pub. 7–7–70. Cl. 39.
Madison, Dolly, Industries, Inc., Philadelphia, Pa. 899,325, pub. 7–7–70. Cl. 46.
Maimon, J., & Sons, Inc., Philadelphia, Pa. 774,595, canc. Cl. 39.
Major Brands, Inc., Seattle, Wash. 774,395, canc. Cl. 16.
Mallard Coach Corp., West Bend, Wis. 899,093, pub. 7–7–70. Cl. 19.
Man-Abouts, Inc., New York, N.Y. 774,596, canc. Cl. 39.
Mangel Stores Corp., New York, N.Y. 774,386, canc. Cl. 16.
Mangel Stores Corp., New York, N.Y. 774,555, canc. Cl. 38.
Mangel Stores Corp., New York, N.Y. 774,701, canc. Cl. 50.
Mangel Stores Corp., New York, N.Y. 774,716, canc. Cl. 52.
Manhattan Industries, Inc., New York, N.Y. 899,246, pub. 7–7–70. Cl. 39.
Marion Laboratories, Inc., Kansas City, Mo. 774,423–4, canc. Cl. 18.
Marriott Corp., Washington, D.C. 899,403, pub. 7–7–70. Multiple Class (Classes 100 and 101).
Marriott Corp., Washington, D.C. 899,407, pub. 7–7–70. Cl. 100.
Martin's, Brooklyn, N.Y. 899,253, pub. 7–7–70. Cl. 39.
Marylene Hosiery Co., New York, N.Y. 774,635, canc. Cl. 39.
Master-Bilt Refrigeration Mfg., New Albany, Miss. 899,209, pub. 7–7–70. Cl. 31.
Mattel, Inc., Hawthorne, Calif. 774,456, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 899,139–40, pub. 7–7–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 899,232, pub. 7–7–70. Cl. 38.
Maun Industries Ltd., Mansfield, England. 899,151, pub. 7–7–70. Cl. 23.
Max, Peter, New York, N.Y. 885,208, cor. Cl. 100.
Mayer, J., & Sohn-Cornelius Heyl Lederfabrik AG., Worms, Germany. 899,005, pub. 7–7–70. Cl. 1.
McClellan Industries, Inc., Traverse City, Mich. 899,137, pub. 7–7–70. Cl. 22.
Medical Precision Products Co., Beverly Hills, Calif. 774,406, canc. Cl. 18.
Medicredit, Inc., Philadelphia, Pa. 899,421–2, pub. 7–7–70. Cl. 102.
Melville Shoe Corp., New York, N.Y. 899,276, pub. 7–7–70. Cl. 39.
Metaverpa N.V., Maartensdijk, Netherlands. 899,035, pub. 7–7–70. Cl. 7.
Microdyne, Inc., Rolling Meadows, Ill. 894,095, cor. Cl. 26.
Midwest Software, Inc., Chicago, Ill. 899,396, pub. 7–7–70. Cl. 100.
Mikkelsens, Inc., Ashtabula, Ohio. 899,003, pub. 7–7–70. Cl. 1.
Milchem Inc., Houston, Tex. 899,024, pub. 7–7–70. Cl. 6.
Miller Brewing Co., Milwaukee, Wis. 899,348, pub. 7–7–70. Cl. 48.
Milo Products Corp., Grantham, Pa. 899,126, pub. 7–7–70. Cl. 22.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 527,302, ren. 9–22–70. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 528,322, ren. 9–22–70. Cl. 21.
Minnesota & Ontario Paper Co., Minneapolis, Minn. 774,362–3, canc. Cl. 12.
Mishawaka Rubber Co., Inc., Mishawaka, Ind. 534,535, ren. 9–22–70. Cl. 39.
Miss District of Columbia, Inc.: *See*— American Pageants, Inc.
Mitchell Foods, Inc., Fredonia, N.Y. 899,323, pub. 7–7–70. Cl. 46.
Mixermobile Manufacturers, Inc., Portland, Oreg. 406,701, canc. Cl. 23.
M-Line, Inc., Whittier, Calif. 899,088, pub. 7–7–70. Multiple Class (Classes 19 and 23).
Mobil Oil Corp., New York, N.Y. 526,340, ren. 9–22–70. Cl. 7.
Monogram Industries, Inc., Los Angeles, Calif. 893,138, cor. Cl. 13.
Morning Fresh Dairy, Inc., Minneapolis, Minn. 899,414, pub. 7–7–70. Cl. 101.
Morris, Mark, Associates, Inc., to Riviana Foods Inc., Houston, Tex. 795,008, new cert. Multiple Class (Classes 12, 38, and 46).
Morris, Mark, Associates, Inc., to Riviana Foods Inc., Houston, Tex. 874,812, new cert. Cl. 46.
Multistamp Co., The, Norfolk, Va. 532,011, ren. 9–22–70. Cl. 37.
Multistamp Co., The, Norfolk, Va. 533,680, ren. 9–22–70. Cl. 23.
Musonic, Inc., Chicago, Ill. 899,220, pub. 7–7–70. Cl. 36.
N.V. Helmondsche Textiel Maatschappij (N.V. Helmond Textile Co.), Helmond, Netherlands. 774,650, canc. Cl. 42.
N.V. Sigarettenfabriek E. Laurens "Le Khedive," The Hague, Netherlands. 899,076, pub. 7–7–70. Cl. 17.
Nan-Flower Lingerie, Inc., New York, N.Y. 899,284, pub. 7–7–70. Cl. 39.
National Billiard Chalk Co., Chicago, Ill. 899,121, pub. 7–7–70. Cl. 22.
National Biscuit Co., New York, N.Y. 274,812, ren. 9–22–70. Cl. 46.
National Executive Services, Inc., Birmingham, Ala. 899,408, pub. 7–7–70. Cl. 101.
National-Spencer, Inc., Wichita, Kans. 529,880, ren. 9–22–70. Cl. 23.
Neal, Harry W., Louisville, Ky. 899,202, pub. 7–7–70. Cl. 27.
Nethercutt Laboratories, d.b.a. Cosgenic Labs, Los Angeles, Calif. 774,748–50, canc. Cl. 51.
New Concepts, Inc., Colorado Springs, Colo. 899,016, pub. 7–7–70. Cl. 3.
New England Food Sales Inc., Belmont, Mass. 774,081, canc. Cl. 46.
New Trends Associates, Inc., New York, N.Y. 774,438, canc. Cl. 21.
Newberry, J. J., Co., New York, N.Y. 774,575, canc. Cl. 39.
Niacet Chemicals Corp., Niagara Falls, NY. 329,716, canc. Cl. 6.
Nibco, Inc., Elkhart, Ind. 899,063, pub. 7–7–70. Cl. 13.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 774,751, canc. Cl. 51.
Noma-World Wide Inc., Chicago, Ill. 899,114, pub. 7–7–70. Cl. 21.
Noone, Frank, Show Co., Inc., Taunton, Mass. 899,207, pub. 7–7–70. Cl. 39.
Norris Industries, Inc., Los Angeles, Calif. 530,552, ren. 9–22–70. Cl. 23.
Norvic Footwear, Inc., New York, N.Y. 799,559, canc. Cl. 39.
Nu-Age Systems, Inc., Detroit, Mich. 774,445, canc. Multiple Class (Classes 21 and 26).
Nyman Mfg. Co., East Providence, R.I. 899,010, pub. 7–7–70. Cl. 2.
O'Brien Corp., The, South Bend, Ind. 899,070, pub. 7–7–70. Cl. 16.
Ohio Brass Co., The, Mansfield, Ohio. 527,507, ren. 9–22–70. Cl. 21.
Ohio Table Pad Co., Toledo, Ohio. 774,705, canc. Cl. 50.
Old Boone Distillery Co., d.b.a. Darling Distillery Co., Shively, Ky. 533,029, ren. 9–22–70. Cl. 49.
Oldberg Mfg Co., Grand Haven, Mich. 774,521, canc. Cl. 32.
Oliver's Pubs, Inc., Chicago, Ill. 899,398, pub. 7–7–70. Cl. 100.
Omark Industries, Inc., Portland, Oreg. 774,527, canc. Cl. 34.
Oneida Ltd., Oneida, N.Y. 899,163–8, pub. 7–7–70. Cl. 23.
Oneida Ltd., Oneida, N.Y. 899,170–1, pub. 7–7–70. Cl. 23.
Orange Roller Bearing Co., Inc., Orange, N.J. 874,215, canc. Cl. 23.
Oti Services, Inc., New York, N.Y. 899,411, pub. 7–7–70. Cl. 101.
Oxford Industries, Inc., Atlanta, Ga. 899,257, pub. 7–7–70. Cl. 39.
Oxford Industries, Inc., Atlanta, Ga. 899,278, pub. 7–7–70. Cl. 39.
Ozark Petroleum Co., Inc., Potosi, Mo. 899,068, pub. 7–7–70. Cl. 15.
Pacific Molasses Co., San Francisco, Calif. 530,106, ren. 9–22–70. Cl. 46.
Pacific Northwest Sports, Inc., Seattle, Wash. 899,437, pub. 7–7–70. Cl. 107.
Paint Producers Inc., St. Louis, Mo. 899,069, pub. 7–7–70. Cl. 16.
Parker, Melvin, d.b.a. Miracle Massage Co., Loveland, Ohio. 774,674, canc. Cl. 44.
Partner Industries of America, Inc., d.b.a. Able Laboratories, Chicago, Ill. 899,082, pub. 7–7–70. Cl. 18.
Pearl, Lester S., d.b.a. Gateway Furniture Mfg. Co., St. Louis, Mo. 774,523, canc. Cl. 32.
Pemberton, Lee S., Jr., d.b.a. Dusorb Products Co., Lenexa, Kans. 899,011, pub. 7–7–70. Cl. 2.
Pengo Corp., Sunnyvale, Calif. 899,176, pub. 7–7–70. Cl. 23.
Penobscot Shoe Co., Boston, Mass. 899,255, pub. 7–7–70. Cl. 39.
Pentex Inc., Kankakee, Ill. 774,334, canc. Cl. 6.
PepsiCo, Inc., New York, N.Y. 899,309, pub. 7–7–70. Cl. 45.
Perfex Corp., Ocean City, N.J. 899,354, pub. 7–7–70. Cl. 50.
Pet Inc., St. Louis, Mo. 899,340, pub. 7–7–70. Cl. 46.
Petzetakis, Aristovoulos G., to The General Tire & Rubber Co., Akron, Ohio. 860,572, new cert. Cl. 35.
Pfizer, Chas., & Co., Inc.: *See*— Pfizer Inc.

Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 899,032, pub. 7–7–70. Cl. 6.
Pharmacy Times, Inc., Port Washington, N.Y. 899,230, pub. 7–7–70. Cl. 38.
Philadelphia Laboratories, Inc., Philadelphia, Pa. 774,420, canc. Cl. 18.
Philadelphia Quartz Co., Philadelphia, Pa. 899,031, pub. 7–7–70. Cl. 6.
Picariello & Singer, Inc., East Boston, Mass. 774,603, canc. Cl. 39.
Pierce's Proprietaries, Inc., New York, N.Y. 535,593, ren. 9–22–70. Cl. 18.
Pioneer Magnetics Inc., Santa Monica, Calif. 899,108, pub. 7–7–70. Multiple Class (Classes 21 and 26).
Pollak Leather, Inc., New York, N.Y. 899,252, pub. 7–7–70. Cl. 39.
Poviet Production, N.V., Amsterdam, Netherlands. 894,886, cor. Cl. 6.
Principal Group Ltd., Edmonton, Alberta, Canada. 899,419, pub. 7–7–70. Cl. 102.
Proen Products Co., Berkeley, Calif. 534,017. Cl. 13.
Professional Budget Plan, Madison, Wis. 528,648, ren. 9–22–70. Cl. 38.
Professional Images Corp., Sarasota, Fla. 899,134, pub. 7–7–70. Cl. 22.
Prosperity Co., Inc., The, New York, N.Y. 348,178, canc. Cl. 21.
Psychological Associates, Inc., St. Louis, Mo. 899,233, pub. 7–7–70. Cl. 38.
Psychosync, Inc., El Rito, N. Mex. 899,243, pub. 7–7–70. Cl. 39.
Public Service Coordinated Transport, Maplewood, N.J. 534,350, ren. 9–22–70. Cl. 38.
Puerto Rico Distillers, Inc., Arecibo, Puerto Rico. 899,347, pub. 7–7–70. Cl. 47.
Pullman Inc., Cincinnati, Ohio. 774,433, canc. Cl. 19.
Pyramid International, Inc., Newton, Mass. 899,210, pub. 6–2–70. Cl. 32.
Qonaar Corp., from Duncan Industries, Inc., Elk Grove Village, Ill. 899,013, pub. 7–7–70. Multiple Class (Classes 2, 25, and 26).
Quaker Shoe Corp., Allentown, Pa. 774,613, canc. Cl. 39.
RCA Corp., from Radio Corp. of America, New York, N.Y. 899,110–11, pub. 7–7–70. Cl. 21.
R.I.T.A. Chemical Corp., Chicago, Ill. 899,025, pub. 7–7–70. Cl. 6.
Radio Corp. of America: *See*— RCA Corp.
Ralph, Harold J., d.b.a. H. J. Ralph Co., to Consolidated Cover Co., Sunnyvale, Calif. 871,369, new cert. 7(c). Cl. 39.
Ralston Purina Co., St. Louis, Mo. 899,316, pub. 7–7–70. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 899,339, pub. 7–7–70. Cl. 46.
Ralston Purina Co., St. Louis, Mo. 899,342–5, pub. 7–7–70. Cl. 46.
Raybestos-Manhattan, Inc., Passaic, N.J. 774,467, canc. Cl. 23.
Rebikoff, Dimitri: *See*— Rebikoff Underwater Products, Inc.
Rebikoff Underwater Products, Inc., from Dimitri Rebikoff, Fort Lauderdale, Fla. 899,187, pub. 7–7–70. Cl. 26.
Reeves Brothers, Inc., New York, N.Y. 899,292, pub. 7–7–70. Cl. 42.
Regis Corp., Minneapolis, Minn. 899,402, pub. 7–7–70. Cl. 100.
Register & Tribune Snydicate, Inc., The, Des Moines, Iowa. 774,567–8, canc. Cl. 38.
Reid-Provident Laboratories Inc., Atlanta, Ga. 899,086, pub. 7–7–70. Cl. 18.
Rembrandt Tobacco Corp. (Overseas) Ltd., Zurich, Switzerland. 899,072–3, pub. 7–7–70. Cl. 17.
Richards, Caryl, Inc., New York, N.Y. 774,707, canc. Cl. 51.
Robertson Aircraft Corp., Bellevue, Wash. 899,427, pub. 7–7–70. Cl. 103.
Robertson Photo-Mechanix, Inc., Des Plaines, Ill. 899,191, pub. 7–7–70. Cl. 26.
Robins, A. H. Co., Inc., Richmond, Va. 899,360, pub. 7–7–70. Cl. 51
Robinson Industries, Inc., Miami, Fla. 899,065–6, pub. 7–7–70. Cl. 13.
Rochester Paper Co., Rochester, Mich. 528,942, ren. 9–22–70. Cl. 37.
Roltec, Inc., River Falls, Wis. 899,112, pub. 7–7–70. Cl. 21.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 899,071, pub. 7–7–70. Cl. 17.
Rothmoor Corp., Chicago, Ill. 899,249, pub. 7–7–70. Cl. 39.
Roval Publishers, Inc., Johnson City, Tenn. 774,571, canc. Cl. 38.
Rueping, Fred, Leather Co., Fond du Lac, Wis. 899,007, pub. 7–7–70. Cl. 1.
Rutishauser, Edgar, Zurich, Switzerland. 444,105, ren. 9–22–70. Cl. 23.
Rykoff, S. E. & Co., Los Angeles, Calif. 899,225, pub. 7–7–70. Cl 37.
S & W Fine Foods, Inc.: *See*— VIP Foods, Inc.
Saffir, Jacob A., Los Angeles, Calif. 774,671, canc. Cl. 44.
Sarcona Brothers Co., New York, N.Y. 899,204, pub. 7–7–70. Cl. 28.
Saurer, Adolph, Ltd., Arbon, Switzerland. 899,146, pub. 7–7–70. Cl. 23.
Schaffner, Hart, & Marx, Chicago, Ill. 524,452, ren. 9–22–70. Cl. 39.
Scharf, Ruth, Ltd., New York, N.Y. 899,244, pub. 7–7–70. Cl. 39.
Schaumburger, Charles, Inc., Englewood, N.J. 774,685, canc. Cl. 46.
Schenley Industries, Inc., New York, N.Y. 533,052, ren. 9–22–70. Cl. 47.
Schiffman, Ilene B., d.b.a. Tweed, Philadelphia, Pa. 774,611, canc. Cl. 39.
Scott, Forrest G., Auburn, Ind. 899,038, pub. 6–30–70. Multiple Class (Classes 9 and 23).
Searer, Harold J., d.b.a. Searer Rubber Co., Akron, Ohio. 899,124, pub. 7–7–70. Cl. 22.
Searle, G. D., & Co., Skokie, Ill. 899,081, pub. 7–7–70. Cl. 18.
Sears, Roebuck & Co., Chicago, Ill. 531,033, ren. 9–22–70. Cl. 23.
Sears, Roebuck and Co., Chicago, Ill. 899,207, pub. 7–7–70. Cl. 29.
Sea-Way Marketing Co., Crown Point, Ind. 774,338, canc. Cl. 6.
Seibert & Sons, Inc., Chenoa, Ill. 899,142, pub. 7–7–70. Cl. 23.
Sendlinger Optische Glaswerke GmbH, Berlin-Zehlendorf, Germany. 899,216, pub. 7–7–70. Cl. 34.
Sensor Technology, Inc., Van Nuys, Calif. 899,099, pub. 7–7–70. Cl. 21.
Sentry Hardware Corp., Cleveland, Ohio. 899,380, pub. 7–7–70. Cl. 52.
Shearer Offerman Co., Minneapolis, Minn. 899,377, pub. 7–7–70. Cl. 52.
Shepherd Casters, Inc., St. Joseph, Mich. 899,064, pub. 7–7–70. Cl. 13.
Sherry Hill, Inc., Boston, Mass. 774,577, canc. Cl. 39.
Shuman, Norman, d.b.a. Coquette, Brooklyn, N.Y. 774,609, canc. Cl. 39.
Siegfried Aktiengesellschaft, Zofingen, Switzerland. 513,278, ren. 9–22–70. Cl. 18.
Simplicity Pattern Co., Inc., New York, N.Y. 899,199, pub. 7–7–70. Cl. 26.
Singer Co., The, New York, N.Y. 774,447, canc. Cl. 21.
Sirco International Corp., Mount Vernon, N.Y. 899,018, pub. 7–7–70. Cl. 3.
Siroil Laboratories, Inc., Santa Monica, Calif. 774,708, canc. Cl. 51.
Skadden, Dayton B., Baltimore, Md. 774,396, canc. Cl. 16.
Skor-Mor Corp., Anaheim, Calif. 899,122, pub. 7–7–70. Cl. 22.
Smidth, F. L., & Co., Cresskill, N.J. 275,229, ren. 9–22–70. Cl. 26.
Societe Anonyme Belge de Constructions Aeronautiques "S.A.B.C.A.," Brussels, Belgium. 899,196–7, pub. 7–7–70. Cl. 26.
Societe d'Outillage et de Mecanique du Faucigny, Thyez, France. 899,053, pub. 7–7–70. Cl. 12.
Societe Francaise des Coussinets Minces, de-la-Ruelle (Loiret), France. 774,466, canc. Cl. 23.
Society of Photographic Scientists and Engineers, Washington, D.C. 899,228, pub. 7–7–70. Cl. 38.
South Eastern Cordage Co., Cleveland, Ohio. 899,020, pub. 7–7–70. Cl. 4.
Southdown, Inc., New Orleans, La. 533,618, ren. 9–22–70. Cl. 46.
Spatola Wines, Inc., Malvern, Pa. 528,792, ren. 9–22–70. Cl. 47.
Sperry Rand Corp., Troy, Mich. 899,388, pub. 7–7–70. Cl. 100.
Spiegel, Jack, Portland, Maine. 527,217, ren. 9–22–70. Cl. 39.
Sprague Electric Co., North Adams, Mass. 531,743, ren. 9–22–70. Cl. 21.
Sprague Electric Co., North Adams, Mass. 533,169, ren. 9–22–70. Cl. 21.
Stage Delicatessen & Restaurant, Inc., New York, N.Y. 899,317, pub. 7–7–70. Cl. 46.
Stage Delicatessen & Restaurant, Inc., New York, N.Y. 899,319, pub. 7–7–70. Cl. 46.
Standard Oil Co. of California, San Francisco, Calif. 533,798, ren. 9–22–70. Cl. 103.
Standard Products Corp., New York, N.Y. 774,352, canc. Cl. 11.
Stannard, Forrest B., Fort Lauderdale, Fla. 899,014, pub. 7–7–70. Cl. 2.
Standard Packaging Corp., Stamford, Conn. 899,138, pub. 7–7–70. Cl. 22.
Star Mfg. Co., Leominster, Mass. 774,734, canc. Cl. 22.
Stetson, John B., Co., Philadelphia, Pa. 273,986, ren. 9–22–70. Cl. 39.
Stevens, J. P., & Co., Inc., New York, N.Y. 275,917, ren. 9–22–70. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 276,060–1, ren. 9–22–70. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 276,193, ren. 9–22–70. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 277,537, ren. 9–22–70. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 531,845, ren. 9–22–70. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 899,300, pub. 7–7–70. Cl. 42.
Stoneman Engineering & Mfg. Co., Inglewood, Calif. 899,056, pub. 7–7–70. Cl. 13.
Stonier, Russ, Inc., Chicago, Ill. 899,052, pub. 7–7–70. Cl. 12.
Stony Brook Casuals, Inc.: *See*— Crystal, David, Inc.
Straight Arrow Publishers, Inc., San Francisco, Calif. 899,234, pub. 7–7–70. Cl. 38.
Stratco Inc., Elkhart, Ind. 899,046, pub. 7–7–70. Cl. 12.
Strathmore Packing House Co., Strathmore, Calif. 534,648, ren. 9–22–70. Cl. 46.
Stromberg-Carlson Corp., Rochester, N.Y. 528,263, ren. 9–22–70. Cl. 21.
Strouse, Adler Co., The, New Haven, Conn. 899,239, pub. 7–7–70. Cl. 39.

Straub, W. F., & Co., Chicago, Ill. 774,789, canc. Cl. 38.
Strum & Drum Inc., Wheeling, Ill. 444,363, ren. 9–22–70. Cl. 36.
Stylume Products, Inc., Hialeah, Fla. 774,525, canc. Cl. 32.
Sulby Engineering Development Co. Ltd., The, London, England. 899,158, pub. 7–7–70. Cl. 23.
Sunkist Growers, Inc., Los Angeles, Calif. 899,315, pub. 7–7–70. Cl. 46.
Suntemp Industries, Inc., Blackwood, N.J. 774,529–30, canc. Cl. 34.
Swanson Sales, Inc., West Hartford, Conn. 774,373, canc. Cl. 13.
Sweet Pepperell, Inc., San Rafael, Calif. 774,684, canc. Cl. 46.
T.G. & Y. Stores Co., Oklahoma City, Okla. 899,055, pub. 7–7–70. Cl. 12.
T. G. & Y. Stores Co., Oklahoma City, Okla. 899,131, pub. 7–7–70. Cl. 22.
T. G. & Y. Stores Co., Oklahoma City, Okla. 899,185, pub. 7–7–70. Cl. 24.
TSC Industries, Inc., from TSC Industries, Inc., d.b.a. Tractor Supply Co., Chicago, Ill. 899,149, pub. 7–7–70. Cl. 23.
Taco Bell, Inc., Torrance, Calif. 899,404–5, pub. 7–7–70. Cl. 100.
Talbot-Carlson, Inc., Audubon, Iowa. 899,091, pub. 7–7–70. Cl. 19.
Tamms Industries Co., Chicago, Ill. 774,360, canc. Cl. 12.
Technic, Inc., Cranston, R.I. 899,028, pub. 7–7–70. Cl. 6.
Televue, Inc., Tampa, Fla. 899,190, pub. 7–7–70. Cl. 26.
Tennant Co., Minneapolis, Minn. 534,541, ren. 9–22–70. Cl. 23.
Texlin Corp., Hartsville, S.C. 899,307, pub. 7–7–70. Cl. 43.
Therm-O-Disc, Inc., Mansfield, Ohio. 899,194, pub. 7–7–70. Cl. 26.
Thomson Co., Thomson, Ga. 774,594, canc. Cl. 39.
Thunderbird Products Corp., Miami, Fla. 899,095, pub. 7–7–70. Cl. 19.
Tideland Signal Corp., Houston, Tex. 899,107, pub. 7–7–70. Cl. 21.
Tradewinds Co., Thunderbolt, Ga. 899,329, pub. 7–7–70. Cl. 46.
Transamerica Corp., San Francisco, Calif. 899,222, pub. 7–7–70. Cl. 37.
Transamerica Corp., San Francisco, Calif. 899,430, pub. 7–7–70. Cl. 105.
Transystems, Inc., Brighton District, Boston, Mass. 899,406, pub. 7–7–70. Cl. 100.
Tremco Mfg. Co., Cleveland, Ohio. 533,980, ren. 9–22–70. Cl. 12.
Troy Chemical Co., Inc., The, Mt. Kisco, N.Y. 276,104, ren. 9–22–70. Cl. 18.
Tube-Sta Enterprises, San Lorenzo, Calif. 899,128, pub. 7–7–70. Cl. 22.
Tugend, William J., Jr., d.b.a. Transmission Concepts, Newhall, Calif. 899,159, pub. 7–7–70. Cl. 23.
Turtle Wax, Inc., Chicago, Ill. 774,435, canc. Cl. 19.
Twinoak Products, Inc., North Aurora, Ill. 899,378, pub. 7–7–70. Cl. 52.
Twinpak Ltd., Lachine, Quebec, Canada. 899,127, pub. 7–7–70. Cl. 22.
Tyer Rubber Corp., Andover, Mass. 532,700, ren. 9–22–70. Cl. 22.
Unimax Switch Corp., Wallingford, Conn. 444,079, ren. 9–22–70. Cl. 21.
Union Oil Co. of California, Los Angeles, Calif. 531,450–1, ren. 9–22–70. Cl. 15.
Unique Fountain iDsplays, Inc., New York, N.Y. 899,352, pub. 7–7–70. Cl. 50.
United Artists Theatre Circuit, Inc., San Francisco, Calif. 899,022, pub. 7–7–70. Cl. 5.
United States Luggage Corp., from United States Trunk Co., Inc., Fall River, Mass. 899,015, pub. 7–7–70. Cl. 3.
Union Pacific Railroad Co., Omaha, Nebr. 533,221, ren. 9–22–70. Cl. 105.
United States Playing Card Co., The, Cincinnati, Ohio. 899,141, 7–7–70. Cl. 22.
United States Rubber Co., New York, N.Y. 774,461, canc. Cl. 22.
United States Shoe Corp., Cincinnati, Ohio. 899,285, pub. 7–7–70. Cl. 39.
United States Tobacco Co., Greenwich, Conn. 527,124, ren. 9–22–70. Cl. 17.
United States Trunk Co., Inc.: *See*—
United States Luggage Corp.
United-Carr Inc., Boston, Mass. 276,809–10, ren. 9–22–70. Cl. 13.
United-Carr Inc., Boston, Mass. 534,930, ren. 9–22–70. Cl. 40.
Universal Oil Products Co., Des Plaines, Ill. 528,572, ren. 9–22–70. Cl. 23.
VIP Foods, Inc., Seattle, Wash. 899,311–12, pub. 10–11–66. Cl. 46.
Valdes, Gloria C., d.b.a. Valencia Importing Co., Tampa, Fla. 524,690, ren. 9–22–70. Cl. 46.
Van Drill, John, d.b.a. The Sally Wallace Bridal Consultants Round Table, Morristown, N.J. 899,412, pub. 7–7–70. Cl. 101.
Vasel, Paul C., d.b.a. Schmidt Sales Co., New York, N.Y. 774,717, canc. Cl. 52.
Vaughan & Bushnell Mfg. Co., Hebron, Ill. 899,173, pub. 7–7–70. Cl. 23.
Veped Traffic Controls, Inc., Oklahoma City, Okla. 899,353, pub. 7–7–70. Cl. 50.
Victoreen Leece Neville, Inc., Cleveland, Ohio. 899,192, pub. 7–7–70. Cl. 26.
Vienna Beauty Products Co., Dayton, Ohio. 899,362, pub. 7–7–70. Cl. 51.
Vital Earth Products, Inc., Washington, D.C. 774,350, canc. Cl. 10.
Vulcan Electrics Proprietary Ltd.: *See*—
Johns-Manville Corp.
Wallace, W. J., Systems, Inc., Batavia, Ill. 899,152, pub. 7–7–70. Cl. 23.
Wampach & Maltbie, Wichita, Kans. 774,414, canc. Cl. 18.
Ward, F. Wayne, Franklin Lakes, N.J. 899,435, pub. 7–7–70. Cl. 107.
Warner & Swasey Co., The, Cleveland, Ohio. 899,229, pub. 7–7–70. Cl. 38.
Waumbec Mills, Inc., New York, N.Y. 899,295, pub. 7–7–70. Cl. 42.
Weidner Canning Co., Inc., Plymouth, Ind. 899,330, pub. 7–7–70. Cl. 46.
Wellco Enterprises, Inc., Waynesville, N.C. 899,282–3, pub. 7–7–70. Cl. 39.
Wembley, Inc., New Orleans, La. 899,250, pub. 7–7–70. Cl. 39.
Westec, California Corp., d.b.a. Sweetland Co., San Francisco, Calif. 774,477, canc. Cl. 23.
Westec, d.b.a. Sweetland Co., San Francisco, Calif. 774,500, canc. Cl. 26.
Western Union Telegraph Co., The, New York, N.Y. 774,727, canc. Cl. 104.
Westland Shoe Corp., Biddeford, Maine. 899,281, pub. 7–7–70. Cl. 39.
Weston, Byron, Co., Dalton, Mass. 899,223, pub. 7–7–70. Cl. 37.
Whirlpool Corp., Benton Harbor, Mich. 774,449, canc. Cl. 21.
White Castle System, Inc., Columbus, Ohio. 535,144, ren. 9–22–70. Cl. 46.
White Stag Mfg. Co., Portland, Oreg. 899,263–4, pub. 7–7–70. Cl. 39.
Williamson-Dickie Mfg. Co., The, Fort Worth, Tex. 899,268, pub. 7–7–70. Cl. 39.
Wilson Sporting Goods Co., River Grove, Ill. 899,120, pub. 7–7–70. Cl. 22.
Winners Circle, Inc., Martinsville, N.J. 865,096, canc. Cl. 51.
Wiscassett Mills Co., Albermarle, N.C. 899,256, pub. 7–7–70. Cl. 39.
Wiss, J., & Sons Co., Newark, N.J. 899,156, pub. 7–7–70. Cl. 23.
Wool Bureau, Inc., The, New York, N.Y. 790,140, cor. Cl. A.
Wolverine Equipment Co., Cambridge, Mass. 774,472, canc. Cl. 23.
Wooster Brush Co., The, Wooster, Ohio. 899,206, pub. 7–7–70. Cl. 29.
Wright, P. M., Electrical Co. Ltd., Montreal, Quebec, Canada. 899,215, pub. 7–7–70. Cl. 34.
Y & S Candies Inc., Brooklyn, N.Y. 534,419, ren. 9–22–70. Cl. 18.
Yeomans Brothers Co., Melrose Park, Ill. 899,143, pub. 3–26–68. Cl. 23.
Youngstown Sheet & Tube Co., Youngstown, Ohio. 277,426, ren. 9–22–70. Cl. 13.
Zell Bros., Inc., Portland, Oreg. 899,298, pub. 7–7–70. Cl. 42.
Zevo, Inc., Los Angeles, Calif. 899,341, pub 7–7–70. Cl. 46.

U.S. GOVERNMENT PRINTING OFFICE: O—1970

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DEPARTMENT OF
COMMERCE
PUBLICATION

U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 29, 1970 Volume 878 Number 5

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of August 1970

Examiner affirmed	116
Examiner affirmed in part	12
Examiner reversed	25
Total	153

Reduction in Patent Application Disclosure

Notice of proposed Guidelines for Preparation of Patent Application Disclosure was published in the Federal Register of January 14, 1969 (34 F.R. 524), and in the OFFICIAL GAZETTE of the Patent Office of February 4, 1969 (859 O.G. 1). Comments from the general public were invited.

After consideration of comments received, new guidelines are deemed unnecessary, even though the average length of specification seems to be increasing. Applicants and their attorneys are reminded that 35 U.S.C. 112 requires inventions to be described "in such full, clear, concise, and exact terms as to enable any person skilled in the art * * * to make and use the same * * *." To satisfy the "concise" requirement, lengthy and unnecessary descriptive detail should be avoided.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: July 24, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70–9862; Filed, July 30, 1970; 8:45 a.m.]

35 F.R. 12296, July 31, 1970

Certificates of Correction for the Week of Sept. 29, 1970

Re. 26,714
Re. 26,909
3,307,056
3,432,351
3,433,865
3,450,730
3,459,471
3,459,549
3,459,919
3,462,344
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3,517,960
3,518,059
3,518,558
3,518,678
3,518,699
3,518,709
3,518,970
3,518,983
3,419,488
3,522,042

New Applications Received During June 1970

Patents	9,583
Designs	567
Plant Patents	7
Reissues	39
Total	10,196

Issue—September 29, 1970

Patents	1300	—No. 3,530,506 to No. 3,531,805, incl.
Designs	81	—No. 218,794 to No. 218,874, incl.
Reissues	5	—No. 26,955 to No. 26,959, incl.
Def. Pub	13	—No. T878,012 to No. T878,024, incl.
Total	1399	

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF SEPTEMBER 8, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	12-09-68
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-07-68
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	3-17-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	2-17-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	6-06-68
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	10-01-69
SECURITY, GROUP 220—C. D. QUARFORTH, Acting Director Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	1-02-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	2-04-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	4-01-69
PHYSICS, GROUP 280—R. L. EVANS, Director Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	2-13-69
DESIGNS, GROUP 290—C. D. QUARFORTH, Acting Director Industrial Arts; Household, Personal and Fine Arts.	12-04-69
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	6-06-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	3-07-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	4-09-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	9-05-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	7-10-69

Total number of pending applications (excluding Designs)	182,635
Total number of Design applications pending	2,957

Expiration of patents: The patents within the range of numbers indicated below expire during August 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,650,360 to 2,654,086, inclusive
Plant Patents	Numbers 1,213 to 1,218, inclusive

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

In re Thomas N. Melin

No. 8303. Decided March 26, 1970

[57 CCPA —; 422 F.2d 1364; 165 USPQ 168]

1. Patentability—Combining References—Obviousness.

"Appellant argues that the inherent capability of Lapham's forks to be moved under load transcends the express disclosures of the reference. So assuming, would it not be obvious to the ordinary artisan to resort to a more heavy-duty and stronger design? However, the artisan would have before him the teachings of Lehmann of the extensible cover type of fork as an obvious alternative to the Lapham type. Ackermann would appear to allay any doubt that a fork device with selectively movable arms is adaptable to orient a load."

2. Same—Reference—Non-Analogous Art.

"We are not impressed with appellant's argument that Ackermann is not analogous to the subject matter of claim 4. Claim 4 relates to a fork-lift truck. Ackermann discloses a platform-lift truck. It would seem apparent that those who design and use fork-type lift trucks would be aware of designs and mechanisms which solve common or related problems in the more heavy-duty platform-type lift trucks."

3. Same—Particular Subject Matter—"Load Handling in Fork-Lift Trucks."

The decision of the Board of Appeals, refusing a certain claim in an application entitled "Load Handling in Fork-Lift Trucks" as unpatentable over the prior art, is affirmed.

Appeal from Patent Office. Serial No. 517,883.

AFFIRMED.

Hayden A. Carney (*Christie, Parker & Hale*), *John A. Finken* (*Wynne & Finken*), for appellant.

Joseph Schimmel (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Rich, Almond, Baldwin, and Lane, *Associate Judges*

Almond, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection over prior art under 35 U.S.C. 103 of claim 4 in appellant's application for "Load Handling in Fork-Lift Trucks." [1]

The invention is best illustrated in FIG. 2 of the application:

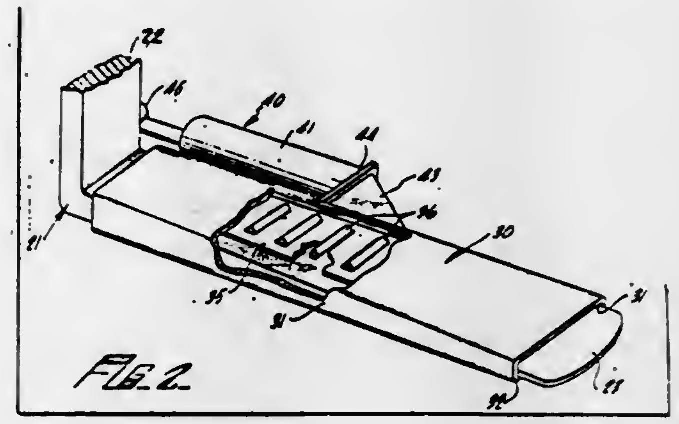

FIG. 2

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[1] Serial No. 517,883 filed December 14, 1965 as a continuation of Serial No. 426,482 filed January 15, 1965 as a continuation-in-part of Serial No. 401,413 filed October 5, 1964.

Claim 4, with reference numerals from the drawing inserted for explanatory purposes, reads as follows:

> 4. In a fork-lift truck having a vertically movable carriage including an apron and a pair of spaced substantially fixed lifting fork members, said fork member supporting the respective portions of a load engaged therewith and extended in cantilevered fashion forwardly of the truck from the apron to unsupported ends spaced from the apron, apparatus comprising an elongated cover member [30] for one of the fork members and supported thereby, the cover member including a top plate disposed over and aligned with the length of the one fork member for engaging the adjacent portion of a load supported by the fork members, the cover member having guide means [31] depending from the top plate along each longitudinal edge of the top plate for guiding the cover member in movement along the length of the one fork member, the guide means having opposing surfaces which are spaced apart a distance greater than the width of the one fork member, bearing means [36] mounting the cover member [30] to the one fork member [21] wholly independently of the other fork member for load bearing guided movement of the cover member along the one fork member towards and away from the fork apron, and cover member moving power means [40] connected between the cover member and the carriage for moving the portion of a load supported by the cover member relative to the portion of the load supported by the other fork member to move the load angularly about a vertical axis through the load.

From the recitations of the appealed claim and the reproduced drawing, it is to be seen that appellant's invention relates to a fork-lift truck wherein at least one of the fork members (21) has a load-bearing cover plate (30) operated outwardly and inwardly by a hydraulic ram assembly (40). The specification discloses that the purpose of the movable cover plate is to align a load such as lumber in a stack.

The references relied upon by the Examiner and the Board of Appeals are:

Lehmann, 2,536,068, Jan. 2, 1951.
Lapham, 2,574,045, Nov. 6, 1951.
Ackermann, 2,756,885, July 31, 1956.

Lehmann teaches a fork-lift truck "adapted to carry loads varying in both weight and/or size." The fork members have movable cover plates or outer fork sections provided with separate power elements for simultaneously moving the outer fork sections outwardly and inwardly.

Lapham "relates to, and * * * has for its object the provision of a fork lift truck and a retractable fork therefor." The patent states:

> By selecting the direction of the flow of fluid through the motors * * *, the screws * * * can be rotated in either direction to thereby selectively extend or retract either or both of the forks * * *, it being contemplated that the motor * * * for each of the two forks shown, be controlled by its own and independent valve.
>
> To pick up a load on the retractable forks * * *, the truck with the forks in their retracted position is advanced to the load, its brakes set, and then the forks are advanced to a position under the load.

Ackermann discloses a platform-lift truck having a carriage supported by wheels on a platform. The carriage has tracks for selectively movable stanchions which carry load manipulating and orienting pusher arms.

In addition to the references relied on below, appellant cites five additional references and asserts that inasmuch as they all relate to fork-lift or fork-type trucks, they are pertinent to the present appeal because they "provide an accurate framework within which to interpret the Lehmann and Lapham references and to define the true scope and content of the pertinent art," and that such scope and content of the prior art is away from the present invention. Appellant asserts that these additional patents were cited either in the prosecution of the parent application or in the final rejection of the claim here on appeal.

Appellant advanced the issue relative to a consideration of "all the prior art of record" in his request for reconsideration. In response thereto and in reaffirming its decision, the Board stated that its decision

> * * * was based on a full consideration of all the points raised in appellant's brief and reply brief, and was the result of a determination that the differences between the subject matter sought to be patented and the cited prior art was such that the subject matter as a whole would have been obvious at the time the improvement was made to a person having ordinary skill in the art.

The record is not persuasive that the five additional references were arbitrarily discarded or ignored by the Examiner or the Board as appellant, at least inferentially, contends. We have examined and considered the teachings of these references. In our view, and apparently in the view of the tribunals below, they are cumulative to the three references relied on by the Examiner and the Board. As pointed out in the Solicitor's brief, the teachings as noted by appellant for three of them are the same as those of Lehmann except for the teaching that the covers for the forks are "rigidly yoked together." The remaining two references describe translatory load movements as does also Ackermann.

Applying the provisions of 35 U.S.C. 103, the Examiner rejected claim 4 as unpatentable over Lapham in view of Lehmann and Ackermann or any "alternative combination" of these references. In essence, the Examiner reasoned that it would be obvious to make the lift forks of Lapham of the extensible cover type as taught by Lehmann with covers being independently extensible as in Lapham for orienting a load on the lift truck as taught by Ackermann.

In holding that the claimed subject matter does not define more than what would be obvious to one of ordinary skill in the art with the patents of Lapham, Lehmann and Ackermann before him, the Board stated:

> The fork lift truck of Lapham is equipped with an independent valve for control of each motor that shifts a fork and such independent valves would be conducive to operation individually since such operation would be simpler than their simultaneous operation. The Ackermann patent appears to use to make it clear that it is known in the art to orient a load on a lift truck bed plate. Thus, we find that the patent to Lapham makes it obvious to provide the truck of Lehmann with fluid controls for independent movement of his outer fork sections, or to provide Lapham with the type of extending fork shown by Lehmann.

Appellant has cited an imposing array of cases, 30 in number, which all but run the gamut of patent jurisprudence. We see no necessity to correlate or distinguish the facts here to or from those disclosed in the cited cases or discuss the legal principles which they expound. The determinative issue here is simply and solely whether the subject matter which appellant seeks to patent would have been obvious to a person of ordinary skill in the art under consideration in accordance with 35 U.S.C. 103.

The essential core of appellant's invention is a cover for a fork member of a lift truck. The cover is movable along the fork member to orient, for purposes of alignment, the load on the fork member.

One of ordinary skill in the art would assess the teachings of Lapham disclosing fork members for a lift truck and readily observe that the fork members are power actuated and movable inwardly and outwardly, the movement of each fork being independent of the other. It would appear to have been obvious to one skilled in the operation of the machine or device who found it necessary to correct the alignment of a load on the fork members to selectively move one or both fork members with the independent controls at hand.

[1] Appellant argues that the inherent capability of Lapham's forks to be moved under load transcends the express disclosures of the reference. So assuming, would it not be obvious to the ordinary artisan to resort to a more heavy-duty and stronger design? However, the artisan would have before him the teachings of Lehmann of the extensible cover type of fork as an obvious alternative to the Lapham type. Ackermann would appear to allay any doubt that a fork device with selectively movable arms is adaptable to orient a load.

[2] We are not impressed with appellant's argument that Ackermann is not analogous to the subject matter of claim 4. Claim 4 relates to a fork-lift truck. Ackermann discloses a platform-lift truck. It would seem apparent that those who design and use fork-type lift trucks would be aware of designs and mechanisms which solve common or related problems in the more heavy-duty platform-type lift trucks.

We have assessed appellant's contentions set forth in his brief and the arguments in support thereof, and we are not persuaded of reversible error in the decision of the Board holding that the claimed subject matter does not define more than would have been obvious to one of ordinary skill in the art in view of the three references cited and herein discussed. **[3]** The decision of the Board is affirmed.

AFFIRMED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,544,246, G. H. Butterfield, CORNEAL CONTACT LENS, **filed** Apr. 3, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–741–FW, *George H. Butterfield, Sr.* v. *Pacific Contact Lens, Inc.* Plaintiff's voluntary dismissal of this action with prejudice, June 19, 1970. **Same, filed** Apr. 8, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–742–FW, *George H. Butterfield, Sr.* v. *Security Contact Lens Corp. and Stimson Lens Laboratories.* Plaintiff's voluntary dismissal of this action with prejudice, June 19, 1970. **Same, filed** Apr. 8, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–744–FW, *George H. Butterfield, Sr.* v. *Hunter Optical Company, Inc.* Plaintiff's voluntary dismissal of this action with prejudice, June 19, 1970. **Same, filed** Apr. 14, 1970, D.C.N.J. (Newark), Doc. 447–70, *George H. Butterfield, Sr.* v. *Herman B. Dinman.* Notice of dismissal of action, June 17, 1970. **Same, filed** Mar. 23, 1970, D.C. Wis. (Milwaukee), Doc. 70–C–156, *George H. Butterfield, Sr.* v. *Rockford Optical Service Corp.* Dismissal filed by plaintiff pursuant to Rule 41(a)(1), June 19, 1970.

2,570,637, M. M. Brown, METHODS OF AND APPARATUS FOR MENDING HOSIERY, **filed** Mar. 26, 1969, D.C.N.J. (Camden), Doc. C–356–69, *Marvel Specialty Company, Inc.* v. *Ashway Hosiery Mills, Inc.* Stipulation of dismissal with prejudice, June 15, 1970.

2,824,946, Katzman and Block, ELECTRIC VAPORIZERS, **filed** June 15, 1970, D.C., S.D.N.Y., Doc. 70–C–2498, *Kaz Manufacturing Co., Inc.* v. *Greatwood Products, Inc.*

2,869,216, Overland, Hill and Seger, CASKET SEALING CONSTRUCTION, **filed** Apr. 26, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–301, *F. H. Hill Co., Inc.* v. *National Casket Co., Inc.* Final judgment dismissing complaint and defendant's counterclaims, June 19, 1970.

2,869,460, E. W. Worthington, ROTARY LETTERPRESS INK FOUNTAIN, **filed** Dec. 22, 1964, D.C.N.J. (Newark), Doc. 1146–64, *Emory W. Worthington* v. *Southern New Jersey Newspapers, Inc.* Judgment of no cause for action; patent not infringed, claims 1, 3, 4, 5, 6 and 7 invalid, June 10, 1970.

2,882,940. (See Re. 24,163.)

2,953,395, E. Turner, MOTORCYCLE FRONT WHEEL SUSPENSION; **Reg. No. 363,993** (TRIUMPH), Triumph Engineering Company Limited, Motorcycles and side cars therefor, and structural parts thereof; **Reg. No. 552,794,** same, Motorcycles; **Reg. No. 569,864** (THUNDERBIRD), same, Motorcycles and structural parts thereof; **Reg. No. 693,662** (TRI-COR AND DESIGN), The Triumph Corporation, Polish for motorcycles, scooters, and the like (Class 4); Gasket sealing compounds (Class 5); Lubricating and penetrating oils and greases (Class 15); Motorcycle and scooter accessories and parts—namely, handlebar grips, luggage cases and saddle bags, crash or safety bars, fairings or enclosures for motorcycles, and control cables for said vehicles (Class 19); Electrical test sets for testing alternators, generators, rectifiers, voltage regulators, switch and wire continuity and battery voltage (Class 26); Crash helmets for motorcyclists and the like (Class 39); Solvents, and cleaners for hands and metal (Class 52), **filed** Nov. 24, 1969, D.C., S.D. Fla. (Miami), Doc. 69–1373–C–TC, *The Triumph Corp.* v. *Bernard Bastacky et al.*

3,095,342, J. Kraly, TIRE REPAIR INSERT, **filed** May 22, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1247, *Mary S. Kraly* v. *National Distillers and Chemical Corp.*

3,103,069, J. S. Gary, VACUUMIZED SURGICAL CAST CUTTER, **filed** Mar. 10, 1967, D.C., N.D. Ind. (South Bend), Doc. 3969, *Orthopedic Equipment Co., Inc.* v. *De Puy Mfg. Co., Inc.* Judgment for defendant on issue of validity; for plaintiff on issue of infringement, Apr. 9, 1970.

3,146,808. (See Re. 24,163.)

3,180,639, Cotler and Lemelson, INFLATABLE TOY AND DISPLAY DEVICE, **filed** June 9, 1970, D.C., S.D.N.Y., Doc. 70–C–2409, *Jules Cotler* v. *Ideal Toy Corporation.*

3,212,431, H. A. Raab, METHOD OF BALING; **3,212,432,** same, BALING SYSTEM; **3,212,433,** same, BALING STRUCTURE AND CONTROLS THEREFOR; **3,511,174,** same, FLUID OPERABLE SYSTEM FOR BALING EQUIPMENT, **filed** June 12, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1425, *East Chicago Machine Tool Corporation* v. *Maren Engineering Corporation.*

3,212,432. (See 3,212,431.)

3,212,433. (See 3,212,431.)

3,247,524, H. M. Umann, HYGIENIC APPARATUS FOR USE ON TOILET BOWLS, **filed** Sept. 26, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c1779, *World Industries, Inc.* v. *Richco Plastic Co. and Sani Seat Co.* Stipulation order, dismissed without prejudice, June 4, 1970.

3,283,326, C. B. Watts, ANTENNA ARRAY AND METHOD FOR INSTRUMENT LANDING SYSTEMS, **filed** June 10, 1970, D.C., S.D.N.Y., Doc. 70–C–2431, *Scanwell Laboratories, Inc.* v. *Cutler-Hammer, Inc.*

3,297,819, J. D. Wetmore, HEAT UNSTABLE COVERING, **filed** Dec. 24, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2467, *Raychem Corporation* v. *Canusa Coating Systems, Inc.* Dismissed, June 12 1970.

3,313,477, G. Brown, TRANSPARENT BANK CONSTRUCTION HAVING COIN SORTING MEANS, **filed** Dec. 5, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c2520, *Superior Toy & Mfg. Co.* v. *Montgomery Ward & Co.* Final judgment on consent, patent valid and infringed by the defendants; defendants enjoined, June 9, 1970.

3,315,548, Anderson and Connoy, METHOD OF MAKING BAND SAW BLADE, **filed** Jan. 27, 1970, U.S. Ct. of App., 1st Cir., Mass. (Boston), Appeal No. 7521, *Contour Saws, Inc.* v. *L. S. Starrett Company.* The judgment of the district court is vacated and case remanded for a new trial, June 12, 1970.

3,319,326, E. I. Unglesby, PREASSEMBLED PISTON AND PISTON ROD BEARING COMBINATION, **filed** June 16, 1970, D.C., E.D. Calif. (Sacramento), Doc. S–1674, *Elmer I. Unglesby* v. *Mr. Gasket Co. et al.*

3,377,125, R. J. Zielinski, ELECTRICAL IGNITION SYSTEM FOR GASEOUS FUEL BURNERS AND THE LIKE, **filed** June 16, 1970, D.C., N.D.N.Y. (Utica), Doc. 70–CV–203, *Fenwal Incorporated and American Gas Association, Inc.* v. *Republic Controls Corp.*

3,408,306, F. J. Boylan, METHOD OF CONTROLLING FOAMING, **filed** Oct. 29, 1968, D.C., N.D. Ga. (Atlanta), Doc. 12187, *Hercules Incorporated* v. *Drew Chemical Company.* Defendant's motion to dismiss for improper venue; judgment entered for the defendant, June 8, 1970.

3,456,301, P. J. Morroni, MOLD HAVING COMPLEMENTAL NON-PLANAR MATING AREAS FOR PARTING SURFACES BETWEEN THE MOLD CAVITIES, **filed** June 12, 1970, D.C. Mass. (Boston), Doc. 70–728–M, *Peter J. Morroni* v. *Van Brode Milling Co., Inc.*

3,499,127, Cherry and Long, THUMBWHEEL TYPE SWITCH, **filed** June 17, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1346-AAH, *Cherry Electrical Products Corporation* v. *Endevco Corporation.*

3,511,174. (See 3,212,431.)

3,512,216, W. D. Voelker, INJECTION MOLDING NOZZLE SUPPORT, **filed** June 15, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1437, *Bischoff Chemical Corporation* v. *Bernard Industries Co.*

3,514,897, Douglas, Iwasaki and Kossoff, DOLL-DRIVEN WHEEL TOY AND RATCHET DEVICE FOR DRIVING SAME, **filed** June 3, 1970, D.C., S.D.N.Y., Doc. 70–C–2305, *Mattel, Inc.* v. *Topper Corporation.*

Re. 24,163, C. Zellweger, VALVES FOR FILLING PYROPHORIC LIGHTERS FOR LIQUIFIED GAS; **2,882,940,** same, FILLING VALVES FOR LIQUEFIED GAS LIGHTERS; **3,146,808,** same, INTERCONNECTIONS FOR REFILL VESSELS AND RESERVOIRS TO BE FILLED WITH LIQUEFIED GAS, **filed** June 10, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1277–F, *Ronson Corporation and La Nationale, S.A.* v. *Bi Rite Drug Co., Inc.*

D. 217,330, C. R. Conry, POURING ATTACHMENT FOR A BOTTLE OR THE LIKE, **filed** June 10, 1970, D.C. Minn. (Minneapolis), Doc. 4–70–C–233, *Charles R. Conry, doing business as Liquor Pourer Manufacturers* v. *John F. Mullen and James M. Hurley, Sr., doing business as C.R. Manufacturing Co. and Co-Rect Alignment.*

Reg. No. 363,993. (See 2,953,395.)

Reg. No. 552,794. (See 2,593,395.)

Reg. No. 569,864. (See 2,953,395.)

Reg. No. 693,662. (See 2,953,395.)

DEFENSIVE PUBLICATIONS

SEPTEMBER 29, 1970

Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T878,012
FINISH COMPOSITION FOR TEXTILE FIBERS

Neil Lamar Finch, Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 15, 1969, Ser. No. 791,501
Int. Cl. D06m *15/66*
U.S. Cl. 252—8.9
No Drawing. 7 Pages Specification

A finish for synthetic fibers used in seat belts comprises (a) about 80 to 99 parts of a random copolymer of ethylene oxide and 1,2-propylene oxide having a molecular weight of about 8500 to 21,000; (b) about 2 to 6 parts of octylphenoxy-tetra(ethyleneoxy)ethanol; and (c) about 0.5 to 5 parts of a block copolymer of ethylene oxide and dimethylsiloxane having a molecular weight of about 1500 to 3,000 in which the repeat units from the ethylene oxide comprise about 75 to 90 percent of the copolymer. The finish may also contain about 1 to 5 parts of an antioxidant selected from n-propyl-3,4,5-trihydroxybenzoate, (b) tri(mixed mono- and di-nonylphenyl)-phosphite and (c) 4,4'-butylidene-bis-(6-tert-butyl-m-cresol).

An 840-denier, 140-filament, melt-spun 66-nylon yarn drawn 5.6x having a tenacity of 8.6 gms./denier and an elongation of 18% may be coated with a 20% aqueous dispersion of the described finish with a finish roll just after the filaments of the yarn are extruded from a spinneret and solidify. The yarn has excellent lubricity and retains its inherent dyeability. It does not support growth of bacteria or mold.

T878,013
CARBODIIMIDE HARDENERS IN INCORPORATED COUPLER EMULSIONS

Edwin Nicholai Oftedahl and Mary Katherine DeSeyn, both of Kodak Park Division, Rochester, N.Y. 14650
Filed Feb. 24, 1969, Ser. No. 801,772
Int. Cl. G03c *1/40*
U.S. Cl. 96—100
No Drawing. 10 Pages Specification

Photographic silver halide emulsions containing an incorporated pyrazolone magenta dye-forming coupler can be hardened with an incorporated carbodiimide hardener. Photographic elements comprising such emulsions, when exposed and processed, produce prints having low stain and high maximum density. Carbodiimide hardening agents including those described in Sheehan U.S. Pat. 2,938,892 issued May 31, 1960, Sheehan U.S. Pat. 3,135,748 issued June 2, 1964, and Brunken German Pat. 7218 issued May 10, 1954, can be used. Suitable carbodiimide hardening agents can be represented by the formula

$$R—N=C=N—R'$$

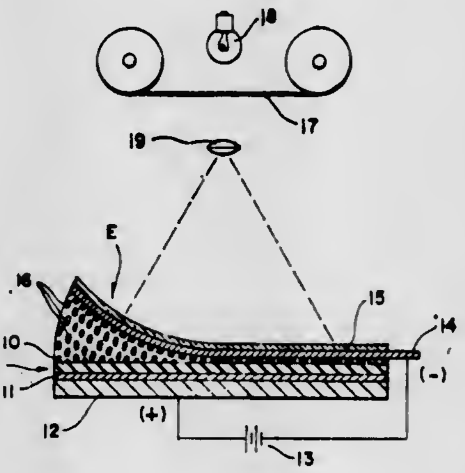
where each of R and R' is an organic radical such as alkyl, alkoxy, allyl, aryl or heterocyclic groups. Typical examples of suitable carbodiimide hardening agents which are incorporated in the photographic materials described herein are 1,3-dimethylcarbodiimide, 1-methyl-3-methoxymethylcarbodiimide, dicyclohexylcarbodiimide and 1-ethyl-3-[3-dimethylaminopropyl] - carbodiimide hydrochloride.

A process for preparing the aforementioned photographic silver halide materials from coating compositions comprising incorporated pyrazolone magenta dye-forming couplers and carbodiimide hardening agents is also disclosed.

The emulsions of the invention can be used in photographic elements in layers containing high-speed chemically sensitized and spectrally sensitized silver halide emulsions, anti-foggants, coating aids, plasticizers, conventional hardeners and the like, such as described in Dunn U.S. Pat. 3,297,446 (columns 4–9).

T878,014
IMAGE FORMING METHODS AND MEANS

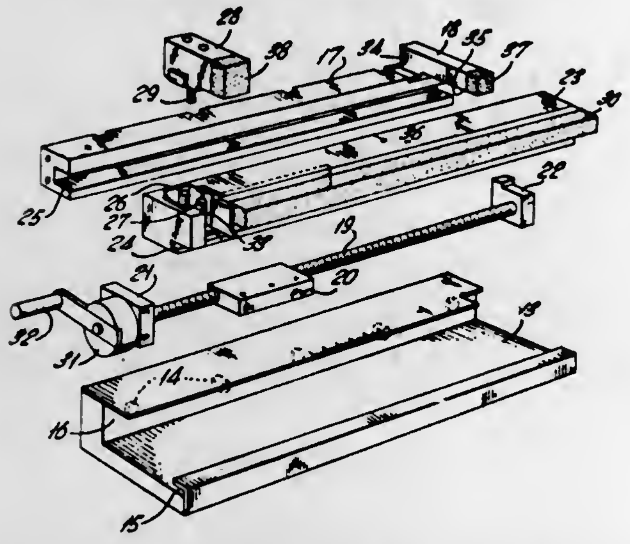
George K. Czarnikow, 901 Elmgrove Road, Rochester, N.Y. 14650
Filed Mar. 7, 1969, Ser. No. 805,173
Int. Cl. G03g *13/02*
U.S. Cl. 355—17
1 Sheet Drawing. 4 Pages Specification



Apparatus and methods are provided for induction charging of a receiver having a photoconductive surface. Proper spacing between the photoconductive surface of the receiver and a conductive surface of an electrode is obtained in one embodiment by providing a photoresist insulative dot pattern on the electrode so that air ionization will take place in the spaces surrounding the photoresist dot pattern during application of a potential between the electrode and a conductive backing on the receiver. Simultaneous or subsequent imagewise exposure will result in an electrostatic image which can be toned to form a half-tone image. In another embodiment the photoconductive surface is made with irregularities which give it a roughness that provides proper spacing for ionization of air between the electrode and the remainder of photoconductive surface. Exposure of the photoconductor may be made through the electrode, which may be transparent, either concurrently with or subsequent to the charging step.

T878,015
UNIVERSAL CLAMP FOR SPLICING INNER TUBES

Horace R. Corbin, Jr., 10 Wisteria Drive, Kensington Garden Apts., Fords, N.J. 08863, and Herbert H. Vickers, Newbury Neck Road, Surry, Maine 04684
Filed July 31, 1969, Ser. No. 846,439
Int. Cl. B25b *1/20*
U.S. Cl. 269—43
3 Sheets Drawing. 11 Pages Specification



An adjustable clamp for holding one end of an unvulcanized inner tube, to be spliced to a mating end when held in a similar clamp in coplanar and parallel relationship, is characterized by an adjustable first jaw and a second fixed jaw. The length of the second jaw is in excess of the maximum extensible length of the adjustable jaw. The adjustable jaw has a first fence carried on a transverse segment, the working surface of which is movable in a direction normal to the inner face and in contact with the lower face of the first fence. The first jaw also has a second fence which is mounted on and retractable into the transverse segment. Means are provided for urging the second fence above the working surface of the transverse segment. Also, means are provided for moving the transverse segment to permit lateral displacement between the first and second fence. The fixed jaw has one end in alignment with the inner face of the first fence, and the opposite end in overlying relationship to the second fence, so that when the fixed jaw is moved toward the adjustable jaw to clamp the inner tube, the second fence is retracted into the transverse segment.

T878,016
ELECTROPHOTOGRAPHIC PROCESS IN WHICH A CHARGED AND IMAGE-WISE EXPOSED PHOTOCONDUCTOR CONTACTS A PHOTOSENSITIVE SILVER HALIDE EMULSION AND FORMS A DEVELOPABLE IMAGE THEREIN

Paul B. Gilman and Joseph Y. Kaukeinen, both of Kodak Park Works, Rochester, N.Y. 14650
Filed Dec. 22, 1969, Ser. No. 887,411
Int. Cl. G03g *13/00, 13/14*
U.S. Cl. 96—1
No Drawing. 36 Pages Specification

A process of rendering visible electrostatic charge patterns is described. The process involves the formation of a charge pattern on a charge-retaining member which is then placed in contact with a silver halide element to form a latent image on the element which is then processed by standard photographic techniques to form a visible silver image. The process eliminates detrimental solvent and abrasive action which occur in standard electrophotographic development techniques.

T878,017
COUPLED SPINNING AND DRAWING PROCESS FOR PRODUCTION OF POLYCARBOXAMIDE FILAMENTS

John J. Shwed, 105 Lake Drive, Laurel, Del. 19956, and Elwood A. Roth, 200 North Porter St., and Armando Rodriquez, 194A Rte. 2, both of Seaford, Del. 19973
Filed Jan. 27, 1970, Ser. No. 6,283
Int. Cl. D01d *5/12;* **D01f** *7/06*
U.S. Cl. 264—210
No Drawing. 4 Pages Specification

A coupled, spinning and drawing process for the production of filamentary yarn from polycarbonamides. After spinning filaments and quenching them to a temperature of about 110–130° C., an aqueous finish is applied and a supplemental quench to a temperature of less than about 75° C. by evaporative cooling is achieved before drawing by delaying advance of the yarn through ambient air to a draw zone. The elapsed time between finish application and take-off from the feed roll to the draw zone is on the order of one second or less.

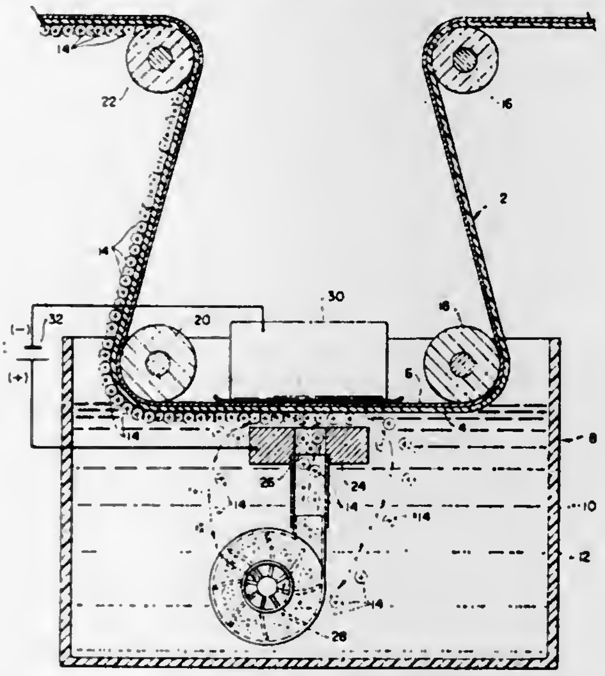
T878,018
PROCESS FOR INSOLUBILIZING POLYCARBONATES AND POLYESTERS

Winston J. Jackson, Jr., and John R. Caldwell, both of P.O. Box 511, Kingsport, Tenn. 37662
Continuation of application Ser. No. 688,992, Dec. 8, 1967. This application Jan. 28, 1970, Ser. No. 7,378
Int. Cl. C08g *39/10*
U.S. Cl. 260—860
No Drawing. 14 Pages Specification

Polycarbonates and polyesters, each being derived from a bisphenol and each being free of olefinic unsaturation, are rendered insoluble in common solvents (for example, methylene chloride and chloroform) by heating, in the presence of molecular oxygen, a blend of said polymer and a glycol polyester of a dicarboxylic acid and an aliphatic or cycloaliphatic glycol.

T878,019
ELECTROPHORETIC CHARGING METHOD AND APPARATUS

William E. Hunt, 901 Elmgrove Road, Rochester, N.Y. 14650
Filed Feb. 6, 1970, Ser. No. 9,382
Int. Cl. B01k *5/00*
U.S. Cl. 204—181
1 Sheet Drawing. 7 Pages Specification



Electrophoretic charging of a photoconductive member 2 is accomplished by applying a potential from source 32 between a conductive backing 6 on the photoconductive member and an electrode 24 spaced therefrom which acts upon charged transparent particles 14 dispersed in a dielectric liquid 12 therebetween. The field which is created between the photoconductive member and the electrode causes the charged particles to be uniformly distributed across the photoconductive surface 4 which surface may then be subjected to further electrophotographic procedures.

T878,020
PHOTOGRAPHIC PHYSICAL DEVELOPMENT UTILIZING A SILVER-ORGANIC COMPLEX

Frederick J. Rauner, Kodak Park Division, Rochester, N.Y. 14650
Filed Feb. 10, 1970, Ser. No. 10,295
Int. Cl. G03c *5/26*
U.S. Cl. 96—50
No Drawing. 21 Pages Specification

A stable source of silver for photographic physical development is (a) a silver-organic complex of silver with a polymeric reaction product of an aldehyde with a hydroxy aromatic carboxylic acid and/or (b) a silver-organic complex of silver with a monomeric hydroxy aromatic carboxylic acid. Photographic elements, compositions and processes which can contain and/or employ these sources of silver for photographic physical development include those which are suitable for so-called dry processing. They can, for example, be used in photographic systems employing a silver dye complex as a photographic component or in photographic systems employing an oxidation-reduction reaction to provide a developed image. A silver-organic complex of silver with, for example, (i) a polymeric reaction product of formaldehyde with salicylic acid, (ii) salicylic acid, (iii) 5,5′-methylenedisalicylic acid, (iv) 5-bromosalicylic acid, (v) 5-sulfosalicylic acid, (vi) 5,5′-thiodisalicylic acid and/or (vii) 3,5-dihydroxy benzoic acid is especially useful as a source of silver for physical development.

T878,021
USE OF POLYCARBOXYLIC ACIDS AND ACID DERIVATIVES AS ANTIFOGGANTS FOR CERTAIN EMULSIONS

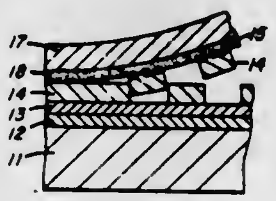
Charles Allen Goffe, Kodak Park Works, Rochester, N.Y. 14650
Filed Mar. 9, 1970, Ser. No. 17,878
Int. Cl. G03c *1/34*
U.S. Cl. 96—109
No Drawing. 30 Pages Specification

Polycarboxylic acids, anhydrides, imides, esters, and lactones are effective antifoggants for silver halide photographic emulsions sensitized by noble metals and selenium. Examples illustrate that polycarboxylic compounds stabilize photographic systems in which gold and labile selenium are employed as sensitizing agents. Particularly effective antifoggants include maleic acid, maleic anhydride, fumaric acid, succinic acid, succinic anhydride, music acid, diethyl malonic acid, and 1,3,5-tricarboxypentane. The effectiveness of the disclosed antifoggants is enhanced by the presence of a tetraazaindene antifoggant compound, but is not dependent thereupon.

T878,022
SELECTIVE STRIPPING OF PHOTOCONDUCTIVE MATERIAL TO MAKE A PRINTING MASTER

William Trachtenberg, Kodak Park Works, Rochester, N.Y. 14650
Filed Mar. 24, 1970, Ser. No. 22,179
Int. Cl. G03g *13/22*
U.S. Cl. 96—1
1 Sheet Drawing. 19 Pages Specification

An image forming process whereby a particle image is formed xerographically on a photoconductive element which has a selectively separable layer of photoconductive material. After the particle image is formed on the photoconductive layer and permanently fused to said photoconductor, an adhesive transfer member is rolled onto said photoconductor while heat and pressure are applied. The transfer member and the photoconductive member are then separated. With this separation the xerographically formed particle image and the photoconductive coating immediately underlying said image adhere and are transferred to the transfer member thus forming complementary images on the respective surfaces. Also disclosed is a process in which the entire photoconductive layer, including the fixed toned image, is stripped from its support with the transfer sheet. This result is obtained because a release layer is used which forms a weaker bond between the photoconductive layer and its support than the bond formed by the transfer sheet with the fixed toner and the photoconductive layer. In the resulting product on the transfer sheet the toned image is overcoated and protected by the stripped photoconductive layer.



T878,023
POLYOLEFINE COMPOSITION

Robert John Taylor, Welwyn Garden City, and Raymond Deverell-Smith and Colin William Greenhalgh, Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
Filed Apr. 3, 1970, Ser. No. 25,548
Claims priority, application Great Britain, Apr. 23, 1969, 20,802/69
Int. Cl. C08f *45/14;* **C09b** *1/26*
U.S. Cl. 260—41
No Drawing. 7 Pages Specification

Transparent, coloured "TPX" includes anthraquinone dyestuffs having a high solubility in hydrocarbons. The dyestuffs are singly substituted with long side chains containing more than 8 carbon atoms.

T878,024
ENHANCED FILM HARDENING BY ULTRASONIC TREATMENT

Charles Allen Goffe and Robert L. Schneider, both of Kodak Park Division, Rochester, N.Y. 14650
Filed Apr. 9, 1970, Ser. No. 27,154
Int. Cl. G03c *1/30*
U.S. Cl. 96—111
No Drawing. 7 Pages Specification

A process for substantially reducing hardness change in coated vehicles is disclosed. In one aspect, this invention relates to a process for substantially reducing hardness change in a hardenable layer or layers which consists of applying ultrasonic energy to the set layer or layers.

Photographic elements comprising a support, a photographic silver halide emulsion and a hardener can be improved according to this invention. In addition to hardening agents, photographic elements and emulsions can also contain other additives such as, for example, spectral sensitizers, speed-increasing materials, other hardeners, plasticizers and the like such as those described in Henn and Goffe, U.S. Pat. 3,128,180 issued Apr. 7, 1964.

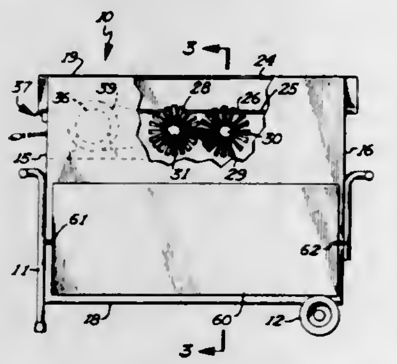
REISSUES

SEPTEMBER 29, 1970

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

26,955
INDUSTRIAL DUST-MOP CLEANER

Robert J. Mills, 1329 Weber Drive,
Clearwater, Fla. 33516
Original No. 3,411,175, dated Nov. 19, 1968, Ser. No. 574,102, Aug. 22, 1966. Application for reissue Jan. 13, 1969, Ser. No. 799,145
Int. Cl. A47l *7/00*
U.S. Cl. 15—311 **4 Claims**



Apparatus for cleaning industrial dust-mops having frame means defining an enclosed dust-receiving chamber therewithin, vertically adjustable mop-receiving channel means disposed adjacent the top surface of the dust-receiving chamber and having an air ingress port to permit transfer of environmental air to the dust-receiving chamber, a pair of counter-rotating brushes disposed within the chamber and having a peripheral surface extending adjacent to the mop-receiving channel, the brushes being rotated along an axis which is generally transverse to the elongated axis of the mop-receiving channel, and fan means within the dust-receiving chamber for exhausting air from the dust-receiving chamber, filter means being provided to remove dust from the air being exhausted.

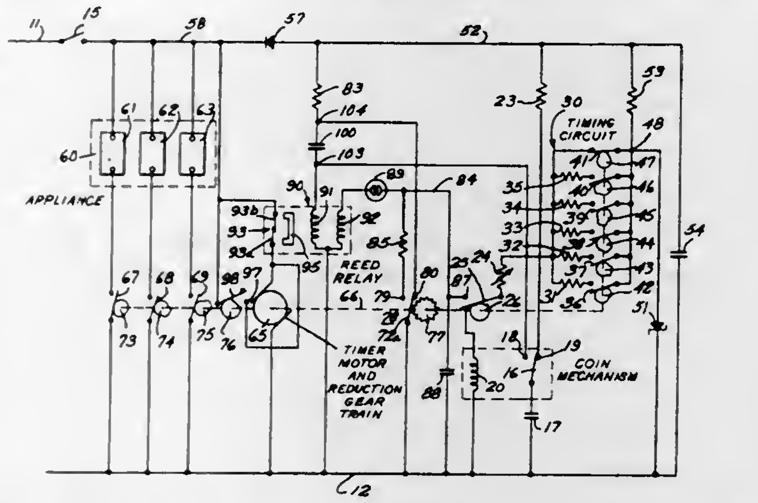
26,956
MOLECULARLY ORIENTED BOTTLE

Fred E. Wiley, Longmeadow, Mass., assignor to Phillips Petroleum Company, a corporation of Delaware
Original No. 3,288,317, dated Nov. 29, 1966, Ser. No. 472,393, July 1, 1965, which is a continuation-in-part of application Ser. No. 153,355, Nov. 20, 1961. Application for reissue Nov. 19, 1968, Ser. No. 786,507
Int. Cl. B65d *23/00*
U.S. Cl. 215—1 **22 Claims**

Thermoplastic polymer is stretched at a temperature just below the crystalline melting point of the polymer to yield articles having high strength. The clarity of such articles is also enhanced.

26,957
ELECTRONIC TIMER ESCAPEMENT AND COIN COUNTER

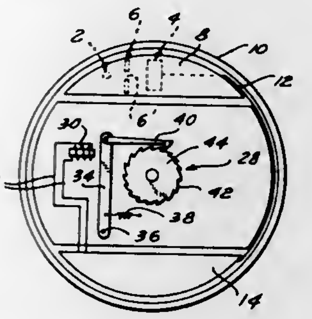
James L. McConnell, St. Joseph, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Original No. 3,360,092, dated Dec. 26, 1967, Ser. No. 559,649, May 31, 1966. Application for reissue Oct. 24, 1968, Ser. No. 785,818
Int. Cl. G07f *5/10*
U.S. Cl. 194—9 **43 Claims**



A control circuit for home and/or coin-operated appliances such as washing machines, dry cleaning machines and clothes dryers which require different time intervals to accomplish respective individual functions wherein an electronic control circuit periodically energizes a motor for incremental rotation and wherein the periods between such motor energizations are varied. A pulse-generating circuit is combined with a sequential controller so that the width of the pulses is adjustable to provide variable sequential timing.

26,958
ELECTRONIC TIMEPIECE

Julian Lazrus, Westport, Conn., Lewis H. Strauss, Washington, D.C., and William P. Canning, Pico Rivera, Calif., assignors to Benrus Corporation, a corporation of Delaware
Original No. 3,370,414, dated Feb. 27, 1968, Ser. No. 465,907, June 22, 1965. Application for reissue Mar. 10, 1969, Ser. No. 808,026
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **20 Claims**



An electronic timer comprises a radioactive source from which radioactive events having a predetermined energy are allowed to reach counting means and a frequency reducing network reduces the frequency output of the counting means to a suitable frequency level for actuating time display means.

26,959
PROCESS FOR PREPARING NON-FERMENTABLE SUGAR SUBSTITUTE AND PRODUCT THEREOF

Ernst Conrad, Lyckeby, Sweden, assignor to Lyckeby Starkelseforadling Aktiebolag, Lyckeby, Sweden, a corporation of Sweden
No Drawing. Original No. 3,329,507, dated July 4, 1967, Ser. No. 363,629, Apr. 29, 1964. Application for reissue Feb. 6, 1969, Ser. No. 802,278
Claims priority, application Sweden, May 6, 1963, 4,950/63
Int. Cl. A23l *1/22*
U.S. Cl. 99—141 **18 Claims**

Sugar substitute prepared by hydrogenating a saccharified starch having a dextrose equivalent of 15–75% and containing dextrines until substantially no dextrose and maltose remain.

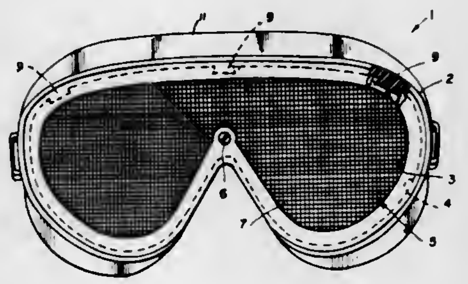
PATENTS

GRANTED SEPTEMBER 29, 1970

GENERAL AND MECHANICAL

3,530,506
SUGAR CANE GOGGLES

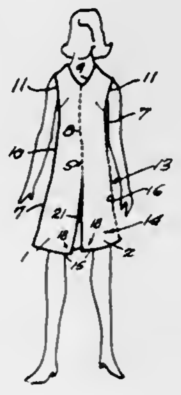
George R. Hoffmaster, Reading, Pa., assignor to ESB Incorporated, Reading, Pa.
Filed Jan. 12, 1968, Ser. No. 698,684
Int. Cl. A61f *9/02*
U.S. Cl. 2—14 **1 Claim**



A safety goggle having a readily attachable and replaceable lens formed of wire mesh or similar material to make it especially useful in tropical climates where greater ventilation and protection of the eyes is needed when the wearer is engaged in tasks such as cutting sugar cane, pineapples, etc.

3,530,507
SINGLE PIECE SHIFT AND CULOTTE WITH SIDE SLIT

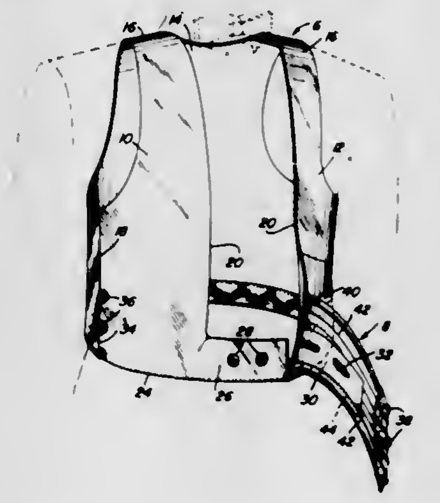
Ann G. White, 2965 19th Ave.,
San Francisco, Calif. 94110
Continuation-in-part of application Ser. No. 585,363, Oct. 10, 1966. This application Apr. 1, 1969, Ser. No. 830,559
Int. Cl. A41d *1/22*
U.S. Cl. 2—71 **5 Claims**



In a one-piece garment wherein the lower portion is divided into legs with a low crotch seam, in order to free the legs and body without taking off the entire garment, an openable side seam is provided on at least one of the legs which side seam extends from the hem to at least above the waistline or higher, whereby the divided portion of the garment can be opened and pulled aside for access for functions of nature; openable closure means such as slide fasteners, are provided to normally hold the side seam closed.

3,530,508
COMBINED VEST AND CUMMERBUND

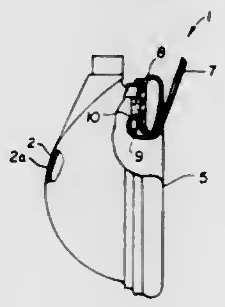
Gregory Pavlou and Dolores M. Pavlou, Reno, Nev.
(both of Box 725, Carefree, Ariz. 85331)
Filed Mar. 17, 1969, Ser. No. 814,495
Int. Cl. A41d *1/04*
U.S. Cl. 2—102 **6 Claims**



The dual purpose or combination garment shown is an innovation in that it comprises a vest equipped with an attached complemental cummerbund. The vest is tailored for proper wear by restaurant waiters but can be and is likewise custom-made for formal or semi-formal occasions. The cummerbund is attractively tailored (gathered and sash-like if desired) and constitutes a companion or complemental part of, spans the lower end portion of the vest and can be, and preferably is, used to fasten the vest with requisite nicety.

3,530,509
SUSPENSION FOR NOISE SUPPRESSING EAR CUPS

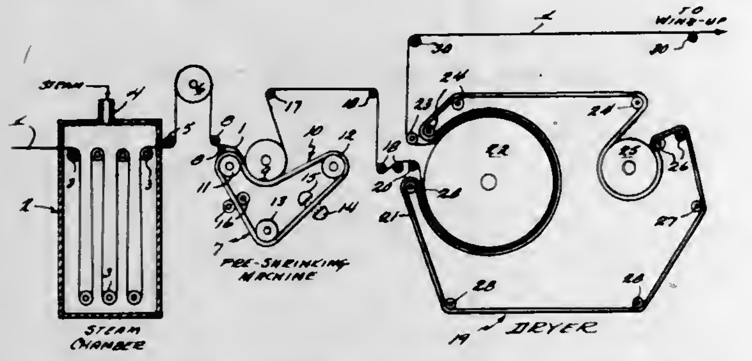
Jack N. Simpson, Sinking Spring, and William R. Bohner, Reading, Pa., assignors to ESB Incorporated, Philadelphia, Pa.
Filed May 15, 1968, Ser. No. 729,257
Int. Cl. A42b *1/06*
U.S. Cl. 2—209 **3 Claims**



A suspension for noise suppressing ear cups or muffs in which T-slots are provided in the base plates of the ear cups, through which slots the end loops of a headband are fastened to provide a firm, adjustable support for the ear cups. The outer surfaces of the ear cups are preferably coated with a highly polished metallic coating to reflect away heat from the sun or other radian energy as encountered in industry.

3,530,510
DURABLE PRESS PROCESS

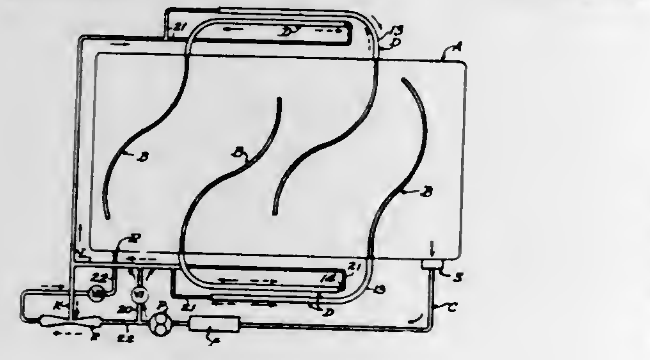
Charles Norris Rabold, Salisbury, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware
Continuation-in-part of application Ser. No. 400,878, Oct. 1, 1964. This application May 6, 1968, Ser. No. 726,730
Int. Cl. A41d
U.S. Cl. 2—243 **7 Claims**

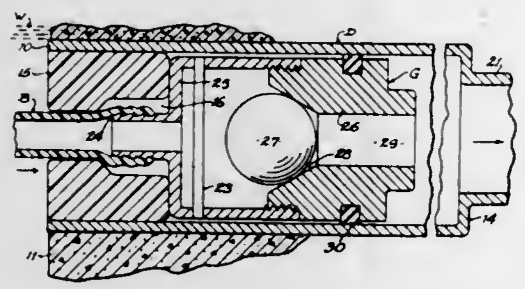


Durable press cellulosic garments demonstrating controlled shrinkage in curing are obtained by padding the textile with a resin selected from the group consisting of methylated urons, lower alkylated carbamates and hydroxyl carbamates and hydroxy ethylene ureas and a catalyst therefor, drying the fabric by heating to a temperature up to 250° F., compressively shrinking the fabric at a temperature up to 350° F., then drying the fabric at a temperature up to 290° F., pressing and curing.

3,530,511
AUTOMATICALLY EXTENSIBLE AND RETRACTABLE POOL CLEANING APPARATUS

Jack A. Berg and Herbert H. Howard, Encino, Calif.; said Howard assignor, by mesne assignments, to Poolmaid, Inc., a corporation of Arizona
Filed Dec. 9, 1968, Ser. No. 782,357
Int. Cl. E04h ***3/16***
U.S. Cl. 4—172.15 **11 Claims**

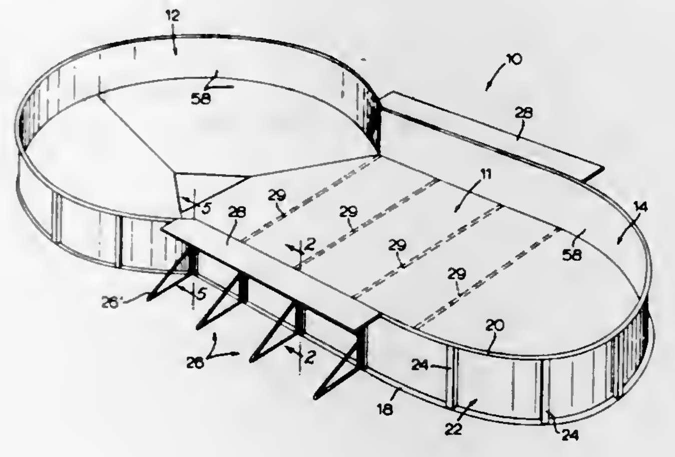


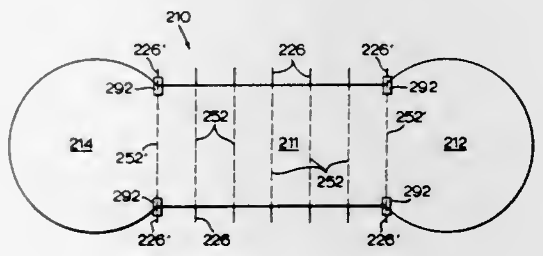


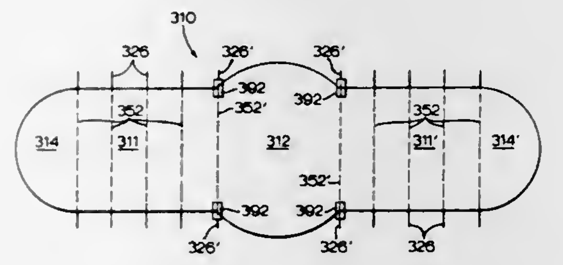
A fully automatic pool cleaner wherein one or more cleaning hoses, sweeping over the interior surface of a pool under the reaction of sediment-scouring jets discharged by them, are automatically extended from housing cylinders by the discharge from the pool circulation pump when applied to the cylinders, and are automatically retracted into the cylinders by differential of atmospheric pressure, acting on the pool surface, over vacuum applied to the cylinders by aspirating action of an ejector operated by pump discharge.

3,530,512
PREFABRICATED ABOVE-GROUND SWIMMING POOL

William J. McBride, Etobicoke, Ontario, Canada, assignor to Haugh's Products Limited, Toronto, Ontario, Canada, a company of Canada
Filed Jan. 26, 1968, Ser. No. 700,850
Int. Cl. E04h ***3/16***
U.S. Cl. 4—172.19 **14 Claims**





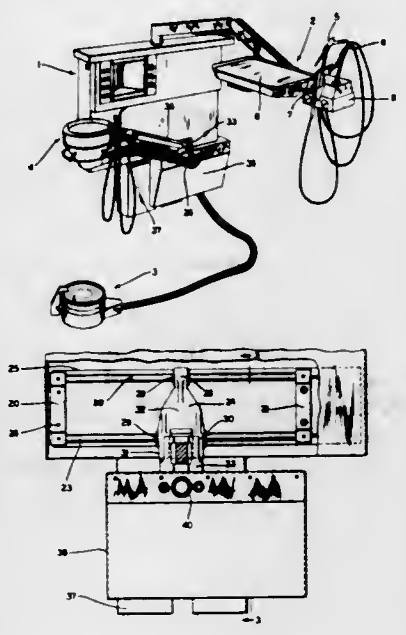


A prefabricated above-ground swimming pool structure having a continuous wall with connected upper and lower peripheral rails, a plurality of uprights extending between said peripheral rails and a water-tight flexible liner detachably secured along the upper rail. In horizontal plan, the wall and peripheral rails define an elongated U-shaped section and an interconnected partially circular section with a diameter greater than the width of the U-section so that inwardly projecting vertices are defined at the intersection of the U-section and the partially circular section. Support means for resisting the pressures exerted by water in the pool include buttresses adjacent the legs of the U-section, transverse tension members connected between the legs of the U-section at the base thereof and anchoring means disposed at each of the vertices to hold the lower rail thereat in ground engagement.

3,530,513
DENTAL BOWL SUPPORT CONSTRUCTION

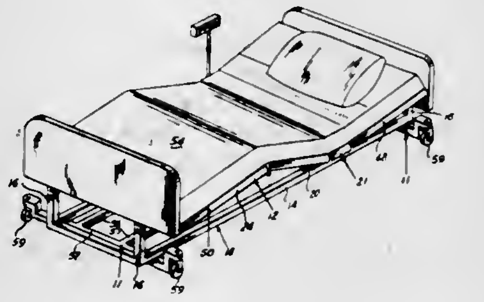
John A. Maurer and Kenneth R. Lappin, Canton, Ohio, assignors, by mesne assignments, to The Weber Dental Manufacturing Company, a corporation of Delaware
Filed Sept. 8, 1967, Ser. No. 666,382
Int. Cl. A61c ***19/00***
U.S. Cl. 4—263 **13 Claims**

A sliding support for a dental bowl unit which is adapted to be wall mounted. The support includes two parallel bar members which carry a yoke having linear bearings. The yoke supports an arm which carries a dental bowl. The yoke also supports an enclosure having the necessary plumbing facilities to supply the dental bowl with water and the other necessary facilities.



3,530,514
ADJUSTABLE BEDS

John A. McCalley, Rte. D, Janesville, Iowa 50647
Filed Apr. 8, 1968, Ser. No. 719,608
Int. Cl. A61g ***7/00, 7/10***
U.S. Cl. 5—66 **5 Claims**



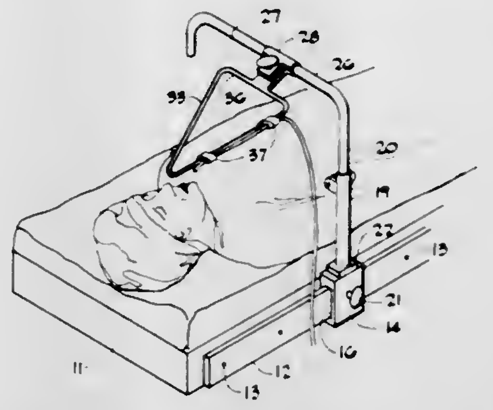
Adjustable hospital type bed in which the mattress supporting platform is divided into one fixed platform for the hips and three hinged or movable platforms for torso, thighs, and legs, all movable platforms being positioned by slaved air motors and the bed, as a whole, being raised, lowered and tilted by two more air motors.

Levers are provided at about the height of the torso of the patient which levers may be moved up and down to control the slaved air motors and the position of the bed and of the slaved motors will be the same degree of height as the positions of the control levers.

3,530,515
PATIENT GUARD DURING SURGERY

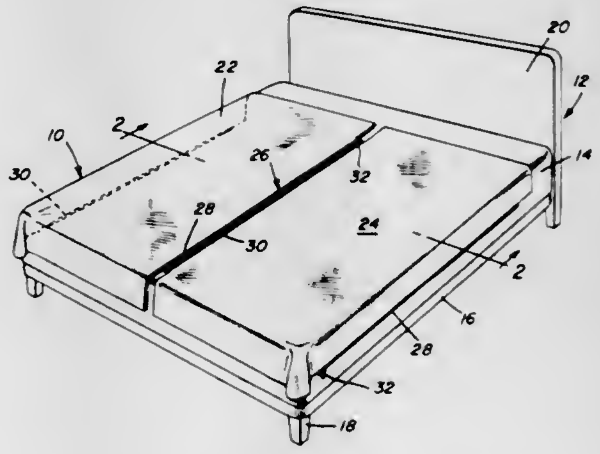
Breta Y. Jacoby, Monterey County, Calif.
(Rte. 1, Box 147, Carmel, Calif. 93921)
Filed Oct. 30, 1967, Ser. No. 679,041
Int. Cl. A47c ***21/00***
U.S. Cl. 5—319 **8 Claims**

A rail clamp secures a post to a table side rail, and the rail clamp allows the post to be variously positioned along the rail. A clamping sleeve provides for varying the length of the post that extends from the table rail to above a patent lying supine on the table. Integral with the upper end of the post is a beam that extends across the patient and the table. An arm supporting and clamping sleeve encompasses the beam and slides along and rotates thereon. Secured to this arm sleeve is an arm formed of a loop of rod shaped material. This loop is V-shaped with the beam substantially in the plane of the loop and the nexus of the V-shape away from the beam. Usually, the beam is across and above the mid-region of the patient and the nexus of the arm is above the nose of the patient. Clips hold tubing to and along the arm, and protective sheeting covers patient and arm.



3,530,516
BLANKET WITH INTERCHANGEABLE HALVES

Edmond R. T. Marquette, P.O. Box 709, Houma, La. 70360
Filed Nov. 6, 1967, Ser. No. 680,916
Int. Cl. A47g ***9/00***
U.S. Cl. 5—334 **3 Claims**

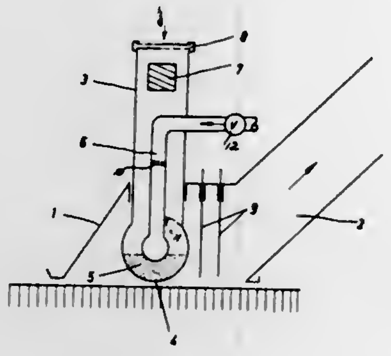


A blanket for a bed constructed of two separate halves having different thicknesses or warmth characteristics with each half having one-half of a slide-type fastener along each edge thereof to enable the blanket halves to be interchanged with each other or with additional blanket halves of different thicknesses.

3,530,517
METHOD OF AND APPARATUS FOR APPLYING TO AND WITHDRAWING LIQUID CLEANING AND TREATING MEANS FROM TEXTILE FLOOR COVERING ESPECIALLY CARPETING

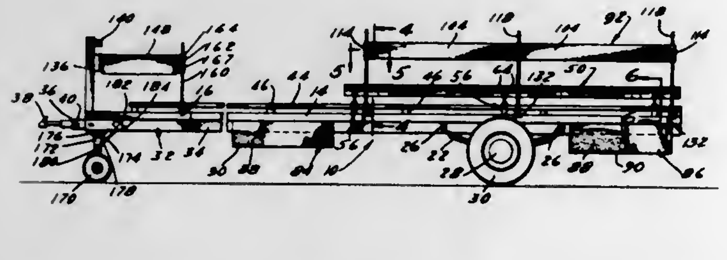
Egon Nohl, 34 Raugasse, A-2700 Wiener Neustadt, Austria
Filed Sept. 11, 1967, Ser. No. 666,621
Claims priority, application Austria, Sept. 12, 1966, A 8,562/66
Int. Cl. A47l ***11/34***
U.S. Cl. 8—158 **6 Claims**

Cleaning of textile floor covering as, for instance, carpeting, and is characterized primarily in that cleaning liquid together with air is due to a suction effect drawn through a perforated or porous body located in a treatment head whereby at the bottom side of said perforated or porous body a foam is formed which is applied to the floor covering to be treated, said suction effect simultaneously being effective to withdrawn the foam applied to said carpeting.



3,530,518
AMPHIBIOUS BOAT TRAILER

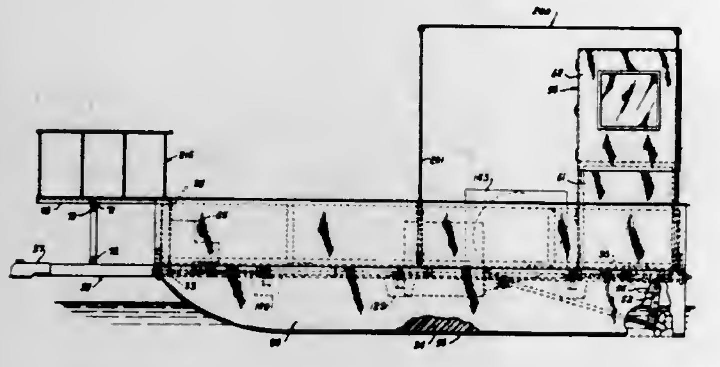
Frank T. Hall, 10832 El Rey, Whittier, Calif. 90606
Filed July 12, 1968, Ser. No. 744,481
Int. Cl. B63c *13/00*
U.S. Cl. 9—1 **7 Claims**



An amphibious trailer for the launching, docking, transporting and storing of pleasure boats. Flotation cells float the trailer at a depth in the water to allow the boat hull to just clear the bed of the trailer and float over the trailer frame without manual maneuvering or lifting from outside the boat.

3,530,519
BOATS

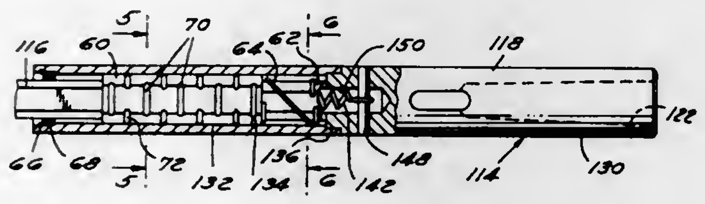
Louis E. Levinson, 6458 Royal Lane,
Dallas, Tex. 75230
Filed Sept. 12, 1968, Ser. No. 759,414
Int. Cl. B63b *7/00, 43/14*
U.S. Cl. 9—1 **19 Claims**



A boat transportable over highways which has a central section and two side section provided at their outer side portions with pontoons, the side sections being pivotal on the central section about spaced longitudinal axes between extended positions wherein the pontoons support the central section above the surface of the water and upper retracted positions wherein the pontoons are spaced above the central section, the side sections and the central section forming a closed chamber when the side sections are in their retracted positions, the central section and the side sections providing a deck of relatively great width and area when the side sections are in their extended positions.

3,530,520
TAP DRIVER

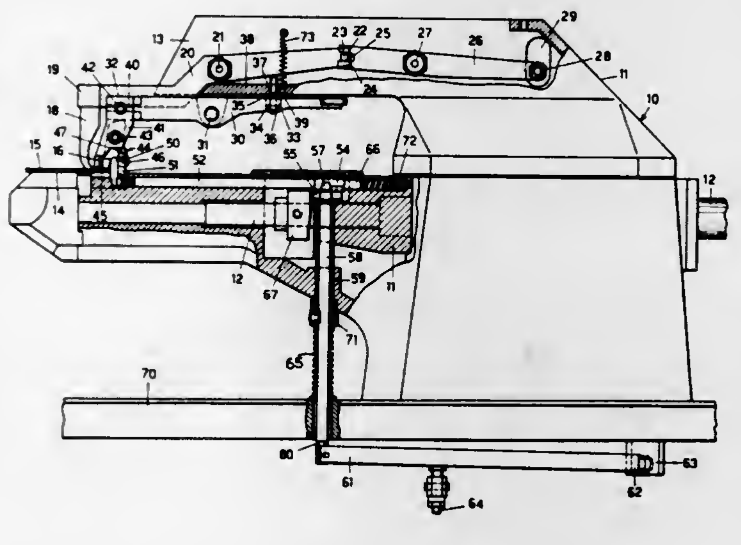
Victor Milewski, Birmingham, and Clifford Earl Cobb, Detroit, Mich., assignors to The Valeron Corporation, a corporation of Michigan
Filed Jan. 15, 1968, Ser. No. 697,932
Int. Cl. B23g *1/00, 5/00, 5/14*
U.S. Cl. 10—129 **7 Claims**



Tap drivers for thread cutting tools and comprising telescopically engaged members having complementary polygonal shapes, for providing a rotary drive connection therebetween, and with means disposed between the driving and driven parts to minimize frictional resistance to relative axial movement in the course of rotary drive.

3,530,521
MACHINES FOR FOLDING EDGES OF A PLIABLE MATERIAL, MORE PARTICULARLY SHOE UPPERS AND THE LIKE

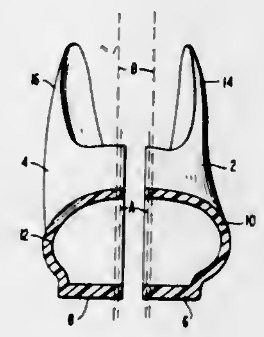
Alberto Bocca, Via S. Maria 23, and Mario Pagani, Via Pergolesi 22, both of Vigevano, Italy
Filed Oct. 26, 1967, Ser. No. 678,268
Claims priority, application Italy, Mar. 9, 1967, 13,528/67
Int. Cl. A43d *11/00*
U.S. Cl. 12—55.1 **9 Claims**



A machine for folding the edges of pliable material, in particular for shoe uppers, wherein cuts or indentations are made in correspondence of the curved outline portions of said edges by means of a blade and counter-blade assembly which engages the upper such that the blade acts on the upper in the same direction as it is folded.

3,530,522
METHOD OF MAKING RIGID ARTICLES OF FOOTWEAR

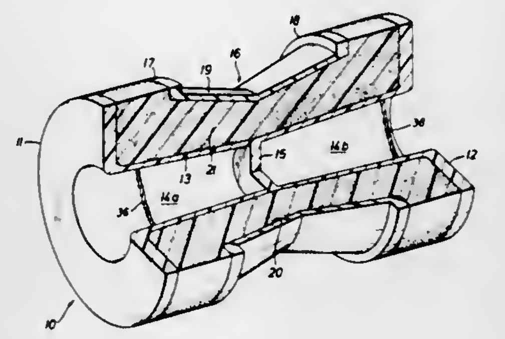
Willy Kaufmann, Kreuzlingen, Switzerland, assignor to Raichle Boot Company, Ltd., Kreuzlingen, Switzerland
Filed Apr. 10, 1969, Ser. No. 815,150
Int. Cl. A43d
U.S. Cl. 12—142 **2 Claims**



Rigid articles of footwear made from complementary left and right half shells are given different overall widths by removing different amounts of material from the mating surfaces of the shells, and then pivotally interconnecting the shells.

3,530,523
PIPELINE PIG

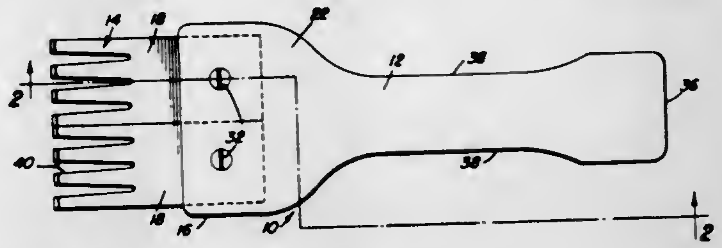
Burton Ver Nooy, Broken Arrow, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed Nov. 18, 1968, Ser. No. 776,373
Int. Cl. B08b *9/04*
U.S. Cl. 15—104.06 **8 Claims**



The pig has first and second spool-shaped members, both of which have end flanges. The members are arranged with the first extending through the second with the end flanges of the first positioned beyond and spaced from the end flanges of the second. The space between the members is filled with an open cell type of urethane foam that permits limited relative movement of the two spool-shaped members. Relative movement of the two members, as the pig is forced through the line, compresses the foam between the two trailing flanges which forces it outwardly into sealing engagement with the pipeline. The foam between the two leading flanges, however, is placed in tension and is pulled away from the walls of the pipeline. Reversing the position of the pig or its direction of travel reverses the conditions of the foam between the flanges.

3,530,524
PAINT SCRAPER HAND TOOL

Earl J. Clemans, 69 N. 6th St., Rio Vista, Calif. 94571
Filed Mar. 6, 1967, Ser. No. 620,777
Int. Cl. A47l *13/08;* **B27g** *17/04*
U.S. Cl. 15—236 **10 Claims**

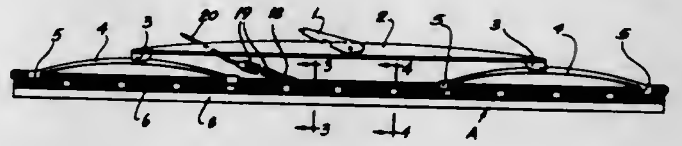


A paint scraper for use as a hand tool in removing loose or scaling paint from stucco, concrete, cement block, wood or other painted rough surfaces. It consists of a handle, contoured to fit and be comfortably held in one's hand. Secured at one end, either permanently or removably, are a number of flexible, metallic tines extending at right angles of the length of the handle. The tines extend from a metal base, and one or more bases may be used, as desired.

The paint scraper held in the hand is pushed back and forth on the surface to be scraped. Tines are operative in both directions. The act of scraping keeps the tines sharpened. Should one or more tines become bent, they may be straightened by pliers or hammer. The metal is one of suitable characteristics, such as steel, stainless or otherwise, or any other suitable metal. If intended for use as a cheap, throwaway tool, its cost is kept down by permanently securing the tine base in position, as by rivets. Also, the handle and tines may be of one piece of metal. If intended for longtime use, suitable threaded studs, screws or bolts are used, either threaded into the handle, or secured by nuts or threaded sleeves or the like, depending on the composition of the handle. The handle may be of wood, or of hard plastic, such as "Bakelite."

3,530,525
HEATED WINDSHIELD WIPER

Louis Abel, deceased, late of Val d'Or, Quebec, Canada, by Etiennette Abel, executrix, 1059 4th Ave., Val d'Or, Quebec, Canada
Filed Oct. 21, 1968, Ser. No. 769,446
Int. Cl. B60s *1/32;* **A47l** *1/02*
U.S. Cl. 15—250.07 **6 Claims**

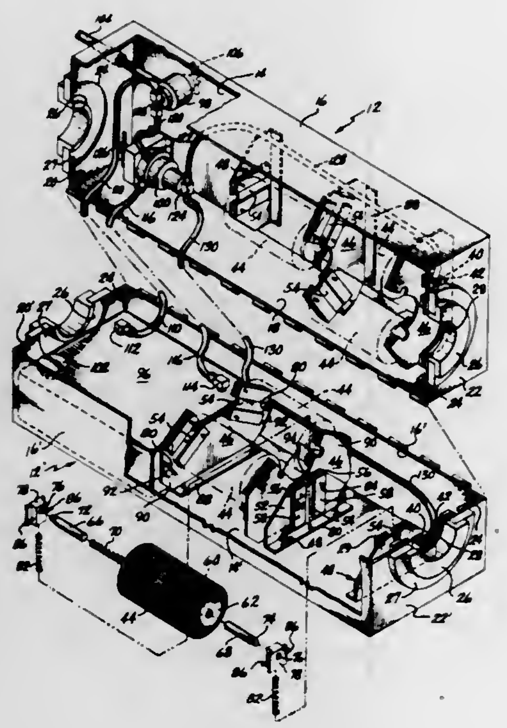


A windshield wiper adapted to be heated and comprising a heated wire associated therewith; a flexible rubber blade and an elongated blade holder, said heated wire being disposed along the blade holder and in contact therewith, such as to predominantly heat the blade holder to prevent ice formation thereon.

3,530,526
MECHANISM FOR SURFACE TREATING AN ELONGATED ARTICLE

Don J. Schmidt, 5028 SW. Wait, Seattle, Wash. 98116
Filed Dec. 18, 1967, Ser. No. 691,583
Int. Cl. A47l *25/00;* **B05b** *13/02*
U.S. Cl. 15—302 **10 Claims**

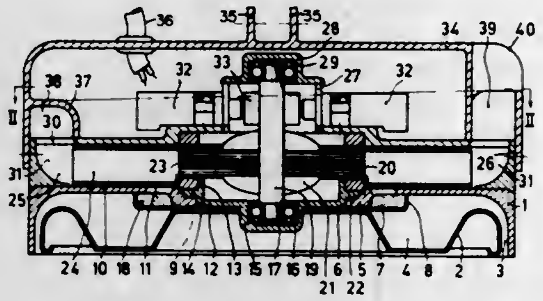
A spraying compartment, a brushing zone, and a fluid system space arranged in series within a two part housing. A pair of two brush mounting brackets separately connected to the full wall of one of the housing parts opposite a pair of single brush brackets separately connected to the full wall of the second housing part. A liquid storage tank in the fluid system space of ore housing part. A fluid mixing device and an air manifold in the fluid system space of the second housing part. A hose delivering compressed air to the manfiold. A flexible tubing delivering some of the compressed air from the manifold into the liquid storage tank. A conduit delivering the remaining compressed air into the mixing device. A flexible tubing delivering pressurized liquid from the storage tank into the mixing device. Flexible tubing delivering the air-liquid mixture from the mixing device to atomizer type nozzles in the spraying compartment.



3,530,527

ELECTRIC VACUUM CLEANER

Pieter Dubbelman, Leeuwarden, Keimpe Klaas Keimpema, Giekerk, and Pieter Cornelis van der Ham, Grouw, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1968, Ser. No. 708,305
Claims priority, application Netherlands, Mar. 10, 1967, 6703713
Int. Cl. A47l *5/00*
U.S. Cl. 15—327 **5 Claims**

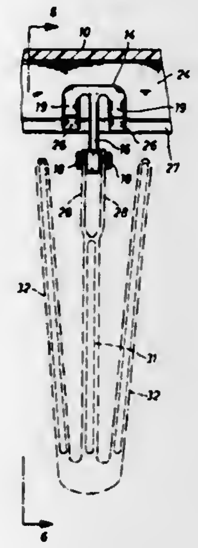


A low silhouette vacuum-cleaner with a flat laminated rotor which supports an impeller. A nozzle is located on the suction side of the impeller and filter elements are provided within the nozzle for collecting the dust from the air; so that purified air can be discharged from the housing.

3,530,528

HANGER

Wilhelm Hachtel, 6994 Niederstetten, Germany
Filed Sept. 10, 1968, Ser. No. 758,783
Claims priority, application Germany, Sept. 16, 1967, 1,654,051
Int. Cl. A47h *13/00*
U.S. Cl. 16—87.4 **4 Claims**

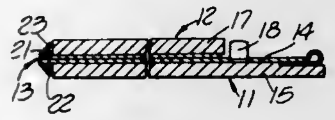


A curtain hanger has a resilient member extending therefrom to which the curtain holding device is connected. The resilient member is easily deflectable in the pulling direction.

3,530,529

HINGED FOLDER ASSEMBLY

Carl J. Nardon, 4532 Cockerham Drive, Los Angeles, Calif. 90027
Filed Sept. 19, 1968, Ser. No. 760,762
Int. Cl. E05d *15/00*
U.S. Cl. 16—128 **6 Claims**



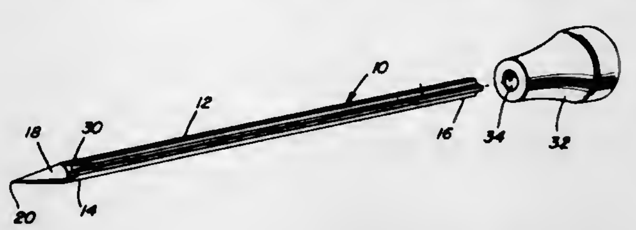
A hinged folder assembly having a pair of flat metal liner sheets mounted within cover boards is provided with a hinge construction employing metal C-shaped retainers each encompassing abutting integral fingers formed on confronting edges of the liner sheets. The fingers each form the same acute angle with respect to their respective liner sheet so that, in the absence of the cover boards, the liner sheets may be moved to an installation position in which the retainers may be installed over adjacent pairs of fingers. The cover boards when installed each have a boundary edge contacting the fingers on its respective liner sheet to prevent disassambly of the retainers from the fingers.

3,530,530

SKEWER FOR CATTLE CARCASS

Robert M. Byrnes, Sr., 2440 Fontenelle Blvd., Omaha, Nebr. 68104
Filed Apr. 2, 1969, Ser. No. 826,743
Int. Cl. A47j *43/28*
U.S. Cl. 17—1 **9 Claims**

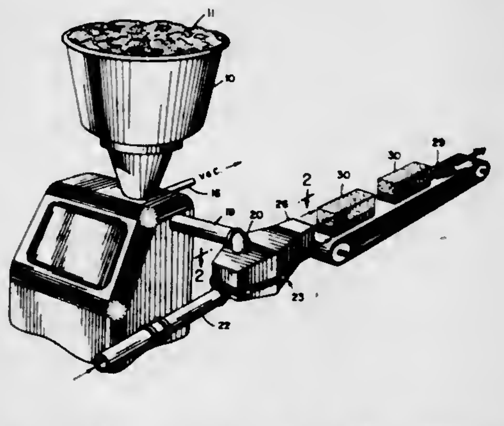
An elongated rod of tough material having high mechanical strength and which is stiff but somewhat flexible. The rod includes a pointed forward end terminating rearwardly in rearwardly tapering partial conical surfaces spaced about the rod and the rod is designed for use in pinning up various portions of hanging meats, such as the lower neck portion of a side of beef.



3,530,531

APPARATUS FOR PREPARING POULTRY LOAF PRODUCT

Russell W. Posegate, La Grange Park, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Continuation-in-part of applications Ser. No. 618,588 and Ser. No. 618,729, both filed Feb. 27, 1967. This application Jan. 23, 1968, Ser. No. 699,826
Int. Cl. A22c *7/00*
U.S. Cl. 17—32 **9 Claims**



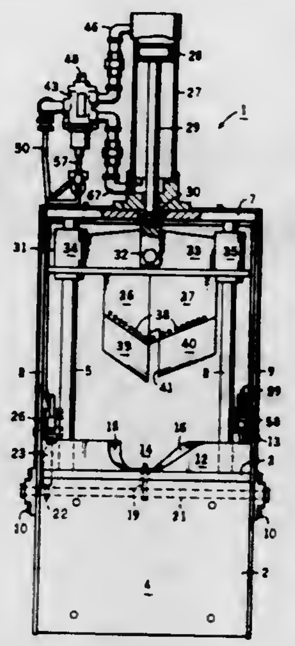
Raw poultry pieces, which have been treated with an edible metallic salt and agitated to extract a salt-soluble coating or binder on the pieces, are extruded through a nozzle to unite the pieces and discharge them in the form of a shape-sustaining loaf onto an open support. The nozzle or extruding chamber may be divided, white meat being fed to one section at the side of the divider and dark meat pieces fed to the other section, and the two meat bodies being brought together in the nozzle or chamber to unite them in a single loaf or in an elongated body which may be sawed or cut to form separate loaves for enclosure in containers. In another embodiment, a cellulosic casing closed at its outer end is drawn over an extrusion nozzle or pipe having a longitudinal divider plate therein to bring the closed end of the casing adjacent the discharge end of the pipe. The coated white and dark meat pieces are passed under pressure through the pipe, with the dark meat on one side of the divider plate and the white meat on the other side of the plate, to advance the casing and fill it with a measured amount of meat. The rear end of the casing is then gathered and closed.

3,530,532

HEAD AND VISCERA REMOVER

Anton Elich, Rolling Hill, Calif., assignor to The Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 11, 1968, Ser. No. 712,027
Int. Cl. A22c *25/14*
U.S. Cl. 17—60 **8 Claims**

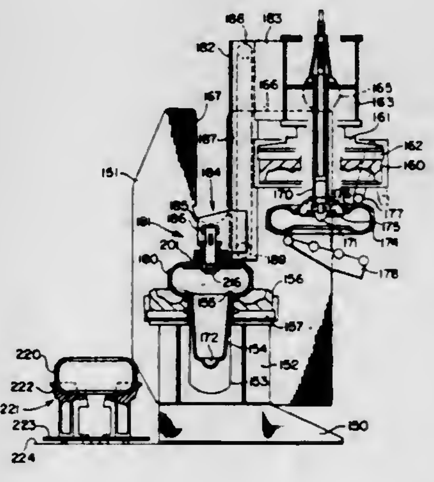
A machine for removing the head and viscera of a fish is provided with a frame having a guillotine blade thereon. An actuation mechanism effects the positive displacement of the guillotine blade such that the head of the fish is severed from the body thereof. The guillotine blade is provided with a notch in the intermediate portion thereof, such that when it severs the head from the body portion of the fish, the esophagus is not severed, but serves as a connecting link between the head and viscera in the body portion. Therefore, the head and viscera may be removed from the body portion of the fish in a single operation.



3,530,533

LOADER FOR TIRE CURING PRESS

Leonard G. Turk, Akron, Ernest S. Ulm, Stow, and Benjamin Stoyanov, Akron, Ohio, assignors to NRM Corporation, a corporation of Ohio
Continuation-in-part of application Ser. No. 444,530, Apr. 1, 1965, now Patent No. 3,378,882. This application Apr. 8, 1968, Ser. No. 719,391
Int. Cl. B29h *5/02*
U.S. Cl. 18—2 **9 Claims**



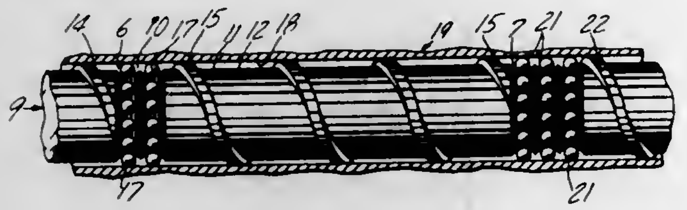
A self-loading tire curing press having a loading mechanism which may be in one of the mold sections first placing the green tire in registry with the mold section incorporating the loader and then moving the mold section with the green tire in registry therewith until the green tire comes into registry with the other mold section; closing the press to shape and cure the green tire and then utilizing the loading mechanism to strip the cured tire from the mold sections. Alternatively, the loader may be mounted on or in front of the press to place the green tire on the stationary mold section, the loader confining the bladder for swelling into the green tire.

3,530,534
EXTRUDER WITH BALL AND SCREW DISPERSING MECHANISM

Anthony W. Pomper, Edison, N.J., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Jan. 29, 1968, Ser. No. 701,258
Int. Cl. B29f *3/02*

U.S. Cl. 18—12 **4 Claims**

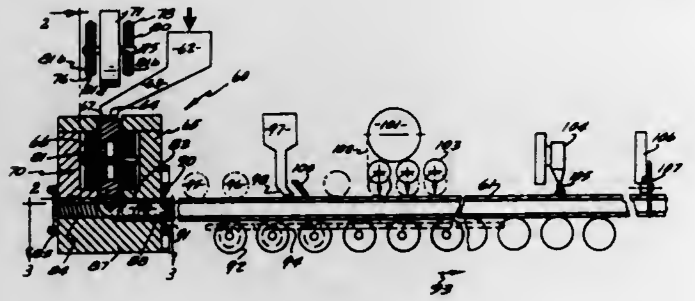


An auger-type extruder wherein the thread and the core of the screw are shaped to provide an annular path extending radially outward from the bottom of a recess in the core along which rollable elements are confined between the bottom of the recess and the inner surface of the barrel of the extruder.

3,530,535
LINEAR EXTRUDING APPARATUS

Carrol C. Sachs, Sunland, Calif. 91040
Filed Dec. 16, 1966, Ser. No. 602,274
Int. Cl. B29d *23/04*

U.S. Cl. 18—14 **12 Claims**



A linear extrusion machine for the continuous manufacture of a product from plastic raw material is disclosed having an extruder body formed with a material working cavity extending therethrough between a discharge orifice and an inlet orifice adapted to introduce the raw material to the working cavity. A material conditioning means is fixed in the working cavity and separates the cavity into a material collection chamber and a die chamber. Die members are disposed within said die chamber for forming the produce with open cores separated by integral ribs. Roller means are movably mounted on the extruder body to pass through the collection chamber in rolling engagement with the conditioning means and are adapted to forcibly urge the raw material past the conditioning means and the die members to continuously issue the material from said discharge orifice with substantially uniform characteristics whereby the discharged material includes open ended cores assuming the shape and configuration of the die members.

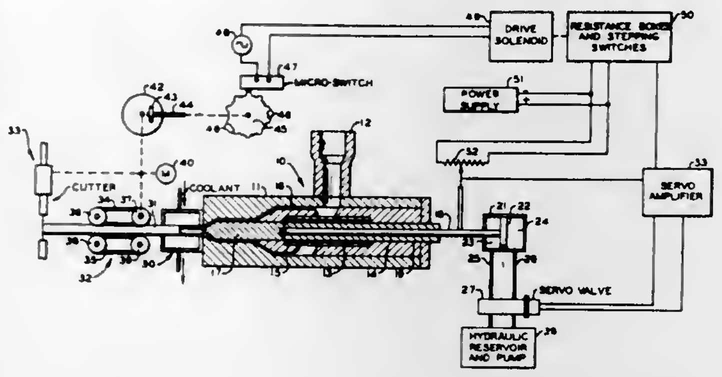
3,530,536
APPARATUS FOR EXTRUDING VARIABLE THICKNESS MATERIALS

Baxter L. Thorman and Fred J. Zavasnik, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 15, 1967, Ser. No. 683,299
Int. Cl. B29d *23/04*

U.S. Cl. 18—14 **6 Claims**

Extrudate of variable cross sectional area is extruded through a die having a movable mandrel disposed therein to provide a variable area orifice. The resulting extrudate is withdrawn by a pulling mechanism which actuates a control system to move the mandrel with respect to the die. Extrudate of any desired thickness or configuration can be formed by suitably programming the control mechanism.



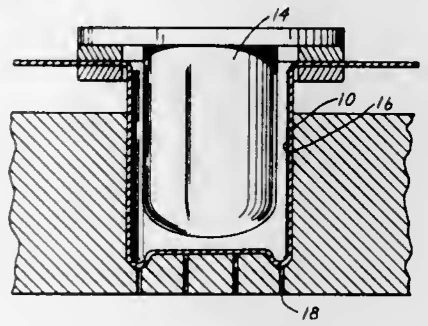
3,530,537
TOUGH PLASTIC ARTICLES OF MANUFACTURE

George E. Walker, Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Original application July 25, 1967, Ser. No. 655,827. Divided and this application Feb. 6, 1969, Ser. No. 810,074

Int. Cl. B29c *17/04*

U.S. Cl. 18—19 **1 Claim**



This invention relates to a method for forming plastic articles having improved structural properties by drawing orientable thermoplastic material into a cavity and severing the lower portion of the drawn material to produce the article.

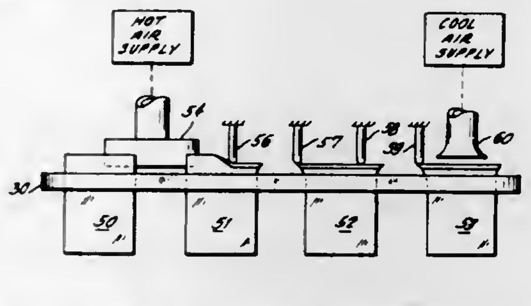
3,530,538
PLASTIC BAG FLARING APPARATUS

John J. Quackenbush, Monroe, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Original application Apr. 7, 1967, Ser. No. 629,328. Divided and this application Jan. 15, 1969, Ser. No. 825,457

Int. Cl. B29c *17/00*

U.S. Cl. 18—19 **1 Claim**

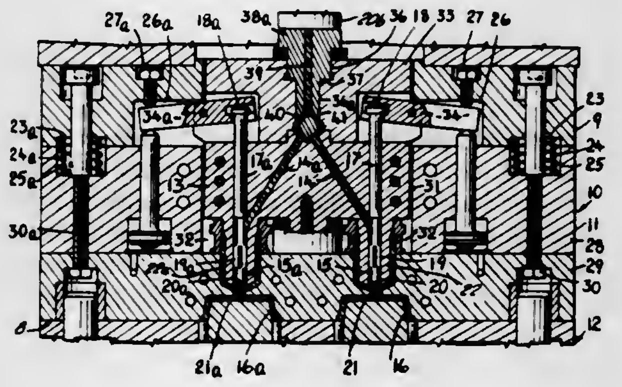


In order to cause the opposing panel ends of a plastic bag to curl outwardly, the bags are captured between moving belts with a portion of their upper surfaces extending above the belts. The outer surfaces of the bag panels are heated, and the panel edges are forced to flare open by passing through a stiff wire. The interior surfaces of the open panel lips are then rapidly cooled to introduce a permanent tendency for the bag panels at the bag opening to curl away from one another.

3,530,539
GATE VALVE FOR INJECTION MOLDING MACHINES

Jobst Ulrich Gellert, 227 Viewmount Ave., Toronto, Ontario, Canada
Filed Feb. 2, 1968, Ser. No. 702,599
Int. Cl. B29f *1/05*

U.S. Cl. 18—30 **5 Claims**

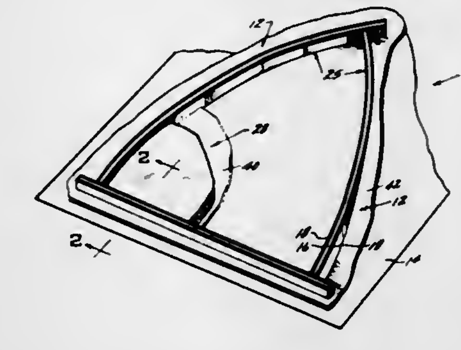


An injection molding machine having a valve gated mold which provides the runner system thereof with a volume expansion device that will automatically expand to receive the hot melt which is displaced in the runner system by the valve pins when they are moved in to closed position by the opening of the mold within a molding cycle. The volume expansion takes place automatically within each molding cycle simultaneously with valve pins re-seating to close the terminal of the runner system which feeds hot melt into the mold cavity. When the valve pins are unseated by the closing of the molds the volume expansion device automatically returns to and is locked in its normal position; that is, the position in which it is held during the injection time of the molding cycle.

3,530,540
MOLDING DEVICE

Ralph C. Mueller, 7000 Summit Ave., Madeira, Ohio 45243
Filed Mar. 1, 1968, Ser. No. 709,548
Int. Cl. B29c *1/00*

U.S. Cl. 18—34 **4 Claims**

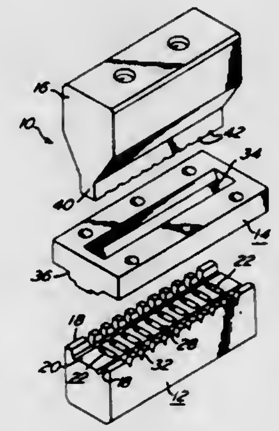


An assembly of flexible strip articles, flexible metallic bands, and metallic surface all of which being magnetically fixedly held together for providing a stable molding apparatus about a form. One of the strip articles of the assembly comprises an elongated strip of magnetic material sandwiched between a pair of coextensively-extending metal members one of which may include a base flange. An additional strip article composed of the magnetic material may be included as part of the assembly. The metallic bands are magnetically secured to the first strip article which in turn is magnetically secured to the metallic surface whereby such assembly constitutes a molding device.

3,530,541
MOLD FOR ENCAPSULATING ELECTRICAL COMPONENTS

Jerome G. Burns, Moorestown, N.J., assignor to TRW Inc., Philadelphia, Pa., a corporation of Ohio
Filed June 13, 1968, Ser. No. 736,827
Int. Cl. B29c *6/00;* **B29d** *3/00*

U.S. Cl. 18—36 **6 Claims**



A mold for encapsulating electrical components in a plastic jacket by compression molding without forming any flash around the terminal wires of the components. The mold has a pair of portions which mate to provide a mold cavity. The mold cavity is adapted to receive the electrical component being encapsulated with the terminal wires of the component extending beyond an end or ends of the mold cavity. The mold also includes a pair of portions having surfaces which mate at the end or ends of the mold cavity from which the terminal wires of the electrical component extend. The mating surfaces have opposed mating grooves therein which receive and surround the terminal wires. The grooves are shaped to form a tight seal between the grooves and the terminal wires without pinching the terminal wires between the mating surfaces. This seal prevents any excess molding material from flowing from the mold cavity along the terminal wires so as to prevent the formation of flash along the terminal wires.

3,530,542
TEXTILE CARDING AND DRAFTING APPARATUS

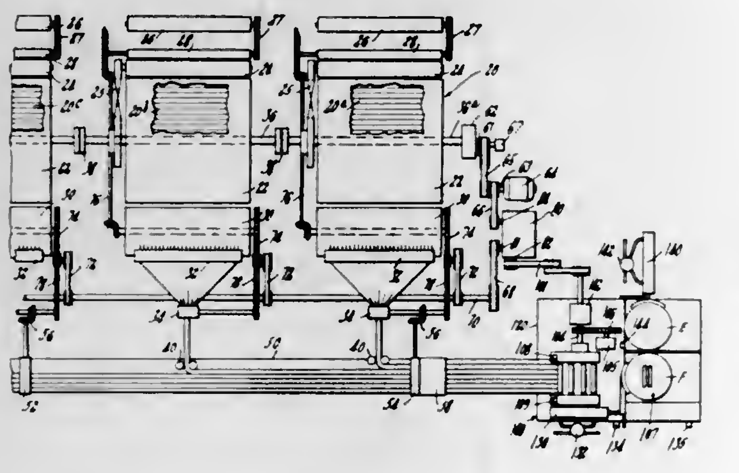
Virgil A. Burnham, Saco, Maine, assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 509,461, Oct. 4, 1965, which is a division of application Ser. No. 278,727, May 7, 1963. This application June 7, 1968, Ser. No. 739,941

Int. Cl. D01g *15/46*

U.S. Cl. 19—106 **20 Claims**

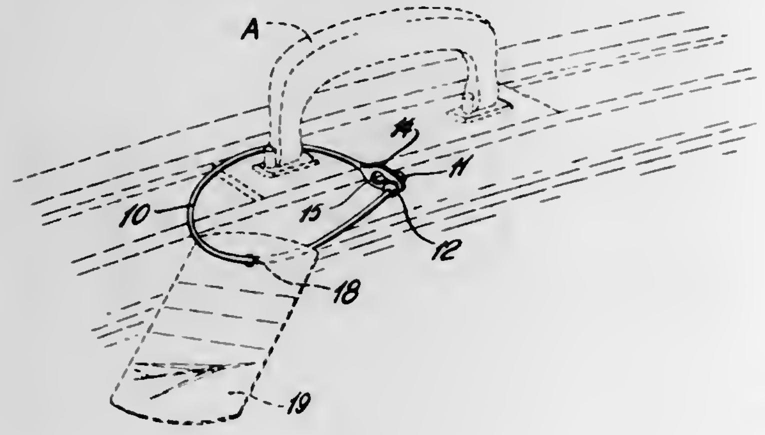
A carding and drafting apparatus comprising several cards arranged in a row for feeding a composite sliver to a drafting mechanism. The cards have their main cylinder shafts aligned and driven together. A multiple speed transmission drives all of the card feed rolls and doffer cylinders and is shiftable between operating and creep speeds. For feeding the plurality of slivers from the doffer cylinders of the cards to the drafting mechanism, there are provided sliver feeding rolls and an accumulator box, with the drafting mechanism being operated at a higher speed than the sliver feeding rolls to pick up excess sliver accumulated in the accumulator box. A quantity defining device establishes the amount of sliver from the drafting means to be collected in a can. Can changing apparatus is operative to shift a filled can from a sliver collecting position and an empty package can into the collecting position. A control system responsive to the quantity defining device, and preferably to a sliver discontinuity detector, is connected to the main card cylinder brake, to the drafting element brake and clutch and to the transmission means. It is effective upon a signal from a sliver discontinuity detecting means to energize both of the brakes and the clutch means to stop the entire apparatus, but effective upon a signal from the quantity defining device to stop only the drafting element, to shift the multiple speed transmission, and to change the cans while the card feed rolls and doffer cylinders are driven at a creep speed and the main card cylinders continue to be driven at operating speed. After the cans have been changed, the control system again drives the drafting element and the card feed rolls and doffer cylinders at operating speed.



3,530,543
LUGGAGE TAG STRING

Gerard Desmarais, 175 Giroux, Laval des Rapides, Quebec, Canada, and Claude Desmarais, 10630 Hogue, Montreal, Quebec, Canada
Filed Nov. 4, 1968, Ser. No. 773,181
Int. Cl. G09f *3/14*

U.S. Cl. 24—16 **4 Claims**



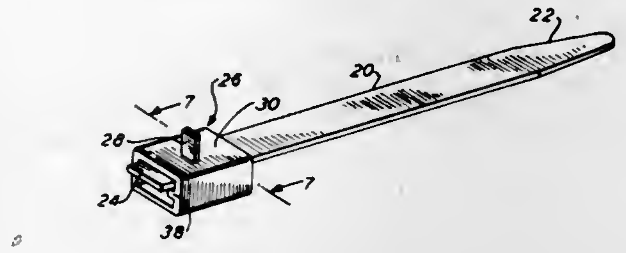
The invention is a luggage tag string with an end knob fitting through a keyhole slot at the other end of the string and an additional knob to keep the string from travelling longitudinally within the slot.

The present invention relates to a string particularly for use in securing identification tags to luggage handles, but which may also be used for other purposes.

3,530,544
CABLE BUNDLING STRAP

Raymond J. Burniston, Madison Township, Middlesex County, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Oct. 30, 1967, Ser. No. 678,876
Int. Cl. B65d *63/00*

U.S. Cl. 24—16 **6 Claims**

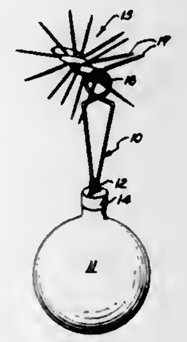


This invention relates to bundling straps composed of three discrete elements. The first of these elements is a strap member having a length chosen in accordance with the purpose for which the strap is to be employed. The second element is a head member having an aperture extending therethrough and having therein a separator so as to separate the aperture into two discrete channels. A first end of the strap member is placed in a first of these channels, within the aperture of said head member, and the second portion of the strap member is then threaded about the objects to be bundled and then placed in the second channel of the head member. The third element, a metallic barb, is then driven through the assembled strap and head member such that the barb pierces first a wall of the head member then enters the two ends of the strap member and thence into a second opposite wall of the head member to complete the assembly of the bundling strap.

3,530,545
CHRISTMAS TREE ORNAMENT SECURING MEANS

Paul E. Lengyel, R.D. Yale Ave., Slingerlands, N.Y. 12159
Filed Apr. 16, 1968, Ser. No. 721,714
Int. Cl. A44b *21/00*

U.S. Cl. 24—73 **9 Claims**

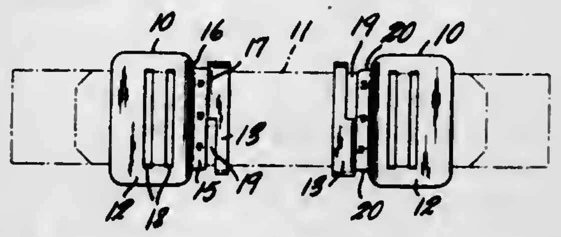


An ornament hanger composed of a material which is initially conformed to the coplanar shape shown in FIG. 2 having arcuate portions in a back-to-back relationship which are joined by the legs of a V-shaped portion, said legs adapted for being manually squeezed together to the position shown in FIG. 3 to bring the arcuate portions in a face-to-face relationship whereby the branch of a Christmas tree may be engaged between such portions, the elastic limits of the material being such that when the legs are released from the position shown in FIG. 3 the hanger returns to a position as shown in FIG. 4 so that the limb of the Christmas tree is loosely encircled by the arcuate portions.

3,530,546
QUICK RELEASE BUCKLE

Juan Vilarrubis Ferrando, Barcelona, Spain, assignor to Nemrod-Metzler, S.A., Barcelona, Spain, a corporation of Spain
Filed Apr. 16, 1968, Ser. No. 721,836
Int. Cl. A44b *11/25*

U.S. Cl. 24—75 **1 Claim**

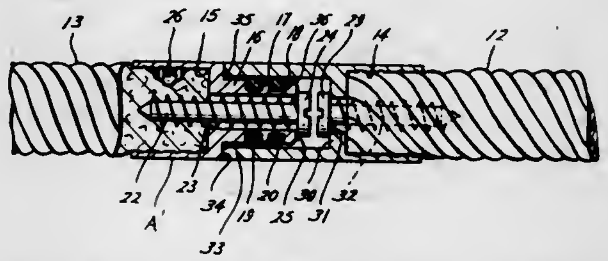


A quick release buckle comprising two buckle elements each including adjacent plate portions lying in different planes and integrally connected by a bend line to provide side-by-side raised and recessed portions with an open-ended slot between them and extending generally along the line of the bend, the buckle elements being coupled by orienting them in inverted relation and at angles to each other and interengaging the slots such that the line of intersection forms a hinge line between the elements, the raised portions of the buckle elements being accommodated in the recessed portions when the elements are pivoted toward the same plane, and means interlocking the recessed and raised portions to prevent relative movement between the buckle elements when the buckle elements are pivoted toward the same plane, the buckle elements being released by pivoting the buckle elements relative to each other along the hinge line to separate the interlocking means and then moving the buckle elements relative to each other to disengage the slots.

3,530,547
BREAK-AWAY ROPE FASTENER

Melvin L. Robinson, 939 3rd St., Rosenberg, Tex. 77471
Filed Apr. 3, 1968, Ser. No. 718,598
Int. Cl. A44b *11/00, 17/00*

U.S. Cl. 24—123 **1 Claim**



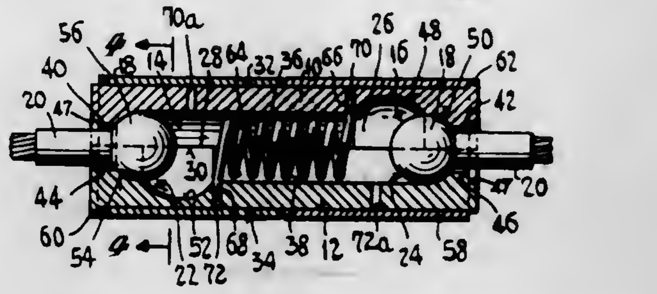
The fastener is constructed of a pair of tubular bodies each having a cup at one end in which a rope end is secured by a screw extending axially through the body and into the rope end. At the other ends of the bodies, respectively, are a socket element and a pin element which telescopingly interfit. The pin element is equipped with rubber O-rings adapted to frictionally grip the socket element to apply predetermined resistance to separation of the body members and attached rope ends.

3,530,548
CABLE COUPLING

John M. Gearin, Brookfield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Apr. 4, 1968, Ser. No. 718,755
Int. Cl. F16g *11/14;* **A44b** *11/25*

U.S. Cl. 24—123 **7 Claims**

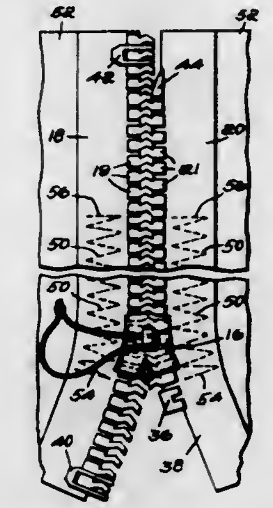
A manually operable tubular coupling having open ends to receive enlargements on cable or rod-like parts. The body of the coupling consists of two spring-urged identical halves having a line of separation along a diametric plane, the halves being slidable longitudinally on each other from aligned or coextensive positions so as to reveal interior cooperable socket configurations which are thereby made accessible for receiving the cable enlargements. Two collars on the body prevent lateral separation of the halves and, when shifted apart, effect the relative sliding disalignment to make the sockets accessible.



3,530,549
QUICK RELEASE SAFETY CLOSURE

Isaac F. Manchester, Jr., Shipyard Lane, South Dartmouth, Mass. 02748
Filed Mar. 6, 1968, Ser. No. 711,130
Int. Cl. A44b *19/36, 19/38*

U.S. Cl. 24—205 **4 Claims**



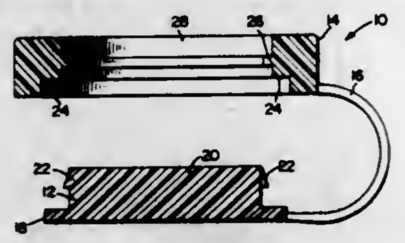
A closure of the type having marginal connecting means adapted to be engaged and disengaged by a slider and which is capable of disengagement by other means herein described as the safety-quick release. The present closure is particularly adapted for embodiment in foul weather gear for sailors and others, and such other enveloping structures which lend themselves to the use of a safety closure quick release device. The present closure is capable of quick release from either end thereof to permit rapid shedding of the garment or other enveloping structure in the event of an emergency. The present closure includes fastening elements connected to flexible tapes adapted to be stitched to the marginal edges of a garment. The structure is characterized by leaving the ends of the tapes unattached to the garment for a short distance from each end. The structure is further characterized by elimination of the conventional pin and box structure for locking the closure at one end.

3,530,550
FLEXIBLE CLAMP

Robert L. White, 503 E. Harrison, Apt. 2, Springfield, Mo. 65806
Filed Oct. 21, 1968, Ser. No. 769,240
Int. Cl. A44b *21/00*

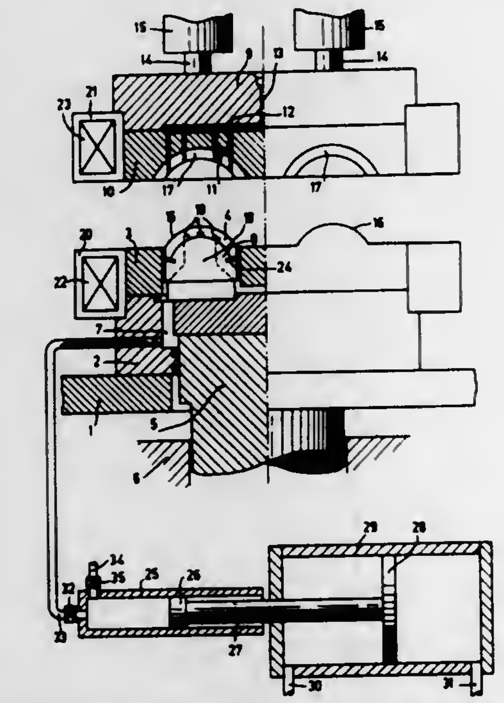
U.S. Cl. 24—245 **4 Claims**

A clamp composed of mating discs for engaging pliant sheet material, such as for fastening baby diapers without the use of pins or the like, and interengaging members provided on the discs for holding them together until released by pressure. An interconnecting flexible strap holds the discs together when they are not in clamping engagement.



3,530,551
APPARATUS FOR MANUFACTURING CERAMIC MAGNETIC ARTICLES

Eduard Johannes Haes and Adrianus Theodorus van der Maat, Emmasingel, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,599
Claims priority, application Netherlands, Aug. 27, 1966, 6612114
Int. Cl. B28b *3/20*
U.S. Cl. 25—11 **5 Claims**

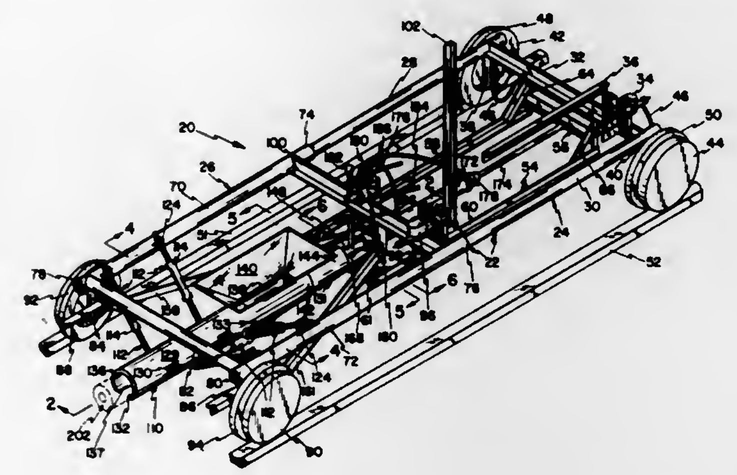


An apparatus for molding ceramic magnetic articles, particularly stators for small electric motors, which provides articles possessing a uniform density and a uniform magnetic field. A ceramic mass suspension is injected in a molding cavity at high pressure thereby partially separating the solid ceramic mass from the liquid. The compressed mass is further compressed by a pressing die thereby removing all the remaining liquid from the ceramic mass. The separated liquid is removed in biaxial directions from the molding cavity. The ceramic mass is magnetized during the injection and pressing operations.

3,530,552
EXTRUSION DEVICE

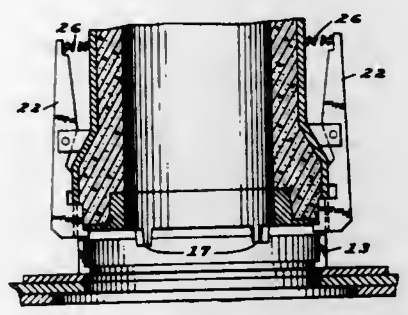
Glen H. Calder, R.F.D. Box 286A, Springville, Utah 84663
Filed Apr. 29, 1968, Ser. No. 725,005
Int. Cl. B28b *21/52*
U.S. Cl. 25—32 **13 Claims**

An apparatus and method for extruding concrete and the like, the apparatus comprising a variable length telescopic frame supported upon front and rear sets of wheels and an extrusion chamber having an open trailing effluent end, the chamber being carried by one frame portion and provided with a laterally disposed influent opening for introducing the concrete mix into the interior of the chamber. A reciprocably powered ram is carried by another frame portion and is located within the extrusion chamber so as to close the leading end thereof and operable to compact and extrude the concrete through the effluent end in a configuration defined by the interior shape of the chamber. Optionally, the ram is configurated to provide offset joints which are periodically extruded in a continuous length of concrete so that upon curing separation into sections can be easily realized. A mandrel is centrally disposed within the chamber to impart a hollow core to the extruded concrete and is controlled by the operator to, when desired, accommodate limited axial reciprocation of the mandrel generally in synchronism with at least part of the stroke of the ram to thereby alter at least the initial frictional resistance to concrete displacement within the chamber. The two portions of the frame are telescopically interrelated to accommodate (a) displacement of the rear frame portion relative to the front frame portion coincident in time with a selected part of the stroke of the ram and (b) displacement of the front frame portion relative to the rear frame portion coincident in time with another selected part of the stroke of the ram, to provide a variety of combinations of movement between the respective parts of the device to walk the apparatus during extrusion, insure proper consolidation of the concrete, and insure that little or no relative movement is occasioned between the concrete and the surface receiving the unset extruded concrete adjacent the effluent opening of the extrusion chamber.



3,530,553
CONCRETE PIPE BELL DEPRESSION FORMER

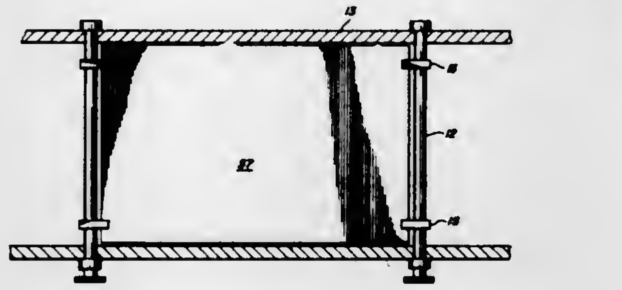
Thomas J. Engle, 23511 Ditner Drive, Rockwood, Mich. 48173; Ronald P. Kirchner, 26421 Hass, Dearborn, Mich. 48127; and Kenneth Atchison, 15011 Lesure, Detroit, Mich. 48227
Filed Mar. 17, 1967, Ser. No. 626,912
Int. Cl. B28b *21/10*
U.S. Cl. 25—39 **1 Claim**



An improvement in the apparatus used for production molding the bell end of concrete pipe is described wherein the outer perimeter of the bell end of the pipe is formed with an annular depression for the purpose of protecting against corner chipping during stacking and unstacking operations.

3,530,554
CONCRETE BLOCK MACHINE WITH PALLET LOCKING DOGS

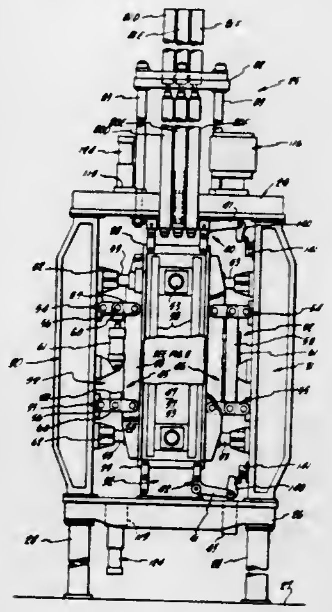
Donald E. Whitehurst, Phoenix, Ariz., assignor to Superlite Builders Supply, Inc., a corporation of Arizona
Filed Mar. 25, 1968, Ser. No. 715,873
Int. Cl. B28b *3/00*
U.S. Cl. 25—41 **8 Claims**



A pair of shafts are rotatably mounted adjacent a lower edge of the molds in a concrete block machine. A plurality of locking dogs are mounted on the shaft and, together with the shaft, are positionable between an unlocked and a locked position. A pair of pneumatic cylinders are positioned adjacent the end of each of the shafts; each cylinder having actuating rods connected by a flexible chain to the shaft through the expediency of a sprocket secured thereto. Alternate actuation of the pneumatic cylinders results in the rotation of the dogs to the locking and unlocking positions.

3,530,555
APPARATUS FOR CASTING MULTI-DUCT CONCRETE CONDUITS

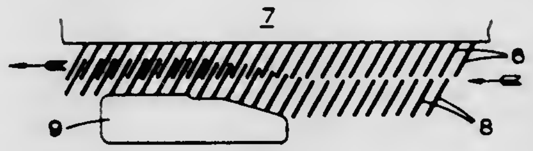
Larry D. Walker, Riverside, Calif., and Clarence H. Jorgensen, Jr., Stamford, Conn., assignors to American Cement Corporation, Los Angeles, Calif., a corporation of Delaware
Original application Mar. 9, 1965, Ser. No. 438,322, now Patent No. 3,415,914. Divided and this application Sept. 23, 1968, Ser. No. 810,048
Int. Cl. B28b *13/02*
U.S. Cl. 25—103 **5 Claims**



A concrete conduit casting machine which includes a plurality of mold sections cooperatively mounted for movement to define a mold cavity of predetermined volume, an elongated mold core mounted for movement through one of the mold sections into and out of the mold cavity, and means for injecting wet concrete slurry into the cavity and for expressing by pressure a portion of the uncombined water in the injected slurry, and in which the mold sections other than the one section are movable a slight amount outwardly of the cavity while the core is present in the cavity.

3,530,556
YARN CRINKLING MACHINE

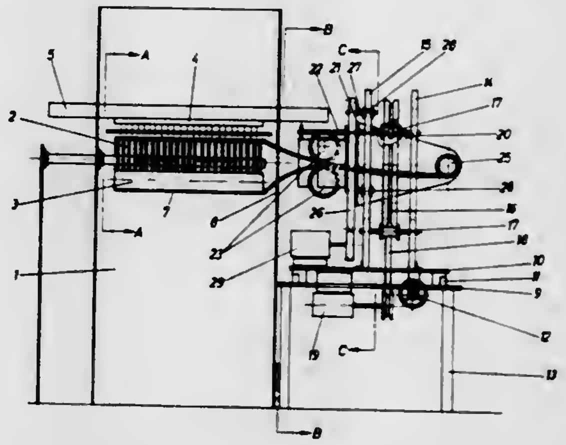
Frederick William Hole, Tiverton, England, assignor to John Heathcoat and Company Limited
Filed Sept. 10, 1968, Ser. No. 758,746
Claims priority, application Great Britain, Sept. 20, 1967, 42,808/67
Int. Cl. D02g *1/14*
U.S. Cl. 28—1.8 **4 Claims**



This invention relates to an apparatus for crinkling yarns. The apparatus includes a rotatable crimping head with a plurality of fixed sinker blocks spaced from each other in a circular row and a plurality of movable sinker elements each of which is movable in a space between two adjacent sinker blocks so that yarn is entrapped between the blocks and elements as it is passed through the rotating head. Cam means engage the sinker elements to move when between the blocks. The sinker blocks and the spaces between them are inclined so as to face towards the direction from which the cam means engage the sinker elements.

3,530,557
APPARATUS FOR MAKING NON-WOVEN FIBROUS TUBING

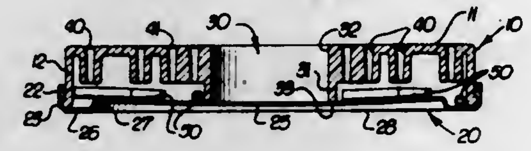
Richard Dilo, Eberbach (Neckar), Germany, assignor to Firma Oskar Dilo KG, Eberbach (Neckar), Germany
Filed July 1, 1968, Ser. No. 741,492
Claims priority, application Germany, July 4, 1967, D 53,511
Int. Cl. D04h *18/00*
U.S. Cl. 28—4 **12 Claims**



A continuous fabric tubing is prepared by helically winding non-woven webs on a rotating drum in partly overlapping relationship, stitching the partly superimposed turns to each other by needling, and axially pulling the tubing so formed from the drum. The take-up mechanism, which pulls the tubing from the drum, rotates with the drum, and an automatic cut-off mechanism may be provided for automatically cutting the continuous tubing to uniform, adjustable lengths. The tubing may consist entirely of monofilaments and other smooth fibers not capable of normal felting.

3,530,558
WEAVING TEMPLATE RECEPTACLE

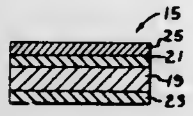
James E. Gick, Inglewood, Calif., assignor to Hazel Pearson Handicrafts, Inc., Rosemead, Calif., a corporation of California
Filed Mar. 25, 1968, Ser. No. 715,594
Int. Cl. D03d *29/00*
U.S. Cl. 28—15 5 Claims



A body of lightweight substantially rigid material having the shape of an inverted cup provided with a tubular hub having a bore, and a cover manually attachable to and detachable from the lower edge of the cup sidewall, the lower edge of the hub contacting the cover along a circular line of contact; the cover has an annular outer rim and a central web portion offset upwardly from the rim, and may be provided with a hole in alignment with the hub bore. The upper base of the body constitutes a working board and has formed therein openings arranged in a spoked pattern, each opening communicating with the upper end of a tapered bore formed in a sleeve integrally formed with the working board and projecting downwardly therefrom. There are provided a plurality of pegs, each having a tapered shank portion frictionally retainable in the sleeve bore. The cover, when assembled with the body, forms therewith a storage compartment or receptacle for loosely housing unused pegs.

3,530,559
ANODE ELECTRODE FABRICATION

Donald R. Kerstetter and Samuel J. Montgomery, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Original application June 28, 1965, Ser. No. 467,639. Divided and this application Mar. 12, 1968, Ser. No. 712,434
Int. Cl. H01j *9/00*
U.S. Cl. 29—25.17 3 Claims

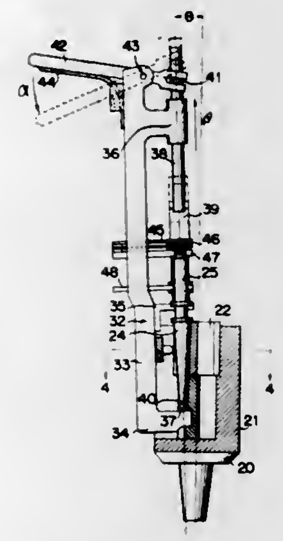


A process for fabricating a composite anode electrode adapted for use in an electron discharge device comprising the steps of: cleaning a core material of steel sandwiched between layers of nickel or copper, vacuum depositing a layer of aluminum, shaping the structure, and heating to transform the aluminum to an aluminum nickel or aluminum copper compound.

3,530,560
APPARATUS FOR MAKING A MULTIELEMENT ELECTRON GUN MEMBER

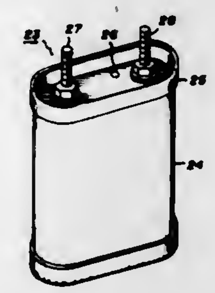
Shinichi Sawagata, Tokyo, Japan, assignor to Tokyo Shibaura Electric Co. Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Sept. 9, 1968, Ser. No. 758,401
Claims priority, application Japan, Oct. 5, 1967, 42/84,444
Int. Cl. H01j *9/06, 9/10, 9/46*
U.S. Cl. 29—25.19 7 Claims

An apparatus for manufacturing an excellent triple electron gun member for use in a colour television set from electron gun units, comprising a truncated conical gauge having a plurality of grooves having V-shaped cross section and extending along the peripheral surface of said gauge at equal spaces from one another, a plurality of central rods each having a tapered lower portion to be inserted in said groove and an upper portion for carrying the electron gun unit and means for restricting the lateral and longitudinal movements of the rods. The inclination angle required for the gun units is determined by the taper angle of the central rod and the taper angle of the side surface of the gauge.



3,530,561
IMPREGNATED DIELECTRIC SYSTEMS

Eugene B. Cox, Fairfield, Conn., assignor to General Electric Company, a corporation of New York
Application Aug. 8, 1967, Ser. No. 659,133, now Patent No. 3,450,968, dated June 17, 1969, which is a division of application Ser. No. 587,835, Oct. 19, 1966, now Patent No. 3,363,156, dated Jan. 9, 1968, which in turn is a continuation-in-part of applications Ser. No. 508,529, Nov. 18, 1965, and Ser. No. 513,240, Dec. 13, 1965. Divided and this application July 22, 1968, Ser. No. 746,427
Int. Cl. H01g *13/00*
U.S. Cl. 29—25.42 21 Claims

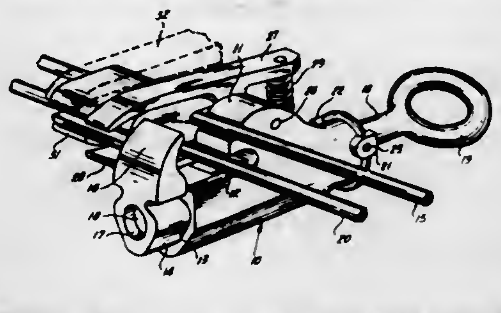


Non-porous polyolefin materials are essentially completely impregnated with a dielectric liquid impregnant to provide an improved dielectric, insulating system.

3,530,562
CONNECTING TOOLS

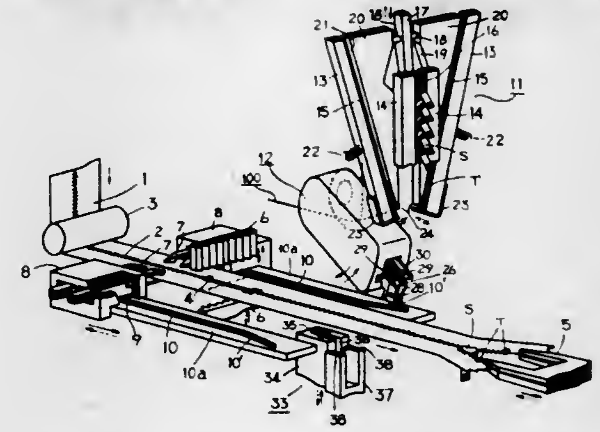
William H. Baumgardner, deceased, late of Lincoln, Nebr., by Lillie O. Baumgardner, legal representative, 11600 W. Dodge Road, Lot E15, Omaha, Nebr. 68154
Filed Apr. 7, 1967, Ser. No. 629,333
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 4 Claims

A tool for engaging, positioning and drawing together two parallel wires for applying an electrical connector, the tool consisting of a main body having a hook for engaging the first wire and a block slidable within the main body having a second hook positioned in relation to the first to engage the second wire, a rod threaded through the block and having only rotational movement within the main body for positioning the second wire with relation to the first. The tool preferably has a connector holding clamp on the side thereof and the rod preferably has a ring on the exposed end so the tool may be manipulated by a "hot stick."



3,530,563
APPARATUS FOR AUTOMATICALLY ASSEMBLING SLIDE FASTENERS

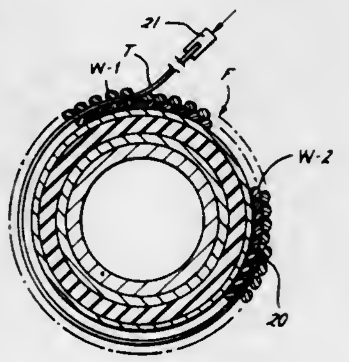
Masayuki Maeda, Toyama-ken, Japan, assignor to Yoshida Kogy K.K., Tokyo, Japan
Filed June 6, 1967, Ser. No. 643,875
Claims priority, application Japan, June 27, 1966, 41/41,672, 41/41,673, 41/60,678; July 11, 1966, 41/45,285
Int. Cl. B23p *19/04;* **B23g** *7/10*
U.S. Cl. 29—207.5 10 Claims



A method and apparatus for assembling slide fasteners having sliders and top stops in an automatic cycle of operation. Apparatus comprises means for cutting a fastener chain carrying interlocking elements to individual unit lengths, means for attaching thereto sliders and top stops, and drawing the assembled slide fasteners out of the machine while maintaining the chain in a successive movement.

3,530,564
METHOD OF REMOVING LOOSENESS IN WIRES OF FLEXIBLE PIPE

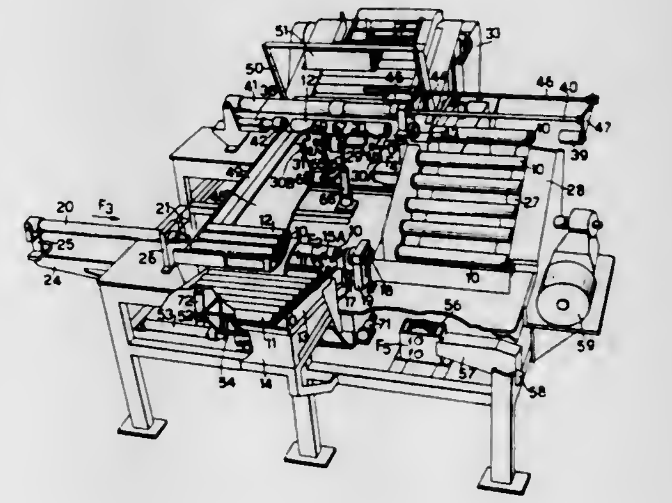
Roy H. Cullen, Houston, Tex., assignor to The Youngstown Sheet and Tube Company, Boardman, Ohio
Continuation-in-part of application Ser. No. 648,039, June 22, 1967. This application Feb. 23, 1968, Ser. No. 707,812
Int. Cl. B21d *19/10;* **B23p** *7/00*
U.S. Cl. 29—401 9 Claims



A method of moving looseness in wire wrapping of flexible pipe wherein one or more tapes of metal or the like is forced substantially circumferentially below the loose wrap or wraps to remove the looseness without apreciably increasing the external diameter of the flexible pipe.

3,530,565
DEVICE FOR REPLACING THE PLASTIC MATERIAL SHEATHS OF CYLINDRICAL SPOOLS AND METHOD THEREFOR

Alberto Lanza, Gozzano, Tiziano Milan, Bolzano Novarese, and Mario Paracchini, Borgomanero, Italy, assignors to Bemberg S.p.A., Milan, Italy, a company of Italy
Filed Dec. 27, 1967, Ser. No. 693,836
Claims priority, application Italy, Jan. 23, 1967, 11,140/67
Int. Cl. B23p *7/00, 11/02, 19/04*
U.S. Cl. 29—401 9 Claims

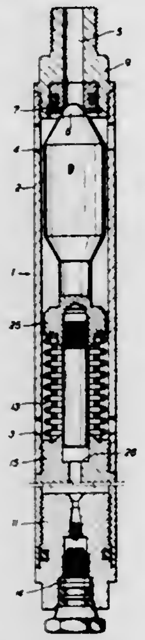


A method and an apparatus are disclosed for stripping old sheaths of plastic material from thread winding spools and for replacing said old sheaths with new ones. An automatized sequence of operational steps, intermittently timed, is such as to remove the old sheaths by slipping them, without cutting, from the spools, whereas the new sheaths are slipped onto the spools, whereas the new manoeuvre. An electropneumatic assembly, operationally combined with appropriate conveyance mechanisms, conveys the spools lined with the old sheaths to a stripping station, and the bare spools in attunement with the new sheaths to a liner-applying station. The advantages consist in a fully automatic operation, and ancillary means are also provided for disposing of the worn out liners. Slipping of the new sheaths onto the attendant spools is facilitated by appropriate preheating means, such as infrared radiation bulbs.

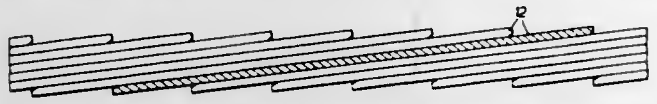
3,530,566
METHOD OF MAKING BELLOWS ASSEMBLY

Everett D. McMurry, Knud I. Bruun, and Bolling A. Abercrombie, Houston, Tex., assignors, by direct and mesne assignments, to McMurry Oil Tool Specialties, Inc., Houston, Tex.
Original application Aug. 23, 1966, Ser. No. 574,323. Divided and this application Jan. 8, 1968, Ser. No. 696,456
Int. Cl. B23p *11/02, 19/04*
U.S. Cl. 29—447 8 Claims

Improved rigid metallic bellows apparatus capable of resisting severe longitudinal compression without creasing or flattening of convolutions, and method of manufacturing same. Endless ring members are disposed in the convolutions both inside and outside of the bellows, the end ring members being preferably formed of heat or flame resistant material such as asbestos, and the other ring members being preferably formed on Teflon.



3,530,567
TUBULAR STRUCTURES
Herbert Campbell Secord, Little Cheveralls, Markyate, England
Filed Jan. 20, 1967, Ser. No. 610,591
Claims priority, application Great Britain, Jan. 24, 1966, 3,073/66
Int. Cl. B23k *31/02*
U.S. Cl. 29—476.5 **20 Claims**

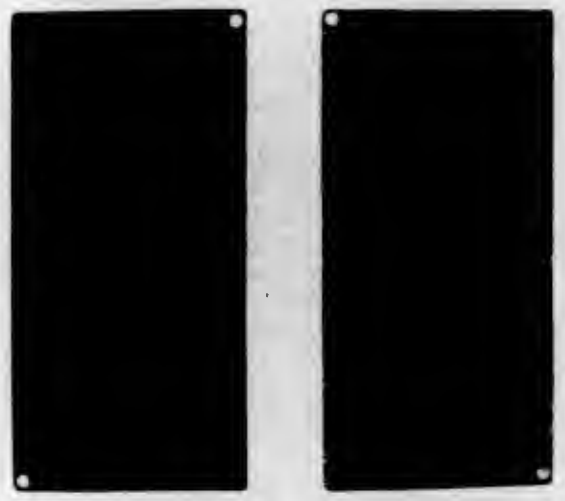


A method of forming a tubular structure comprising the steps of helically winding at least one metal strip which is curved in plan when flat, in self-overlapping fashion so that each lap has a part-conical disposition and the thickness of the wall of the structure at any point is formed from a plurality of laps, and thereafter flattening the laps one against another to substantially eliminate any gaps therebetween by expanding the tubular structure beyond the yield point of the metal strips.

3,530,568
DIFFUSION WELDING OF THE NICKEL-BASE SUPERALLOYS
William A. Owczarski, Cheshire, Conn., William H. King, Seattle, Wash., and David Scott Duvall, Middletown, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Apr. 24, 1969, Ser. No. 819,063
Int. Cl. B23k *31/02, 35/24*
U.S. Cl. 29—498 **10 Claims**

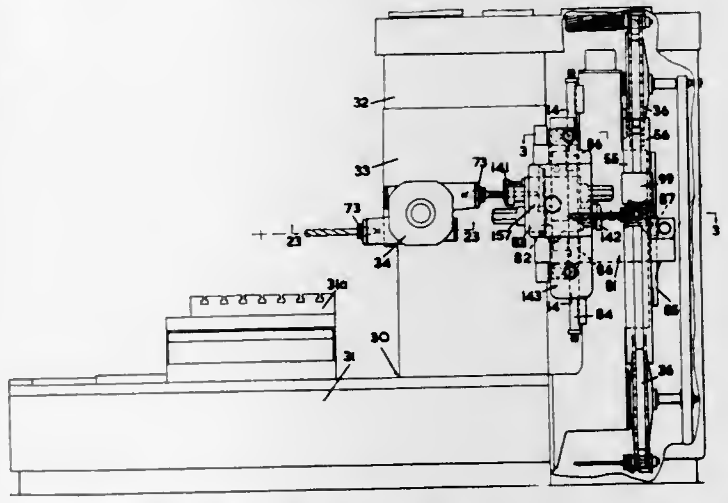
The nickel-base superalloys are joined together in a process wherein the mating surfaces are plated with nickel or a nickel-cobalt alloy and diffusion welded at high temperature.

3,530,569
METHOD OF COATING STEEL FOR PREVENTION OF CORROSION
William Wilson, Jr., 229 Upper Montain Ave., Upper Montclair, N.J. 07043
Filed Sept. 27, 1967, Ser. No. 671,514
Int. Cl. B23p *27/00*
U.S. Cl. 29—527.1 **7 Claims**



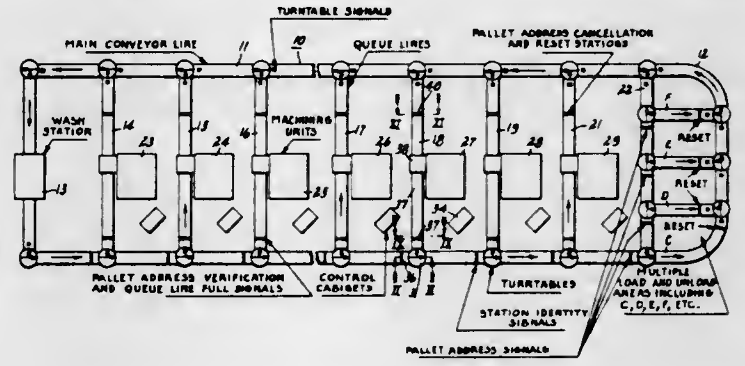
The corrosion of sheet steel is prevented by hot rolling the steel in an inert gas enclosure, cooling the steel to about 200° F. and thereafter temporarily protecting the steel from corrosion and the like by coating the cooled sheets of steel with a composition comprising 15 to 30% of a phenolic vinyl resin, 1 to 10% of metal chromate, 1 to 10% molybdenum disulphide, and a liquid vehicle. The coated steel is next cold-rolled and reduced, after which a coating of the same composition is applied to the surface of the steel to protect the same during the subsequent cold working operations such as stamping and cutting. The finally formed article is given a primer coating consisting of the same coating mixture without the molybdenum disulphide, with the article thereafter being covered by a conventional paint film.

3,530,570
MACHINE TOOL WITH AUTOMATIC TOOL CHANGE FACILITIES
Douglas R. Shotter, Rugby, England, assignor to Alfred Herbert Limited, Edgwick, Coventry, England
Filed Feb. 2, 1968, Ser. No. 702,737
Claims priority, application Great Britain, Feb. 2, 1967, 5,108/67
Int. Cl. B23q *3/157*
U.S. Cl. 29—568 **23 Claims**



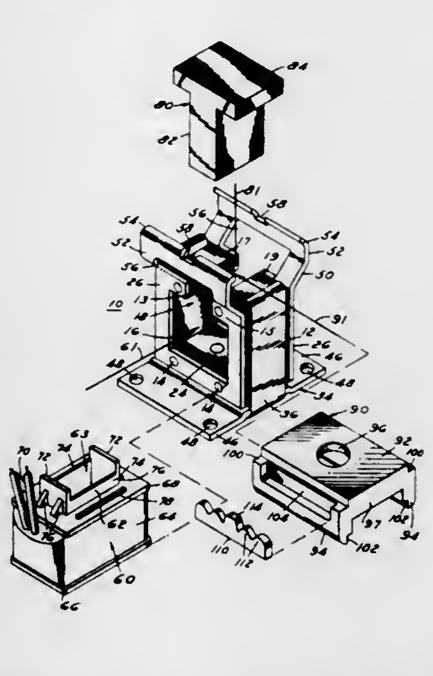
A tool changer is arranged for transferring tools between a magazine and a spindle. The tools in the magazine and the spindle point towards one another and undergo end for end turning during transfer. The transfer mechanism includes grippers on a rotatable and rectilinearly movable head. The grippers are engaged with and disengaged from the tools by rectilinear movement of the head and are transferred by turning of the head.

3,530,571
MANUFACTURING SYSTEM
Charles B. Perry, Cincinnati, Ohio, assignor to Cincinnati Milacron, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 15, 1967, Ser. No. 691,027
Int. Cl. B23q *41/02*
U.S. Cl. 29—563 **13 Claims**



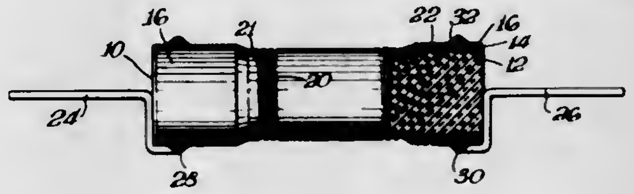
This invention relates to a manufacturing system and, more particularly, to an arrangement of work stations and associated equipment for performing a series of operations on each of a plurality of workpieces in which the workpieces are moved individually along a conveyor capable of individually addressing workpieces to work stations such as machine tools, inspection stations, assembly and processing stations, for example.

3,530,572
METHOD OF ASSEMBLING A SOLENOID
Louis R. Conrath, Huntington Woods, Mich., assignor to Detroit Coil Company, Ferndale, Mich., a corporation of Michigan
Filed May 3, 1968, Ser. No. 726,291
Int. Cl. H01f *7/06*
U.S. Cl. 29—602 **8 Claims**



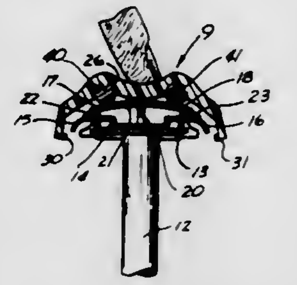
This disclosure relates to methods of assembling solenoids wherein the backstop member is slid between the side plates and locked there so as to resiliently cushion the plunger when the solenoid is de-energized.

3,530,573
MACHINED CIRCUIT ELEMENT PROCESS
Walter Helgeland, Nashua, N.H., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Feb. 24, 1967, Ser. No. 618,370
Int. Cl. H01c *7/00*
U.S. Cl. 29—620 **7 Claims**



Electrical resistors and other circuit elements and combinations are formed by machining out spaces or grooves in electrically conductive layer held on vitreous substrate without developing thermal cracking in substarte by conducting the machining while substrate is at elevated temperature. Also rapid machining is more accurately terminated, regardless of substrate, by sharply reducing the time rate of change of the machining effect shortly before termination. For this result the terminating portion of layer can be made more conductive as by an overlying conductive layer, or machining spaces can be made wider or farther apart at terminating portion. Applying an overlying layer also enables simpler lead attachment to overlying layer which can then be nickel for spot welding for example, or covered in turn by copper, for soldering for example. High temperature soldering is effective when applied around periphery of rod rather than end face. Spacing terminating grooves farther apart is conveniently effected with traversing electron beam. Machining with electron beam or laser beam is effective with respect to conductive or resistive coating on oxidized surface of silicon without affecting the silicon. Mica can also be used as thin substrate if protected by an oxide coating; without it the mica is cut through when a resistive film is machined.

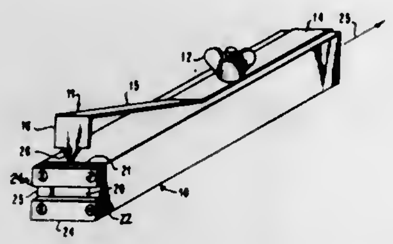
3,530,574
SHIELD FOR SAFETY RAZOR
Donald C. Patterson, 12722 Blossey E., Spokane, Wash. 99216
Filed Jan. 12, 1968, Ser. No. 697,438
Int. Cl. B26b *21/40*
U.S. Cl. 30—90 **4 Claims**



A protective shield for a safety razor is described that is formed of an elastic material with a back section, side and end walls that cover the head and blade guards of the holder for a double edge blade. The side walls have inwardly extending lips. Parallel longitudinal ribs are formed on the interior of the back section and extend toward the razor head to keep the back section raised from the head of the razor. To release the shield one depresses the back section between the ribs to pivot the side walls outward to spread the lips outward from the razor blade guards. Tabs are formed on the ends of the shield for facilitating the removal after the lips are released.

3,530,575
WIRE STRIPPER, PARTICULARLY FOR PAIRED CONDUCTORS

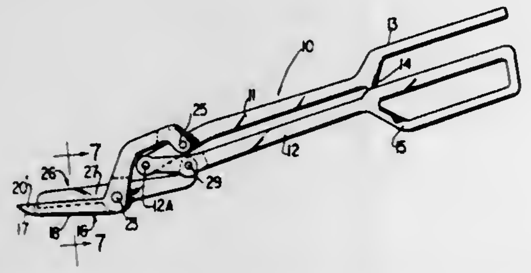
Frank P. Riche, 550 Rosedale Ave.,
Bronx, N.Y. 10472
Filed Oct. 3, 1968, Ser. No. 764,836
Int. Cl. B21f *13/00;* **H02g** *1/12*
U.S. Cl. 30—91.2 **16 Claims**



An elongated housing has a hollow longitudinally extending locating channel formed to receive a pair of conductors, for example 300 ohm television lead-in wire, appliance connection cord and the like; a cutter blade is mounted on the housing and movable perpendicular to the channel, the cutter blade having cutting edges defining a cutting zone which is arranged to pierce the part of the insulation between the wires and cut the web between the wires (or, for coaxial cable, a portion of the jacket) so that, when the wire is pulled out of the housing, the remaining insulation along the outside of the wire will tear, the cutter being retained in its position by bearing against the end face of the housing.

3,530,576
METAL BAND CUTTER

Per Reichborn-Kjennerud, Staten Island, N.Y., assignor to Goodway Tools Corporation, New York, N.Y., a corporation of New York
Filed Oct. 25, 1967, Ser. No. 678,101
Int. Cl. B26b *13/12, 17/02*
U.S. Cl. 30—134 **1 Claim**

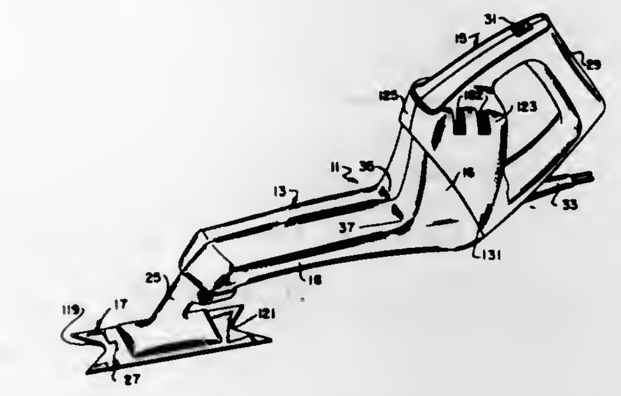


A metal band cutter having an anvil member coacting with an integral cutting and gripping blade member with these members being pivotally connected together intermediate their ends and the corresponding ends of said members are each pivotally connected to respective handles. The corresponding one ends of the handles are also pivotally connected and the pivotal connections between the handles and the members are adjacent the handle pivotal connection.

3,530,577
VIBRATING TOOL CONSTRUCTION

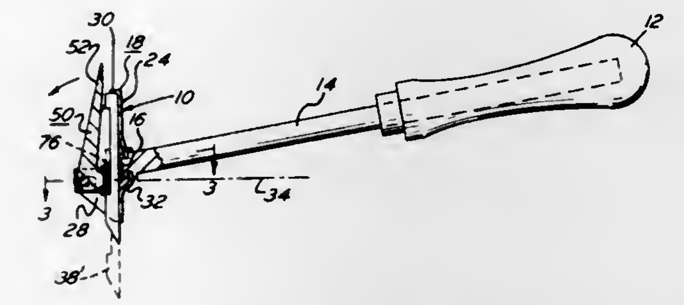
Burton P. Franklin, Danville, Va., and Paul W. Bless, Durham, N.C., assignors, by mesne assignments, to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed July 25, 1967, Ser. No. 655,852
Int. Cl. B27g *17/04;* **E02d** *7/18*
U.S. Cl. 30—169 **20 Claims**

The device disclosed herein is a portable, motor powered vibrating tool for use in performing such tasks as soil cultivation and aeration, paint scraping, stirring or agitating solids and fluids, etc. The device includes a frame having an interconnected motor and vibratory source supported thereon. An implement is also supported by the frame and is controllably vibrated by the vibratory source upon energizing the motor. A handle is attached to the frame for control and manipulation of the device.



3,530,578
SCRAPER DEVICE WITH ADJUSTABLE CONTOUR

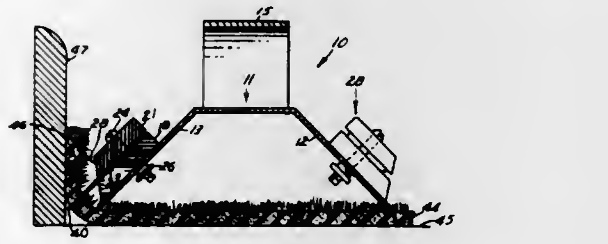
Meyer M. Katz, Philadelphia, Pa., assignor to Crystal Metal Products Co., Inc., Philadelphia, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 606,704, Jan. 3, 1967. This application Mar. 24, 1969, Ser. No. 810,927
Int. Cl. B26b *3/00;* **B27g** *17/04*
U.S. Cl. 30—171 **4 Claims**



A scraper device with adjustable contour provided by the ends of a plurality of individually movable scraper elements provided with pivotally secured means for releasably clamping and positioning the elements for maintaining a selected contour.

3,530,579
CARPET TRIMMER

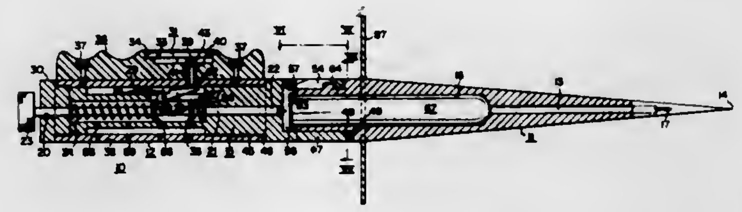
Edwin A. Dahlke, 208 W. Green Bay St.,
Shawano, Wis. 54166
Filed Jan. 24, 1968, Ser. No. 700,092
Int. Cl. B26b *29/00*
U.S. Cl. 30—287 **5 Claims**



A carpet trimmer comprising an inverted substantially V-shaped body and having a cutter blade mounted on a side thereof projecting outwardly and downwardly and extending beyond the adjacent underlying body edge, for reaching into a floor-wall juncture zone to trim a coved carpet at said juncture as the trimmer is pushed on said carpet and along said juncture.

3,530,580
UNDER-WATER WEAPON

Thomas Shelnick, Penn Hills, Pa.
(9717 Glendale Road, Pittsburgh, Pa. 15235)
Filed Dec. 26, 1967, Ser. No. 693,315
Int. Cl. A01k *81/00;* **F41b** *13/08, 15/00*
U.S. Cl. 30—359 **6 Claims**



A hand-held skin diver's knife having a hollow blade portion for conveying a lethal fluid discharged from a cartridge contained, for firing, in the rear end of the blade portion. A handle portion coupled to the blade portion houses a firing mechanism which requires cocking prior to the forcing of the fluid through the blade portion, upon firing of the cartridge, and which requires actuation of a release mechanism by the user after the blade portion has penetrated the body of a shark or the like.

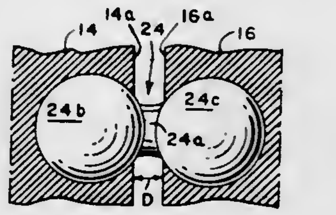
3,530,581
NON-SLIPPING PLASTIC DENTURE MATERIAL AND THE LIKE

Roy W. Whitney, Dayton, Ohio, assignor to Coe Laboratories, Chicago, Ill., a corporation of Illinois
No Drawing. Filed Mar. 13, 1967, Ser. No. 628,211
Int. Cl. A61c *13/00*
U.S. Cl. 32—2 **7 Claims**

A slip resistant plastic composition particularly adapted for use in making dentures so that said denture is retained in the mouth in an improved manner. The compositions and articles are prepared by incorporating hard particles into a flowable plastic mass so they are distributed at least at the surface of the cured body of plastic surface which is intended to come in contact with another surface. The articles are preferably prepared by exposing a substantial portion of such particles towards the surface to improve the retention of the article in the mouth.

3,530,582
DENTAL PROSTHETIC STRUCTURE

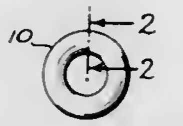
Bernard Weissman, 304 Ashland Place,
Brooklyn, N.Y. 11217
Filed Aug. 26, 1968, Ser. No. 755,292
Int. Cl. A61c *5/08*
U.S. Cl. 32—12 **6 Claims**



A dental prosthetic structure consisting of at least two interconnected crowns wherein the link forming the connection has spherical heads at opposite ends respectively embedded in the crowns so as not to interfere with the natural movement of the teeth relative to each other, and such link in combination with a removable body serves as an effective means of positioning the link during investment molding of the crowns about the spherical heads and also of insuring encasement only of these spherical heads so that the aforesaid relative movement is preserved in the resulting structure.

3,530,583
TRACTIVE MEANS FOR USE WITH ORTHODONTIC APPARATUS

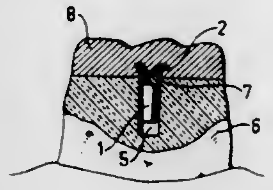
Paul E. Klein, 928 Lake Shore Road, Lake Oswego, Oreg. 97034, and Roland M. Anderson, 2770 SW. 107th Ave., Portland, Oreg. 97225
Filed Apr. 24, 1967, Ser. No. 632,961
Int. Cl. A61c *7/00*
U.S. Cl. 32—14 **7 Claims**



Devices for use with orthodontic apparatus to produce tractive forces and to assist in tooth positioning, such devices being made of a durable, elastomeric, mouth-fluid-resistant material and being formed in an endless connector loop having a smooth nonangular surface.

3,530,584
DENTAL PLUG

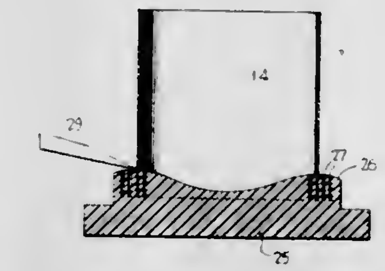
Göran K. S. Karlström, Nygatan 37, Gavle, Sweden
Filed May 15, 1967, Ser. No. 638,508
Claims priority, application Sweden, May 20, 1966, 6,992/66
Int. Cl. A61k *5/02*
U.S. Cl. 32—15 **2 Claims**



A device for anchoring in position a temporary dental fixture, such as a crown, bridge or the like, so that when the temporary fixture is removed, a hole previously drilled in the tooth to receive a permanent crown or the like is preserved in its original condition. The device comprises a plug-like member having a substantially cylindrical peg portion fixedly connected at one end thereof to a head portion, which is conical and diverges outwardly toward the free end of the plug-like member, which is preferably constructed of a resilient material.

3,530,585
MEANS FOR FASHIONING BANDS FOR TAKING IMPRESSIONS OF TEETH

Robert S. Goldstine, 527 A-2 Regis Court,
Andalusia, Pa. 19020
Filed July 9, 1969, Ser. No. 840,160
Int. Cl. A61c *9/00*
U.S. Cl. 32—17 **9 Claims**



By the use of this invention, bands used for taking impressions of teeth in dentistry are quickly contoured to fit subgingivally around the teeth. The band is received in a contoured pattern of shape selected to approximate that of the gum line around the entire periphery of the tooth. This contour is then scribed or cut into the band.

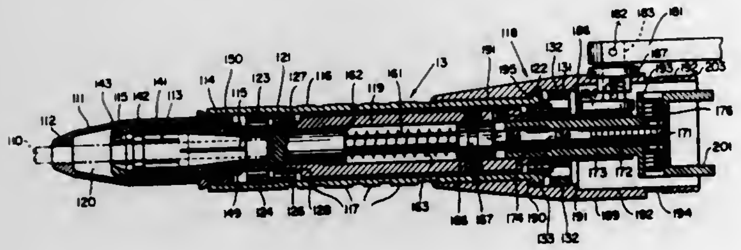
3,530,586
SPEED REDUCER CONSTRUCTION FOR DRIVING DENTAL TOOLS

Egon R. Weickgenannt, Rochester, N.Y., assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York

Original application Feb. 27, 1964, Ser. No. 347,813, now Patent No. 3,309,965, dated Mar. 21, 1967. Divided and this application Jan. 13, 1967, Ser. No. 609,179

Int. Cl. A61c *1/08*

U.S. Cl. 32—26 **10 Claims**



A dental instrument comprising: (1) a motor housing containing a motor, a motor shaft, a speed reducer, and a first power output connection means connected to the motor shaft and a second power output connection means connected to the speed reducer, and (2) a tool housing containing a chuck for holding the shank of a dental tool, a shaft for driving the chuck, a spring pressed collet for clamping a tool shank in the chuck, means for releasing the collet against the spring, and a removable coupling means for coupling the tool shaft to one of the first and second power output connection means. The tool housing and the motor housing have mating attaching means such that when they are attached the coupling means is connected to one of the motor shaft and the speed reducer depending on which removable coupling means is employed.

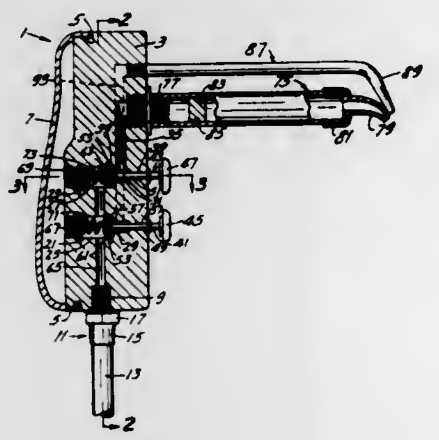
3,530,587
IMPRESSION GUN

Robert Leo Anderson, 89 Wildwood Beach Road, Mahtomedi, Minn. 55115

Filed Sept. 30, 1968, Ser. No. 763,621

Int. Cl. A61c *5/04*

U.S. Cl. 32—60 **4 Claims**



A pneumatically operated gun providing for separate application of an air blast and impression material to one or more teeth prepared for the taking of dental impressions, such gun providing a connection to the compressed air line found in dental offices, which compressed air can be internally regulated by means of manually manipulable valves to provide for the discharge of the air and/or impression material to the region of the tooth being cared for.

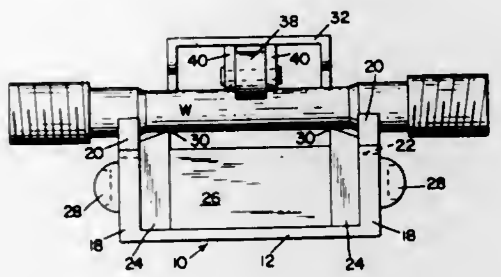
3,530,588
GAUGE LENGTH SCRIBER

Richard Kent Johnson, 299 Pakachoag St., Auburn, Mass. 01501

Filed May 21, 1969, Ser. No. 826,379

Int. Cl. B43i *13/00*

U.S. Cl. 33—21 **3 Claims**



A scriber, for test pieces especially, including a V block base with two spaced knives intersecting the V's and a pivoted arm having rolls thereon in position to hold the test piece down onto the knives.

3,530,589
DRAUGHTING MACHINE

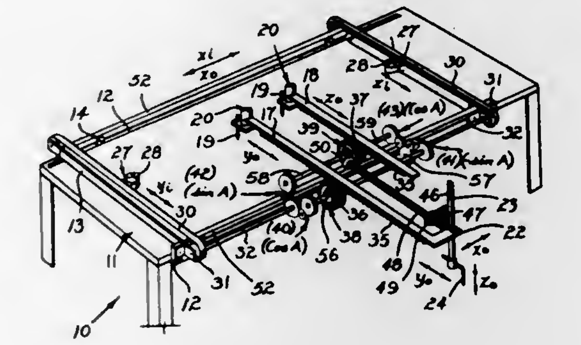
Christopher G. Kelsey, Glenalta, South Australia, Australia, assignor to Data Resolved Tools Pty. Ltd., Plympton, South Australia, Australia

Filed Oct. 5, 1966, Ser. No. 584,507

Claims priority, application Australia, Oct. 5, 1965, 64,809/65

Int. Cl. B43l *13/00*

U.S. Cl. 33—23 **8 Claims**



A draughting machine for interchange of data from one set of orthographic drawings to another, or alternatively from a set of orthographic drawings to a three dimensional object, or alternatively from a three dimensional object to a set of drawings, wherein tracer means and print-out means are coupled to move together for translational displacement in an X direction, but are interconnected by rotational members for differential movement in the Y and Z directions.

3,530,590
PAINT PROPORTIONING APPARATUS

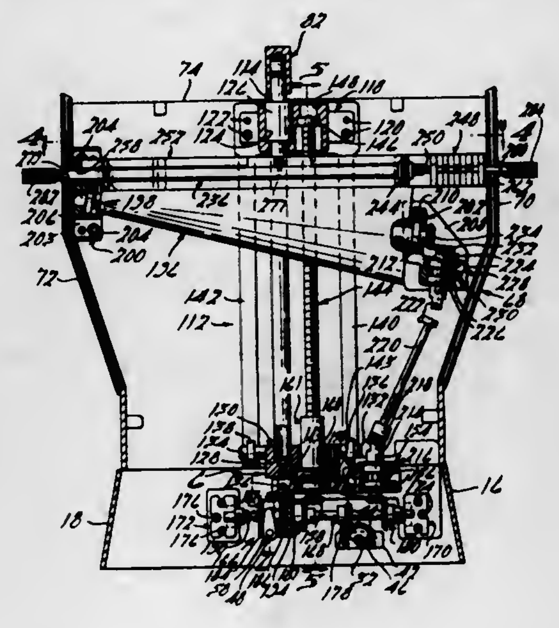
Homer R. G. Dunham, Royal Oak, and Gerald F. Lewis, Berkley, Mich., assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio

Filed Nov. 13, 1967, Ser. No. 682,341

Int. Cl. G01f *23/04*

U.S. Cl. 33—126.7 **26 Claims**

A paint proportioning apparatus comprising a base structure adapted to support a receptacle for receiving proportionate quantities of paint constituents; a vertically disposed probe element adapted to have the lower end thereof inserted within a receptacle mounted on the base structure; means for effecting vertical adjustable movement of the probe element; counter means for indicating the amount of movement of the probe element; means for simultaneously actuating the counter means and the means for effectiing vertical movement of the probe element, and means for varying the ratio of movement of the probe element to the rate of actuation of the counter means.



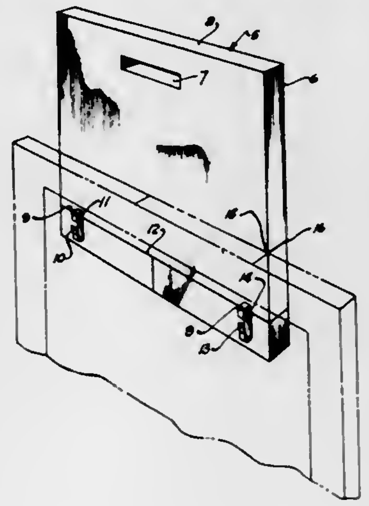
3,530,591
PICTURE OR MIRROR HANGING AID

Wayne V. Moffitt, Hillsborough, Calif. (520 NE. Ione, Camas, Wash. 98607)

Filed Apr. 12, 1968, Ser. No. 720,929

Int. Cl. G01b *3/30*

U.S. Cl. 33—180 **2 Claims**



This invention is used in hanging pictures which are to be hung from a hook or the like secured to a wall at the back of the picture. With my invention the picture can be held in the exact position that it is to hang and my aid used to determine the exact position on the wall to place the hook or hooks. This invention consists of a rectangular board having a rectangular opening in the longitudinal center thereof near the top of the board for the purpose of holding the board against a wall. The board is provided with a horizontal line extending completely across the front of the board and connecting to lines extending across the ends of the board, a portion of a vertical center line is on the front of the board and hooks are provided for securement to the board at suitable points along the horizontal line.

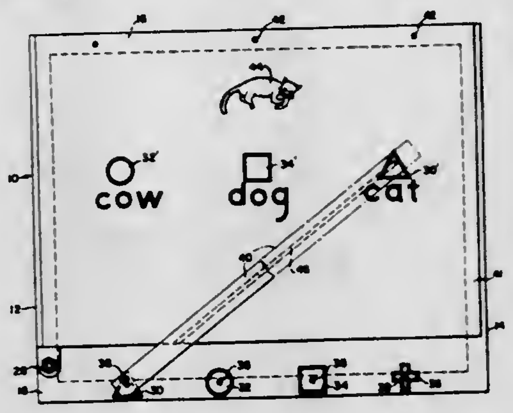
3,530,592
TRAINING AID

John A. Gough, Rte. 2, Nottingham, Pa. 19362

Filed Apr. 24, 1969, Ser. No. 818,929

Int. Cl. G09b *7/10*

U.S. Cl. 35—9 **4 Claims**



A hidden answer training aid including an opaque strip which is placed on a card to designate the selected one of several possible solutions. A normally hidden line remains obscured by the opaque strip when the card is subjected to illumination, but if the learner has selected incorrectly, he observes simultaneously with his selection the correct solution as indicated by the normally hidden line after it has been rendered visible by the illumination.

ERRATUM

For Class 35—35 see:
Patent No. 3,531,575

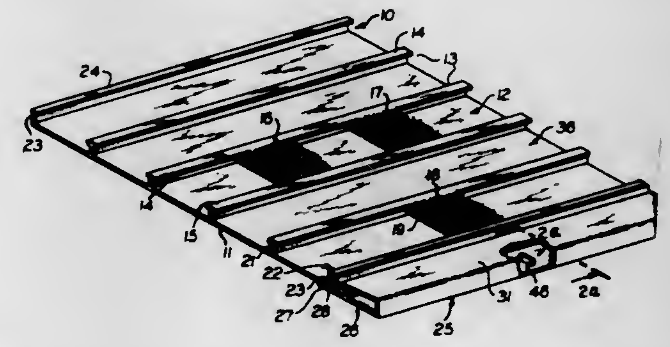
3,530,593
DISPLAY DEVICE FOR CARPET SAMPLES

Fred Howard, New York, N.Y., assignor to Howard Displays, Inc., New York, N.Y., a corporation of New York

Filed Sept. 17, 1968, Ser. No. 760,294

Int. Cl. B65d *73/00*

U.S. Cl. 35—55 **8 Claims**



A substantially flat carrier of extruded plastic having parallel ribs or rails which are profiled for retaining small swatches of carpets. The device clampingly receives a substantially larger sample carpet swatch so that comparison may be carried out for the customer.

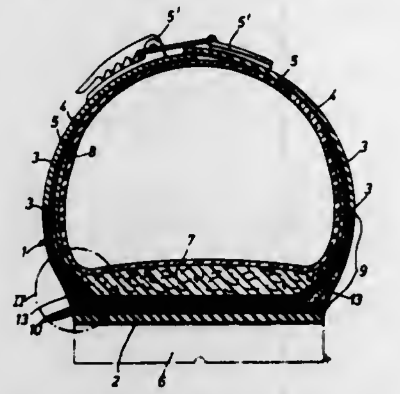
3,530,594
SKI BOOT

Raimund W. Vogel, Lierstrasse 25, Munich, Germany Continuation-in-part of application Ser. No. 541,896, Mar. 18, 1966. This application Sept. 6, 1967, Ser. No. 683,746

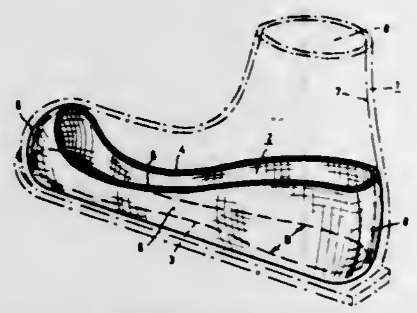
Int. Cl. A43b

U.S. Cl. 36—2.5 **12 Claims**

A ski boot whose foot portion includes a grid-upwardly open shell which receives and supports the foot and is a unitary piece of rigid plastic. A foil of thin and pliable plastic or leather closes the open top of the shell and extends to the shaft portion which may include a forwardly open upper stiff cuff, rigid in normally vertical planes but sufficiently flexible in a horizontal plane to be bent apart for insertion of the heel of the foot into the boot. The cuff is hingedly fastened to the foot portion and guided so that it can pivot only in a plane longitudinal of the boot.

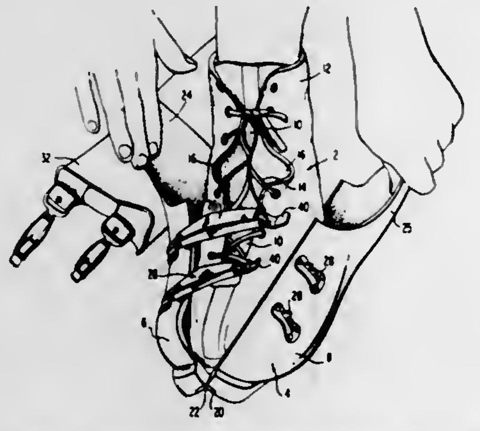


3,530,595
BOOT AND MORE PARTICULARLY SKI BOOT
Raimund W. Vogel, Lierstrasse 25, Munich, Germany
Filed Oct. 7, 1968, Ser. No. 765,489
Claims priority, application Germany, Oct. 18, 1967, 1,685,776
Int. Cl. A43b
U.S. Cl. 36—2.5 6 Claims



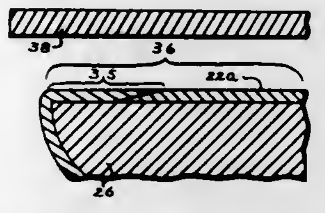
A boot with an inner lining consisting of mainly open cell foam tissue which lining can be adapted, outside the boot, to existing foot anomalies.

3,530,596
SKI BOOT
Willy Kaufmann and Ernst Misteli, Kreuzlingen, Switzerland, assignors to Raichle Boot Company, Ltd., Kreuzlingen, Switzerland
Continuation-in-part of application Ser. No. 700,766, Jan. 26, 1968. This application Mar. 12, 1969, Ser. No. 806,497
Int. Cl. A43b
U.S. Cl. 36—2.5 10 Claims



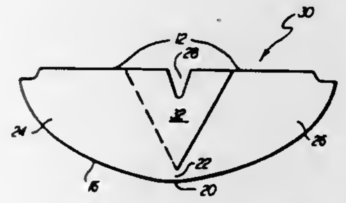
A ski boot has a removable inner boot and a permanently rigid outer boot shell formed of two pivotally interconnected shell portions. The shell portions have upstanding sides which extend upwardly above the ankle to provide lateral support. An opening between the upstanding sides is obstructed by a cuff with adjustable tensioning means which offers variable resistance to forward inclination of the wearer's leg. Clamps for holding the two shells together are adjustable and are provided with means for preventing their interference with the closing of the boot.

3,530,597
BEVELED CORE SHOE CONSTRUCTION AND PROCESS FOR SAME
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 689,884, Dec. 12, 1967. This application Sept. 17, 1968, Ser. No. 760,227
Int. Cl. A43b *9/12*
U.S. Cl. 36—19.5 10 Claims



A shoe construction and process utilizing a planar lasting core that has a beveled, peripheral margin extending around at least the forepart and shank portions of the core. An upper is lasted to the beveled margin of the lasting core and then the high spots of the upper are removed until the outer surface of the lasted upper and the lasting core are substantially co-planar. Alternatively, the upper can be lasted to an L- or T-shaped sewing rib that is secured to the beveled margin of the lasting core. A sole element is secured to the lasted upper, and thereafter, the manufacture of the shoe is completed in a conventional manner.

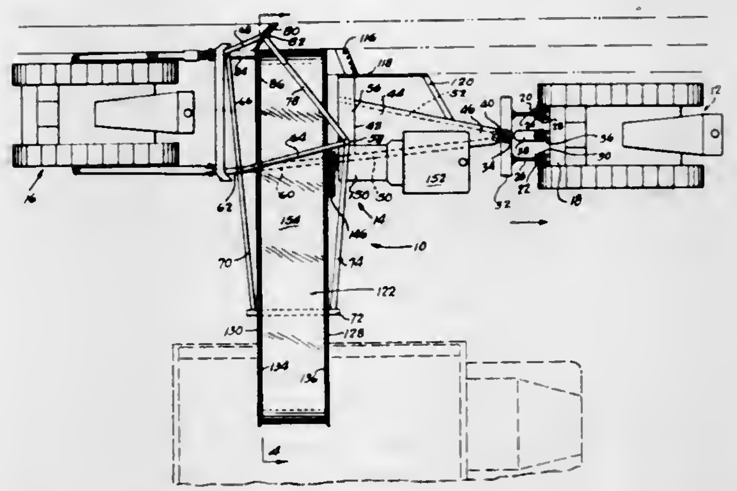
3,530,598
COUNTER WITH THICKENED BACKSEAM
Jacob S. Kamborian, 70 Crestwood Road, West Newton, Mass. 02165
Filed Nov. 14, 1968, Ser. No. 775,723
Int. Cl. A43b *13/42*
U.S. Cl. 36—68 12 Claims



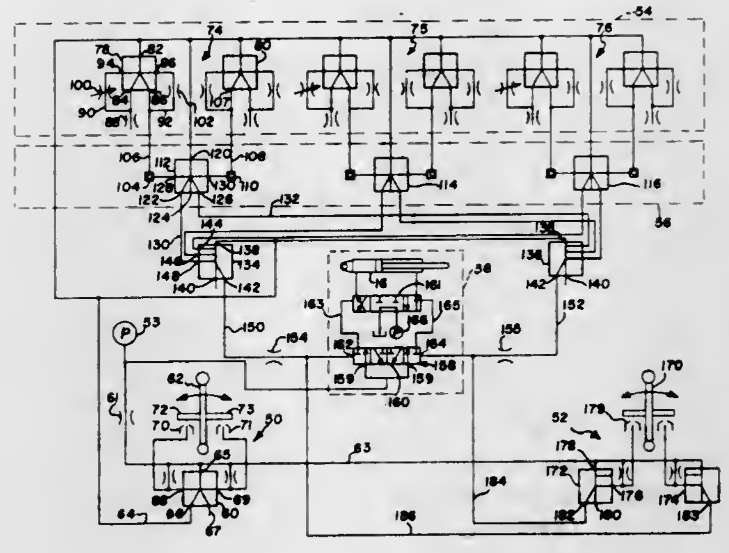
A counter having a pair of overlapping segments connected to each other at a hinge area to form a backseam of double thickness.

3,530,599
ELEVATING BELT LOADER AND EXCAVATION APPARATUS
Francis H. Holland, P.O. Box 20223, Billings, Mont. 59102
Filed Feb. 10, 1969, Ser. No. 804,045
Int. Cl. E02f *5/00;* **B60d** *1/06, 3/00*
U.S. Cl. 37—110 3 Claims

A horizontal platform carrying horizontal and vertical cutting blades and an endless conveyor adapted to discharge excavated material to one side of the platform is coupled to a leading prime mover by a ball and socket coupling which may be vertically raised or lowered while the trailing prime mover is coupled directly to the rear end of the platform by means carried by the trailing prime mover which independently raises and lowers the trailing end of the platform and tilts the same about the longitudinal axis.

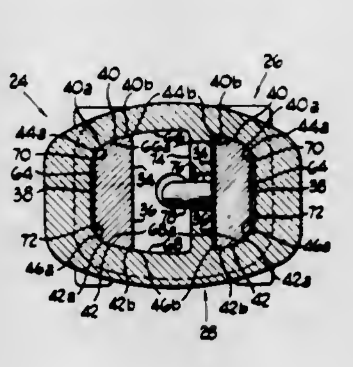


3,530,600
EARTHMOVING SCRAPPER WITH FLUIDIC CONTROL MEANS
Lawrence D. Strantz, Washington, Ill., assignor to Westinghouse Air Brake Company, Peoria, Ill., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 659,112, Aug. 8, 1967. This application Oct. 26, 1967, Ser. No. 678,317
Int. Cl. E02f *3/85*
U.S. Cl. 37—129 6 Claims



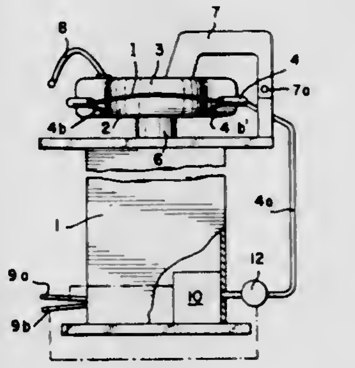
A dust-tolerant, automatic fluidic control for an earthmoving scraper of the elevating type for controlling the depth of cut of a scraper cutting edge in accordance with tractor engine fuel rack setting, drive wheel slippage, and elevator speed, priority of control being given to any fluidic signal inducing upward movement of the cutting edge. Because fluidic conduit lengths in such an application may be in excess of ten feet, and for this reason present problems of line loss and signal transmission time, the present invention provides a plurality of digital fluidic pulse generating means, each including a digital oscillator for generating a pulse at a controlled frequency to be received by an analog or proportional amplifier, which compares this pulse with a reference. The output of the proportional amplifier is ultimately directed to an interface valve for controlling hydraulic flow from a high pressure source to a hydraulic motor controlling the elevation of the scraper cutting edge. A manual override is provided to permit manual control of cutting edge elevation in spite of signals generated by the automatic system.

3,530,601
TOOTH POINT ASSEMBLY FOR EARTH DIGGING STRUCTURES
Gordon E. Stell, River Forest, Ill., assignor to Page Engineering Company, a corporation of Illinois
Filed Feb. 17, 1966, Ser. No. 540,429
Int. Cl. E02f *9/28*
U.S. Cl. 37—142 6 Claims



A tooth point assembly for excavating equipment including a base having a nose portion on which a replaceable tooth point is received and a tooth point having a rearwardly facing cavity for telescoping over the nose of the base characterized in that the base has a pair of forwardly projecting stubs which comprise the nose portion, the stubs having diametrically opposed contacting surfaces generally inclined relative to the major and minor axes of the base and the tooth point cavity has generally mating contacting surfaces so that when the tooth point is driven on the base, the stubs of the base nose are sprung inwardly and the tooth point is secured thereto by the tension exerted on the stubs by the interior cavity of the tooth point.

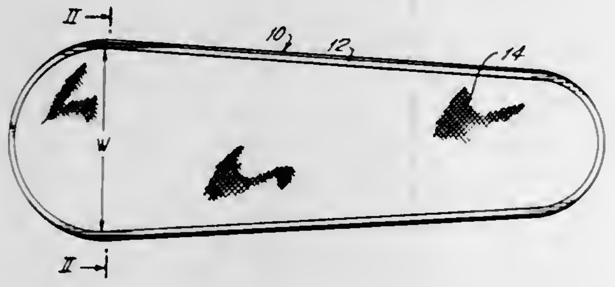
3,530,602
NONSCALD STEAM GARMENT PRESS
Joseph Lascari, Manhasset, N.Y., assignor to American Permac Inc., Garden City, N.Y., a corporation of U.S.A.
Filed Mar. 26, 1969, Ser. No. 810,463
Int. Cl. D06f *71/34*
U.S. Cl. 38—16 3 Claims



In order to prevent the operator of a steam garment press from being scalded, the press is provided with an annular suction channel or tube which lies along the edge of the pressing surfaces of buck and head in a closed position of the press and intercepts and aspirates the steam emitted from between these surfaces. A suction pump or blower is attached to this channel and is only actuated when steam is admitted to the garment positioned between the surfaces.

3,530,603
DIFFUSER FOR STEAM PRESSING MACHINE

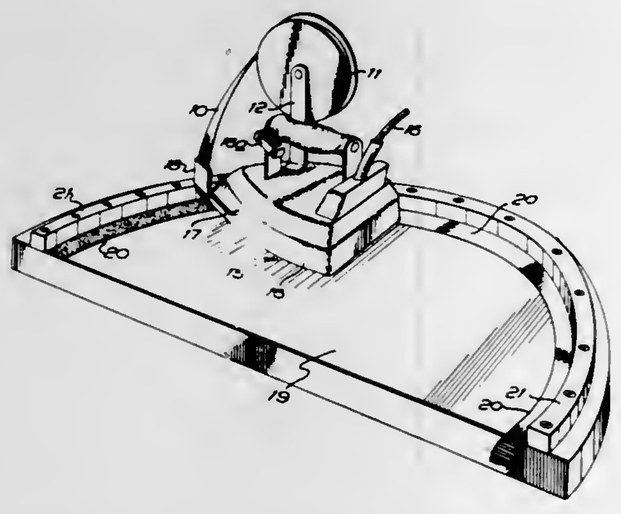
Alexander Kahn, Amityville, and Ernest George Moore, East Meadow, N.Y., assignors to U.S. Dynamics Corp., Nassau County, N.Y., a corporation of New York
Filed Sept. 9, 1968, Ser. No. 758,558
Int. Cl. D06f *8/00*
U.S. Cl. 38—66 **6 Claims**



A pressing plate is provided for a steam garment-pressing machine, said plate being characterized by a shape-retaining arrangement consisting of a steam-permeable metal sheet confined by a rim and assuming a flat or arched profile, there being associated with the metal sheet diffusion means including an asbestos sheet atop which is positioned a heat-resistant felt pad which is covered by a heat-resistant cloth.

3,530,604
PRODUCTION OF WAIST-BANDS

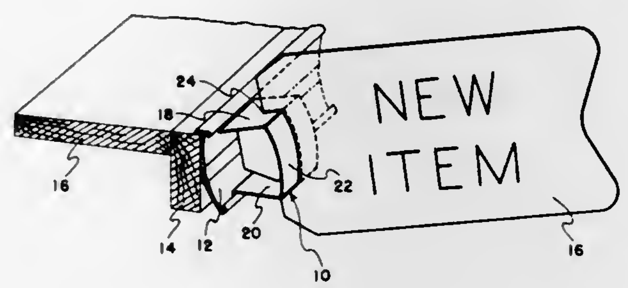
Fred Hardaker, Oldham, England, assignor to Andrew Baron Limited, Oldham, England, a corporation of England
Filed Oct. 3, 1968, Ser. No. 764,899
Int. Cl. D06f *75/00*
U.S. Cl. 38—75 **3 Claims**



A machine for steam-pressing and vacuum-shrinking waist-bands in arcuate strip form useful for inserting into a garment, the machine comprising a curved track perforated for drawing a vacuum through the strip laid thereover and a steam iron on which is mounted the supply reel for a roll of the strip material fed below the forward nose of the iron to steam the strip while vacuum is being applied to set the curvature.

3,530,605
DISPLAY DEVICE

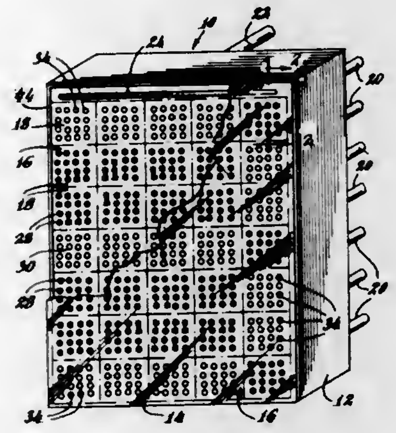
Thomas Gutterson, 802 Bath St., Santa Barbara, Calif. 93101
Filed May 13, 1968, Ser. No. 728,709
Int. Cl. G09f *3/18*
U.S. Cl. 40—11 **5 Claims**



In this invention a spring clip is provided with retaining means for holding an associated attention directing card and is also provided with pointed mounting feet to prevent sideways movement in the conventional price tag molding with which it is used.

3,530,606
LARGE SCALE FLUIDIC CHARACTER DISPLAY

Robert F. O'Keefe, Trumbull, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed Oct. 28, 1968, Ser. No. 771,256
Int. Cl. G09f *9/30*
U.S. Cl. 40—28 **9 Claims**

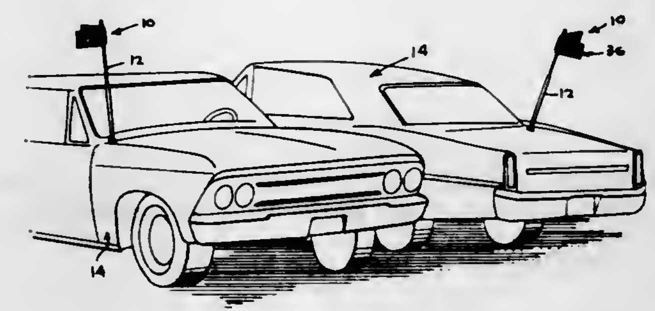


In a large scale fluidic character display of the type in which individual elements appear in different spatial patterns on a display face to form various alphanumeric characters, the elements are each divided into a plurality of sub-elements, and means are provided for insuring that all the sub-elements of an element act in unison for character display purposes. The sub-elements may be either physically or fluidically linked to achieve this result. The area of the display face which is occupied by any one of the sub-elements is but a fraction of the area occupied by the entire element. The decrease in area overcomes the response speed limitations previously encountered with large scale alphanumeric character display devices.

3,530,607
IDENTIFICATION MEMBER

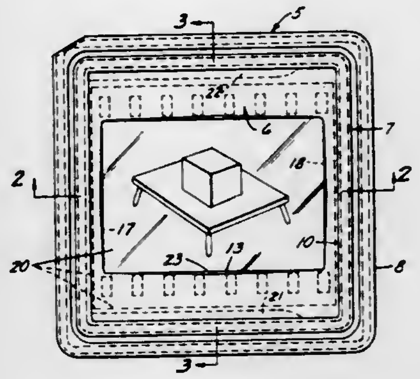
Samuel M. Willis, 6180 SW. 109 Court, Miami, Fla. 33156
Filed Aug. 23, 1968, Ser. No. 754,930
Int. Cl. G09f *7/00*
U.S. Cl. 40—129 **5 Claims**

A pair of panels are connected at a fold portion and have a cord extended through openings formed in the panels. The cord is engageable about an upstanding support both at the location of the openings and at a location above the panels to thereby frictionally engage the panels on the support for identification purposes.



3,530,608
TRANSPARENCY MOUNT

Cedric C. Sovia, Forrest Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 668,456, Sept. 18, 1967. This application June 4, 1968, Ser. No. 734,386
Int. Cl. G09f *1/12*
U.S. Cl. 40—159 **9 Claims**

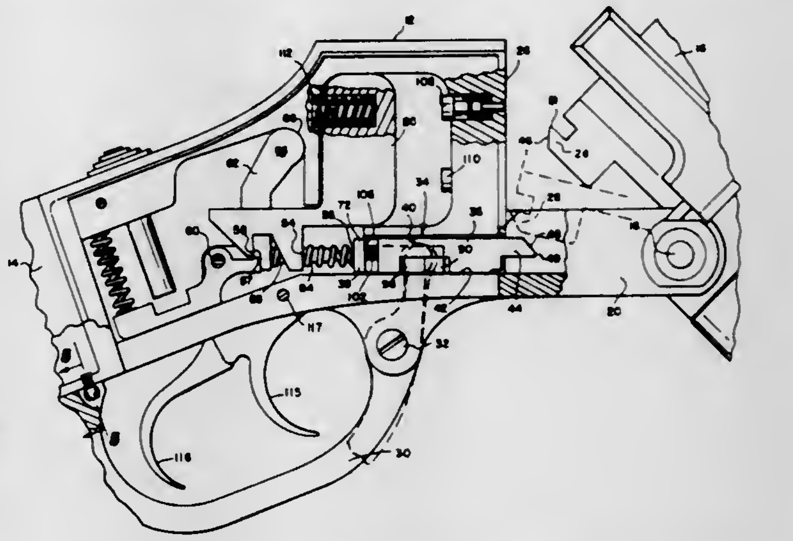


A light-weight transparency mount formed of a molded frame piece and a stamped cap welded together defining a pocket which captures the transparency and which affords insertion and removal of the transparency by flexing the frame piece.

3,530,609
BREECH LOCKING MECHANISM FOR BREAK-ACTION OVER AND UNDER FIREARM

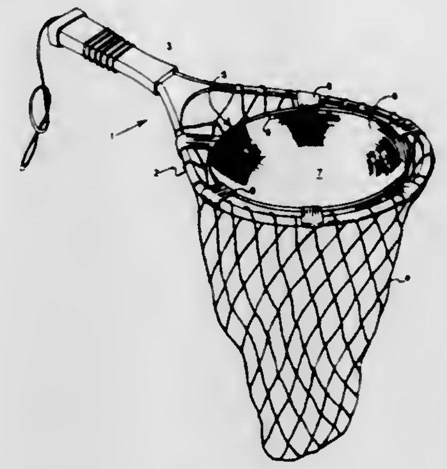
Ralph E. Staggs, 4801 E. Palomino Road, Phoenix, Ariz. 85018
Filed July 29, 1968, Ser. No. 748,527
Int. Cl. F41c *11/02, 11/08, 11/10*
U.S. Cl. 42—43 **12 Claims**

A firearms mechanism comprising an over and under superimposed multiple barrel firearm having a break-type action operable pivotally on a horizontal axis and comprising a breech locking mechanism wherein a pair of relatively movable locking members are operable by a pivoted lever, and wherein one of the locking members is adapted to lock the breech of the firearm mechanism and may move a greater distance than the other of the locking members so that a long stroke may be provided for cocking the hammers of the mechanism, and a relatively short stroke may be provided for locking and unlocking a barrel housing of the mechanism relative to the breech housing thereof, and to thereby insure full cocking of said hammers before the barrel housing is unlocked relative to the breech housing of the firearm mechanism.



3,530,610
FISHERMAN'S WATER ANALYZING APPARATUS

Fred C. Bremer, 4740 Rica Road, Saginaw, Mich. 48603
Filed Nov. 19, 1968, Ser. No. 776,916
Int. Cl. A01k *77/00*
U.S. Cl. 43—11 **6 Claims**

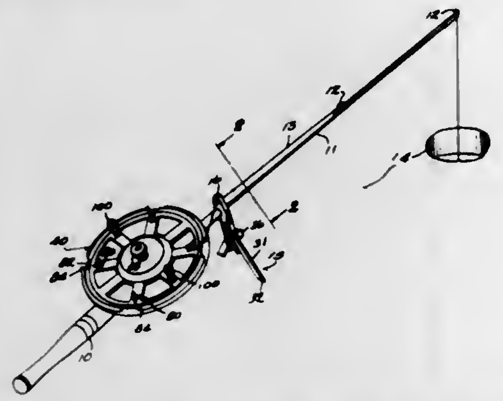


A fisherman's landing net having a loop support to which is secured an open mouth net of relatively coarse mesh, the open mount of the net being closed by netting of relatively fine mesh, whereby dipping the landing net into a body of water will enable the contents of the water to be trapped by the relatively fine mesh netting material for analysis. The fine mesh netting material is removable from the landing net to enable the latter to function in its customary manner.

3,530,611
FISHING REEL AND STAND

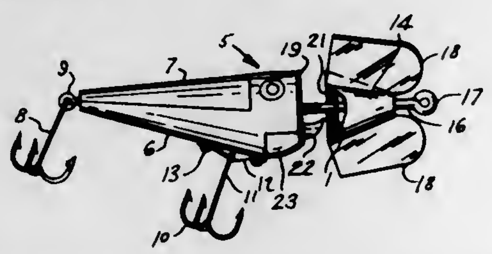
Robert J. Britt, Delavan, Wis., assignor to Swiss-Tech, Inc., Delavan, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 705,763, Feb. 15, 1968. This application Dec. 31, 1968, Ser. No. 798,564
Int. Cl. A01k *89/00, 97/10, 97/12*
U.S. Cl. 43—17 **15 Claims**

A fishing pole having a stand located forward of the handle and a large diameter fishing line reel on the upper side of the handle. The stand includes a pair of foldable legs which are openable to form the stand and are adjustable vertically to vary the height of the end of the pole. The reel has an annular line-storage channel or space around its outer periphery and a peripherally-diverging opening or throat, slightly larger than the thickness of the line with the first line guide on the rod located below the peripheral opening in the reel. A number of line-depth stops are secured to the top of the reel with adjacent reliefs or slots cut in the upper part of the peripheral opening to allow setting of the line at different depths.



3,530,612
FISHING LURE HAVING NOISEMAKER

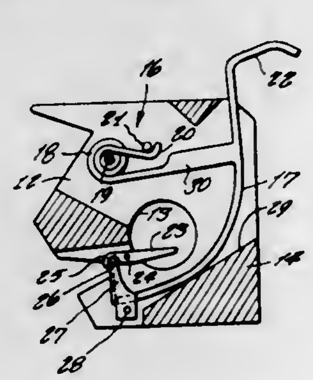
James G. Garrison, Manchester, Ky.
(Rte. 1, Box 125, Monticello, Ky. 42633)
Continuation-in-part of application Ser. No. 685,029, Nov. 22, 1967. This application Feb. 6, 1969, Ser. No. 802,319
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.16 **12 Claims**



A fishing lure body having a member mounted therewith for rotation when the body is pulled through the water. The member is movable parallel to its axis of rotation for movement into engagement with a tooth of a disc, which is supported on the body, when the body is pulled through the water to produce a noisemaking sound. To prevent breaking of the tooth, either the disc or a portion of the rotating member is resiliently mounted to permit relative movement in the axial direction between the tooth and the rotating member when they are in engagement with each other.

3,530,613
RODENT TRAP

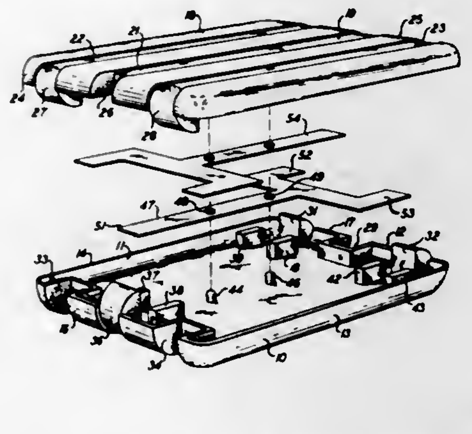
Gardner G. Brubakken, 501 8th Ave., Two Harbors, Minn. 55616
Filed Jan. 23, 1969, Ser. No. 793,361
Int. Cl. A01m *23/30*
U.S. Cl. 43—85 **1 Claim**



An improved trap for mice and other small animals of rodent type, the trap comprising a housing having an opening through opposite sides thereof, the opening having a portion thereof intercepted by a trip-plate which when activated by a mouse passing through the openings, will throw a death spring across the opening to kill the animal during movement therethrough.

3,530,614
TOY

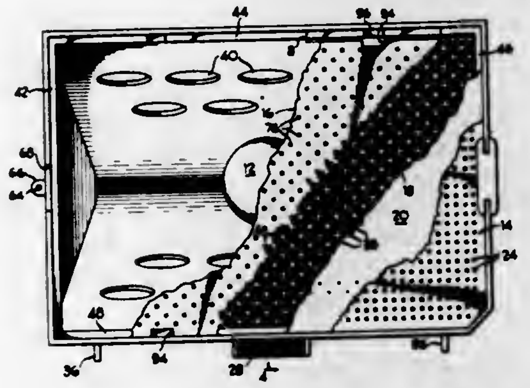
Ned Strongin, Baldwin, N.Y., assignor to Toplay Products, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 3, 1967, Ser. No. 658,261
Int. Cl. A63h *33/00*
U.S. Cl. 46—1 **9 Claims**



A "Jacob's ladder" type toy in which a plurality of blocks each formed from two identical symmetrical complementary disposed plastic block forming elements are joined together by a plurality of block attaching tapes each secured between a pair of spaced raised members on an inner surface of one of the block forming elements. A tape clearance slot is provided in the other block forming member opposite each pair of raised members to allow each tape to extend perpendicularly to the inner surface out of the block. An adhesive is employed to attach the tapes to the plastic block forming elements and a Y shaped element is provided to cooperate with each block forming element to help secure the tapes in the respective block forming elements.

3,530,615
ILLUMINATED DESIGN SET

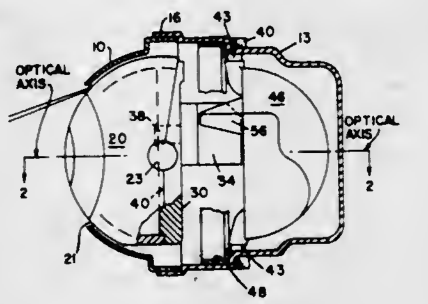
Burton C. Meyer, Chicago, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed May 13, 1968, Ser. No. 728,488
Int. Cl. A63h *33/00*
U.S. Cl. 46—16 **2 Claims**



A toy for creating illuminated designs and means for providing the illusion of motion to the designs including a housing with a light source therein, a pair of perforated sheets and an intermediate grid disposed in covering relation to a front opening in the housing, and a plurality of translucent pegs adapted to be inserted in the front perforated sheet and the grid. The rear perforated sheet is movable to permit light to be transmitted through alternate openings in the grid and front sheet and thereby alternately transmit light to adjacent pegs in the front sheet.

3,530,616
SIDE SLEEPING DOLL EYE

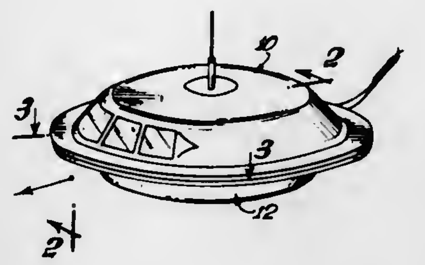
William Leibowitz, Flushing, Frank DeLise, Staten Island, Robert Gardel, New York, and Egon Gorsky, Brooklyn, N.Y., assignors to Dollac Company, Division of Jacoby-Bender, Inc., Brooklyn, N.Y., a corporation of New York
Filed Apr. 3, 1968, Ser. No. 718,435
Int. Cl. A63h *3/40*
U.S. Cl. 46—169 **10 Claims**



The invention relates to doll eyes and more particularly to a unit eye of the sleeping type. The particular feature of the invention resides in a construction for an eyeball and actuator wherein when the doll in which a pair of unit eyes is provided has been oriented so that it is lying down on its side the eyeballs rotate to sleeping position. Normally, with the doll erect, the eyes are open and when placed flat on its back the eyes remain open; however, when rolled to rest on either side, the eyes close.

3,530,617
VIBRATION DRIVEN VEHICLE

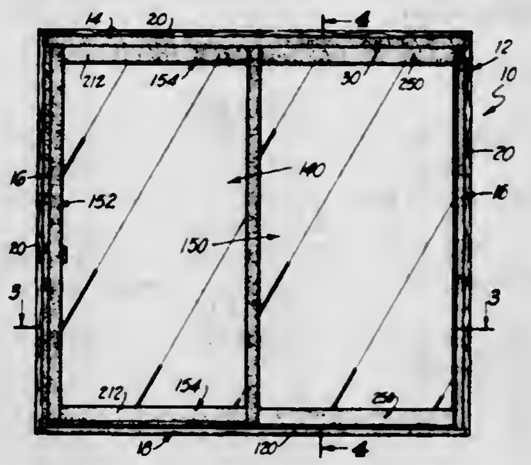
Earle M. Halvorson, 23908 De Ville Way, Santa Monica, Calif. 90265, and Kurt Schwarz, 322 11th St., Malibu, Calif. 90402
Filed July 2, 1968, Ser. No. 742,062
Int. Cl. A63h *29/22*
U.S. Cl. 46—243 **17 Claims**



A vibration driven vehicle, of a toy construction, having a dish-shaped structure with an electric motor mounted therein. The electric motor has rotational unbalance weights, mounted on both ends of its horizontal shaft which rotate at a predetermined speed imparting rotational centrifugal forces, acting in vertical planes thus generating vibration in a vertical plane. The motor is mounted on a unique spring which when vibrating maintains the component of the centrifugal forces only which moves the vehicle forward and eliminates the component which opposes such a movement thereby causing the vehicle to move in a horizontal direction with no visible propelling means.

3,530,618
COMPOSITE DOOR AND WINDOW CONSTRUCTION

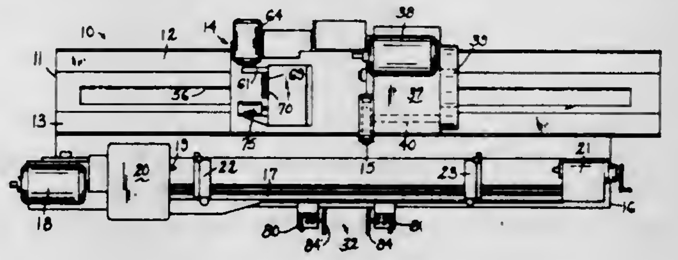
Abraham Grossman, Northridge, Calif., assignor, by direct and mesne assignments, to Panascope, Inc., Santa Monica, Calif., a corporation of California
Filed Oct. 9, 1968, Ser. No. 766,112
Int. Cl. E06b *3/00*
U.S. Cl. 49—501 **6 Claims**



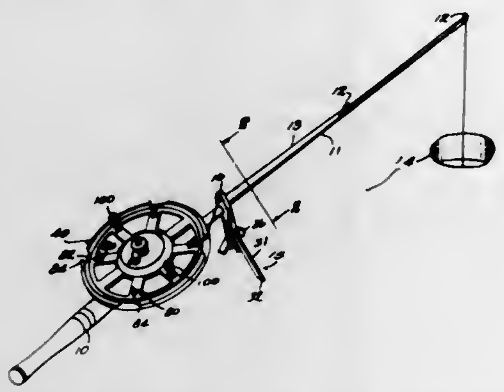
A fenestration device, such as a sliding door or window is provided with a composite frame and sash construction. The frame includes jamb and head members constituted by flexible sheaths formed of polyvinyl chloride or similar plastic and incorporating reinforcing means and the sash includes a plurality of reinforcing members encompassed in flexible sheaths of polyvinyl chloride plastic. The relationship between the plastic and the metallic elements of the frame is such that a weather-block construction is provided which prevents the conduction of external ambient temperatures through the metal reinforcements to the interior of the frame. The same weather-block construction is incorporated in the sash since no direct conduction of ambient temperatures is possible. Furthermore, the reinforcing members of the sash are fabricated from a plurality of sheet metal elements which are positively connected to each other and the sheath means for the reinforcing members is operatively connected to the reinforcing members in such a manner that, when the components of the sash are assembled, relative expansion between the sheath means and the metallic reinforcing members is permitted. In addition, since none of the sheath means are positively connected to each other at their extremities, there is no necessity for welding or covering or securing the adjacent extremities of the sheath means where they happen to be located in contiguity to one another.

3,530,619
GRINDING MACHINE

Alfred T. Parrella, Newtown, and John C. Hinchcliffe, Cheshire, Conn., assignors to Farrel Corporation, Ansonia, Conn.
Filed Sept. 18, 1967, Ser. No. 668,479
Int. Cl. B24b *5/00, 49/00*
U.S. Cl. 51—165 **17 Claims**



This disclosure relates to a grinding machine wherein operator infeed and end feed controls are movably mounted to the bed of the machine for movement along thickness of the line with the first line guide on the rod located below the peripheral opening in the reel. A number of line-depth stops are secured to the top of the reel with adjacent reliefs or slots cut in the upper part of the peripheral opening to allow setting of the line at different depths.



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(Rte. 1, Box 125, Monticello, Ky. 42633)
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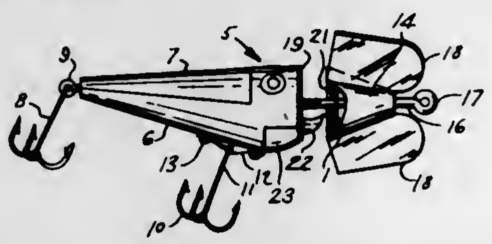
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.16 **12 Claims**



A fishing lure body having a member mounted therewith for rotation when the body is pulled through the water. The member is movable parallel to its axis of rotation for movement into engagement with a tooth of a disc, which is supported on the body, when the body is pulled through the water to produce a noisemaking sound. To prevent breaking of the tooth, either the disc or a portion of the rotating member is resiliently mounted to permit relative movement in the axial direction between the tooth and the rotating member when they are in engagement with each other.

3,530,613
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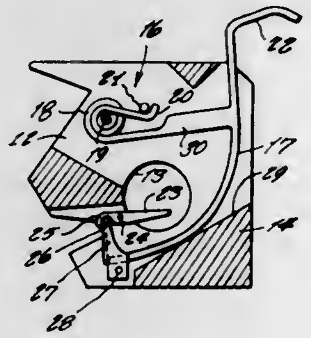
Gardner G. Brubakken, 501 8th Ave.,
Two Harbors, Minn. 55616
Filed Jan. 23, 1969, Ser. No. 793,361
Int. Cl. A01m *23/30*
U.S. Cl. 43—85 **1 Claim**



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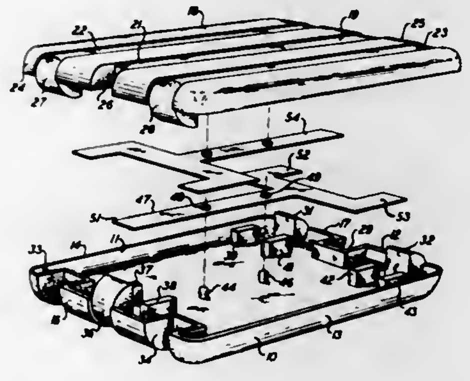
Filed Aug. 3, 1967, Ser. No. 658,261
Int. Cl. A63h *33/00*
U.S. Cl. 46—1 **9 Claims**



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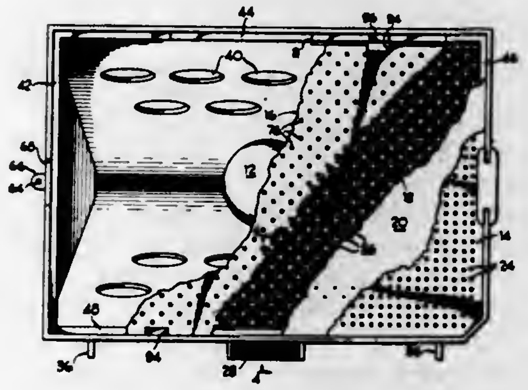
3,530,615
ILLUMINATED DESIGN SET

Burton C. Meyer, Chicago, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed May 13, 1968, Ser. No. 728,488
Int. Cl. A63h *33/00*
U.S. Cl. 46—16 **2 Claims**



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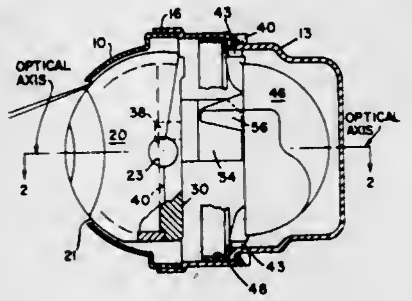
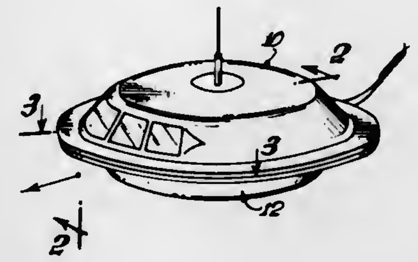
Filed Apr. 3, 1968, Ser. No. 718,435
Int. Cl. A63h *3/40*
U.S. Cl. 46—169 **10 Claims**



The invention relates to doll eyes and more particularly to a unit eye of the sleeping type. The particular feature of the invention resides in a construction for an eyeball and actuator wherein when the doll in which a pair of unit eyes is provided has been oriented so that it is lying down on its side the eyeballs rotate to sleeping position. Normally, with the doll erect, the eyes are open and when placed flat on its back the eyes remain open; however, when rolled to rest on either side, the eyes close.

3,530,617
VIBRATION DRIVEN VEHICLE

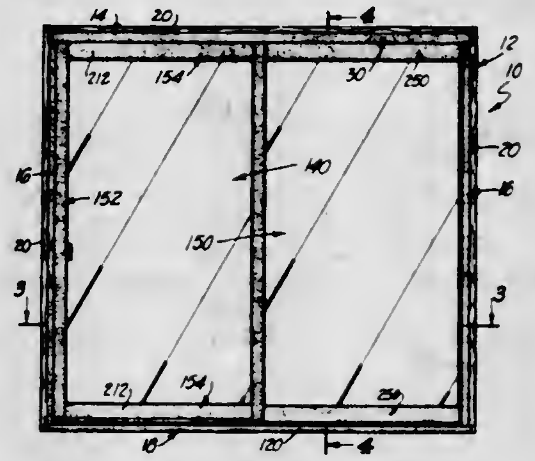
Earle M. Halvorson, 23908 De Ville Way, Santa Monica, Calif. 90265, and Kurt Schwarz, 322 11th St., Malibu, Calif. 90402
Filed July 2, 1968, Ser. No. 742,062
Int. Cl. A63h *29/22*
U.S. Cl. 46—243 **17 Claims**



A vibration driven vehicle, of a toy construction, having a dish-shaped structure with an electric motor mounted therein. The electric motor has rotational unbalance weights, mounted on both ends of its horizontal shaft which rotate at a predetermined speed imparting rotational centrifugal forces, acting in vertical planes thus generating vibration in a vertical plane. The motor is mounted on a unique spring which when vibrating maintains the component of the centrifugal forces only which moves the vehicle forward and eliminates the component which opposes such a movement thereby causing the vehicle to move in a horizontal direction with no visible propelling means.

3,530,618
COMPOSITE DOOR AND WINDOW CONSTRUCTION

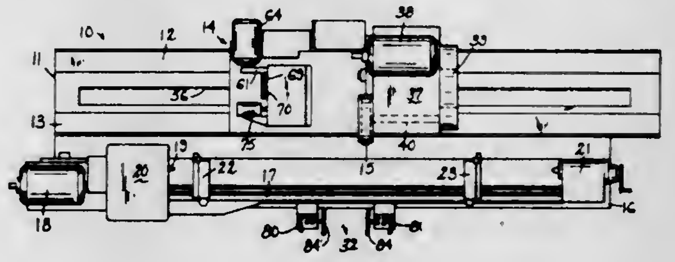
Abraham Grossman, Northridge, Calif., assignor, by direct and mesne assignments, to Panascope, Inc., Santa Monica, Calif., a corporation of California
Filed Oct. 9, 1968, Ser. No. 766,112
Int. Cl. E06b *3/00*
U.S. Cl. 49—501 **6 Claims**



A fenestration device, such as a sliding door or window is provided with a composite frame and sash construction. The frame includes jamb and head members constituted by flexible sheaths formed of polyvinyl chloride or similar plastic and incorporating reinforcing means and the sash includes a plurality of reinforcing members encompassed in flexible sheaths of polyvinyl chloride plastic. The relationship between the plastic and the metallic elements of the frame is such that a weather-block construction is provided which prevents the conduction of external ambient temperatures through the metal reinforcements to the interior of the frame. The same weather-block construction is incorporated in the sash since no direct conduction of ambient temperatures is possible. Furthermore, the reinforcing members of the sash are fabricated from a plurality of sheet metal elements which are positively connected to each other and the sheath means for the reinforcing members is operatively connected to the reinforcing members in such a manner that, when the components of the sash are assembled, relative expansion between the sheath means and the metallic reinforcing members is permitted. In addition, since none of the sheath means are positively connected to each other at their extremities, there is no necessity for welding or covering or securing the adjacent extremities of the sheath means where they happen to be located in contiguity to one another.

3,530,619
GRINDING MACHINE

Alfred T. Parrella, Newtown, and John C. Hinchcliffe, Cheshire, Conn., assignors to Farrel Corporation, Ansonia, Conn.
Filed Sept. 18, 1967, Ser. No. 668,479
Int. Cl. B24b *5/00, 49/00*
U.S. Cl. 51—165 **17 Claims**

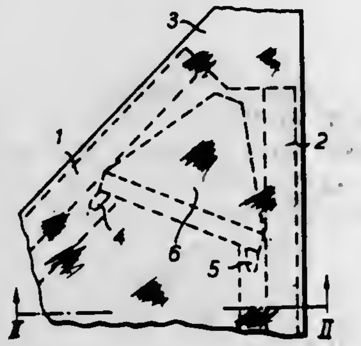


This disclosure relates to a grinding machine wherein operator infeed and end feed controls are movably mounted to the bed of the machine for movement along the bed to allow the operator to take a position at the point of grinding and control the feeds while at such point. The disclosure further relates to new feed controls which comprise an error selsyn which in one mode of operation yields a signal indicative of a selected feed distance selected by a control selsyn, and which in another mode of operation acts as a follower on a monitoring selsyn, geared to the control selsyn so that the error selsyn is normally in a predetermined angular relationship with the control selsyn.

3,530,620

ELEMENT FOR THE CONSTRUCTION OF DOME-SHAPED STRUCTURES

Erik Voje Heleren, Ringerike, Norway, assignor to Selco A/S, Oslo, Norway
Filed Mar. 28, 1968, Ser. No. 716,747
Claims priority, application Norway, Apr. 8, 1967, 167,637
Int. Cl. E04c *1/30;* **E04d** *13/03;* **E04b** *7/10*
U.S. Cl. 52—81 4 Claims

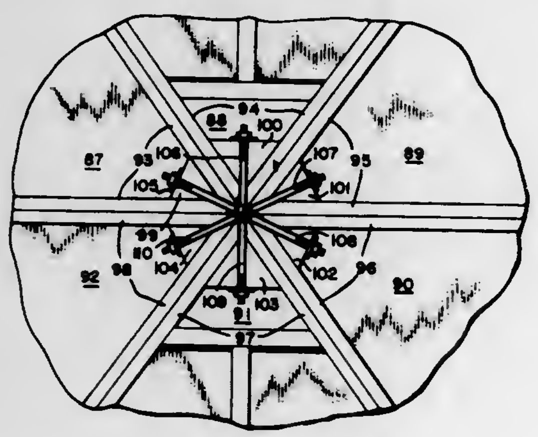


A triangular element for a dome-shaped structure such as a radome, comprises a covered triangular frame the sides of which are interconnected at the corners by means of obliquely positioned plates.

3,530,621

GEODESIC DOMES

John D. Rutzebeck, P.O. Box 30, Hayward, Calif. 94543
Filed Oct. 31, 1968, Ser. No. 772,342
Int. Cl. E04b *1/32, 7/08*
U.S. Cl. 52—81 4 Claims

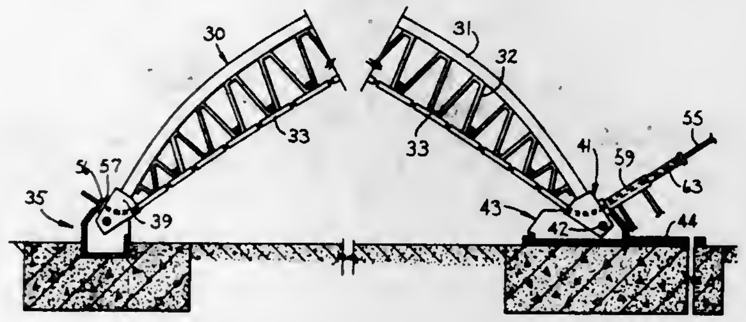


Geodesic dome structure and method of assembly using a predetermined number of panel or wall members of triangular shape which are held together by prefabricated clamping members engaging the adjoining panels in adjacent apexes thereof, thereby clamping these panels together. The clamping members employ 3, 5 or 6 bolts welded together so that the bolts are radially disposed around a common weld joint.

3,530,622

BUILDING APPARATUS AND METHOD

Edwin Jacques Cohen, 20 Moreland Court, Lyndale Ave., London, England
Continuation-in-part of application Ser. No. 639,449, May 18, 1967. This application May 9, 1968, Ser. No. 728,028
Claims priority, application Great Britain, May 23, 1966, 22,827/66; May 9, 1967, 21,597/67
Int. Cl. E04b *1/32;* **E04g** *21/00;* **B23p** *19/04*
U.S. Cl. 52—86 8 Claims

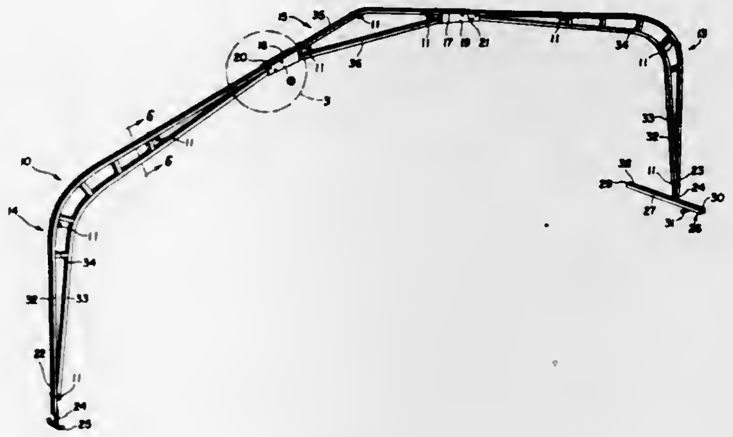


A method and an apparatus for erecting an arched building member by applying a longitudinal compressive force to the member so as to camber it upwardly to the required extent and then locking the cambered member in position.

3,530,623

FRAME MEMBER FOR COLLAPSIBLE STRUCTURE

John Thomas Burton, Toronto, Ontario, Canada, assignor to Fold-Way Covers Limited
Filed Apr. 21, 1969, Ser. No. 817,885
Int. Cl. E04b *1/32, 1/34;* **A45f** *1/00*
U.S. Cl. 52—86 9 Claims

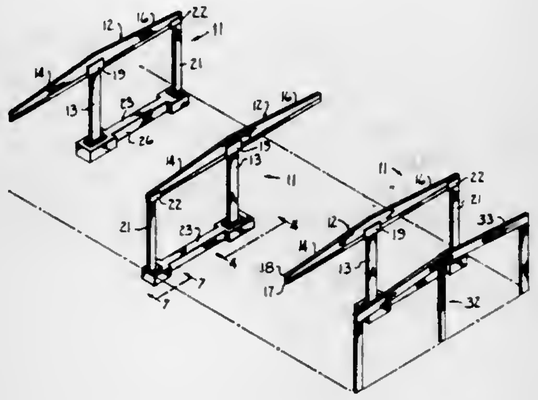


An adjustable arch-shaped frame for use with a permanently anchored track means in a plurality of temporary collapsible structures of various widths having two side portions and a roof portion having a pair of universal side frame sections with upper and lower ends forming the side portions and part of the roof portion of the structure, a removable top frame section forming the intermediate portion of the roof portion of the structure between the upper ends of the side frame sections, carriage means on the lower ends of the side frame sections engaging the track means to support the frame movably at its lower ends, connecting means connected at the junction between each said top frame section and the upper ends of the side frame sections for joining same to the top frame section in alignment whereby the widths of the structures may be varied by substituting top frame sections of different lengths.

3,530,624

STRUCTURAL ELEMENT FOR AIRCRAFT HANGERS AND THE LIKE

Lawrence P. Fones, Richmond, Calif., assignor to T-Hangers, Inc., Vacaville, Calif., a corporation of California
Continuation of application Ser. No. 537,050, Mar. 24, 1966. This application Dec. 2, 1968, Ser. No. 786,537
Int. Cl. E04b *1/342*
U.S. Cl. 52—93 9 Claims

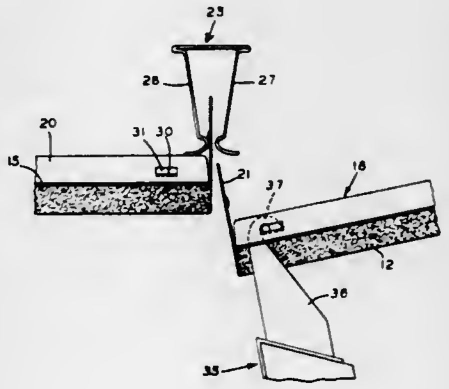


A structural element is described which provides rigid support for a cantilevered beam thereof. The element includes a horizontal metallic beam to which a pair of metallic support columns are secured in right-angular relation at spaced positions. At least one end of the horizontal beam is cantilevered from one of the columns and a tie beam footing structure is secured to the bases of the columns. The footing structure is of reenforced concrete and includes a reenforced tie beam which extends between the column bases to link the same together and thus provide a rigid structure capable of resisting loads applied to the cantilevered portion of the beam.

3,530,625

CEILING PANEL HANGER REMOVAL

James C. Ollinger, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Mar. 29, 1968, Ser. No. 717,221
Int. Cl. B25b *27/14;* **E04b** *5/57*
U.S. Cl. 52—127 3 Claims

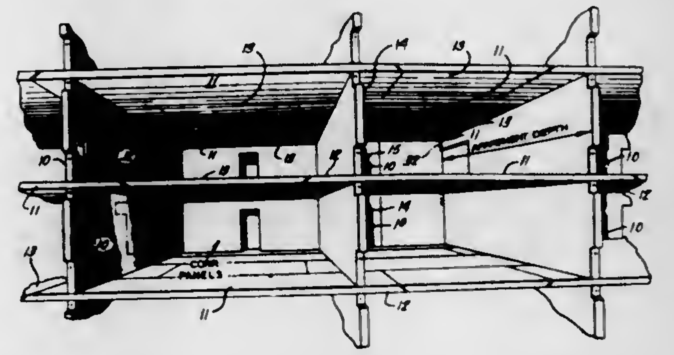


A method and apparatus for the easy removal of ceiling panels in a suspended ceiling system. The ceiling panels are supported by hangers which snap into main runner supports. The main runner supports provide the primary supports for the ceiling system, while the hangers provide the support for the individual panels. Accessibility to the area above the suspended ceiling is desirable and a means must be provided for readily removing the panels to gain access to the area above the ceiling system. The use of a hook tool to slide between adjacent panels to engage the individual hangers will permit a downward movement of the tool to free the hangers from the main runner supports. The freeing of the hangers from the main runner supports thus permits removal of individual panels to gain access to the area above the ceiling system.

3,530,626

CONCRETE PRE-FABRICATED SPACE FRAME STRUCTURE

Istvan Mezes, 47 Prospect St., Westmount, Quebec, Canada
Continuation-in-part of application Ser. No. 624,304, Mar. 20, 1967. This application Dec. 23, 1968, Ser. No. 785,888
Int. Cl. E04h *1/04;* **E04b** *5/02*
U.S. Cl. 52—204 4 Claims

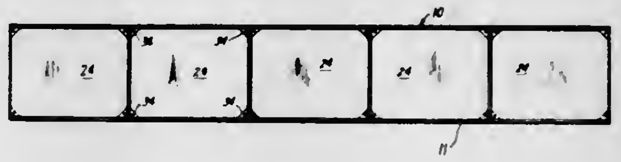


A concrete pre-fabricated space frame structure includes a number of vertically arranged, reinforced concrete, load bearing wall panels spaced apart at the desired width of the bay or room that is to be formed between these wall panels. The floors of the building are formed by floor elements or slabs supported on the load bearing walls.

3,530,627

TRENCH HEADER DUCT SYSTEM

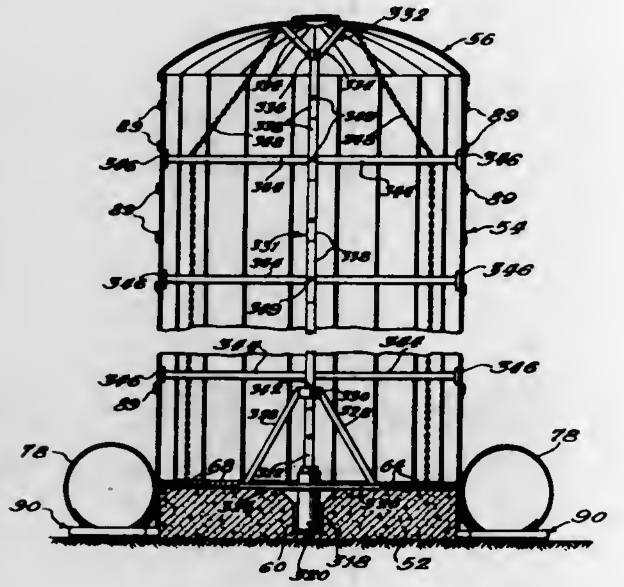
Eugene H. Carter, Bellevue, and Albert C. Wheeler, Seattle, Wash., assignors to General Electric Company, a corporation of New York
Filed July 10, 1968, Ser. No. 743,776
Int. Cl. E04b *5/48;* **E04f** *19/08;* **H02g** *3/12*
U.S. Cl. 52—221 13 Claims



A trench header duct system complete with straight length sections and the following sub-assemblies compatible therewith: elbow, T, cross, and end cap assemblies, up-elbow, cabinet riser and connecting flange, and expansion joints; the straight length sections each including a U-shaped duct trough, a pair of cover support angles adjustably supported on respective opposed side wall portions of the duct trough, a pair of screeding and anchoring angles supported in juxtaposed relation to the cover support angles, and a cover having trim portions in perpendicular relation thereon wherein the cover is reversible between a screeding position in which the cover trim portions are in abutting relation with the cover support angles and a finished position in which the flat bottom surface of the cover is in substantial abutting relation with the cover support angles.

3,530,628
SILO

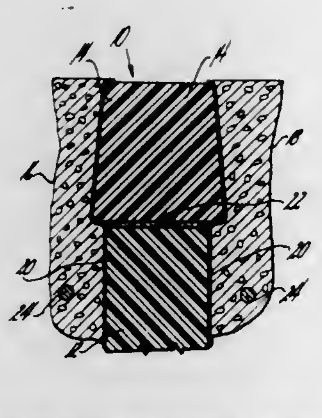
Robert G. Ferris, Harvard, Ill., and Howard J. Ferris, Gulfport, Fla., assignors to Starline, Inc., a corporation of Delaware
Filed Nov. 20, 1967, Ser. No. 684,366
Int. Cl. E04h *7/22;* **E06b** *3/54*
U.S. Cl. 52—248 **25 Claims**



A permanent silo structure formed by a method including the steps of assembling a plurality of transversely precurved, coiled wall members around the perimeter of a base, with the free ends of the wall members extending vertically upwardly and terminating in a common horizonal plane; inserting filler members between each of the wall members to create a sealed structure; assembling a roof to the free ends of the wall members; incrementally applying an upward force to unroll the coiled wall members to elevate the structure; and securing compressive members in vertically spaced positions around the perimeter of the wall members and filler members after each increment of upward force is applied.

3,530,629
FILLER FOR CONCRETE JOINTS

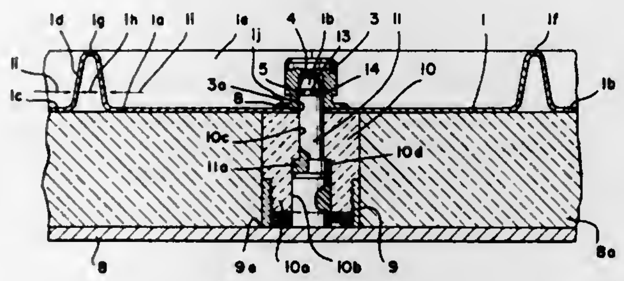
Casimir Kozikowski, 44 Crescent St., New Britain, Conn. 06051
Filed Dec. 30, 1968, Ser. No. 787,901
Int. Cl. E01c *11/10;* **E04f** *15/14*
U.S. Cl. 52—396 **2 Claims**



The filler comprises an elongated sheet of compressible material, such as cellular plastic, cork or the like, in any desired thickness. At least the broad faces of the sheet are covered by a fabric, preferably a fairly open mesh glass cloth, and coated with an epoxy resin which gives the sheet board-like rigidity without surrendering its compressibility. In a preferred form, brackets are secured to the faces of the thus prepared sheet by an epoxy cement to support longitudinally extending steel rods which facilitate attachment of the filler to reinforcing steel members in the concrete construction, add strength to the filler, and which also provides reinforcing for the concrete adjacent the filler sheet. The preferred form also includes an exposed edge portion which can be removed, if desired, after application of the filler in a concrete construction, to provide space for insertion of a joint sealer element.

3,530,630
TANK ASSEMBLY FOR THE TRANSPORTATION OF LOW-TEMPERATURE FLUIDS

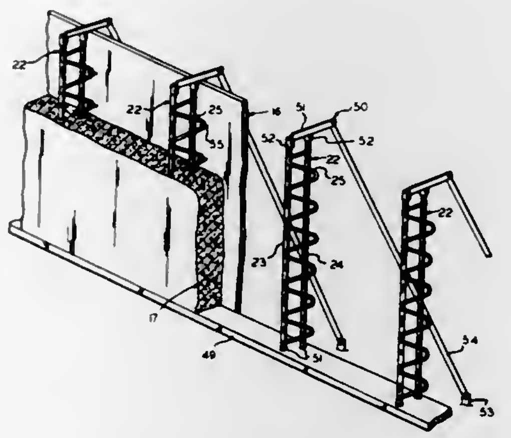
Wilhelm Samaga, Trostberg, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany
Filed Apr. 12, 1968, Ser. No. 721,042
Claims priority, application Germany, Apr. 25, 1967, L 56,337
Int. Cl. E04b *1/38*
U.S. Cl. 52—410 **7 Claims**



A receptacle assembly for the retention of low-temperature fluids, e.g. a tankship for the transportation of liquefied gases at low temperature, wherein a sheet-metal wall is affixed to a further wall with an intervening layer of thermal insulation with the aid of a cap mounted upon the sheet-metal wall and adapted to be thrust over a pin extending through the sheet-metal wall from an insulating post anchored to the other wall and to engage this pin via a spring ring received in a groove of the cap.

3,530,631
BUILDING STUD AND WALL CONSTRUCTION

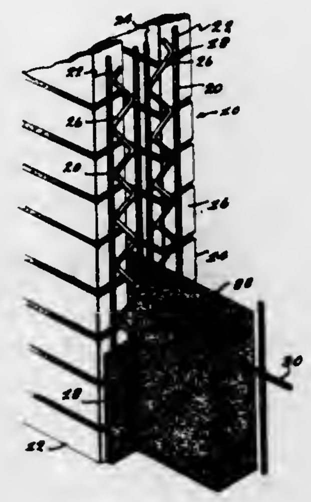
Karl Guddal, Peger Road, Fairbanks, Alaska 99701
Original application May 21, 1965, Ser. No. 457,611. Divided and this application Dec. 1, 1967, Ser. No. 707,902
Int. Cl. E04b *1/18, 2/56;* **E04g** *21/02*
U.S. Cl. 52—414 **3 Claims**



Reinforced concrete panel including a body of concrete having a plurality of building studs therein, wherein each building stud includes a reinforcing bar and at least each alternate building stud includes guide means for guiding construction of the panel and for positioning the reinforcing bars of the studs within the body.

3,530,632
PRECAST MASONRY WALL PANEL AND METHOD OF PRECASTING SAME

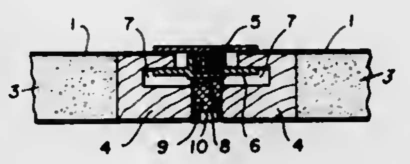
Mangum W. Sloan, 2836 Sunset Drive, Charlotte, N.C. 28209
Filed Apr. 3, 1968, Ser. No. 718,405
Int. Cl. E04b *2/04, 2/84*
U.S. Cl. 52—425 **9 Claims**



A precast masonry wall panel having a pair of spaced wythes of masonry units bonded together by a concrete core, with each wythe having metal rod reinforcing lattices partially embedded in mortar between the masonry units and projecting into the concrete core. Metal attaching plates are secured to the ends of the concrete core adjacent the side edges of the panel for attachment in a building structure by welding. This wall panel is precast by arranging masonry units in a bed and applying mortar between the masonry units with the reinforcing lattices positioned in the mortar in projecting disposition, and then positioning a pair of these precast wythes in spaced face-to-face relation with concrete therebetween to form the core that bonds, the wythes together and embeds the projecting lattices in the core.

3,530,633
BUILDING PANEL

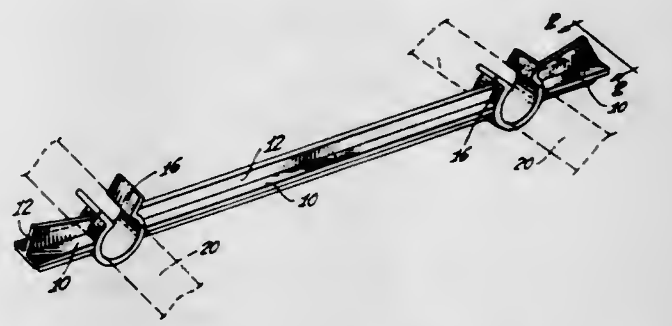
Harley D. Scott, Wexford, Pa., assignor to Elwin G. Smith & Company, Inc., Pittsburgh, Pa.
Filed May 29, 1968, Ser. No. 733,019
Int. Cl. E04b *1/40, 2/88*
U.S. Cl. 52—460 **5 Claims**



Building panel construction comprising a concealed fastener system for assembling either horizontal panels or vertical panels on a building wall frame. The concealed fastener system eliminates the necessity of access to the inside of the panels when assembling the wall panels, that is, of having a man on the inside to drill through and insert fasteners. Novel extruded clips or battens of aluminum, for example, are used in substantially U-shaped openings provided in opposed blocks which form side strips of the building panels. There is provided between the front faces of the panels a pre-molded filler and continuous bead of caulking to provide a sealed joint and yet to allow for ample expansion and contraction of the panels as the result of temperature changes.

3,530,634
PLASTIC SUPPORT BRACKET FOR CONCRETE REINFORCING RODS

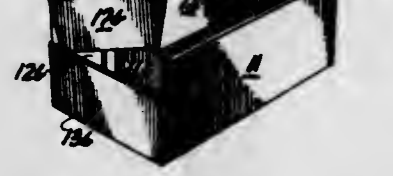
Gerald F. Adams, Redondo Beach, Calif., assignor to Chariot Manufacturing Company, doing business as Adams Brothers Plastic, Hawthorne, Calif., a corporation of California
Filed Oct. 11, 1968, Ser. No. 766,858
Int. Cl. E04c *5/16;* **E04g** *17/06*
U.S. Cl. 52—687 **2 Claims**



A plastic support bracket is provided for supporting the reinforcing rods in reinforced concrete while the concrete is being poured. The particular support bracket of the present invention is especially suited for use, for example, in casting reinforced concrete beams. The support bracket of the invention serves to position the reinforcing rods precisely at predetermined distances from the sides of the concrete beams, or other similar members, and the brackets serve to assure that the reinforcing rods are positively held so as to extend along the beam in parallel relationship with the sides thereof throughout the length of the beam.

3,530,635
CONTAINER CONSTRUCTION AND BLANK THEREFOR

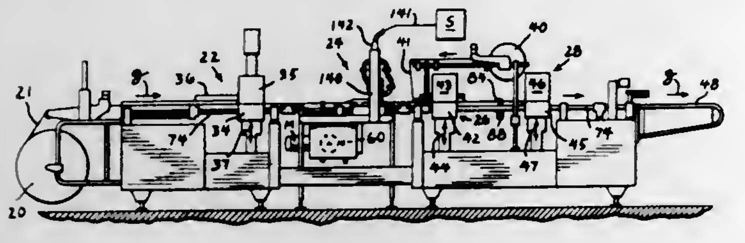
John Peter Fischer, Grand Rapids, Mich., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Continuation of application Ser. No. 645,536, June 12, 1967, which is a continuation of application Ser. No. 473,747, July 21, 1965. This application Sept. 18, 1968, Ser. No. 767,037
Int. Cl. B65b *43/39*
U.S. Cl. 53—29 **4 Claims**



A collapsed tubular carton blank for an end loading carton comprising top, bottom and side panels, the fold connection between the top panel and one side panel being formed by exposed rendable means, and end flaps connected to such panels, the top and bottom end flaps being of a combined length substantially greater than the width of the side panels, and the side end flaps cooperating with the bottom end flaps to form end walls having pockets open upward for the top end flaps. The blank is erected to open-ended, tubular form, the product is inserted endwise thereinto, and the respective end flaps are closed by closing the side end flaps, then the top end flap, and finally the bottom end flap, each bottom end flap being closed over and overlying a portion of the respective top end flap to confine such portion of the top end flap in the respective pocket.

3,530,636
FILLING APPARATUS AND METHOD

Harry W. Weprin, Fred W. Villemure, and Roger H. Stohlquist, Rockford, Ill., assignors to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Jan. 17, 1969, Ser. No. 792,081
Int. Cl. B65b *1/04, 3/12*
U.S. Cl. 53—29 **20 Claims**

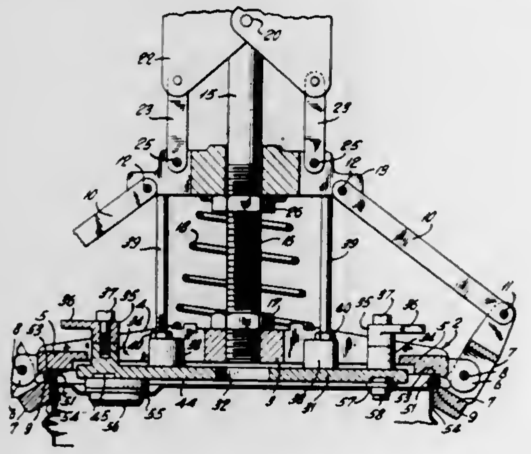


The apparatus includes a conveyor which intermittently advances a sheet of plastic past forming, filling, and sealing stations. Nine containers are formed during the dwell period and covers are sealed onto the containers after filling and during a subsequent dwell period. Three nozzles fill nine containers during one cycle of the apparatus by filling three containers while the sheet is advanced and indexing to fill the remaining containers during the dwell period. The drive includes a multipurpose cam which advances the sheet, indexes the nozzles, controls the fill, and performs other functions incident to the foregoing.

The method includes intermittently advancing a longitudinal row of containers, moving a nozzle along with one of the containers and dispensing a material into the one container as it is advanced, and moving the nozzle in the opposite direction to a position above a second container and dispensing the material into the second container while it is stationary.

3,530,637
METHOD AND APPARATUS FOR SEALING OPEN HEAD CONTAINERS

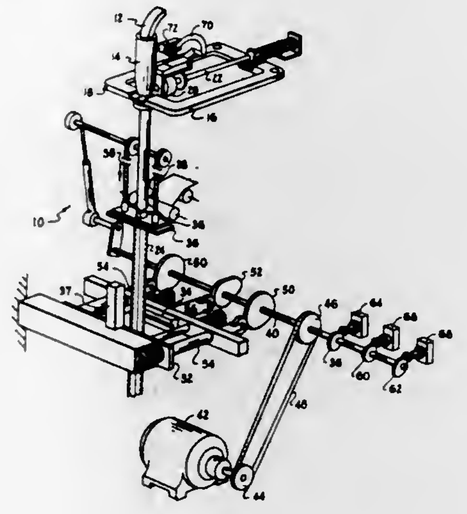
Peter Rezner, Beamsville, Ontario, and Philip A. Sciamonte, St. Catharines, Ontario, Canada, assignors to American Flange & Mfg. Co. Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,665
Int. Cl. B65b *7/28*
U.S. Cl. 53—42 **10 Claims**



A method and apparatus for sealing lug covers on to open head pails. The sealing operation is performed by a segmented crimping annulus which has associated with it means for applying a dispensing closure member to an opening formed in the lug cover.

3,530,638
COIN WRAPPING MACHINE

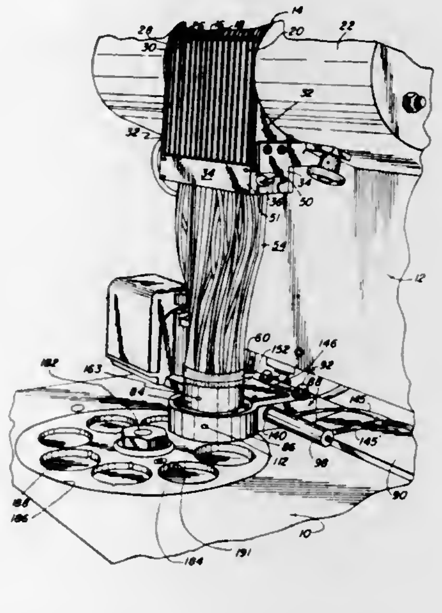
John K. McCollough, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed Apr. 4, 1969, Ser. No. 813,609
Int. Cl. B65b *57/16*
U.S. Cl. 53—77 **9 Claims**



Method and apparatus to detect the improper alignment of coins in a coin collection tube prior to the transfer of coins to a coin wrapping station and to stop the operation of the coin wrapping machine if the coin collection tube is not empty.

3,530,639
PILL BOX FILLER

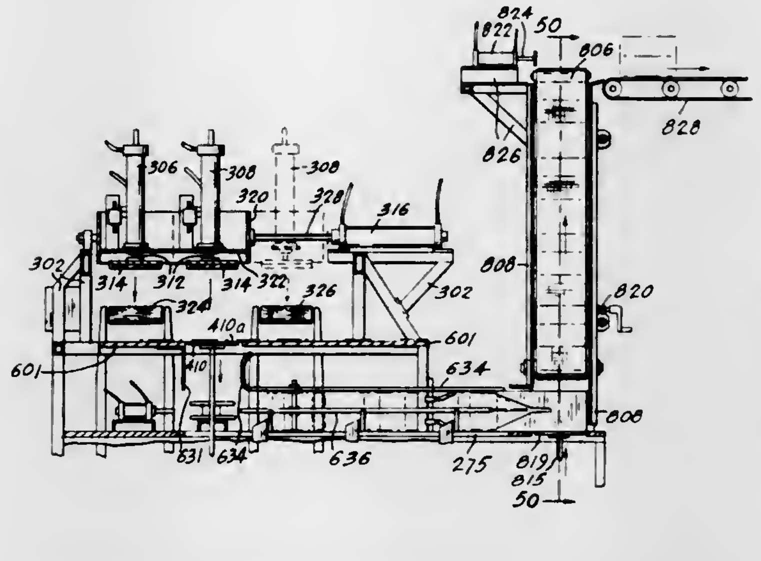
Charles F. Bross, Chicago, Ill., assignor to Merrill Machinery Co., Chicago, Ill., a corporation of Illinois
Filed Nov. 12, 1968, Ser. No. 774,815
Int. Cl. B65b *57/20*
U.S. Cl. 53—78 **16 Claims**



This disclosure describes a device for filling compartmented containers such as pill boxes or so-called dial packs and includes a tablet feeding system whereby predetermined numbers of tablets are sequentially conveyed in an oriented line, dropped into an upper manifold having passageways communicating with a lower manifold of fixed tubes through which the tablets pass by gravitational force to a rotary or oscillating ring manifold holding the outlet ends of the tubes in a circular arrangement and communicating with the spaces between flexible, radially and vertically disposed ribs therein into the compartments of a container held in filling position by a rotary container locating plate. Means are included to (1) time the sequential deliveries, (2) orient the container and its compartments with the rotary locating plate and the rotary ring manifold, (3) coordinate the sequential deliveries or discharges of the conveyor with the relative positions of the oscillating ring manifold and the rotating container locating plate to sequentially fill the compartments of the container, (4) to count the number of tablets discharged, and (5) to stop the device without losing count. To operate the device the empty containers are placed in recesses of the locating plate and filled containers are removed from the plate after moving under the oscillating ring manifold. Other embodiments are disclosed.

3,530,640
BUNDLING MACHINE

Wolfgang Hoffmann, Beaconsfield, Quebec, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada
Continuation-in-part of application Ser. No. 416,929, Dec. 8, 1964, now Patent No. 3,354,600. This application Oct. 6, 1966, Ser. No. 584,817
Claims priority, application Canada, Oct. 9, 1964, 913,682
Int. Cl. B65b *11/18, 13/20, 61/24*
U.S. Cl. 53—124 **22 Claims**

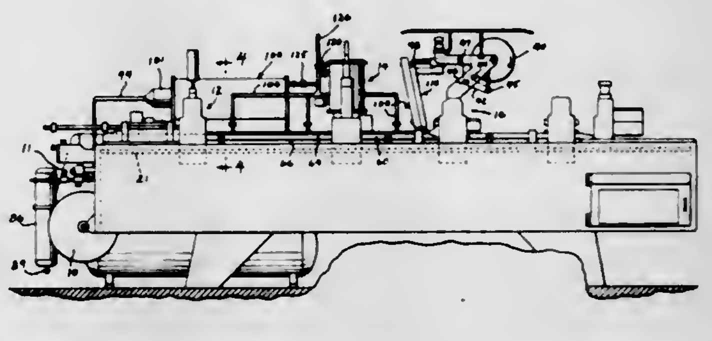


Apparatus for continuously packaging commodities, generally under compression, including upper and lower stations or platforms and an elevator operable therebetween and in conjunction with a commodity retaining pusher, wrapper and commodity feeding components for orienting a wrapper and commodity on the elevator at the upper station whereafter they are transported and formed in compact relationship as they are moved to the lower station and thereafter wrapper-tucking folding is accomplished to complete the package generally at the lower station.

3,530,641
SANITARY PACKAGING MACHINE

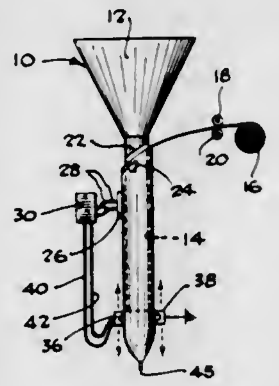
Roger C. Bergstrom, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Filed Sept. 9, 1968, Ser. No. 758,396
Int. Cl. B65b *31/02*
U.S. Cl. 53—167 **12 Claims**

Apparatus is provided for forming containers in a strip of thermoplastic material and for advancing the strip to filling and sealing stations. A protective shroud extends from the forming station to the sealing station. Apparatus is provided for removing moisture and bacteria from the air and feeding it to the shroud at a relatively low pressure so the containers are maintained in a sanitary atmosphere until sealed.



3,530,642
APPARATUS FOR SEALING FILM

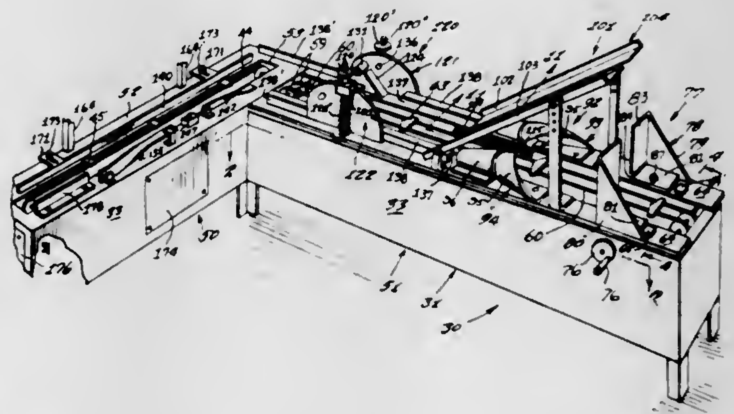
John Leimert, 2000 Center St., Northbrook, Ill. 60062
Continuation of application Ser. No. 615,171, Feb. 10, 1967. This application May 15, 1968, Ser. No. 729,315
Int. Cl. B65b *51/22*
U.S. Cl. 53—180 **5 Claims**



An apparatus for sealing plastic film into an enclosed form with high frequency electrical energy, the film first being formed into a closed shape and continuously sealed in this shape, said apparatus contemplating the sealing of film such as polyvinyl chloride rapidly and without interruption in the seal.

3,530,643
APPARATUS FOR PACKAGING BOOKS

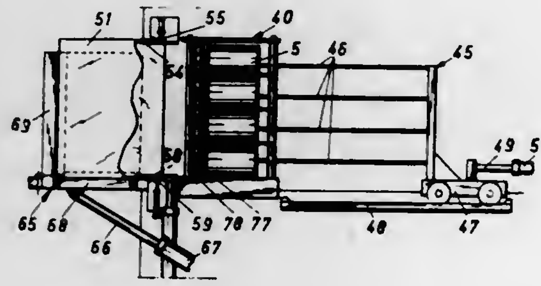
Hans L. Levi, New York, N.Y.
(63 Mountain View Road, Demarest, N.J. 07627)
Filed May 23, 1968, Ser. No. 731,471
Int. Cl. B65b *11/18, 25/14, 61/00*
U.S. Cl. 53—183 **12 Claims**



A machine for enclosing books and similarly shaped articles within mailing cartons by high-speed mass production methods, the machine including a magazine from which unfolded cartons are automatically fed. Subsequently the books are automatically or hand fed one at a time upon each of the unfolded cartons, and then the carton is folded around the book and sealed by adhesive or tuck flap; the enclosed book thus being completely packaged and ready for mailing.

3,530,644
PACKING MACHINE

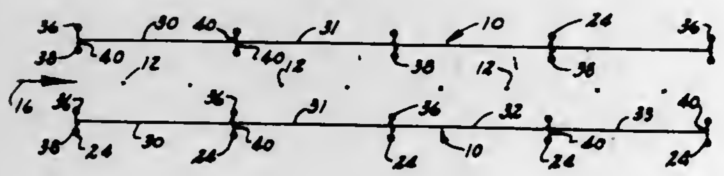
Erik Gunnar Kapare, Goteborg, Sweden, assignor to Billeruds, AB, Saffle, Sweden, a corporation of Sweden
Filed Feb. 5, 1968, Ser. No. 703,137
Int. Cl. B65b *5/06, 43/26*
U.S. Cl. 53—187 **5 Claims**



The present invention has reference to a machine for packing objects in paper bags in an automatic way. This has been achieved by means for clamping the walls of the paper bag during the filling of the bag and for keeping the walls apart during the filling operation without influencing the pattern of the objects to be packed and in such a way that there is no risk that the objects cause damage on the bag.

3,530,645
COLLECTOR PLATE CONSTRUCTION

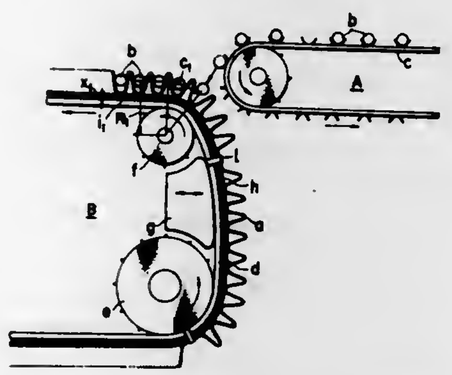
Michael P. De Lisio, 5228 N. Pebblecreek Road, Birmingham, Mich. 48010
Filed Mar. 21, 1968, Ser. No. 715,006
Int. Cl. B03c *3/76*
U.S. Cl. 55—112 **5 Claims**



This invention proposes a collector plate construction for electrostatic precipitators wherein the plate is formed by a rigid framework and a series of panels attached thereto. Rapper force applied to the framework causes vibratory impulses to be set up about substantially the entire periphery of each panel so that dust accumulations are dislodged from all panel surfaces. The framework rigidifies the collector plate construction and prevents twisting thereof during transit from factory to site of installation, as well as during erection of the precipitator. By making the framework separate from the panels it is possible for each of them to use the gage material which is most appropriate to its respective structural and functional character, thus minimizing costs and improving performance.

3,530,646
APPARATUS FOR CONTINUOUSLY PACKING ARTICLES INTO CONTAINER

Iwao Amada, Ikuji Inowaki, and Shin-ichi Uchino, Saitam, Japan, assignors to Eisai Kabushiki Kaisha, Tokyo, Japan
Filed Mar. 18, 1968, Ser. No. 713,870
Claims priority, application Japan, Mar. 23, 1967, 42/17,645
Int. Cl. B65b *5/04, 19/34*
U.S. Cl. 53—236 **4 Claims**



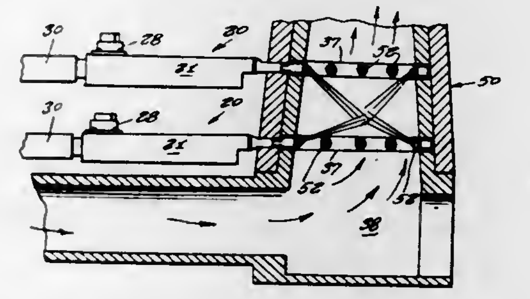
An apparatus is disclosed for continuously packing articles into a container with corrugations of the size for holding a plurality of articles of a given size. A first endless conveyor having means thereon for supporting articles to be packed at regular intervals thereon has a path changing from horizontal to a vertically downward direction. A second endless conveyor has a fixed circular length and has means thereon for carrying a container with a series of corrugations secured to the second conveyor with a gap between the bottom surface of the container and the external surface of the conveyor and with the corrugations opening outwardly away from the second endless conveyor. A region of at least a portion of the length of the second conveyor is curved in an arcuate shape and is below the point of the shift in the path of the first endless conveyor so that the articles dropped in succession from the first conveyor fall into the corrugations of the container on the second conveyor, which corrugations are spread apart as the second conveyor moves along the arcuately curved region. Means are operatively associated with said second conveyor for changing the size of the radii of the arcuate portion of the second endless conveyor.

ERRATUM

For Class 55—112 see:
Patent No. 3,530,645

3,530,647
APPARATUS FOR CONTROL OF AIR POLLUTION

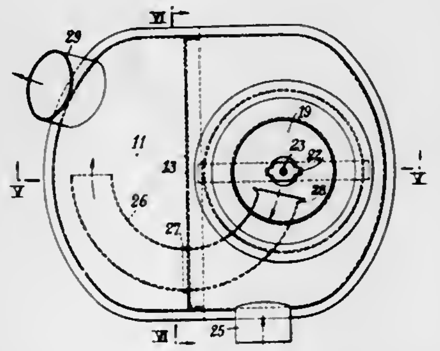
Bertha Wetzel, 2840 Bailey Ave., Bronx, N.Y. 10463
Filed Feb. 1, 1965, Ser. No. 429,524
Int. Cl. B01d *51/00*
U.S. Cl. 55—263 **3 Claims**



A device for dissolving and disintegrating incomplete products of combustion, the device being a flue having an interior peripheral wall, a hollow steam distributor ring mounted peripherally in the flue wall having its surface substantially flush with the interior wall of the flue, the ring having a plurality of spaced apart distributor nozzles protruding radially inwardly beyond the interior wall of the flue, a conduit passing through the flue wall and connecting the ring to a source of superheated steam.

3,530,648
COMBINED AIR-FILTER AND INDUCTION SILENCER

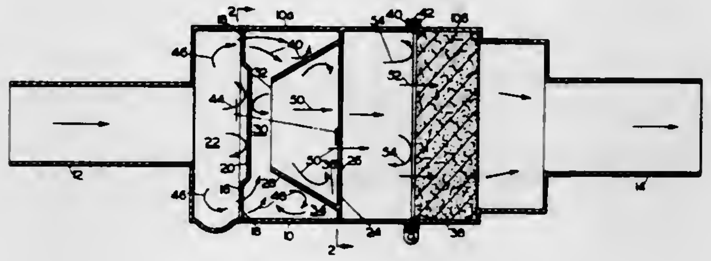
Raymond A. Ravenel, Sceaux, France, assignor to Société Anonyme André Citroën, Paris, France
Filed Mar. 7, 1968, Ser. No. 711,257
Claims priority, application France, Apr. 18, 1967, 103,170
Int. Cl. B01d *27/08*
U.S. Cl. 55—276 **5 Claims**



A combined air-filter and induction silencer for machines sucking a gaseous fluid, such as compressors, internal combustion engines, etc. The combined air-filter and induction silencer according to this invention comprises in the direction of flow of the induction stream at least a first chamber and a second chamber interconnected by a coupling duct, and said second or downstream chamber has a relatively high inherent resonance frequency, higher than the inherent frequency of the first or upstream chamber, and said coupling duct interconnecting said chambers is arranged with a view to introduce a greater pressure drop in the direction opposite to the normal direction of flow of the incoming gaseous stream.

3,530,649
AIR POLLUTION CONTROL DEVICE FOR ENGINES

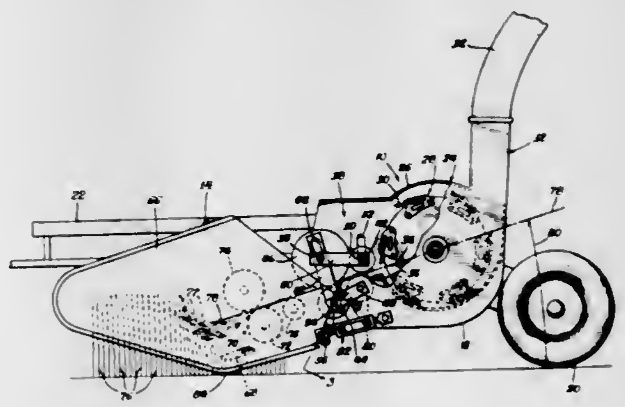
Fred W. Porsch, P.O. Box 245, Roy, Wash. 98580; Chester M. Shelton, 15018 E. Bingham, Tacoma, Wash. 98446; and Lawrence O. Dove, Rte. 1, Box 160, Roy, Wash. 98580
Filed June 28, 1968, Ser. No. 741,111
Int. Cl. B01d *50/00*
U.S. Cl. 55—316 **3 Claims**



The air pollution control device hereof includes a tubular casing having an inlet end for attachment to the exhaust outlet of an engine. Within the casing adjacent the inlet end is a first transverse baffle or wall having a plurality of apertures adjacent its outer edge through which the waste products of combustion such as exhaust gases, soot, etc. pass. This first baffle has a central indentation to cause an agitation of the said waste products. A second transverse baffle or wall is disposed between the first baffle and a filter, and a forwardly extending cone-shaped wall is secured to the second baffle. This cone-shaped wall is arranged to produce further agitation in the waste products of combustion. The second baffle is provided with an enlarged central opening through which the waste products of combustion pass on their way to the filter. The filter is of a type to remove the solid particles from the gases and also to remove obnoxious gases if desired.

3,530,650
FORAGE HARVESTER WITH VARIABLE ATTITUDE CONVEYOR AND SELECTIVELY ATTACHABLE ROW AND NON-ROW HARVESTERS

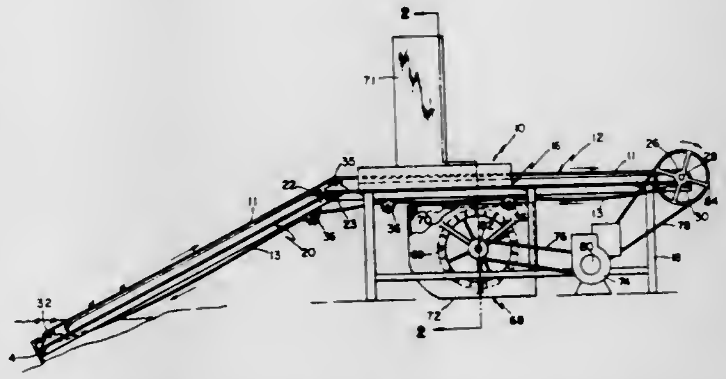
Carmen S. Phillips, Downers Grove, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,546
Int. Cl. A01d *43/00*
U.S. Cl. 56—2 **15 Claims**



A main unit including a processing means, such as a chopper, and a plurality of attachments, one for a row crop and one for a non-row crop for example, the row crop attachment delivering the plants to the processing means in butt-end-down position, and the non-row crop attachment delivering the plants in butt-end-up position. Means are provided for attaching the desired one of the attachments so that it delivers the cut plants to the processing device along a straight line trajectory.

3,530,651
CRANBERRY HARVESTER

Walter Marland Rounsville, Box 255, Nantucket, Mass. 02554
Filed Oct. 3, 1967, Ser. No. 672,496
Int. Cl. A01d *45/08*
U.S. Cl. 56—9 **9 Claims**

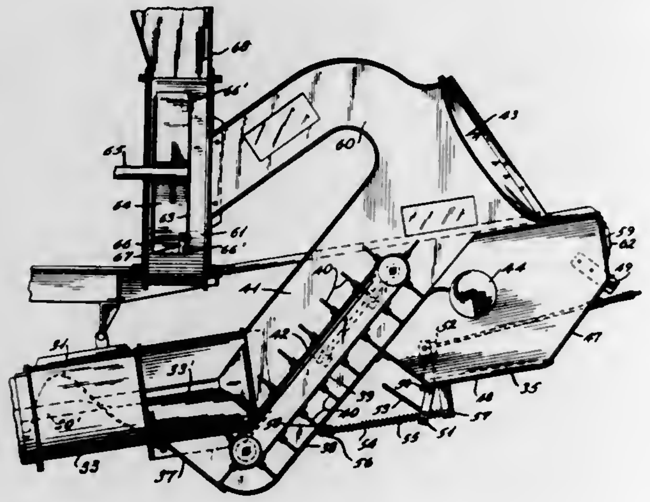


A cranberry harvester including an inclined ramp, an endless open conveyor extending around and engaging a conveyor support at the lower end of the ramp, a motor for advancing the conveyor, a baffle mounted adjacent and extending transverse the ramp lower end with a first longitudinal edge adjacent the portion of the conveyor engaging the support and a second longitudinal edge below the ramp, a wiper secured to the baffle and engaging the conveyor, and a blower for producing an airstream of uneven intensity mounted below the conveyor in position for blowing upwardly through a portion of the conveyor.

3,530,652

COTTON HARVESTER WITH MEANS FOR SEPARATING MATURE COTTON FROM GREEN BOLLS AND DEBRIS

William R. Long, Zebulon Vance Long, and Philip J. T. Rawlins, Tarboro, N.C., assignors to Long Manufacturing Company, Tarboro, N.C.
Filed Sept. 2, 1966, Ser. No. 576,874
Int. Cl. A01d *45/18*
U.S. Cl. 56—12 **6 Claims**

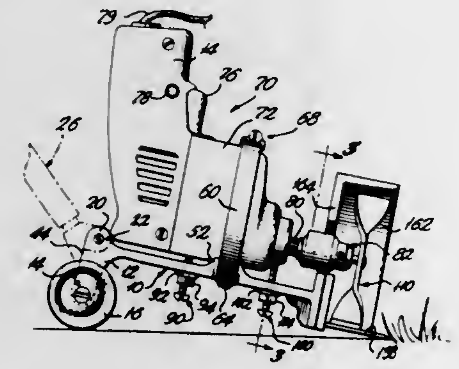


A mobile harvester for cotton having a housing with means for introducing cotton thereinto, and for conveying the cotton by both pneumatic and mechanical means through the housing in a predetermined path of travel, and for cushioning and separating the cotton and foreign matter, allowing the heavier particles to fall by gravity upon being halted by such cushioning means, and the lighter particles to be conveyed, cleaned and deposited in a collection area.

3,530,653

LAWN EDGE AND HEDGE TRIMMER

Vivian L. Ott, 7328 Hampton Blvd., Apt. 3A, Norfolk, Va. 23505
Filed Jan. 30, 1968, Ser. No. 701,590
Int. Cl. A01d *53/14*
U.S. Cl. 56—25.4 **12 Claims**

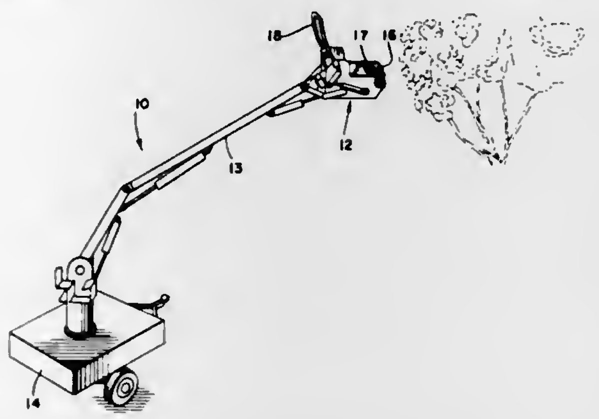


A body means has wheels rotatably mounted at one end thereof and a fixed ledger blade mounted at the opposite end thereof. A conventional power drill is held in place on the body means and means is provided for accurately adjusting the position of the power drill. A rotatable cutting blade or cutter means is connected with the power drill and cooperates with the fixed, ledger blade to cut vegetation. A guard means is mounted adjacent to the rotatable cutter means, and a handle for manipulating the apparatus is pivotally interconnected with the body means adjacent the wheels supported thereby.

3,530,654

FRUIT PICKER HEAD

Louis T. Staats, Sr., Rte. 1, Lincoln University, Pa. 19352; and Cecil D. Misener, 1050 Minnehaha Ave., and Frank B. Innis, 1020 Minnehaha Ave., both of Clermont, Fla. 32711
Continuation-in-part of application Ser. No. 661,649, Aug. 18, 1967. This application Aug. 14, 1969, Ser. No. 850,005
Int. Cl. A01g *19/00*
U.S. Cl. 56—328 **11 Claims**

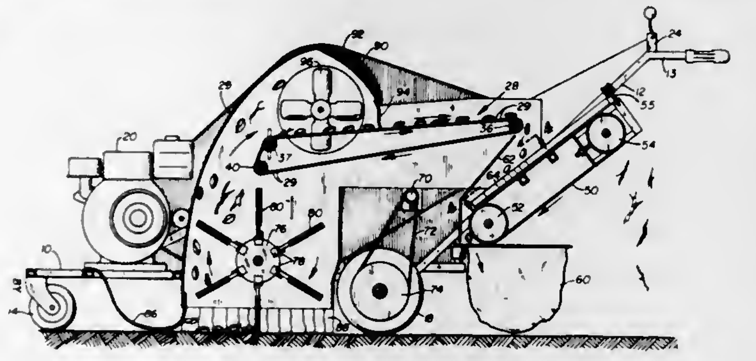


An open-top receptacle carried by a movable support and provided at its front portion with an upstanding picker comb and with an auger rearwardly of the picker comb so that when the comb engages behind fruit on branches, the fruit is twisted off by the auger. A U-shaped bail is pivotally and slidably connected to the receptacle for movement from a raised position downwardly and forwardly over the picker comb to bring fruit-laden branches into engagement with the comb, whereupon the bail moves rearwardly over the comb to a retracted position adjacent the auger to bring the fruit in contact with the latter.

3,530,655

NUT HARVESTER

Richard W. Whitney, 1107 E. 4th, and Lawrence O. Roth, 713 Pine St., both of Stillwater, Okla. 74074
Filed Feb. 9, 1968, Ser. No. 704,427
Int. Cl. A01g *19/00*
U.S. Cl. 56—328 **2 Claims**

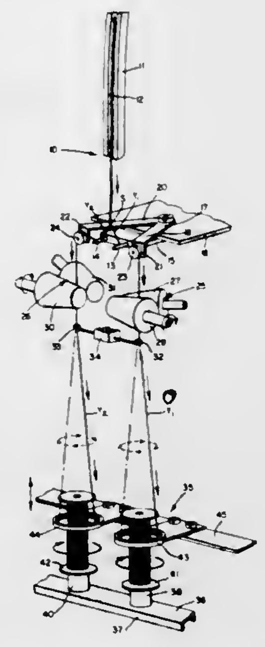


Rubber sweep fingers direct nuts from the ground upward where they are diverted rearwardly upon a first conveyor. A transverse blower removes light trash with nuts and larger sticks conveyed to an inclined second belt separator designed to carry and remove heavier sticks and trash oppositely to the nuts which roll down the belt and collect in a removable hopper.

3,530,656

MULTIPLE TWIST YARN TEXTURIZING APPARATUS AND METHOD

William Kirk Wyatt, Lansdale, Pa., assignor to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Filed Oct. 17, 1968, Ser. No. 768,234
Int. Cl. D02g *1/00, 1/02;* **D01h** *13/28*
U.S. Cl. 57—34 **6 Claims**

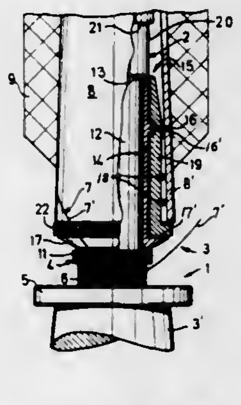


Apparatus is provided for texturizing yarn in two stages; first by applying false twist to the yarn, heatsetting the same in a false twisted condition, and removing the false twist therefrom; with the second stage then comprising the winding of yarn into packages in such a manner that real twist is applied, which further texturizes the yarns, the real twist being applied by winding the yarns individually over the end of a spool, package or the like, and guiding such yarn being wound by means of a ring disposed about the spool and moveable between its ends. The ring has a traveler which travels about the ring at a rate dependent upon the peripheral take-up speed of the yarn being wound onto a spool, and the delivery speed of yarn from the false twisting apparatus.

3,530,657

SPINDLE, PARTICULARLY FOR TEXTILE MACHINES

Gerhard Grau, Ebersbach, Germany, assignor to Zinser-Textilmaschinen-Gesellschaft mit beschrankter Haftung, Ebersbach, Germany, a corporation of Germany
Filed Apr. 11, 1969, Ser. No. 815,346
Claims priority, application Germany, Apr. 13, 1968, 1,760,184
Int. Cl. D01h *9/16*
U.S. Cl. 57—34 **33 Claims**

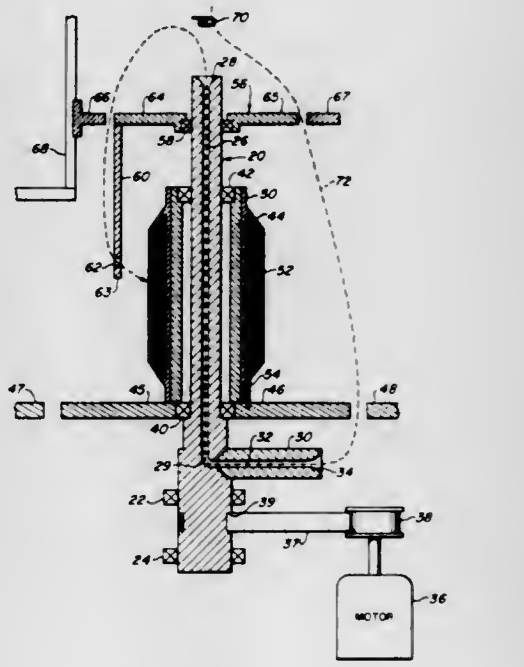


The spindle of a textile machine is provided with a yarn cutting device which comprises a driving sleeve member axially slidably held on the spindle and frictionally coupled to the inserted bobbin and a driven sleeve member axially slidably held on the spindle and carrying a knife. When the full bobbin is moved upwardly on the spindle to effect its removal, the driving member is carried axially upward with it. During its axial displacement, the driving member, by means of a worm coupling, imparts a rotary motion to the driven member and the knife, whereby the yarn, leading from the cop to a reserve winding location therebelow and tensioned against the knife, is rapidly and securely severed.

3,530,658

YARN TWISTER

Dennis E. Johnson, Cambridge, Mass., assignor to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Nov. 17, 1969, Ser. No. 877,375
Int. Cl. D01h *1/10*
U.S. Cl. 57—58.67 **9 Claims**

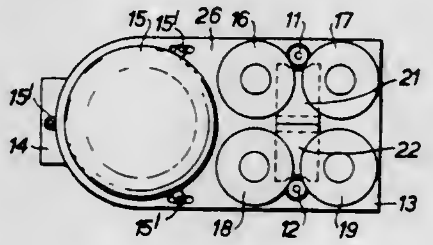


A "three-for-one" yarn twister particularly suitable for twisting fibers of synthetic materials directly following spinning through spinnerettes, the twister having a driven, hollow spindle with a bobbin support disposed on the spindle for coaxial rotation independently of the latter. An axially moveable traveler is also mounted on the spindle for rotation independently of the latter, the spindle and traveler being counter-rotatable.

3,530,659

TEXTILE APPARATUS

Walter Parker, Wilmslow, England, assignor to Ernest Scragg & Sons Limited
Filed Jan. 22, 1969, Ser. No. 793,931
Claims priority, application Great Britain, Jan. 23, 1968, 3,502/68
Int. Cl. D01h *1/00, 7/92;* **D02g** *1/02*
U.S. Cl. 57—105 **26 Claims**



A false twisting unit having roller means mounted on a support for supporting a false twist spindle, a motor mounted on said support and motion transmitting means connecting the motor and said roller means which in turn drive the false twister.

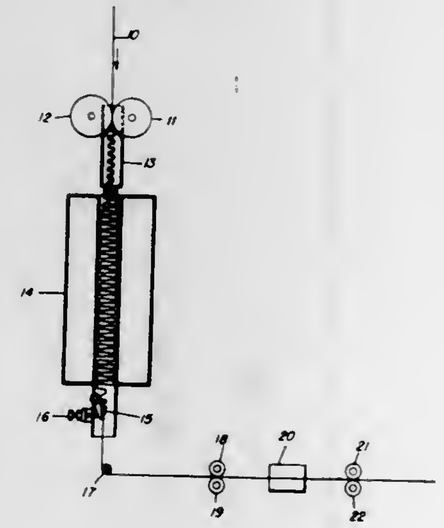
3,530,660
MANUFACTURING A MECHANICALLY CRIMPED YARN AND PRODUCTS THEREOF

Carl Edward Kirchner, Jr., Taylors, and William Moseley Cooper, Charleston, S.C., assignors to Fiber Industries, Inc., a corporation of Delaware

Filed July 12, 1965, Ser. No. 471,318

Int. Cl. D02g *1/20, 3/24*

U.S. Cl. 57—140 **10 Claims**



A bulked yarn is produced by first mechanically crimping the yarn and thereafter air entangling the crimped yarn.

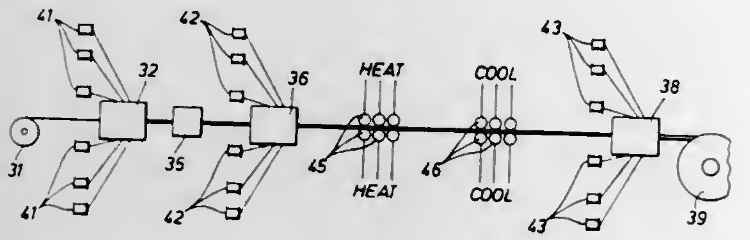
3,530,661
METHOD FOR PRESTRESSING ARMORED CABLE

George H. Thomen, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas

Filed Mar. 21, 1969, Ser. No. 809,314

Int. Cl. D02g *3/36;* **D07b** *1/06*

U.S. Cl. 57—162 **7 Claims**



The technical disclosure herein, which illustrates the principles of the present invention concerns methods for manufacturing well logging cable having conductors with thermoplastic insulation. With the objective of minimizing undesirable permanent stretch of the cable in use, the method steps include pre-stressing the cable before the first of two armor layers is applied, and then subjecting the cable to inward radial forces and heating calculated to deform the conductor insulators and to fill any interior interstices present in the cable construction. While the insulators are in their deformed state the cable is cooled to alter the shape memory of the thermoplastic insulator material. Finally, the outer layer of armor is applied to complete the cable construction.

3,530,662
ELECTRICALLY CONTROLLED TIMEKEEPER DEVICES WITH MECHANICAL OSCILLATORS

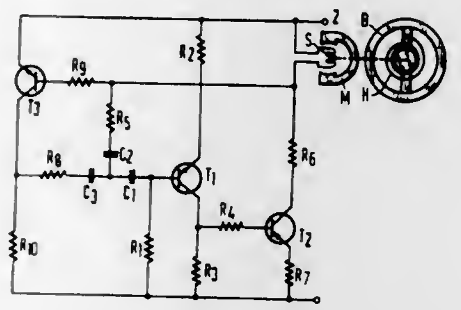
Edgar Schöninger, Munich-Allach, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

Filed Apr. 1, 1968, Ser. No. 717,572

Claims priority, application Germany, Apr. 19, 1967, S 109,401

Int. Cl. G04c *3/00*

U.S. Cl. 58—23 **12 Claims**



A timekeeper device has a mechanical oscillator controlled without mechanical switching contacts by an excitation coil, which is movable in the field of a magnet and is joined with the mechanical oscillator. The coil is connected into the collector circuit of a driver transistor which, together with a control transistor, forms an astable multivibrator. The feedback connection between the collector circuit of the driver transistor and the base of the control transistor has two parallel branches of which one contains an ohmic resistor. The other branch contains a phase reversing member and an ohmic resistor in series with each other. The collector-emitter circuit of the control transistor extending between the direct-current supply buses of the multivibrator, contain ohmic resistors so as to form a voltage divider.

3,530,663
AUTOMATIC AND CONTINUOUS TIME ADJUSTING DEVICE FOR A CLOCK

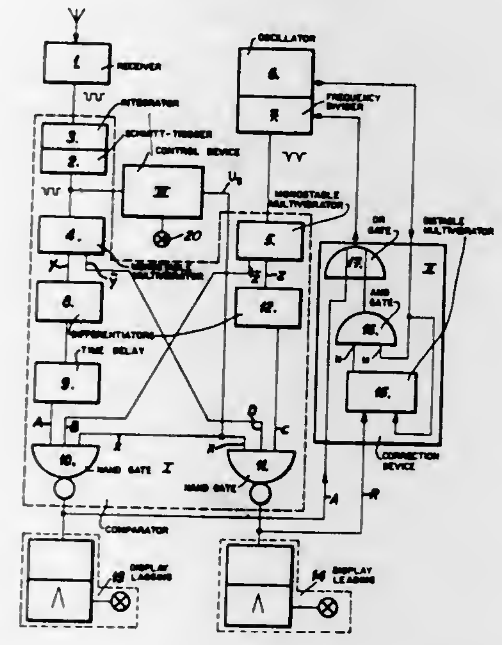
Raymond Marti, Chatelaine, Geneva, Switzerland, assignor to Patek Philippe S.A., Geneva, Switzerland

Filed May 16, 1968, Ser. No. 729,597

Claims priority, application Switzerland, Sept. 1, 1967, 12,290/67

Int. Cl. G04c *3/00*

U.S. Cl. 58—23 **7 Claims**



The invention concerns an automatic and continuous time setting device for an electronic clock in which the correction signals are obtained by the comparison of the oscillating frequency of the clock or a division thereof with broadcasted reference frequency. The clock comprises further means hindering any time setting if the reception of the broadcasted reference frequency is not received correctly.

3,530,664
ELECTRONIC TIMEPIECE

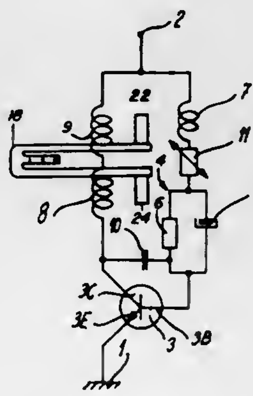
Fridolin Wiget, Cortaillod, Switzerland, assignor to Ebauches S.A., Neuchatel, Neuchatel, Switzerland, a firm

Filed Nov. 9, 1967, Ser. No. 681,626

Claims priority, application Switzerland, Nov. 25, 1966, 17,070/66

Int. Cl. G04c *3/00*

U.S. Cl. 58—28 **1 Claim**



An electronic timepiece with an oscillating regulator sustained electrically by a transducer controlled by a signal induced in a pickup coil and amplified by a transistor, wherein the source impedance of the control signal is varied as a function of the temperature so as to compensate the width of the sustaining pulses for the effect of temperature variation on the operation of the timepiece, a thermistance being included in the control circuit of the transistor to effect this compensation, and the winding of the pickup coil itself optionally being fabricated of a metal with a compensatory thermal coefficient.

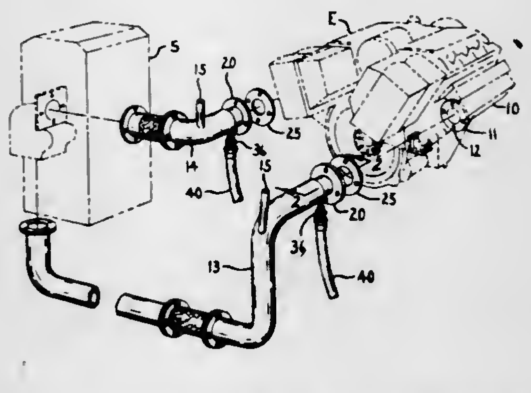
3,530,665
WATER INJECTOR FOR ENGINE EXHAUST

Eddie B. Wagner, Portland, Oreg., assignor to Wagner Mining Scoop, Inc., Portland, Oreg., a corporation of Oregon

Filed Aug. 26, 1968, Ser. No. 755,161

Int. Cl. F01n *3/04*

U.S. Cl. 60—30 **6 Claims**



The device is incorporated in a flanged fitting for connection between the engine exhaust manifold and exhaust pipe without requiring any modification of existing parts. An axial water tube directs its stream into a conical deflector which forms a spray to cool and wash the exhaust gases. The deflector shields the nozzle end of the water tube so that the nozzle does not become obstructed by deposits from the exhaust gases.

3,530,666
GAS TURBINE ENGINE FUEL SYSTEM

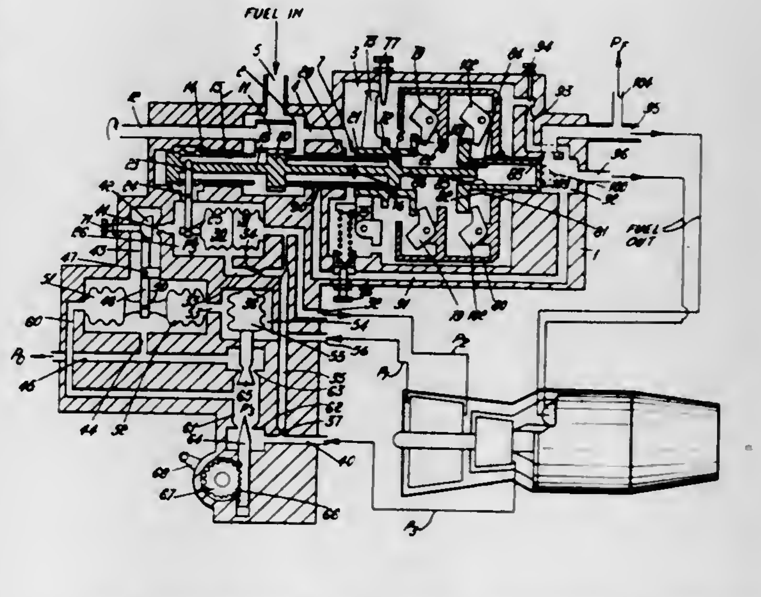
Walter George Cross and Wesley Boyd Edwards, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company

Filed Dec. 14, 1967, Ser. No. 690,600

Claims priority, application Great Britain, Jan. 13, 1967, 2,075/67

Int. Cl. F02c *9/08, 3/06*

U.S. Cl. 60—39.16 **14 Claims**



A gas turbine engine fuel system maintains a constant compressor ratio at any given setting of the pilot's throttle control and at any given ambient temperature altitude, and forward speed.

3,530,667
FUEL INJECTOR FOR GAS TURBINE ENGINES

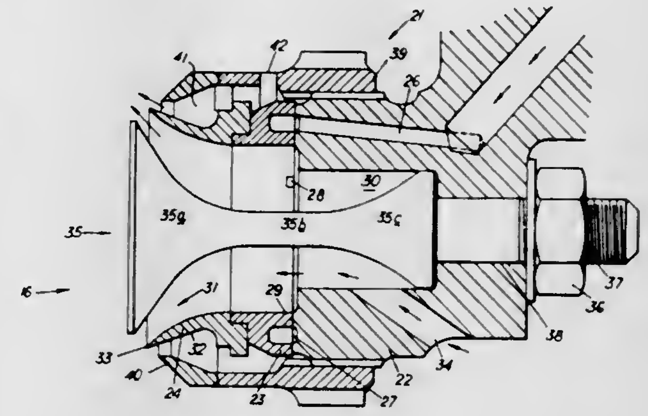
Robert Howard Bryan, Belper, England, assignor to Rolls-Royce Limited, Derby, England, a British company

Filed Oct. 28, 1968, Ser. No. 771,025

Claims priority, application Great Britain, Nov. 2, 1967, 49,829/67; Oct. 22, 1968, 50,193/68

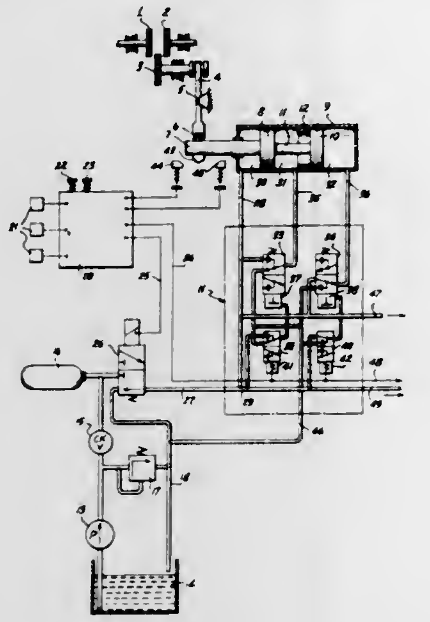
Int. Cl. F02c *3/24*

U.S. Cl. 60—39.74 **12 Claims**



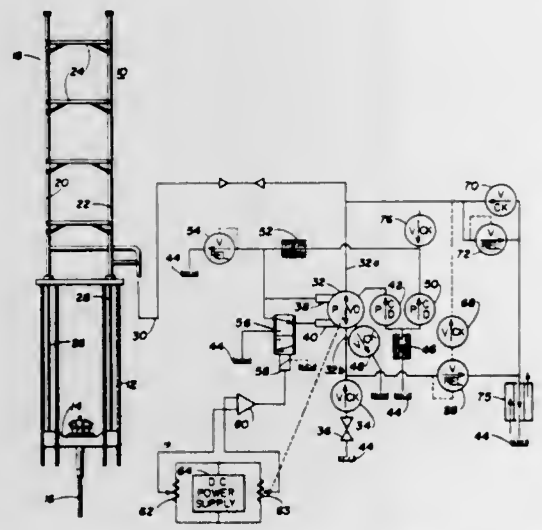
A fuel injector for a gas turbine engine comprises a hollow central body, an outer body surrounding the central body to define a flow passage therebetween, the flow passage and the interior of the central body being supplied with compressed air, fuel being supplied to the internal surface of the central body to form a fuel annulus flowing downstream therein, means deflecting the flow of fuel and air from said interior towards the air flow from said flow passage, said internal surface having a downstream fuel detachment edge and being shaped to flare radially outwardly towards said edge.

3,530,668
RAPID GEAR-CHANGE APPARATUS
Gunter Siebers, Dahlmannstrasse 32, Nuremberg, Germany, and Karl Prenzel, Chemnitzerstrasse 27a, Neu-Katzwang, Germany
Filed Mar. 25, 1969, Ser. No. 810,311
Claims priority, application Germany, Mar. 30, 1968, 1,750,114
Int. Cl. F15b *9/09;* **F16h** *5/60;* **G05g** *19/00*
U.S. Cl. 60—51 **4 Claims**



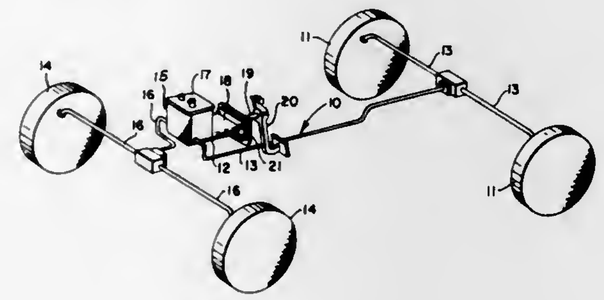
The invention relates to a hydraulic gear change apparatus for toothed change-speed gearing. It comprises substantially an engine-driven hydraulic pump, at least one hydraulic actuating motor for performing the gear-changing movements, and an electrically operated control member between the pump and the actuating motor. The control member is associated with an electric or electronic command unit which gives the gear-change commands. As such, it can take various forms and does not form part of the present invention.

3,530,669
FLUID CONTROL SYSTEM
Raymond J. Bromell, Dallas, Tex., George Homanick, Livonia, Mich., and Marion D. Lackey, Dallas, Tex., assignors to Automatic Drilling Machines, Inc., Dallas, Tex., a corporation of Texas
Filed Dec. 9, 1968, Ser. No. 782,231
Int. Cl. F15b *15/18*
U.S. Cl. 60—52 **15 Claims**



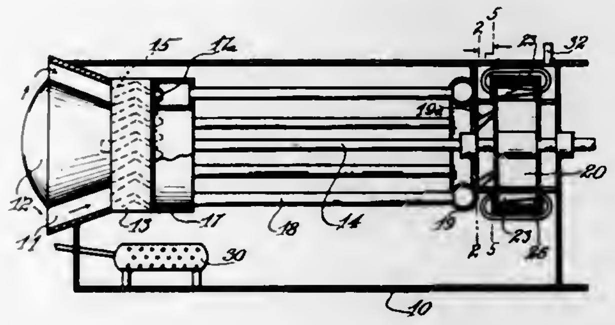
A fluid control system that includes a variable displacement pump for varying the rate of fluid flow to and from a hydraulic operator. When pumping fluid to the operator, the pump operates in the usual manner converting mechanical energy into hydraulic pressure. During that part of a cycle when fluid is discharged from the hydraulic operator, an energy converter establishes a pressure downstream of the pump which exceeds the upstream pressure. Under such conditions, the variable displacement pump always operates to convert mechanical energy into fluid pressure. Where the load on the hydraulic operator varies, the downstream pressure during the discharge cycle varies in accordance with the load. The amount of fluid passing through the variable displacement pump in either direction is controlled by an electrically operated servo valve which directs fluid to or from the stroking cylinder, thereby controlling the pump yoke position.

3,530,670
PROPORTIONING DEVICE FOR HYDRAULIC SYSTEM ACTUATOR
Clarence C. Fay, 17211 Edgewater Drive, Lakewood, Ohio 44107
Continuation-in-part of application Ser. No. 782,925, Dec. 11, 1968. This application Sept. 4, 1969, Ser. No. 855,349
Int. Cl. F15b *7/08*
U.S. Cl. 60—54.6 **25 Claims**



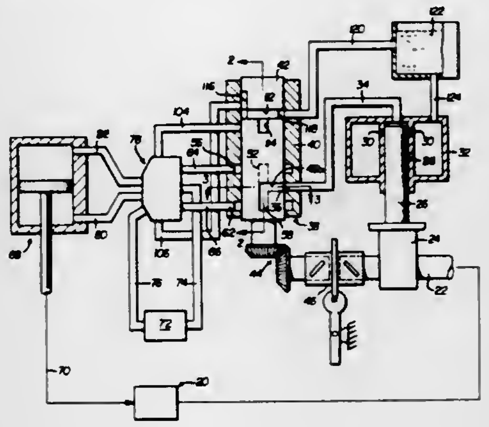
There is provided an hydraulic fluid actuator especially useful in automobile dual brake systems characterized by means for dividing an applied force, e.g. from a brake pedal, and directing portions thereof to each of two pistons moving in isolated cylinders, and coacting therewith, means for changing the ratio of forces applied to the pistons in response to movement in said cylinders.

3,530,671
REGENERATIVE AIR TURBINES
Edward Kolodziej, 5616 W. 5th Ave., Gary, Ind. 46406
Filed July 2, 1968, Ser. No. 741,962
Int. Cl. F01k *3/18;* **F01d** *1/00*
U.S. Cl. 60—59 **2 Claims**



A housing receiving air toward one end by way of a series of pipes into a manifold from which nozzles are directed toward a turbine rotor. The pipes, manifold and rotor are all inside the housing; and the latter contains a heating unit. The nozzles are circularly-spaced; and outlets from the rotor communicate with coils which return the air discharged by the rotor to inlets between the nozzles for re-use. The housing has a top vent for the escape of the air discharged by the turbine, such escape causing a draft to stimulate the operation of the heating unit.

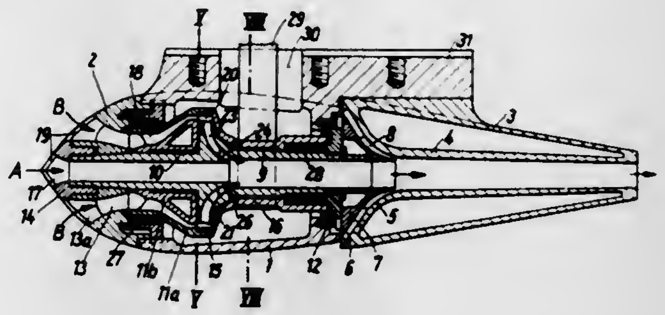
3,530,672
SPEED SENSING DEVICE
George D. Wolff, 22565 Statler Blvd., St. Clair Shores, Mich. 48081
Continuation-in-part of application Ser. No. 536,400, Mar. 22, 1966. This application Aug. 6, 1968, Ser. No. 750,509
Int. Cl. F23n
U.S. Cl. 60—105 **24 Claims**



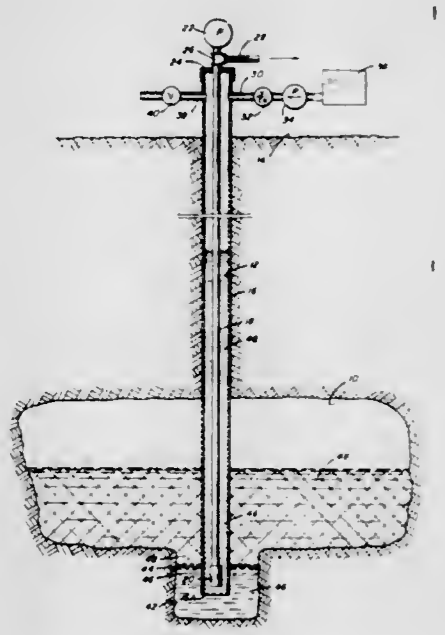
Speed sensing devices for generating a pressure signal representative of the speed of a variable speed device. Fluid pressure pulses are generated at a rate proportional to the speed of the device being controlled and transmitted from the pulse generator to a pulse dividing mechanism via a conduit having a length such that a finite length of time is required for the pulse to travel from the generator to the divider. In one type of device, the pulse divider is so arranged that under steady state operation, the incoming pulses are split equally and transmitted to a control element which is positioned in accordance with a pressure differential between the two divided pulse portions. A change from the steady state operation, for example a reduction in speed of the variable speed device, causes the pulses to be divided unequally, thus creating a pressure differential which shifts the control element. Alternatively, the control element may be spring biased and all or a preselected portion only of the arriving pulse may be transmitted from the pulse divider to the control element to urge the control element in opposition to the spring bias. Various modifications are disclosed, such as pulse generators or pulse dividers operable to apply a dither signal to the control element, which may take the form of a servo valve, and further variations are disclosed relating to means for modifying the effect of a speed change on the control element.

3,530,673
JET-PROPULSION UNITS FOR WATER CRAFT
Ludwig Huber, An der Langenfuhr 23, Dormagen, Germany
Filed Dec. 31, 1968, Ser. No. 788,206
Int. Cl. B63h *11/00*
U.S. Cl. 60—221 **6 Claims**

A water jet-propulsion unit for water craft of the kind in which the entering water is divided into a primary water stream accelerated by a rotary pump and at least one secondary water stream accelerated by the primary water stream has a pump with a rotor provided with blades which are curved forwards in the direction of rotation of the rotor and with a shroud ring which is fixed to the blades so that it rotates with them and extends beyond the blades in a downstream direction. The shroud ring is so dimensioned that, in operation, a ring of water is formed in it by the water issuing from the rotor blades and this ring of water rotates in the same direction as, but faster than the shroud ring and the water passes from the water ring into an exit guide device which has guide blades situated within the shroud ring. The exit guide device guides the water from the rotating water ring inwards and rearwards through a jet stream pipe from which the propulsion jet of water issues.



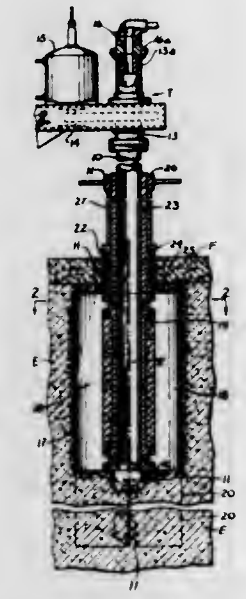
3,530,674
METHOD OF SEALING A CAVERN HAVING ANHYDROUS AMMONIA STORED THEREIN DURING REMOVAL OR INSERTION OF PUMPING DEVICES
James H. Cobbs and Sidney E. Scisson, Tulsa, Okla., assignors to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Oct. 17, 1968, Ser. No. 768,397
Int. Cl. B65g *5/00;* **E21f** *17/16*
U.S. Cl. 61—.5 **2 Claims**



This invention relates to a method of removing a structure from a casing communicating with an underground cavern storing anhydrous ammonia, the cavern having a sump therein into which the casing extends. The invention includes introducing water under pressure into the casing, the water flowing into the cavern sump, opening the casing to permit removal of the structure, the pressure in the cavern forcing the water upwardly within the casing until the hydrostatic weight of the water column in the casing balances the pressure of the cavern, and removing the structure without escape of gas or fluids from the cavern.

3,530,675
METHOD AND MEANS FOR STABILIZING STRUCTURAL LAYER OVERLYING EARTH MATERIALS IN SITU

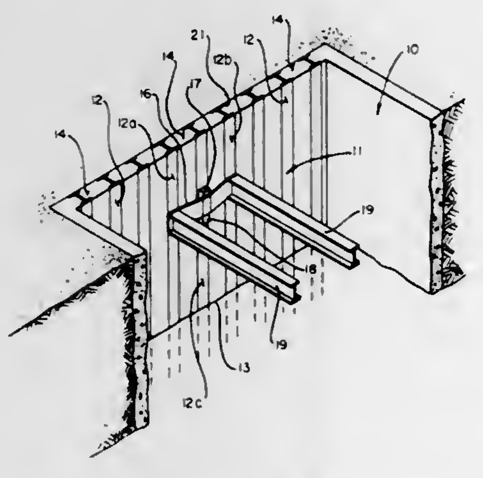
Lee A. Turzillo, 2078 Glengary Road,
Bath, Ohio 44313
Filed Aug. 26, 1968, Ser. No. 755,273
Int. Cl. E02d *5/00, 17/04*
U.S. Cl. 61—35 **8 Claims**



Method and means for providing solid columnar support under structural layer, overlying earth materials of an earth situs. Expansible agitator means projected through relatively small diameter hole in overlying layer and expanded to agitate and loosen earth materials to define elongated body thereof of greater peripheral size than hole. Self-hardenable fluid, pumped through hole into loosened earth, is allowed to harden after removal of contracted agitator means through small hole. Resultant rigid, composite column underlies area of structural layer surrounding hole for the solid support of same.

3,530,676
CONCRETE WALL CONSTRUCTION WITH TENSION-LOADED EXTERNAL REINFORCING ELEMENT AND METHOD

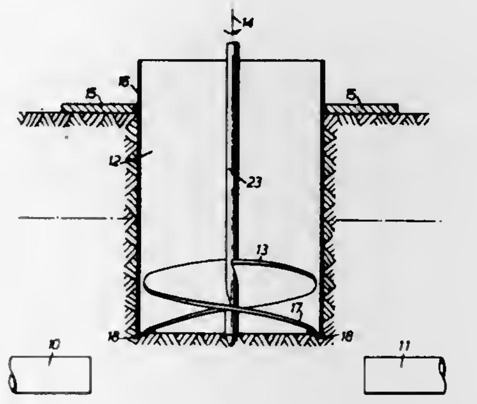
Philip J. York, Mill Valley, Calif., assignor to J. H. Pomeroy & Co., Inc., San Francisco, Calif., a corporation of Washington
Filed Feb. 19, 1969, Ser. No. 800,525
Int. Cl. E02d *5/20*
U.S. Cl. 61—39 **6 Claims**



A concrete wall construction with tension-loaded external reinforcing element serves to carry the major tension forces experienced by a concrete wall on the excavated side of a wall when subjected to earth pressure from the opposite side. Struts then act against the unexcavated side of the wall to apply and develop compressive forces in the subsurface region adjacent the unexcavated side face of the wall.

3,530,677
MANHOLES INSPECTION CHAMBERS AND PIPE JUNCTIONS

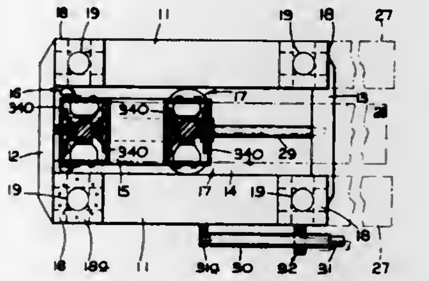
Ainsley Neville Ede, 36 Thornton Way,
Cambridge, England
Filed Sept. 9, 1968, Ser. No. 758,481
Claims priority, application Great Britain, Sept. 13, 1967, 41,730/67
Int. Cl. E21d *5/00;* **E21b** *1/02, 9/26*
U.S. Cl. 61—41 **7 Claims**



A method of making a lined chamber in the ground which comprises boring a hole by means of an earth auger and simultaneously sinking a lining shield into the hole as it is formed, the lining shield resting on a retractible part of the auger, and after completion with drawing the auger from the hole leaving the shield therein.

3,530,678
POSITION RESTORING DEVICES FOR MINE ROOF PROPS

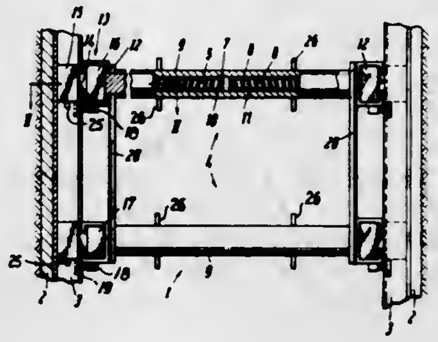
Karl Marie Groetschel, Stolzestrasse 44,
Bochum, Germany
Filed Apr. 29, 1968, Ser. No. 724,763
Claims priority, application Germany, Apr. 28, 1967, G 49,952; Dec. 6, 1967, G 51,828
Int. Cl. E21d *23/00*
U.S. Cl. 61—45 **28 Claims**



A restoring device for correcting tilt of hydraulic props or angular deflection of a traction ram in a mine roof support is provided comprising a housing formed integrally with, or structurally separate from, the base of the support, such housing containing one or more rubber or the like non-metallic resilient bodies or metal springs at selected positions around a reference axis of the prop or ram, each such body or spring being subjected to pre-stress borne initially against stop means preventing such stress deflecting the prop or ram from its datum position but providing a threshold of restoring force to return the prop or ram to its datum position when deflected by horizontally applied loads on the superstructure of the support or by drift of a conveyor to which the traction ram is connected respectively.

3,530,679
TENSIONING DEVICE FOR THE SHEETING OF MACHINE DUG SERVICE TRENCHES

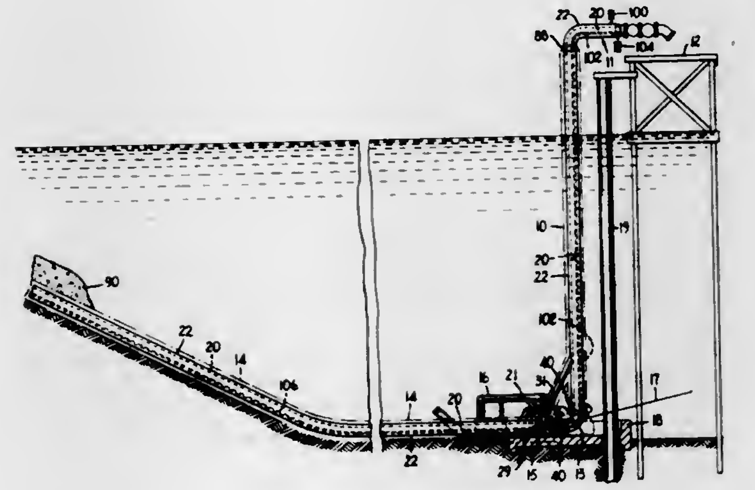
Josef Krings, 23 Hans-Bockler Str.,
6138 Oberbruch, Germany
Filed Jan. 23, 1969, Ser. No. 793,409
Claims priority, application Germany, Jan. 24, 1968, 1,708,539
Int. Cl. E02d *5/00*
U.S. Cl. 61—46 **5 Claims**



This disclosure relates to shoring which includes opposed sheeting having associated therewith hollow posts. Tensioning devices which are longitudinally adjustable extend between the posts and have at the opposite ends thereof housings. The tensioning devices are connected to the posts for adjustment along the posts in interlocked engagement therewith and for each of releasal by generally dumbbell shaped connectors. The tensioning devices may be further extended by the addition of extension elements at the ends thereof, which extension elements may also be axially extensible.

3,530,680
PRESTRESSED CONDUIT FOR COLD FLUIDS

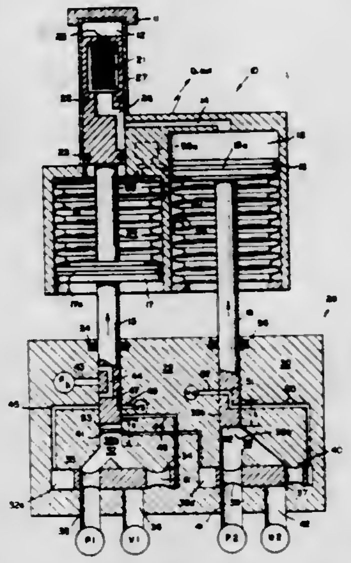
Marvin B. Gardner, Jr., Roselle Park, N.J., assignor to The M. B. Gardner Co., Inc., Roselle Park, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 433,060, Feb. 16, 1965. This application Feb. 7, 1967, Ser. No. 614,506
Int. Cl. F16l *7/00, 39/00*
U.S. Cl. 61—72.3 **10 Claims**



Conduit for refrigerated fluid comprising an inner conduit covered with insulation and having longitudinally overlapping antifriction slats and rollers, and slid into outer conduit with connectors interposed between corresponding ends of the conduits, and the inner conduit longitudinally compressed by jacking with respect to the outer conduit, with the connectors welded to the prestressed conduits by longitudinal lines of welding.

3,530,681
HYDRAULICALLY DRIVEN CRYOGENIC REFRIGERATOR

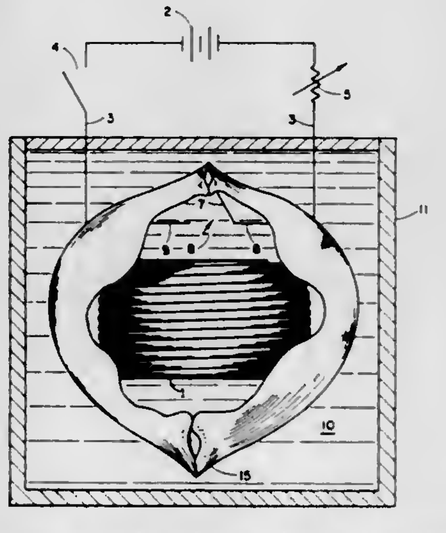
Axel G. Dehne, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 5, 1968, Ser. No. 750,163
Int. Cl. F25b *9/00*
U.S. Cl. 62—6 **13 Claims**



This disclosure specifically relates to an arrangement wherein cryogenic refrigerator expander and compressor pistons are actuated back and forth under the influence of refrigerant pressure and hydraulic pressure. Continuation of the refrigerant is avoided by providing bellows to hermetically seal the pistons within respective interconnected refrigerator subchambers. Each piston is controlled by a valve assembly having a two-position valve to allow refrigerant gas pressure to move the respective piston in a first direction when the valve is in a first position and to allow hydraulic pressure to move the respective piston in a second direction when the valve is in a second position. These valves are shifted between positions at appropriate times in the refrigeration cycle by hydraulic signals traveling through hydraulic passages including portions positioned within the pistons so that the pistons may reciprocate 90° out of phase.

3,530,682
FOIL WRAPPED SUPERCONDUCTING MAGNET

Jacob L. Zar, North Andover, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Sept. 28, 1967, Ser. No. 671,441
Int. Cl. F25d *3/10*
U.S. Cl. 62—65 **5 Claims**

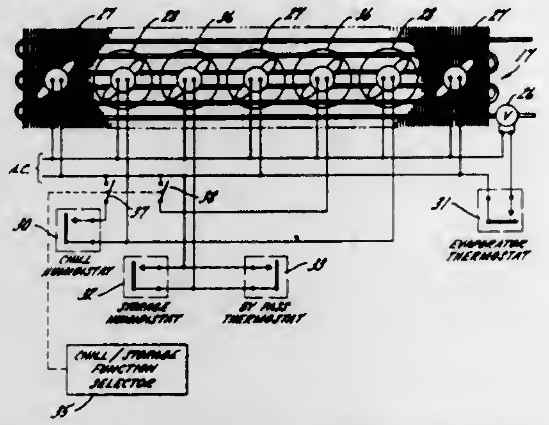


A superconducting device and method of cooling same wherein the magnet is enclosed in a material that functions as a condensor during cool down of the device.

During cool down, liquids, solid contaminants and the like condense on the condensor material during final cool down.

3,530,683
REFRIGERATION SYSTEM FOR CHILLING AND STORING MEAT PRODUCTS

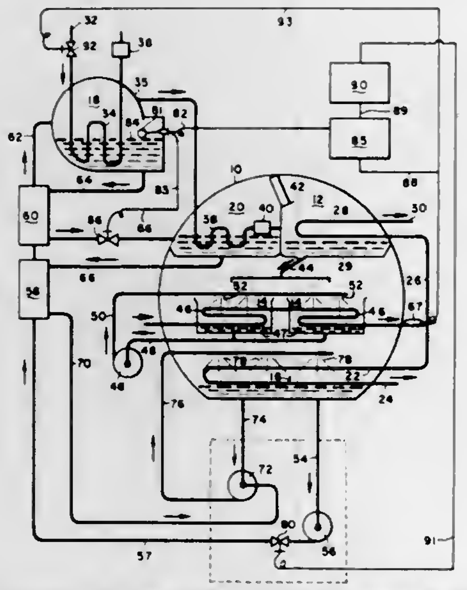
John E. Watkins, 9 N. 3rd Ave., Maywood, Ill. 60153
Filed Apr. 16, 1969, Ser. No. 816,755
Int. Cl. F25d *17/04*
U.S. Cl. 62—89 **16 Claims**



Refrigeration apparatus and a method of operation are described in which a chill area is divided into individually controlled refrigeration zones. Separate temperature and humidity sensing elements are provided to control the evaporator and fan units in each zone, with the cooled air being directed downward and under the product to augment natural convection. When initially warm, moist product is introduced, air circulation is increased to an initially relatively high rate which results in a smaller overall air temperature cooling range allowing the relative humidity to increase and reducing moisture pickup from the product. Temperature control within the zone is accomplished by controlling the flow of liquid refrigerant into the evaporator, and control of excess humidity may thereafter be accomplished by selectively reducing the air circulation rate so that the air is cooled below its dew point within the evaporator, thereby to deposit a portion of its moisture.

3,530,684
HIGH PRESSURE GENERATOR SOLUTION LEVEL CONTROL

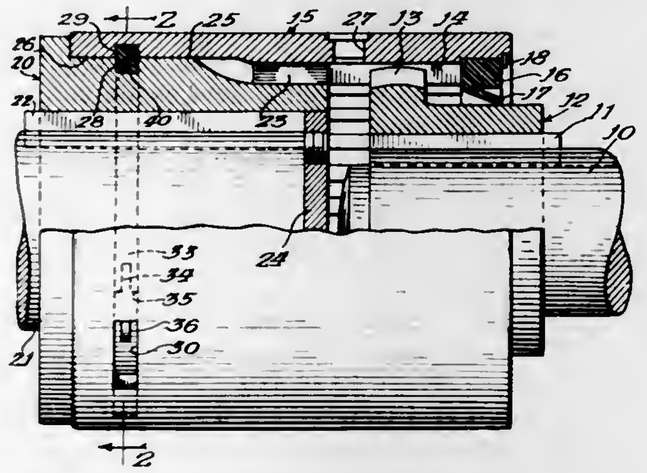
James M. Porter, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Nov. 12, 1968, Ser. No. 774,805
Int. Cl. F25b *15/00*
U.S. Cl. 62—148 **8 Claims**



A control circuit is provided which senses the level of intermediate strength absorbent solution in the high pressure generator of an absorption refrigeration machine. The signal from the level sensor is sent to a modulating valve on the outlet conduit from the high pressure generator and to a pressure selector. An additional signal from a thermostat sensing the leaving chilled water temperature is also sent to the pressure selector. The same signal is also relayed to a valve on the high pressure steam inlet to the high pressure generator for modulation in response to load on the absorption machine. The pressure selector sends the proper signal from the level control and the thermostat sensor to another valve in the conduit leading from the absorber to the high pressure generator to modulate the flow into the high pressure generator.

3,530,685
RETAINER-SEAL FOR GEAR TYPE FLEXIBLE COUPLINGS

John B. Ehret, 20860 Greenwood Drive, Olympia Fields, Ill. 60461
Filed Sept. 24, 1968, Ser. No. 761,968
Int. Cl. F16c *1/06;* **F16d** *3/18*
U.S. Cl. 64—4 **8 Claims**

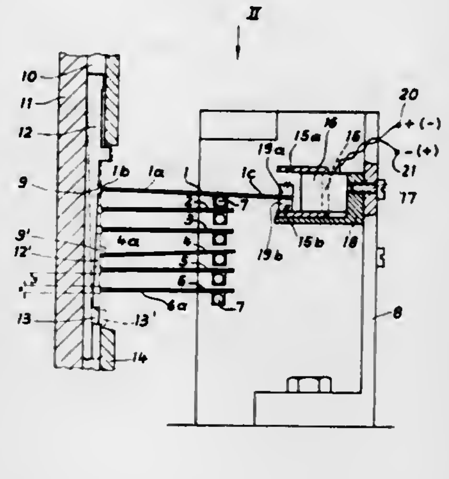


A retainer for securing gear type coupling sleeves and hubs together against endwise separation. A key of flexible material such as nylon, polyurethane or other plastic which has physical characteristics that permit the key to be pushed endwise through an exterior opening in the coupling sleeve into a key-way groove between the coupling parts, and to be pulled out of the groove when desired. The key fills the groove, has ends mated, and acts as a key and a seal against loss of lubricant from within the coupling parts.

3,530,686
PATTERN DEVICE FOR CIRCULAR KNITTING MACHINES HAVING ROTARY NEEDLE CARRIERS

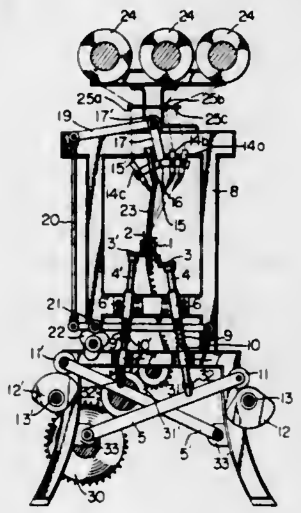
Johann Martinetz, Hechingen, Germany, assignor to Mayer & Cie, Tailfingen, Wurttemberg, Germany
Filed Jan. 15, 1968, Ser. No. 697,878
Claims priority, application Germany, Mar. 6, 1967, M 73,048
Int. Cl. D04b *15/78*
U.S. Cl. 66—50 **5 Claims**

A pattern structure for a circular knitting machine. The machine includes a rotary needle carrier provided with a plurality of control plates or jacks which control the needles and which respectively have pattern feet. A plurality of armature means respectively coact with the pattern feet to control the positions of the control plates, and each armature means is supported for swinging movement immediate its ends, one end being adapted to engage a pattern foot and the other end carrying a permanent magnet means. A plurality of electromagnets respectively coact with the permanent magnet means, and each electromagnet includes a pair of opposed pole shoes between which a permanent magnet means is located and a direct current exciting coil which will control the polarity of the pole shoes depending upon the direction of the direct current. In this way with a single impulse of direct current it is possible to swing an armature means, and when the pulse of current terminates the permanent magnet means will maintain the armature means in the position to which it has been displaced.



3,530,687
METHOD AND APPARATUS FOR MANUFACTURING KNITTED CLOTH HAVING PILE CONFIGURATION

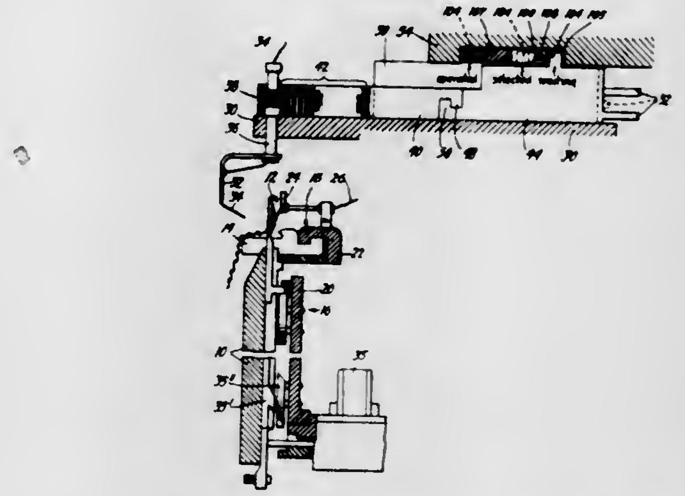
Hisashi Hamano, Soka-shi, Japan, assignor, by mesne assignments, to International Knitlok Corporation, New York, N.Y., a corporation of New York
Filed Aug. 10, 1967, Ser. No. 659,669
Claims priority, application Japan, Oct. 14, 1966, 41/67,212
Int. Cl. D04b *23/08*
U.S. Cl. 66—84 **2 Claims**



An improved production method and apparatus for manufacturing pile knitting cloth characterized by using flexible pile wires for the purpose of guiding piles in stable condition during the knitting operation, thereby interlocking the piles in predetermined arrangement and shape with yarns composing the basic knitted cloth, devices and methods for heat setting and cutting the piles to produce a material provided with material engaging surface comprising configuration of pile knitting of the invention.

3,530,688
CIRCULAR KNITTING MACHINE

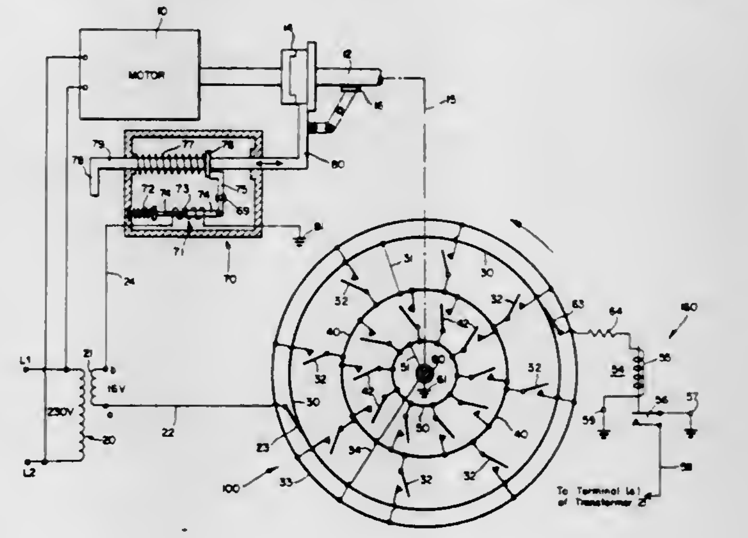
Victor J. Lombardi, 2715 Charlotte Lane, Burlington, N.C. 27215
Filed July 22, 1968, Ser. No. 746,673
Int. Cl. D04b *9/32*
U.S. Cl. 66—135 **26 Claims**



A circular knitting machine having one or more yarn guides swingable from positions at the rear of a row of needles through an arc having a portion lying in front of the row of needles. For operating the yarn guides there are employed means slidable in radial slots and of a width commensurate with the width of the slots throughout the length of the slidable means. Each slidable means may be in the form of a jack in immediate engagement with a slidable element on which there is formed a rack or may be in the form of such a jack and such a slidable rack-carrying element having a lost motion connection therebetween. The yarn guide and its operating means are protected by the provision of a deflectable cam which comes forwardly to a point and is operated in advance of the yarn guide operating cam and the provison of means to then guide the jack butts in an inoperative course.

3,530,689
STOP MOTION PROTECTIVE CIRCUIT FOR ROTARY TEXTILE MACHINE

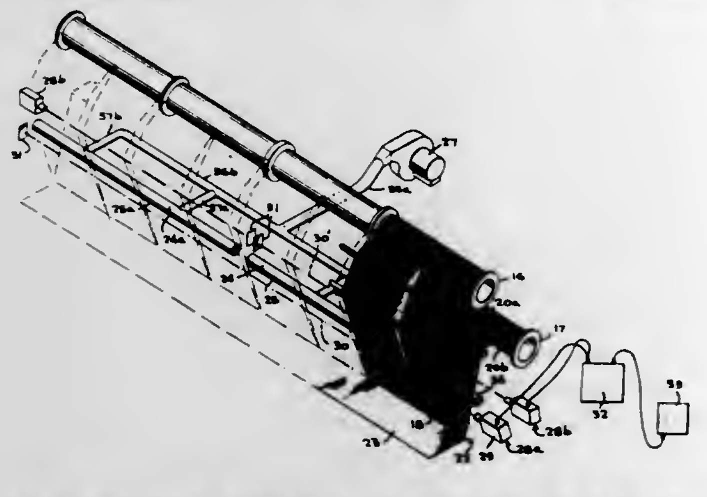
Fred Hall Yarbrough, Winston-Salem, N.C., assignor to Hanes Corporation, Winston-Salem, N.C., a corporation of North Carolina
Filed Mar. 12, 1968, Ser. No. 712,562
Int. Cl. D04b *35/10;* **G08b** *21/00*
U.S. Cl. 66—157 **6 Claims**



In the preferred embodiment, an auxiliary stop motion relay circuit is provided for a rotary knitting machine for indicating the availability of electrical energy to the regular stop motion detector circuits. The current which flows normally through the relay circuit also flows through the electromagnetic device which triggers the stop motion knock-off mechanism but the relay current is held to a low value insufficient to actuate the electromagnetic device. In other embodiments, the auxiliary circuit is merely an indicator circuit to indicate availability of electrical energy to the stop motion detectors.

3,530,690
YARN INSPECTION APPARATUS

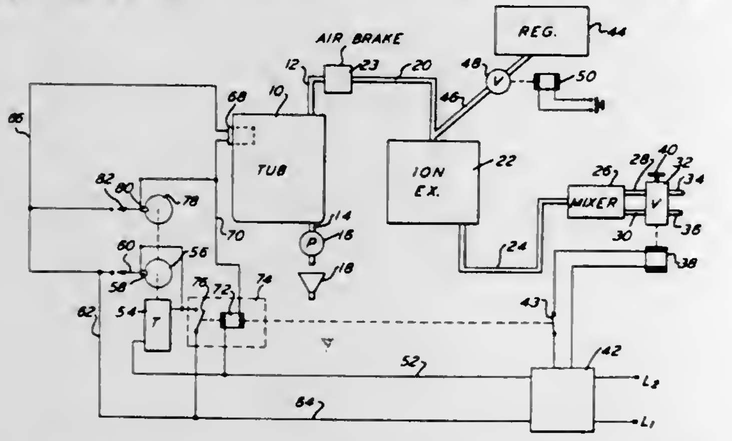
Lawrence Creigh Nickell, Raymond Baines Fertig, and Henry T. Sessions, Ronceverte, W. Va., assignors to Appalachian Electronic Instruments, Inc., Ronceverte, W. Va., a corporation of West Virginia
Filed Mar. 29, 1968, Ser. No. 717,076
Int. Cl. D04b *35/10*
U.S. Cl. 66—163 **14 Claims**



Yarn inspection apparatus for detecting broken yarns in a yarn sheet of parallel yarns moving along a feed plane over at least a portion of its feed path, including a detector head adjacent one edge of the yarn sheet for projecting a narrow cross section light beam transversely spanning the width of the yarn sheet along a beam axis located closely adjacent but spaced to one side of the feed plane, a retro-reflective target adjacent the other edge of the yarn sheet for returning light to the detector head along the ray path of incident light projected by the detector head, and an air discharge tube paralleling the light beam and spaced to the opposite side of the yarn sheet to blow any broken yarns from the yarn sheet into the light beam.

3,530,691
AUTOMATIC WASHING MACHINE WITH WATER-SOFTENING MEANS

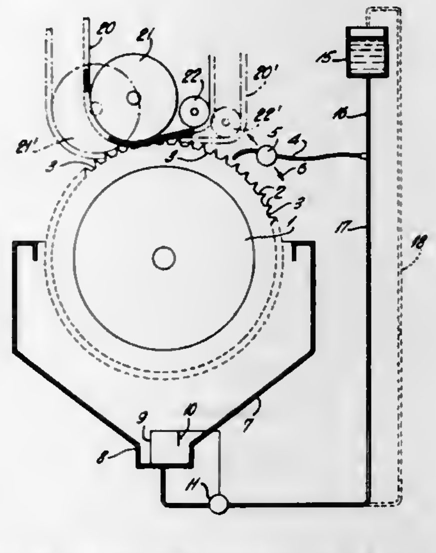
Stuart Borochaner, 22 Parkside Circle, Levittown, Pa. 19056
Original application Feb. 27, 1968, Ser. No. 708,675. Divided and this application June 10, 1969, Ser. No. 831,975
Int. Cl. B01d *15/06;* **D06f** *29/00*
U.S. Cl. 68—13 **2 Claims**



A water softening system for a washing machine which comprises an ion-exchange chamber, containing an ion-exchange resin, and a regenerating chamber, containing fluid for regenerating the ion-exchange resin prior to the next washing operation. The regenerating chamber is directly connected to the ion-exchange chamber and has no connection with the water system itself. The regenerating fluid is flushed through the ion-exchange chamber into the drain by the operation of the drain pump.

3,530,692
APPARATUS FOR APPLYING COLOR TO PILE FABRIC

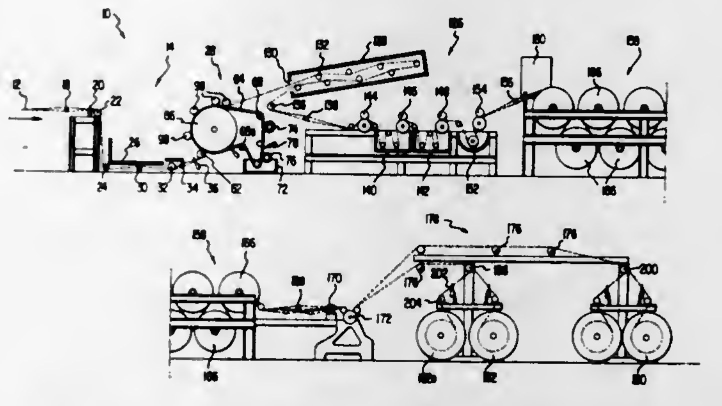
Werner E. Schweizer, Zumikon, Switzerland, and Alfred Korsch, Krefeld, Germany, assignors to Deep Dye Processes A.G., Chur, Switzerland, a Swiss company
Filed Oct. 7, 1968, Ser. No. 765,343
Int. Cl. D06f *35/00*
U.S. Cl. 68—202 **8 Claims**



Apparatus for applying a coloring agent to a pile fabric in which the pile fabric is passed with the pile facing downwardly between a pressure roll and a carrier such as a cylinder (or roller) having a surface with a number of receptacles formed thereon for receiving and holding the coloring agent. Said receptacles extend without interruption across the width of the carrier surface and are defined between parallel resilient ribs extending upwardly from said surface. Said ribs are part of the carrier surface or are removably secured thereto.

3,530,693
APPARATUS FOR DYEING TEXTILE STRANDS

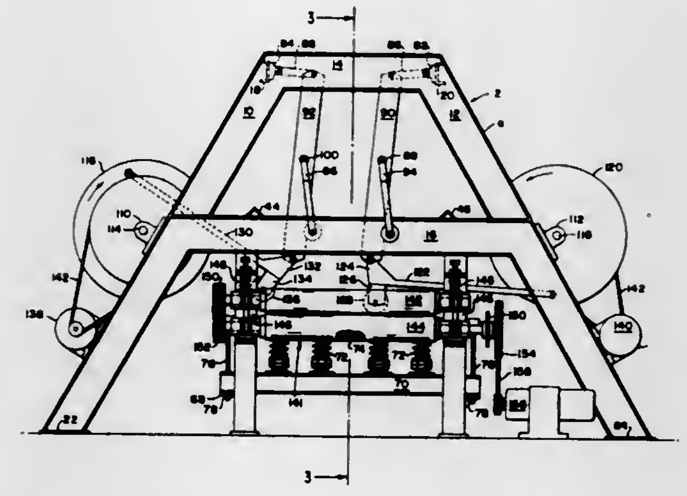
William Dimond, Wayne, and Irving Brawer, Fair Lawn, N.J., assignors to Empire Piece Dyeing & Finishing Co., Inc., Haledon, N.J., a corporation of New Jersey
Original application Jan. 26, 1965, Ser. No. 428,133. Divided and this application July 30, 1969, Ser. No. 845,967
Int. Cl. B05c *1/04*
U.S. Cl. 68—202 **11 Claims**



The invention relates to a method and apparatus for dyeing textile strands wherein a multiplicity of individual textile strands are dyed with a plurality of colors by inducing relative lateral movement between the strands and a plurality of color sources while simultaneously moving the strands longitudinally and applying color thereto. Strand filament separation is precluded during dyeing by rolling the strands across a support surface during the lateral movement thereof.

3,530,694
LEATHER ROLLING MACHINE

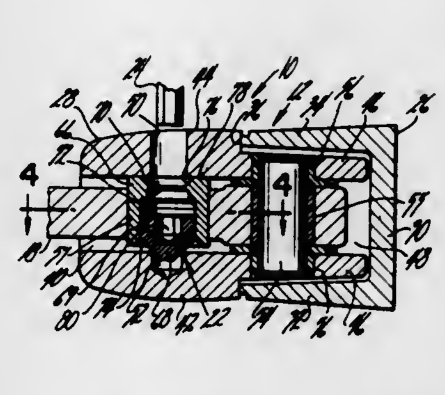
Gilbert S. Hevenor, Clearfield, Pa., assignor to Howes Leather Company, Inc., Boston, Mass., a corporation of Delaware
Filed July 29, 1968, Ser. No. 748,500
Int. Cl. C14b *1/36*
U.S. Cl. 69—46 **9 Claims**



This invention is a machine for rolling leather hides after tanning, and comprises a plurality of "balls" or rollers arranged in tandem in a single machine in such manner as the leather passes through the machine, it is engaged successively by rollers moving laterally across its surface with sufficient force to compact and polish the leather. The machine incorporates bed plates made of a tough synthetic plastic in a novel manner and combination, the use of such bed plates lessening, if not completely eliminating, the marring of the leather which is encountered in previous machines.

3,530,695
DOGGING MECHANISM FOR EMERGENCY EXIT LOCK

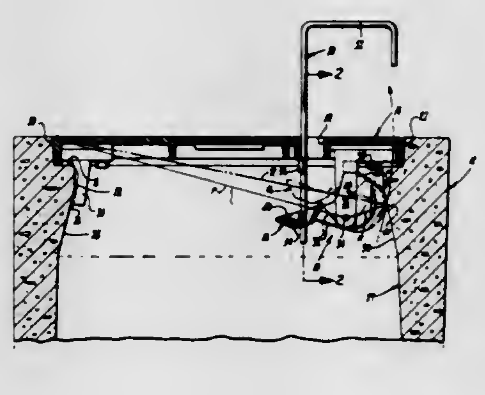
Walter O. Balducci, New Britain, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed July 22, 1968, Ser. No. 746,610
Int. Cl. E05b *65/10;* **E05c** *19/00*
U.S. Cl. 70—92 **7 Claims**



An emergency exit lock having a case including opposing wall portions providing a clevis for a latch bolt actuating lever. A dogging mechanism carried by the lever includes two telescopically co-engaging parts movable relative to the lever and in opposite directions relative to each other between dogged and undogged positions. In the dogged position each of the parts engages an associated one of the wall portions to retain the lever in a fixed position relative to the case. When the lever is in a position corresponding to a retracted position of the latch bolt the mechanism is accessible for manual manipulation externally of the case.

3,530,696
GRAVITY LATCH FOR BOX LID

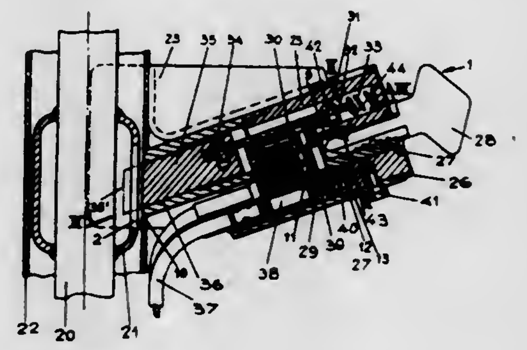
Paul G. Dunmire, Oakland, Calif., assignor to Christy Concrete Products Incorporated, Emeryville, Calif., a corporation of California
Filed Mar. 7, 1968, Ser. No. 711,419
Int. Cl. B65d *55/14;* **E02d** *29/14*
U.S. Cl. 70—167 **1 Claim**



A gravity latch for securing a lid to a box in which one side of the lid utilizes means for selectively engaging the box to prevent lifting of that side and the other side of the lid is provided with a releasable friction latch operated by gravity and designed to require a pushing motion of the operating end of a latch lever to disengage the same and simultaneously require a lifting or pulling motion to lift the lid. A key is disclosed for operating the latch and for simultaneously lifting the lid.

3,530,697
LOCKING DEVICE, IN PARTICULAR FOR THEFT PREVENTION ON AUTOMOTIVE VEHICLES

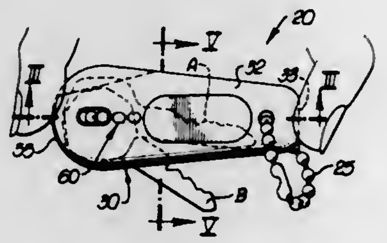
Bertrand Antoine Warnod, 30 Rue Charles Lafitte, Neuilly-sur-Seine, France
Filed Jan. 2, 1968, Ser. No. 695,158
Claims priority, application France, Oct. 5, 1967, 123,357
Int. Cl. E05b *65/12;* **B60r** *25/02*
U.S. Cl. 70—252 **19 Claims**



An anti-theft device on a motor vehicle for locking the steering-wheel shaft while simultaneously breaking all electric circuits, comprising a cartridge-like assembly mounted in a socket-like holder integral with the steering-column and including a safety-lock operable by a removable key which may successively assume a "stop," a "parking," a "run," and a "start" position, a retractable snap-bolt actuated by said safety-lock and insertable, when extended, into a clasp integral with said shaft, and a rotary switch controlling at least the electric ignition and start circuits and operable in unison with said lock.

3,530,698
KEY HOLDER

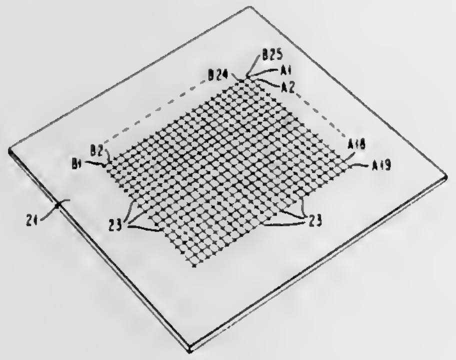
John H. Clement, 340 Wanaao Road,
Kailua, Hawaii 96734
Filed Nov. 21, 1968, Ser. No. 777,610
Int. Cl. A45c *11/32*
U.S. Cl. 70—457 **10 Claims**



A key holder constructed of flexible material defining a case of generally flat configuration containing a plurality of keys therewithin, the keys being mounted on a bead or ball type chain within the case and easily individually selected singularly or in multiples for ejection from the key case for use.

3,530,699
METHOD OF IMPROVING THERMOFORMED COMPONENTS

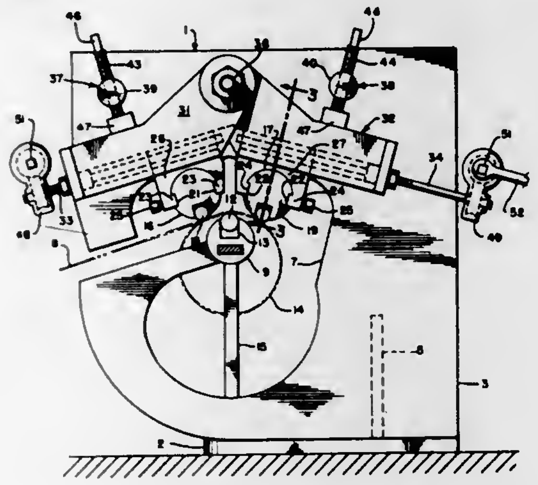
Edward C. Uberbacher, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 15, 1968, Ser. No. 744,909
Int. Cl. B21d *26/04*
U.S. Cl. 72—60 **5 Claims**



Thin wall areas of a component made by a pressure deformation process are eliminated by forming a test component from a material sheet of uniform thickness and determining from the component thus formed the location and extent of the thin wall areas. A die is formed having indentations at a location and of a depth which corresponds, respectively, to the location and extent of the wall thinning on the test component. Further material sheets are formed against the indented die so as to preform material sheets with extra thickness areas determined by the indentations in the die. Each of these preformed material sheets, when formed the same as the test component, provide a component having substantially equal thickness walls throughout.

3,530,700
METHOD AND APPARATUS FOR FORMING SPIRAL PIPE

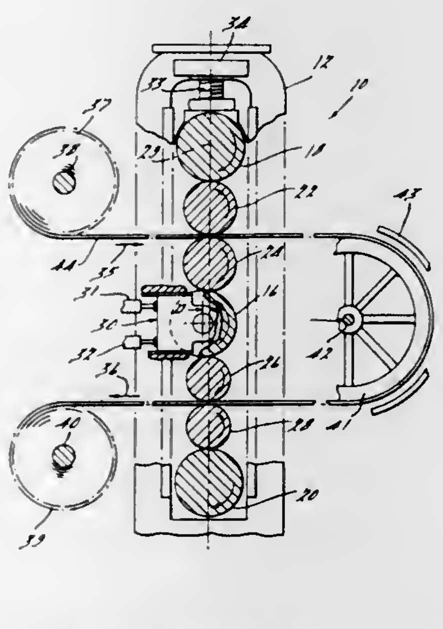
Richard O. Marsh, Jr., Sewickley, Pa., assignor to Fay Pipe & Pile Inc.
Filed July 12, 1968, Ser. No. 744,450
Int. Cl. B21c *37/12*
U.S. Cl. 72—145 **6 Claims**



This disclosure relates to a method for the continuous formation of spiral pipe from flat sheet material using a stationary forming roll and two movable forming rolls which are capable of pivotable and translatory motion in all directions to determine the diameter of the spiral to be formed and to control the spiral during its formation. The apparatus used includes at least one pivotable arm for moving each of the forming rolls and has carrier means mounted on each arm for translatory movement of the elements along the arm. Carrier means may be used to serve each end portion of a forming roll and their movement may be coordinated to move the entire roll at one time.

3,530,701
STRIP METAL ROLLING MILL

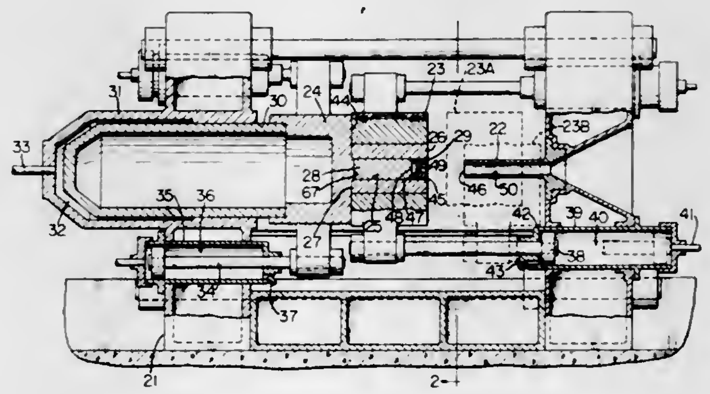
Louis J. Maiale, 3831 West Point St.,
Dearborn, Mich. 48204
Filed May 9, 1968, Ser. No. 727,884
Int. Cl. B21b *41/06*
U.S. Cl. 72—229 **9 Claims**



A strip rolling mill comprising two pair of work stock engaging rolls; a pair of counterpressure rolls disposed one adjacent each of the pairs of work stock engaging rolls; means supporting the rolls whereby the rotational axes thereof lie along a common plane; a center pressure roll disposed interjacent the pairs of work stock engaging rolls, and means for supporting the center pressure roll and for selectively urging the same toward the common plane, whereby the center pressure roll is adapted to extert outwardly directed opposed forces against the pairs of work stock engaging rolls.

3,530,702
EXTRUDING METHOD AND APPARATUS AND PARTS THEREFOR

Ernst J. De Ridder, Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Aug. 29, 1967, Ser. No. 664,083
Int. Cl. B21c *23/00*
U.S. Cl. 72—255 **24 Claims**



This disclosure relates to a method and apparatus for extruding an elongated member from a heated metallic billet by disposing the billet in a container together with a separate female die so that when the container and die are moved toward a stationary ram to engage the die against a front end of the stationary ram, further movement of the container and billet toward the ram relative to the engaged die causes the billet to extrude through the die until the billet has been extruded to the desired amount. The die is subsequently removed from the container out through the other end thereof by having the other end of the container moved beyond the front end of the ram to force the die out of the container into a die receiver, the removed die being cleaned and returned to the front end of the container by the die receiver for a subsequent extruding operation.

ERRATUM

For Class 72—354 see:
Patent No. 3,530,717

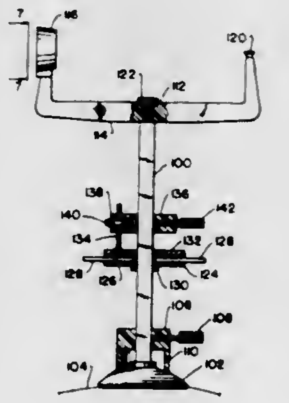
3,530,703
QUENCH HARDENED ROLL OF FORGED STEEL CONTAINING COBALT

Tadashi Shimegi, Yokosuka-shi, Haruhiko Hirose, Fujisawa-shi, and Hiroshi Ozawa, Chigasaki-shi, Japan, assignors to Kanto Tokushu Seiko Kabushiki Kaisha, Kanagawa-ken, Japan
Continuation-in-part of application Ser. No. 246,788, Dec. 24, 1962. This application June 10, 1966, Ser. No. 556,753
Int. Cl. B21b *1/00;* **C21d** *9/38*
U.S. Cl. 72—366 **3 Claims**

A method for cold rolling of metals utilizing a roll composed of roll steel having improved resistance against cracks and wear, a hardness of above Vickers hardness No. 700, and prepared by forging a roll steel consisting of 0.60 to 1.30% C., 0.25 to 3.50% Si, 0.15 to 1.60% Mn, 1.00 to 3.50% Cr, 0.30 to 8.0% Co, and the balance iron and impurities, and quenching the surface thereof.

3,530,704
COMPASS COMPENSATION

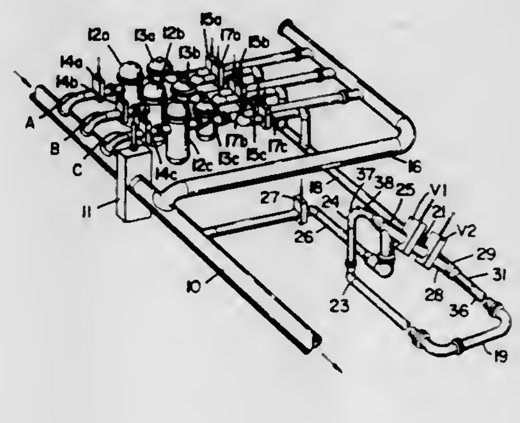
Richard B. Wallace, Bloomfield Hills, Mich., assignor to The Oakland Corporation, Troy, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 476,343, Aug. 2, 1965. This application May 29, 1967, Ser. No. 641,959
The portion of the term of the patent subsequent to Dec. 31, 1985, has been disclaimed
Int. Cl. G01c *17/38*
U.S. Cl. 73—1 **11 Claims**



A magnetic compass on a vessel or other vehicle is compensated against semi-circular deviation due to a disturbing magnetic field of the vessel by maintaining the vessel on a single heading and separately and sequentially neutralizing the effect of the earth's magnetic field and the effect of the local disturbing magnetic field on the compass, and thereafter restoring the effectiveness of the earth's magnetic field on the compass.

3,530,705
METER PROVING SYSTEM WITH LEAK DETECTION

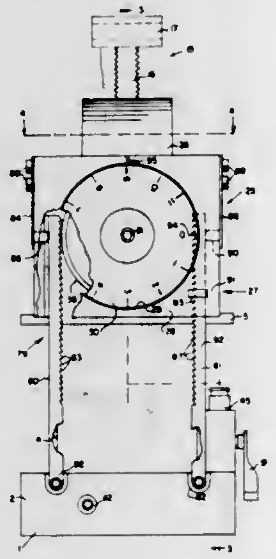
Francis M. Lathrop II, Houston, Tex., assignor to M & J Valve Company, Houston, Tex., a corporation of Delaware
Filed June 10, 1968, Ser. No. 735,622
Int. Cl. G01f *25/00*
U.S. Cl. 73—3 **4 Claims**



Meter proving apparatus of the type using a metering pipe which receives a flow propelled sphere and a valve controlled sphere return passage connecting the inlet and discharge ends of the metering pipe. Leak detecting means is incorporated with the apparatus so that if valve leakage occurs, such as would interfere with metering accuracy, it is immediately detected.

3,530,706
SHOCK ABSORBER TESTING APPARATUS

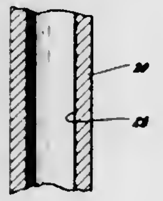
Gerald W. Kelly, Bridgeport, Mich., assignor to Wilson Engineering, Inc., Saginaw, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 643,646, June 5, 1967. This application Jan. 22, 1969, Ser. No. 793,023
Int. Cl. G01m *17/04*
U.S. Cl. 73—11 15 Claims



Testing apparatus for a shock absorber device or the like having a support reciprocable in a cylinder and a rotary scale operable to indicate the accumulative travel of the support in both directions of its travel for providing a measure of the efficiency of a device under test. The cylinder is equipped with a rapid exhaust mechanism for enabling substantially instantaneous exhaust of fluid from the cylinder to avoid the imposition of any fluid force in opposition to the movement of the support. A resilient friction clutch mechanism couples the support and the rotary scale to rotate the latter in one direction only and without any slippage. Adjusting means is provided to compensate for wear of the clutch.

3,530,707
ANALYTICAL INSTRUMENT

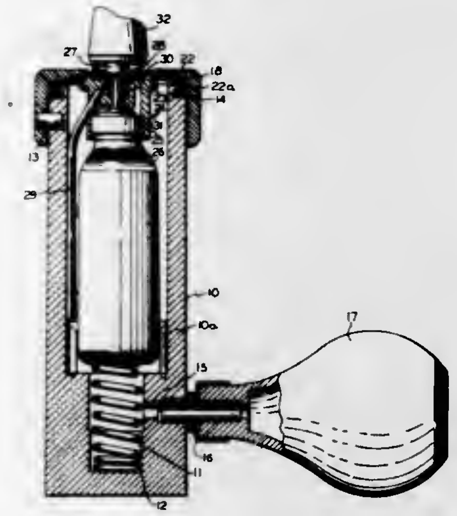
Hans G. Zimmermann, Hodingen, Kreis Uberlingen, Germany, assignor to Bodenseewerk Perkin-Elmer & Co., G.m.b.H., Uberlingen (Bodensee), Germany, a corporation of Germany
Filed Aug. 1, 1966, Ser. No. 569,416
Claims priority, application Germany, Aug. 2, 1965, B 83,099
Int. Cl. B01d *53/04, 53/14;* **G01n** *31/08*
U.S. Cl. 73—23.1 4 Claims



An analytical instrument is described in which a sample to be analyzed is conveyed to a detection means through a passage including a plurality of members wherein a surface of at least one of the members is formed of zirconium oxide.

3,530,708
DEVICE FOR TESTING LIQUID TIGHTNESS OF A VALVE ASSEMBLY

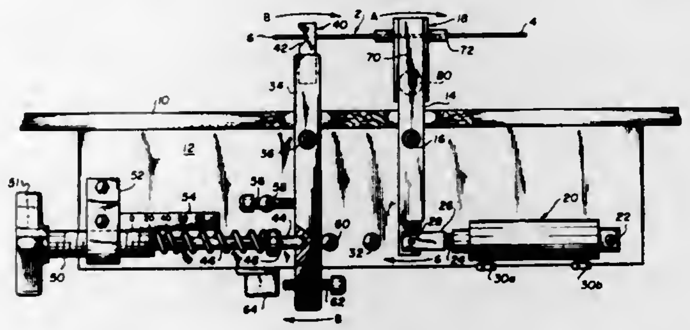
Jean Y. Marand, St. Benoit, France, assignor to Geigy Chemical Corporation, Ardsley, N.Y.
Filed Nov. 25, 1968, Ser. No. 778,413
Int. Cl. G01m *3/06, 3/26*
U.S. Cl. 73—45.5 7 Claims



A device for testing liquid tightness of a valve assembly having a product container cover member with valve means and a propellant gas cartridge depending therefrom. The testing device is a chamber having only one end open, and having sealing means at the open end. A chamber lid is tightly engageable with the open end of said chamber. The inside surface of the chamber lid has a shape for holding the product container cover in fluid tight engagement with the sealing means. Means is connected to said chamber for feeding a fluid under pressure into said chamber, whereby if the valve assembly leaks escaping fluid can be detected.

3,530,709
MACHINE FOR TESTING THE TENSILE STRESS RESISTANCE OF A WORKPIECE

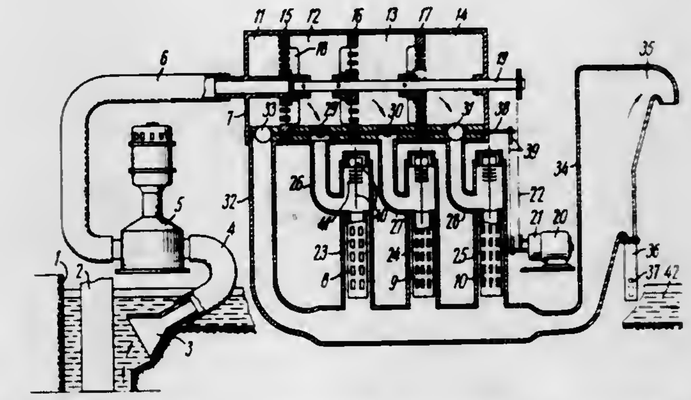
Edward Nemeth, 13—08 Morlot Ave., Fair Lawn, N.J. 07410
Filed Oct. 22, 1968, Ser. No. 769,642
Int. Cl. G01n *3/08*
U.S. Cl. 73—95 4 Claims



A machine for testing the tensile stress resistance of a workpiece, wherein the workpiece is secured between a pair of movable levers and one of the levers is moved in a direction away from the other to exert a gradually increasing tensile stress on the workpiece. The other lever is restrained from movement in the same direction until a predetermined tensile stress is exerted on the workpiece.

3,530,710
APPARATUS FOR THE CONTINUOUS WITHDRAWAL OF SLUDGE DURING THE MUD LOGGING OF WELLS

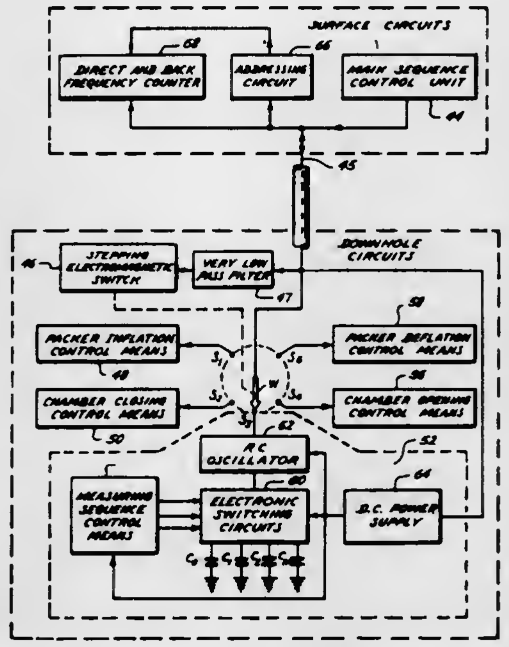
Georgy Ivanovich Beloglazov, Ul. Mikhailovskaya 26, kv. 5; Lev Izrailevich Pomerants, Sirenevy bulvar 29/45, korp. 2, kv. 29; Sergei Grigorievich Komarov, Ul. Kazakova 3, kv. 64; Nikolai Nikolaevich Gerasimov, 2 Donskoi proezd 9b, kv. 1; Boris Yakovlevich Kudymov, 3 Kozhukhovskaya ul. 7, kv. 215; Sergei Nikolaevich Schukin, 3 Tverskaya-Yamskaya 40/39, kv. 13; and Nikolai Nikolaevich Kvashnin, Ul. Timiryazevskaya 8, kv. 61, all of Moscow, U.S.S.R.
Filed Oct. 22, 1968, Ser. No. 769,620
Int. Cl. E21b *49/02*
U.S. Cl. 73—153 3 Claims



An apparatus for continuous withdrawal of sludge during the mud logging of wells in which the sludge is separated into groups of particles in a sludge-sorting chamber divided into sections by filtering grids, the sludge having been sorted out into groups of particles being accumulated in mesh containers.

3,530,711
METHOD AND APPARATUS FOR DETERMINING THE PROPORTION OF COMPONENTS OF A MIXTURE OF FLUIDS PRODUCED BY A WELL

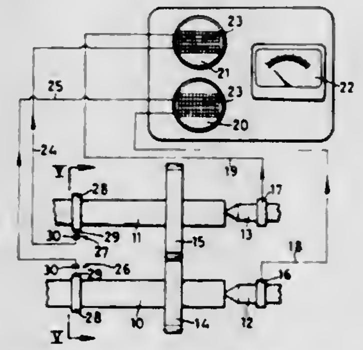
Jean-Louis Tocanne, Lozere-sur-Yvette, Essonne, France, assignor to Schlumberger Technology Corporation
Filed Dec. 18, 1968, Ser. No. 785,456
Claims priority, application France, Nov. 12, 1968, 173,294
Int. Cl. E21b *47/00*
U.S. Cl. 73—155 19 Claims


SURFACE CIRCUITS
DIRECT AND BACK FREQUENCY COUNTER
ADDRESSING CIRCUIT
MAIN SEQUENCE CONTROL UNIT
DOWNHOLE CIRCUITS
STEPPING ELECTROMAGNETIC SWITCH
VERY LOW PASS FILTER
PACKER INFLATION CONTROL MEANS
PACKER DEFLATION CONTROL MEANS
CHAMBER CLOSING CONTROL MEANS
CHAMBER OPENING CONTROL MEANS
RC OSCILLATOR
MEASURING SEQUENCE CONTROL MEANS
ELECTRONIC SWITCHING CIRCUITS
D.C. POWER SUPPLY

Disclosed is a method and apparatus for use in a producing well for determining the relative proportion of components of the fluid mixture being produced at a given depth in the well. A well tool provided with a packer, a fluid flow passage, a sample chamber slidably mounted in the passage, a fluid bypass, a flowmeter, and interface detecting means is lowered into the well. When the tool is activated, the sample chamber is rapidly closed trapping a representative sample of well fluid at the level in question therein. The sample is allowed to separate under the influence of gravity to form fluid interfaces in the sample chamber. The level of fluid interfaces are then detected in situ by the interface detecting means and this information, indicative of the relative proportion of fluids present, is transmitted to the surface. The operation of the tool may then be recycled at a new depth.

3,530,712
MACHINES FOR THE NOISE TESTING OF GEARS

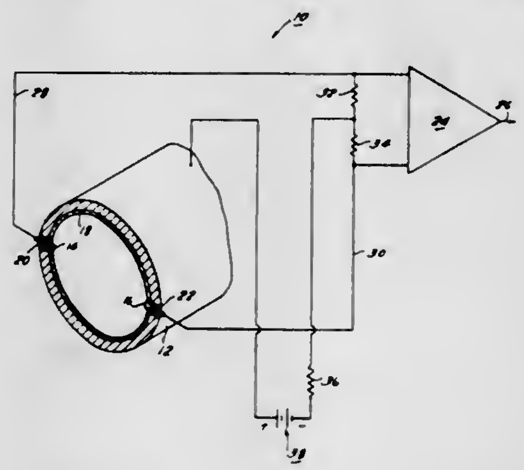
Giampiero Matteucci, Porretta Terme, Bologna, Italy, assignor to S.p.A. Officine Meccaniche F.lli Daldi & Matteucci, Milan, Italy, an Italian company
Filed Oct. 31, 1968, Ser. No. 772,199
Claims priority, application Italy, May 22, 1968, 16,835/68
Int. Cl. G01m *13/02*
U.S. Cl. 73—162 3 Claims



A device for detecting defects in gears by noise testing two gears of different diameters rotated in mesh with each other. The meshed gears are supported on spindles, one of which is driven in rotation. The spindles have piezoelectric vibration transducers connected to an oscilloscope, and a magnetic pad and pickup to synchronize the scan of each oscilloscope with the rotation of the corresponding spindle. Defects are indicated by a stationary peak on the oscilloscope corresponding to the gear having the defect.

3,530,713
A.C. MAGNETIC FLOWMETER WITH D.C. BIAS ON ELECTRODES

Alfred Nazareth, Jr., Rehoboth, Mass., assignor to The Foxboro Company, Foxboro, Mass.
Filed Dec. 26, 1967, Ser. No. 693,663
Int. Cl. G01p *5/08*
U.S. Cl. 73—194 5 Claims

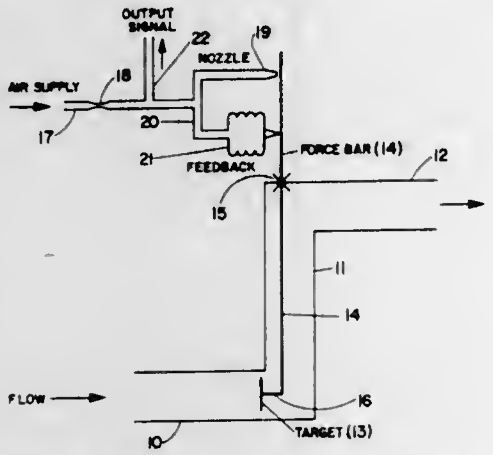


A magnetic flowmeter wherein an A.C. magnetic field is produced in the interior of a flow pipe carrying a liquid and a pair of electrodes mounted on opposite sides of the pipe contact the liquid to develop an A.C. signal proportional to the rate of fluid flow, there also being provided a source of D.C. potential arranged to apply to the electrodes a negative bias to reduce the error-producing effects of what appears to be contamination of the electrode surface.

3,530,714
TARGET FLOWMETER

Lloyd T. Akeley, Charlestown, N.H., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed Feb. 21, 1968, Ser. No. 707,058
Int. Cl. G01f *1/00;* G01p *5/02*
U.S. Cl. 73—228 1 Claim

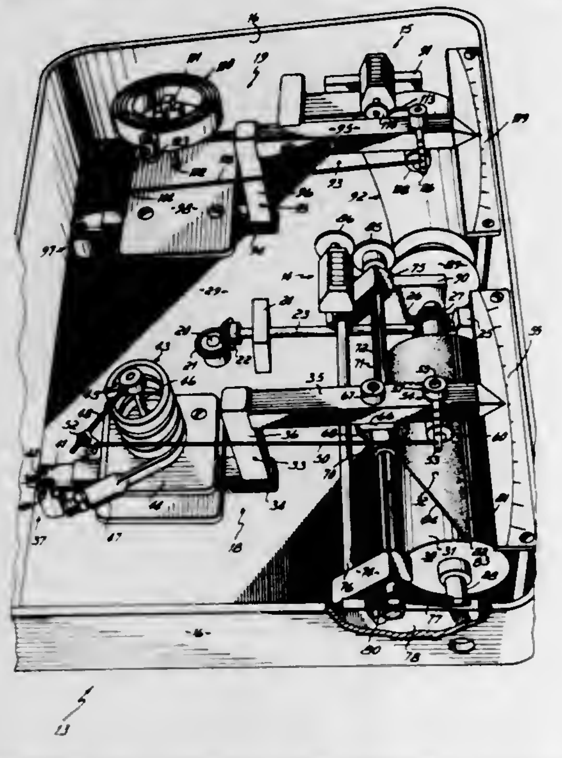


A flowmeter of the target meter type with an elbow-angled flow path in which the target is in the input angle leg and the force bar target support arm is in and along the other angle leg, providing a non-clogging long moment arm situation within the flow passage. A flush force bar pivot seal may be provided, and an option of straight through flow is disclosed.

3,530,715
FLUID METER COMPENSATOR

Robert B. Stiens, Cincinnati, Ohio, assignor to Mercury Instruments, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 26, 1968, Ser. No. 700,851
Int. Cl. G01f *1/00, 3/02*
U.S. Cl. 73—233 17 Claims



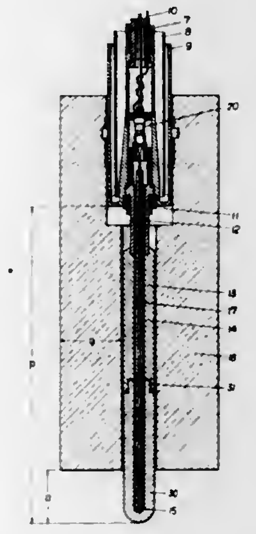
Apparatus for correcting the volume of gas measured by a fluid meter for both changes in temperature and changes in pressure.

The compensator includes pressure and volume compensating mechanisms. Each mechanism comprises a torque amplifier in the form of a pivoted beam carrying a steering wheel in engagement with the periphery of a rotating drum. The steering wheel is pivoted through a linkage actuated by a pressure transducer (Bourdon tube) in one case and a temperature transducer (Bourdon tube) in the other. The pressure compensating drum is driven by the meter mechanism and includes a raised cam surface tracked by a follower mounted upon the beam and geared to a register. The temperature compensator drum is driven in synchronism with the pressure register and includes a modified frustoconical periphery. The wheel tracking this periphery drives a second register which reads gas volume corrected for both pressure and temperature.

3,530,716
DEVICE FOR CONTINUOUSLY MEASURING THE TEMPERATURE OF METAL BATHS IN MELTING OR REFINING FURNACES, PARTICULARLY IN CONVERTERS

Meinhard Truppe, Matthias Schernthaner, and Gunter Roferl, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, an Austrian company

Filed Aug. 27, 1968, Ser. No. 755,557
Claims priority, application Austria, Sept. 19, 1967, A 8,518/67; May 15, 1968, A 4,657/68
Int. Cl. G01k *1/12, 7/02*
U.S. Cl. 73—343 7 Claims



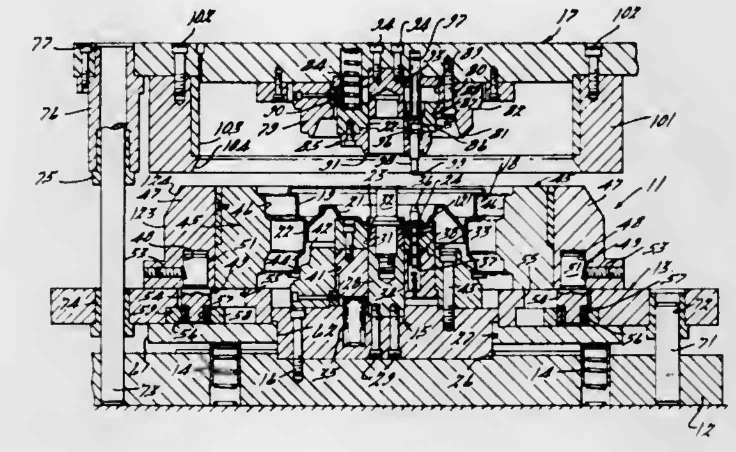
A device for continuously measuring the temperature of metal baths in melting or refining furnaces. This device is lowerable from the top into the hot metal charge and consists essentially of a water-cooled probe, to the head of which a measuring instrument is attached. The measuring instrument is provided with a sheath tube consisting of refractory material, at least on its tip, containing a thermocouple, and with a detachable outer shell made of refractory material.

3,530,717
WHEEL ROUNDING MACHINE

Horace D. Gregg, Wayne, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware

Continuation of application Ser. No. 637,424, May 10, 1967. This application Apr. 22, 1969, Ser. No. 826,760
Int. Cl. B21d *22/00*
U.S. Cl. 72—354 17 Claims

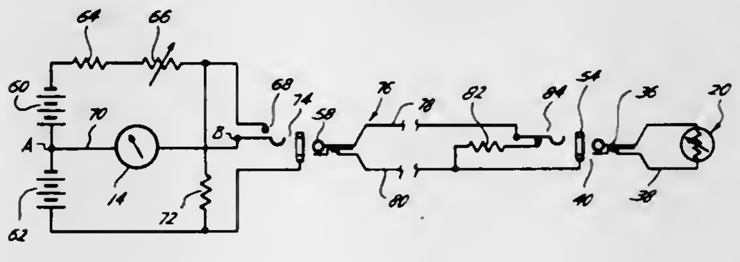
This application discloses a machine having a plurality of dies that coact with an assembled wheel to true any axial or radial runout present in the wheel rim and for performing certain other forming operations simultaneously with the truing. The machine is comprised of a fixed base plate having a pilot die that engages and locates the wheel spider and is adapted to engage the inner periphery of the rim. Rounding dies are supported for movement in a radial direction and engage the periphery of the rim, which is preferably formed oversize when the wheel is assembled, for bringing the rim into axial and radial alignment. When the rim is held in its true position by the rounding dies, a machining or forming operation is performed upon a locating opening in the spider so that the rim will be true with respect to its axis of rotation as defined by this locating opening. If the wheel is located by its central opening, a machining operation may be performed upon this central opening when the rim is held in its true position. If the wheel is located by the attachment holes formed in the spider around the central opening, these holes may be accurately located and formed by forming members carried by a ram that engage the spider and which accomplish a finish forming operation upon the wheel attachment holes of the spider. Liftout fingers are pivotally carried by the ram for lifting the rounded wheel out of the die base assembly.



3,530,718
ELECTRIC THERMOMETER

Walter R. Ehlo, San Antonio, Tex., assignor to Research and Aviation Development, Inc., San Antonio, Tex., a corporation of Texas

Filed Oct. 17, 1967, Ser. No. 679,589
Int. Cl. G01k *7/24;* H01c *7/04*
U.S. Cl. 73—362 9 Claims

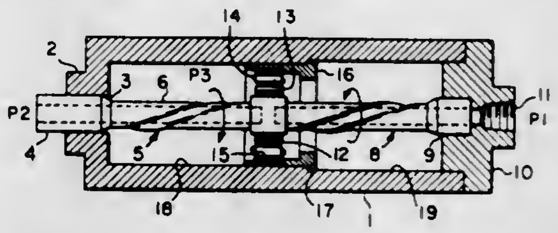


An electric thermometer for use primarily in the medical field which utilizes a replaceable probe that may be subjected to sterilization containing two thermistors which may be matched to achieve the desired resistance. Thus, the current flowing through a meter to which the thermistors are operatively connected will vary with the temperature of the probe's environment. A bleed resistor is also utilized across the voltage source. The thermometer is comprised of a housing carrying the meter and most of the electrical circuitry, and this housing is connected to the interchangeable probe by a flexible cord.

3,530,719
PRESSURE TRANSDUCERS

Michael D. Altfillisch, Canton, Mass., assignor to Electrosyn Technology Laboratories, Inc., Canton, Mass., a corporation of Massachusetts

Filed Oct. 23, 1968, Ser. No. 769,854
Int. Cl. G01l *9/10*
U.S. Cl. 73—398 9 Claims

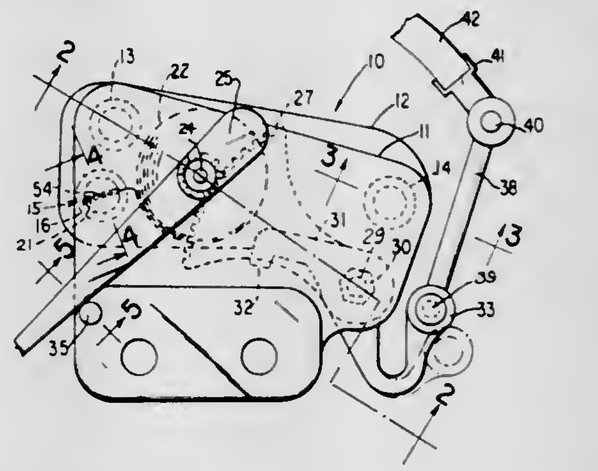


The pressure transducer disclosed herein employs an elongate transducting element having a pair of helically twisted tubular elements which are aligned and rigidly connected together so that the point at which they are joined rotates to an extent which is a function of the algebraic sum of respective torque components.

3,530,720
PLASTIC GAUGE MOVEMENT

Philip W. Harland, Perkasie, and Ralph D. Waite, Sellersville, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 6, 1968, Ser. No. 773,856
Int. Cl. G01l *7/04*
U.S. Cl. 73—415 9 Claims



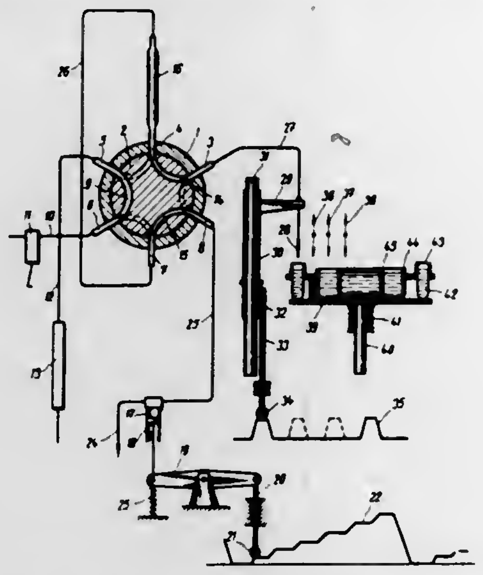
A movement for a pressure gauge wherein a pinion carrying a hairspring and meshing with a sector gear mounted on an arbor are all mounted between top and bottom plates. The plates, pinion and sector gear are made of a plastic material. A bendable tail is made of metal and is mounted on the arbor and connectable to the pressure sensitive element of the gauge. The tail may be bent to calibrate the gauge. A zero stop for the pointer comprises a post on the top plate which passes through an opening in the dial face.

3,530,721
APPARATUS FOR AUTOMATIC SAMPLE LIQUID LOADING FOR CHROMATOGRAPHY COLUMNS

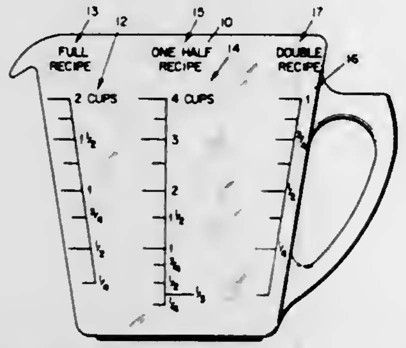
Jiří Hrdina, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia, a corporation of Czechoslovakia

Continuation of application Ser. No. 749,252, July 22, 1968, which is a continuation of application Ser. No. 457,997, May 24, 1965. This application July 2, 1969, Ser. No. 845,609
Claims priority, application Czechoslovakia, June 1, 1964, 3,160/64
Int. Cl. G01n *1/14*
U.S. Cl. 73—423 15 Claims

An apparatus for supplying liquid samples to a chromatographic column. The samples initially within reservoirs disposed on a turntable. A take-off needle sequentially removes the samples as the turntable positions the reservoirs, the sample reservoirs adjacent the take-off needle in a manner known in the art. According to this invention the samples are first pumped to an intermediate receptacle prior to being switched to the elutant stream and the chromatography column.

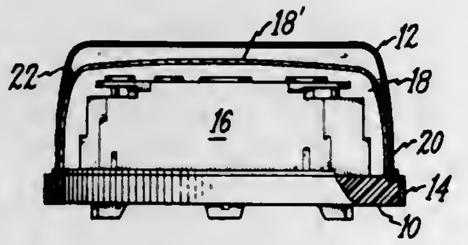


3,530,722
RECIPE MEASURING DEVICE
Paul J. Miller, Rochester, N.Y., assignor of twenty-five percent each to John R. Schovee and Winslow E. Thomson
Filed Dec. 20, 1963, Ser. No. 332,183
Int. Cl. G01f ***19/00***
U.S. Cl. 73—427 **6 Claims**



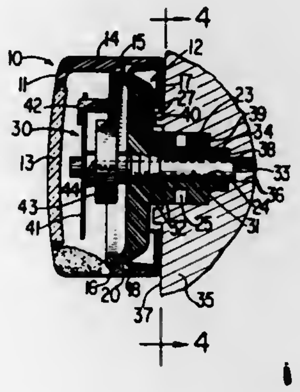
Measuring containers in which the volume indicated is different from the volume contained for the purpose of measuring out fractional or multiple recipes.

3,530,723
METER HAVING METER COVER LINER
Marcus P. Hogue, Rochester, and Paul D. Jacobson, Greenland, N.H., assignors to General Electric Company, a corporation of New York
Filed June 25, 1968, Ser. No. 739,769
Int. Cl. G01d ***11/26***
U.S. Cl. 73—431 **4 Claims**



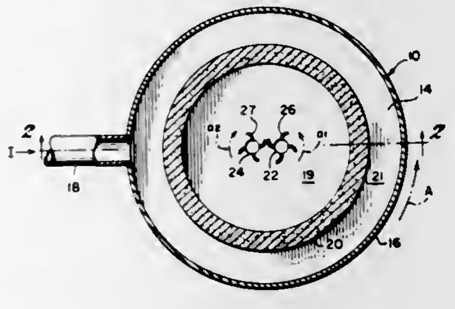
A meter including a meter cover liner of plastic sheet material mounted within the glass cover of the meter, such as a watthour meter. The plastic material is vacuum formed in the shape of the meter cover and has a cylindrical side wall which fits snugly against the inside cylindrical side wall of the meter cover. The liner has a flange secured between the glass cover and the meter base. Alternatively, or additionally, the side walls of the liner are fastened to the inside wall of the cover by an adhesive material. The face of the liner is approximately 5 to 10 mils below the meter cover face. A desiccant material is placed between the liner and the cover to absorb moisture.

3,530,724
PLASTIC CASE WITH CONNECTION AND O-RING SEAL
Philip W. Harland, Perkasie, and Ralph D. Waite, Sellersville, Pa., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 785,261
Int. Cl. G01l ***19/14***
U.S. Cl. 73—431 **3 Claims**



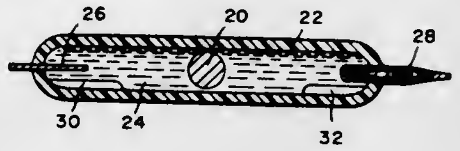
An instrument casing assembly having a plastic back plate which has a central bore therethrough and a boss on the outer face of said back plate surrounding said bore. An instrument movement is mounted on one end of a metallic tubular socket which is closely received within the bore and has a plurality of annular serrations for gripping the inner face of the bore. The outer end of the socket projects outwardly beyond the boss and is surrounded with a resilient O-ring for effecting a sealing connection with a shoulder of a stepped bore of a housing.

3,530,725
ANGULAR RATE SENSOR
Albertus E. Schmidlin, Caldwell, and Edward L. Rakowsky, Kinnelon, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed July 17, 1968, Ser. No. 745,489
Int. Cl. G01p ***3/26***
U.S. Cl. 73—505 **5 Claims**



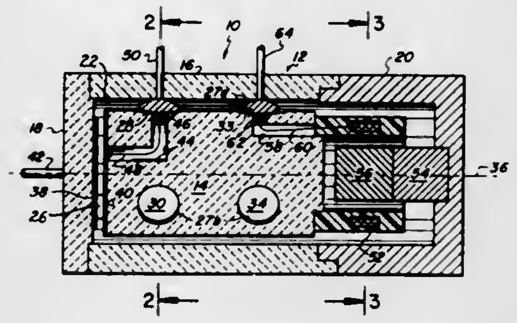
An angular rate sensor comprising a housing rotatable about its axis and having an inlet and an outlet for fluid. Means are provided to impart a circumferential velocity to the fluid as it passes through the outlet, which circumferential velocity is varied in response to an input rate. The input rate is detected by measuring the flow rate through the outlet.

3,530,726
ACCELEROMETER
Niels O. Young, Lincoln, Mass., assignor to Block Engineering, Inc., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 606,671
Int. Cl. G01p ***15/08***
U.S. Cl. 73—516 **5 Claims**



The following specification describes several embodiments of an accelerometric device which typically comprises a glass capillary tube filled with an electrolytic solution in contact with which is a globule of mercury constrained by the tube to be movable only along the long axis of the tube. A pair of electrodes are positioned adjacent each end of the tube in electrical contact with opposite sides of the mercury droplet to detect any potential developed across the latter due to distortion of the interface between the droplet and electrolytic solution when the device is subject to acceleration with a component along the tube axis.

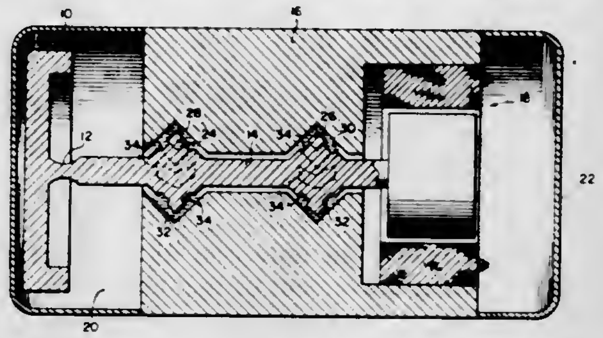
3,530,727
LIQUID METAL SUPPORT (LMS) ACCELEROMETER
William C. Albert, Waldwick, N.J., assignor to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,420
Int. Cl. G01p ***15/08***
U.S. Cl. 73—516 **6 Claims**



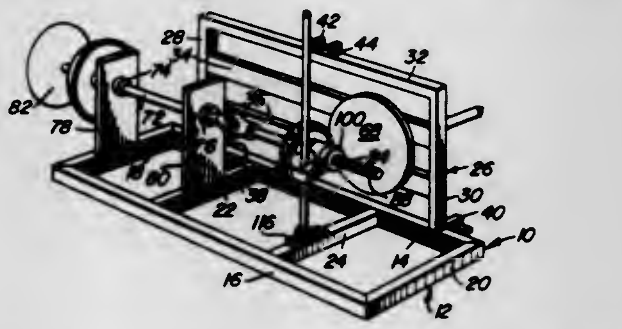
An accelerometer adaptable to force balance operation wherein a proof mass of preferably ceramic material is supported within a housing by pads of liquid of high surface tension. The pads have sufficient resiliency due to surface tension to prevent relative transverse motion between proof mass and enclosure. To prevent relative rotation, the surface of the proof mass adjacent to the pad is concave or otherwise contoured and the interior of the enclosure is longitudinally grooved to receive the pads whereby relative rotation would result in compression of the liquid of the pad.

3,530,728
CONICAL LIQUID BEARING ASSEMBLY
John L. Evans, Oakland, and Jay Hoffman, Livingston, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,178
Int. Cl. G01c ***19/16***
U.S. Cl. 74—5 **2 Claims**

A bearing assembly for a rotor rotatably mounted in a stator, in which at least one conical shaped annular cavity is formed in the stator and a corresponding conical shaped annular flange is formed on the rotor shaft, the flange extending within the cavity in a spaced relation from the wall thereof. A non-wetting liquid is disposed in the space between the flange and the wall of the cavity to provide a bearing between the rotor shaft and the stator.



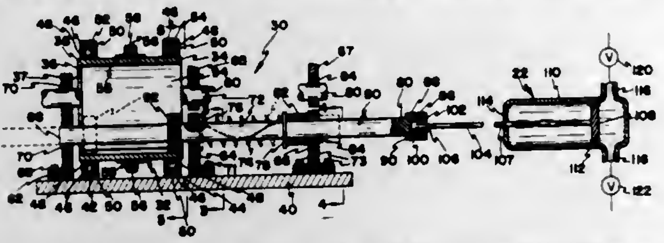
3,530,729
FRICTION GEARING DRIVE MEANS FOR A WIRE WINDING POWER TAKEOFF ATTACHMENT
Woodrow C. Nusz, R.F.D., Okeene, Okla. 73763
Filed Feb. 26, 1969, Ser. No. 802,374
Int. Cl. F16h ***37/00, 15/08***
U.S. Cl. 74—15.4 **10 Claims**



First and second rotatable shafts with a friction disk mounted on the first shaft for rotation therewith and a friction wheel mounted on the second shaft for rotation therewith and shifting axially therealong. The second shaft is mounted for angular displacement relative to the first shaft to swing the wheel thereon generally axially of the first shaft whereby to selectively frictionally engage the periphery of the wheel with an axial end face of the disk and shifting of the wheel axially of its shaft serving to shift the area of contact of the wheel with the disk generally along a diameter of the disk.

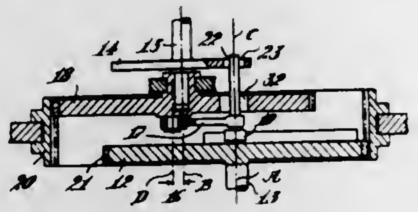
3,530,730
POWER CONVERSION
Robert L. White, 304 East 7200 South, Salt Lake City, Utah 84121
Filed Jan. 6, 1969, Ser. No. 789,266
Int. Cl. F16h ***25/12***
U.S. Cl. 74—23 **9 Claims**

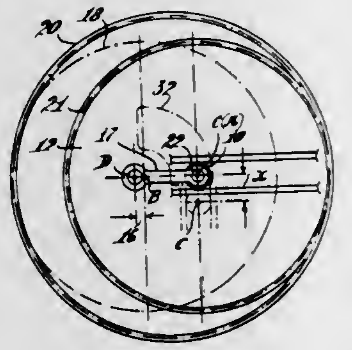
A power conversion system, the presently preferred apparatus featuring a transmission comprising a primary driving wheel which, seriatim rotationally displaces a plurality of shafts through a predetermined distance during part of a cycle, each shaft axially reciprocating first in one direction during the rotational displacement and, when the rotational displacement terminates, in the opposite direction thereby returning the shaft to the initial position. A fluid pump, actuated by the transmission, develops increased pressure in a fluid upon which it acts, and the fluid under pressure is communicated to inlet ports of a fluid motor. The fluid motor comprises a reciprocable shaft upon which a spool is integrally mounted in fluid-sealed relation within a cylinder housing which is cyclically opened at one end and closed at the other and then vice versa to cause the fluid to exert pressure first on one face of the spool and thereby reciprocally displace the spool and integral shaft in one direction and then upon the opposite face to oppositely displace the spool and shaft. The ends of the reciprocable flud motor shaft drive other machinery, e.g. each can be pivotally connected to a pawl or roller which engages a given circumferential location on a large wheel which rotates in only one direction responsive to the reciprocating movement of the fluid motor shaft.



3,530,731
INDEXING MEANS FOR INJECTION MOLDING MACHINE

Friedrich Koch, Achim, near Bremen, and Lothar Fink, Baden, Kreis Verden, Germany, assignors to Desma-Werke Gesellschaft mit beschrankter Haftung, Uesen, near Bremen, Germany
Filed Feb. 7, 1969, Ser. No. 797,417
Claims priority, application Germany, Feb. 21, 1968, 1,650,675
Int. Cl. F16h *21/14*
U.S. Cl. 74—69 **17 Claims**



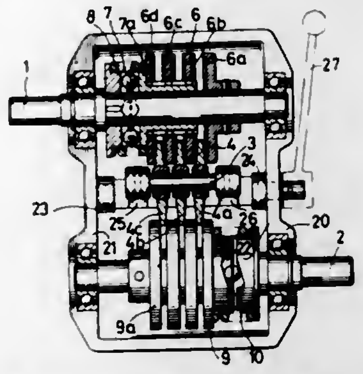


A horizontally disposed table supported for rotation about a vertical axis and indexing means for stepping the table around at predetermined intervals, comprising spaced parallel input and output shafts, and driving means connecting said shafts for transforming uniform rotation of the input shaft to non-uniform intermittent rotation of the output shaft, said means embodying a diametrically disposed guide fast to one shaft, a drive elecent constrained to move linearly along the guide and angularly with the guide about the axis of the input shaft when the latter is rotated, means operably connecting the drive element to the output shaft so that the combined linear and angular movement of the drive element will impart rotation to the output shaft, means drivably connecting the output shaft to the table, and means on the input shaft adapted to impart uniform rotation thereto.

3,530,732
VARIABLE-SPEED TRANSMISSION OF FRICTION TYPE

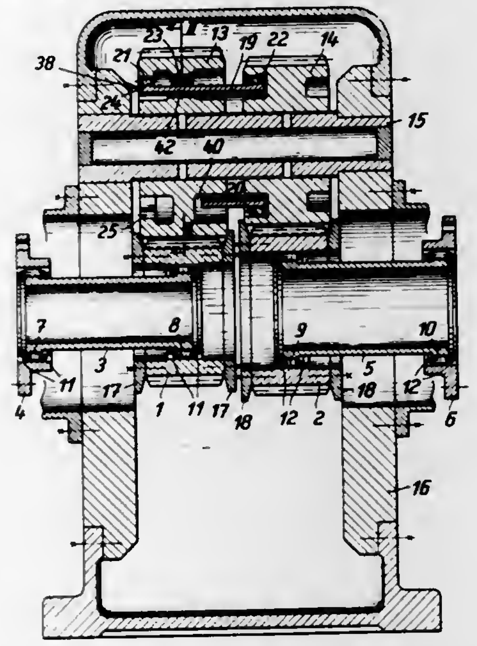
Manabu Kashihara, Uji, Kyoto, Japan, assignor to Shimpo Kogyo Kabushiki Kaisha (Shimpo Kogyo Co. Ltd.), Kyoto, Japan, a corporation of Japan
Filed July 19, 1968, Ser. No. 746,030
Claims priority, application Japan, July 24, 1967, 42/47,506, 42/47,507, 42/47,508
Int. Cl. F16h *15/08, 15/52*
U.S. Cl. 74—199 **6 Claims**

A variable speed transmission having rollers with conical surfaces each engaging, at varying effective radii, alternate disc wheels of two different sets, one of which is a driving set. In order to compensate for axial movement of the disc wheels relative to the rollers, the rollers may be deflected from a position normal to the axis of the shaft on which they are mounted.



3,530,733
MULTIWAY TRANSMISSION

Gunther Heidrich, Munich, Germany, assignor to Alexander Stoeckicht, Munich, Germany
Filed Oct. 9, 1968, Ser. No. 766,213
Claims priority, application Germany, Oct. 21, 1967, 1,650,857
Int. Cl. F16h *57/00*
U.S. Cl. 74—410 **8 Claims**

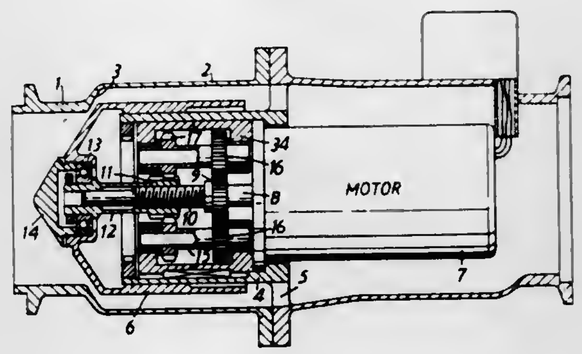


A multiway gearing consists of a central input gear driven by an input shaft, a central output gear driving an output shaft and at least three pairs of auxiliary gears. The two gears of each pair are in mesh with the input gear and the output gear, respectively, and are interconnected by a gear coupling sleeve slotted at the ends thereof. The slotted coupling sleeve provides a connection capable of being twisted within certain limits. The special engagement of sleeve and auxiliary gears allows minimum length of the gearing without impairing the flexibility. The construction permits balance of small gear-teeth irregularities, damping of torsional vibrations and reduction of sudden torque peaks in operation.

3,530,734
LOW-SPEED LINEAR ACTUATORS

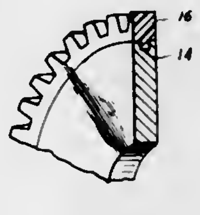
Ronald J. Wray and Leonard T. Tribe, Ilford, England, assignors to The Plessey Company Limited, Ilford, England, a British company
Filed Sept. 27, 1968, Ser. No. 763,237
Claims priority, application Great Britain, Sept. 29, 1967, 44,571/67
Int. Cl. F16h *1/18;* **F16k** *31/44*
U.S. Cl. 74—424.8 **4 Claims**

In a linear actuator driven by a rotary motor via a nut-and-spindle drive, both the spindle and nut are motor-driven in the same direction and are coupled by gear means which cause the two to rotate at slightly different speeds. Gear means of a lay-shaft type may be combined with the motor by enclosing two intermeshing gears of such gear means in a housing for operation as a gear-type fluid-displacement motor.



3,530,735
PRECISION GEAR AND BLANK FOR MANUFACTURE OF THE SAME

Alton K. Allen, 11 Flower Lane, Kingspoint, N.Y. 11024
Filed Sept. 17, 1968, Ser. No. 760,191
Int. Cl. F16h *55/12*
U.S. Cl. 74—446 **9 Claims**

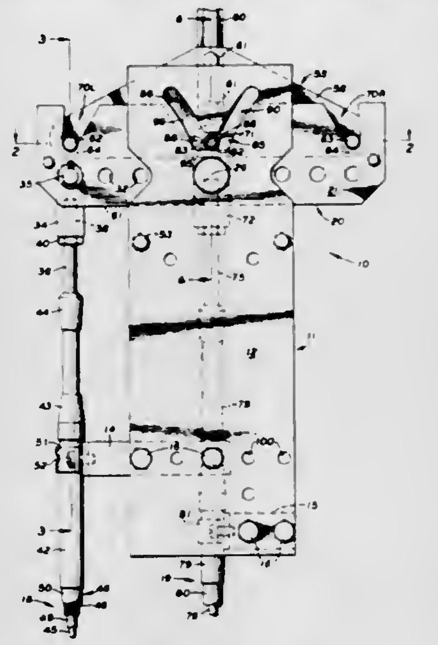


A flat stamped metal disc is used for the body of a composite precision gear blank having a plastics rim. The cross section of the plastics rim is uniform entirely around the gear. An undercut peripheral groove is preliminarily machined in the metal body. A plastics rim then is molded by injection molding directly against the periphery of the metal disc, so that an undercut tongue fills the undercut groove to interlock the rim and disc. The groove may have a dovetail section or a T section. Shrinkage of the plastics material inward and outward binds the rim securely to the wheel. Double disc grinding gives the disc parallel face planes. The gear teeth are machine cut, preferably on a stack of such blanks in one operation.

3,530,736
SINGLE LEVER CONTROL

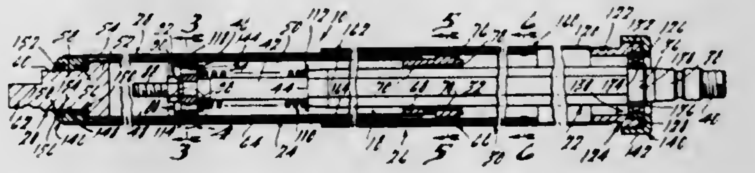
Richard D. Houk, Stow, Ohio, assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 13, 1968, Ser. No. 783,521
Int. Cl. G05g *1/00*
U.S. Cl. 74—469 **13 Claims**

A single lever control for sequential actuation of two force transmitting devices. The control has an oscillating beam mounted on a frame. One of the force transmitting devices is adapted for operation by swinging movement of said oscillating beam with respect to the frame. A rocker arm is swingingly mounted on the oscillating beam, and the second force transmitting device is adapted for operation by swinging movement of the rocker arm with respect to the oscillating beam. The control lever is secured to the rocker arm, and a cam follower on the rocker arm interengages a cam on the frame to assure sequential operation between the force transmitting devices and further to assure that only the reversely directed reaction force transmitting device at a time can be fed back through the control unit to the control lever.



3,530,737
COLLAPSIBLE STEERING COLUMN

William W. Higginbotham, Monroe, Mich., assignor to Monroe Auto Equipment Co., Monroe, Mich., a corporation of Michigan
Filed Aug. 21, 1968, Ser. No. 754,172
Int. Cl. B62d *1/16*
U.S. Cl. 74—492 **17 Claims**

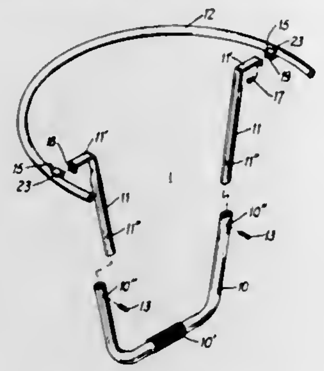


A collapsible steering column comprising a steering shaft having upper and lower shaft sections, the upper shaft section adapted to be operatively connected to an associated steering wheel and the lower shaft section adapter to be operatively connected to an associated steering gear assembly; means operatively connecting the upper and lower shaft sections and defining a fluid reservoir; valve means disposed within the reservoir and dividing the interior thereof into first and second fluid chambers, the valve means normally being closed and being actuatable to an open position in response to preselected axial movement of one of the steering shaft sections, whereby to permit actuating fluid disposed in one of the chambers to flow into the other of said chambers and thereby dampen the axial movement of the one steering shaft section, and a telescopic jacket or housing surrounding the steering column and comprising upper and lower sections telescopically movable relative to one another upon relative axial movement of the steering shaft sections.

3,530,738
BICYCLE STEERING WHEEL ASSEMBLY

Charles E. Kerr, Little Rock, Ark., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 25, 1969, Ser. No. 801,947
Int. Cl. B62k *21/16*
U.S. Cl. 74—551.3 **7 Claims**

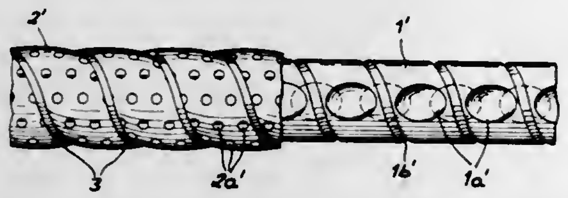
A U-shaped tubular member is adjustably fixed to a steering wheel fork. Two tubular struts are telescopically mounted at one end in the legs of the U-shaped member. A handle bar is adjustably mounted to the other ends of the struts. The adjustments at the fork mounting and at the ends of the struts permit the handle bar to be releasably secured in a variety of positions.



3,530,739

STEERING-WHEEL ASSEMBLY

Karl Meier, Wolfsburg, Germany, assignor to Firma Kamel-Auto-Komfort-Wolfsburg K. Meier KG., Wolfsburg, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 684,686, Nov. 21, 1967. This application Apr. 16, 1969, Ser. No. 816,658
Claims priority, application Germany, May 28, 1968, K 61,357
Int. Cl. B62d *1/06;* **G05g** *1/10*
U.S. Cl. 74—552 10 Claims

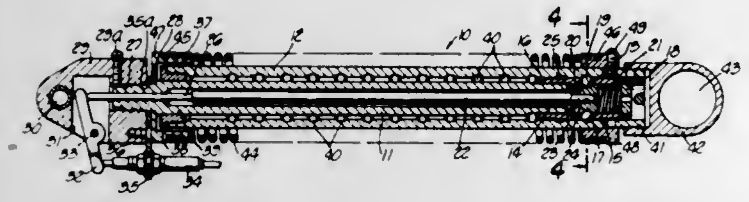


A toroidal steering wheel is formed with a plurality of surface indentations. A toroidal resilient plastic sheath tightly envelops this wheel spanning these indentations to form the wheel-gripping surface. This sheath consists of a spongy resiliently compressible porous layer and a nonporous surface layer with a multiplicity of throughgoing perforations communicating with the indentations. The indentations can breathe through these perforations, when the gripping sheath or cover is compressed and released.

3,530,740

ADJUSTABLE LINK

John F. Turner, Granada Hills, Calif., assignor to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of New York
Filed Nov. 26, 1968, Ser. No. 779,081
Int. Cl. G05g *5/06*
U.S. Cl. 74—586 9 Claims

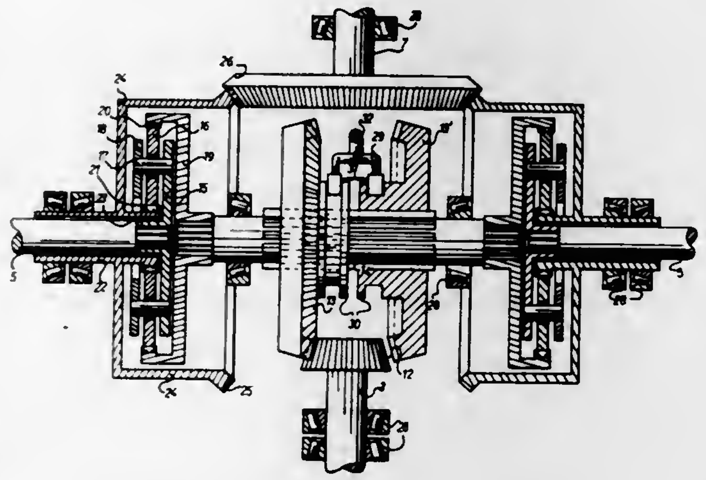


An axially adjustable link for support purposes includes a pair of concentric sleeves which move axially relative to each other and a mechanical lock which is adapted to prevent relative axial movement of the sleeves at a variety of adjusted positions. Release means operably connected to the lock releases the lock when adjustment of the link is required.

3,530,741

MECHANICAL DRIVING AND STEERING SYSTEM FOR TRACKED VEHICLES

André Charest, 160 Des Bouleaux St., Lyster, Quebec, Canada
Filed Dec. 18, 1968, Ser. No. 784,611
Int. Cl. F16h *37/08, 37/06*
U.S. Cl. 74—675 10 Claims

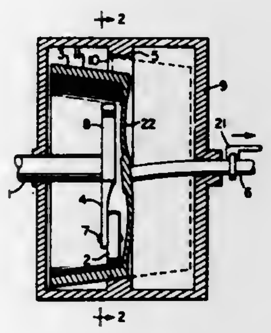


A mechanical driving and steering system for tracked vehicles having at least two tracks, comprising output shafts for driving the respective tracks, a power-driven shaft connected to the respective output shafts through the intermediary of planetary gear systems, each having a reaction gearing, and a steering shaft producing rotation of the reaction gearings in opposite directions, so as to cause rotation of the respective output shafts at different speeds for steering of the vehicle with a minimum loss of power.

3,530,742

POWER TRANSMISSION DEVICE

Albert P. Sfredda, 2106 Iris Place, Bethlehem, Pa. 18018
Filed Sept. 12, 1968, Ser. No. 759,468
Int. Cl. F16h *15/16, 15/50*
U.S. Cl. 74—796 12 Claims



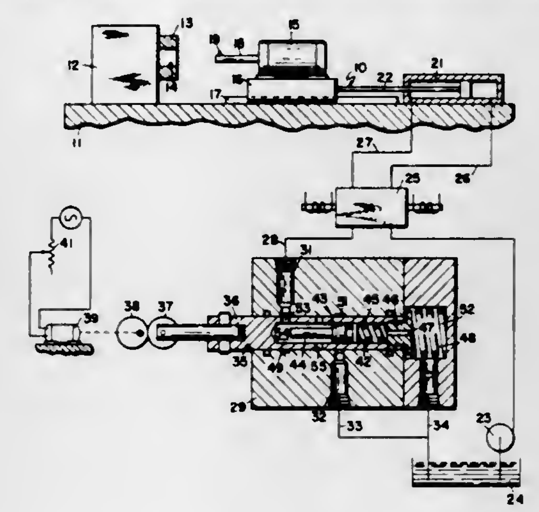
A variable speed power transmitting device whereby power is transmitted from a drive member to a driven member. A drive member rotates a conical roller driven member within a slightly larger raceway. Axial controlled movement between the two members varies the output speed from zero to a progressive substantial variance relative to input speed.

3,530,743

MACHINE TOOL FEED MEANS

Alden H. Jacobson, Princeton, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,717
Int. Cl. B23b *39/00*
U.S. Cl. 77—3 3 Claims

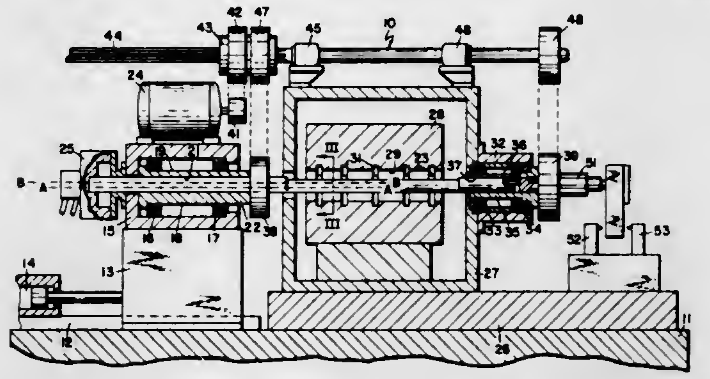
This invention relates to a machine tool and, more particularly, to such apparatus in which the tool is fed into the workpiece for machining operation by use of a hydraulic actuator which operates in incremental movements.



3,530,744

MACHINE TOOL

Alden H. Jacobson, Princeton, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,568
Int. Cl. B23b *29/04*
U.S. Cl. 77—57 7 Claims

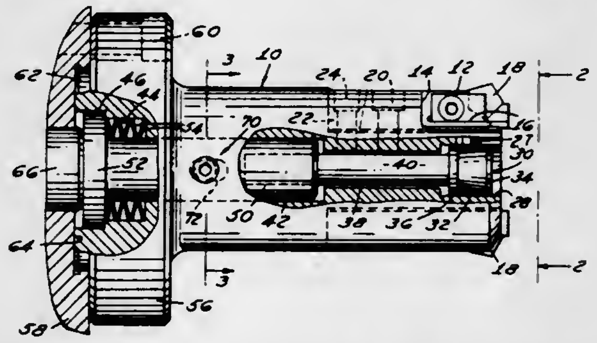


Apparatus for generating surfaces of revolution, such as grooves, in bores of limited diameter, consisting of a rotatable bar on which tools are mounted, the axis of rotation of the bar being movable laterally after the bar and tools have been inserted in the bore.

3,530,745

RETRACTABLE CAM SET CUTTER

Victor Milewski, Birmingham, Mich., assignor to The Valeron Corporation, a corporation of Michigan
Filed Mar. 27, 1967, Ser. No. 626,087
Int. Cl. B23b *29/034*
U.S. Cl. 77—58 6 Claims

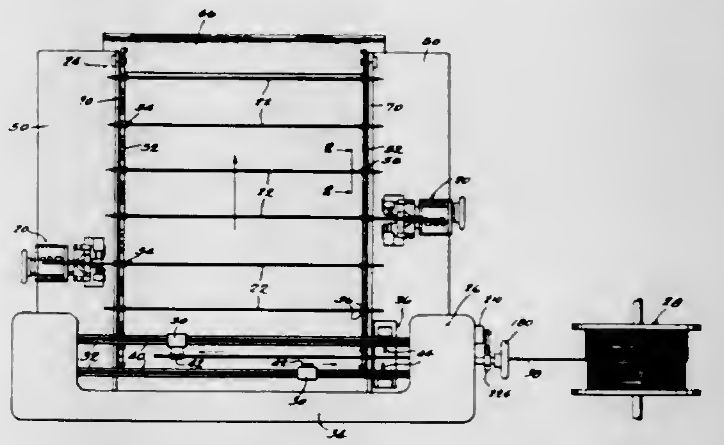


A rotary cutting tool including cutters which are radially adjustable by means within the tool and operable from the retained end thereof for changing the cutting diameter of the tool during its operating cycle. The present embodiment comprises a spindle-mounted multiple cutter boring bar adapted for simultaneous radial extension or retraction of the cutters while the boring bar is rotating.

3,530,746

WIRE STRIPPING APPARATUS

Ragnar Gudmestad, West Allis, Wis., assignor to Artos Engineering Company, New Berlin, Wis., a corporation of Wisconsin
Filed Jan. 5, 1968, Ser. No. 695,998
Int. Cl. H02g *1/12*
U.S. Cl. 81—9.51 19 Claims

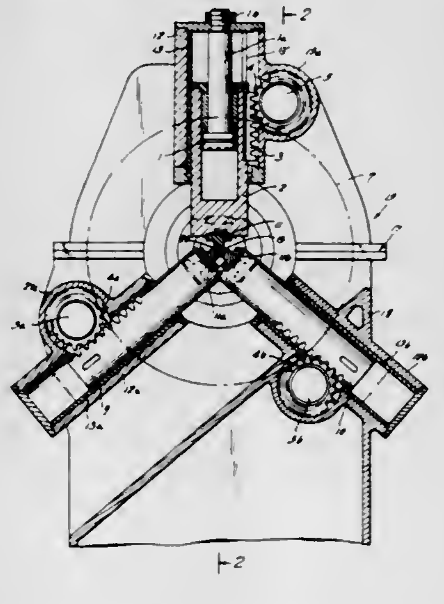


This device relates to apparatus operating in timed relation with a wire conveyor for stripping insulation from the ends of successive wire lengths as they are advanced along a predetermined path. The stripping device includes means for clamping the wire as it is advanced to the stripping station by the conveyor, means for moving the open stripping blades axially toward the wire and inwardly of the end thereof, means for closing the blades onto the wire, and means for thereafter moving the closed blades axially away from the wire beyond its stripped end while the wire clamp remains effective.

3,530,747

CENTERED CLAMPING DEVICE

Horst Lorenz, Solingen, Germany, assignor to Th. Kieserling & Albrecht, Solingen, Germany
Continuation-in-part of application Ser. No. 495,907, Oct. 14, 1965. This application July 11, 1967, Ser. No. 652,590
Int. Cl. B23b *25/00*
U.S. Cl. 82—38 4 Claims

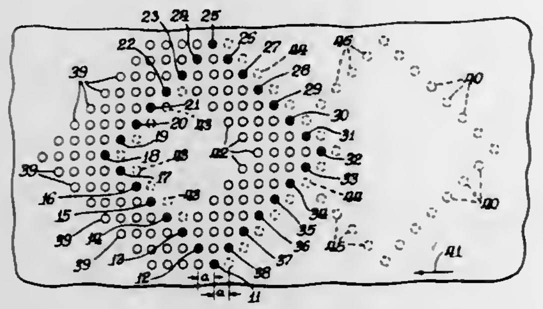


Three clamping jaws are angularly spaced 120°. Only one clamping jaw is directly driven by a hydraulic fluid, but all three clamping jaws carry racks meshing with pinions which mesh with an annular gear so that all three clamping jaws are connected for simultaneous synchronized movement toward a line of symmetry in which a workpiece clamped by the clamping jaws is held.

3,530,748

DESIGN PUNCHING METHOD AND APPARATUS

Judson E. Fuller, River Forest, Illinois, assignor to The Harrington & King Perforating Co., Inc., Chicago, Illinois a corporation of Illinois
Filed Dec. 26, 1968, Ser. No. 787,127
Int. Cl. B21d *28/26*
U.S. Cl. 83—50 **3 Claims**

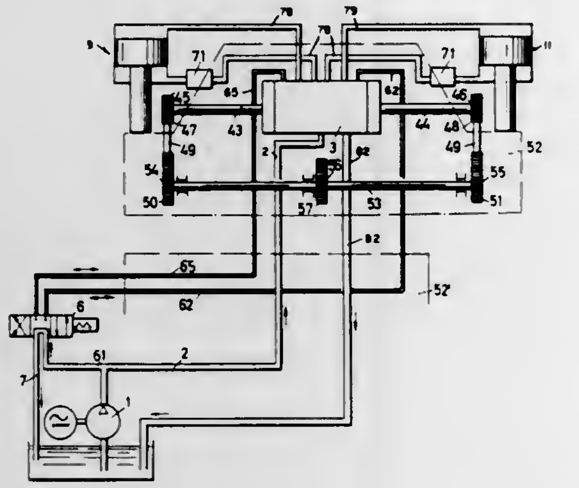


A design having a limited area and a predetermined outline is punched in metal by positioning a first group of punches transverse to an axis of the design and in an alignment such as to define one end of the design intersected by that axis. The second group of punches is positioned in a second row transverse to said axis in an alignment corresponding to the opposite end of the design. The various punches are spaced from each other, as measured parallel to said axis, distances which are a given measurement multiplied by integers. At least some of the punches of the second row are spaced from at least some of the punches of the first row by an amount that is less than half the distance between the two ends of the design. With the punches so mounted in a punch press the sheet to be perforated is fed through the press with the increments of sheet movement, between punching operations, being equal to said given measurement. The punches are first rendered effective to perforate the sheet at the portion of the sheet at which said one end of the design is to appear and disabled from causing further perforations at the portion of the sheet at which the other end is to appear.

3,530,749

PARALLEL-MOTION CONTROL MECHANISM

Hans Röhmer, Friedrichshafener Str. 26, Lindau, Germany, and Bozidar Habazin, Flur 1424, Berneck, Switzerland
Filed April 18, 1968, Ser. No. 722,442
Claims priority, application Germany, April 18, 1967, R 45,789
Int. Cl. B26d *5/12*
U.S. Cl. 83—74 **8 Claims**

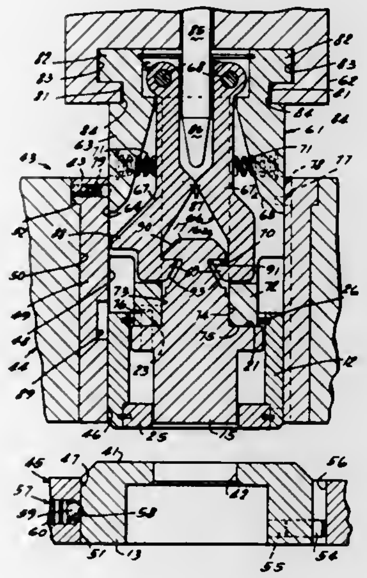


Parallel-motion control mechanism for double-acting ram cylinders, particularly in trimming presses and the like machine tools, wherein a single valve is interposed between the pressure-fluid feed pipes and the pressure ducts to the individual cylinders, with a single piston, and having rotatable control disks at the ends of the valve body, the disks having ports which provide communication between a number of ducts so as to provide efficient compensation for asymmetrical loads.

3,530,750

PUNCHING TOOL ASSEMBLY

Dennis Daniels, Williamsville, New York, assignor to Houdaille Industries, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 629,335, Feb. 6, 1967, now Patent No. 3,449,991, which is a continuation-in-part of application Ser. No. 528,856, Feb. 21, 1966. This application Jan. 5, 1968, Ser. No. 696,027
Int. Cl. B26d *1/00;* **B26f** *1/14*
U.S. Cl. 83—141 **18 Claims**

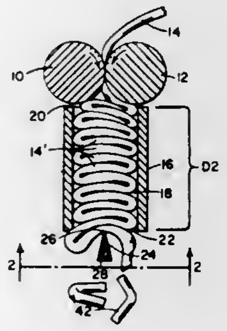


A tool assembly comprising a die member, a stripper sleeve, and a punch nestable together as a unit for use in a press. When nested, the punch is retained in the stripper sleeve and movable relative to the sleeve so that the punch extends into the die member. The die member has the greatest diameter of the parts of the assembly. The punch has an attachment portion received by gripping arms of a punch drive assembly to form a connection therewith.

3,530,751

APPARATUS FOR CUTTING TOW

Richard W. Munroe, Clemson, South Carolina, assignor to Maremont Corporation, Chicago, Illinois a corporation of Illinois
Filed March 12, 1968, Ser. No. 712,492
Int. Cl. B26d *1/10,7/08*
U.S. Cl. 83—176 **7 Claims**

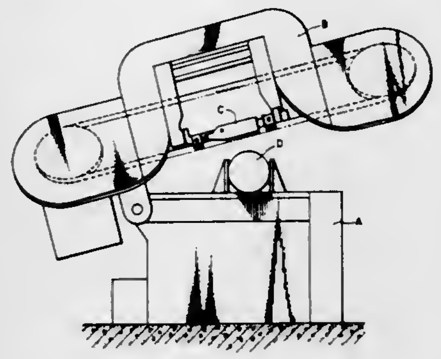


Tow is advanced by a pair of feed rolls into one open end of a stuffer chamber, where it is folded upon itself and moved to and through the other open end of the chamber. An oscillating blade at the other end of the chamber severs the folded tow segments transversely of their length as they exit from the chamber.

3,530,752

GUIDING AND VIBRATION DAMPING DEVICE FOR A SAW BLADE IN A BAND-SAWING MACHINE

Kanichi Washio, Tokyo, Japan; Goro Fukugami, Tokyo, Japan; and Tsuneo Aizawa, Tokyo, Japan, assignors to Kabushiki-Kaisha Amada, Tokyo, Japan a company of Japan
Filed Apr. 18, 1967, Ser. No. 631,708
Claims priority, application Japan, March 14, 1967, 42/15,550
Int. Cl. B26d *1/54*
U.S. Cl. 83—201.15 **5 Claims**

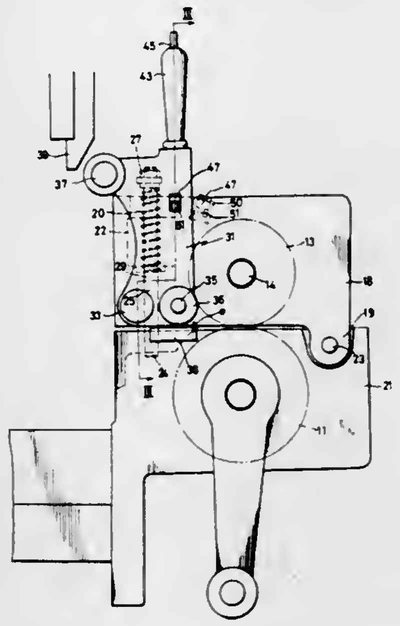


This invention relates to a guiding and vibration damping device for a saw blade in a bandsawing machine which has a supporting frame drivably fitted with a band saw blade. The machine may be provided with a backup bar in contact with the back of said band saw blade, to carry out a cutting operation by moving up and down and to the left, in the cutting direction. The device, which may be in contact with the back of said backup bar, is slidable in a direction perpendicular to the movement of the band saw blade, and is pivotably fitted near one end to a portion of the supporting frame.

3,530,753

SEPARATING APPARATUS FOR ROLLER FEED

Isamu Imai, Iseharacho, Nakagun Kanagawa Prefecture, assignor to Kabushi-Kaisha Amada, Tokyo, a company of Japan
Filed Oct. 31, 1967, Ser. No. 679,475
Claims priority, application Japan, June 1, 1967, 42/34,464
Int. Cl. B26d *5/22*
U.S. Cl. 83—436 **6 Claims**

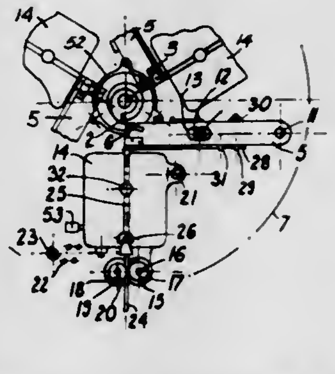


Apparatus for separating the rollers of material feed means in an automatic press and the like, selectively manually and mechanically, the press having a ram reciprocable in a direction toward and away from the rollers, and a control member reciprocating in cooperation with the ram; comprising a roller housing pivoted at its corner to the machine frame, a roller in the housing and another roller in the machine frame, in frictional engagement with each other, means for pressing the rollers toward each other; and an operating lever assembly having an engaging portion adapted to be selectively cleared and contacted by the control member in cooperation with the press ram; whereby the pressing means is deactivated and the rollers are moved out of the frictional engagement when the control member acts upon the engaging portion during the movement of the ram toward the rollers.

3,530,754

APPARATUS FOR THE INTRODUCTION OF ADDITIVES INTO THERMOMECHANICALLY FORMED PLASTICS ARTICLES

Peter Gabor Kalman, 51 Compayne Gardens, London NW.6, England
Filed June 15, 1967, Ser. No. 646,306
Claims priority, application Great Britain, June 20, 1966, 27,457/66
Int. Cl. B26d *5/20*
U.S. Cl. 83—355 **3 Claims**

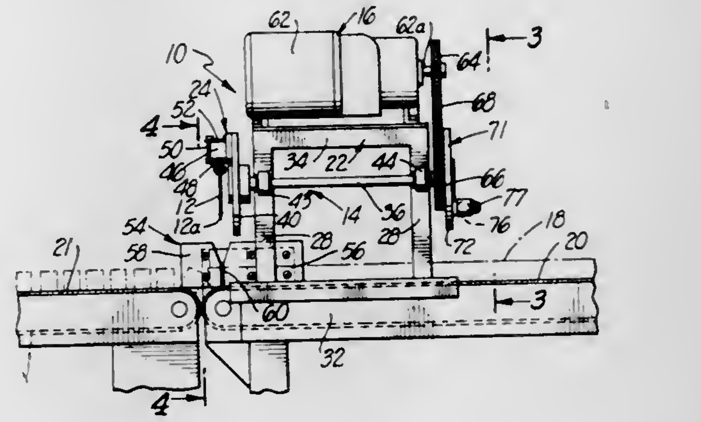


Method and apparatus for introducing an additive into plastic material in the manufacture of plastic articles in which the additive is provided in strand or ribbon form, the strand or ribbon fed to a cutter to be cut into lengths, and the cut lengths added directly to the plastics material at intake to the article manufacturing machine, the rate of feed of the strand or ribbon being controlled to give the desired ratio of additive to plastics material.

3,530,755

APPARATUS FOR CUTTING MATERIAL ADVANCING ALONG A CONVEYOR

Victor F. Gugler, 8920 Helen Ave., Sun Valley, California
Filed Feb. 13, 1968, Ser. No. 705,136
Int. Cl. B26d *5/08*
U.S. Cl. 83—355 **10 Claims**



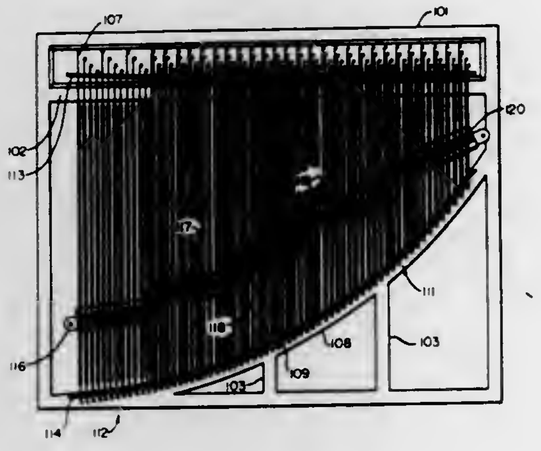
Apparatus for cutting material advancing along a conveyor comprising a cutting blade supported for simultaneous vertical and horizontal movement between upper and lower positions in a plane transverse to direction of movement of the conveyor.

ERRATUM

For Class 114—144 see:
Patent No. 3,530,819

3,530,756
ELECTROMAGNETIC PIANO

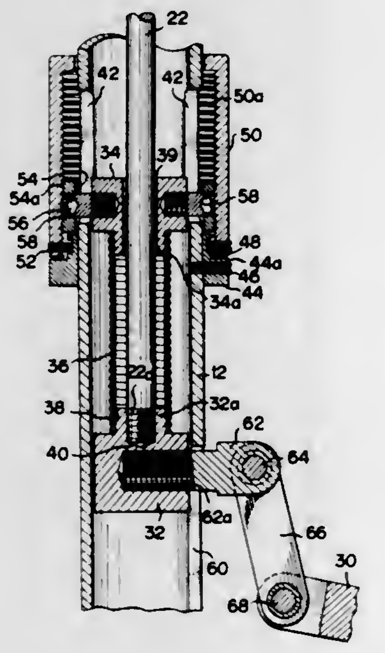
Elden G. Chapman, Woodside, California, assignor to Electric Piano Inc., Washougal, Washington a corporation of Washington
Filed Dec. 1, 1967, Ser. No. 687,246
Int. Cl. G10h *3/00, 3/06, 1/02*
U.S. Cl. 84—1.15 **2 Claims**



A piano having a conventional hammer and damper for striking the strings. Electromagnetic means coupled to the strings for converting the oscillations of the string into electrical oscillations or signals which are electrically processed and applied to speakers to produce sound.

3,530,757
HIGH HAT CYMBAL STAND

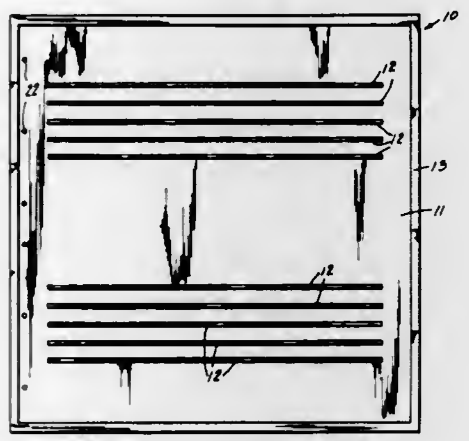
Tamotsu Osuga, Chiba-ken, Japan, assignor to Pearl Musical Instrument Manufacturing Co. Ltd., Tokyo, Japan a corporation of Japan
Filed Dec. 5, 1968, Ser. No. 781,562
Claims priority, application Japan, June 20, 1968 (utility model), 43/51,665
U.S. Cl. 84—422 **3 Claims**



The present invention provides a high hat cymbal stand wherein a rod fitted with a head cymbal is held by a draw coil spring enclosed in a support pipe instead of by a compression coil spring thereby to make it easier to operate a pedal for vertically moving the rod than has been possible with the prior art.

3,530,758
DEVICE FOR TEACHING MUSIC TO THE BLIND

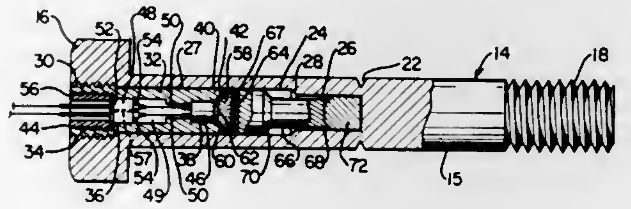
Michael J. Stillo, 7674 Grennan Place, Niles, Illinois
Filed June 28, 1968, Ser. No. 740,930
Int. Cl. G09b *15/02*
U.S. Cl. 84—471 **2 Claims**



An educational device for teaching music to the blind including a sheet of magnetized material having raised portions disposed thereon which are positioned so as to represent a musical staff for receiving discrete musical characters which can be detachably secured to the sheet and touched by the blind student during his instruction.

3,530,759
EXPLOSIVELY SEVERABLE ELEMENT

Gus Francis, 29 Polo Club Circle, Denver, Colorado
Filed Feb. 20, 1969, Ser. No. 801,037
Int. Cl. F16b *35/00;* **F41f** *5/02*
U.S. Cl. 85—1 **10 Claims**

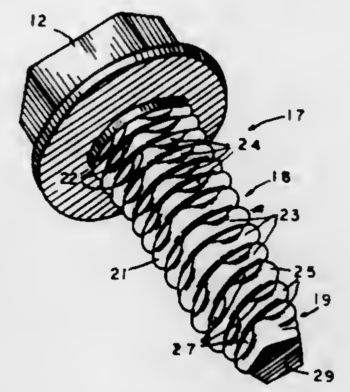


An explosively severable element, such as an explosive bolt, and a method for severing the element with substantially no noise, and little or no shock being imparted to the severed parts, which comprises enclosing internally of the element and proximate the severing area a quantity of liquid or a malleable metallic substance and applying force to the enclosed material to create in the severing area of the element outwardly directed circumferential hoop stresses and axially directed tensile stresses to sever the element.

3,530,760
THREAD-FORMING SCREW

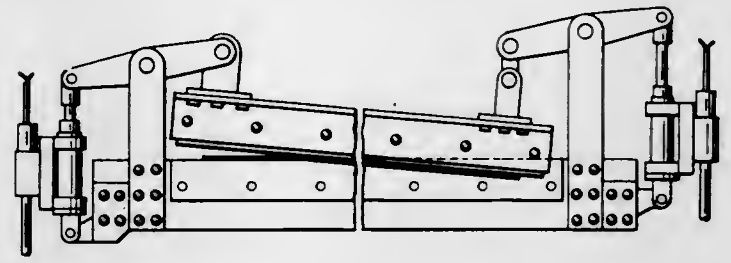
Robert O. Lindstrand, Rockford, Illinois, assignor to Keystone Consolidated Industries Inc., Peoria, Illinois a corporation of Delaware
Continuation-in-part of application Ser. No. 524,072, Feb. 1, 1966. This application Nov. 8, 1968, Ser. No. 800,784
Int. Cl. F16b *33/02, 39/30*
U.S. Cl. 85—46 **2 Claims**

A thread-forming screw having a generally pentagonal shape with an enlarged head at one end and a tapered thread-forming free end. The screw is pentagonal throughout its length having five lobes running longitudinally the entire length of the screw shank with a relief area behind each lobe. The screw has a constant root diameter and the lobes have threads of full depth with sharp crests while the relief areas have threads of non-uniform depth. On the tapered thread-forming end, the root diameter of the thread remains constant while the threads on the lobes decrease in depth and have progressively flattened and concave crests and the relief areas increase in area and decrease in thread depth.



3,530,761
AUTOMATIC SHEARS

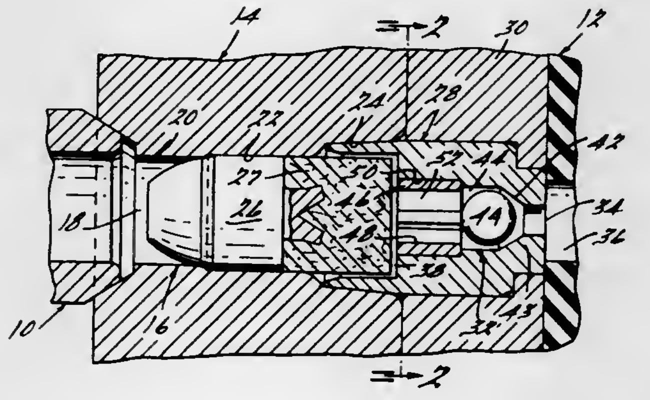
Galen B. Erwin, Carthage, Missouri, assignor to Flex-O-Lators, Inc., Carthage, Missouri a corporation of Missouri
Filed Oct. 10, 1967, Ser. No. 674,189
Int. Cl. B26d *5/08, 5/12*
U.S. Cl. 83—644 **7 Claims**



Automatic shears for cutting sheet material interposed between the elongated blades thereof, one of said blades being fixed and the other being movable and normally parallel to and spaced apart from the first, and having means whereby first one end and then the other end of said movable blade is moved into overlapping engagement with the fixed blade, whereby the cutting edges of said blades are disposed angularly to each other and the point of intersection of said edges moves progressively along the lengths of said blades.

3,530,762
AIR OPERATED PROJECTILE FIRING APPARATUS

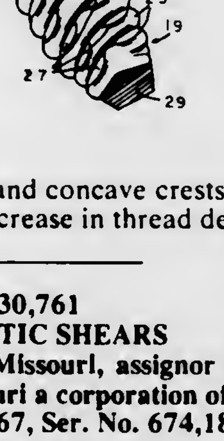
William Harold Batie, Rogers, Arkansas; Glenn Clark Smith, Rogers, Arkansas; and Robert Keith Marshall, Rogers, Arkansas, assignors, by mesne assignments, to Victor Comptometer Corporation, Chicago, Illinois, a corporation of Illinois
Continuation of application Ser. No. 469,987, July 7, 1965. This application Nov. 14, 1967, Ser. No. 683,029
Int. Cl. F41f *1/04*
U.S. Cl. 89—7 **3 Claims**



There is herein disclosed an air ignition system firearm wherein a ball valve is freely floatingly mounted in a valve chamber in a separate one-piece valve plug mounted on the front of an axially movable air compression device.

3,530,763
MACHINE TOOL

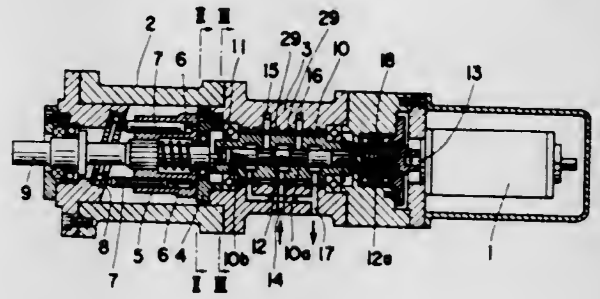
Gayle E. Grim, La Crosse, Wisconsin, and Abe G. Whitehead, Onalaska, Wisconsin, assignors to The Trane Company, La Crosse, Wisconsin a corporation of Wisconsin
Filed March 14, 1969, Ser. No. 807,373
Int. Cl. B23d *9/00*
U.S. Cl. 90—24 **2 Claims**



A novel beveling tool having a double cutting edge which is adaptable for reciprocating motion is disclosed along with a reciprocating means, a workpiece holder, and the method for using the tool.

3,530,764
ELECTRO-HYDRAULIC SERVOMOTOR

Tamaki Tomita, Okazaki, Japan, assignor to Toyota Koki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan a corporation of Japan
Filed Dec. 26, 1968, Ser. No. 787,166
Claims priority, application Japan, Dec. 27, 1967, 42/83,880
Int. Cl. F01b *3/00;* **F01l** *33/02;* **F15b** *9/10*
U.S. Cl. 91—6.5 **10 Claims**

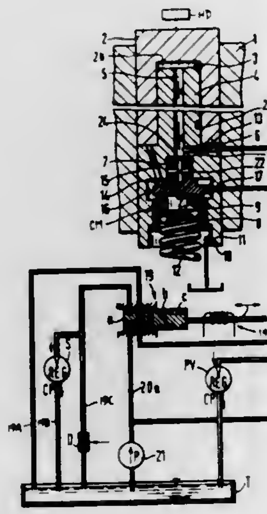


This invention relates to an electro-hydraulic servomotor wherein a hydraulic motor can exactly follow the rotation of an electric motor. No relative rotation occurs between a servovalve chamber and a valve spool closely mounted within said chamber. The valve spool is axially moved by the electric motor, thereby enlarging the opening degree of the oil ports of the hydraulic motor, and the rotation of said hydraulic motor moves said valve spool in the reverse direction to said axial displacement of said valve spool, thereby controlling the opening degree of said oil ports of said hydraulic motor.

3,530,765
CONTROLLABLE HYDRAULIC PRESS FOR PAPER CUTTING MACHINES OR THE LIKE

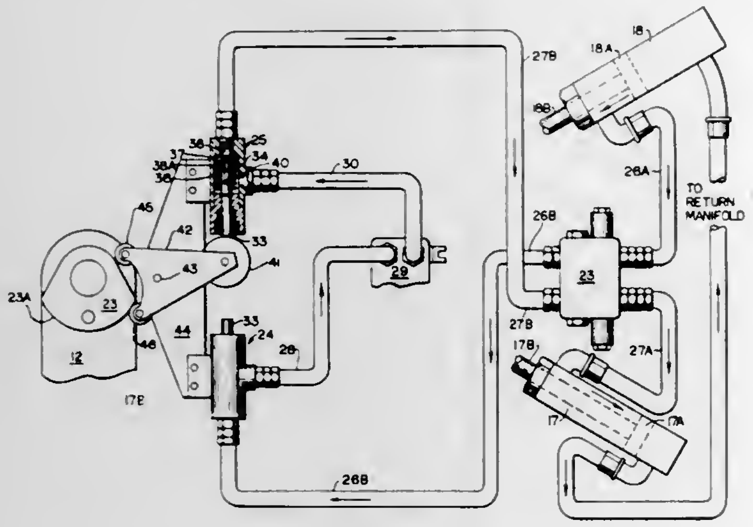
Werner Kastl, Wombach, Germany, assignor to G. L. Rexroth Lohrer Eisenwerk GmbH, Lohr (Main), Germany
Filed July 10, 1968, Ser. No. 743,657
Claims priority, application Germany, July 11, 1967, R 46,446; R 46,447
Int. Cl. F01b *15/00;* **F15b** *11/08, 13/64*
U.S. Cl. 91—208 **6 Claims**

The hold-down device HD for stacked sheets in a paper cutting machine receives motion from a piston 2 which is reciprocable in a cylinder **1** and has an axial blind bore **2***a* receiving a portion **4** of the cylinder to define therewith a working chamber **3** which can receive hydraulic fluid at a lower and a higher pressure. The lower fluid pressure suffices to move the piston with reference to the cylinder. The latter accommodates a reciprocable control member CM which normally seals the working chamber from a second chamber **16** in the cylinder but permits entry of fluid into the second chamber when exposed to fluid at the higher pressure. Such fluid then bears against an annular face **13** of the piston and against a surface **14** of the control member to maintain the control member in a position in which the two chambers communicate with each other against the opposition of a strong closing spring **12**.



3,530,766
CONTROL MECHANISM FOR AUTOMATICALLY RESTRICTING THE FLOW OF FLUID IN A CONDUIT LEADING TO HYDRAULICALLY ACTUATED MEANS

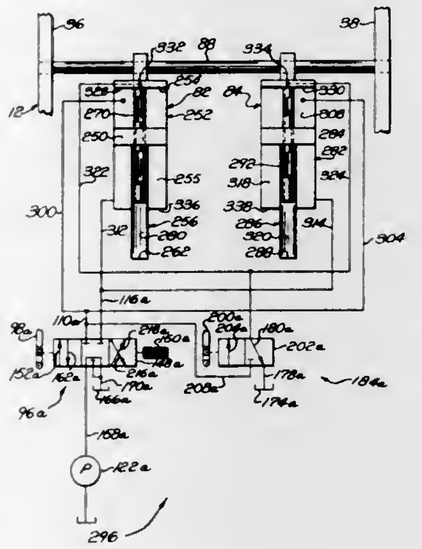
John S. Pilch, Ware, Massachusetts, assignor to Ware Machine Works, Inc., Ware, Massachusetts a corporation of Massachusetts
Filed Jan. 9, 1969, Ser. No. 790,082
Int. Cl. F15b *11/04, 11/16*
U.S. Cl. 91—411 **6 Claims**



A mechanism for automatically restricting the flow of fluid in a conduit leading between a source of fluid under pressure and hydraulically actuated means for causing pivotal movement of a member. The speed of pivotal movement of the member is rapid during one portion of its pivotal movement but the speed is automatically reduced at a predetermined portion of its pivotal movement and such reduced speed is maintained during at least a portion of its subsequent pivotal movement.

3,530,767
MACHINE WITH HYDRAULIC BOOM

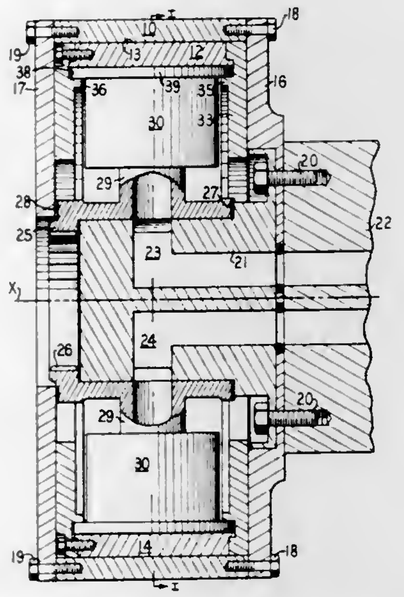
William M. Shook, New Philadelphia, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio a corporation of Ohio
Continuation-in-part of application Ser. No. 703,123, Feb. 5, 1969, now Patent No. 3,481,251. This application April 21, 1969, Ser. No. 818,037
Int. Cl. F15b *11/16;* **B66f** *9/00*
U.S. Cl. 91—411 **3 Claims**



An improved machine includes a load carrying member which is moved by a piston and cylinder assembly against the influence of variable loads. Controls for the piston and cylinder assembly include a first valve which is manually operable between a neutral condition and either one of two operated conditions. In the neutral condition the first valve blocks fluid flow to and from the piston and cylinder assembly to retain the member in a selected position. The first valve is operable from the neutral condition to enable fluid to flow to and from the piston and cylinder assembly in such a manner as to move the member either inwardly or outwardly. A second control valve is manually operable between first and second operating conditions to selectively communicate an operating area of the piston and cylinder assembly directly to drain or to a source of fluid under pressure through the first valve when it is in one of the operated conditions. Communicating the operating area with the source of fluid under pressure by operation of the second valve decreases the speed and increases the power with which the member is moved.

3,530,768
RADIAL PISTON PUMP AND MOTOR

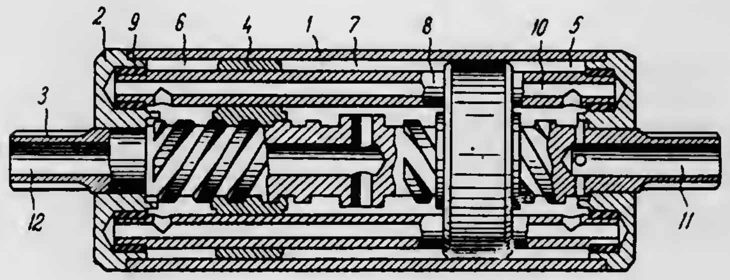
William K. Engel, Peoria, Illinois, assignor to Caterpillar Tractor Co., Peoria, Illinois a corporation of California
Filed Oct. 22, 1968, Ser. No. 769,569
Int. Cl. F01b *13/04;* **F04b** *49/00, 1/02*
U.S. Cl. 91—491 **12 Claims**



A variable displacement pump and motor of the radial piston type comprises a stationary housing having a rectangular control ring shiftably mounted therein to selectively control fluid flow. The control ring has a plurality of radially disposed cylinders rotatably mounted therein. The piston of each cylinder is attached in spokelike fashion to a rotor which in turn cooperates with a pintle valve for fluid displacement purposes.

3,530,769
HYDRAULIC MOTOR

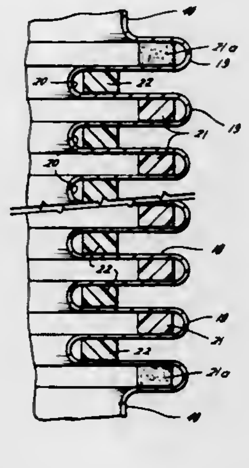
Leonid Mikhailovich Gurevich, ulitsa Gorkogo, 5, kv.4, Moscow, U.S.S.R.
Filed July 11, 1968, Ser. No. 744,133
Int. Cl. F01b *3/06, 7/02*
U.S. Cl. 92—31 **6 Claims**



A hydraulic motor is provided in which reciprocating motion of a pair of pistons is converted into an intermittent angular motion of a driving member by means of a kinematic screw-and-nut assembly. The pistons are employed as a nut, and the shaft of the hydraulic motor, as a screw. Inside the shaft there are provided isolated channels for supplying working fluid into the working chambers of the cylinder and for discharge therefrom. The pistons and cylinder are interconnected by bars for transmitting torque therebetween and in the bars are channels intercommunicating corresponding working chambers of the cylinder.

3,530,770
BELLOWS ASSEMBLY AND METHOD

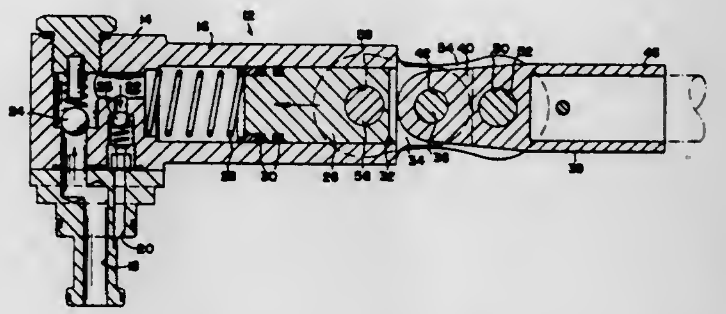
Everett D. McMurray, Houston, Texas; Knud I. Bruun, Houston, Texas; and Bolling A. Abercrombie, Houston, Texas, assignors to McMurry Oil Tools, Inc., Houston, Texas, a corporation of Texas
Continuation of application Ser. No. 574,323, Aug. 23, 1966. This application Dec. 30, 1968, Ser. No. 798,560
Int. Cl. F16j *3/00*
U.S. Cl. 92—42 **10 Claims**



Improved rigid metallic bellows apparatus capable of resisting severe longitudinal compression without creasing or flattening of convolutions, and method of manufacturing same. Endless ring members are disposed in the convolutions both inside and outside of the bellows, the end ring members being preferably formed of heat or flame resistant material such as asbestos, and the other ring members being preferably formed of Teflon.

3,530,771
RECIPROCATING PUMP

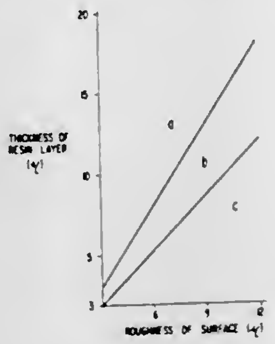
Spencer Bowman, 32299 Lake Road, Avon Lake, Lakewood, Ohio and Anthony Nevulis, Wickliffe, Ohio, said Nevulis assignor to said Bowman
Filed Sept. 3, 1968, Ser. No. 757,083
Int. Cl. F04b *19/22;* **F15b** *15/18;* **F16b** *21/44*
U.S. Cl. 92—140 **5 Claims**



A novel variable capacity pump particularly for hand operation comprising a pump housing wherein a piston reciprocates within the housing. A lever or pump handle actuates the piston through a rigid link means which is connected between the piston and the lever, the lever being pivotally connected to the pump housing at a pivot point which is aligned with the plane of movement of the piston. The pivot point also is between the points of connection of the link means to the piston and the lever when the piston is in the outermost position of its stroke in the housing.

3,530,772
CYLINDER OR CYLINDER LINER AND METHOD FOR PRODUCING THE SAME

Yoshio Mori, Tokyo, Japan, assignor to Nippon Piston Ring Co., Ltd., Tokyo, Japan
Filed Feb. 15, 1968, Ser. No. 705,693
Claims priority, application Japan, Feb. 15, 1967, 42/9,709
Int. Cl. F16j *15/18;* **F01b** *11/02;* **F16c** *33/30*
U.S. Cl. 92—168 **2 Claims**

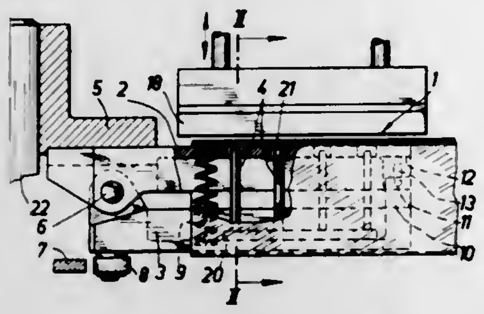


A method for finishing a surface of a cylinder liner comprising, working the surface formed of a wear resistant metal so that it has a roughness within the range in which it is easily workable, and depositing a synthetic resin layer on the surface, said layer having a thickness at least greater than the roughness of the surface to compensate for the lack of running-in-properties due to the lack of smoothness due to working.

3,530,773
FORMING MANDREL FOR MACHINE FABRICATING PACKAGING CONTAINERS

Paul Kühnle, Winnenden, Germany, and Fritz Gaukler, Stuttgart-Feuerbach, Germany, assignors to Fa. Fr. Hesser Maschinenfabrik A.G., Stuttgart-Bad Cannstatt, Germany a corporation of Germany
Filed July 11, 1968, Ser. No. 745,338
Claims priority, application Germany, July 12, 1967, H 63,261
Int. Cl. B31b *1/28*
U.S. Cl. 93—12 **12 Claims**

Apparatus for making a bag of at least partly heat seal responsive material in which the bag is formed around a mandrel. The mandrel constructed is in two parts and radially expands about a pivot axis and is provided with lifting pins to lift and if necessary sever the heat sealed area of the bag from the mandrel upon completion of the heat seal step.



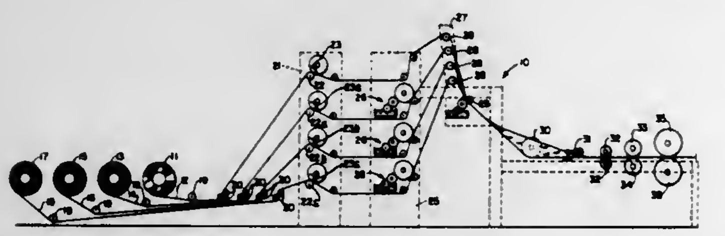
3,530,774
METHOD OF MAKING A FLAT BOTTOM MULTI-PLY BAG

Shirley H. Booth, Franklin, Ohio, and John G. Lepiston, Middletown, Ohio, assignors, by mesne assignments, to Hoerner Waldorf Corporation, St. Paul, Minnesota, a corporation of Delaware

Application Dec. 13, 1967, Ser. No. 690,230 now Pat. No. 3,412,925, which is a continuation-in-part of application Ser. No. 548,593, May 5, 1966. Divided and this application July 2, 1968, Ser. No. 755,480

Int. Cl. B31b *119/04*

U.S. Cl. 93—35 **4 Claims**



A multiwall bag having an inner, a second, and a third ply of tubular, concentrically arranged material wherein the inner ply is made from a preformed, tubular thermoplastic material. Both the inner plastic ply and the second or next innermost ply have the same length and initially have straight cut end sections. The bag has a diamond fold closure on at least one end provided by two infolded corner tabs and two infolded side flaps wherein one of the side flaps has one portion of a greater length than the other to provide a stepped-end seal when the side flaps are infolded. The diamond fold end closure is made by adhesively joining the side flaps to each other and to the corner flaps without permanently adhesively joining the interior surface of the inner plastic ply either to itself or to any other surface of the second or third plies of material. The bag thus constructed has the advantages that the interior plastic ply substantially covers the inside of the bag whereby materials which would normally damage kraft paper can be conveniently packaged without damage. The bag can be produced on high speed multiwall bag tubing and flat bottom bag bottoming equipment without any sacrifice in speeds since the bag does not require a hermetic or a permanent adhesive end seal for the plastic inner ply. A process for the manufacture of the bag is also disclosed.

3,530,775
POP UP TRAFFIC DIVIDER

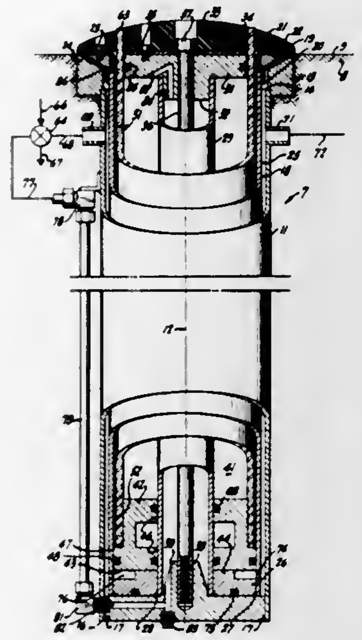
Joseph W. Bowersox, Monterey, California, assignor to Terra Engineering Company, Inc., a corporation of Delaware

Filed Nov. 14, 1968, Ser. No. 775,822

Int. Cl. E01c *23/16*

U.S. Cl. 94—1.5 **10 Claims**

A pop up traffic divider for use on a highway has a housing buried flush with the highway and containing a casing also flush with the highway and encompassing a column supported on the casing bottom and at top flush with the highway. An annular piston is disposed between the casing and the column and is moved up and down by differential pressure of fluid such as air. On the piston is a resilient, deformable tube retracted within the casing and expelled therefrom by movement of the piston. The upper end of the column and of the casing afford a rounded body or bodies over which the extended, deformable and resilient tube can be bent without injury.



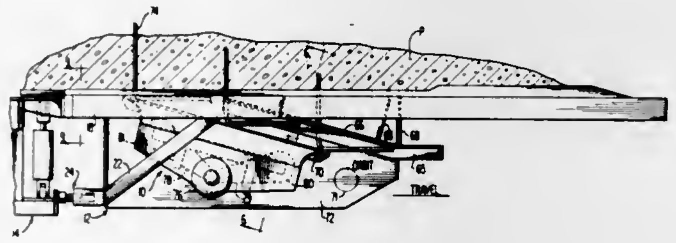
3,530,776
OSCILLATING TIE BAR INSERTS

Michael I. Hudis, Brookfield, Wisconsin, assignor to Rex Chainbelt Inc., Milwaukee, Wisconsin a corporation of Wisconsin

Continuation-in-part of application Ser. No. 736,623, June 13, 1968. This application April 22, 1969, Ser. No. 818,317

Int. Cl. E01c *19/00*

U.S. Cl. 94—39 **9 Claims**



A tie bar insertion device is mounted on a slip form paver of the type which moves continuously forward relative to the pavement being formed. The tie bars are positioned on a guide rail and support table so as to properly align them with associated holes in a key strip which is being positioned in engagement with one edge of the pavement being formed. A pusher bar is mounted in an angled position relative to the key strip and moves in a continuous, orbital fashion by means of two eccentrically mounted sprocket wheels arranged on each end of the pusher and driven by a common motor. The pusher bar simultaneously pushes a plurality of tie bars into the plastic concrete in a step-by-step fashion as the slip form paver continuously moves along the roadway being formed.

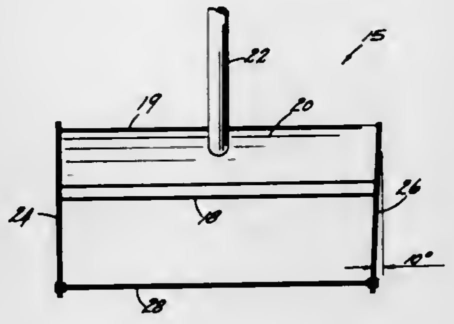
3,530,777
FLOOR RESURFACING SPREADER

Merle F. Peck, Western Springs, Illinois, assignor to The Valspar Corporation, Rockford, Illinois a corporation of Delaware

Filed Oct. 3, 1968, Ser. No. 764,676

Int. Cl. E01c *19/12*

U.S. Cl. 94—44 **3 Claims**



The spreader has an inclined rear wall and non-parallel side walls. One side wall is perpendicular to the rear wall. The other side wall is at 80° to the rear wall and is abbreviated to provide a limited lateral extension of material.

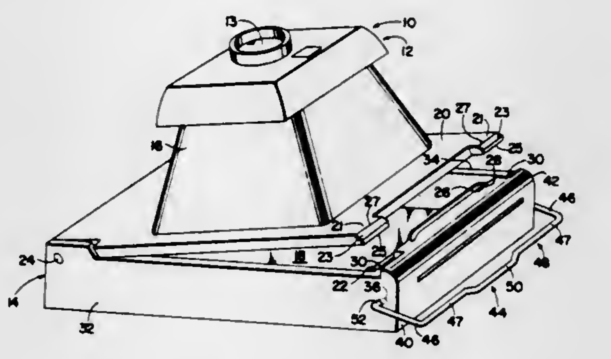
3,530,778
PHOTOGRAPHIC CAMERA

James M. Conner, South Pasadena, California and Patrick L. Finelli, Sudbury, Massachusetts, assignors to Polaroid Corporation, Cambridge, Massachusetts a corporation of Delaware

Continuation-in-part of application Ser. No. 640,858, May 24, 1967. This application Apr. 1, 1968, Ser. No. 717,812

Int. Cl. G03b *17/52*

U.S. Cl. 95—13 **9 Claims**



A photographic camera includes a hinged two-part body which can be opened to provide access to its interior and closed to provide a light-tight enclosure during photographic exposure production. The body is releasably retained in its closed condition by a generally U-shaped structure which engirdles a first part of the camera body so as to trap a projecting portion of the second part of the body between the first part and the U-shaped structure.

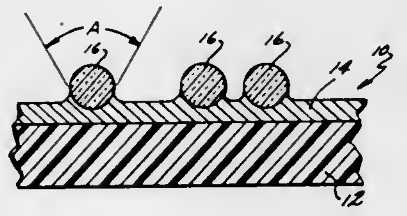
3,530,779
THREE-DIMENSIONAL PHOTOGRAPHY

John W. Alofs, 648 Ethel Ave. SE., Grand Rapids, Michigan

Filed Dec. 1, 1966, Ser. No. 598,349

Int. Cl. G03b *35/08*

U.S. Cl. 95—18 **11 Claims**



A photographic film construction in which a layer of photosensitive material is applied to a typical supportive backing sheet and a plurality of minute, generally transparent, mutually independent lens elements in the form of glass beads are secured to the photosensitive layer by being embedded therein. Also, a method of making three-dimensional photographic reproductions by exposing a photographic film construction of the aforesaid nature to an illuminated subject such that each of the glass bead lens elements focuses light reflected from an illuminated subject onto the photosensitive layer immediately behind that lens element to record an image thereon of the subject as seen by that particular lens element, all such images thereby collectively forming a three-dimensional reproduction of the subject.

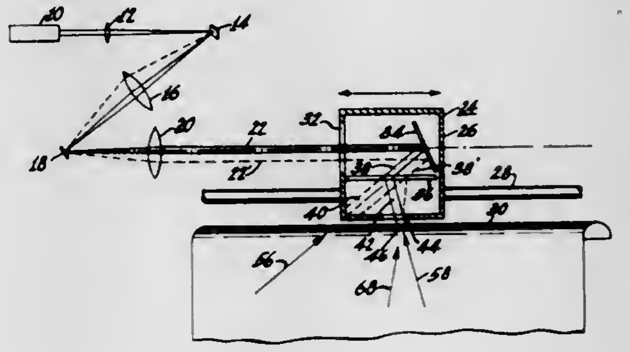
3,530,780
PHOTOCOMPOSING APPARATUS

Harold E. Haynes, Cranbury, New Jersey, assignor to RCA Corporation, a corporation of Delaware

Filed Dec. 20, 1967, Ser. No. 692,076

Int. Cl. B41b *21/26*

U.S. Cl. 95—4.5 **5 Claims**



An optical data and display system for use in a photocomposing apparatus or the like. Images of any selected ones of many alphanumeric or graphic characters are successively created and projected onto a photosensitive film at successively spaced points along a line on the film. A matrix of holograms with respective graphic images and a reflector are mounted in fixed relation to each other and are arranged to be movable as a unit in a direction parallel with the surface of the photosensitive film. Light from a laser is reflected from horizontally and vertically rotatable galvanometer mirrors along any one of a plurality of paths which are all parallel with the direction of motion of the hologram-reflector unit. The light beam is reflected by the reflector to the hologram matrix where it illuminates any selected one of the holograms and causes a corresponding graphic image to be projected onto the photosensitive film.

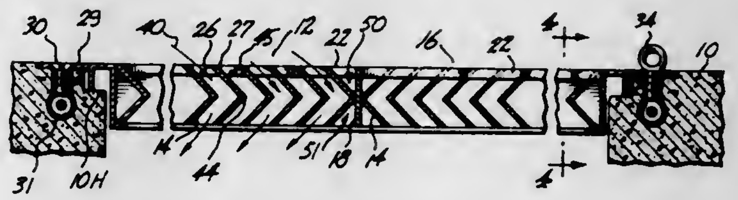
3,530,781
TRANSFORMER HOUSING AND VENTED COVER ASSEMBLY

Charles W. Kesinger, Tacoma, Washington, assignor to Lundberg Concrete Pipe Co., Inc., Tacoma, Washington a corporation of Washington

Filed April 11, 1968, Ser. No. 720,731

Int. Cl. F24f *13/08*

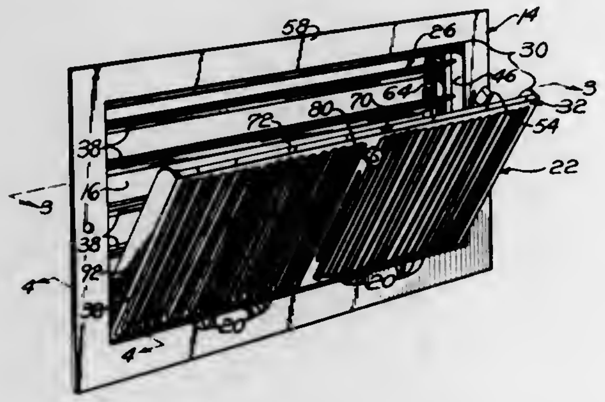
U.S. Cl. 98—101 **2 Claims**



This application discloses an improved cover for a transformer housing of the type adapted to protect a transformer when located in an underground installation. The improved cover for the housing includes a plurality of angled air directing bars so interconnected and rigidly positioned with respect to each other that elongated objects such as sticks or poles cannot be inserted through the cover. At the same time the arrangement of the members is such that air currents over the cover set up air currents within the housing chamber with a preferential direction of air flow resulting in increased air circulation as compared to prior art covers. Details of an improved fastening assembly for securing the metal portion of the cover to a concrete portion of the cover are also disclosed.

3,530,782
REGISTER ASSEMBLY

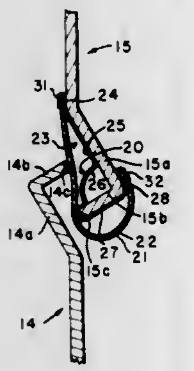
W. Philip Ardussi, Rocky River, Ohio, assignor to The Auer Register Company, Cleveland, Ohio a corporation of Ohio
Filed Sept. 17, 1968, Ser. No. 760,295
Int. Cl. F24f *13/00*
U.S. Cl. 98—107 **5 Claims**



An improved register assembly includes a louvered front panel which is movable between a first position extending across an opening in a base through which air flows and a second position extending upwardly and outwardly from a bottom portion of the base. In the first position the louvered front panel reduces resistance to the flow of air by providing through the opening. In the second position the louvered front panel reduces resistence to the flow of air by providing for an unrestricted opening between the base and an upper portion of the front panel. When the front panel is in the second position, the register assembly is adapted to direct a relatively large flow of cool air upwardly.

3,530,783
DAMPER APPARATUS AND MOUNTING CLIP TO HOLD AN INFLATABLE SEALING MEMBER

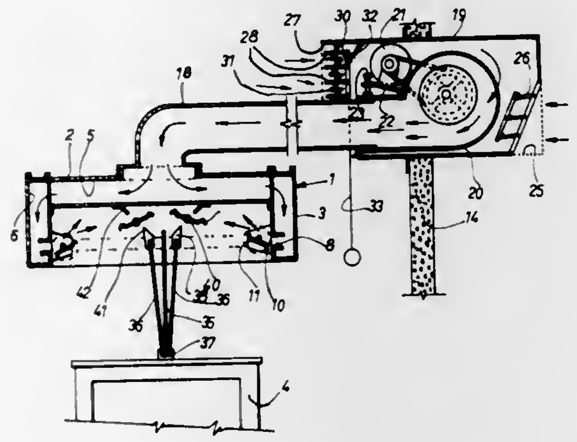
Leo Alamprese, Wood Dale, Illinois, assignor to Honeywell Inc., Minneapolis, Minnesota a corporation of Delaware
Filed Jan. 13, 1969, Ser. No. 790,693
Int. Cl. F24f *13/08*
U.S. Cl. 98—110 **11 Claims**



A damper apparatus and a mounting clip to mount an inflatable sealing member along the edge of a damper blade, the clip being bent to generally conform to the shape of the edge of the blade to facilitate the mounting of the clip on the blade by pressure directed toward the edge of the blade, with a flexible sealing member mounted on the clip by means of two grooves which hold the edges of the sealing member in a manner to cause the sealing member to assume a generally teardrop shape, the sealing member having inlet openings to cause the sealing member to be inflated when the damper is closed.

3,530,784
SMOKE AND VAPOR COLLECTING HOOD

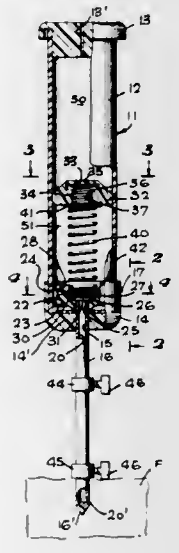
Germain Courchesne, 167 Chemin du Golf, Drummondville, Quebec, Canada
Filed June 3, 1968, Ser. No. 734,072
Int. Cl. F23j *11/00*
U.S. Cl. 98—115 **6 Claims**



A smoke and vapor collecting hood provided with means to produce a flow of air in the vicinity of and directed towards said hood, to assist in the entrainment into the hood of smoke and vapors which might have otherwise escaped the hood, the air flow being supplied by outside and inside air in adjustable proportion to be able to maintain a comfortable temperature in the room in which the hood is located and prevent waste of expensive heated air.

3,530,785
FOOD TENDERIZING DEVICE

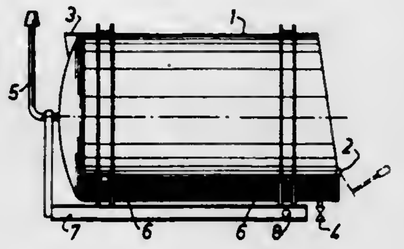
Myron J. Peters, 4003 Texas St., San Diego, California and Collette I. Peters, 4003 Texas St., San Diego, California
Original application Feb. 27, 1967, Ser. No. 618,948, now Pat. No. 3,483,810, dated Dec. 16, 1969. Divided and this application Dec. 26, 1968, Ser. No. 799,136
Int. Cl. A23b *1/16*
U.S. Cl. 99—256 **2 Claims**



A syringe for injecting fluid into meat with a hollow probe mounted in a piston disposed in the lower of two compartments of a container. The probe is fitted with two adjustably positionable stops to limit penetration of the probe and the fluid delivery stroke of the combined piston and probe, respectively.

3,530,786
SELF-EMPTYING HOMOGENIZING AND FERMENTATION VATS

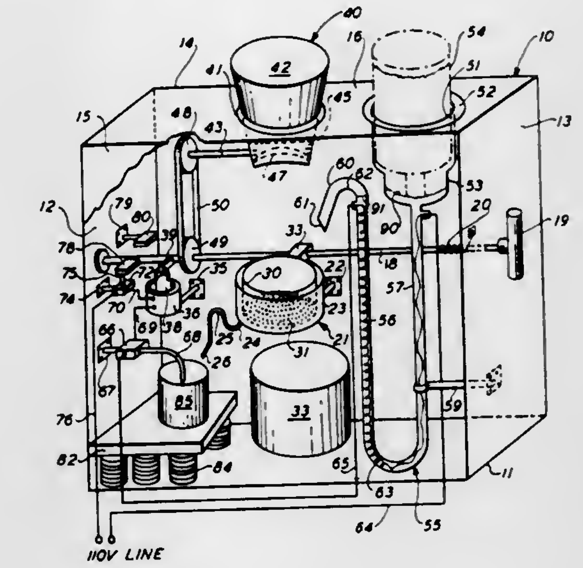
Roger Bellot, 104 Rue de la Medoquine, Talence, Gironde, France; Jean Bellot, 104 Rue de la Medoquine, Talence, Gironde, France; Jacques Miroir, Avenue John Fitzgerald Kennedy, Merignac, Gironde, France; and Francois Bouteille, 27 Rue Paul Lacombe, Carcassonne, Aude, France
Filed Jan. 24, 1969, Ser. No. 793,736
Int. Cl. C12b *1/10*
U.S. Cl. 99—276 **7 Claims**



Self-emptying homogenization and fermentation vat applicable to wine-making, having a fixed or variable inclination about a horizontal transverse axis and a bottom provided at one end with a racking-off door with progressive opening. Cylindric vats may further rotate about their longitudinal axis.

3,530,787
APPARATUS FOR PREPARING AND DISPENSING FRESHLY BREWED COFFEE

Frank R. Litterio, 53 S. Maple Ave., East Orange, New Jersey
Filed March 14, 1967, Ser. No. 622,956
Int. Cl. A47j *31/40*
U.S. Cl. 99—281 **5 Claims**

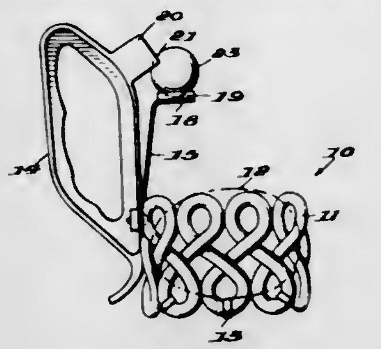


Apparatus for preparing and dispensing a freshly brewed cup of coffee: charging a predetermined quantity of ground roasted coffee into a vessel and continually spurt-charging mainly water at about 200°—212°F. onto said coffee, syphoning off into a cup the resultant brew in said vessel when the quantity of liquid in said vessel is about 20—50 percent of the volume of said cup and repeating said syphoning a number of times until the cup is approximately filled.

3,530,788
HARD-BOILED EGG COOKING AND SHELLING DEVICE

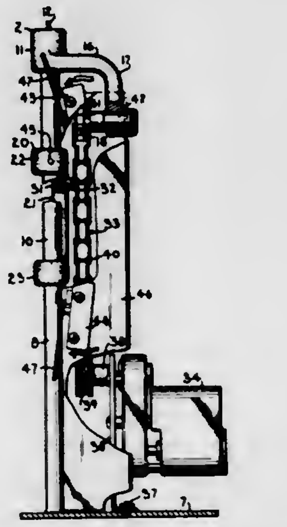
Oscar H. Berman, 459½ 41st Avenue, South, St. Petersburg, Florida
Filed Dec. 3, 1968, Ser. No. 780,847
Int. Cl. A47j *29/02*
U.S. Cl. 99—325 **4 Claims**

The present invention is directed to a device which will support an egg for cooking in a pan of water and will, after a predetermined point in the cooking operation, crack the shell and tear the double membrane surrounding the egg so that the further cooking will expand the egg and widen the cracks in the said shell; immersion in cold water, preferably running, will shrink the egg white permitting water to enter the resulting space loosening the egg for ready shelling.



3,530,789
LIFT APPARATUS FOR A TREATING UNIT

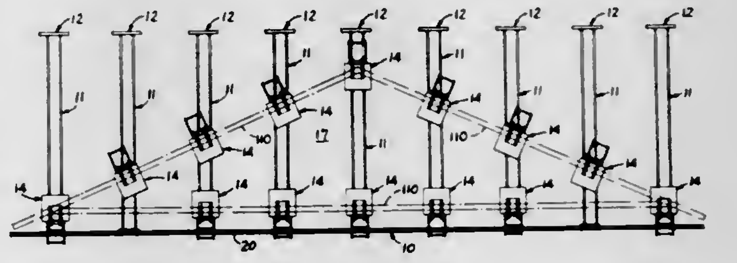
Paul F. Lane, Box 208, Wellington, Missouri
Filed July 8, 1968, Ser. No. 743,225
Int. Cl. A47j *37/12*
U.S. Cl. 99—336 **7 Claims**



A lift apparatus for lowering a container into a treating well of treating unit and raising same after treating articles therein for a selected time. The apparatus has a container support member which is movable between limits along an elongate track by a motor for driving means for raising and lowering the container. Limit switches are positioned adjacent the track at the upper and lower limits of travel of the container support member and are engaged thereby. A timer means in circuit with the motor controls the dwell time of the container in treating position. The limit switches, timer means, and motor are electrically connected in a circuit for lowering the food container into the treating well and raising same after a selected dwell time.

3,530,790
ROOF TRUSS FORMING MACHINE

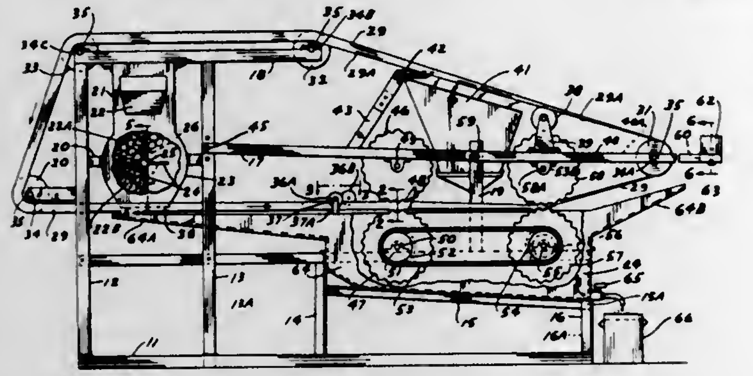
Donald P. Post, Palatine, Illinois, assignor to Structomatic, Inc., Chicago, Illinois a corporation of Illinois
Filed Feb. 10, 1969, Ser. No. 798,031
Int. Cl. B30b *1/18*
U.S. Cl. 100—100 **14 Claims**



A roof truss forming machine for assembling and nailing with nail plates timbers into a planar roof truss includes a stationary elongated rail and a plurality of bridges extending laterally therefrom and adjustably positioned along the rail. Each bridge longitudinally adjustably carries at least one base and each base rotatably adjustably carries a stand which supports the timbers to be nailed. Each stand movably carries a cradle which is movable toward and away from the timbers to be nailed, and each cradle supports a hydraulically operated C-clamp for pressing the nail plates into the timbers supported by the stand when the cradle is moved toward the timbers.

3,530,791
ROTARY CIDER PRESS

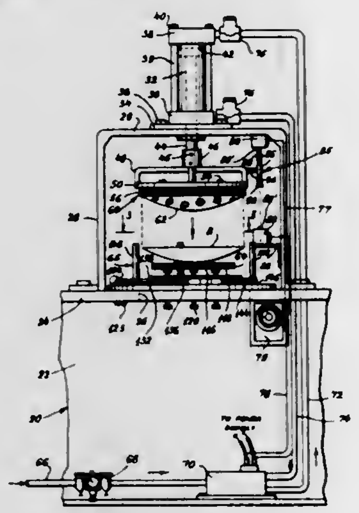
Percy Flotte, 17040 Renton Blvd., Belleville, Michigan
Filed April 15, 1968, Ser. No. 721,283
Int. Cl. B30b *9/24*
U.S. Cl. 100—120 **5 Claims**



This application discloses a rotary cider press. The invention resides in the particular combination and arrangement of parts. The invention device comprises a receiving station in which the fruit is first fragmented and from which it is discharged and deposited onto an endless belt of porous material. The belt is power driven and has means for folding its edges over the fruit while in motion to form a moving enclosure for the fruit, prior to its being received between pairs of power driven rollers, the latter being adjustable to provide varying degrees of pressure on the folded belt and its contents. The juice is pressed from the fruit by the fluted rollers and passes through the belt material into a collector basin from which it is withdrawn for use. The folded belt containing the relatively dry fruit pulp continues over other rollers to another station, where the belt is unfolded, after which it is then scraped clean of the fruit pulp which is discharged through a chute into suitable containers for disposition. The belt continues to travel over other rollers and returns to a position below the first station where it again picks up more fragmented fruit to repeat the cycle.

3,530,792
APPARATUS FOR UNDERGLAZE CERAMIC DECORATION

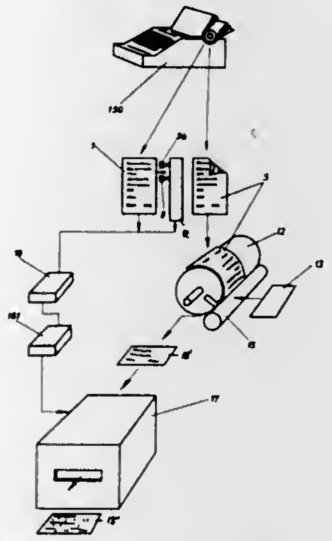
José Valiela, 311 W. 23rd Street, New York, New York
Filed Nov. 13, 1967, Ser. No. 682,374
Int. Cl. B41f *17/28, 15/04;* **B41l** *27/26*
U.S. Cl. 101—41 **4 Claims**



Apparatus for applying underglaze decorative patterns to porous surfaces of ceramic articles made of baked clay. A printing plate assembly having a matrix made of resilient foam plastic pad, coated or covered on one side with a nonporous film. The film has open areas defining decorative patterns on exposed portions of the foam pad. The pad is backed by a perforated plate with a surrounding wall arranged to contain ink which flows by gravity through the pad to the article being decorated. The apparatus includes a centering device for aligning the printing plate assembly with the article being decorated. The apparatus can be operated manually or semiautomatically. An air pressure driven piston carries the printing plate assembly with associated timer, limit switches, and valves. Matrices of various shapes may be used.

3,530,793
METHOD AND APPARATUS FOR PRINTING AND RECORDING ON A CARD

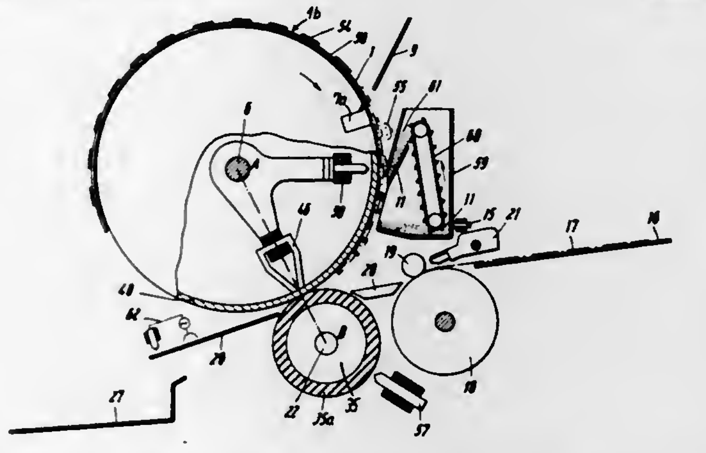
Gerhard Ritzerfeld, 21 Franzensbader Str., 1 Berlin 33, Germany
Filed Sept. 29, 1966, Ser. No. 584,048
Claims priority, application Germany, Sept. 30, 1965, R 41,683; Dec. 10, 1965, R 42,188
Int. Cl. B41l *47/46*
U.S. Cl. 101—91 **29 Claims**



On superimposed printing form and record carrier blanks, printable legible symbols and recordings are made, respectively, by the same impression means so that the same information is represented by the same. The printing form and the record carrier are used for imprinting and recording on the same card so that the card has the same information legibly printed and also recorded for being read out by a machine.

3,530,794
MAGNETIC PRINTING ARRANGEMENT

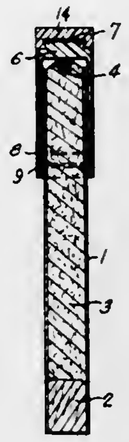
Gerhard Ritzerfeld, 14 Schorlemer Allee, 33 Berlin (Dahlem), Germany
Filed Feb. 26, 1968, Ser. No. 708,208
Claims priority, application Germany, Feb. 28, 1967, R 45,410; Mar. 2, 1967, R 45,431
Int. Cl. B41f *5/00*
U.S. Cl. 101—216 **39 Claims**



A thin flexible master comprising a thin carrier sheet and magnetizable, character representing, mirror reversed printing portions, is placed on a rotary printing cylinder. The printing portions are magnetized to attract a colored iron toner powder and then brought into contact with a copy sheet to which the powder is transferred by a magnetic or electrostatic field. Finally, the copy sheet is heated so that the powder is baked into the same and represents characters or digits.

3,530,795
FLARE IGNITER

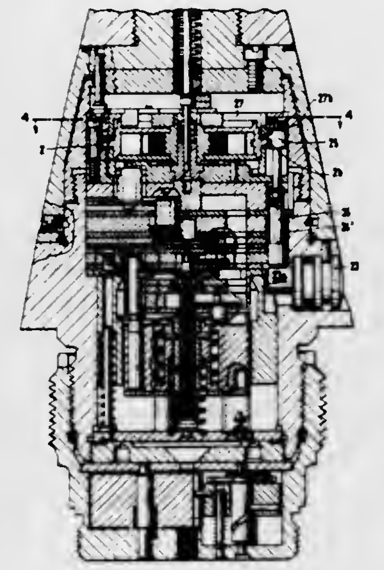
Joseph Albert Raymond Denis, St. Philippe d'Argenteuil, Quebec, Canada and Jack R. Partridge, Brownsburg, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada a corporation of Canada
Filed June 10, 1968, Ser. No. 735,645
Int. Cl. C06d *1/10*
U.S. Cl. 102—37.8 **3 Claims**



The invention pertains to a pyrotechnic flare and more particularly to the structure of a thermoplastic end protective cover for the ignited end of the flare. The cover is generally tubular and on one end is adapted to slide on the flare and has a gripping structure on the internal surface to secure it to the flare. The other end of the cover has a striking surface to ignite the flare and a cover for the striking surface.

3,530,796
CLOCKWORK FUZE

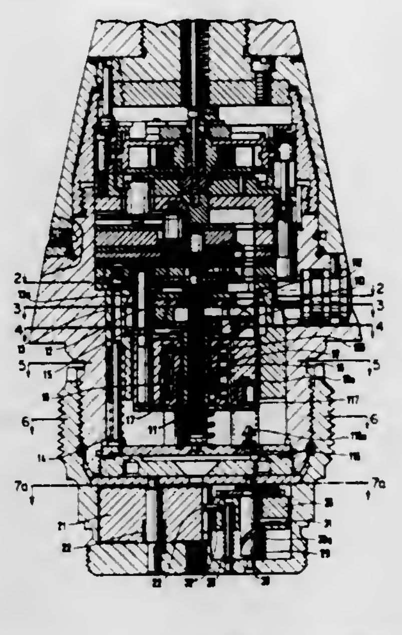
Paul Kaiser, Schramberg, Wurttemberg, Germany, and Josef Mueller, Schramberg-Sulgen, Wurttemberg, Germany, assignors to Gerbruder Junghans G.m.b.H., Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Dec. 15, 1966, Ser. No. 602,457
Claims priority, application Germany, Dec. 16, 1965, J. 29,616
Int. Cl. F42c *9/04, 9/02, 9/00*
U.S. Cl. 102—84 **1 Claim**



A clockwork fuze structure has setting members operable from the outside of the fuze for the release times with the setting means having a setting angle $\alpha \leqq 360°$, either an angle path α (short) or an angle path of $360° + \alpha$ (long).

3,530,797
CLOCKWORK TIME FUZES

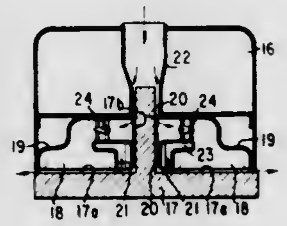
Paul Kaiser, Schramberg, Wurttemberg, Germany, and Josef Mueller, Schramberg-Sulgen, Wurttemberg, Germany, assignors to Gebruder Junghans G.m.b.H., Schramberg, Wurttemberg, Germany, a corporation of Germany
Filed Dec. 21, 1966, Ser. No. 603,691
Claims priority, application Germany, Dec. 22, 1965, J 29,687
Int. Cl. F42c *9/00, 9/02, 9/04*
U.S. Cl. 102—84 **3 Claims**



A clockwork time fuze including an actuating mechanism, movement of which is controlled in part by a retarding means. An acceleration responsive mechanism is incorporated in series relation between the actuating means and a motor associated with the retarding means. The acceleration responsive means is operable to provide a first acceleration force transmitting condition responsive to relatively high acceleration so as to cause a relatively high rate of movement of the actuating means at least partially independent of the retarding means. The acceleration responsive means is also operable to provide a second acceleration force transmitting condition which is responsive to relatively low acceleration and which is operable to cause a relatively low movement of the actuating means, governed by the retarding means.

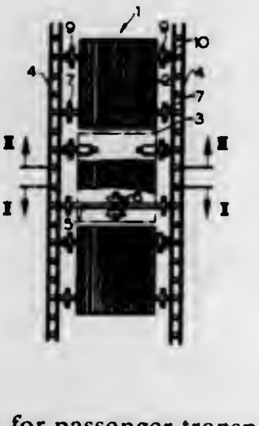
3,530,798
FLUID CUSHION SUPPORTED AND GUIDED VEHICLE AND TRACK SYSTEM

Marc Henri Jean Faure, Saint-Maur-des-Fosses, France, assignor to Bertin et Compagnie, Paris, France a company of France
Filed Sept. 11, 1967, Ser. No. 666,821
Claims priority, application France, Sept. 14, 1966, 76,394
Int. Cl. B61b *13/06;* **B61c** *13/08;* **E01b** *25/08*
U.S. Cl. 104—23 **5 Claims**



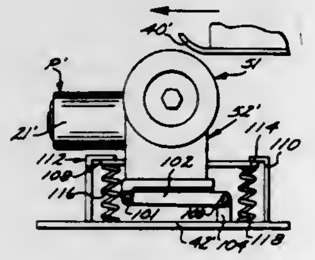
Ground effect machine movable along a track with a fluid medium being interposed between the outer surface of said track and adjacent solid parts of said machine, for supporting and guiding the latter by exertion of forces bearing upon said track outer surface, said interposed fluid medium being partly at a relative overpressure and partly at a relative underpressure with respect to the ambient pressure, said overpressure and said underpressure being respectively created by the suction and the discharge of a same generator.

3,530,799
GUIDING ARRANGEMENT FOR PLATFORM CARRIAGES FOR PASSENGER CONVEYOR INSTALLATIONS
Emil Braun, Dortmund-Kirchlinde, Germany, assignor to Orenstein & Koppel Aktiengesellschaft, Berlin, Germany
Filed Sept. 11, 1968, Ser. No. 758,977
Claims priority, application Germany, Sept. 14, 1967, 1,580,899
Int. Cl. A63g *1/00*
U.S. Cl. 104—25 **3 Claims**



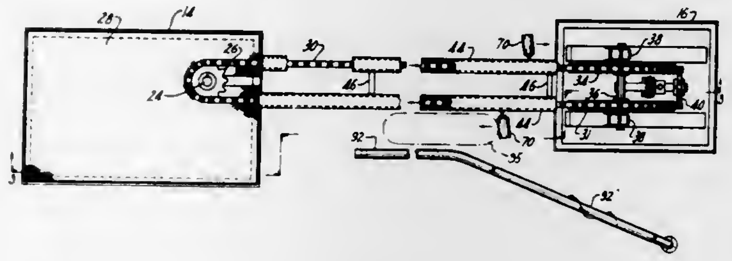
Guiding mechanism for passenger transport systems having platforms serially arranged in an operating path between a pair of endless tow chains. Each platform is conveyed along opposite drive chain strands on roller shafts that are journaled to the platform. Adjustable partially rounded discs and chain mounted mushroom-shaped guiding means provide pivotally journaled axis-parallel platform positioning that is maintained thereby with the shafts between the chains.

3,530,800
SELF-ENERGIZING PROPULSION UNIT FOR DRIVING A VEHICLE
William M. Watkins, West Covina, California, assignor to WED Enterprises, Inc., Glendale, California a corporation of California
Filed Dec. 15, 1967, Ser. No. 690,993
Int. Cl. B61b *13/12*
U.S. Cl. 104—168 **1 Claim**



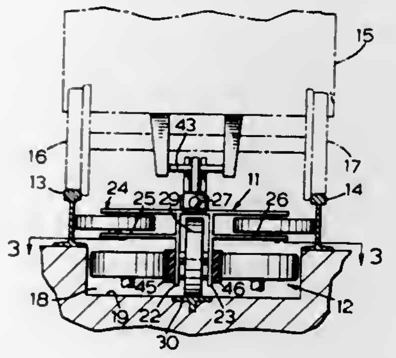
A self-energizing propulsion unit for driving a vehicle, such vehicle being provided at its underside with a platen. The propulsion unit includes a drive wheel that frictionally engages the platen to drive the platen and hence the vehicle forwardly. The drive wheel is carried by a support for powered rotation about a horizontal axis essentially normal to the direction of movement of the vehicle. The drive wheel support has its rear end mounted for movement about a horizontal axis normal to the direction of travel of the vehicle. Spring means bias the front of the drive wheel support upwardly against the platen to effect initial frictional engagement of the drive wheel with the front of the platen. As the drive wheel begins to apply force to the platen the reaction load causes the drive wheel to tend to pivot upward thereby providing sufficient force to secure traction between the wheel and platen.

3,530,801
TRANSPORTING DEVICE AND METHOD
George S. Murillo, Monrovia, California, assignor to Chem-Therm Mfg. Co. Inc., Monrovia, California a corporation of California
Filed Feb. 19, 1965, Ser. No. 433,884
Int. Cl. B61j *3/04*
U.S. Cl. 104—172 **15 Claims**



An automobile tow conveyor having an endless flexible chain with portions driven in a horizontal plane with a plurality of elongated yokes spaced along and affixed to a preselected pintle shaft of such chain and with freely rotatable rollers mounted on such yokes, and an elongated guide member for receiving and guiding the yokes and chain through the conveying portion of the conveyor.

3,530,802
PROPULSION SYSTEM FOR VEHICLES
Hendrik Johan Edens, 1740 Pharmacy Ave., Agincourt, Ontario, Canada
Filed Nov. 24, 1967, Ser. No. 685,696
Claims priority, application Canada, Dec. 12, 1966, 977,708
Int. Cl. B61b *13/12;* **B65g** *27/20*
U.S. Cl. 104—176 **9 Claims**

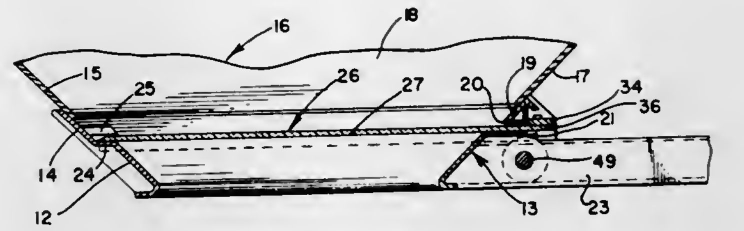


A propulsion system for a rapid transit system employing vehicles supported on rails, consisting of a series of aligned, elongated rigid beams hingeably coupled together at their ends to form a long closed loop. The vehicles are supported and guided along a way or route by a pair of spaced parallel rails having a channel between them. The beams are located in the channel, and they are provided with wheels or rollers riding along the bottom of the channel. Guide means is provided to keep the beams properly aligned in the channel, and the beams are moved by means of driven belts which frictionally engage vertical webs of the beams. The vehicles are releasably attached to the beams at predetermined intervals along the lengths of the beams by means of a vehicle catching mechanism.

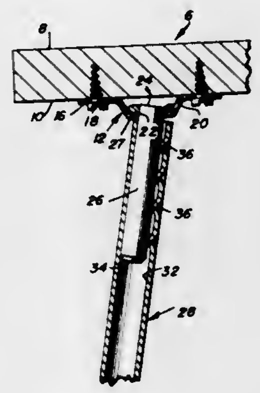
3,530,803
LIGHTWEIGHT HOPPER GATE
Franklin P. Adler, Michigan City, Indiana, assignor to Pullman Incorporated, Chicago, Illinois a corporation of Delaware
Filed Feb. 5, 1968, Ser. No. 702,985
Int. Cl. B61d *7/20, 7/22;* **F04f** *1/00*
U.S. Cl. 105—282 **7 Claims**

A lightweight gate for regulating the discharge opening provided by a four-sided wall structure attached to the

hopper of a railway car, the said gate comprising a plate of fiber glass provided with metallic edging portions, which slide on metal surfaces formed on said walls disposed below the discharge opening. The fiber glass plate is connected to a U-shaped actuating member including racks which are disposed on opposite sides of the wall structure, the said racks being slidable on slide elements on said wall structure wherein the gate may be moved horizontally to either a closed or open position relative to said discharge openings.



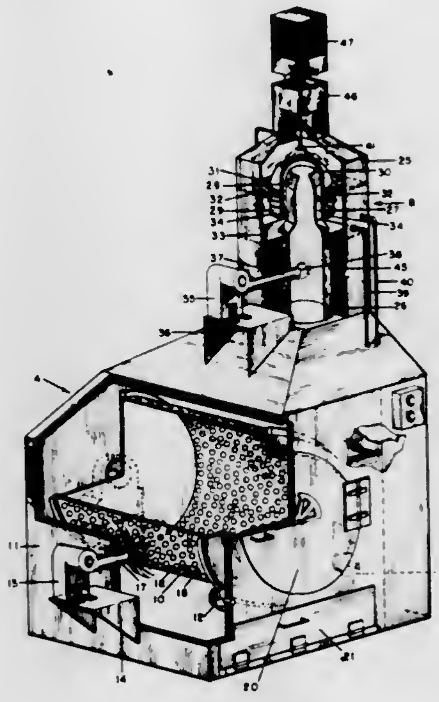
3,530,804
TABLE WITH READILY ATTACHABLE LEGS
Oscar E. Broome, 16930 Sorrento, Detroit, Michigan
Filed May 29, 1968, Ser. No. 733,012
Int. Cl. A47b *3/06*
U.S. Cl. 108—156 **3 Claims**



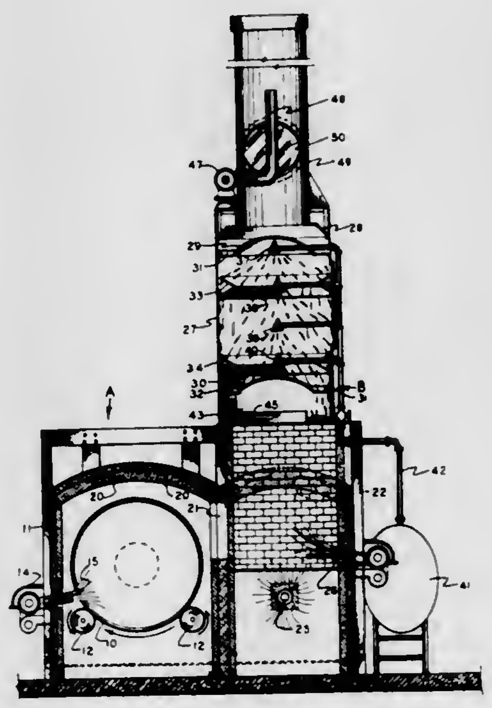
A table top provided at its corners with brackets each embodying a mounting plate secured to the coacting underneath surface by screw threaded headed fasteners. A centrally apertured well-like depression has an angularly welded stud telescoping into the upper hollow end portion of a detachable leg. The latter portion has a row of longitudinally spaced indentations providing yielding friction-retained detents.

3,530,805
INCINERATOR
Vernon D. Bowman, Dayton, Ohio, assignor to Bowman Enterprises, Inc., Baltimore, Maryland a firm
Filed Nov. 6, 1968, Ser. No. 773,741
Int. Cl. F23g *5/12*
U.S. Cl. 110—8 **1 Claim**

A combination incinerator and exhaust scrubbing apparatus having an incinerator section with a rotatable perforated drum in which the material to be burned is placed, a fuel burner positioned to direct its flame against the drum to dry and ultimately consume the material therein and an exhaust scrubbing section through which the products of combustion from the incinerator are passed, the latter section having provisions for burning any combustible gases in the combustion products and finally scrubbing and cleaning the same by steam and water spray to insure an exhaust free of smoke and noxious gases.



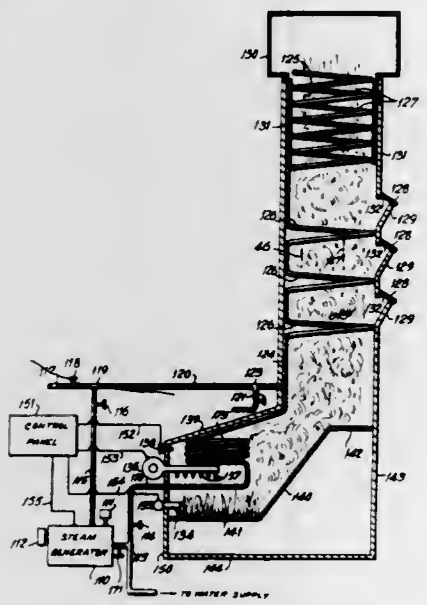
3,530,806
INCINERATOR
Vernon D. Bowman, Dayton, Ohio, assignor to Bowman Enterprises, Inc., Baltimore, Maryland a firm
Filed Jan. 10, 1969, Ser. No. 790,299
Int. Cl. F23g *5/12*
U.S. Cl. 110—8 **5 Claims**



A combination refuse incinerator and exhaust gas burning and scrubbing device having an incinerator section with a rotatable perforated drum for receiving the material to be burned, a fuel burner positioned to direct its flame against the drum and through the perforations thereof to dry and ultimately consume the material therein and an exhaust burning and scrubbing section receiving the exhaust gases from the incinerator and having fuel burners for consuming any combustible gases and scrubbing means in the form of water sprayers to remove any fine solid matter and soluble constituents therefrom.

3,530,807
ANTI-POLLUTION APPARATUS

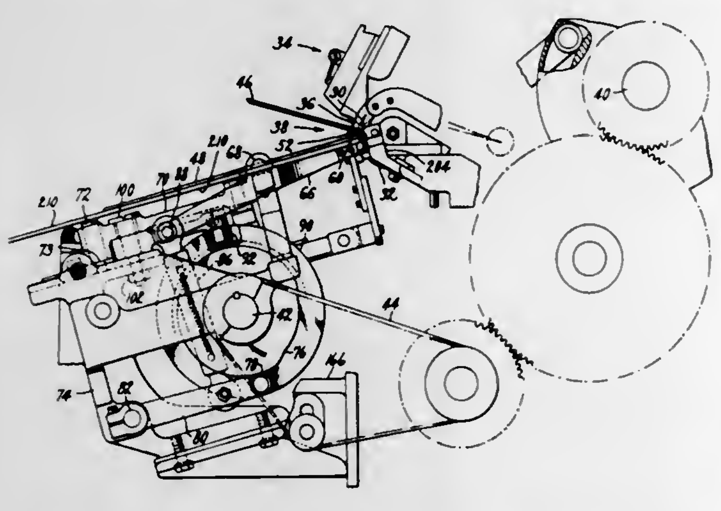
Solomon Zalman, 114–08 Rockaway Blvd., Rockaway, Park, New York
Continuation-in-part of application Ser. No. 698,221, Jan. 16, 1968. This application April 28, 1969, Ser. No. 819,812
No. 819,812
Int. Cl. F23g *3/06*
U.S. Cl. 110—8 **9 Claims**



An anti-pollution apparatus for removing the smoke particles from exhaust gases of an incinerator or fuel burning apparatus, having a plurality of spiral coils with steam jets mounted against the internal walls of the chimney adjacent to its opening and supplied with steam under pressure. As an incinerator, the apparatus also utilizes a gas burner for igniting the refuse articles, and an air blower having an air jet manifold for maintaining a high temperature of combustion within the incinerator. The apparatus also includes a control panel connected to a temperature dispensing device for operating the gas burner, and air blower to maintain a high temperature of combustion within its combustion chamber.

3,530,808
SEWING MACHINES

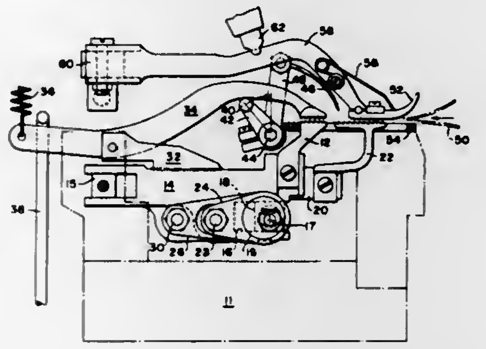
Joseph R. Ionnilli, Beverly, Massachusetts, assignor to USM Corporation, Boston, Massachusetts a corporation of New Jersey
Filed June 2, 1969, Ser. No. 829,309
Int. Cl. D05b *15/00*
U.S. Cl. 112—54 **11 Claims**



A lockstitch sewing machine having two adjustable sets of work piece feeding devices to enable one ply of a two ply work piece to be overfed or puckered with respect to the other at a point in advance of the sewing point so that one is held by the stitches in puckered relationship the other which remains essentially flat at the seam. The machine is particularly useful for sewing together the parts of a true moccasin comprising a vamp which passes beneath the wearer's foot and has a long edge connected by a seam to the shorter edge of a plug.

3,530,809
WORK FEEDER FOR SEWING MACHINE

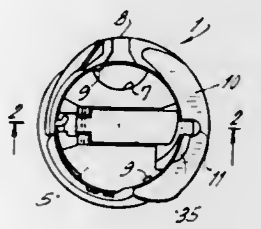
Robert E. Porter, 5 Oak St., Hamilton, Massachusetts
Filed March 17, 1969, Ser. No. 807,489
Int. Cl. D05b *27/06*
U.S. Cl. 112—207 **7 Claims**



Apparatus for advancing the upper layer in synchronism with the underlying layer of an assembly being sewn. The apparatus is driven simultaneously by the lower feed mechanism and by the needle drive of the sewing machine. It includes a spring-biased, arm pivoted from the lower feed system and cam-driven from the stitching mechanism. At the end of the arm a serrated work-engaging feed dog is formed. The arm may be lifted from contact with the work being sewn by means of a foot treadle.

3,530,810
FULL-ROTARY TYPE HOOK USING MASS OF WOUND THREAD

Kazukiyo Shiragami, Toyonaka, Japan, assignor to Hirose Seisakusho Ltd., a corporation of Japan
Filed June 4, 1968, Ser. No. 734,411
Claims priority, application Japan, Sept. 19, 1967, 42/80,081
Int. Cl. D05b *57/14*
U.S. Cl. 112—229 **5 Claims**

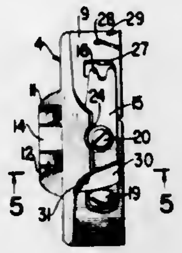


A container and dispenser for filamentary material such as thread, consisting of a generally cylindrical cup-shaped outer holder and a correspondingly shaped inverted cup-shaped inner casing therein, including the provision of filament in the form of a wound coreless body in said casing coupled with means for retaining the casing in the holder whereby it is possible to unwind the filament without movement of the body.

3,530,811
BOBBIN CASE TENSION SPRING

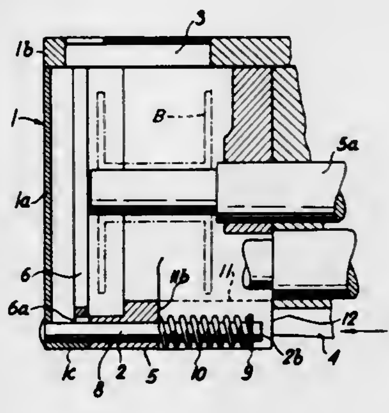
Ludwig J. Kuhar, Clark, New Jersey, and Joseph J. Dolney, Denville, New Jersey, assignors to The Singer Company, New York, New York, a corporation of New Jersey
Filed April 25, 1969, Ser. No. 819,213
Int. Cl. D05b *57/14*
U.S. Cl. 112—229 **5 Claims**

A bobbin case for use in a sewing machine comprising a cup-shaped body including a cylindrical outer wall and a substantially circular end face. A bobbin thread tension spring is adjustably secured to the outer wall. An overhanging arcuate lip projecting radially from the periphery of the end face overlays the spring to provide a smooth snag-free surface over which the needle thread loop can pass. A finger extends from an edge of the spring and folds over the spring to abut the lip thus preventing bobbin thread from becoming entrapped under the lip.



3,530,812
LOOPER HOUSING ARRANGEMENT

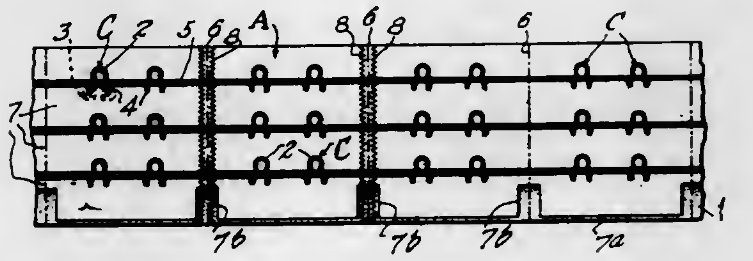
Josef Rouha, Boskovice, Czechoslovakia, assignor to Elitex, Zavody Textilnihio Strojirenstvi Generalni Reditelstvi, Liberec, Czechoslovakia
Filed Sept. 13, 1968, Ser. No. 759,569
Claims priority, application Czechoslovakia, Sept. 14, 1967, 6,558/67
Int. Cl. D05b *75/00*
U.S. Cl. 112—258 **13 Claims**



A cover normally closes the open end of a tubular housing portion of a sewing machine in which a looper or shuttle with an exchangeable bobbin is mounted. For exchange of the bobbin, it is necessary to move the cover away from the housing end portion against the action of a spring, and then to turn the cover in a transverse plane to a position in which the open end of the housing portion is uncovered and access to the bobbin is provided. Blocking means prevent the turning of the cover in the normal closing position.

3,530,813
PRODUCING FASTENER TAPE SECTIONS ON STRAP ENDS

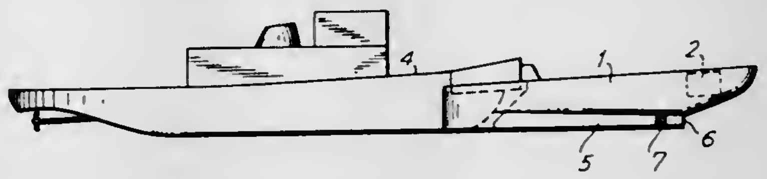
Richard J. Roseman, 72 Stafford Road, Colonia and Morton A. Roseman, 20 Tower Drive, Maplewood, New Jersey
Continuation-in-part of application Ser. No. 686,165, Nov. 28, 1965. This application Jan. 14, 1969, Ser. No. 816,135
Int. Cl. A41f *1/00;* **A44b** *13/00*
U.S. Cl. 112—407 **8 Claims**



A fastener section with two parallel bound edges has fastener elements on a fabric body strip partially overlaid by a cover strip and one or both of said strips is notched at spaced points between said bound edges to provide a flap between which and the other strip one end of a strap is secured by stitches. In making one form of the section, the body and cover strips are elongated, one strip has notches equidistantly spaced longitudinally thereof, formed either before or after the strips are secured together, and either spaced apart parallel lines of binding stitches are formed to extend through the notches and transversely of the strips after which the strips are severed between the lines of stitches, or the strips are first severed through the notches and the stitches are applied to the severed edges of the strips, thereby to provide separate fastener sections each having a flap for attaching a strap or a garment edge to the section.

3,530,814
ICEBREAKING ATTACHMENT

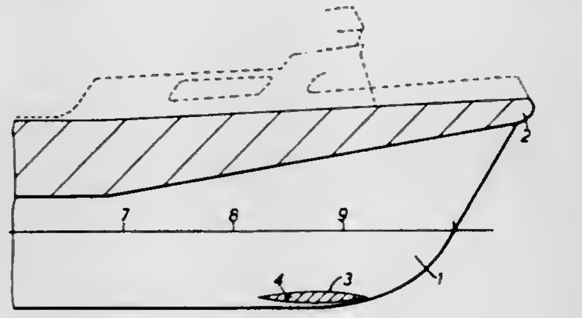
Vladislav Vladimirovich Rastorguev, Sosnovaya polyana, Georgievskaya ul. 52, kv. 15, Leningrad, U.S.S.R.; Artur Mikhailovich Terakopov, ul. Kuibysheva, 29, kv. 66, Leningrad, U.S.S.R.; Nikolai Melitonovich Ivashkov, Primorsky prosp., 53, kv. 11, Leningrad, U.S.S.R.; Alexandr Ivanovich Begunkov, ul. Zaitseva, 32, kv. 47, Leningrad, U.S.S.R.; Alexandr Borisovich Belkin, ul. Marata, 72, kv. 60, Leningrad, U.S.S.R.; and Ilia Nusinovich Vexklyarsky, ul. Zaitseva, 32, kv. 7, Leningrad, U.S.S.R.
Filed July 16, 1968, Ser. No. 745,273
Int. Cl. B63b *35/10*
U.S. Cl. 114—40 **10 Claims**



An icebreaker attachment is provided for connection with a ship at the bow end thereof such that the bow end of the ship is accommodated within a recess in the stern of the attachment. A protrusion is formed on the bottom of the attachment and has a wedge-shaped bow gradually flaring towards the stern of the attachment. A vibratory mechanism is carried by the attachment to impart vibrations thereto and break up ice through which the attachment passes, the attachment having a pump and pipes extending therefrom to the flaring sides of the protrusion to move broken ice out of the path of the ship.

3,530,815
CATAMARAN-TYPE SHIPS

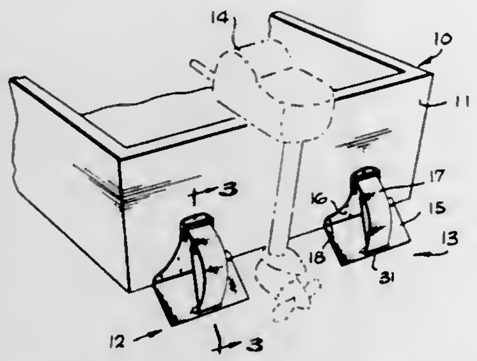
George Richard Grant Lewison, Feltham, England, assignor to National Research Development Corporation, London, England a British body corporate
Filed Mar. 21, 1968, Ser. No. 714,978
Claims priority, application Great Britain, Mar. 22, 1967, 13,516/67
Int. Cl. B63b *39/06*
U.S. Cl. 114—61 **6 Claims**



A catamaran-type ship is provided with a plate-like anti-pitching member disposed below the still water line, the member joining the two hulls near the fore end.

3,530,816
POWER BOAT STABILIZING APPARATUS

Herman Mitchell, Los Angeles, California (8983 Greenbush Ave., Arleta Calif. 91331)
Filed July 19, 1968, Ser. No. 746,161
Int. Cl. B63b *1/18*
U.S. Cl. 114—66.5 **12 Claims**



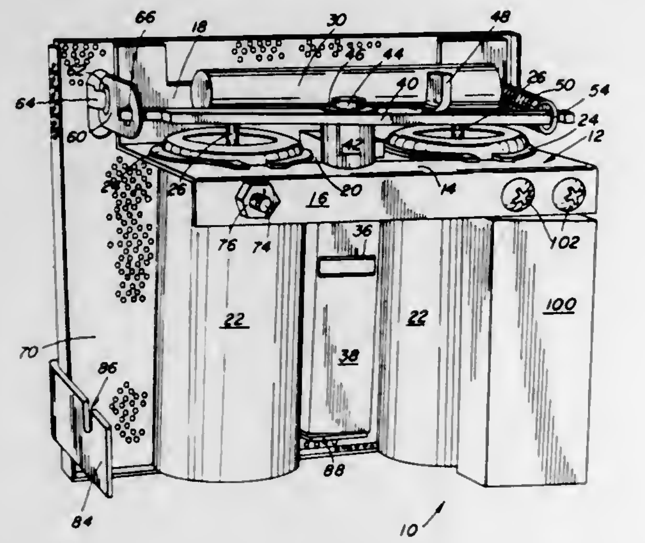
The stabilizing apparatus disclosed herein provides trim control plates hingeably mounted on the transom of a power boat so as to introduce an impact surface of the plates to the pressure of oncoming water. A high initial effort leaf spring is pivotally connected at its opposite ends to the transom and the free end of the plates, respectively, which normally urges the plates towards an angular position below the horizontal and which is adapted to yield suddenly under a specific increase of water impact loads to permit each plate to assume angular positions closer to the horizontal.

ERRATUM

For Class 83—644 see:
Patent No. 3,530,761

3,530,817
PNEUMATICALLY ACTUATED DEVICE AND ARRANGEMENT FOR MOUNTING SAME

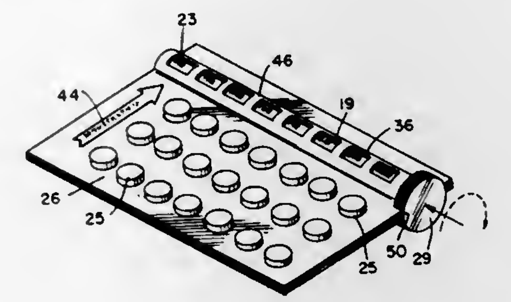
William J. Garvey, Rte. 1, Indian Trail Road, Barrington, Illinois
Filed Nov. 27, 1968, Ser. No. 779,562
Int. Cl. G08b *17/00*
U.S. Cl. 116—106 **8 Claims**



An improved fire alarm device includes a container for pressurized propellant and a whistle operatively connected to the container by valve means which, when actuated, release pressurized propellant so as to cause a warning signal to be emitted. The valve means is actuated by a spring biased, pivotally mounted lever normally restrained by thermally responsive means adapted to permit the lever to pivot so as to actuate the valve when the ambient temperature exceeds a predetermined temperature. The device is pivotally mounted such that the device pivots to a predetermined position when the useful supply of pressurized propellant therein is less than a predetermined amount.

3,530,818
PILL DISPENSER WITH INDICATING MEANS

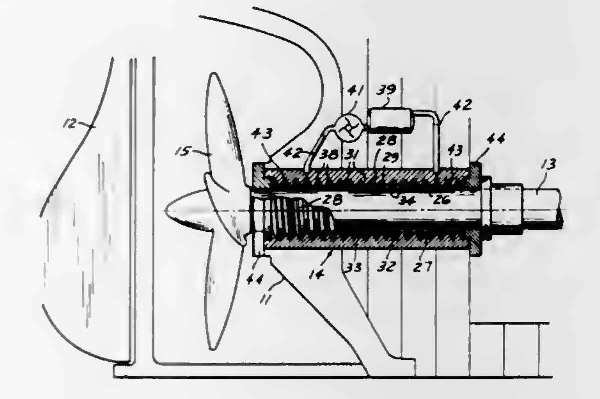
Margaret A. Secondino, Indianapolis, Indiana, assignor to Eli Lilly and Company, Indianapolis, Indiana a corporation of Indiana
Filed Aug. 19, 1968, Ser. No. 753,570
Int. Cl. G09f *9/00*
U.S. Cl. 116—121 **2 Claims**



A package of pills arranged in a predetermined pattern for sequential consumption is provided with a roll calendar having a plurality of indicia adjustable for correct alignment with the pills for indicating the time each pill is to be taken.

3,530,819
BEARING ASSEMBLY

Henry J. Modrey, 158 Eagle Drive, Stamford, Connecticut
Filed Jan. 10, 1969, Ser. No. 790,208
Claims priority, application Great Britain, Nov. 13, 1968, 53,782/68
Int. Cl. B63h *25/22*
U.S. Cl. 114—144 **17 Claims**

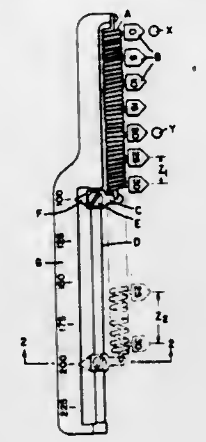


This disclosure teaches a seal and bearing (or bushing) arrangement suitable for marine and comparable applications, and particularly a stern tube bearing and sealing assembly. A supporting member has an internally threaded mounting hole with a bearing insertable therein. The bearing comprises a coil spring externally defining a screw thread engageable with a thread of the mounting hole. Internally the coil spring describes a continuous axially aligned land which forms a cylindrical bearing (or bushing) for a shaft or rod. A continuous helical path provided between the thread of the coil spring and that of the mounting hole causes circulation of a lubricant about the shaft or rod with or without an external lubricating circuit. Helical sealing elements are positioned in the thread of the mounting hole snugly engaging the shaft or rod to close off the axial ends of said path. End plates secure the sealing elements in position. These plates can be rotated to tighten the coil spring and sealing elements if desired.

3,530,820
METHOD OF SUPPORTING NUMBER TABS ON HELICAL SPRING

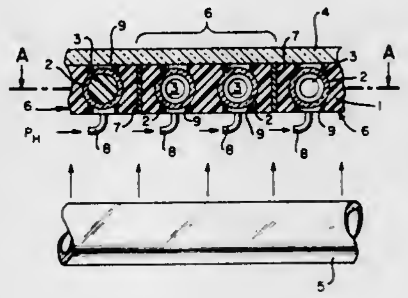
Henri Morgenroth, 3090 Hidden Valley Lane, Santa Barbara, California
Filed Nov. 24, 1967, Ser. No. 685,365
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 **2 Claims**

The method of attaching number carrying tabs to a helical spring used in a simple mechanical analogue multiplying computer by tensioning the spring slightly more than its maximum working length and inserting flat numbered tabs having portions adapted to be retained by the spring coils when the spring is in its normal working length.



3,530,821
PRESSURE ACTUATED INDICATOR DEVICE FOR BINARY PRESSURE SIGNALS

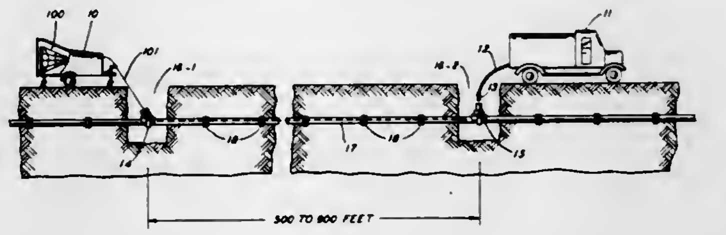
Helfried Bilz, Kleinmachnow, Germany; Jürgen Voigt, Dresden, Germany; Wolfgang Göbel, Moritzburg, Germany; Christian Hahn, Dresden, Germany; and Rainer Emmrich, Braunsdorf, Germany, assignors to Veb Reglerwerk Dresden, Dresden, Germany
Filed Jan. 21, 1969, Ser. No. 792,741
Int. Cl. G01l *19/12*
U.S. Cl. 116—70 **3 Claims**



A flat opaque body is provided with a plurality of light passages and covered at one side with a display screen. At the opposite side of the body, a light source is arranged for transmitting light through the passages. Each passage is provided with a movable opaque piston disposed within a transparent cylinder. The light passing position of the piston is set by the pressure of a signal fluid introduced into the cylinder through a separate pressure inlet, and the light blocking position is reset by separate reset means.

3,530,822
APPARATUS FOR COATING THE INTERIOR OF PIPES

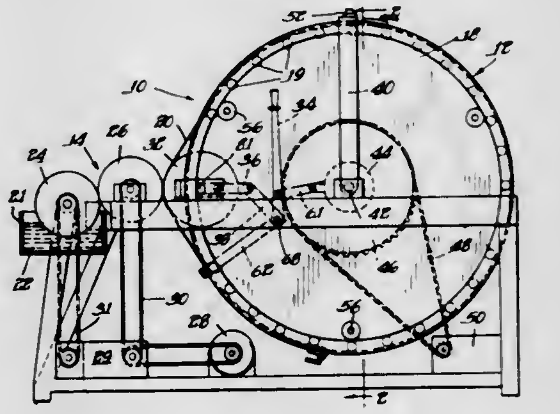
Gerardo Di Mura, 459 Mountain Terrace, Dunellen, New Jersey
Continuation-in-part of application Ser. No. 463,600, June 14, 1965. This application Nov. 23, 1965, Ser. No. 507,990
Int. Cl. B05b *13/06*
U.S. Cl. 118—9 **7 Claims**



Apparatus is disclosed for spraying in a single operation the interior of a relatively long section of a gas main with a sealing compound by connecting a relatively light, flexible snake line to a nozzle attached to a hose at a first one of the two extremities of the gas main section and drawing the snake line from an opening at the first gas main extremity through the interior of the main to an opening in the gas main at the second extremity while the sealing compound is pumped through the hose and is sprayed out of the nozzle in a plurality of discrete angles into contact with the interior of the gas main. Reel means, multiorifice-angled nozzle and plural gas main saddle arrangements are disclosed for facilitating the spraying operation.

3,530,823
APPARATUS FOR COATING TEST PANELS

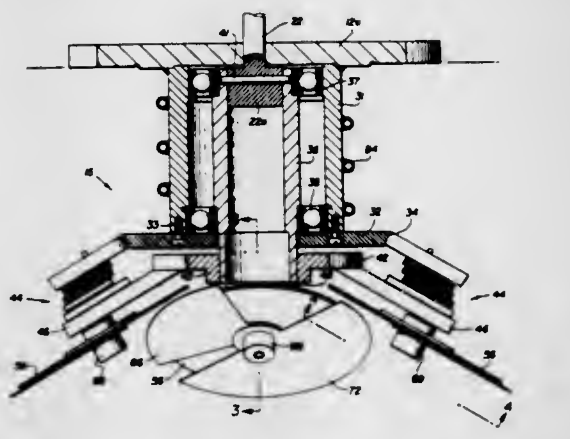
Joseph Giordano, 133 West 110th St., Chicago, Illinois
Filed Dec. 16, 1968, Ser. No. 783,857
Int. Cl. B05c *1/02*
U.S. Cl. 118—12 **13 Claims**



A machine for applying a uniform coating of paint to a test panel of flexible aluminum siding. The machine includes a stationary cylindrical frame, paint applying means, and means for moving a test panel about the periphery of said frame and into engagement with said paint applying means.

3,530,824
DEPOSITION APPARATUS INCLUDING ROTATABLE AND ORBITAL MASKING ASSEMBLY

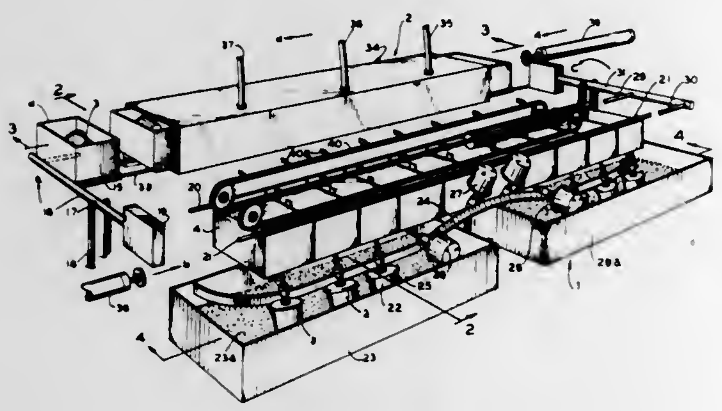
Rolf F. Illsley, Santa Rosa, California; Alfred J. Thelen, Santa Rosa, California; and Joseph H. Apfel, Santa Rosa, California, assignors to Optical Coating Laboratory, Inc., a corporation of California
Original application Aug. 25, 1964, Ser. No. 391,928, now Patent No. 3,442,572 dated May 6, 1969. Divided and this application Nov. 12, 1968, Ser. No. 774,642
Int. Cl. C23c *13/08*
U.S. Cl. 118—48 **12 Claims**



An apparatus for the manufacture of a rotatable variable filter having first, second and third elements in which the first element comprises a substrate, the second element comprises a first mask and the third element comprises a second mask. A source of coating material is provided. The means is also provided for mounting the first, second and third elements so that the second and third elements are positioned between the source of coating material and the first element. The means for mounting includes means for causing different relative rotational movement of at least two of the elements and means for orbiting the assembly of elements about the source of coating material.

3,530,825
APPARATUS FOR PREPARING REFRACTORY SHELL MOLDS

Peter Antonissen, London, England, assignor to Monsanto Chemicals Limited, of Monsanto House, London, England
Continuation-in-part of application Ser. No. 641,266, May 25, 1967. This application Aug. 30, 1967, Ser. No. 664,324
Claims priority, application Great Britain, June 7, 1966, 25,337/66
Int. Cl. B05c *11/02*
U.S. Cl. 118—56 **10 Claims**

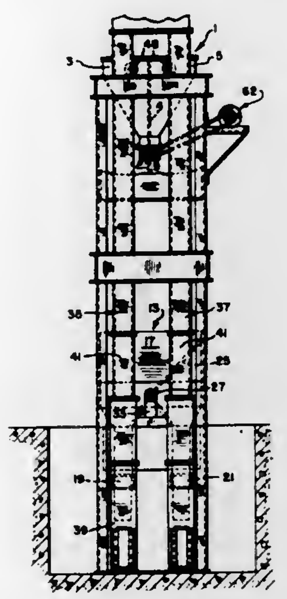


The present invention, in part, relates to an apparatus for applying a coating of a slurry to a pattern and treating the slurry of the coating with a gaseous media such as ammonia in order to gel such slurry. Such apparatus comprises a container having an opening sufficiently large for a pattern to pass therethrough, such container being provided with mounting means incorporating a pivotal device for attaching a pattern to the container. Such mounting means allows the container when in a first position and when the opening of said container is in the upper most position to support the pattern within said container. When the container is in a second position with the opening in the lower position, the pattern is positioned outside of such container. There is also provided means for moving the container from the first position to the second position and a second means for applying a coating of a slurry to a pattern when the container is in the second position, and a third means for treating the slurry of the coating with such gas when the container is in the first position.

3,530,826
MATERIALS HANDLING APPARATUS FOR TREATMENT STATION

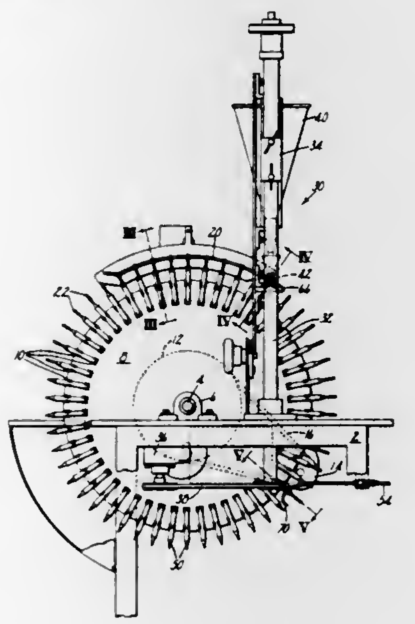
William H. Trench, Chester, New Jersey, assignor to Howmet Corporation, a corporation of New Jersey
Filed Oct. 18, 1968, Ser. No. 768,676
Int. Cl. B05c *5/00*
U.S. Cl. 118—310 **4 Claims**

Apparatus for handling a plurality of differing particle materials at a station for treating objects, such as shell molds which are treated by showering them with the particle materials. The apparatus provides a compartmented storage hopper for storing and selectively discharging one or more of the materials being handled and further provides a collection hopper to collect the excess particle material while maintaining segregation of the materials used at the station and finally provides means for returning the materials to the storage hopper.



3,530,827
MACHINE FOR APPLYING A LOCKING PATCH TO A THREADED ELEMENT

George F. C. Burke, Beverly, Massachusetts, assignor to USM Corporation, Boston, Massachusetts a corporation of New Jersey
Continuation of application Ser. No. 672,347, Oct. 2, 1967. This application March 20, 1969, Ser. No. 810,913
Int. Cl. B05c *5/00*
U.S. Cl. 118—620 **14 Claims**

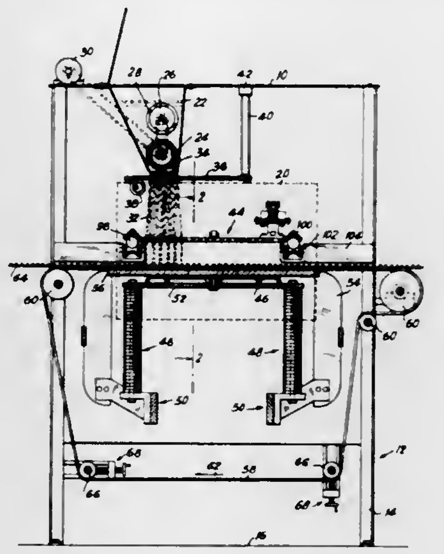


A machine for applying a locking patch to elements, the machine having a rotatable wheel with a plurality of removable holders to carry the elements sequentially and individually through a heating station, a patch applying station and a removal station.

3,530,828
ELECTROSTATIC FLOCKING APPARATUS

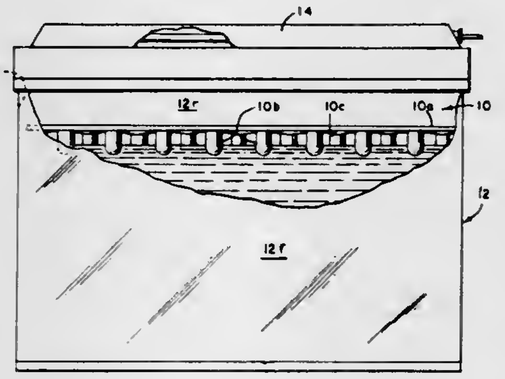
Samuel M. Schwartz, Paterson, New Jersey (404 Clifton Ave., Clifton, NJ 07015)
Filed July 5, 1968, Ser. No. 742,944
Int. Cl. B05b *5/00*
U.S. Cl. 118—624 **3 Claims**

Electrostatic flocking apparatus including means feeding a substrate through the space between a pair of vertically aligned electrodes. Means reciprocate the upper electrode in its own plane and means operate to simultaneously vibrate the upper electrode in a vertical direction. A flock feeding device is located above the upper electrode. The flock is desirably of any composition other than metallic, such as finely chopped or otherwise divided fibres or particles of materials, including vegetable or animal matter, or nylon or other cellulosic or nitrogeneous fibres of natural or synthetic origin other than metallic substances may be used.



3,530,829
FLOATING COVER FOR AN AQUARIUM

Allan H. Willinger, 56 Gail Drive, New Rochelle, New York
Filed Sept. 13, 1968, Ser. No. 759,545
Int. Cl. A01k *63/00*
U.S. Cl. 119—5 **5 Claims**

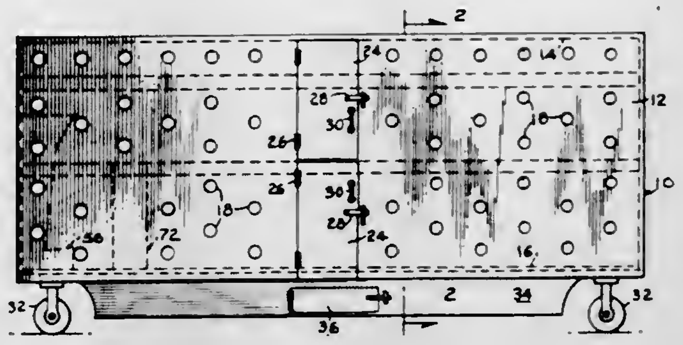


A cover for an aquarium tank floatingly supported on the water body thereof so as to prevent fish from jumping out and to minimize evaporation, dirt and dust contamination of the water, as well as providing other benefits, and wherein depending flotation members hold the cover in a clearance position above the water and thereby keep the cover from interfering with the interchange of gases between the atmosphere and the water necessary to sustain fish and plant life.

3,530,830
LIVESTOCK SHIPPING CONTAINER

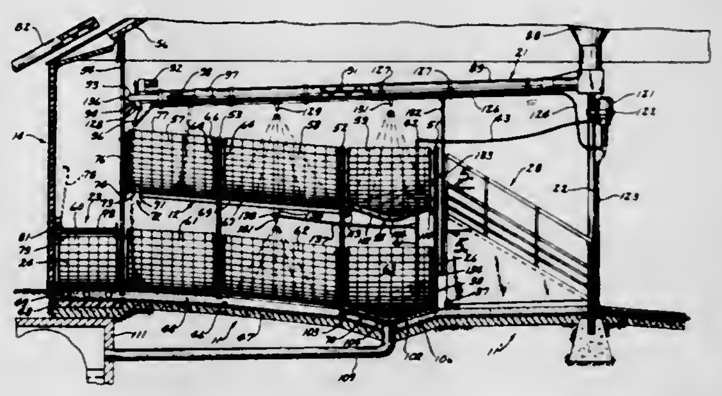
Bruce L. Smith, 9555 School St., Elk Grove, California
Filed May 29, 1968, Ser. No. 732,960
Int. Cl. A01k *1/00;* **B61d** *3/00*
U.S. Cl. 119—15 **1 Claim**

A relatively large rectangular container is used for shipping livestock, such as animals and poultry, by truck, railroad car or marine vessels. Opposite sides of the shipping container are provided with vertically spaced parallel cleats secured against the side walls to selectively engage and support horizontal partitions. When the upper parallel members are used, the support extending across the container form an upper compartment in which may be arranged a bale of straw for supplying bedding to animals therebelow. When smaller animals or poultry are to be shipped, the transverse support may rest upon the lower longitudinal members to divide the containers into upper and lower compartments to increase the shipping capacity of the container.



3,530,831
METHOD OF AND CLEANING APPARATUS FOR FARM ANIMAL FEEDING HOUSE

William J. Conover, Rhodes, Iowa
Filed Oct. 17, 1968, Ser. No. 768,975
Int. Cl. A01k *1/00*
U.S. Cl. 119—16 **14 Claims**



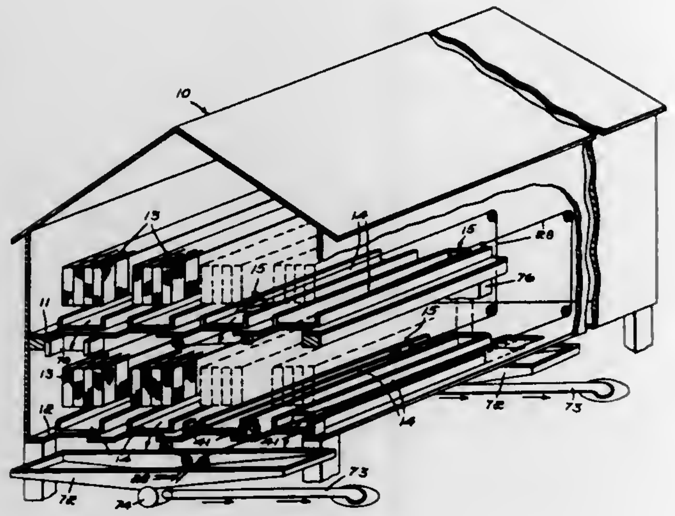
This invention relates to a method of and a cleaning apparatus for a farm animal feeding house which house includes a plurality of floors each sloped downwardly from the periphery toward the center, with each floor having a plurality of arcuately spaced stalls formed thereon and arranged concentrically about the center of the floor, and with the house having an auger type feed conveyor pivotally mounted at the center of the house for circularly swinging over the uppermost floor for dumping feed therefrom which reaches each floor, the improvement comprising a semi V-shaped trough formed about the inside of each floor, which trough progressively descends from one end to the other, the running of water to one or more nozzles above the top floor and trough for discharge thereon, with the water running down the uppermost floor onto the trough, and around and down that trough, and with means for carrying the cleansing water from one trough to another and then externally of the bin.

3,530,832
APPARATUS FOR USE IN REMOVING MANURE FROM BUILDINGS HAVING MANURE COLLECTING CHANNELS

Allen H. De Satnick, Wellesley Hills, Massachusetts, assignor to De Mag Engineering Inc., Watick, Massachusetts a corporation of Massachusetts
Filed April 3, 1968, Ser. No. 718,622
Int. Cl. A01k *31/04*
U.S. Cl. 119—22 **16 Claims**

Apparatus for use in removing manure from buildings of the type provided with manure collecting channels, the apparatus having scraper means for each channel, each scraper means being movable lengthwise thereof in both directions but operable only when travelling towards the discharge end.

The drive for the scraper means has a control responsive to the return of a scraper means into a loaded position, and, for remote control, the drive has a detachable cable connection with the scraper means so that the drive may be moved from building to building and includes cable tensioning means that, desirably, is responsive to the load.



3,530,833

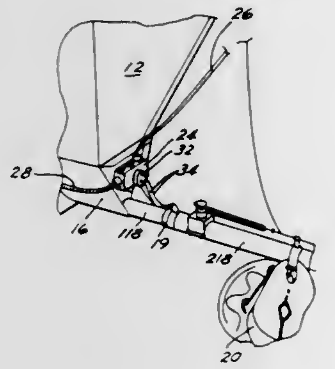
ANIMAL FEEDER WITH SAFETY SHUTOFF

Dee Dexter Allen, Zeeland, Michigan, and William R. Comber, Holland, Michigan, assignors, by mesne assignments, to U.S. Industries, Inc., New York, New York, a corporation of Delaware

Filed Feb. 1, 1968, Ser. No. 702,300

Int. Cl. A01k *5/00*

U.S. Cl. 119—51 **10 Claims**



An animal feeder of the type having a hopper and a long feeder trough communicating with the bottom thereof which houses a driven conveyor member, for example an auger, whose purpose is to transfer feed along the length of the trough, in which the trough is made in separate pieces or segments joined together at connection joints and in which an electrical plug and receptacle are each connected to one side of such a joint in the feeder trough. The plug and receptacle form a series switch in the energizing circuit for the motor which drives the auger or other conveyor member, such that if, upon mechanical malfunction or other difficulty such as binding or jamming of the auger, the feeder trough is separated at such joint, the aforesaid plug will be pulled from the receptacle to open said switch and de-energize the auger drive motor, thereby stopping operation of the feeder.

3,530,834

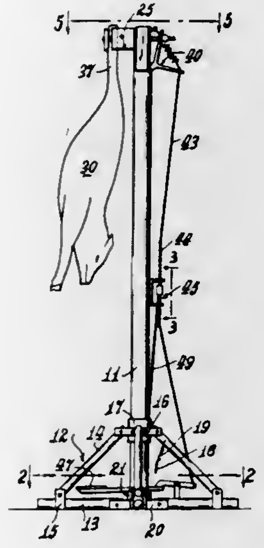
ANIMAL SUSPENSION RACK

Charles J. Hollenback, 4304 W. South St. and Loren J. Freund, 3505 W. Ringwood Road, McHenry, Illinois

Filed May 6, 1968, Ser. No. 726,888

Int. Cl. A62b *35/00;* **A61d** *3/00*

U.S. Cl. 119—96 **5 Claims**



An animal suspension rack comprising an upstanding standard, a clamping device for holding an animal in extended position at the upper end of the standard, foot pedals for locking and unlocking the clamping device, and a base for the standard.

3,530,835

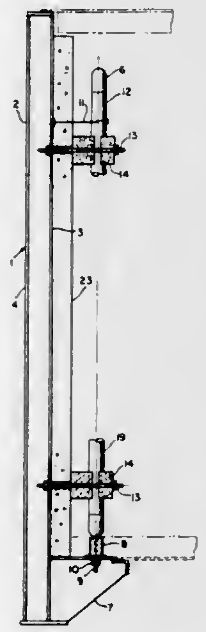
MODULARIZED FURNACE ENCLOSURE

Peter von Wiesenthal, 17 E. 89th St., New York, New York

Filed June 28, 1968, Ser. No. 740,971

Int. Cl. F22b *37/24*

U.S. Cl. 122—6 **6 Claims**



This disclosure teaches a method and related apparatus for subassembling a furnace enclosure. Modules are prepared which include panels complete with tube supports, coils and refractory. These panels are rectangular with flanges along opposite sides which flanges are formed by bending the panels. Modules are assembled to describe the furnace enclosure with a polygonal plan section (preferably a regular octagon). Adjacent panels are joined along corners by means of the flanges.

3,530,836

FORCED THROUGH-FLOW STEAM GENERATOR

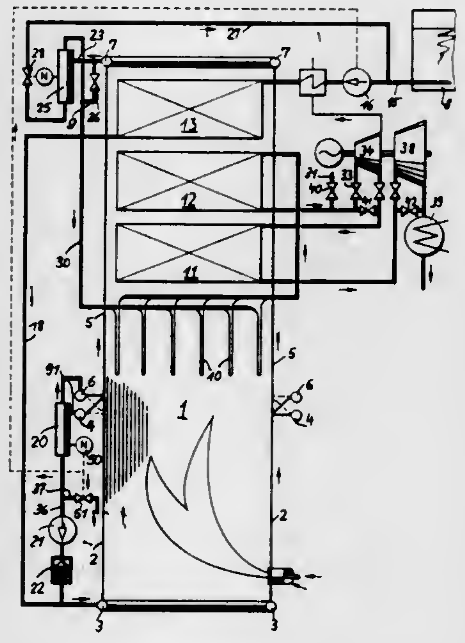
Mario Caravatti, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland a corporation of Switzerland

Filed July 11, 1968, Ser. No. 744,149

Claims priority, application Switzerland, July 13, 1967, 10,038/67

Int. Cl. F22b *29/12*

U.S. Cl. 122—406 **10 Claims**



The steam generator is provided with a tap off point between the evaporator and first superheater and a second tap off point after the first superheater. The tap off points connect with a separator. A by-pass line is also positioned between the second superheater and turbines. Upon starting, working medium is tapped off and returned to the flow path between the feed water tank and evaporator. After starting, up to normal operation, the working medium is not tapped off and the steam generator functions as a once-through forced-flow system.

3,530,837

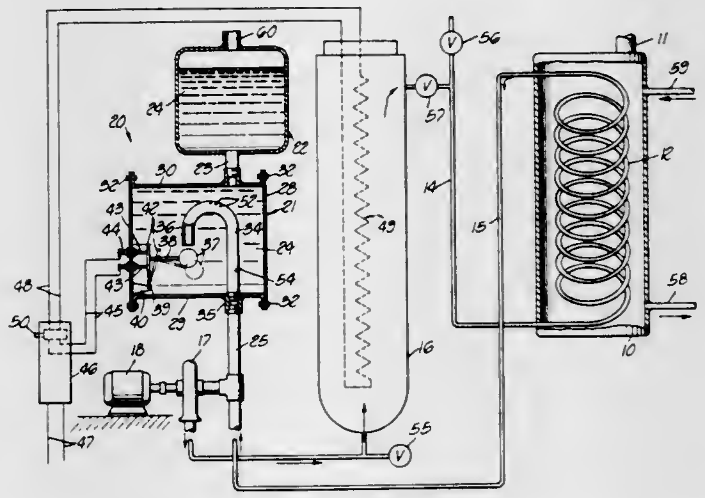
FLOW-RESPONSIVE SAFETY DEVICE

Alvin A. Olney, Santa Ana, California, assignor to The Scott & Fetzer Company, Cleveland, Ohio a corporation of Ohio

Filed Dec. 9, 1968, Ser. No. 782,161

Int. Cl. F22b *37/42*

U.S. Cl. 122—504 **18 Claims**



A safety device responsive to abnormal pressure and/or flow condition in a confined thermal liquid and effective to activate monitoring and protective equipment. In an exemplary embodiment, the device is located in a normally quiescent portion of the liquid but is instantly responsive to movement of the quiescent liquid to activate protective equipment for heating means for the thermal liquid. An abnormal pressure condition may arise from overheating the thermal liquid, or from the migration of low boiling-point liquid into the hot thermal liquid, or other circumstance causing a dangerous condition within the thermal liquid.

3,530,838

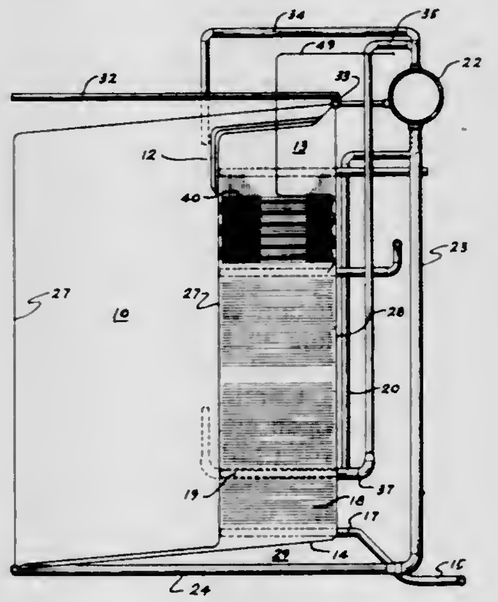
SUPERHEATER SUPPORT IN A STEAM GENERATOR

Johann G. Sailer, Chateauguay Center, Quebec, Canada, assignor to Combustion Engineering, Inc., Windsor, Connecticut, a corporation of Delaware

Filed May 12, 1969, Ser. No. 823,715

Int. Cl. F22b *37/24*

U.S. Cl. 122—510 **9 Claims**



A steam generator with a low temperature superheater and a high temperature superheater located in a vertical flue. The wall of the flue is at approximately saturation temperature as are vertical hanger tubes which pass through the flue to support the horizontal elements. The low temperature superheater elements are welded to the vertical hanger tubes. The high temperature superheater section is supported on horizontal support tubes which are welded to the vertical hanger tubes. Steam from the steam drum passes through the horizontal support tubes in parallel with the low temperature superheater and discharges into the inlet header for the high temperature superheater section.

3,530,839

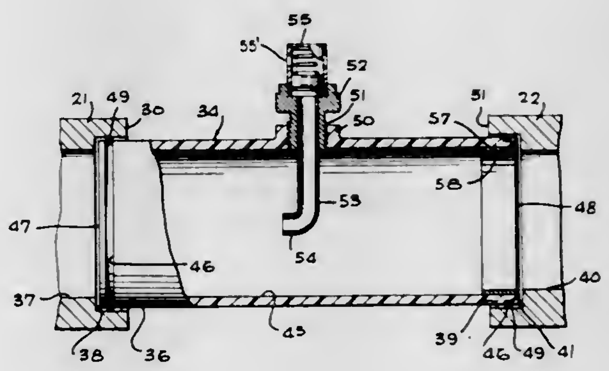
FLOW GUARD FOR MANIFOLD

Walter C. Avrea, Placentia, California, assignor to Saf-Gard Products, Inc., a corporation of Arizona

Filed March 4, 1968, Ser. No. 710,323

Int. Cl. F01p *11/18, 11/02*

U.S. Cl. 123—41.15 **1 Claim**



The invention is embodied in a transparent tube mounted with sealing slip joints between two fittings in the coolant water supply manifold of a diesel engine and wherein the bores of the tube and fittings are of identical inside diameter with no turbulence creating obstructions. Intermediate opposite ends of the tube is a sensor tube with a bent inside end facing upstream and a spring resistant relief valve opening at the exterior end of the sensor tube.

3,530,840
SOUNDPROOF INTERNAL COMBUSTION ENGINES

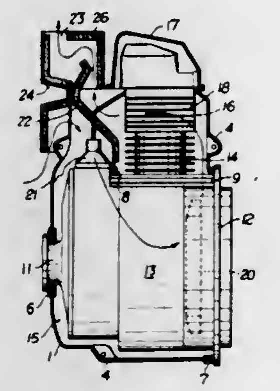
Fritz Freyn, Graz, Austria, assignor to Hans List, Graz, Austria

Filed Jan. 15, 1968, Ser. No. 697,896

Claims priority, application Austria, Feb. 14, 1967, A 1,451/67

Int. Cl. F01p *1/02, 1/10;* **F02f** *7/00*

U.S. Cl. 123—41.7 **1 Claim**



An internal combustion engine having a soundproofing enclosure and a cooling air blower with the enclosure consisting of at least two shells enclosing the engine in spaced relationship thereto. Continuous soundproofing packing strips are provided which are of an elastic material and extending along the bearing surfaces of the shells with bolts interconnecting the shells and air ducts provided in a cavity between the shells and the outer surfaces of the cylinder block so that the entire cooling air will be directed over the outer surface of the cylinder block.

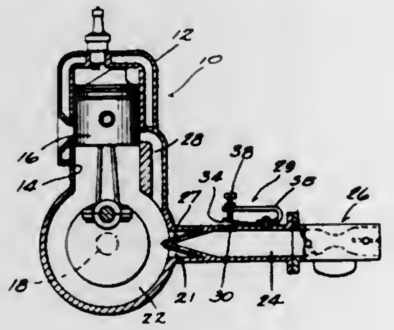
3,530,841
IDLE AIR INLET VALVE

Gerald Haft, Brookfield, Wisconsin and Robert W. Schultz, Menominee, Michigan, assignors to Outboard Marine Corporation, Waukegan, Illinois a corporation of Delaware

Filed March 6, 1968, Ser. No. 710,863

Int. Cl. F02m *3/00, 23/04;* **F02d** *9/00*

U.S. Cl. 123—119 **9 Claims**



Disclosed herein is an engine provided with an idle air intake port located in the intake manifold connecting a carburetor to an engine for supplying fuel free air for idle engine operation. Air flow through the intake port is controlled by a pressure responsive valve including a valve member in the form of a flexible member or diaphragm having a portion which is located over the intake port and which is biased to an open position to uncover the intake port. Upon increase in engine speed and increase in engine vacuum during idling operation the reduced pressure in the manifold causes the valve member portion to close the idle air intake port.

3,530,842
VAPOR INJECTOR SYSTEM

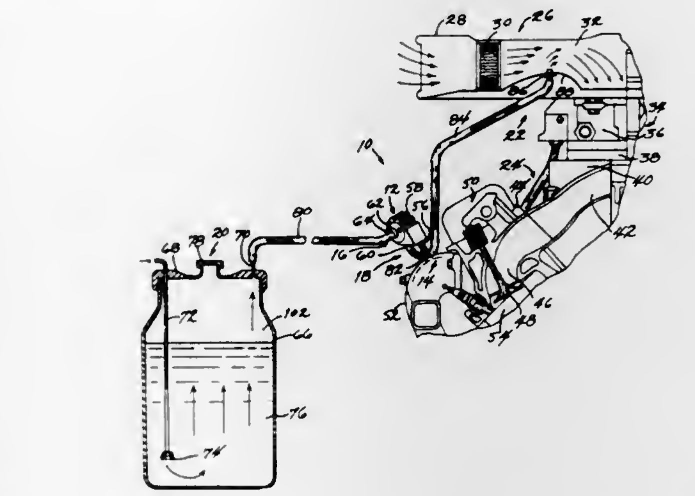
Joe W. von Brimer, 1209 Commerce, Las Vegas, Nevada

Filed Aug. 12, 1968, Ser. No. 751,787

Int. Cl. F02f *9/00;* **F04f** *5/00*

U.S. Cl. 123—119 **11 Claims**

A vapor injector system including a vacuum chamber with a pair of end walls, combustion gas inlet means, gas-vapor outlet means, and a curvilinear side wall extending between the inlet and the outlet, an opening in one of the end walls, and means for supplying exhaust gases from an internal combustion engine to the inlet means, for guiding gases flowing through the chamber from the outlet means into the intake air stream of the engine, and a container and conduit for supplying vaporizable fluid to a vapor inlet opening in the end wall of the chamber, so that gases flowing through the chamber along the wall, by centrifugal force, create a vacuum which pulls vapors from the container and entrains them in a vapor-gas stream which is supplied to the intake air stream of the engine. The vapors are preferably water-alcohol mixtures or other compositions having a high latent heat of vaporization and good anti-detonation qualities.



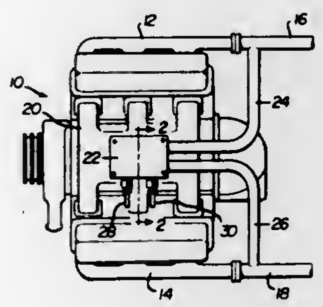
3,530,843
BLENDER AND CONVERTER

De Witt M. Fessenden, 911 Summit Blvd., West Palm Beach, Florida

Filed Oct. 22, 1968, Ser. No. 769,508

Int. Cl. F02m *25/06*

U.S. Cl. 123—119 **5 Claims**



A static blender and converter for an internal combustion engine having baffles for blending recycled exhaust gases with vaporized fuel and air and heat conductive structure for conducting heat from the engine to the baffles to convert any residual liquid in the fuel to gas. Hydrocarbon rich gases are separated in the exhaust conduit and fed back to the blender and converter.

3,530,844
DEVICE ADAPTED TO BE EMPLOYED IN CONJUNCTION WITH THE CARBURETOR IN AN INTERNAL COMBUSTION ENGINE

Mitsuji Kawai, 26, 1-chrome, Kaname-cho, Toshima-ku, Tokyo, Japan

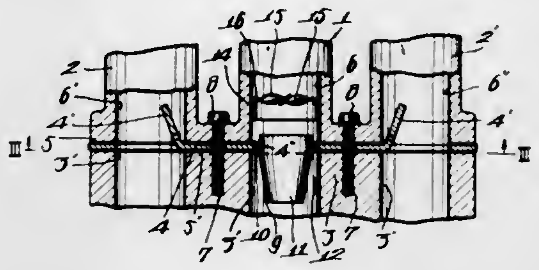
Filed Nov. 26, 1968, Ser. No. 779,094

Claims priority, application Japan, Jan. 8, 1968, 43/760

Int. Cl. F02m *31/08*

U.S. Cl. 123—122 **10 Claims**

A device adapted to be employed in conjunction with the carburetor in an internal combustion engine in order to heat and reduce the pressure on a flow of mixture of gasoline and air from said carburetor as the mixture is moving from the carburetor toward the cylinder of said internal combustion engine whereby the vaporization of the mixture is further augmented to the extent suitable to be perfectly burned in the engine and the amount of hydrocarbon to be contained in the exhaust gas formed by such combustion is greatly reduced.



3,530,845
CENTRIFUGAL GOVERNOR FOR CONTROLLING THE R.P.M. OF DIESEL ENGINES

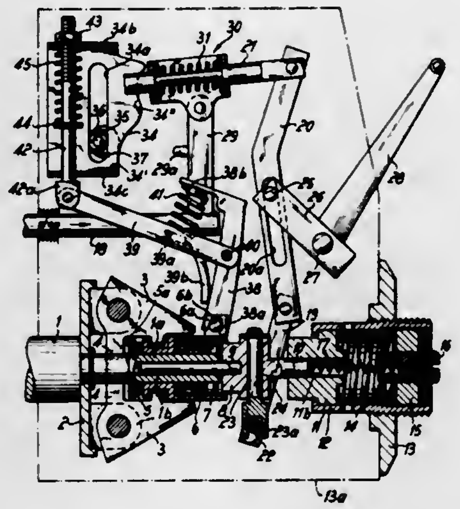
Heinrich Staudt, Markgroningen-Weilertalhausen, Germany; Rolf Müller, Stuttgart-Zuffenhausen, Germany; and Eberhard Hofmann, Kirchberg, Murr-Neuhof, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany

Filed Nov. 5, 1968, Ser. No. 773,619

Claims priority, application Germany, Nov. 14, 1967, 1,576,291

Int. Cl. F02d *1/04*

U.S. Cl. 123—140 **7 Claims**



In a diesel engine, a centrifugal governor is connected (1) by a first linkage means to the control rod of a fuel injection pump to cause displacement of said rod thereby varying the fuel delivery and (2) by a second linkage means to an adjustable abutment which limits said displacement and thus limits the maximum fuel delivery under various operating conditions. The position of said adjustable abutment is independent of the position of said first linkage means.

3,530,846
RADIO-CONTROLLED REMOTE ENGINE STARTING APPARATUS

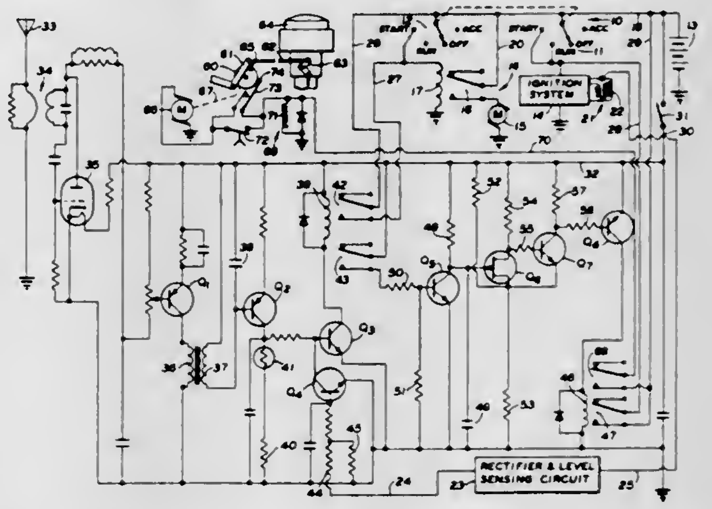
Stephen F. Bean, Worthington and Donald L. Cullen, Columbus, Ohio, assignors to Ohio Electronics Corporation, Columbus, Ohio a corporation of Ohio

Filed Sept. 10, 1968, Ser. No. 758,816

Int. Cl. F02n *17/00*

U.S. Cl. 123—179 **8 Claims**

Remote starting of an automobile engine is accomplished by remote radio control apparatus which includes an operator-actuated switch controlled RF transmitter and a tuned receiver which energizes the starter and ignition system in response to a transmitted signal. The transmitter emits an RF carrier signal which may be in the frequency range of 200—300 mHz. or the 27 mHz. Citizen's Band and which is modulated by a low freqency signal in the range of 10—20 kHz. with the RF carrier and low frequency signals selected to provide a combination peculiar to a specific transmitter-receiver combination. The receiver includes an RF section tuned to the preselected RF carrier which rejects all other carrier signals and a low frequency detector section which is tuned to the specific low frequency signal and thus provides an output signal in response to receipt of the specific frequency-combination signal. This signal activates first and second relay circuits for energization of the engine starter and ignition system, respectively. Both relay circuits are connected to bypass the conventional key-lock type ignition switch; however, the second relay circuit incorporates an electronic time delay which disables the circuit after a predetermined time interval and disconnects the ignition system thereby stopping the engine unless the key has been utilized in the interim to operate the ignition lock. The first relay circuit is interconnected with the vehicle's electrical generator circuit and, in response to detection of engine operation by presence of a generated voltage, prevents further activation of the starter relay circuit.



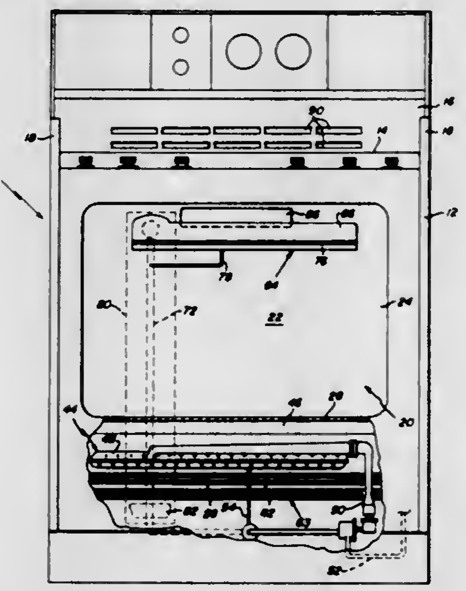
3,530,847
GAS-FUELED SELF-CLEANING OVEN

George W. Myler, Emmaus, Pennsylvania, and Domenick Saponara, Allentown, Pennsylvania, assignors to Caloric Corporation, Topton, Pennsylvania, a corporation of Pennsylvania

Filed April 2, 1968, Ser. No. 718,129

Int. Cl. F21c *15/32*

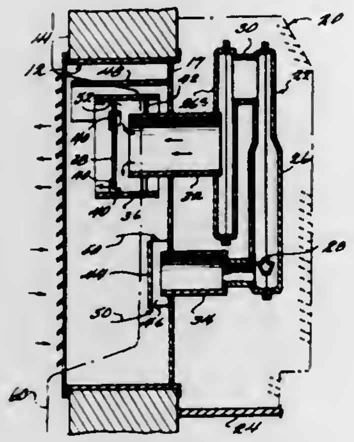
U.S. Cl. 126—21 **13 Claims**



A self-cleaning oven for household gas ranges comprising an oven containing a lower convection heater and an upper radiant heater for heating the interior of the oven to a temperature high enough for pyrolysis of food soils on the oven walls, the oven having an exhaust opening near an upper extremity thereof for exhaust of resulting gaseous degradation products, the radiant heater providing a broad flame of extensive area positioned to intercept the flow of degradation products before the products reach the exhaust opening whereby smoke in the degradation products is substantially removed by incineration.

3,530,848
VENT AND INLET FOR GAS HEATER

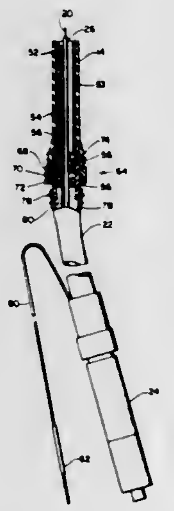
Murray O. Wilhoite, Nashville, Tennessee, assignor to Temco, Inc., Nashville, Tennessee a corporation of Tennessee
Filed Aug. 14, 1968, Ser. No. 752,515
Int. Cl. F25b *29/00*
U.S. Cl. 126—85 **4 Claims**



A gas wall heater of the type having an ambient air inlet and an exhaust gas vent extending through a building wall and a sealed combustion chamber disposed adjacent the wall. The inlet and vent openings are specially constructed and arranged within a common louvered chamber which is open to the atmosphere through the outside surface of the wall and which is substantially flush with the wall. In the preferred construction the heater is combined with a compression type air conditioner, and the refrigerant condenser portion of the latter is also disposed in the chamber.

3,530,849
ELECTRODE FOR MAKING IN VIVO IONIC MEASUREMENTS OF VENOUS BLOOD

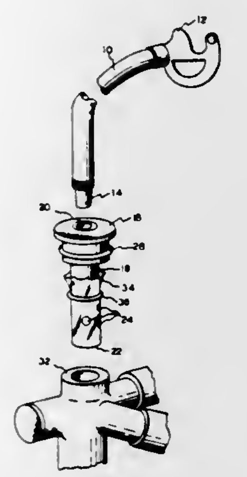
Hideo Watanabe, Fullerton, California, and Robert D. Gafford, Santa Ana, California, assignors to Beckman Instruments, Inc., a corporation of California
Filed May 5, 1965, Ser. No. 453,281
Int. Cl. A61b *5/00*
U.S. Cl. 128—2 **5 Claims**



A miniature electrode for making in vivo ionic measurements of venous blood in which the ion measuring electrode is positioned entirely in front of the reference electrode to minimize the cross sectional area of the assembly. The reference electrode includes a flexible catheter tube which holds the electrolyte of the reference electrode. The catheter tube may be filled with a sufficient quantity of electrolyte to expand the tube whereby the tube exerts a positive pressure on the electrolyte therein and thereby produces a constant flow of electrolyte through the liquid junction of the reference electrode regardless of the position of the assembly.

3,530,850
APPARATUS FOR LISTENING TO BREATHING SOUNDS DURING ANESTHESIA

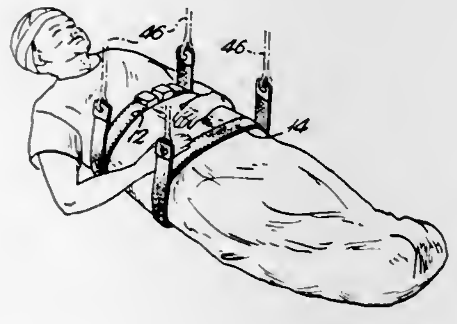
Howard M. Edwards, Jr., P.O. Box 17, Dixon, Illinois
Continuation of application Ser. No. 302,253, Aug. 15, 1963. This application Aug. 31, 1966, Ser. No. 573,425
Int. Cl. A61b *7/02*
U.S. Cl. 128—2 **3 Claims**



A listening device including a diaphragm to determine whether a respiratory obstruction exists in breathing passages of a patient including a fitting having an opening and a passage extending through the length thereof, a plastic membrane closing off one end of the passage of the fitting, a flexible tube having one end connected to the passage of the fitting, and an ear piece secured to the other end of the flexible tube.

3,530,851
HOSPITAL GOWN WITH ELECTRICAL SENSING MEANS

Charles F. Geschickter, Rte 2, Lorton, Virginia
Filed Oct. 6, 1967, Ser. No. 673,388
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.06 **10 Claims**

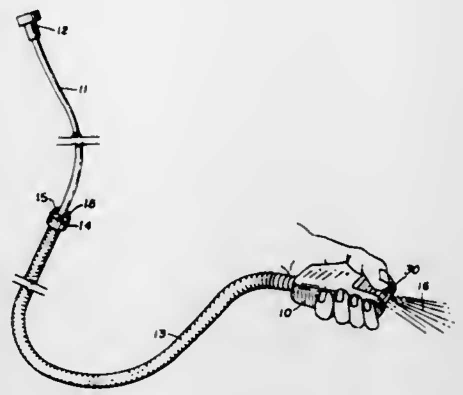


A hospital gown including straps which are adapted to be connected to and tensioned by an overhead hoisting means to position and confine a patient in his bed or to facilitate transporting a patient. The straps are formed to receive electrical sensing elements for monitoring patient conditions.

3,530,852
HYDRO-MASSAGE UNIT

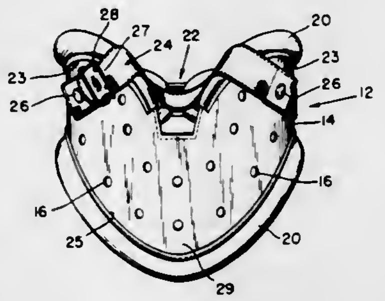
Arthur P. Fattor, 5380 S. Holly St., Littleton, Colorado
Filed July 3, 1968, Ser. No. 742,314
Int. Cl. A61h *9/00*
U.S. Cl. 128—66 **4 Claims**

A flexible water conduit, attachable at its intake extremity to a pressure source. A flexible air conduit axially encloses said water conduit for a portion of the length of the latter, both conduits terminating at their discharge extremities in a hand-held nozzle housing in which air is drawn through said air conduit, by a jet of water discharging from said water conduit, to produce a high velocity vibrating stream of intermixed air and water. The housing is provided with a flap valve which can be manually forced into said stream to control the discharge characteristics of said stream.



3,530,853
CERVICAL COLLAR

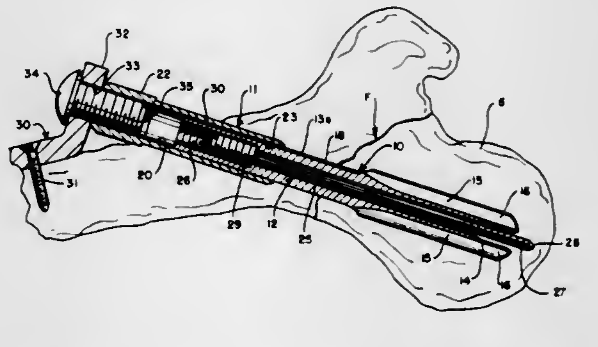
John L. Bond, North Wilkesboro, North Carolina
Filed Dec. 7, 1966, Ser. No. 599,872
Int. Cl. A61h *1/02*
U.S. Cl. 128—75 **5 Claims**



This invention relates generally to orthopedic devices and more particularly to a new and improved cervical collar formed from a flexible material and adapted to be adjustably encircled around the neck of a patient for correction of defective cervical level conditions.

3,530,854
FRACTURE NAIL ASSEMBLY

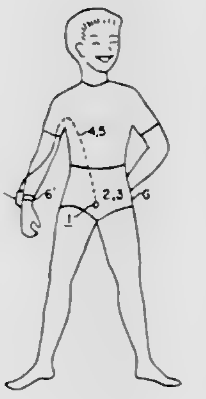
John Kearney, 9024 Kennedy Blvd., North Bergen, New Jersey
Filed July 11, 1968, Ser. No. 744,165
Int. Cl. A61f *5/04*
U.S. Cl. 128—92 **7 Claims**



The disclosure relates generally to a telescoping nail assembly of the so-called Massie Sliding Nail type employed to fix intra-capsular fractures of the femur and, more particularly, to an improved sliding nail assembly in which anchoring of the forward end portions of the nail body in the femoral head is enhanced by the provision of an auxiliary threaded rod which projects beyond the forward end of the nail body and by the provision of claws which project beyond the forward body portions of the nail. The claws and threaded rod accommodate knitting and growth of bone tissue in and about the nail assembly to improve its anchorage and stability.

3,530,855
ENURETIC CONTROL DEVICE

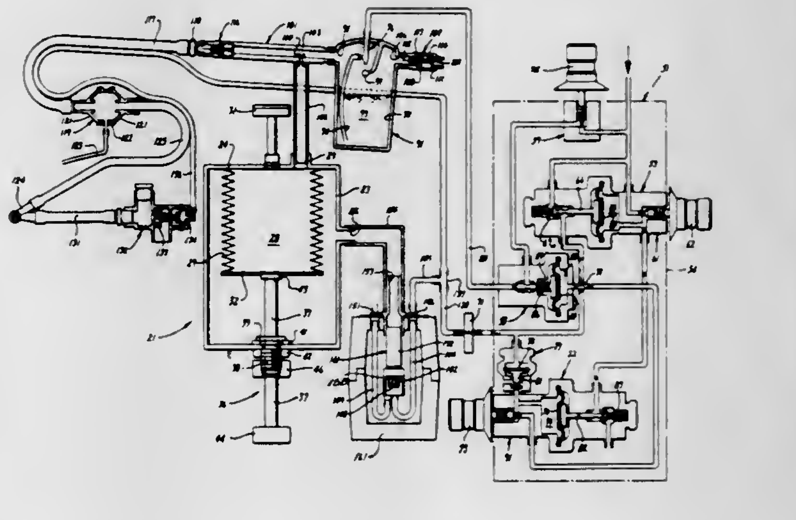
George H. Balding, 75 Sevilla Drive, Los Altos, California
Filed June 7, 1968, Ser. No. 735,318
Int. Cl. A61b *19/00*
U.S. Cl. 128—138 **11 Claims**



A portable, light weight device for use in treating nocturnal enuresis in which sensor means worn by the user comprise a first and a second clip electrode adapted to be fastened to opposite sides of the user's undergarment. The clips are fastened in circuit with a transistorized oscillator and with occurrence of moisture, a low resistance path is completed to energize the oscillator which, via an amplifier, drives a miniature speaker at 800 cycles, the entire circuit being powered by a low voltage d.c. battery and being contained in a miniature package worn on the wrist of the patient.

3,530,856
MECHANICAL VOLUME LIMITING VENTILATOR

Forrest M. Bird, Palm Springs, California (Box 817, Sandpoint, Idaho), and Henry L. Pohndorf, El Cerrito, California (Box 817, Sandpoint, Idaho)
Filed Feb. 28, 1967, Ser. No. 619,240
Int. Cl. A62b *7/00;* **A61m** *15/00*
U.S. Cl. 128—145.6 **15 Claims**



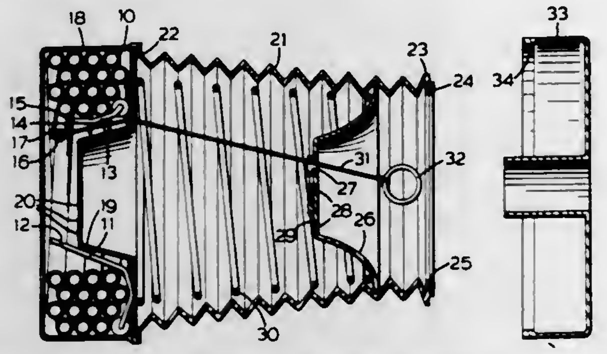
Mechanical volume limiting ventilator having a bellows which is filled with humidified and nebulized gas during the expiratory phase for delivery to the patient during an inspiratory phase.

3,530,857
RESUSCITATOR MASK

Lothar Miczka, Marl, Westphalia, Germany, assignor, by mesne assignments, to Abbott Laboratories, a corporation of Illinois

Filed Dec. 18, 1967, Ser. No. 691,354
Int. Cl. A62b *7/02*

U.S. Cl. 128–145.8 **8 Claims**



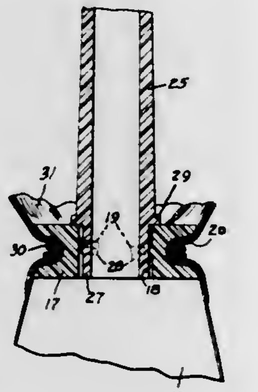
This specification describes an oxygen breathing mask device, suitable either for incorporation in a single package with a small pressure vessel, or which may alternatively be used with only minor modifications in conjunction with a separate somewhat larger source of oxygen, or other gas, the mask assembly being formed with concertina side walls to permit the same to be collapsed when not in use, and to be expanded to provide a relatively substantial container for oxygen at low pressure, and which incorporates a face mask at one end of the container and which also incorporates means for attaching conduits thereto so as to permit the container to be used as a pump, the oxygen or other gas being delivered through such conduits to a further mask and further describes the use of a particularly advantageous tubular pressure vessel and pressure reducing outlet means and quick release sealing means.

3,530,858
DISPOSABLE SYRINGE

John Richard Edwards, 2004 W. Yakima Ave., Yakima, Washington

Filed May 3, 1968, Ser. No. 726,281
Int. Cl. A61m *1/00*

U.S. Cl. 128–232 **4 Claims**



A disposable syringe primarily for use in feminine hygiene, which includes a rectangular 12″ x 3½″ polyethylene bag open at one end, a flat plastic spool, a plastic nozzle threadedly received by the spool opening to make a liquid tight fit therewith, the spool being freely received within the open end of the bag, and a rubber band wrapped around the bag end to bind the same to the spool in a fluid tight connection therewith.

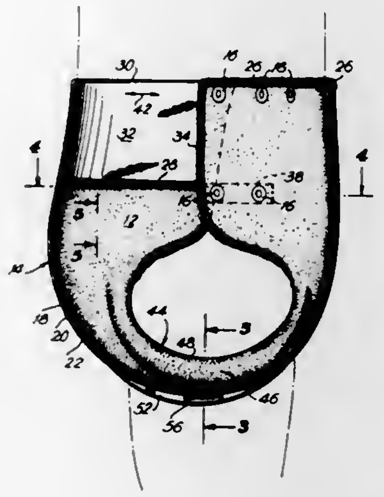
3,530,859
DIAPER GARMENT

Louis Heimowitz, Brooklyn, New York, assignor to Diapants Corporation, Brooklyn, New York a corporation of New York.

Filed Feb. 27, 1967, Ser. No. 618,913
Int. Cl. A61f *13/16*

U.S. Cl. 128–284 **1 Claim**

Diaper-like garment which may effectively be employed on infants from the time they initially begin using diapers until such time as they are completely trained and do not require further use of diapers fabricated of a double layer of terry cloth and an outer covering of knitted material with soft cotton tufting on its inner surface to provide high absorbing qualities for large amounts of liquid without wetting through and constructed and arranged with an expansible waistband portion adapted to be held on the body without the use of safety pins, strings or other loose objects to create the appearance of a pair of pants while automatically forming a pocket in the crotch to contain solid soils.

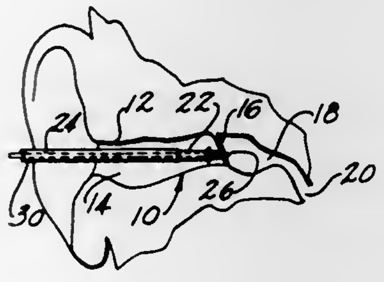


3,530,860
METHOD AND APPARATUS FOR INSERTING A TUBE THROUGH THE EAR DRUM

Marton Majoros, c/o Ponce de Leon Ear, Nose and Throat Infirmary, 144 Ponce de Leon Ave., Atlanta, Georgia

Filed Jan. 9, 1967, Ser. No. 607,961
Int. Cl. A61b *17/34;* **A61m** *27/00*

U.S. Cl. 128–305 **15 Claims**



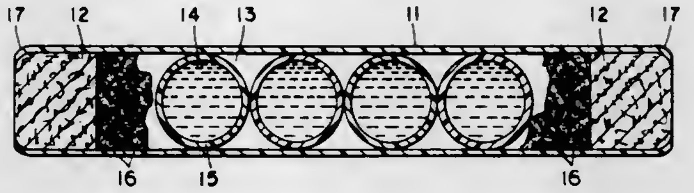
A method for inserting a tube, such as a small plastic drain tube, through the ear drum into the middle ear, which comprises supporting the drain tube on an elongated instrument member with the tube tightly fitting the end of the instrument, the tip of which protrudes beyond the outer end of the tube, inserting the tip of the instrument through the ear drum, making an opening smaller than the drain tube by making an incision with the tip of the instrument, and then in the same motion inserting the tip of the tube through the incision and, while the tube is in position through the incision in the ear drum, bringing a second member into engagement with the tube to push same from the first instrument member. One form of the instrument apparatus comprises a scissors having an elongated, rigid first instrument incision member attached to one leg of the scissors and the other leg of the scissors in the form of a crank which has an elongated tubular sleeve attached thereto and slidably fitting over and sliding on the first member whereby operating the scissors causes relative movement between the outer tubular sleeve and the end of the inner insertion instrument member, the tip of which serves to make the small incision in the ear drum.

3,530,861
WATER-REACTIVE FILTER ELEMENT FOR SMOKING DEVICES AND MEANS FOR SECURING THE ASSEMBLY WITHIN THE HOUSING

Margaret F. Carty, Plainfield, Vermont, assignor to The H-2-O Filter Corporation, New York, New York, a corporation of New York

Filed Aug. 7, 1968, Ser. No. 750,842
Int. Cl. A24f *7/04, 13/06, 25/00*

U.S. Cl. 131–264 **3 Claims**



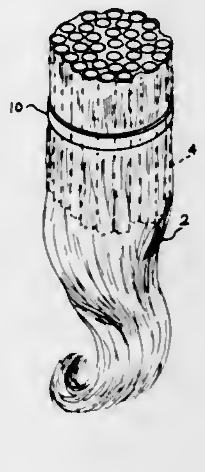
This invention relates to a filter for smoking articles such as cigarettes, cigars and pipes, wherein water container means, rupturable upon compression, are disposed within a resilient, waterproof housing. Smoke-permeable bodies are located at the opposite ends of the housing, and are retained within said housing by inwardly turned flanges on housing walls at both ends thereof. The flanges engage the bodies and retain them within the housing despite compression or distortion of the housing by squeezing.

3,530,862
PROCESS FOR FABRICATING A DETACHABLE COIFFURE

Beatrice A. Hudson, 729 W. Cottom, New Albany, Indiana

Filed March 5, 1969, Ser. No. 804,401
Int. Cl. A41g *5/00*

U.S. Cl. 132–5 **10 Claims**



A hair piece made by aligning hair to a rod-like member, trimming the hair ends, grouping the hair covered rods together and coating the trimmed ends with an elastomeric binder to form a web-like base.

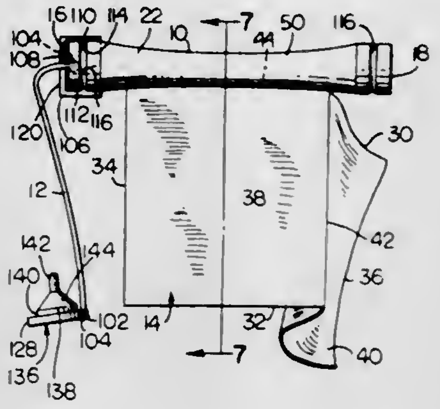
3,530,863
HAIR WINDING DEVICE

Fred F. Foster, 3917 Dalewood Drive, Fort Wayne, Indiana, and John F. Snider, 128 Southgate Plaza, Fort Wayne, Indiana

Filed June 2, 1967, Ser. No. 643,109
Int. Cl. A45d *2/16*

U.S. Cl. 132–33 **5 Claims**

A hair winding device having an attached and reusable winding pad of relatively thin sheet material which is not self-supporting, stretchable or absorbent, but which is flexible and porous. The winding pad has two portions. Only one winding pad portion is secured to the device. The unsecured winding pad portion can be folded over or under the secured portion to position a shaft of hair therebetween prior to winding both the pad and the shaft of hair onto the device. The device has a member attached at one end for holding the winding pad and shaft of hair in wound condition on the device. The device is provided with an end opening and communicating apertures intermediate the opposite ends of the device for applying hair treating liquids to the shaft of hair while wound upon the device.

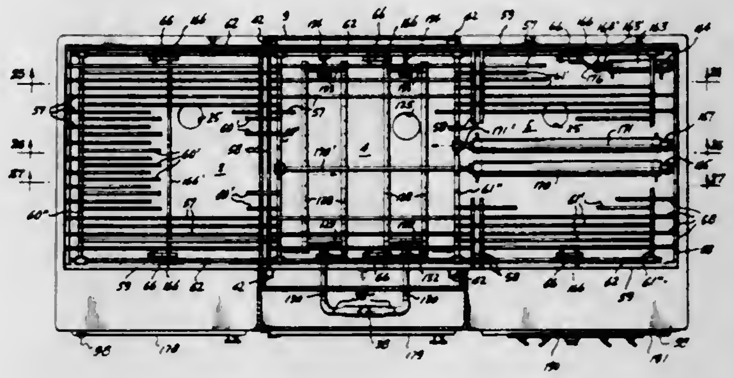


3,530,864
DISHWASHING MACHINE

Kenneth F. A. Wright, Westminster, California, assignor to Exceltronic Industries Ltd., Vancouver, British Columbia, Canada, a corporation of British Columbia

Continuation-in-part of application Ser. No. 553,862, May 31, 1966. This application Feb. 24, 1969, Ser. No. 801,737
Int. Cl. B08b *3/02*

U.S. Cl. 134–58 **4 Claims**



A loading station, a washing station and an unloading station for dishes are arranged generally in line with a basin under each station. Stationary racks composed of parallel rods at each station can support dishes, and dishes can be moved from the loading station to the washing station and from the washing station to the unloading station by two movable racks having parallel rods interdigitated with the stationary parallel rods which can be translated lengthwise of such rods. The movable racks are movable elevationally to lift dishes from the stationary rack at one station to be transported to the stationary rack at an adjacent station. Latches can connect the two movable racks for conjoint translation. At the washing station sprays oscillating about axes extending transversely of the direction of translation of the racks wash the dishes. During such washing operation roll curtains at opposite ends of a housing over the washing station are lowered to confine the sprays.

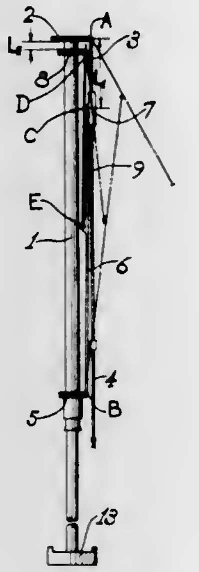
3,530,865
FOLDING UMBRELLA

Masaaki Hirai, Osaka, Japan, assignor to Asahi Kogyo Kabushiki Kaisha (Asahi Kogyo Co., Ltd.), Jotu-ku, Osaka, Japan, a corporation of Japan

Filed April 30, 1968, Ser. No. 725,368
Claims priority, application Japan, June 30, 1967 (utility model), 42/56,755
Int. Cl. A45b *19/04, 19/06*

U.S. Cl. 135–26 **4 Claims**

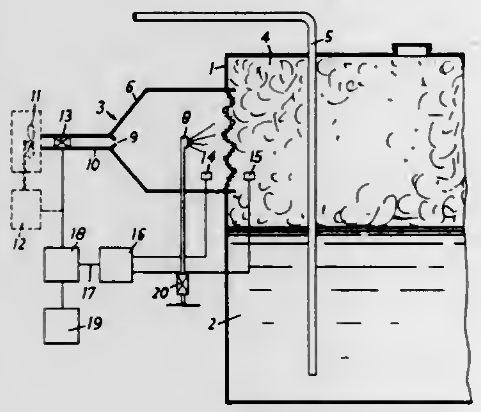
A folding umbrella comprising an extendable shaft, including a first wheel mounted at the upper end of the shaft with a plurality of mother ribs pivotally mounted at one end about the wheel, a second wheel slidably mounted on said shaft with a plurality of supporting ribs mounted at first ends thereof about said second wheel, a plurality of sliders each being pivotally mounted at the free end of a respective one of the supporting ribs, each slider engaging a respective mother rib for slidable movement therealong, sliding ribs pivotally connected at first ends to the sliders and extending outwardly therefrom in parallel relation to the mother ribs for slidable movement with respect thereto, and pushing ribs connected at one end to a third wheel slidably mounted on the shaft between the first and second wheels, with the other ends of the pushing ribs being pivotally connected to respective ones of the supporting ribs. When in a closed position, a first predetermined distance between the sliders and the first or upper wheel and a second, smaller predetermined distance between the first and third wheels is provided. These distances, in conjunction with restraining means provided on the mother ribs adjacent respective sliders, serve to curtail temporarily upward movement of the sliders toward the first or upper wheel, making the umbrella easy to open.



3,530,866
EXPULSION OF FLUIDS FROM CONTAINERS

Denis Shepherd, South Harrow, England, and Alexander R. Spidy, Pulborough, England, assignors to Walter Kidde & Company, Inc., Belleville, New Jersey a corporation of Delaware

Filed Jan. 14, 1969, Ser. No. 790,964
Int. Cl. B67d *5/54*
U.S. Cl. 137—2 10 Claims

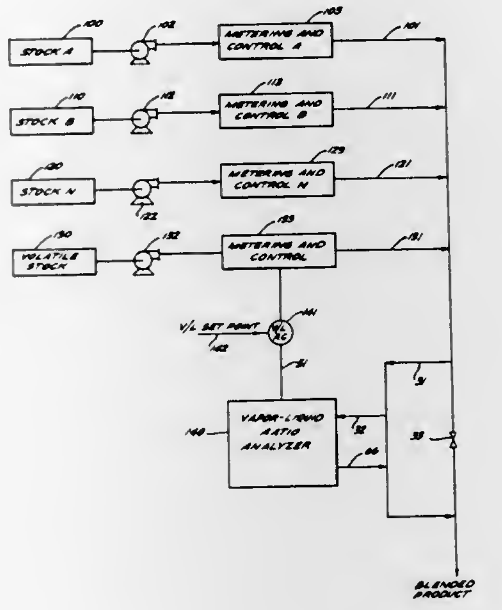


Method and means for ejecting fluid, particularly oil, from a container by laying a blanket of high-expansion foam on the fluid and pressurizing the space above the blanket to eject the fluid from an outlet. The pressure may be applied by more high expansion foam or by gas.

3,530,867
METHOD FOR BLENDING VOLATILE LIQUIDS

Robert H. Hass, Fullerton, California, assignor to Union Oil Company of California, Los Angeles, California a corporation of California

Original application Aug. 30, 1965, Ser. No. 483,636, now Patent No. 3,491,585, dated Jan. 27, 1970. Divided and this application Sept. 11, 1969, Ser. No. 857,138
Int. Cl. G05d *11/02;* G01n *11/00*
U.S. Cl. 137—3 3 Claims

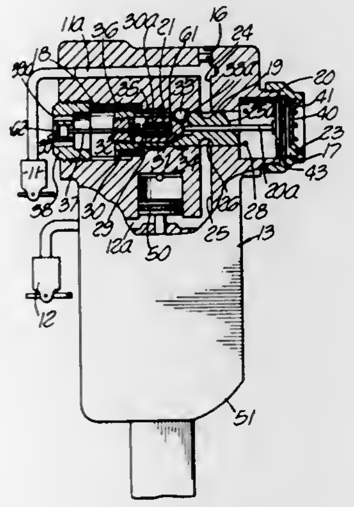


A method and apparatus for continuously measuring the vapor-liquid ratio of a volatile liquid at a preselected temperature, and a method for continuously blending a plurality of liquid components of varying volatilities to continuously produce liquid product having a controlled intermediate vapor-liquid ratio measured at the preselected temperature.

3,530,868
DYNAMIC PRESSURE SENSITIVE SELECTOR

Michael A. Rickards, Sherman Oaks, California, assignor to Walter Kidde & Company, Inc., Belleville, New Jersey, a corporation of Delaware

Filed Aug. 12, 1968, Ser. No. 751,826
Int. Cl. G05b
U.S. Cl. 137—38 25 Claims

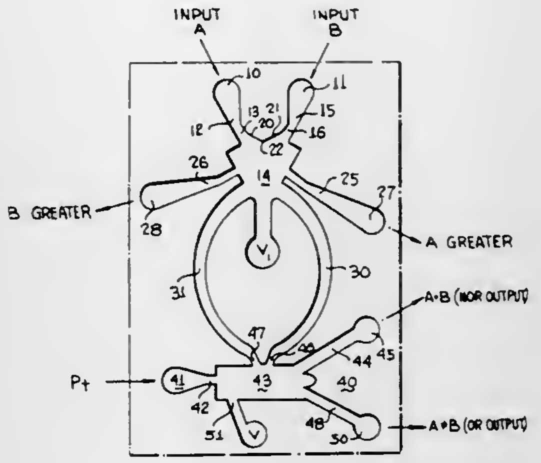


A pressure sensitive device that responds to dynamic air pressure to select either one of two sequences best suited for the dynamic air pressure level experienced. A modification of the device used in the system compensates for inertial and gravitational forces, which might interfere in the selection of the proper sequence.

3,530,869
DIGITAL COMPARATORS

Carmine V. Di Camillo, Silver Spring, Maryland, assignor to Bowles Engineering Corporation, Silver Spring, Maryland, a corporation of Maryland

Filed Oct. 21, 1965, Ser. No. 499,782
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 6 Claims



A pure fluid digital comparator compares two binary fluid signals A and B and provides four distinct fluid output signals corresponding respectively to the following logic conditions:

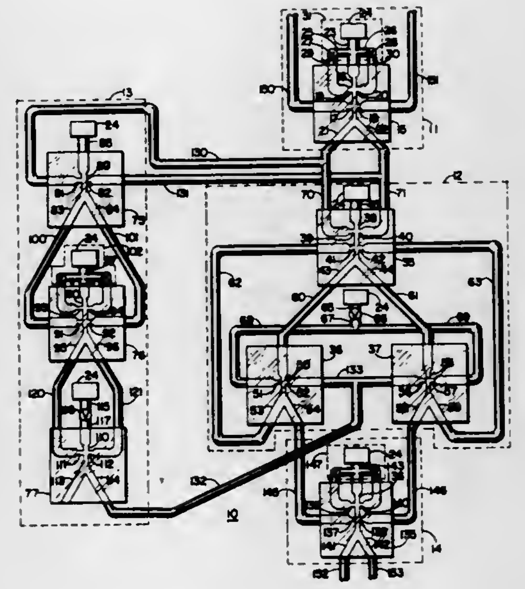
$$(1)\ A\cdot\overline{B},\ (2)\ \overline{A}\cdot B,\ (3)\ A=B,\ (4)\ A\neq B.$$

The A and B signals are applied at separate input ports aligned with respective output ports to provide signals (1) and (2) respectively. The input ports are disposed so that coincidence of signals A and B provides an output signal at a further output port. A pair of channels are provided to conduct signals (1) and (2) to respective control nozzles of an OR/NOR gate. The OR output signal of the gate corresponds to signal (4) and the NOR output signal of the gate corresponds to signal (3).

3,530,870
FLUID CIRCUIT

Michael J. Hoglund, Blaine, Minnesota, assignor to Honeywell Inc., Minneapolis, Minnesota, a corporation of Delaware

Filed Dec. 14, 1967, Ser. No. 690,460
Int. Cl. F15c *1/12*
U.S. Cl. 137—81.5 11 Claims

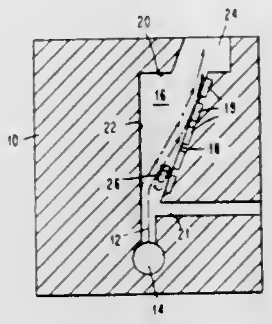


A fluidic circuit, the output signal of which is a variable function of the input signal supplied thereto. The circuit comprises means for supplying a common input signal to both a fluidic variable gain circuit and a control circuit which provides the variable gain circuit with gain control signals.

3,530,871
FLUIDIC HEAT SENSITIVE DEVICE AND SYSTEM

Bernard J. Greenblott, Poughkeepsie, New York, assignor to International Business Machines Corporation, Armonk, New York a corporation of New York

Filed Oct. 15, 1968, Ser. No. 767,735
Int. Cl. F15c *1/10*
U.S. Cl. 137—81.5 8 Claims

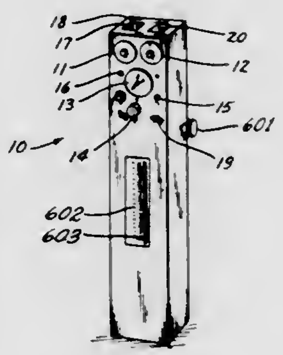


A heat sensitive fluidic device is provided having a cooling fluid jet stream passing thru a chamber which has a wall of a predetermined length arranged adjacent to and divergent with respect to the direction of flow of the stream. The jet stream is arranged so as to attach to the wall by boundary layer lock-on. The wall is made of a good heat conductor so that evaporation takes place in the boundary layer of the jet stream as sufficient heat is transferred thereto from the heat conducting wall. A vapor bubbles or bubbles form in the boundary layer and cause detachment of the jet stream from the wall when the vapor bubble growth is sufficient to cause the boundary layer to pass the downstream end of the wall. The jet stream is automatically reattached to the wall after a short delay; this cycle of jet stream movement is repeated if the wall remains above the predetermined temperature. The device not only provides cooling of the heat conducting wall within predetermined limits but also provides for detecting when a predetermined temperature has been exceeded.

3,530,872
RESPIRATORY APPARATUS

Leon J. Arp, 1305 Highland Ave., Blacksburg, Virginia, and James M. Varnum, Ames, Iowa, said Varnum assignor to said Arp

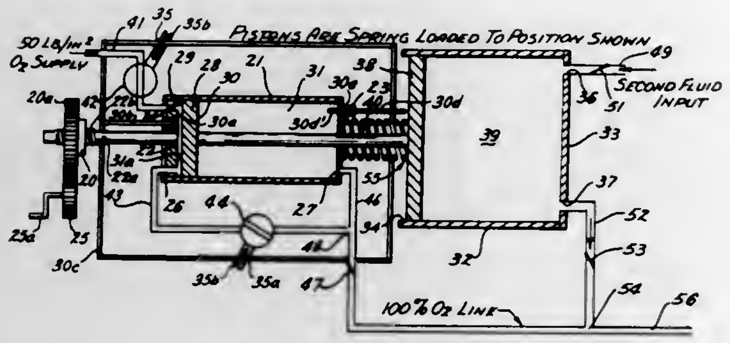
Continuation-in-part of application Ser. No. 454,400, May 10, 1965. This application Nov. 29, 1966, Ser. No. 579,649
Int. Cl. G05d *11/02;* A61m *16/00*
U.S. Cl. 137—99 4 Claims



This invention relates to a fluid mixing apparatus, which includes interconnected piston and cylinders which are fluid connected and valved to deliver an exact volume of an exact mixture of a pair of fluids in either one of two reciprocal positions of the apparatus, and simultaneously in either one of the two positions to deliver a certain amount of one of the two fluids for use with or without the fluid mixture.

3,530,873
FLUID DELIVERY DEVICE

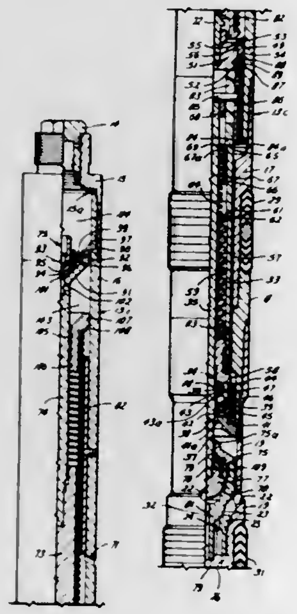
Leon J. Arp, 1221 Marston, Ames, Iowa, and James M. Varnum, Ames, Iowa, said Varnum assignor to said Arp
Continuation of application Ser. No. 454,400, May 10, 1965. This application Mar. 26, 1969, Ser. No. 812,556
Int. Cl. A62b *7/00;* **A61m** *16/00;* **G05d** *11/02*
U.S. Cl. 137—99 **10 Claims**



This invention relates to the respirator field, and includes a pair of separate cylinders having interconnected pistons, which cylinders are double-valved at each end with at least one end movable for varying the volume of fluid discharged; which valves are operable in response to a main piston bottoming at one end of the main cylinder, and in response to patient inhalation, wherein the main cylinder discharges a fluid, upon reciprocation of its piston, from which it derives its power, and wherein the secondary cylinder discharges a second fluid upon reciprocation of its piston for precise volumetric proportioning with the driving fluid for discharge to a patient.

3,530,874
VALVES

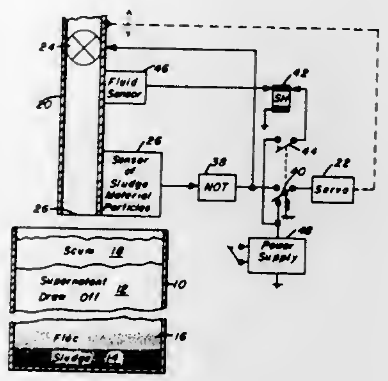
Charles Paul Lamb, Garland, Texas; William A. Dudley, Garland, Texas; and J. Boyd Fox, Garland, Texas; assignors to Merla Inc., Garland, Texas, a corporation of California
Filed Jan. 9, 1968, Ser. No. 696,574
Int. Cl. F04f *1/20*
U.S. Cl. 137—155 **10 Claims**



This patent discloses a gas lift valve which opens in response to tubing pressure and closes at a selected time interval thereafter.

3,530,875
DECANTING APPARATUS

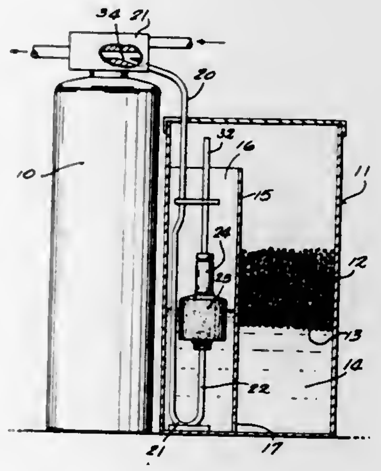
Arthur L. Carter, Henrietta, New York, assignor to Eastman Kodak Company, Rochester, New York a corporation of New Jersey
Filed Nov. 15, 1968, Ser. No. 776,233
Int. Cl. F16k *31/02*
U.S. Cl. 137—172 **10 Claims**



Automatic apparatus for decanting a fluid which is sandwiched between two other fluids is disclosed. Apparatus according to the invention employs a suction having spaced apart sensors. One such sensor is proximate the mouth of the suction; and the other of such sensors controls whether a servo for positioning the suction is open-loop controlled—for plunking through a fluid layer—or closed-loop controlled by means of the first sensor—for tracking the settling of floc within the fluid being drawn off.

3,530,876
CONTROL VALVE FOR BRINE TANK OF WATER SOFTENER

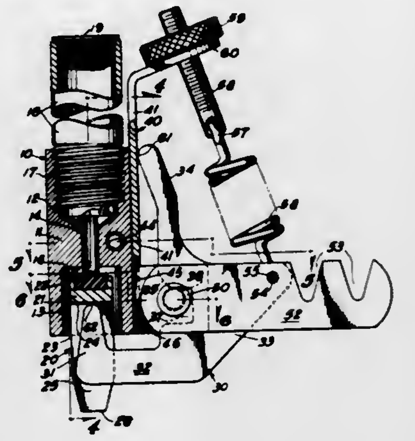
Theodore R. Stoner, 311 Linwood Ave., Stevens Point, Wisconsin
Filed Oct. 25, 1968, Ser. No. 770,624
Int. Cl. B01j *1/04;* **G05d** *9/00*
U.S. Cl. 137—399 **8 Claims**



This disclosure relates to apparatus for controlling liquid flow into and out of the brine tank of a water softener. The liquid pipe through which fresh water is admitted to the tank and brine is withdrawn from the tank terminates in a valve plug spaced substantially above the tank bottom. The valve comprises a vertically elongated, vertically movable valve chamber which surrounds the valve plug and has top and bottom valve seats which cooperate with the plug to shut off liquid flow through the pipe. The chamber has a float to cause it to rise and fall with the level of the liquid in the tank. The chamber has an opening near its bottom in communication with the liquid in the tank.

3,530,877
AUTOMATIC VALVE ASSEMBLY

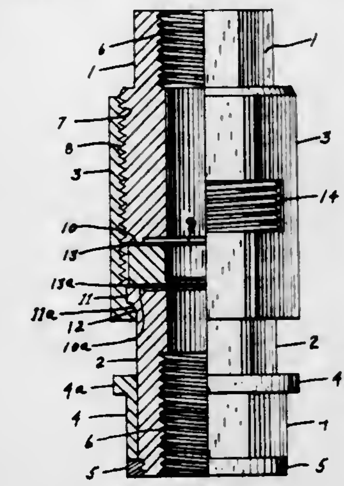
Nelson R. Henry, 583 Willivee Drive, Decatur, Georgia
Filed May 31, 1967, Ser. No. 642,477
Int. Cl. E03 *1/02;* **F16k** *31/44*
U.S. Cl. 137—408 **8 Claims**



An automatic double acting watering trough valve having few moving parts which can be assembled and disassembled without the use of tools, without removing it from the valve stand or shutting off the water.

3,530,878
VERTICAL UNION CHECK VALVE

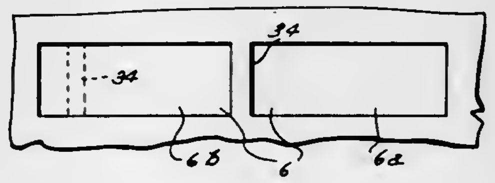
Thaddeus S. Janton, 2545 W. Walton St., Chicago, Illinois
Filed Feb. 6, 1967, Ser. No. 614,777
Int. Cl. F16k *15/00*
U.S. Cl. 137—512.1 **2 Claims**



Check valve in which a narrow central piece extends transversely across a passage in a body member to provide two separate parallel passage portions around which valve seat surfaces are formed for engagement by pivotal flap valves to provide fluid-tight seals. Stop means are provided to limit pivotal movement of the flap valves and to insure closure of the valves from back fluid pressure. The body member is mounted in a union including an outer member which is slotted to permit removal and replacement of a body member and the valve structure.

3,530,879
PARTITIONED VALVE TRAY

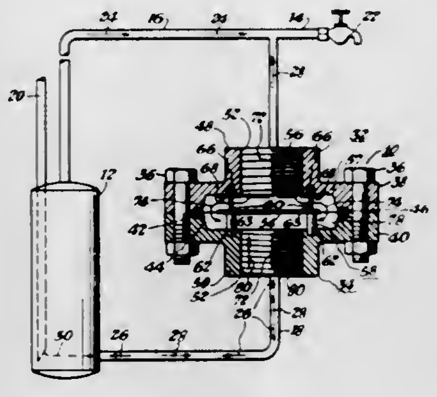
Dale E. Nutter, 1512 S. 77th East Ave., Tulsa, Oklahoma
Filed Oct. 20, 1967, Ser. No. 676,885
Int. Cl. F16k *15/06*
U.S. Cl. 137—512.1 **2 Claims**



A fluid contact tray provided with partitioned apertures to prevent an overlying valve member from falling through an associated tray aperture.

3,530,880
SUPERSENSITIVE CHECK VALVE

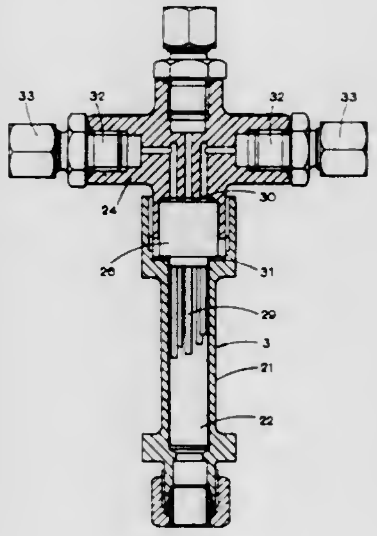
Ronald G. Hune, 830 Oystercreek, Sugarland, Texas
Filed Jan. 17, 1968, Ser. No. 698,483
Int. Cl. F16k *15/00*
U.S. Cl. 137—515.5 **11 Claims**



A check valve is disclosed having a lightweight but rigid checking element. The check valve is so constructed that opening and closing of the element can be effected by very small differential pressures across the valve. Desirably, the checking element is weighted so that it can be moved, for example, by convection currents of the medium in which the valve is used. The check valve is provided with a minimum of moving parts and is constructed so that the various clearances among the engaging parts of the check valve are not critical and careful machining of engaging parts is not required. Thus, the check valve can be employed for indefinite periods of time in fluid mediums which are corrosive or conductive to scale formation.

3,530,881
LIQUID FLOW PROPORTIONING DEVICES

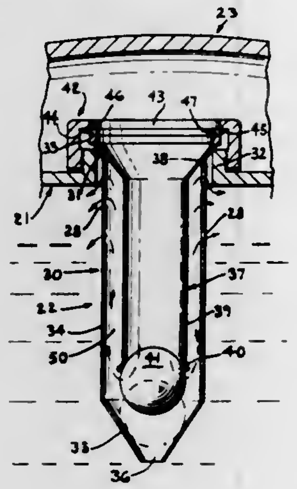
Dennis C. Tanner and Bryan Ernest Humphreys, Isleworth, England, assignors to T.K.S. (Aircraft De-Icing) Limited, Isleworth, England, Middlesex, England
Filed May 10, 1967, Ser. No. 642,281
Claims priority, application Great Britain, June 6, 1966, 25,148/66
Int. Cl. F15d *1/02*
U.S. Cl. 137—561 **3 Claims**



The invention relates to a device for proportioning the flow of liquids and is primarily intended to divide in desired proportions, the flow of de-icing distributors in aerofoils of aircraft. It can, however, also be used to distribute lubricants to mechanisms having different lubrication requirements as for other purposes. The device includes a chamber having a liquid inlet and a plurality of liquid outlets. A metering device is arranged in the chamber and may include a plurality of capillary tubes which project into the chamber by different distances.

3,530,882
SAFETY CHECK VALVE FOR VEHICLE BORNE LIQUID TANKS

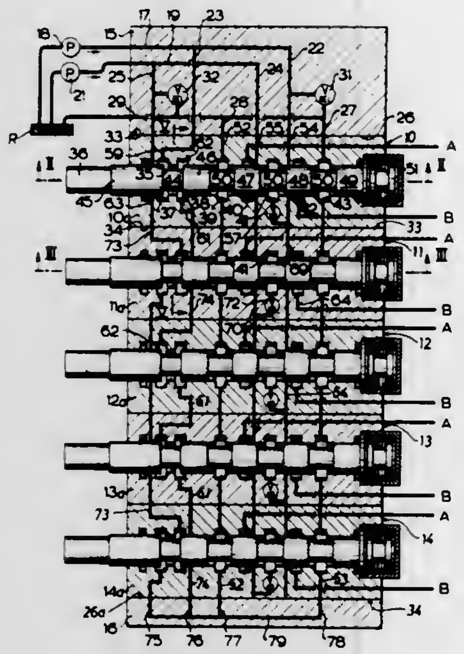
Versie Case, 4729 Banks, New Orleans, Louisiana and James Migliaccio, 1435 Cherokee, Metairie, Louisiana
Filed June 26, 1968, Ser. No. 740,051
Int. Cl. F16k *45/00*
U.S. Cl. 137—588 **10 Claims**



The invention includes an outer shell to seat centrally through a manhole plate and an inner shell, to seat sealably within the outer shell, and providing at lower end an upper valve seat above a lower valve seat provided by the lower, tapered, open end of the outer shell. A ball valve seats upwardly to avoid escape of tank contents upwardly through an inner shell, and seats downwardly so that atmospheric air may pass down the inner shell and upwardly and out through openings in an outer shell, thus to avoid vacuum being pulled in the evacuation of the tank by a pump.

3,530,883
FLUID FLOW CONTROL APPARATUS

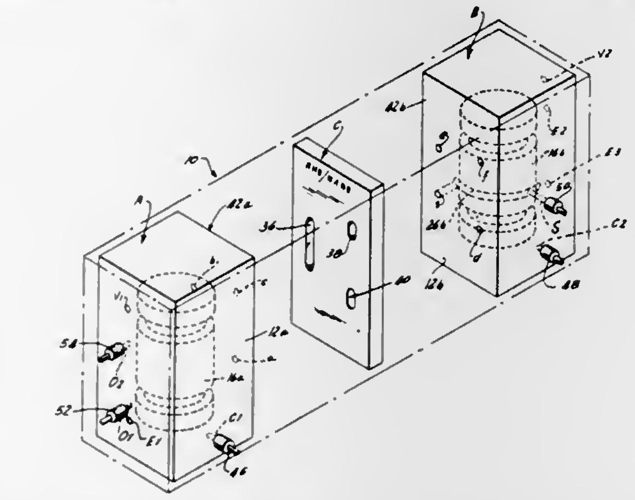
Manfred Kramer, Fellbach-Lindle, Germany, assignor to Robert Bosch GmbH, Breitscheidstrasse, Stuttgart, Germany
Filed March 5, 1969, Ser. No. 804,473
Claims priority, application Germany, March 8, 1968, 1,675,487; Dec. 7, 1968, 1,813,419
Int. Cl. F16k *11/07, 11/10*
U.S. Cl. 137—596 **22 Claims**



A control apparatus wherein a battery of sliding spool directional control valves controls the flow of hydraulic fluid from two sources to single-acting or double-acting loads. The valves form two groups but may be in random distribution and their bodies are formed with channels defining two fluid circulating and two connecting passages. One of the connecting passages can be sealed by the spools of valves of one group and the other connecting passage can be sealed by the spools of valves in the other group when the spools are moved from neutral to working positions. Analogously, the spools of one group of valves can seal the first fluid circulating passage and the spools of the other group can seal the second fluid circulating passage in working positions of such spools.

3,530,884
FLUID LOGIC MODULE

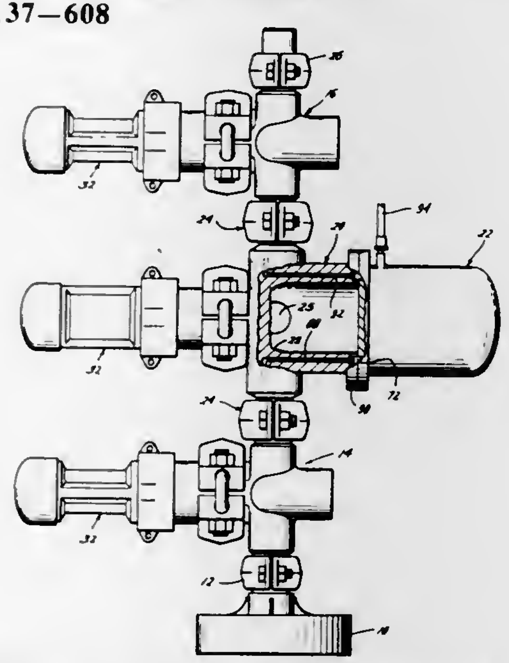
Aaron Kutz, Forest Hills, New York, assignor to Fluidic Controls Corporation, South Hackensack, New Jersey a corporation of New Jersey
Filed March 7, 1969, Ser. No. 805,281
Int. Cl. F16d *1/00;* **F15c** *3/00*
U.S. Cl. 137—608 **19 Claims**



A fluid logic module comprises two substantially similar valves each having a movable valve member and an input port for receiving a control signal. The valve system has an output port and a port for receiving a source signal. Each valve further includes at least one intercommunication port placed in preselected operative fluid communication with a corresponding intercommunication port formed in the other valve through a passage formed in a communication member interposed between the valves. The relative positions of the valve members, corresponding to the presence or absence of one or both of the control signals, either effects or prevents operative communication between selected ports in the valves to control the operative fluid communication between the source port and the output port as a predetermined logic function of the control signals.

3,530,885
WELLHEAD ASSEMBLY

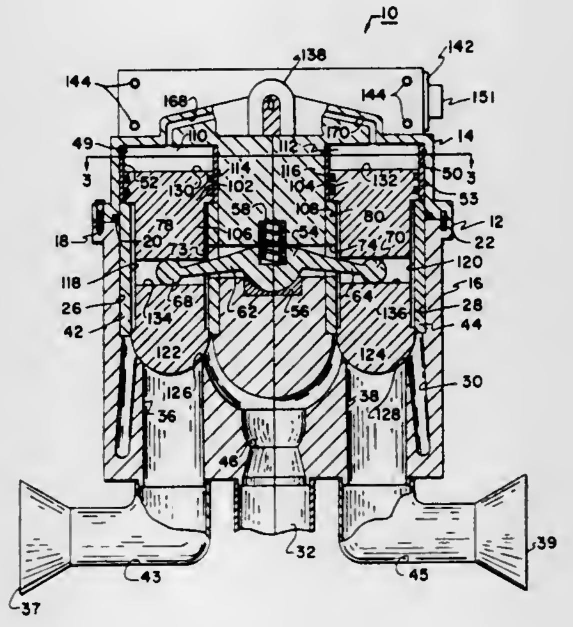
John H. Fowler, Houston, Texas, assignor to Rockwell Manufacturing Company, Houston, Texas a corporation of Pennsylvania
Filed Oct. 19, 1966, Ser. No. 587,774
Int. Cl. E21b *41/00*
U.S. Cl. 137—608 **4 Claims**



An underwater wellhead assembly comprising a plurality of valves connected by an adapter. Each valve has a fluid-actuable operator thereon. A control means in the wellhead controls flow of operating fluid to and from the operators. Passageways are formed in the walls of the adapter, valves and operators connecting the control means to the operators without external conduits.

3,530,886
HYDRAULIC CONTROL VALVE

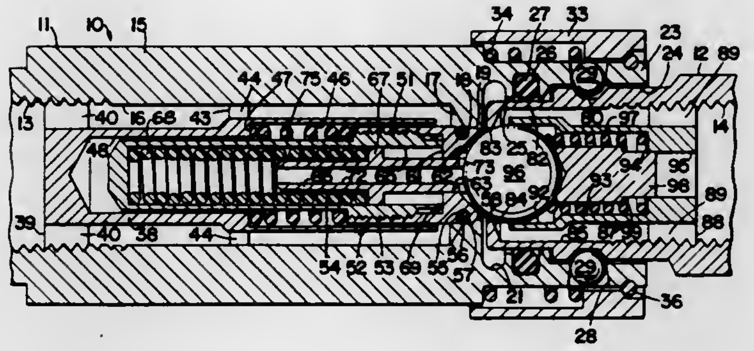
Walter J. Zoya, Troy, Michigan, assignor to Sperry Rand Corporation, Troy, Michigan a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,868
Int. Cl. F17d *1/10;* **B63h** *25/46*
U.S. Cl. 137—609 **8 Claims**



A directional control valve having in combination a plurality of pressure responsive valve mechanisms for selectively closing communication between a fluid inlet and a plurality of fluid outlets and a linking mechanism which mechanically connects the said plurality of valve mechanisms to each other.

3,530,887
QUICK DISCONNECT COUPLING

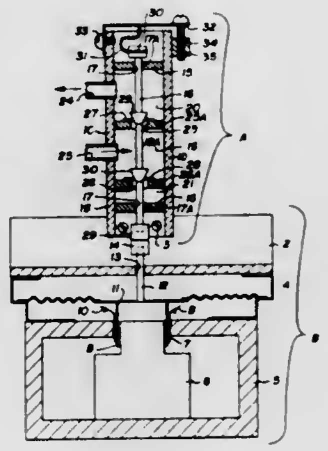
Paul E. Stratman, Minneapolis, Minnesota, assignor to Parker-Hannifin Corporation, Cleveland, Ohio a corporation of Ohio
Filed Nov. 29, 1967, Ser. No. 686,571
Int. Cl. F16l *37/22, 37/28*
U.S. Cl. 137—614.05 **7 Claims**



This invention relates to a valved quick disconnect coupler for fluid lines in which one coupling member is constructed to permit coupling to the other coupling member while both members are under fluid pressure, one of the coupling members having an internal construction permitting minimum overall length of the coupled members and with the internal parts thereof constructed to avoid hydraulic locking and to insure tight closure of the check valve therein when the one coupling member is disconnected from the other.

3,530,888
SOUND ACTUATED FLUID FLOW CONTROL APPARATUS

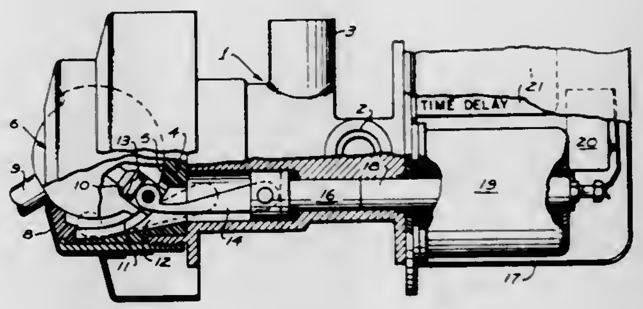
Cecil R. Cable, 7924 Rowland Road, Edmonton, Alberta, Canada
Filed Feb. 13, 1967, Ser. No. 609,449
Int. Cl. F16k *31/44*
U.S. Cl. 137—624.11 **2 Claims**



A fluid flow control system for use with fountains and the like having a valve balanced to remain closed under varying fluid pressure at the inlet and outlet of the valve with a transducer adapted to open the valve and an electronically amplified sound source to actuate the transducer.

3,530,889
MIXING VALVE WITH SECONDARY SHUTOFF

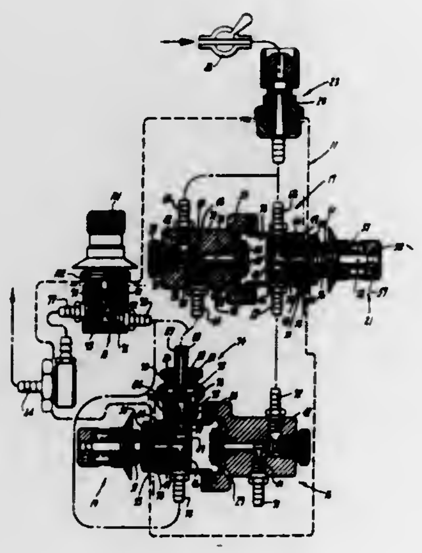
Lloyd Spencer, 220 Patrician Way, Pasadena, California
Continuation-in-part of abandoned application Ser. No. 565,336, June 27, 1966, which is a division of application Ser. No. 359,392, Apr. 13, 1964, now Pat. No. 3,384,121, which in turn is a continuation-in-part of application Ser. No. 2,523, Jan. 14, 1960 and Ser. No. 289,806, June 24, 1963. This application June 2, 1969, Ser. No. 829,546
Int. Cl. F16k *11/00, 19/00*
U.S. Cl. 137—624.12 **12-Claims**



A mixing valve having hot and cold valve units movable simultaneously and alternately between open and closed positions by a common control member; the control member being manually operated from its front side by a single handle, and also engageable from its back side to move both units simultaneously from any previous manual adjustment to their closed positions.

3,530,890
VENTILATING APPARATUS

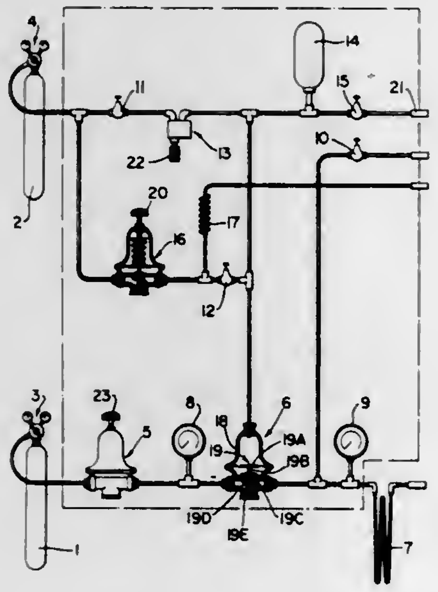
Forrest M. Bird, 212 NW Cerritos, Palm Springs and Henry L. Pohndorf, 1227 Brewster Drive, El Cerrito, California
Filed Dec. 14, 1966, Ser. No. 601,770
Int. Cl. A61m *16/00*
U.S. Cl. 137—624.14 **5 Claims**



Ventilating apparatus having an inspiratory cartridge, an expiratory cartridge with first and second manually operable metering valve means connected to a source of fluid and to said cartridges to provide an expiratory phase and an inspiratory phase.

3,530,891
PRESSURE CONTROL

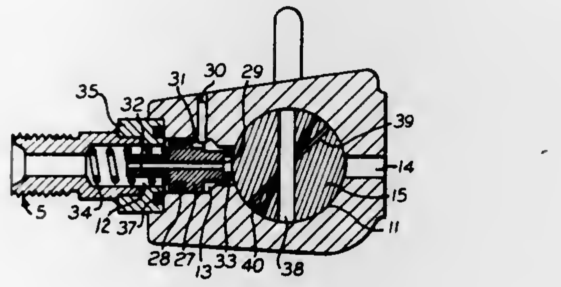
John M. Welland, Hemel Hempstead, England, assignor to Perkin-Elmer Limited, a corporation of Great Britain
Filed Jan. 26, 1968, Ser. No. 700,881
Claims priority, application Great Britain, Feb. 2, 1967, 5,183/67
Int. Cl. F16k *31/12*
U.S. Cl. 137—624.18 **8 Claims**



A programmed pressure control system is disclosed having a control circuit which provides a varying control pressure upon a throttling member of a pressure reducing valve in a utilization circuit. The control circuit includes means for establishing an initial constant pressure and means for providing a control pressure varying at a selected rate.

3,530,892
CYLINDRICAL VALVE PLUG

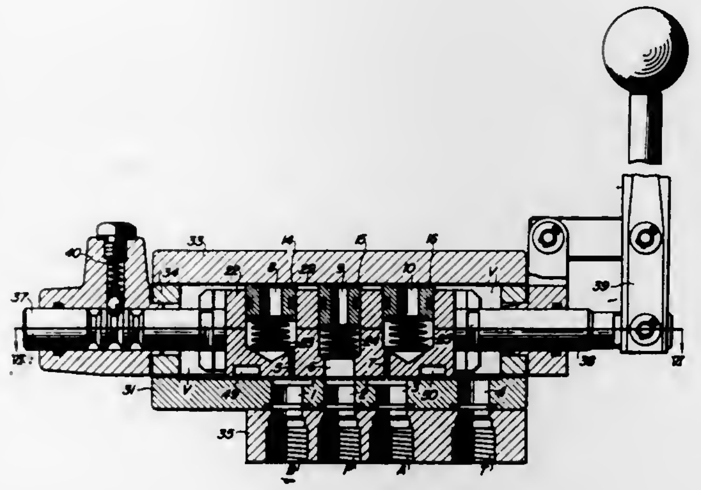
Herbert Charlop, Brooklyn and Anthony J. Rotolico, Hauppauge, New York, assignors to Metco Inc., Westbury, New York a corporation of New Jersey
Filed March 15, 1968, Ser. No. 713,349
Int. Cl. F16k *19/00*
U.S. Cl. 137—625.19 **10 Claims**



A plug valve for a flame spray gun having a cylindrical valve core rotatably mounted in a housing which is provided with inlet and outlet gas flow passages leading to and from the cylindrical core in order to provide a seal. The core is provided with a primary cylindrical flow orifice of substantially uniform diameter, at least one secondary smaller cylindrical bleed orifice of substantially uniform diameter, and at least one third cylindrical bleed orifice of substantially uniform diameter extending between the primary and secondary orifices.

3,530,893
SLIDING PLATE TYPE DIRECTIONAL CONTROL VALVE

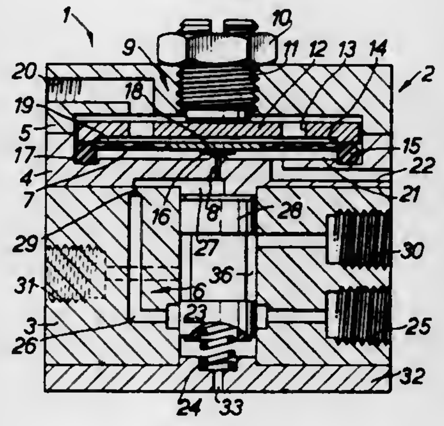
Kenzi Masuda, Suita-shi, Japan, assignor to Daikin Kogyo Co., Ltd., Osaka, Japan a corporation of Japan
Filed Dec. 11, 1967, Ser. No. 689,430
Claims priority, application Japan, Dec. 13, 1966, 41/81,703
Int. Cl. F16k *11/02, 39/04*
U.S. Cl. 137—625.25 **6 Claims**



A sliding plate type directional control valve comprising a movable or sliding plate member disposed within the valve chamber for sliding movement, said movable member having, solely or together with a valve body member, stepped fluid passages each comprising a large diameter passage portion and a small diameter passage portion, each of said stepped fluid passages is always in communication with either one of the valve ports, a piston being disposed in each of the large diameter portions, the cross-sectional area of said large diameter passage portion being equal to or greater than the effective pressure acting area of the corresponding port so that the movable member may be constantly urged toward the valve port under the influence of the pressure difference acting thereon.

3,530,894
PNEUMATIC RELAY VALVE

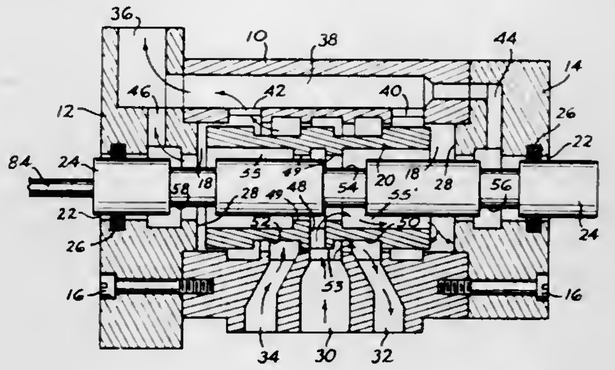
Detlef Henzgen, Stuttgart-Bad Cannstatt, Germany, assignor to Erich Herion Sr., Stuttgart-Frauenkopf, Germany
Filed Feb. 10, 1969, Ser. No. 798,020
Claims priority, application Germany, May 7, 1968, 1,750,483
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.6 **9 Claims**



A pneumatic relay valve in which the operation of a reversing valve structure is controlled by means of a valve closing member positioned on a diaphragm. Control pressure is applied to the sides of the diaphragm opposite the valve closing member, and means are provided for adjusting the spacing between the valve closing member and the duct cooperating therewith in order to adjust the valve.

3,530,895
AUTOMATIC FLUID PRESSURE SWITCHING VALVE

Arthur A. Rothrock, Portland, Oregon, assignor to Dupar Dynamics Division of Palmer Supply Co., Seattle, Washington
Filed Feb. 9, 1968, Ser. No. 704,473
Int. Cl. F16k *11/07, 39/04*
U.S. Cl. 137—625.63 **3 Claims**

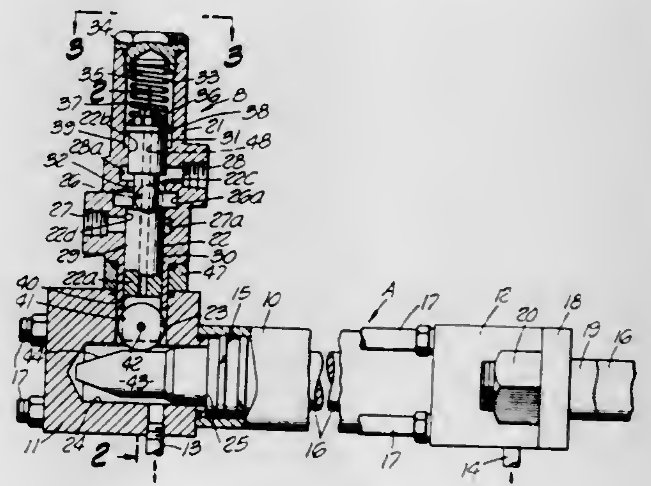


A hollow switching valve body houses a hollow sleeve freely reciprocative therein, and a control stem extends slidably through the body and sleeve. A pair of spaced conductor grooves in the sleeve cooperate with an inlet port, a pair of outlet ports and an exhaust port in the body to deliver fluid under pressure from the inlet port selectively to the pair of outlet ports and exhaust port. A by-pass groove in the movable control stem cooperates with a by-pass port in the sleeve between the conductor grooves to by-pass fluid under pressure from the inlet port selectively to opposite ends of the sleeve to move the latter and switch the delivery of fluid under pressure from one outlet port to the other.

3,530,896
HYDRAULIC POWER ACTUATOR AND PILOT VALVE UNIT ASSEMBLY

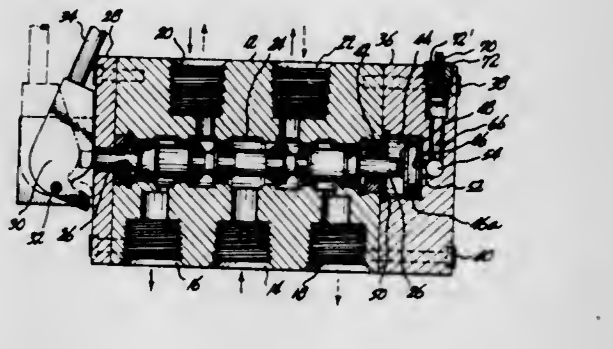
Marvin E. Whiteman, Jr., 10010 Shoshone Ave., Northridge, California
Filed Apr. 25, 1968, Ser. No. 724,135
Int. Cl. F16k *11/07, 39/04*
U.S. Cl. 137—625.66 **15 Claims**

Fluid powered actuator means in which a cylinder reciprocably contains a piston connected to a power delivery element and being operable by a pressurized fluid such as water, oil and the like, the cylinder being fitted with end caps, one or both of which mounts a pilot valve body having a bore therein containing a spool valve for selectively controlling flow paths between a plurality of fluid flow connection ports, the spool being spring urged to one operating position, and mechanically actuated to another operating position by means of a cam within the cylinder and which is supported for movement with the piston and arranged to engage a roller carried by the spool valve. One end of the pilot valve bore communicates directly with the cylinder interior so that the moving valve parts and cam are totally enclosed and lubricated by the motivating fluid of the actuator. A passageway through the spool valve applies cylinder fluid pressure against opposite ends of the spool so as to provide balanced operation thereof at all times.



3,530,897
PISTON ACTUATED FLUID DISPLACEMENT INTERLOCK SERVO FOR MULTI-CONTROL VALVE SYSTEMS

Angus Buchanan, 2453 6th Ave., Seattle, Washington
Filed Oct. 23, 1968, Ser. No. 769,949
Int. Cl. F16k *11/22*
U.S. Cl. 137—637 **8 Claims**

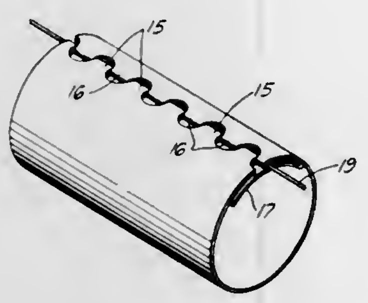


Volitional resetting of any individual or plurality of valves selected from among a larger group of valves automatically resets in the reverse sense an equal number of valves in the group through the motor action of hydraulic pistons, or equivalents, respectively associated with the individual valves and working through respective columns of hydraulic liquid comprising part of a body of such liquid filling out the confinement volume of a hydraulic enclosure including passageways which afford flow communication between the columns. Provision for adjustability of the confinement volume of the enclosure permits selective conditioning of the system for motion interlock between single valves, or between pairs of valves, or other combinations.

3,530,898
CLOSURE SLEEVE

John R. Wilson, Cupertino, California, assignor to Raychem Corporation, Menlo Park, California a corporation of California

Filed Oct. 30, 1968, Ser. No. 771,817
Int. Cl. F16l
U.S. Cl. 138—99 **7 Claims**

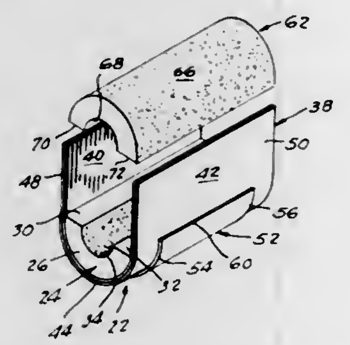


A closure sleeve for pipes or the like constructed from a piece of independently dimensionally heat unstable material, that is, material that will return to its original shape and dimensions upon application of heat alone. The sleeve is split and provided along the edges with a plurality of loops. To install the sleeve, the edges are connected by passing a suitable rod through the loops, and the resulting tubular member can then be heat recovered.

3,530,899
PROTECTIVE SHIELD FOR PIPE HANGER ASSEMBLY

Dillard Breeding, deceased, late of Nashville, Tennessee, by Freida J. Breeding, executrix, Nashville, Tennessee, assignor, to Breeding Insulation Company, Inc., Nashville, Tennessee, a corporation of Tennessee

Filed March 27, 1968, Ser. No. 716,637
Int. Cl. F16l *3/00*
U.S. Cl. 138—107 **1 Claim**

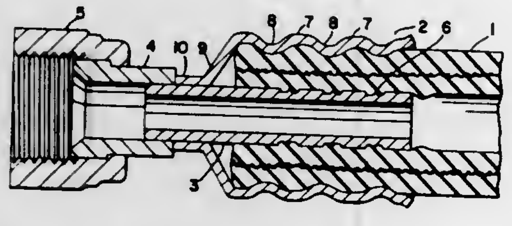


In an overhead pipe assembly wherein the pipe is surrounded by tubular insulation of material subject to being cut, a section of preformed insulation of sectional form has a vapor barrier and a plate, the plate being affixed to one section of the preformed insulation, and tape wrappings secure the assembly in place.

3,530,900
HOSE ASSEMBLY

Arthur S. Kish, Lyndhurst, Ohio, assignor to Murray Corporation, Cockeysville, Maryland a corporation of Maryland

Continuation-in-part of application Ser. No. 652,320, July 10, 1967. This application Aug. 30, 1968, Ser. No. 756,530
Int. Cl. F16l *9/22*
U.S. Cl. 138—109 **9 Claims**

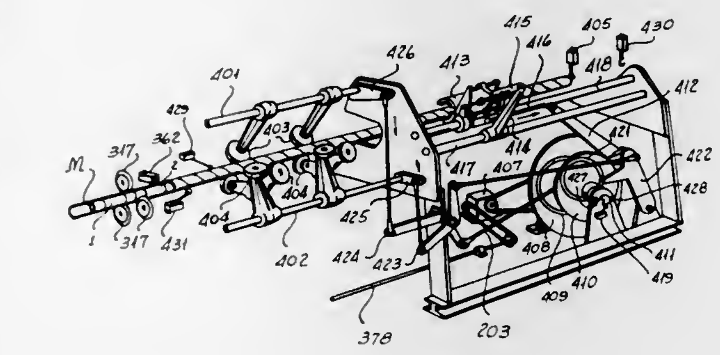


The invention is concerned with the provision of a hose assembly in which the hose is clamped between a nipple and a shell, and the shell is provided with a swaged end which is brazed to the nipple to thereby provide a fluid tight joint in this area of the assembly. The shell is made from a thin-walled tube of deep-drawing steel of uniform wall thickness swaged to provide a conical flange which functions as a stop or shoulder for the end of the hose and exerts an inward camming effect on the end of the hose to improve the seal between the hose and nipple. The invention is also concerned with a novel and highly efficient machine or apparatus for crimping the body of the shell to the hose, and which is characterized by the use of reciprocable crimping jaws.

3,530,901
REINFORCED HOLLOW PLASTIC PIPE

Henry M. Richardson, Somers, Connecticut; Alfred C. Alberghini, Hazardville, Connecticut; Fred E. Wiley, Longmeadow, Massachusetts; and Wesley S. Larson, Hazardville, Connecticut, assignors to The Youngstown Sheet and Tube Company, Boardman, Ohio, a corporation of Ohio

Continuation of application Ser. No. 627,519, Mar. 31, 1967, which is a division of application Ser. No. 486,678, Sept. 13, 1965, now Pat. No. 3,377,657, which is a division of application Ser. No. 248,058, Dec. 28, 1962, now Pat. No. 3,256,128, dated June 14, 1966. This application June 3, 1969, Ser. No. 833,867
Int. Cl. F16l *9/16*
U.S. Cl. 138—144 **5 Claims**



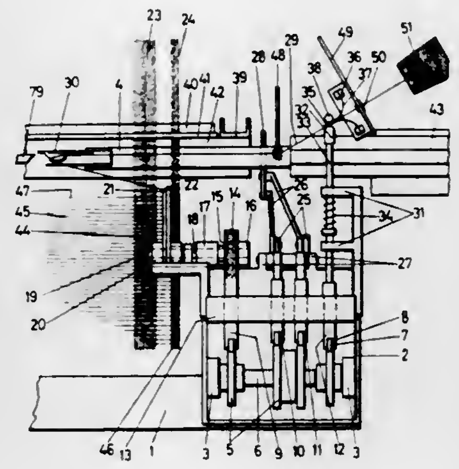
This patent discloses a mold for plastic pipe having two elongate semicircular members which embrace the exterior of a preform to be cured. The members are held within an encircling body which provides heat for curing. An internal bladder expands the preform against the two semicircular members. Gases from the preform escape through the juncture of the semicircular members and out through the encircling body. The resulting pipe has all of its reinforcing strands under substantially equal tension. For a disclosure of the entire method and apparatus employed in fabricating the pipe, see U.S. Pat. No. 3,256,128 which is incorporated herein by reference.

3,530,902
WEFT CUTTER AND CONTROL FOR WEAVING MACHINE

Johann Stingl, Hohenberg (Eger), Germany, assignor to Georg Fischer Ltd., Brugg, Brugg, Switzerland

Filed Oct. 10, 1968, Ser. No. 766,446
Claims priority, application Switzerland, Oct. 13, 1967, 14,353/67
Int. Cl. D03d *47/40*
U.S. Cl. 139—122 **7 Claims**

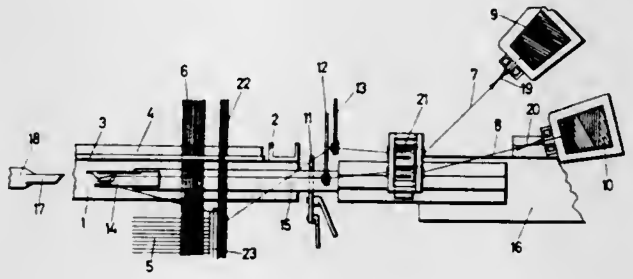
The present invention relates to a weft thread cutting device and the mode of and means for its operation in a weaving machine having weft thread supply cones located outside the shed and weft thread insertion members such as rapiers with weft engaging carriers, which also includes a cam shaft rotating synchronously with the weft thread insertion members and provided with a plurality of cams for actuation of a thread positioning member, a pulldown member, a weft thread clamping device and a cam for actuation of the cutting device.



3,530,903
METHOD OF WEAVING

Johann Stingl, Hohenberg (Eger), Germany, assignor to Georg Fischer Ltd., Brugg, Brugg, Switzerland

Filed Oct. 18, 1968, Ser. No. 768,859
Int. Cl. D03d *47/00*
U.S. Cl. 139—122 **2 Claims**



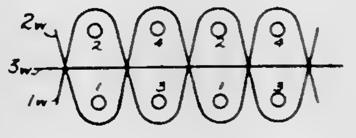
The present invention relates to a method of weaving in shuttleless weaving machines of the type in which weft is drawn from a supply or supplies fixed outside the shed of a fabric being woven and in which weft is inserted as picks by means so devised and operated as to inject a loop of weft drawn from the supply into the shed, until enough has been measured off for a complete pick, then holding the weft from being drawn from the cone, cutting the weft close to the fabric edge where it is connected to a previous pick and extending that cut end to the opposite edge of the shed whereupon the same may be beaten into the fell of the already formed fabric. This is accomplished in such a manner that single picks cut at each end are inserted, the fabric is identical at both sides without limitations as to density, and this is effected by insertion means constructed as simple weft carriers as contrasted to grippers for gripping and transferring an end only of a weft thread.

3,530,904
ENERGY ABSORBING FABRIC

Homer Lee Ballard, South Hill, Virginia, assignor to Burlington Industries, Inc., Greensboro, North Carolina a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 672,029
Int. Cl. D03d *23/00, 11/00*
U.S. Cl. 139—383 **8 Claims**

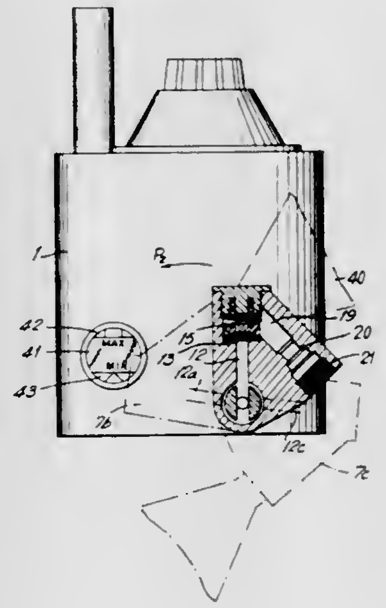
A woven fabric capable of energy absorption and having a primary function of absorbing a shock load impulse of an object and/or body to prevent destruction of the same. The fabric is constructed by weaving the same with yarns having relatively different physical properties, the yarns being woven at relatively different tensions so that the resultant fabric is capable of elongation in the order of 10 percent at loads of 500 pounds with full recovery.



3,530,905
VAPORIZER FOR ANESTHETIC

Christian Drager, Lubeck, Germany; Karl F. Mollering, Lubeck, Germany; and Hans Georg Breiling, Lubeck, Germany, assignors to Dragerwerke, Heinr. & Bernh. Drager, Lubeck, Germany

Filed Sept. 20, 1968, Ser. No. 761,089
Claims priority, application Germany, Sept. 20, 1967, 1,566,592
Int. Cl. B65b *3/04*
U.S. Cl. 141—18 **14 Claims**



A vaporizer for an anesthetic has been provided which comprises a container for said anesthetic in which said anesthetic is vaporized, a filling and an emptying means therefor, said filling and emptying means being positioned at the lowest point of said vaporizer, said filling and emptying means being swingable around an inlet bore or channel to said vaporizer container sealingly engaging the same and removable therefrom, a cylinder coupling means provided in said swingable filling and emptying means for detachable fastening of a cylinder containing said anesthetic, and a valve means activatable by said cylinder coupling means for filling and emptying said vaporizer container for the anesthetic. Further, a vaporizer for an anesthetic has been provided which comprises a container for said anesthetic in which said anesthetic is vaporized, a filling and emptying means therefor, said filling and emptying means being positioned at the bottom of said vaporizer and communicating with said container, a valve means positioned inside the filling and emptying means, a coupling means within said filling and emptying means for receiving a male coupling connection on a flexible conduit connected to a cylinder containing the anesthetic, said valve means being activatable by said male coupling means on the flexible conduit.

3,530,906

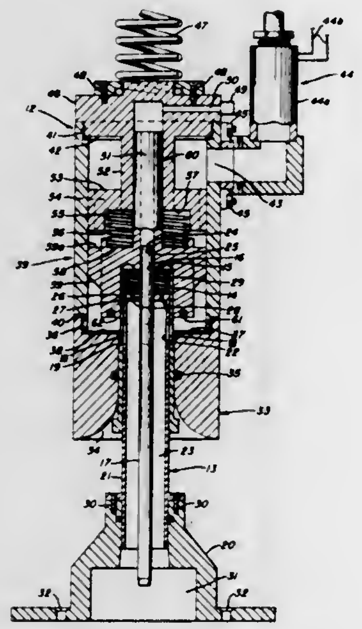
APPARATUS FOR AUTOMATICALLY FUELLING VEHICLES

Irwin Ginsburgh, Morton Grove; Lawrence T. Wright, Homewood and Joseph C. Rhodes, Park Forest, Illinois, assignors to Standard Oil Company, Chicago, Illinois a corporation of Indiana

Filed June 1, 1967, Ser. No. 642,756

Int. Cl. B67d *5/04, 5/373*

U.S. Cl. 141—59 **7 Claims**



A vehicle mounted antenna or fuel receiving means having a base and an extending cylindrical member with a spring urged movable sleeve-type cap which reciprocates along the axis of the extended cylindrical member so that in one position the interior of the extending member is open to receive fluids into the annulus formed by the inside of the extended cylindrical member and a smaller coincidental conduit means rigidly disposed therein. The vehicle mounted fuel receiving means communicates with the vehicle fuel tank through a plurality of conduit means. One conduit connects the coincidental conduit with the fuel tank of the vehicle and another conduit connects the annulus between the small conduit and the extended member with the vehicle fuel tank. The inner conduit means draws a vacuum on the tank while the other conduit connected with the annulus and the tank transports the fuel from the fuel receiving means to the vehicle fuel tank.

A dispensing head flexibly mounted on a support and communicating with a fuel supply mates with and fits over the movable sleeve-type cap of the extended cylindrical member of the fuel receiving means so that when the dispensing head and fuel receiving means are finally positioned fuel is transferred in a controlled manner from the fuel supply through the dispensing head and fuel receiving means to the vehicle fuel tank.

3,530,907

AUTOMATIC BEVERAGE DISPENSING SYSTEM

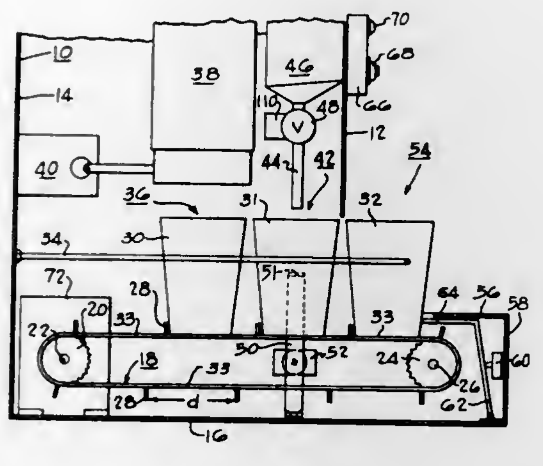
Jerome Slass, 701 Middlesex Drive, Cinnaminson, New Jersey

Filed Dec. 21, 1967, Ser. No. 692,545

Int. Cl. B65b *43/42*

U.S. Cl. 141—167 **9 Claims**

A beverage dispensing system includes a control circuit that permits alternative selection of two modes of self-service operation. In one mode, the removal of a filled cup at a pickup station initiates a cycle in which a cup previously filled at a filling station is moved by a conveyor to the pickup station and concurrently an empty cup previously dropped at a supply station is moved to the filling station. Thereafter, when the conveyor is stationary, another empty cup is dropped at the supply station and the cup at the filling station is filled. Each time a cup is removed at the pickup station the cycle is repeated. In a manual mode, a cycle made up of the same segments is initiated by operation of a manual switch. However, the sequence starts with the cup supply and filling operations and concludes with the advancing of the filled cup to the pickup station. A selector switch transposes the control circuit to either mode.



3,530,908

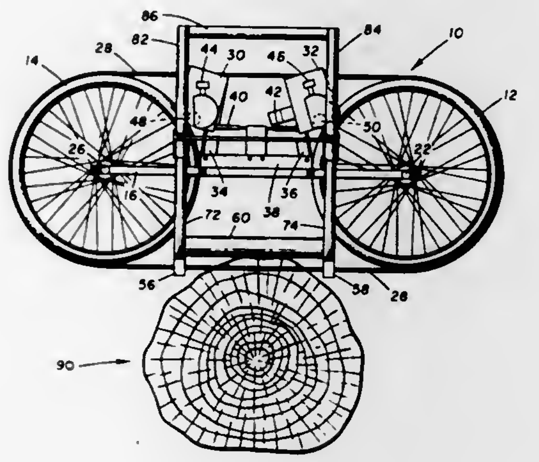
PORTABLE SAW

Ralph R. Crow, P.O. Box 8, Saratoga, Wyoming

Filed April 1, 1968, Ser. No. 717,861

Int. Cl. B27b *15/02*

U.S. Cl. 143—19 **2 Claims**



A frame supports a pair of wheels mounted for rotation on spaced parallel axes. A continuous sawband is driven about the peripheries of the wheels. At least one motor is mounted between the wheels to rotate the wheels by direct frictional contact against the wheels. A horizontal roller is mounted on the frame for bearing against the upper portion of a felled log to guide the lower portion of the sawband through the felled log as the frame is moved along the length of the log. Mechanism is provided to vary the distance between the roller and the frame to allow for selective adjustment of the depth of the cut through log.

3,530,909

ELASTOMERICALLY MOUNTED CHAIN SAW

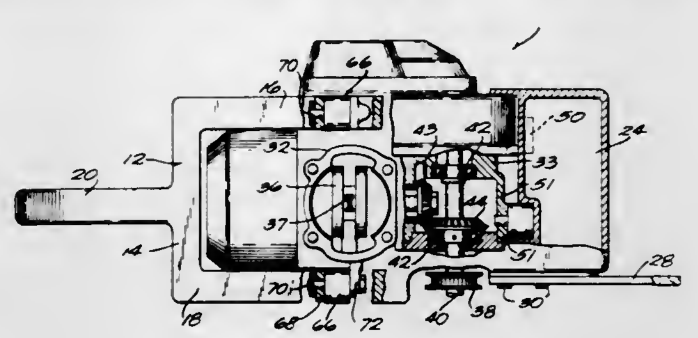
Otto H. Scharpf, Brookfield, Wisconsin, assignor to Outboard Marine Corporation, Waukegan, Illinois a corporation of Delaware

Filed Jan. 18, 1968, Ser. No. 698,781

Int. Cl. B27b *17/00*

U.S. Cl. 143—32 **16 Claims**

Disclosed herein is a chain saw in which the upper and rear handles, the gas tank and the cutter bar are rigidly secured to a frame to form a frame assembly. The engine is mounted relative to the frame assembly so that the crankshaft is parallel to the cutter bar and the piston reciprocates about a generally vertical axis when the saw is in an upright horizontal position. A sprocket shaft for driving a cutting chain is rotatably supported by a portion of the engine block at right angles to the crankshaft. The engine is mounted to the frame assembly by elastomeric engine mounts which have a low spring rate in the direction of shear and a high rate in the direction of compression.



3,530,910

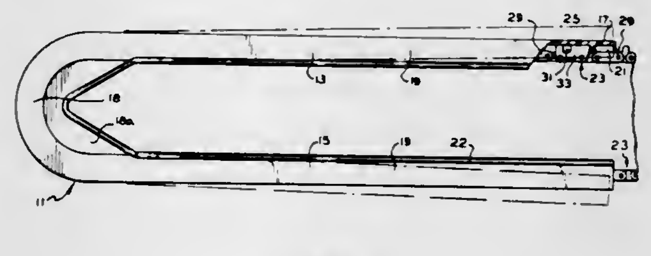
CHAIN SAW GUARD

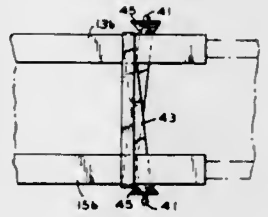
Maurice M. Cairns, Roseburg, Oregon, assignor to Sylvanus R. Hunt, doing business as Snively Wedge Co., Roseburg, Oregon, a sole proprietorship

Filed Apr. 15, 1968, Ser. No. 721,429

Int. Cl. B27b *17/00*

U.S. Cl. 143—32 **2 Claims**





A chain saw guard in the form of a C-shaped channel member which has converging legs which are spreadable to fit onto the saw bar and its chain, wherein each leg has a stop lug to engage behind a raised portion of the chain to releasably retain the member on the chain saw against inadvertent endwise dislodgment.

3,530,911

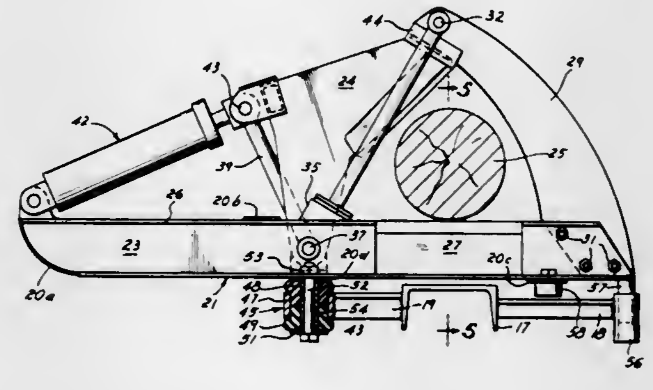
MOUNTING FOR SHEAR

Cyrus E. Hoadley, Olla, Louisiana, assignor to The Youngstown Sheet and Tube Company, Youngstown, Ohio

Filed June 25, 1968, Ser. No. 739,865

Int. Cl. A01g *23/02*

U.S. Cl. 144—34 **10 Claims**



This patent discloses a tree harvester, and more particularly a shear for the tree harvester mounted in a manner to reduce stresses on various portions of the shear. The mounting disclosed is of a nature to permit the entire shear to move to conform to the position of the tree therein.

3,530,912

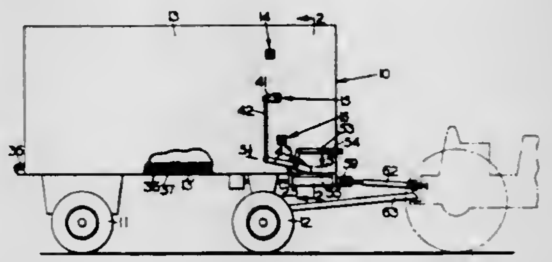
BALE SHREDDER AND DISCHARGER

Percy F. Freeman, 4061 SW. Greenleaf Drive, Portland, Oregon

Filed Sept. 3, 1968, Ser. No. 756,890

Int. Cl. A01f *29/00, 31/00*

U.S. Cl. 146—70.1 **3 Claims**



A device mounted either on a separate trailer vehicle and adapted to be towed and operated by a tractor having a power take-off, or mounted on a truck and operated by the power take-off shaft from the truck transmission, the device comprising a large bin for receiving a supply of twine-tied bales, or wire-tied bales after the wires have been clipped, and equipped with means, driven from the power take-off, for shredding the bales and discharging the resulting material along the ground or otherwise as desired.

3,530,913

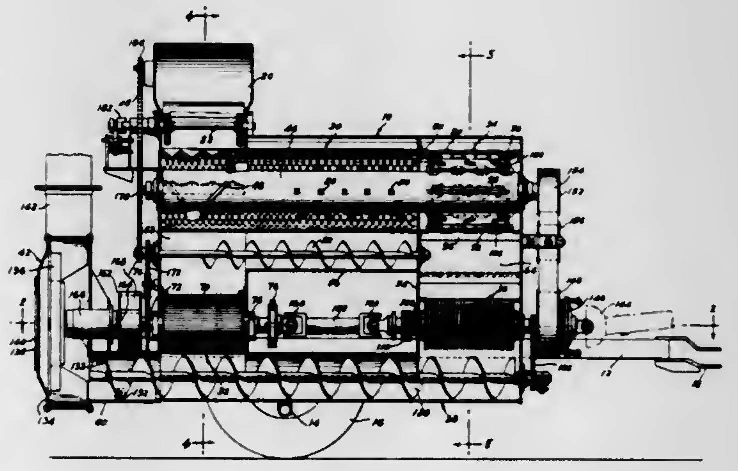
CORN PROCESSOR

Charles M. Kline, Reinholds, Pennsylvania; Allison W. Blanshine, Lititz, Pennsylvania; and Albert M. Best, New Holland, Pennsylvania, assignors to Sperry Rand Corporation, New Holland, Pennsylvania a corporation of Delaware

Filed April 29, 1966, Ser. No. 546,280

Int. Cl. B02c *4/08*

U.S. Cl. 146—71 **2 Claims**



This apparatus processes ears of corn to prepare the same for feeding to livestock. The apparatus shells the corn, separates the kernels from the cobs and husks, comminutes the kernels, and the cobs and husks, and then recombines the comminuted kernels, cobs and husks to make a feed mixture.

3,530,914

MEAT FLAKER

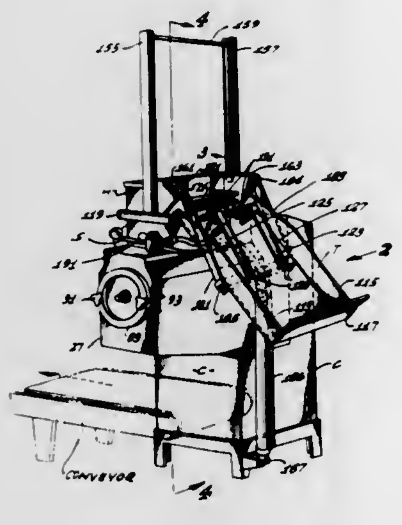
William Lasar, Long Beach, California

Original application Jan. 26, 1968, Ser. No. 700,815. Divided and this application Sept. 19, 1969, Ser. No. 867,111

Int. Cl. B02c *18/00;* **A22c** *17/00*

U.S. Cl. 146—92 **8 Claims**

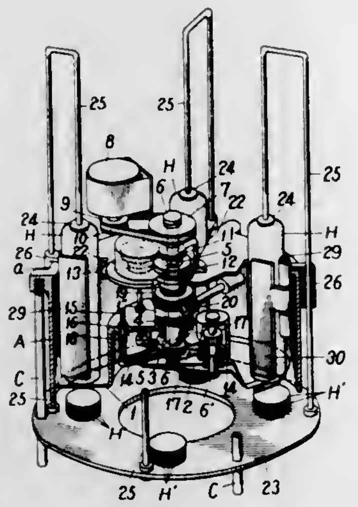
The meat flaker of the present invention includes a cabinet supporting a rotary cutting drum and formed with an upwardly opening hopper. A loading tray is pivotally connected on one end to the cabinet and has its free end coupled with a double acting air cylinder which raises and lowers such tray. A vertically traveling pressure plate is also connected with the free end of the loading tray whereby a block of meat may be placed on the tray, the cylinder activated to raise the free end of such tray to feed the meat block into the hopper and under the pressure plate, and the cylinder reversed to lower the pressure plate and press the meat block downwardly against the cutting drum while lowering the tray for receiving the next block of meat.



3,530,915
SLICER

Sadanobu Moriuchi, Igoma-gun, Japan, assignor to Nantsune Tekko Kabushiki Kaisha (Nantsune Iron Works) Limited), Tenoji-ku, Osaka, Japan

Filed April 11, 1968, Ser. No. 720,522
Claims priority, application Japan, Oct. 28, 1967, 42/69,238
Int. Cl. B23d *19/00;* **B26d** *1/28*
U.S. Cl. 146—105 **3 Claims**

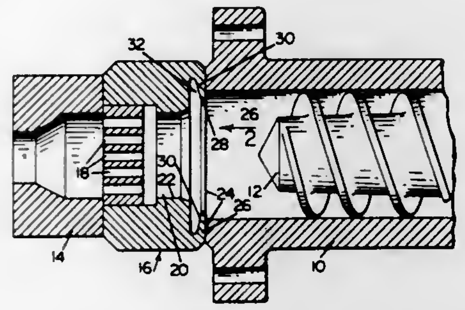


A slicer having a rotary blade adapted to automatically slice a material held in an immovable state in a predetermined thickness while making both rotational and pivotal movements at a fixed position, a mechanism to adjust the thickness of sliced pieces as desired and a mechanism to slice the material in a uniform thickness under uniform pressure.

3,530,916
SELF-SEALING BREAKER PLATE FOR EXTRUDERS

John G. E. Williams, Islington, Ontario, Canada, assignor to Hobbs Manufacturing Company, Worcester, Massachusetts a corporation of Massachusetts

Filed Sept. 30, 1968, Ser. No. 763,750
Int. Cl. A22c *5/00;* **B29f** *3/00*
U.S. Cl. 146—186 **8 Claims**

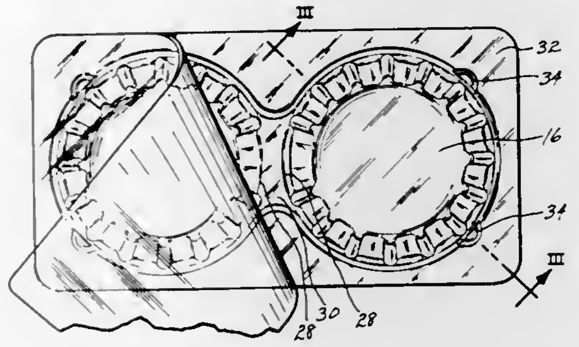


A breaker plate for extruders having an interiorly open annular groove forming a sealing lip pressed against the end of the extruding cylinder, or other part, by the pressure of the media in the cylinder.

3,530,917
PACKAGE

Donald W. Donovan, Glastonbury, Connecticut, assignor to Monsanto Company, St. Louis, Missouri a corporation of Delaware

Continuation-in-part of application Ser. No. 696,296, Jan. 8, 1968, now Patent No. 3,483,908. This application Feb. 27, 1969, Ser. No. 803,022
Int. Cl. A47g *19/00;* **B65d** *21/02*
U.S. Cl. 150—.5 **7 Claims**

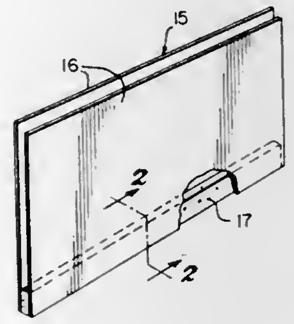


Improvements in a film covered package for holding a plurality of adjacently positioned food items which include the use of a film coating which permits peelably opening the package without destroying it, an upper expanded portion of the receptacle to accommodate enlarged sections of the enclosed contents and a plurality of stacking lugs for stably supporting closely nested container body portions within each other without wedging one within the other.

3,530,918
PAPER STORAGE FOLDER

David Meade Peebles, 325 Marcy Ave., Oxon Hill, Maryland

Filed March 17, 1969, Ser. No. 807,588
Int. Cl. B65d *37/00*
U.S. Cl. 150—.5 **6 Claims**

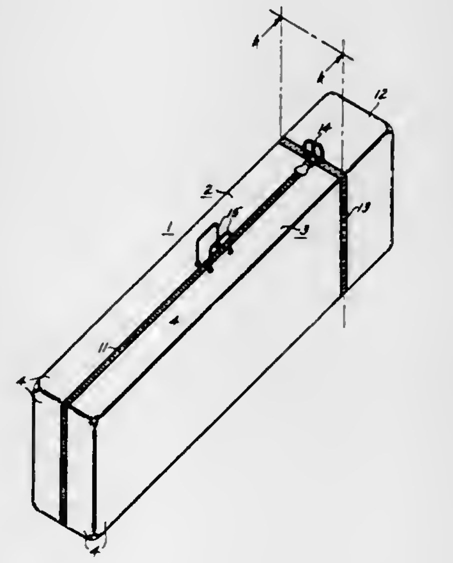


A folder having opposed side sections which are maintained spaced apart by a strip of crushable material. The arrangement allows the placement of papers having a certain thickness inside of the folder followed by crushing of said strip to adjust the final thickness of the folder to that of the papers being stored therein.

3,530,919
GOLF BAG

Albert G. May, Berwick, Pennsylvania, assignor, by direct and mesne assignments, to Maycase Corporation, a corporation of Pennsylvania

Filed Nov. 7, 1968, Ser. No. 774,013
Int. Cl. A63b *55/00*
U.S. Cl. 150—1.5 **4 Claims**

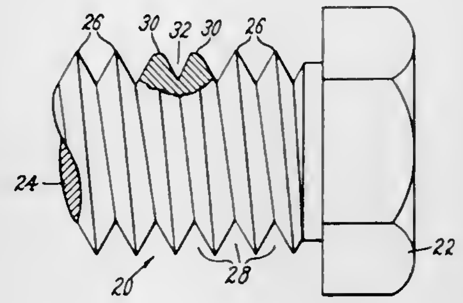


A golf bag having a pair of similar substantially rigid club and equipment storage compartments. The compartments are reversible to adapt the bag for either traveling or play. The compartments are also separable from each other to provide a pair of lightweight "half-size" bags each complete with its own club and equipment storage areas.

3,530,920
SELF-LOCKING THREADED FASTENERS

Howard I. Podell, Larchmont, New York, assignor to USM Corporation, Flemington, New Jersey a corporation of New Jersey

Filed May 23, 1968, Ser. No. 731,416
Int. Cl. F16b *29/30*
U.S. Cl. 151—22 **9 Claims**

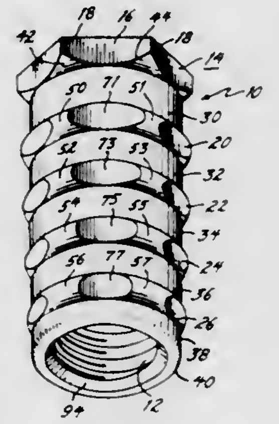


A self-locking threaded fastener such as a screw in which locking action is obtained from at least one locking zone, parts of two adjacent turns leaning toward each other and including between them a groove of reduced thread angle. The threads on the product are advantageously formed by rolling with novel dies including a lock forming area in which normal internal support for the flanks of developing thread ridges are removed during the latter part of the thread rolling operation thereby causing the pressure applied to external flanks to result in leaning of the locking turn portions toward each other.

3,530,921
INSERTS

Richard B. Ernest, Richboro, Pennsylvania, assignor to Penn Engineering & Manufacturing Corp., Danboro (Doylestown), Pennsylvania a corporation of Delaware

Filed April 10, 1969, Ser. No. 815,023
Int. Cl. F16b *15/06, 39/28*
U.S. Cl. 151—41.73 **14 Claims**

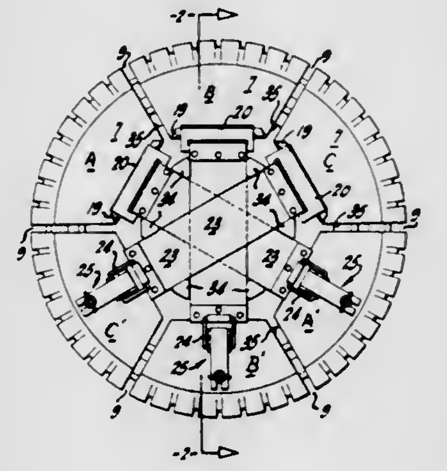


A fastener or insert for use in plastic material is formed with an elongated and tapered body having a head and a forward end portion. The body includes a plurality of flanges spaced along its length between the head and the forward end portion, the flanges being derived from hexagon shapes and having what would be the corner portions of the hexagon shapes progressively reduced along the length of the fastener from the head to the forward end portion to provide a tapered shape at the corner portions of what would otherwise be hexagon shapes.

3,530,922
ANTISKID TRACTION DEVICE

Arthur C. Mathews, 15 Cordova Court, Portola Valley, California

Filed May 3, 1968, Ser. No. 726,461
Int. Cl. B60c *27/04*
U.S. Cl. 152—225 **5 Claims**



An antiskid traction device providing tread-engaging elements adapted to extend transversely across and against the tread of the pneumatic tire of a wheel and to be removably held in position without securement to the wheel, but by tensioning means connected with said elements operative for urging the tread-engaging elements into tight engagement with said tread when said tensioning means is tensioned, and for releasing said elements for removal when the tension is released, the application and removal of said elements being effected from the outer side of the wheel.

3,530,923

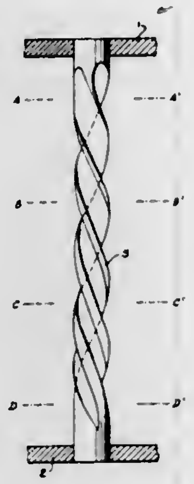
EVAPORATOR TUBES

Konrad Mattern, Bad Homburg vor der Hohe, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany

Filed June 3, 1968, Ser. No. 733,851

Int. Cl. B01d *1/100;* **F16l** *9/100;* **F28f** *13/08*

U.S. Cl. 159—13 **4 Claims**



An evaporator tube is helically creased to form channels within the tube which increase in cross section from one end of the tube to the other. This produces a swirl in the liquid flowing through the tube and the centrifugal force of which presses the liquid into good heat exchange with the tube wall. The vaporized liquid has a uniform velocity through the tube.

3,530,924

CRYSTALLIZATION METHOD AND DEVICE

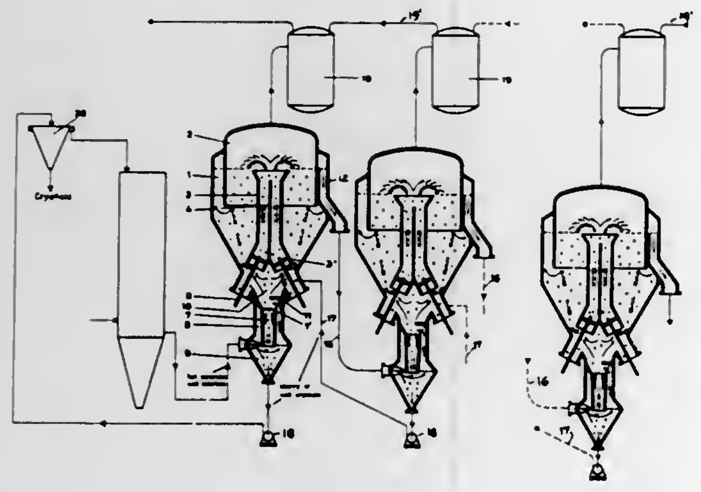
Hans Domning, Kassel, Germany, assignor to Wintershall Aktiengesellschaft, Kassel, Germany and Wyss Escher GmbH, Ravensburg, Wurttemburg, Germany

Filed Feb. 29, 1968, Ser. No. 709,477

Claims priority, application Germany, Mar. 3, 1967, W43,483; Mar. 3, 1967, W43,484; Apr. 1, 1967, W43,674

Int. Cl. B01d *3/06, 3/10*

U.S. Cl. 159—45 **11 Claims**



A crystallization process carried out in a plurality of successive units each including an upright crystallizing chamber communicating at the bottom end thereof with an upright separating chamber, in which a suspension of crystals in a crystallizable solution is introduced in the crystallizing chamber of each unit while a fluid is introduced in upward direction through the separating chamber to flow from there into the crystallizing chamber so that crystals growing in the latter and new crystals forming therein will descend into the separating chamber in countercurrent to the fluid rising therein. The speed of the rising fluid may be adjusted to control the minimum size of crystals descending into the separation chamber and the crystals descending into the separating chamber are transferred from the bottom of the latter into the crystallizing chamber of the adjacent unit.

3,530,925

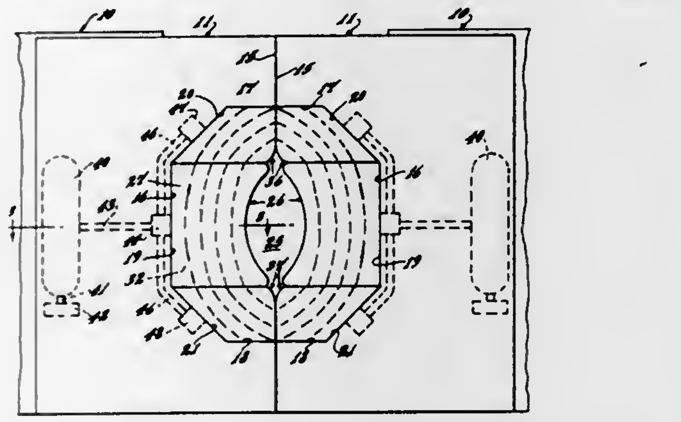
DOOR CONSTRUCTION HAVING PNEUMATIC CUSHION

Norman K. Miller, Concordville, Pennsylvania, assignor to Miller Brothers, Concordville, Pennsylvania a partnership

Filed Feb. 12, 1969, Ser. No. 798,593

Int. Cl. E06b *7/22*

U.S. Cl. 160—180 **5 Claims**



A door construction wherein a pneumatic cushion is conformably engageable with an article in a doorway when the door is closed.

3,530,926

APPARATUS AND METHOD FOR CONTINUOUS CASTING OF METALS

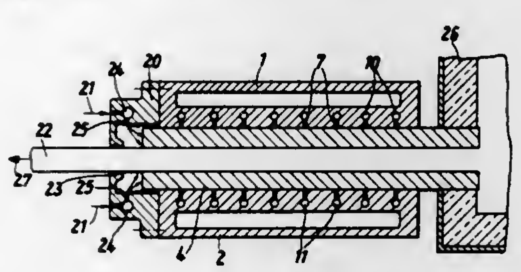
Alfred J. Wertli, 15, Poststrasse, CH 8406 Winterthur, Switzerland

Original application Feb. 24, 1967, Ser. No. 618,415, now Pat. No. 3,502,135. Divided and this application Jan. 29, 1969, Ser. No. 822,767

Claims priority, application Switzerland, Mar. 31, 1966, 5,060/66

Int. Cl. B22d *11/00*

U.S. Cl. 164—82 **2 Claims**



An apparatus for maintaining intimate contact between a mold and cooling device in a continuous casting operation. The contact surface between the mold and cooling device is subjected to a reduced pressure by a vacuum transmitted through apertures in the cooling device which communicate with the contact surface. The mold can also be sealed to the atmosphere and supplied with nitrogen to prevent oxidation where graphite molds are used.

3,530,927

METHOD OF FABRICATION OF METALS BY PRESSURE CASTING

Daniel Lejeune, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablishments Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France

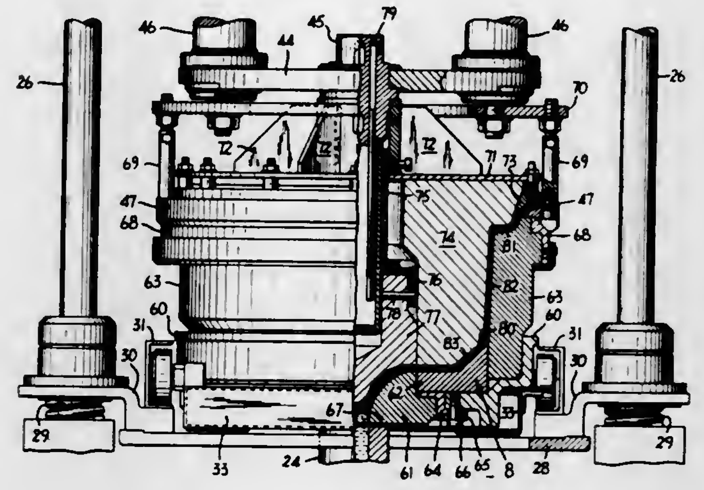
Filed June 23, 1967, Ser. No. 648,397

Claims priority, application France, June 24, 1966, 66,940

Int. Cl. B22d *27/14*

U.S. Cl. 164—120 **4 Claims**

The disclosure herein relates to high speed precision casting of metal articles wherein a carriage carrying a mold is positioned above a feed pipe entering an enclosure provided with ladle filled with liquid metal. The enclosure is then put under pressure to expel the liquid metal from the ladle into the mold through the feed pipe. The metal fills the cavity of the mold expelling the air contained therein through vents until the metal solidifies in the vents and closes them. The pneumatic pressure of the enclosure is increased during the progressive solidification of the metal from the top to the bottom of the mold until the solidification front reaches the head of the feed pipe at which time the pressure is decreased, the core withdrawn and the article separated from the mold.



3,530,928

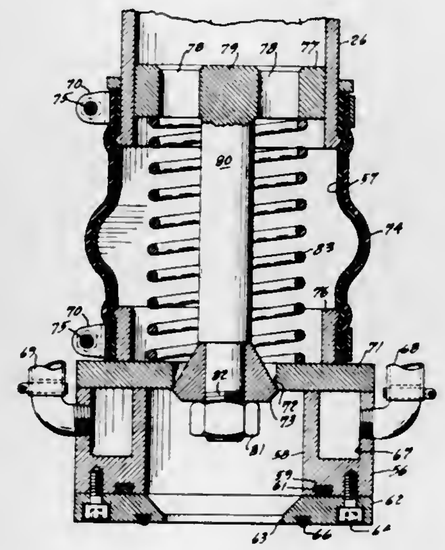
BLOW HEAD HAVING VALVE MEANS COOPERATING WITH FLEXIBLE CHAMBER WALLS

Jerry F. Swinney, Anniston, Alabama, assignor to Woodward Iron Company, a corporation of Delaware

Filed Jan. 26, 1968, Ser. No. 700,965

Int. Cl. B22c *15/24*

U.S. Cl. 164—201 **4 Claims**



A self-aligning blow head for sand blowing equipment used for filling core boxes, flasks and the like with granular material characterized by means automatically to open a sand discharge valve when the apparatus is pressed into operative relation against the granular material opening of the core box to be filled and which shuts off the flow of sand when removed from the core box. The end of the blow head is water cooled for use in blowing resin coated sand as when filling heated core boxes, flasks or the like with the same.

3,530,929

APPARATUS FOR THE CONTINUOUS CASTING OF METAL

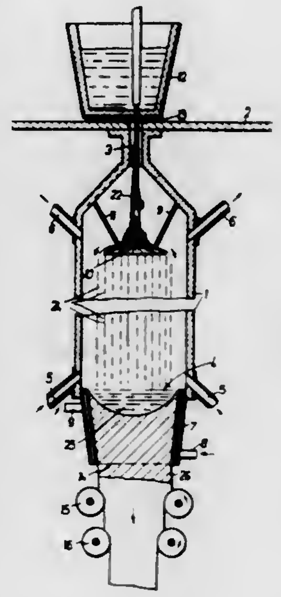
Fritz Harders, Post Ergste uber Schwerte (Ruhr) and Franz Oeters, Dortmund, Germany, assignors to Dortmund-Horder Huttenunion Aktiengesellschaft, Dortmund, Germany

Original application Sept. 3, 1965, Ser. No. 484,796, now Pat. No. 3,399,715, dated Sept. 3, 1968. Divided and this application Apr. 3, 1968, Ser. No. 740,000

Claims priority, application Germany, Sept. 22, 1964, D 45,482

Int. Cl. B22d *11/10*

U.S. Cl. 164—281 **4 Claims**



Described is apparatus for continuous casting of metal comprising a tower with a restricted inlet at its upper end for introduction of the melt and a relatively large discharge opening. The tower has inlet and outlet ports for circulatory flow of a coolant gas, means for feeding the molten metal through the inlet, distributing means at the upper end onto which the molten metal falls and whereby it is dispersed as droplets which reunite in the discharge section prior to issuing therefrom as a solid mass.

3,530,930

HEAT TRANSFER METHOD AND APPARATUS

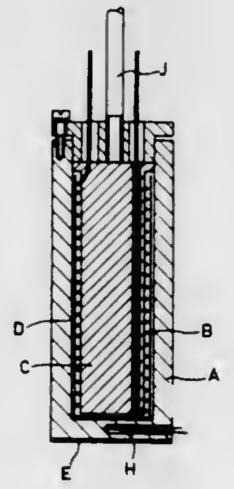
Reginald Charles Oldfield, Caterham, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, New York, a corporation of Delaware

Filed Aug. 22, 1968, Ser. No. 754,627

Claims priority, application Great Britain, Sept. 15, 1967, 42,097/67

Int. Cl. F28f *13/18*

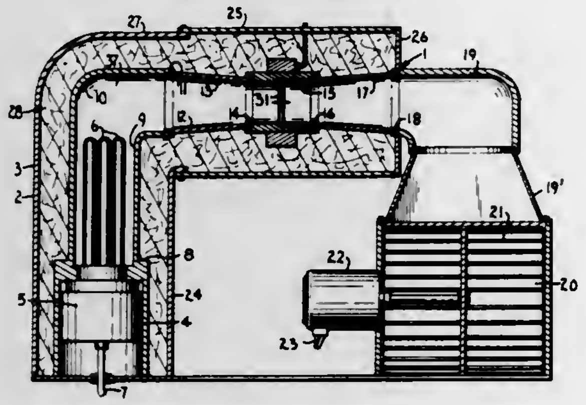
U.S. Cl. 165—1 **12 Claims**



A device for effecting heat transfer between an active and a passive body under near vacuum conditions via an intermediate heat-transferring layer that contacts both bodies, this layer having characteristics in its liquid state for wetting the active body but not wetting the passive body. The device includes means for selectively moving the bodies into and out of contact, and for heating or cooling one of the bodies for heat-transfer with the other.

3,530,931
TEMPERATURE CONDITIONER

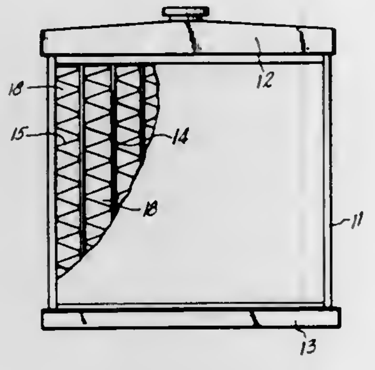
Benedict John Cabot, Binghamton, New York, assignor to Cabot Industrial Developments, Inc., Wichita, Kansas
Continuation-in-part of application Ser. No. 648,753, June 26, 1967. This application Apr. 7, 1969, Ser. No. 825,089
Int. Cl. F25b *29/00*
U.S. Cl. 165—65 **8 Claims**

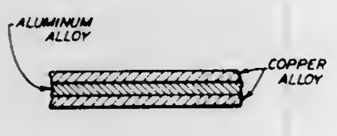


Temperature of an ambient fluid is changed by producing a high heat in a heating chamber which is entirely closed except for a single opening into a converging nozzle of a venturi. A throat portion of the venturi is connected to a diverging nozzle, the open end of which is connected to a flow chamber into which ambient fluid is admitted. Flow circulating apparatus, such as a fan, is used in conjunction with a flow chamber to promote flow of the ambient fluid. The heating chamber and the converging portion of the venturi are insulated so that heat is concentrated inwardly. In a preferred form of the invention, an impeller is provided at the throat of the venturi, and in another preferred form of the invention, the throat is formed as a chambered rotating shaft.

3,530,932
HIGH STRENGTH HEAT EXCHANGE ASSEMBLY

Michael J. Pryor, Hamden, Connecticut, assignor to Olin Corporation, a corporation of Virginia
Original application Jan. 23, 1967, Ser. No. 611,018, now Patent No. 3,480,411, dated Nov. 25, 1969. Divided and this application Jan. 27, 1969, Ser. No. 823,207
Int. Cl. F28d *7/00*
U.S. Cl. 165—153 **2 Claims**

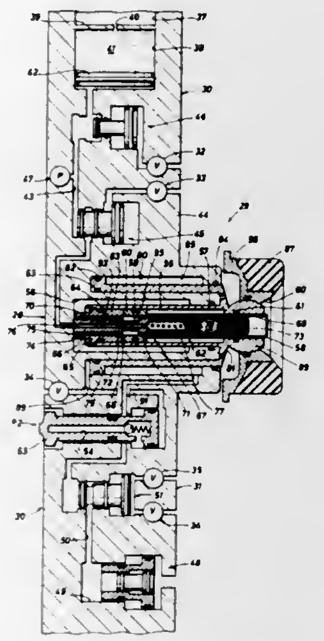




The present invention relates to a composite metallurgically bonded fin stock material and a heat exchange assembly including same wherein said fin stock material has an aluminum base alloy core clad on both sides with copper.

3,530,933
FORMATION-SAMPLING APPARATUS

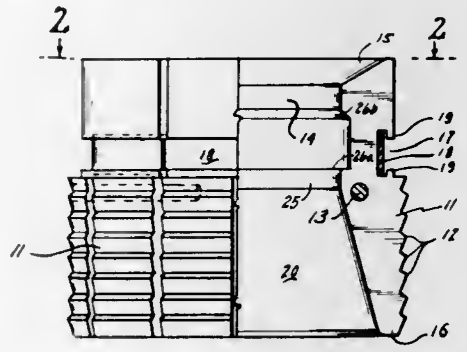
Frank R. Whitten, Houston, Texas, assignor to Schlumberger Technology Corporation, New York, New York a corporation of Texas
Filed April 2, 1969, Ser. No. 812,726
Int. Cl. E21b *49/00*
U.S. Cl. 166—100 **33 Claims**



In each of the several embodiments of the new and improved fluid-sampling apparatus disclosed herein, sample-admitting means adapted to be selectively extended therefrom include an annular sealing pad operatively arranged around the forward end of a tubular sampling member so that, upon contacting a well bore surface, the pad will make firm sealing engagement therewith. Means are provided for delaying the establishment of flow communication between a sample-collecting system in the apparatus and an earth formation being tested until the sample-admitting means have been extended. Means are uniquely arranged in the sampling member for regulating the flow of fluid samples as well as for limiting the entrance of mudcake and unconsolidated formation materials that might otherwise plug the sampling apparatus or disrupt the sealing engagement of the sealing pad.

3,530,934
SEGMENTED FRANGIBLE SLIPS WITH GUIDE PINS

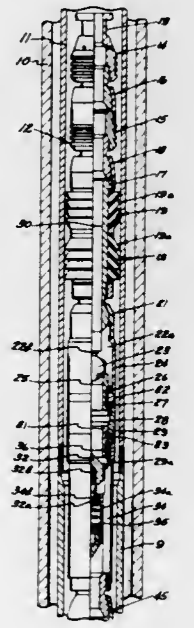
James W. Kisling III, Houston, Texas, assignor to Schlumberger Technology Corporation, New York, New York a corporation of Texas
Filed July 11, 1968, Ser. No. 744,011
Int. Cl. E21b *33/129*
U.S. Cl. 166—134 **12 Claims**



Disclosed is a well tool employing a new type of breakable segmented slips for use in anchoring in well bores. Guide pins mounted transversely to the length of the segmented slips maintain uniformity in the circumferential spacing as well as horizontal alignment of the slips as they are expanded or moved radially outward. Each of the slip segments has a retaining band segment which is trapped in a flanged retaining groove on an outer surface of the slip segments. The band segments serve to maintain alignment of broken portions of the slip segments in a horizontal plane during final setting of the slips.

3,530,935
MOTOR FOR RUNNING AND RETRIEVING WELL TOOLS

Henry U. Garrett, Houston, Texas, assignor, by mesne assignments, to Brown Oil Tools, Inc., Houston, Texas a corporation of Texas
Filed June 3, 1968, Ser. No. 733,881
Int. Cl. E21b *23/02, 33/00*
U.S. Cl. 166—153 **7 Claims**

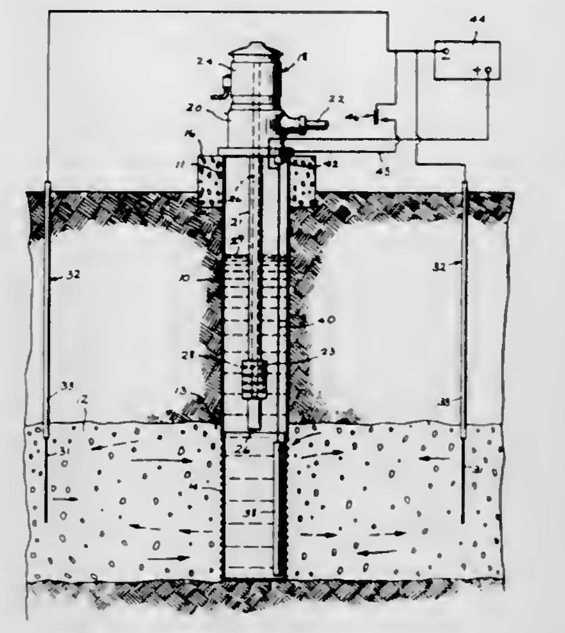


This patent discloses a motor for running and retrieving a string of well tools. Valves are opened and closed hydraulically to substantially prevent flow through the motor while it is being run or retrieved, and to permit flow through the motor while the well is being produced. The motor is moved by a differential in pressure across packing between the motor and the tubing in which it is run. The motor is combined with a gas lift valve and both are landed in a single mandrel. Landing dogs are provided for selecting one of several mandrels in a well tubing and for landing the assembly in the tubing.

3,530,936
ELECTRICAL METHOD AND MEANS FOR MINIMIZING CLOGGING OF A WATER WELL

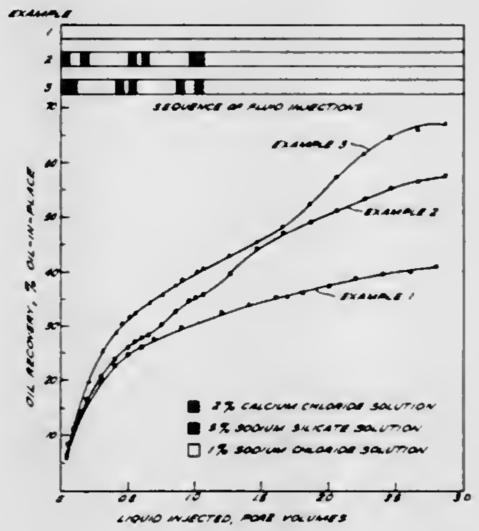
Norris E. Gunderson, 1717 Tudor Lane, South Bend, Indiana, and Hubert L. Keith, 313 State St., Mishawaka, Indiana
Filed Dec. 9, 1968, Ser. No. 782,094
Int. Cl. E21b *43/25*
U.S. Cl. 166—248 **2 Claims**

A method and means for minimizing clogging of the inlet of a well wherein at least one first electrode is positioned in the ground laterally outwardly of said inlet, a second electrode is positioned at or inside said inlet, the negative terminal of a DC power source is connected to said first electrode and the positive terminal of said DC power source is connected to said second electrode, and a DC voltage is impressed across said first and second electrodes to create an electrical current which flows from said second electrode to said first electrode.



3,530,937
METHOD FOR WATER FLOODING HETEROGENEOUS PETROLEUM RESERVOIRS

George G. Bernard, La Mirada, California, assignor to Union Oil Company of California, Los Angeles, California a corporation of California
Filed Dec. 3, 1968, Ser. No. 780,819
Int. Cl. E21b *33/138, 43/20, 43/22*
U.S. Cl. 166—270 **13 Claims**



A method for water flooding heterogeneous petroleum reservoirs having strata of different permeabilities in which plugging precipitates are successively deposited in regions of the reservoir increasingly further from the injection well. The plugging precipitate is formed by the reaction of chemically reactive agents injected into the reservoir in aqueous solutions separated by an inert spacing medium, the amount of spacing medium being increased in each successive plugging treatment to cause the precipitate to be formed in a region of the reservoir increasingly further from the injection well.

3,530,938
OIL RECOVERY PROCESS UTILIZING A THICKENED AQUEOUS FLOODING MEDIUM

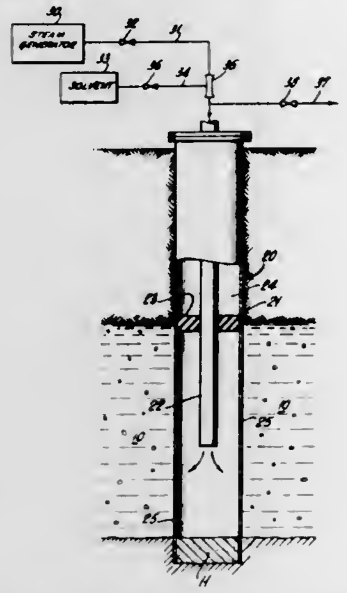
James E. Cooper, Dallas, Texas, assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Dec. 20, 1968, Ser. No. 785,733
Int. Cl. E21b *43/22*
U.S. Cl. 166—273 **10 Claims**

This specification discloses a method of recovering oil employing an aqueous flooding medium containing a sulfonated poly(2-R-6-R'-1,4-phenylene oxide) wherein R is hydrogen or an aliphatic group containing from 1 to 3 carbon atoms and R' is an aliphatic group containing from 14 to 20 carbon atoms with at least 14 carbon atoms in a straight chain. The aqueous solution of the sulfonated polymer exhibits the property of undergoing an increase in viscosity with an increase in salt concentration. The aqueous flooding medium may contain a salt, or an aqueous solution of a salt may be injected prior to or subsequent to the flooding medium.

3,530,939
METHOD OF TREATING ASPHALTIC TYPE RESIDUES

Eric B. Turner, Pointe-a-Pierre, Trinidad and Tobago and Frederick W. Sommer, Bogota, Colombia, assignors to Texaco Trinidad Inc., Pointe-a-Pierre, Trinidad and Tobago, a corporation of Delaware

Filed Sept. 24, 1968, Ser. No. 762,081
Int. Cl. E21b *43/25*
U.S. Cl. 166—303 **16 Claims**



Treatment of a well penetrating a hydrocarbon-bearing formation having asphalt-containing deposits therein, and the formation surrounding the well to remove asphaltic-type blockages is accomplished by injecting an aromatic solvent into the formation and thereafter circulating steam in combination with an aromatic solvent in vapor phase therethrough. Thereafter, the asphaltic residues are brought to the surface or dispersed into the formation by continued injection and circulation of the steam and aromatic solvent.

3,530,940
INCREASING FOAM STABILITY IN EARTH FORMATIONS

Dwight L. Dauben, Tulsa, Oklahoma, and Syed H. Raza, Tulsa, Oklahoma, assignors to Pan American Petroleum Corporation, Tulsa, Oklahoma, a corporation of Delaware

No Drawing. Filed Feb. 5, 1969, Ser. No. 796,904
Int. Cl. E21b *33/138*
U.S. Cl. 166—305 **9 Claims**

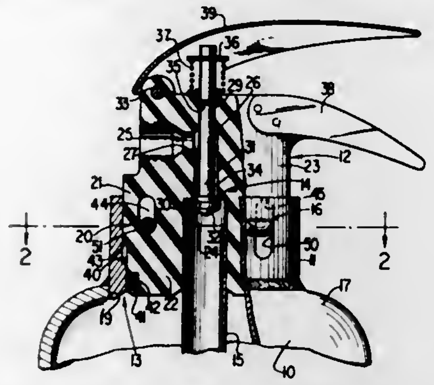
Film-forming, water-soluble polymers are used with aqueous foaming agent solutions to form foams in earth formations. The polymers stabilize the foams against the adverse effects of oil and high temperatures. The foams can be further stabilized by adding plasticizers, such as glycerine, to the polymer-containing foaming agent solutions. Suitable polymers are polyvinyl alcohols and polyvinyl pyrrolidones.

3,530,941
FIRE EXTINGUISHER WITH A PIN CONNECTED CONTROL HEAD

Arne Hansen, New City, New York and Lester V. Hebenstreit, Bloomfield, New Jersey, assignors to Walter Kidde & Company, Inc., Belleville, New Jersey a corporation of Delaware

Filed Sept. 18, 1968, Ser. No. 760,584
Int. Cl. A62c *13/00*
U.S. Cl. 169—31 **9 Claims**

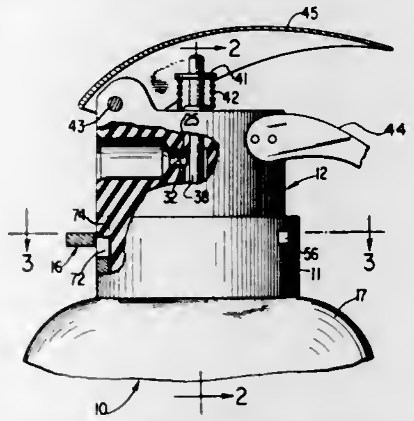
A fire extinguisher having a plastic control head which is connected to the neck of an extinguishing agent container by a U-shaped pin extending through vertically elongated slots in the neck and control head. The pin is capable of being withdrawn, to remove the control head only when the control head is depressed into the neck sufficiently to render the sealing arrangement between the neck and control head ineffective and allow pressure within the container to vent.



3,530,942
FIRE EXTINGUISHER WITH A CLIP CONNECTED CONTROL HEAD

Arne Hansen, New City, New York, assignor to Walter Kidde & Company, Inc., Belleville, New Jersey, a corporation of Delaware

Filed Sept. 20, 1968, Ser. No. 761,237
Int. Cl. A62c *13/24*
U.S. Cl. 169—31 **5 Claims**

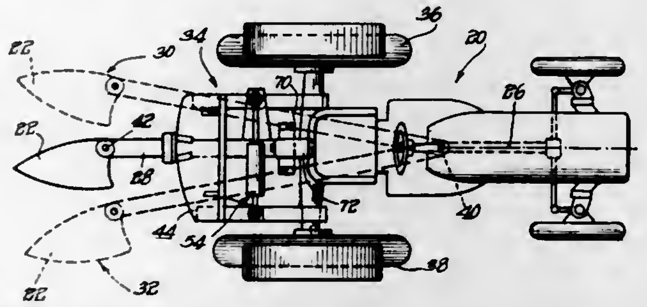


A fire extinguisher having a plastic control head which is connected to the neck of an extinguishing agent container by a flat clip having arms which are received by apertures in the neck and lie in grooves formed in the top surface of the control head. The clip and the control head are provided with interferring formations which allow the clip to be withdrawn only when the control head is depressed into the neck sufficiently to render the sealing arrangement between the neck and the head ineffective and allow pressure within the container to vent.

3,530,943
AUTOMATIC DRAWBAR ADJUSTMENT CONNECTION MEANS

Charles R. Taylor, Tremonton, Utah, assignor of fifty percent to La Moyne Roberts, Tremonton, Utah

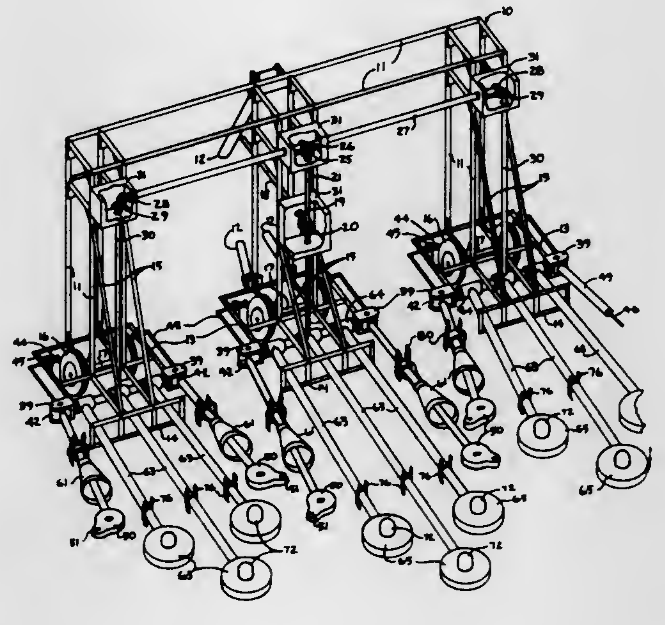
Filed June 12, 1967, Ser. No. 645,279
Int. Cl. A01b *41/06, 65/00*
U.S. Cl. 172—2 **15 Claims**



This invention relates generally to an attachment means for adjustably connecting an earth working device to a vehicle, and more particularly to a control mechanism for automatically altering the position of a plow relative to a tractor as a function of the slope of the hillside.

3,530,944
AGRICULTRAL IMPLEMENT

Perry W. Spell, Roseboro, North Carolina
Continuation-in-part of application Ser. No. 623,911, Mar. 17, 1967. This application Sept. 30, 1969, Ser. No. 862,347
Int. Cl. A01b *33/06*
U.S. Cl. 172—59 **6 Claims**

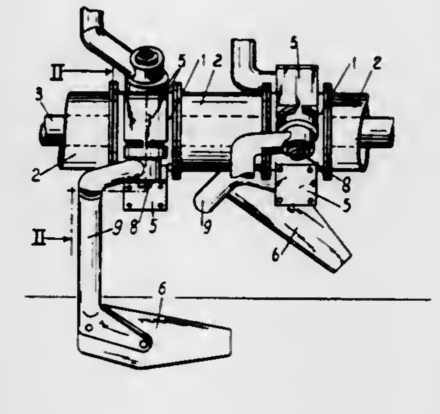


In abstract, a preferred embodiment of this invention is an earth scarifying device capable of operating between small, tender plants attached to the rear of a tractor and operated by the power take-off of such tractor.

3,530,945
MACHINES FOR CULTIVATING THE SOIL

Herbert Vissers, Nieuw-Vennep, Netherlands, assignor to Landbouwwerktuigen-en Machinefabriek H. Vissers N.V., Nieuw-Vennep, Netherlands, a company of the Netherlands

Filed May 5, 1967, Ser. No. 636,418
Claims priority, application Netherlands, June 6, 1966, 6607805
Int. Cl. A01b *33/14, 35/28*
U.S. Cl. 172—95 **1 Claim**

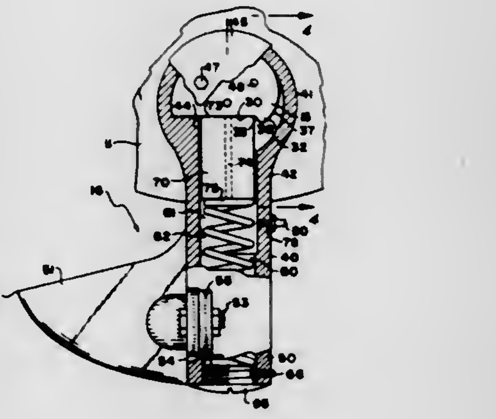


The invention relates to a machine for cultivating the soil and having digging blades arranged in at least one circular set. Said blades each are secured with its arm on a stub shaft, which is rotatably journaled at a hub body for tilting the digging blade in order to have the slice of soil taken up by the blade sliding down thereof in a predetermined position of the blade above the ground. For preventing that the sliding down of the slice of soil from the blade is disturbed by the arm, said arm engages the digging blade at or near that lateral edge thereof, which during rotation of the circular set lies at the top after the blade has been tilted.

3,530,946
ROTARY CULTIVATOR

Mederic J. Major, 1218 Hammond Ave., New Westminster, British Columbia, Canada

Filed April 24, 1968, Ser. No. 723,822
Int. Cl. A01b *33/00*
U.S. Cl. 172—96 **9 Claims**

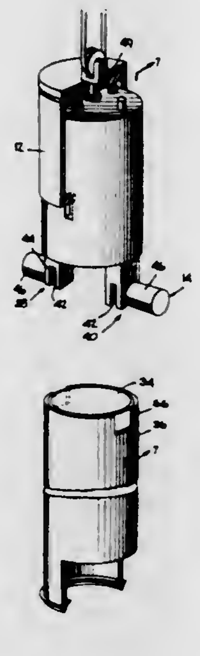


A rotary cultivator having a rotable driven member upon which a digging tool is rotatably journalled for rotation about an axis parallel to but off-center relative to the axis of the member for swinging movement between an extended position and a retracted position. A follower is slidably mounted on the tool and is spring-urged radially inwardly against a cam which moves the follower radially outwardly against a spring as the tool is moved from its extended to its retracted position. The cam is convexly curved so that the effective resistance of the spring to the rotation of the tool diminishes as the tool is moved away from its extended position.

3,530,947
CLAMPING ARRANGEMENT FOR DOUBLE WALLED SHELLS TO BE DRIVEN INTO THE EARTH

George J. Gendron, Oradell, New Jersey, assignor to Raymond International, Inc., New York, New York a corporation of New Jersey

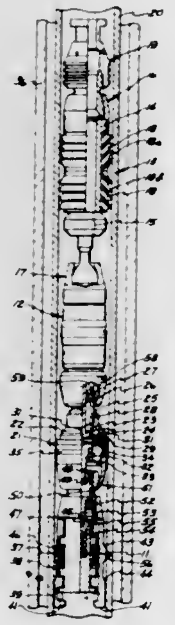
Filed Nov. 27, 1968, Ser. No. 779,504
Int. Cl. E21c *3/02*
U.S. Cl. 175—55 **14 Claims**



A clamping arrangement for selectively clamping to a vibrator one of two or both elongated telescopically disposed tubular shells to be driven into the earth.

3,530,948
PERFORATOR

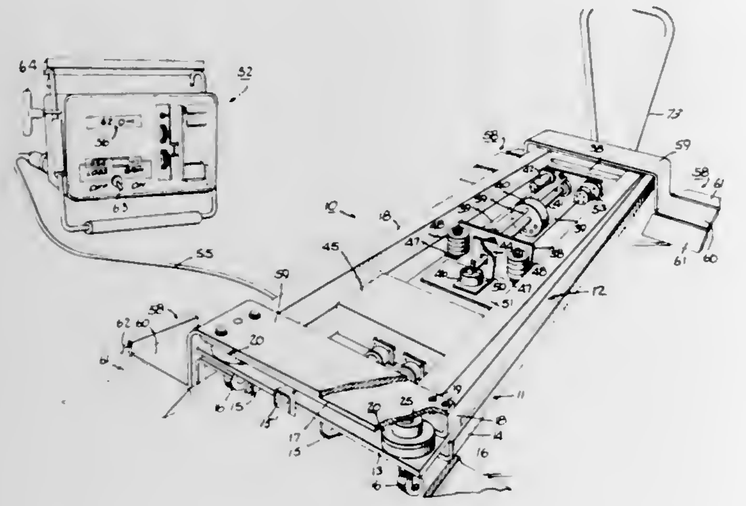
Henry U. Garrett, Houston, Tex., assignor, by mesne assignments, to Brown Oil Tools, Inc., Houston, Tex., a corporation of Texas
Filed June 20, 1968, Ser. No. 738,556
Int. Cl. E21b *43/112, 43/119*
U.S. Cl. 175—4.51 5 Claims



This patent discloses a perforating apparatus which is preferably pumped into and out of a well. The apparatus is landable in a tubing and the gun is fired by hydraulic pressure. This abstract of disclosure does not limit the invention or interpret the claims.

3,530,949
HYDRAULIC WEIGHT TOTALIZING APPARATUS WITH ELECTRIC RE-BALANCING

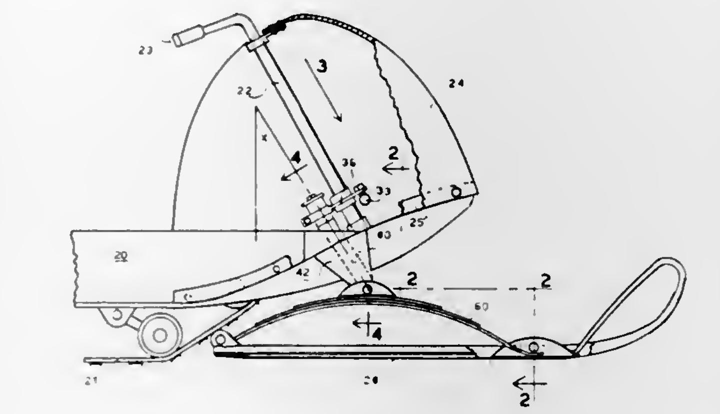
Burt L. Swersey and Peter I. Fried, Hartsdale, Ruth Harlam, New York, and Irwin Math, Beechhurst, N.Y., assignors to Brookline Instrument Company, White Plains, N.Y., a corporation of New York
Filed Apr. 14, 1969, Ser. No. 815,722
Int. Cl. G01g *5/04, 7/00*
U.S. Cl. 177—209 12 Claims



The scale accurately senses the weight of a load and also continuously senses variations in the load weight. The counterweight assembly is mounted within the confines of the scale and the scale is trasportable from place to place. The scale can be provided with ramps upon which a hospital bed can be mounted for weighing.

3,530,950
TURNABLE RUNNER STEERED VEHICLE

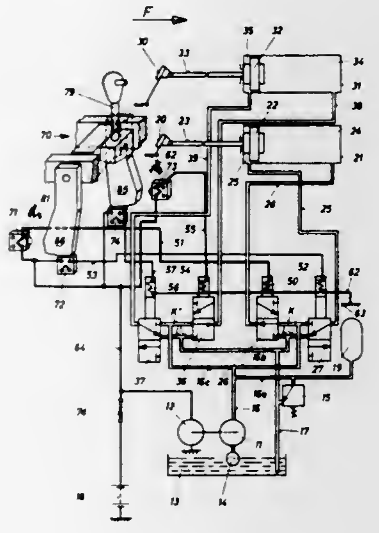
Robert M. Lamb, 915 Oswego St., Liverpool, N.Y. 13088
Filed Jan. 24, 1968, Ser. No. 700,070
Int. Cl. B62m *27/00*
U.S. Cl. 180—5 9 Claims



A snowmobile is equipped with two front runners, each attached to an upwardly extending steering spindle. Each spindle is slanted forwardly and laterally outwardly towards its lower end and has a pin at its lower end to which its runner is swivelly attached, the runner being positioned below the pin to rock in a fixed plane relative to the swivel pins. The pins extend laterally in alignment when the runners are directed straight forward. Turning the runners causes them to be pitched over to the outer side on the turning curve and to bank, matching the motion of a person on skis. Steering stability results.

3,530,951
DUAL CONTROL SYSTEM

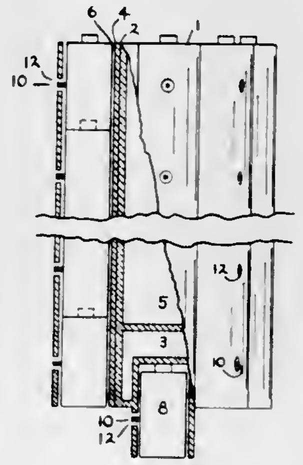
Willy Beig, Friedrichshafen-Waggershausen, and Willi Kuhnle, Friedrichshafen, Germany, assignors to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany
Filed Apr. 1, 1968, Ser. No. 717,716
Claims priority, application Germany, Apr. 5, 1967, Z 12,784
Int. Cl. B60k *33/00*
U.S. Cl. 180—77 13 Claims



The invention relates to dual control systems for vehicles wherein the fuel, brake, and steering elements normally under manual operation by a vehicle driver can be operated by a supervisory driver in the vehicle. A particular feature of the invention resides in a simplification of an infinitely variable system utilizing hydraulic power with electrical control circuitry wherein a single source of hydraulic oil pressure is utilized.

3,530,952
UNDERSEA, LONG-RANGE TRACKING AND SIGNALLING SYSTEMS AND APPARATUS

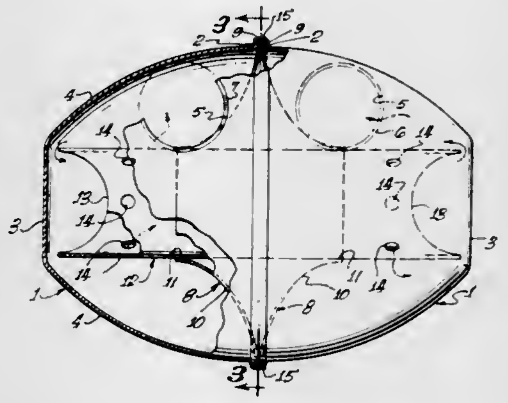
Sidney Epstein and David Epstein, Brooklyn, N.Y., assignors to Vadys Associates, Ltd., New York, N.Y., a corporation of New York
Filed May 23, 1968, Ser. No. 731,396
Int. Cl. G08b *3/14*
U.S. Cl. 181—.5 12 Claims



A neutrally buoyant deep-drifting float assembly formed of a neutrally buoyant core having a plurality of neutrally buoyant signalling modules releasably mounted thereon and incorporating means to effect preprogrammed release and selective modification of the buoyancy characteristics thereof to induce displacement of a released signalling module into a communication channel.

3,530,953
MUFFLER WITH TANGENTIAL INLET AND OUTLET NIPPLES

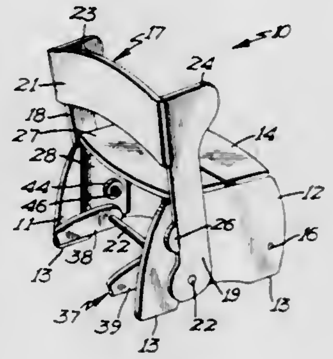
Patrick J. Conlin, Vancouver, British Columbia, Canada
Filed July 19, 1968, Ser. No. 754,150
Int. Cl. F01n *1/08, 7/18*
U.S. Cl. 181—58 12 Claims



A muffler for internal-combustion engines comprising an enclosed cylindrical body formed with tangentially disposed inlet and outlet ports. The body is formed of identical bowl-like halves or members having cylindrical wall portions in which the ports are formed and thence tapered to end walls of smaller diameter than the meeting edges of the body members. Partition means on the interior of the body are secured in place by the seam or juncture between the body forming members and those members may be secured to each other in any desired relative rotative position to accommodate particular installations.

3,530,954
THREE-STEP CHAIR

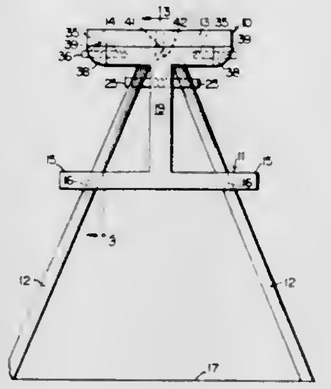
Robert O. Schmidt, 61 E. Rose Ave., St. Paul, Minn. 55117
Filed Mar. 20, 1969, Ser. No. 808,926
Int. Cl. A47c *13/00*
U.S. Cl. 182—33 11 Claims



A step chair having a back rest and front seat panel secured to upright side members. A movable seat panel slideably mounted on the side members adjacent the back of the front seat panel is elevated in response to movement of the back rest. When the back rest is in a down-step position the movable seat panel is held in an up-step position. An elevating mechanism operable in response to pivotal movement of the back rests selectively moves and holds the movable seat panel to an up-step position and to a down-seat position.

3,530,955
I-BEAM SAWHORSE OR SUPPORT STRUCTURE

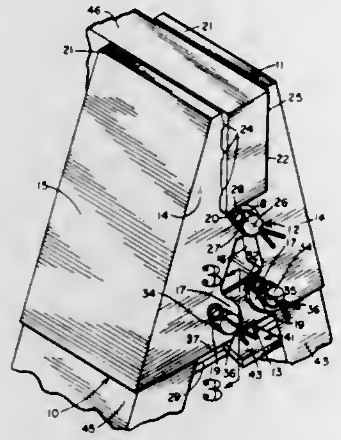
Macon D. Rice, P.O. Box 1905, Hawthorne, Nev. 89415
Filed Jan. 31, 1969, Ser. No. 795,443
Int. Cl. E04g *1/32;* F16m *11/00*
U.S. Cl. 182—181 10 Claims



A sawhorse or like support structure employing an I-beam body member providing oppositely directed upper and lower flanges and removable leg members of rectangular configuration mounted in laterally outwardly and axially outwardly inclined rectangular through leg openings formed adjacent the opposite ends of the lower flanges with the upper leg ends angle cut to abuttingly engage the under face of the upper flanges and provided with spreader and retainer means to maintain the legs in proper assembled relation to the I-beam body member. The oppositely directed edges of the upper I-beam are provided with pin retaining openings and a saw board having dependent clamp strips laterally spaced to receive the upper I-beam flange and pin receiving openings axially spaced to align with the pin retaining flange openings is provided to adapt the sawhorse for use as a carpenter's worktable.

3,530,956
WEDGE-LOCKING SAWHORSE BRACKET

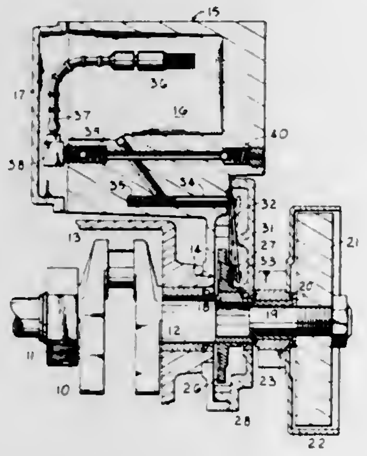
Adam Jadek, 1728 E. Hartson, Spokane, Wash. 99202
Filed Aug. 4, 1969, Ser. No. 847,027
Int. Cl. E04g *1/32;* **F16m** *11/00*
U.S. Cl. 182—186 5 Claims



A bracket to releasably join opposed legs to the beam of a sawhorse. The bracket provides paired leg elements, each carrying a saw horse leg, pivotably joined in scissor fashion to form a jaw to receive the horizontal saw horse beam. A wedge device, disposed between the legs and below the bracket pivot, moves the structure to releasably fasten all elements.

3,530,957
AUTOMATIC OILER FOR CHAIN SAWS

Gerald J. Shaw and Lloyd H. Tuggle, Shreveport, La., assignors to Baird-Pouland Inc., Shreveport, La., a corporation of Delaware
Filed Oct. 9, 1968, Ser. No. 766,135
Int. Cl. F16n *13/14*
U.S. Cl. 184—15 3 Claims

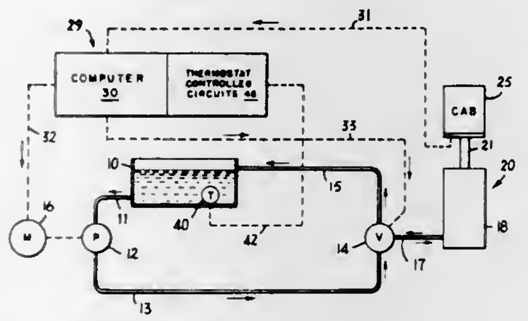


An oil pump operatively associated with the centrifugal clutch of a chain saw; the pump including a system of cams, levers and check valves which, when activated by the engagement of the clutch, moves a quantity of oil from a reservoir and discharges the same as a lubricant on the cutting chain. An outstanding feature of the pump is the means of reducing the speed between that of the engine and the reciprocating stroke of the pump.

3,530,958
VISCOSITY CONTROL MEANS FOR FLUID OF HYDRAULIC ELEVATOR SYSTEMS

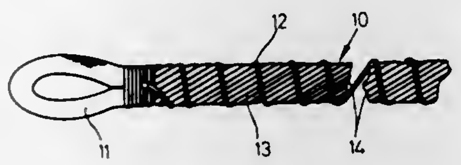
John E. Brannon and Louis Conn, Jr., Memphis, Tenn., assignors to Dover Corporation, Memphis, Tenn., a corporation of Delaware
Filed Aug. 16, 1968, Ser. No. 753,105
Int. Cl. B66b *1/04*
U.S. Cl. 187—17 14 Claims

In a hydraulic elevator installation, a thermostat is included in a closed loop path in which oil may be recirculated by a pump. A valve controls exchange of fluid between such path and the jack for the cab so as to cause the cab to move up and down or be parked. The thermostat responds to a drop in oil temperature to a cut-invalve to cause the pump to recirculate fluid in the mentioned path until the oil is heated by turbulence effects to a selected higher cut-off temperature. Recirculation for heating purposes is continuous over the period the thermostat signals for heat except when the cab is required to respond to a down movement signal. In the absence of other control, the cab is lowered to and kept at the lowest floor in response to the thermostat signal so that most of the oil of the system is out of the jack and in the closed loop path to be subject to heating.



3,530,959
APPARATUS FOR ARRESTING THE ACCELERATION OF AN AIRCRAFT

Gerhard Kopp, Munich, Germany, assignor to Entwicklungsring Sud G.m.b.H., Munich, Germany
Filed Jan. 8, 1968, Ser. No. 696,408
Claims priority, application Germany, Jan. 13, 1967, E 33,208
Int. Cl. F16d *63/00*
U.S. Cl. 188—1 4 Claims

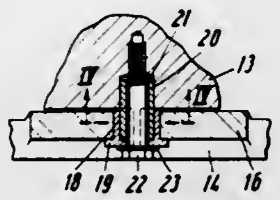


The invention concerns an apparatus for arresting the acceleration of an aircraft and includes an elongated, flexible member such as a rope, one end of which is terminated to form a loop. Helically wrapped about the exterior surface of the rope and secured to the two ends thereof is a safety wire. Upon rupture of the rope, a sudden release of energy is produced tending to cause the broken ends thereof to be rapidly forced toward their respective mounts. The safety wire serves to control the release of energy of the rope ends so as to determine their paths of movement, thereby preventing possible damage to equipment and personnel. With regard to alternate embodiment, the safety wire is essentially disposed within the flexible member.

3,530,960
WHEEL AND BRAKE CONSTRUCTION

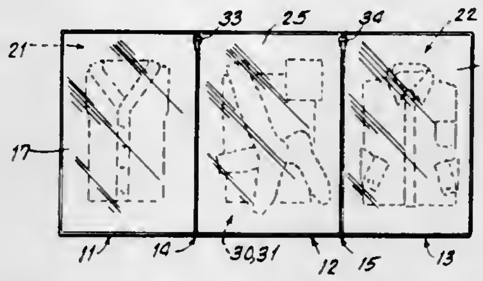
Alfred Otto and Manfred Gronemann, Remscheid, Germany, assignors to Bergische Stahl-Industrie, Remscheid, Germany
Filed Feb. 28, 1969, Ser. No. 803,147
Claims priority, application Germany, Mar. 15, 1968, 1,680,379
Int. Cl. F16d *65/12*
U.S. Cl. 188—218 10 Claims

A wheel for rail vehicles includes a hub surrounded by a radially extending disk portion. A pair of annular brake members each overlie one axial side of the disk portion and are provided with circumferentially spaced radial projections. A radial cutout is provided in each projection and a split insert including at least two sections is received in each of the cutouts. A plurality of expansion members is provided each rigid with the disk portion and each having a part received in one of the cutouts surrounded by the sections of the respective split insert so that, when the respective expansion member is expanded, the sections of the split insert are clamped between it and the walls bounding the respective cutout to thereby connect the brake members with the hub.



3,530,961
TRAVELING CASE

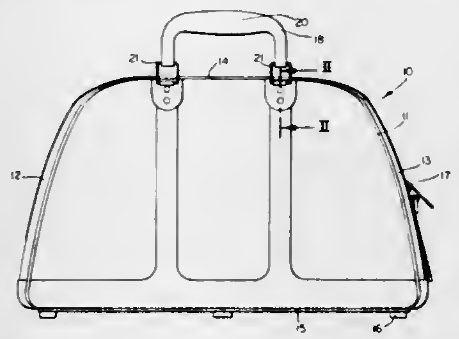
Alfred Weissenbach, 235 W. 76th St., New York, N.Y. 10023
Filed Nov. 25, 1968, Ser. No. 778,592
Int. Cl. A45c *11/00*
U.S. Cl. 190—43 8 Claims



A traveling case for articles of clothing comprises three pocket-forming sections that are foldable over each other for carrying, and that are each enclosed on one side by a portion of an outer, flexible, opaque sheet, the sections being enclosed on their opposite sides by flexible, transparent material, and being arranged to open pocketwise at the lines of fold, the center section comprising superposed, oppositely open pockets, and the flexible, transparent walls at each fold line being separably connected by slide fasteners to close the pockets covered by such walls.

3,530,962
BAG HANDLE CONNECTION

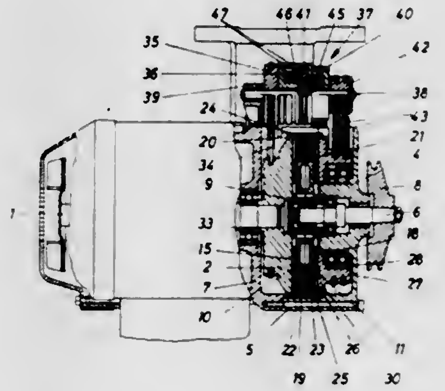
Marvin Schneider, Bryn Mawr, Pa., assignor to Rapid American Corporation, Clayton, Del., a corporation of Ohio
Continuation-in-part of application Ser. No. 769,313, Oct. 21, 1968. This application Aug. 22, 1969, Ser. No. 852,438
Int. Cl. A45c *13/26*
U.S. Cl. 190—58 9 Claims



A bag handle connection is provided which facilitates force distribution of a bag load, during carrying of the bag, and which simplifies and makes more economical the assembly operation attendant to the bag construction.

3,530,963
CLUTCH TRANSMISSION WITH BRAKE

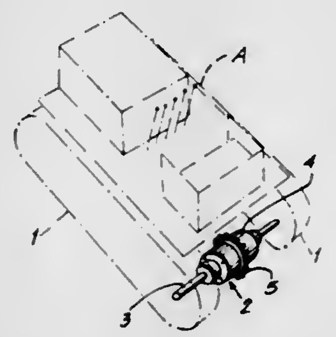
Ernst Becker and Karl Notz, Darmstadt, Germany, assignors to Quick-Rotan Becker & Co., Darmstadt, Germany
Filed May 3, 1968, Ser. No. 726,413
Claims priority, application Germany, May 6, 1967, Q 943
The portion of the term of the patent subsequent to Dec. 30, 1986, has been disclaimed
Int. Cl. F16d *67/00*
U.S. Cl. 192—4 10 Claims



An auxiliary clutch and brake device is used for braking the output means of a main clutch. The rotary parts of the auxiliary clutch and brake device are driven through a step-up transmission from the input shaft of the main clutch at a higher speed than the input shaft, while the output means of the main clutch are driven by a reduction transmission from the auxiliary clutch and brake device at a reduced speed which is less than the speed of the motor shaft. When the rotary parts of the auxiliary clutch and brake device are braked to a stop, which requires a certain angular displacement, the output means of the main clutch are also stopped after turning through a smaller angle due to the high step-down ratio of the reduction transmission.

3,530,964
POWER TRANSMISSION AND STEERING DEVICE

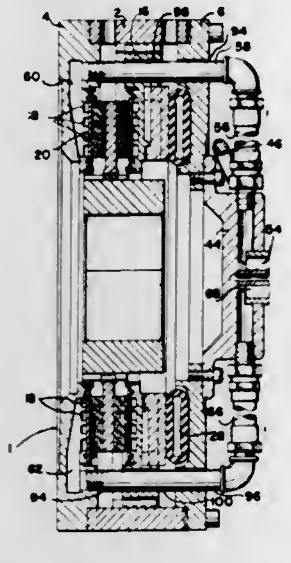
John C. Maguire, deceased, late of Lennoxville, Quebec, Canada, by Ivy Maguire, nee Cook, executrix, Cookshire Highway, Lennoxville, Quebec, Canada
Filed Jan. 27, 1969, Ser. No. 795,143
Claims priority, application Canada, Feb. 23, 1968, 013,276
Int. Cl. F16d *25/06;* **B62d** *11/08*
U.S. Cl. 192—59 8 Claims



A power transmission having a single input member and two axially aligned output shafts, each having a wobble plate affixed thereto. The output shafts are coupled to the input member by way of first and second operating push rods which are associated with first and second valve members. The valve members block fluid passages which in turn cause piston members, carried by the input member, to clutch the input member to the wobble plates.

3,530,965
CLUTCH OR BRAKE FLUID COOLING SYSTEM

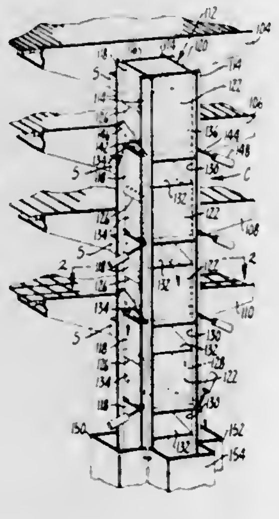
John Hart Wilson, ℅ Wilson Manufacturing Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Continuation-in-part of application Ser. No. 713,094, Mar. 14, 1968. This application Apr. 9, 1969, Ser. No. 814,739
Int. Cl. F16d *13/72*
U.S. Cl. 192—113 11 Claims



A fluid cooling system for clutches or brakes which directs a cooling fluid, such as water or the like, to the interior of the clutch or brake so the circulation of cooling fluid is directed to complementary friction elements so as to dissipate the heat created between the friction elements in the braking or clutching operation. Provision is made to direct the cooling fluid into rotating clutches through rotary fluid seals into and through the clutch or brake elements and to be discharged out through the rotary fluid seal, or cooling fluid may be directed directly into the body of a non-rotating brake element to dissipate the heat in a similar manner. Resilient conduits are connected between distribution rings, which resilient conduits lead to the interior of the clutch or brake, so as to permit movement of the conduits and brake or clutch elements while fluid is being circulated therethrough.

3,530,966
COLLECTING TOWER

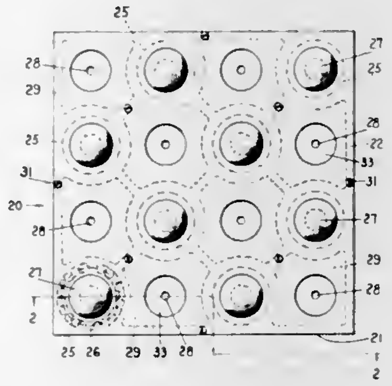
Bentley B. Mathews, Box 335, Arbuckle, Calif. 95912, and Paul T. Frentzen, Arbuckle, Calif.; said Frentzen assignor to said Mathews
Original application Aug. 28, 1967, Ser. No. 663,835. Divided and this application Mar. 26, 1969, Ser. No. 810,750
Int. Cl. B65g *11/00*
U.S. Cl. 193—29 3 Claims



A collection tower having a tubular column adapted to simultaneously receive material from a plurality of generally vertically spaced output sources. The tower is provided with a receiving chamber for each output source directed thereinto and alternatively operable baffled discharge outputs adapted to be selectively opened to direct material received in each of the chambers to any one of a number of processing stations.

3,530,967
BALL TRANSFER TILE

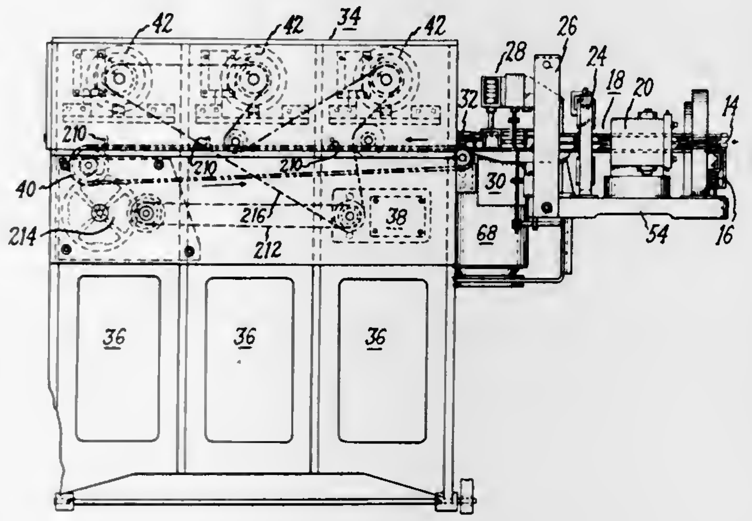
Paul S. Huber and Guthrie B. Stone, Honeoye, N.Y., assignors to Stone Conveyor Company, Inc., Honeoye, N.Y., a corporation of New York
Filed Sept. 24, 1968, Ser. No. 762,004
Int. Cl. B65g *13/00;* **F16c** *19/10*
U.S. Cl. 193—37 4 Claims



A molded tile-like housing for a plurality of plastic ball bearing transfer units which are retained for free rotation by an overlying surface plate.

3,530,968
TICKET HANDLING AND STORAGE MECHANISM ESPECIALLY USEFUL IN AUTOMATIC FARE COLLECTION SYSTEMS

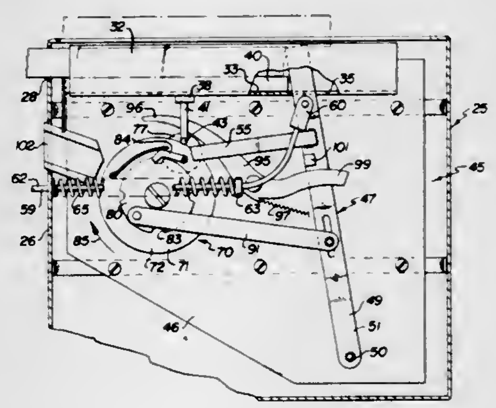
Ansell W. Palmer, Hampton, N.H., assignor to General Electric Company, a corporation of New York
Filed May 16, 1968, Ser. No. 729,615
Int. Cl. G07f *1/06*
U.S. Cl. 194—4 13 Claims



A ticket handling and storage mechanism forming part of a passenger gate in an automatic fare collection system. The mechanism includes a ticket transport device, actuated by placing a ticket in the ticket slot of the gate to transport the ticket through the mechanism. A reversing switch is provided to reverse the transport and return the ticket to the slot. A read head, a write head and a punch mechanism are provided to read the information on the ticket, to write desired information on the ticket, and to punch out portions of the ticket to indicate use of the ticket. Storage means are also included for capturing and storing reusable tickets as well as dispensing such reusable tickets. Storage is also provided to capture and discard used tickets that are not reusable.

3,530,969
COIN CONTROLLED VENDING APPARATUS WITH PLATFORM DESCENDING FOR ARTICLE EJECTION

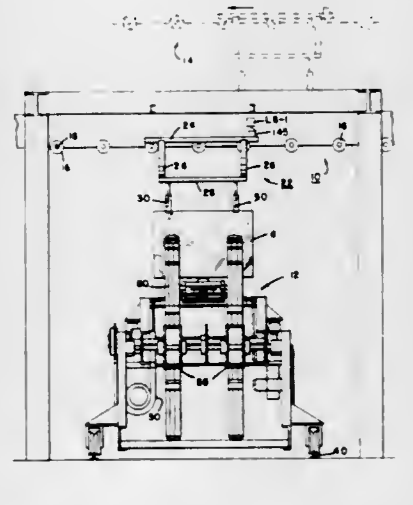
Gordon E. Sanborn, deceased, late of Coquitlam, British Columbia, Canada, by Dorothy L. Sanborn, executrix, 2834 W. 41st Ave., Vancouver, British Columbia, Canada
Filed Aug. 2, 1968, Ser. No. 749,835
Int. Cl. G07f *11/00*
U.S. Cl. 194—63 6 Claims



Vending apparatus having an article carrying platform from which articles are ejected by a manually operated fore and aft movable ejection member and a coin carrying disc operably connected to the ejection member for rotation therewith to move an obstructing member which normally prevents ejective movement of said ejection member.

3,530,970
LIFTER FOR USE WITH AUTOMATIC TONG UNLOADER

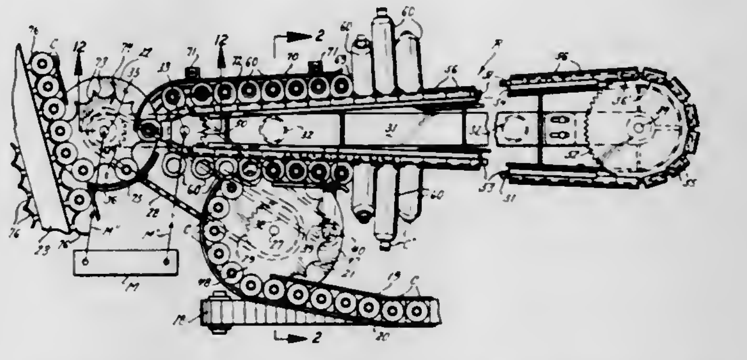
Ronald E. Richardson, Oshawa, Ontario, Gordon F. Pereman, Columbus, Ontario, and John D. Kellar and Jan G. Borremans, Oshawa, Ontario, Canada, assignors to PPG Industries, Inc., Pittsburgh, Pa.
Filed July 3, 1968, Ser. No. 742,334
Claims priority, application Canada, May 14, 1968, 019,960
Int. Cl. B65g *47/00, 15/00*
U.S. Cl. 198—20 8 Claims



The disclosure shows an apparatus for transferring a tong suspended glass sheet from a first conveyor system to a peg conveyor in a relatively gentle manner by engaging the tong suspended glass sheet at is bottom edge and then lifting the glass upwardly to relax the tongs. The relaxed tongs are then engaged and held in the relaxed position while the bottom edge supporting member lowers the glass toward the peg conveyor.

3,530,971
CONTAINER RINSING AND COMBINING APPARATUS

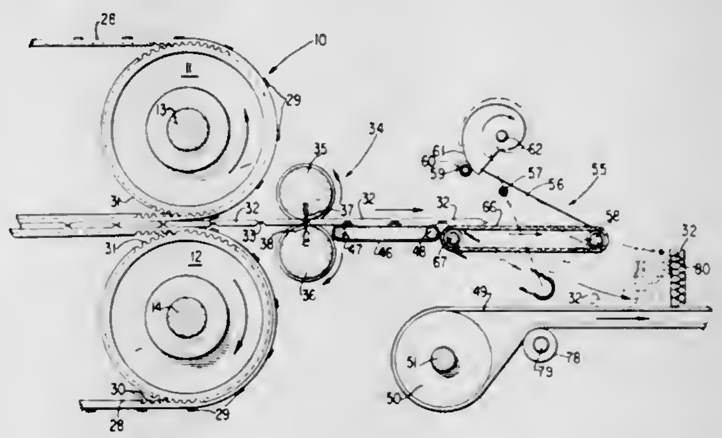
Momir Babunovic, Des Peres, Mo., assignor to Barry-Wehmiller Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 4, 1968, Ser. No. 710,141
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 9 Claims



Apparatus for handling containers at high speed and in which the containers are run through a rinsing operation prior to filling and are then combined so that several rinsing operation stations can be utilized to make up the capacity of a high speed filler. The apparatus is constructed to allow time for the rinsing phase which includes injecting draining and flinging the rinsing fluid, all in conveyors having a relatively long run that is doubled back on itself for conserving floor space.

3,530,972
APPARATUS FOR STACKING SHEETS

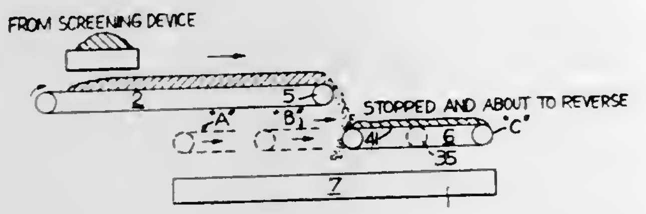
Arthur B. Erekson, Scarsdale, N.Y., assignor to Borden Inc., New York, N.Y., a corporation of New Jersey
Filed Jan. 22, 1969, Ser. No. 793,087
Int. Cl. B65g *57/112*
U.S. Cl. 198—35 6 Claims



This invention relates to apparatus for stacking continuously fed sheets on a moving conveyor comprising first conveyor means, second conveyor means, stacking apparatus interposed between said first and second conveyor means comprising a driven shaft, an arm pivotal about an axis parallel to said driven shaft, said arm having a rotatable shaft at one end thereof, an extensible belt entrained about said driven and rotatable shaft, means for pivoting said arm through predetermined arc whereby said rotatable shaft passes through a noncircular arc and with respect to said driven shaft to reach out and position said sheets in stacks on said second conveyor means.

3,530,973
FEED CONVEYING AND DISTRIBUTING APPARATUS

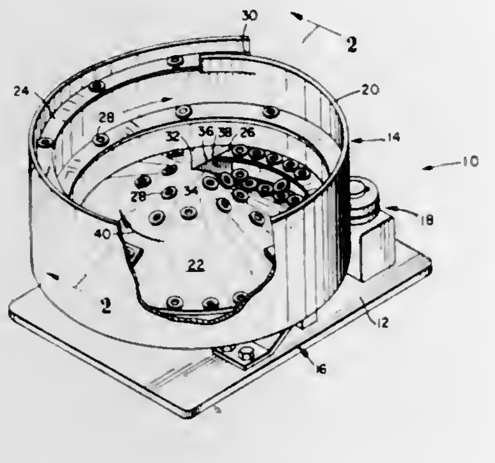
Eugene F. Rossi, Wauwautosa, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 30, 1968, Ser. No. 787,850
Int. Cl. B65g *16/22*
U.S. Cl. 198—96 **10 Claims**



An apparatus is disclosed for receiving a stream of particles or agglomerates of finely divided material from a particle size screening device, compacting mill, balling drum or balling pan, conveying the material, and distributing it across the entire width of a transport conveyor substantially wider than the stream of material, for delivery to a traveling grate preheater of furnace of a width approximately the same as the transport conveyor. The stream of material is dropped over a central portion of the transport conveyor and intercepted by shuttle conveyor that spreads the stream of material across the entire width of the transport conveyor. The shuttle conveyor is transverse to the transport conveyor and of adjustable length preferably set to be an effective length of approximately one-half the width of the transport conveyor. The shuttle conveyor reciprocates with strokes back and forth over the transport conveyor alternately discharging material first over one end thereof and then over the other end thereof but always over the end which is the leading end for the stroke then in progress. A stream of material is therefore distributed across the entire width of the transport conveyor which is wider than the stream, by the shuttle conveyor of a length only about one-half the width of the transport conveyor.

3,530,974
SPIRAL BOTTOM FEEDER BOWL

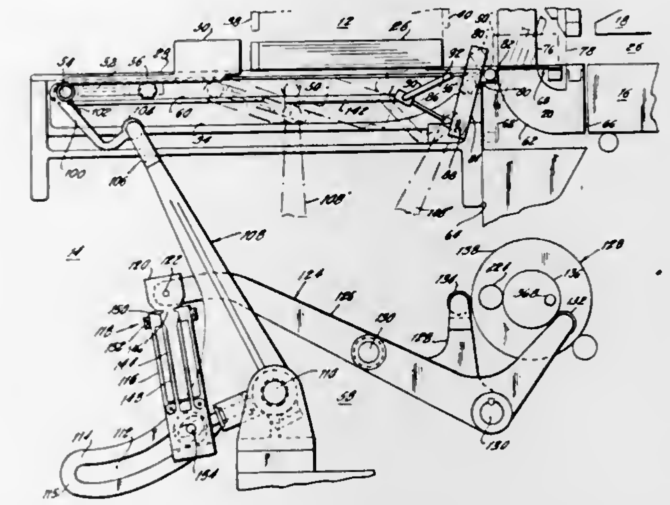
Robert P. Moore, Indianapolis, Ind., assignor to Moorfeed Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 10, 1968, Ser. No. 720,029
Int. Cl. B65g *47/24, 47/18*
U.S. Cl. 198—220 **2 Claims**



A vibratory feeder comprising a hopper bowl having a spirally formed bottom for receiving articles to be fed and oriented, a peripheral side wall, and an article-carrying track spirally inclined about the periphery of the sidewall The spiral axes of the bottom and the track may coincide and the lower end of the track merges with a portion of the upper delivery edge of the bottom. The upper surface of the bottom is preferably defined by rotating a generally straight line about the coinciding spiral axes with its proximal end coinciding with a fixed point on the axes and its distal end progressively moving axially upwardly at a uniform rate along the inner periphery of the sidewall. Also, preferably, the lower extremity of the bottom, which is defined by the starting position of the line, is approximately 300–360 degrees displaced from the upper delivery edge of the bottom. Also, preferably, such a straight line is always inclined downwardly from its proximal end, even at the upper delivery edge of the bottom, to define a spirally and conically warped bottom.

3,530,975
INPUT FEED MECHANISM FOR TRIMMER

Carl Thumim, Chicago, Nicholas Herman, Palatine, and James Des Jardins, Chicago, Ill., assignors to Miehle-Goss-Dexter, Incorporated, Chicago, Ill., a corporation of Delaware
Original application Mar. 10, 1966, Ser. No. 533,328, now Patent No. 3,424,044. Divided and this application June 13, 1968, Ser. No. 775,211
Int. Cl. B65g *25/08*
U.S. Cl. 198—222 **13 Claims**



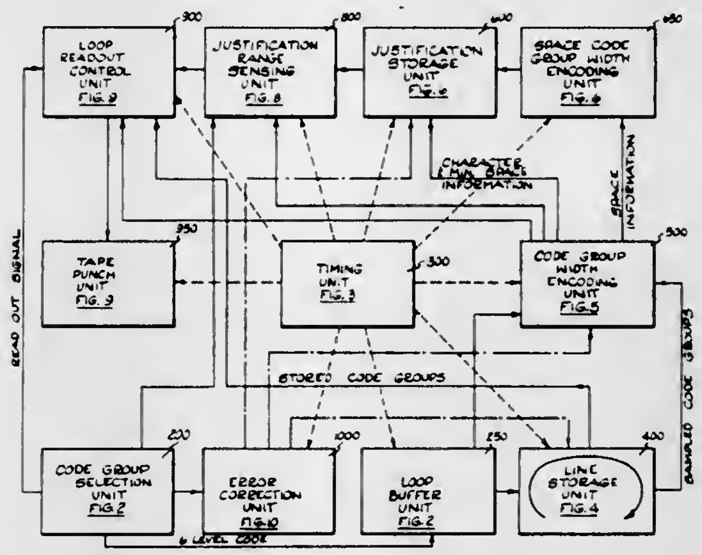
Input feed mechanism for continuous trimmer, including a pusher for moving items to be trimmed to a work location; the pusher being secured to a trolley which rides along a track; the track includes a switch that permits the pusher to engage items to be moved during the push stroke and that causes the trolley and the pusher to dip beneath the next stack of items to be pushed during the return stroke; drive means for the trolley, including a release device for releasing the trolley from the drive means when a jam up of items being pushed occurs.

3,530,976
TYPE JUSTIFICATION APPARATUS

Frank G. Higgason, Jr., Arlington Heights, Robert J. Sehnert, Palatine, and Harry E. Rueckel, Buffalo Grove, Ill., assignors to Ludlow Typograph Company, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 600,859, Dec. 12, 1966. This application July 11, 1969, Ser. No. 842,830
Int. Cl. B41b *9/06*
U.S. Cl. 199—18 **7 Claims**

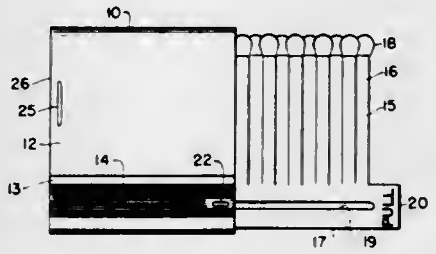
The apparatus is employed to produce justified coded information for the control of typesetting equipment in the composition of a justified line. The apparatus includes a code group selection unit wherein the particular character spaces and functional commands are selected manually by the operator in accordance with the particular textural material to be justified, the output of the code group selection unit being in the form of a binary code group. The code group is introduced into a closed

delay loop under the control of an input timing means which is synchronized to indicate the position in the delay loop of the last code group to be entered. The closed delay loop includes a delay line having sufficient capacity to store code groups representing one line of type, the output of the delay line being coupled to the input of the delay line except when code groups are being fed to and from the delay loop. As each code group is introduced into the closed delay loop, it is sampled and the sampled information is introduced into a code grop width encoding unit, which provides a width signal representative of the width of the tye matrix represented by the code group being sampled. The width signals are introduced to a justification storage unit which provides a remainder signal repersenting the width of the line unoccupied by the matrices represented by the code groups stored in the closed delay loop. The sampled code groups representing space matrices are simultaneously fed into a space code group width encoding unit which provides a space signal related to the total of the sampled spaces. The space signal is compared with the remainder signal and when the information stored in the closed delay loop is within justification range, a signal is given to the operator. Upon command from the code group selection unit, the code groups stored within the closed delay loop are read out, with code groups representing fixed space bands being added to the minimum space bands as needed for justification, and the code groups pass into a tape punch unit wherein they are used in the punching of a paper tape. The apparatus also includes an error correction unit which permits the operator to correct errors in the code groups stored in the delay loop.


LOOP READOUT CONTROL UNIT FIG. 9
900
JUSTIFICATION RANGE SENSING UNIT FIG. 8
800
JUSTIFICATION STORAGE UNIT FIG. 6
600
SPACE CODE GROUP WIDTH ENCODING UNIT FIG. 6
650
CHARACTER & MIN. SPACE INFORMATION
SPACE INFORMATION
TAPE PUNCH UNIT FIG. 9
950
TIMING UNIT FIG. 3
300
CODE GROUP WIDTH ENCODING UNIT FIG. 5
500
READ OUT SIGNAL
STORED CODE GROUPS
SAMPLED CODE GROUPS
CODE GROUP SELECTION UNIT FIG. 2
200
ERROR CORRECTION UNIT FIG. 10
1000
LOOP BUFFER UNIT FIG. 2
250
LINE STORAGE UNIT FIG. 4
400
6 LEVEL CODE

3,530,977
SAFETY MATCH PACKAGE

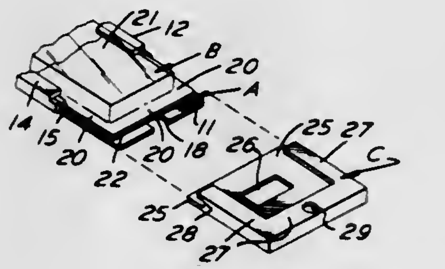
Benjamin Ungarsohn, 23—50 Oceancrest Blvd., Far Rockaway, N.Y. 11691
Filed Oct. 23, 1968, Ser. No. 770,016
Int. Cl. A24l *27/00*
U.S. Cl. 206—29 **2 Claims**



A flattened tubular cover has a paper of upstanding matches therein, the match paper being laterally slidable within the cover for match removal. An enlongated slit in the base of the match paper and an extension thereof has a fastening means extend through it and transfix the cover to limit withdrawal of the match paper and hold the cover closed.

3,530,978
DISPLAY CONTAINER

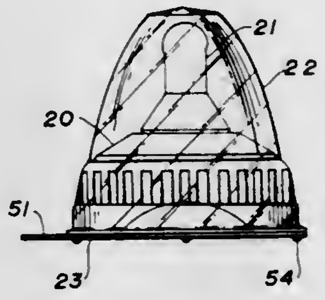
Walter A. Lewandowski, Hatboro, Pa., assignor to J. L. Popowich & Son, Philadelphia, Pa., a partnership
Filed Feb. 26, 1969, Ser. No. 802,587
Int. Cl. B65d *43/12*
U.S. Cl. 206—45.34 **2 Claims**



A display container for elongated articles such as watch bands, bracelets and the like is assembled from three sections. These include a lower housing, a transparent upper housing and a removable end cap. The upper housing is, in effect, an open backed container for the item to be displayed and it mounts on the lower housing which serves as its back. The end cap completes the assembly and prevents displacement of the upper housing with respect to the lower housing. Mounting of the upper housing on the lower housing is accomplished by providing one of the members with a retention slot and the other member with a shouldered portion which is slideably retained in the slot. The end cap also contains a retention slot so that it can slideably mount on the assembled housings. It is preferable to provide the end cap and lower housing with cooperating resilient detent means for fixing one with respect to the other.

3,530,979
NIPPLE ASSEMBLY

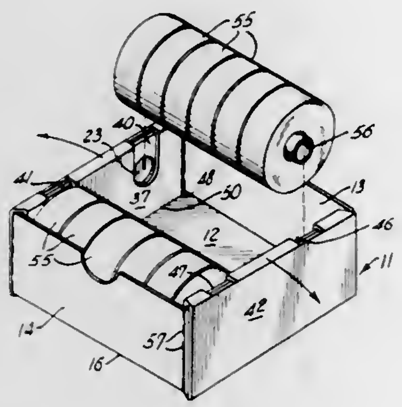
Ralph K. Merrill, Jr., and Richard W. Jarman, Fremont, Mich., assignors to Gerber Products Company, Fremont, Mich.
Filed Feb. 16, 1967, Ser. No. 616,592
Int. Cl. A61j *11/02, 11/04;* **B65d** *85/54*
U.S. Cl. 206—46 **6 Claims**



A nursing nipple assembly having a screw cap carrying a nipple received within a protective cover which may be closed by a closure. The cap and the cover have interlocking splines which permit the cap to be screwed onto a jar of baby formula without removal of the cap from the cover. The cap, cover, and closure have internal projections which permit sterilizing bath water to enter the assembly and then to drain out upon removal of the assembly from the bath.

3,530,980
PACKAGE

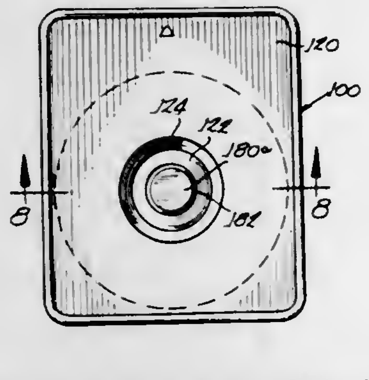
Martin Link, North Brunswick, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Sept. 20, 1968, Ser. No. 761,276
Int. Cl. B65d *85/04*
U.S. Cl. 206—52 **9 Claims**



A package for shipping, storing and dispensing rolls of sheet material mounted on elongated spindles is made from a single blank and comprises a bottom portion, two opposed side portions integral with the bottom portion and two opposed end portions formed from inwardly turned flaps which are extensions of the side portions and from locking members which are extensions of the bottom portion and are wrapped upwardly and downwardly around the flaps. The flaps have spindle receiving apertures therethrough and the downwardly extending portions of the locking members have spindle guiding slots therethrough for guiding the spindle into the apertures.

3,530,981
RECORD MAILER

Louis G. Wienecke, Jr., Mission, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1968, Ser. No. 786,997
Int. Cl. B65d *85/30, 43/10*
U.S. Cl. 206—62 **9 Claims**

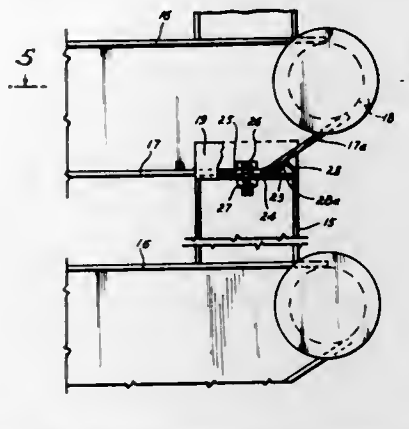


A container having a tapered spindle inside on which a fragile flat article such as a phonograph record may be impaled and held securely by the friction between the article and the wall of the spindle.

3,530,982
ASSEMBLY OF COLLAPSED BUILDINGS FOR SHIPPING

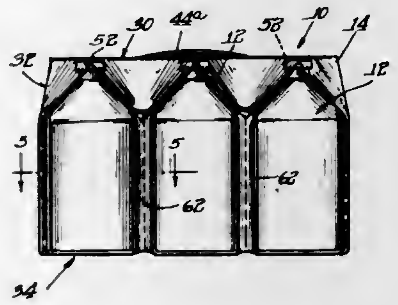
Floyd E. Bigelow, Jr., P.O. Box 7064, Houston, Tex. 77008
Filed July 1, 1968, Ser. No. 741,440
Int. Cl. B65d *7/28, 21/02, 71/00*
U.S. Cl. 206—65 **6 Claims**

This patent discloses a system for shipping collapsed, stacked buildings. A plurality of stacking racks extend upwardly from skids above the level of the walls and roof when in collapsed position. The skid of an upper building is bolted to the stacking rack of a lower building. A wedge member on the stacking racks and a complementary surface on the skids translate any relative horizontal movement between stacked buildings to vertical movement to place the securing bolts in tension and prevent shifting of the buildings.



3,530,983
CONTAINER CARRIER

Herbert Jourdan Wanderer, Elmhurst, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 22, 1968, Ser. No. 754,688
Int. Cl. B65d *71/00, 75/56*
U.S. Cl. 206—65 **7 Claims**

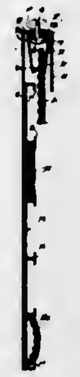


A carrier device formed of a single sheet of resilient, flexible plastic material for accommodating a group of containers arranged in a predetermined pattern, comprising a center, a planar section adapted to engage first ends of the containers, a pair of side, planar sections adapted to be extended along opposite sides of the group of containers and each including a plurality of cut-outs therein, each of the cut-outs being dimensioned to receive snugly therein, a side portion of one of the containers of the group, and a pair of interconnected, planar sections, each of which is in turn connected to a respective one of the side planar sections, and is adapted to engage the second ends of the containers, thereby to secure the containers within the carrier device.

3,530,984
PORTABLE DISPLAY DEVICES

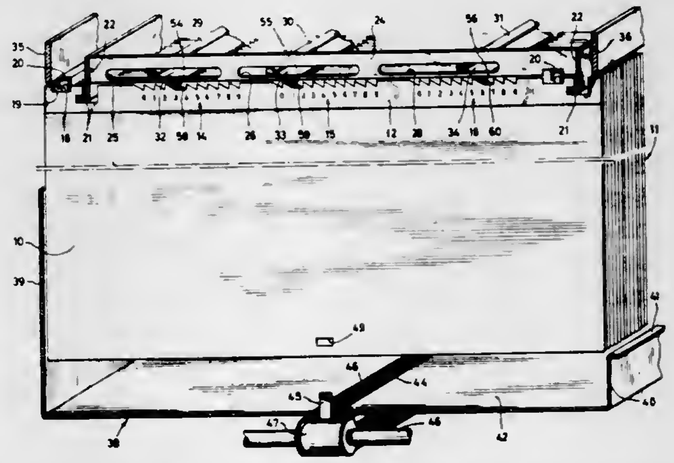
Fred Howard, New York, N.Y., assignor to Howard Displays, Inc., New York, N.Y., a corporation of New York
Filed Dec. 13, 1968, Ser. No. 783,647
Int. Cl. A44h *7/00*
U.S. Cl. 206—82 **9 Claims**

The display and carrying device for carpet and like flat material samples according to the present invention is characterized by a plate member, which is provided with retainer means for clampingly withholding relatively small samples of carpet products, a hollow clamp body, which terminates in a substantially flat wall at one end and in cooperable clip means at the opposite end, which is spaced from said plate member sufficient so that a relatively larger piece of carpet sample when held in said clip means overlies said small carpet samples on said plate member. The flat wall of said clamp body has a plurality of spaced perforations passing through said flat wall. A relatively stiff suspension member is further provided which has pliable legs which terminate in profiled end pieces, shaped to abut against the inner face of the flat end wall of the clamp body, when said end pieces are threaded through said perforations of said clamp body, thereby to facilitate support of the device from said suspension member.



3,530,985
RECORD SELECTOR

Heinz-Hermann Voss, 91–93 Moses Hess St., 5 Cologne-Stammheim, Germany, and Hans Bringer, Junkersdorf, Germany; said Bringer assignor to said Heinz-Hermann Voss
Filed July 31, 1968, Ser. No. 749,053
Int. Cl. B07c *3/10*
U.S. Cl. 209—80.5 **12 Claims**

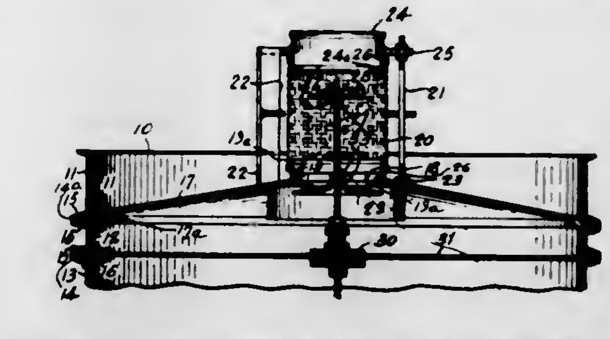


A stack of record carriers, such as file cards are each held at one edge in a rack. Each file card has a spring at its edge which extends into a U-shaped rod which runs longitudinally along the stack. A first selecting and shifting mechanism displaces the selected card laterally with respect to the stack, through the cooperation of the spring. A second shifting mechanism operates transversely to the first and pushes the selected card a greater distance out of the stack sufficient to be engaged by a moving tappet for full withdrawal.

3,530,986
SCREEN APPARATUS

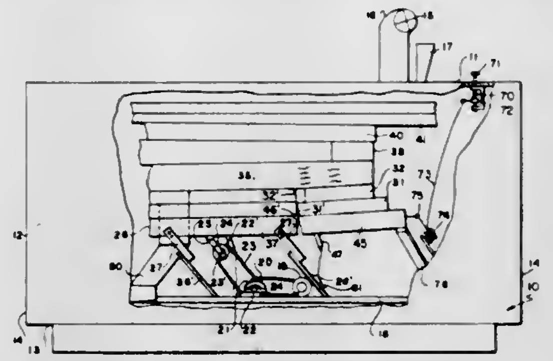
John L. More, Montreal, Quebec, and Flor Kat, La Salle, Quebec, Canada, assignors to Separator Engineering Ltd., Montreal, Quebec, Canada
Filed Apr. 24, 1967, Ser. No. 632,997
Claims priority, application Canada, May 4, 1966, 959,590
Int. Cl. B07b *1/28, 1/38, 1/42*
U.S. Cl. 209—234 **5 Claims**

A screening apparatus of the type in which the screen makes vibratory and gyratory motions employing such a vertically extending tubular screen alone or in combination with such a horizontally extending screen, and means within the vertical tubular screen and carried thereby for laterally deflecting material flowing down through the vertical screen to impinge the material against the inner surface of the vertical screen.



3,530,987
AIR FLOTATION SEPARATOR

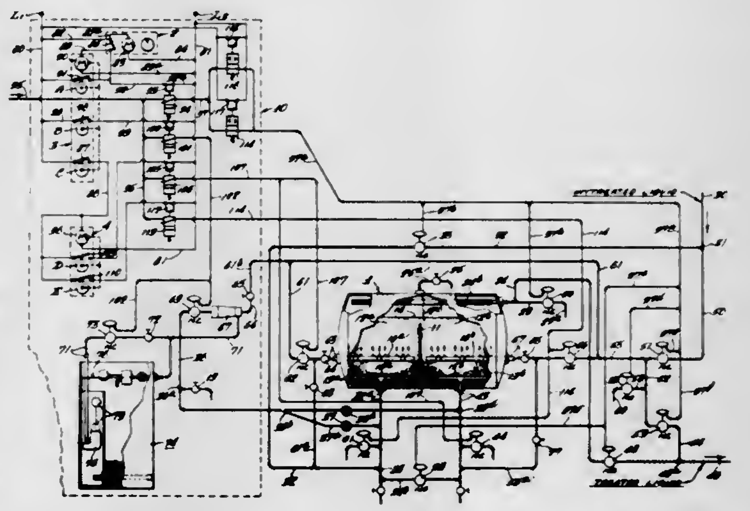
Robert A. Kipp, 8 Fulham Ave., Winnipeg 9, Manitoba, Canada
Continuation-in-part of application Ser. No. 712,054, Mar. 11, 1968. This application July 29, 1968, Ser. No. 748,520
Int. Cl. B03b *3/12, 3/34*
U.S. Cl. 209—467 **19 Claims**



An air flotation machine having a shaker frame suspended by a flexible rubber web or the like with a removable screen assembly being held in the frame by upward spring pressure and having the discharge end of the screen assembly adjustable in inclination within limits to control the contaminant discharge characteristics.

3,530,988
MEANS FOR PREVENTING CONTAMINATION OF TREATED LIQUIDS

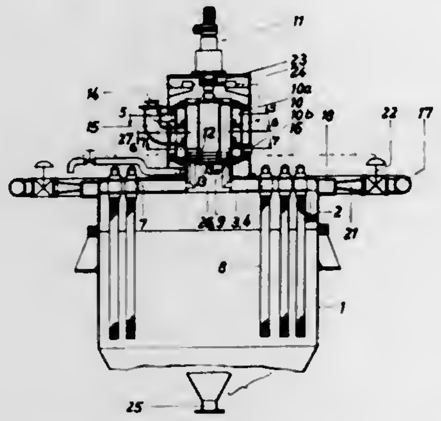
Frank J. Smith, 7352 Limekiln Pike, Philadelphia, Pa. 19138
Filed Mar. 14, 1969, Ser. No. 807,392
Int. Cl. B01d *29/08*
U.S. Cl. 210—130 **11 Claims**



For liquid treating apparatus having an untreated backwash liquid conduit leading into the apparatus connected by an untreated liquid by-pass conduit to a treated liquid conduit leading from the apparatus, the improvement to prevent passage of contaminating leakage into either the backwash conduit or the by-pass conduit, said improvement including spaced normally closed valves in the conduits and means for venting the conduits between said valves in the conduits to prevent pressure buildup with resultant flow of contaminant into treated liquid.

3,530,989
FILTER APPARATUS FOR GASEOUS LIQUID

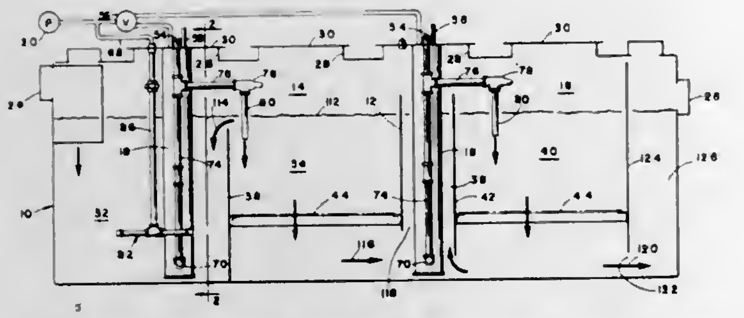
Hermann Koethke, Westphalia, Germany, assignor to H. Putsch & Comp., Hagen, Westphalia, Germany, a corporation of Germany
Filed Jan. 9, 1967, Ser. No. 607,938
Int. Cl. B01d *29/30*
U.S. Cl. 210—188 11 Claims



A thickening filter having a housing defining a closed reservoir to the upper end of which turbid liquid is introduced radially under sufficient pressure to move gas along a path leading to a gas collector provided at the upper end of the reservoir. The liquid may be introduced peripherally or centrally of the reservoir and the gas collected centrally or peripherally, respectively, thereof. The introduction of liquid may be circumferential or may proceed in angular stages. Atop the reservoir is a plurality of separate, segment shaped chambers and atop the chambers is a cover. Filter candles extend through the cover and the chambers into the reservoir for the transfer of liquid between the latter and the chambers, but are accessible from outside the cover.

3,530,990
SEWAGE TREATMENT SYSTEM

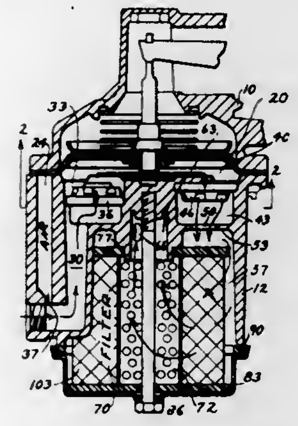
Derald E. Grimshaw, Denver, Colo., assignor to Environmental Services, Inc., York, Pa.
Filed May 8, 1969, Ser. No. 822,912
Int. Cl. C02c *1/12*
U.S. Cl. 210—199 16 Claims



A sewage treatment system comprising a tank arrangement having one or more primary compartments, separated by baffles for restricted passage of liquid therebetween, each primary compartment having a sub-compartment therein provided with a sludge retaining screen, each primary compartment having a pneumatic circulator unit therein operable to receive a segregated quantity of influent to be treated, said unit having a sparger therein connected to a power operated air compressor and operable to super-saturate segregated quantities of influent with air and discharging such super-saturated quantities into the sub-compartment of each primary compartment for accelerated promotion of bacteria within the system and thereby expedite the treatment of sewage to reduce the B.O.D. thereof to an acceptable limit.

3,530,991
FILTER AND PULSATOR FUEL PUMPS

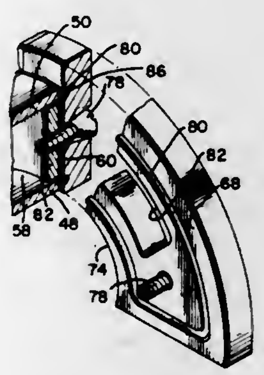
Claude F. Phillips, Fairfield, Ill., assignor to Airtex Products, Division of United Industrial Syndicate, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 566,504, July 20, 1966. This application May 29, 1969, Ser. No. 833,856
Int. Cl. B01d *35/26*
U.S. Cl. 210—349 3 Claims



This invention relates to fuel pumps and more particularly to fuel pumps having pulsator chambers and filter chambers and being of compact and simple construction and high efficiency in pumping performance and one which can be easily assembled or disassembled for repair purposes. The structure contemplates a combination of elements wherein a pulsator chamber is provided for a fuel pump inlet in combination with a filter of commercial material having a pleated construction. The efficiency of the pump is enhanced by use of a restricted opening between the inlet passage and a pulsator chamber. An outlet pulsator chamber is provided which is effected by enlargement of the filter chamber, either in the pump body casting or by provision of a domed closure cover over the filter chamber.

3,530,992
ROTARY DRUM FILTER

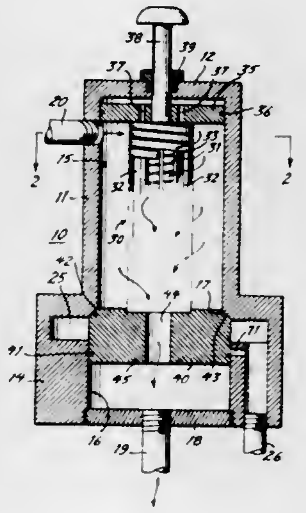
Ralph W. Turner, Jr., Nashua, N.H., assignor to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Feb. 5, 1969, Ser. No. 796,700
Int. Cl. B01d *35/12*
U.S. Cl. 210—392 9 Claims



A rotary drum filter comprising a rotatable drum having generally longitudinally extending filtrate compartments along its periphery. The filtrate compartments include juxtaposed open ends; and the filter has a rotary filter cycle including an arcuate portion during which subatmospheric pressure is applied through such open ends to the compartments for filter cake accretion and an arcuate portion during which the subatmospheric pressure is cut off from the compartments. The application of the subatmosheric pressure is controlled by a nonrotatable or stationary valving assembly which includes plate elements resiliently biased into sliding engagement with the drum at the open ends of the filtrate compartments.

3,530,993
STRAINER VALVES

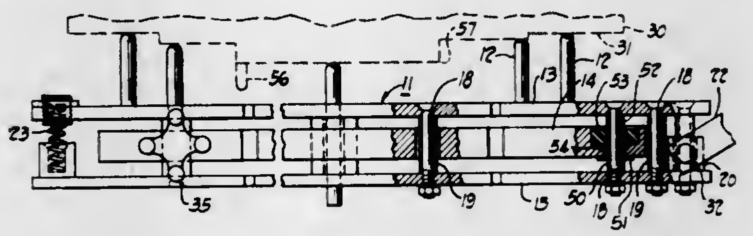
Garland L. Fulton, 1428 Woodford Drive, Wayne, Pa. 19087
Filed Sept. 19, 1968, Ser. No. 760,819
Int. Cl. B01d *29/38*
U.S. Cl. 210—411 9 Claims



A strainer valve having a housing with aligned bores, a contaminated fluid supply connection, a clean fluid delivery connection and a flushing discharge connection. The housing has a strainer therein with a disc at one end and a valve plug at the other. The strainer is movable from a fluid particle separating or straining position to a position for back flushing in the opposite direction through the strainers. The valves may be connected in parallel for increased capacity. Flushing may be by clean fluid, the contaminated fluid or by an auxiliary fluid.

3,530,994
CORE RECEIVER TABLE

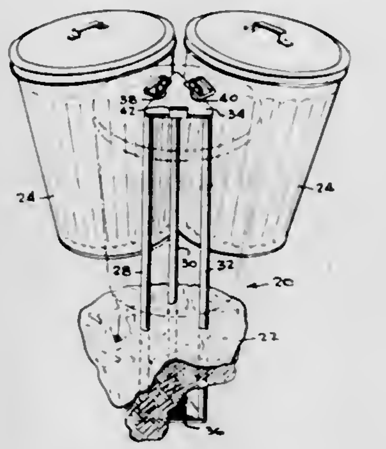
Hugh A. Bourassa, University Heights, Arthur H. Emser, Mentor, and Edward J. Ptak, Cleveland, Ohio, assignors to Acme-Cleveland Corporation, a corporation of Ohio
Filed July 23, 1968, Ser. No. 746,887
Int. Cl. B22c *19/02*
U.S. Cl. 211—13 21 Claims



A core receiver table to receive a core or mold having a variable contour and which is easily damaged. The table carries a plurality of upstanding fingers which have a small frictional force to permit their being readily moved to conform to the irregular contour of any such core. Hand wheels turn screws to relatively move two supports in the table and this frictionally binds the fingers in a located position. This frictional binding compresses elastic rubber sleeves to establish a yielding frictional force binding the fingers. Thereafter the table may be raised and lowered to receive successive cores with the fingers precisely positioned to receive these cores.

3,530,995
TRASH CAN SUPPORT STAND ASSEMBLY

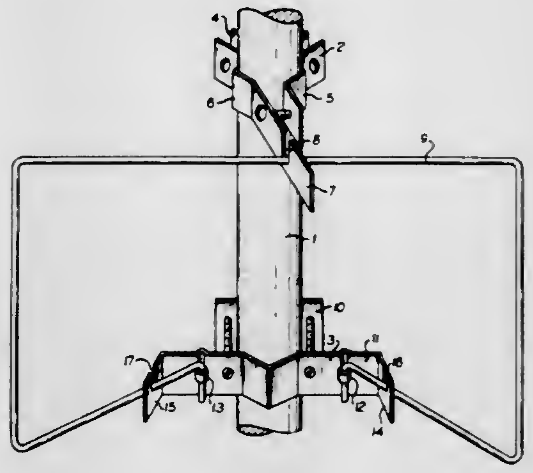
Woodrow F. Tremper, 5601 Rolling Road, Springfield, Va. 22151
Filed Oct. 24, 1968, Ser. No. 770,355
Int. Cl. B65f *1/00*
U.S. Cl. 211—71 2 Claims



A support for garbage cans formed with three vertical rods connected at their upper and lower ends by triangular connector plates at the corners of the plates with the upper connector plate having three upwardly extending tabs forming hooks each positioned on one edge at the middle of one of the sides of the triangular plate and over which the handles of three garbage cans can be fitted independently and individually with the bases of the cans being positionable against the two rods between which their respective hooks are positioned equidistantly.

3,530,996
DISPLAY SUPPORT STRUCTURE

Howard C. Schaffer, East Rockaway, N.Y., assignor to I. Fenster & Sons, Inc., Brooklyn, N.Y., a corporation
Filed Aug. 19, 1968, Ser. No. 753,376
Int. Cl. A47f *5/08;* **F16m** *13/02*
U.S. Cl. 211—107 1 Claim

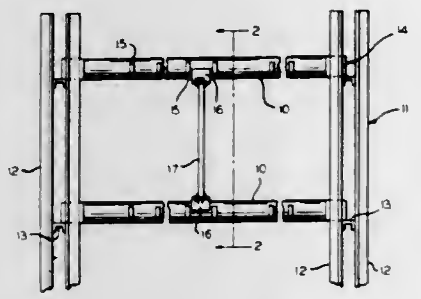


A display support structure comprising a wiretype frame, a lower clamp, and an upper clamp. The lower clamp is made up of a base bar having transverse receptacles for holding the wire ends and angularly disposed brackets with transverse slots therein through which the wire passes. The upper clamp has a single transverse slot to support an opposite portion of the wire frame.

3,530,997

RACK MODIFYING DIVIDER TYPE SUPPORT BRACKETS

Richard C. Djorup, P.O. Box 70, Thiensville, Wis. 53092
Filed July 8, 1968, Ser. No. 743,104
Int. Cl. A47f *5/00*
U.S. Cl. 211—184 **4 Claims**

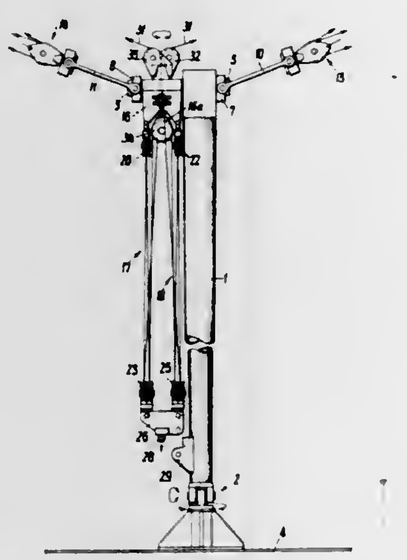


Storage racks equipped for use with rack modifying divider type support brackets, said brackets extending vertically between cross-members with the ends thereof conforming to the outer peripheral surface of the cross-members and fitting within guide means on the cross-members.

3,530,998

CARGO LOADING DEVICE

Heinz Ferdinand Johannes Sprengel, Hamburg, Germany, assignor to Blohm & Voss A.G., Hamburg-Steinwerder, Germany, a company of Germany
Filed Mar. 21, 1968, Ser. No. 714,962
Claims priority, application Germany, Sept. 30, 1967, B 94,755
Int. Cl. B66c *23/52*
U.S. Cl. 212—3 **2 Claims**

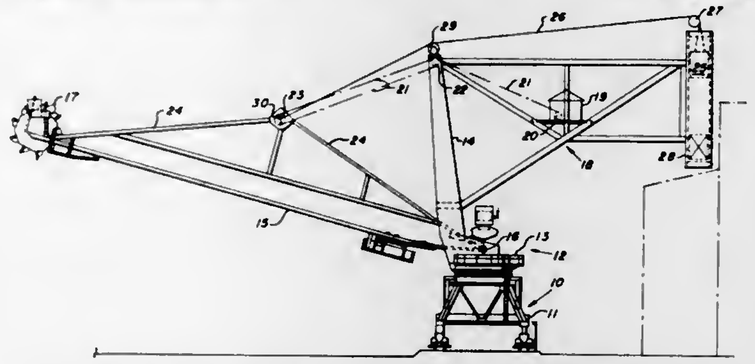


Ship's loading apparatus having a cargo boom which is pivotally mounted on a deck and is capable of swinging having a head pin at its upper end arranged transversely to its longitudinal axis which is provided with a swivel engaged by hanger tackle on both sides and including a block whip carried on the head pin at one side of the boom on which a pair of tackle parts are arranged and which respectively embody upper and lower cargo blocks, the latter being connected together for handling a heavy cargo load by a cross member provided with a swivel eye to which said load is connected or being connected to a fixed holder supported near the lower end of the boom when lighter cargo load is to be shifted in which event one of the two lower cargo blocks is disconnected from the cross member and connected to the lighter cargo load.

3,530,999

SAFETY DEVICE FOR MATERIALS HANDLING STRUCTURES

Laimons Naruns, Pittsburgh, Pa., assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 1, 1967, Ser. No. 687,227
Int. Cl. B66c *23/72;* **E02f** *3/18*
U.S. Cl. 212—49 **4 Claims**

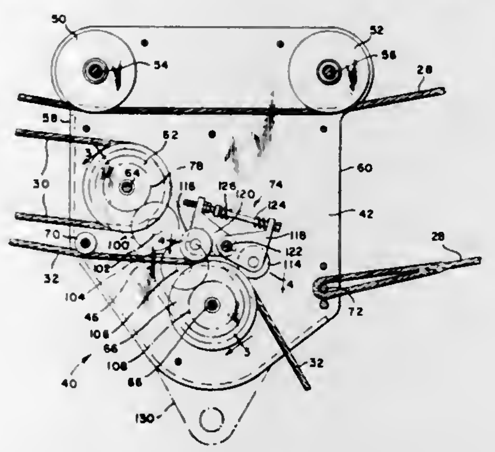


This invention relates to material handling structures having a mobile carriage with a turntable, a mast on the turntable, a boom mounted on the mast for movements in elevation, an outrigger structure mounted on the mast diametrically opposite the boom and a moveable counterweight suspended from the outrigger and connected to the boom to maintain a constant lifting force on the boom.

3,531,000

SCAB LINE CARRIAGE SYSTEM METHOD AND APPARATUS

David G. Rennie, Burnaby, British Columbia, and Maurice J. McIntyre, Coquitlam, New Westminister, British Columbia, Canada, assignors to Skagit Corporation, Sedro-Woolley, Wash., a corporation of Washington
Continuation-in-part of application Ser. No. 618,022, Feb. 23, 1967. This application Jan. 18, 1968, Ser. No. 698,826
Int. Cl. B66c *21/00*
U.S. Cl. 212—89 **4 Claims**



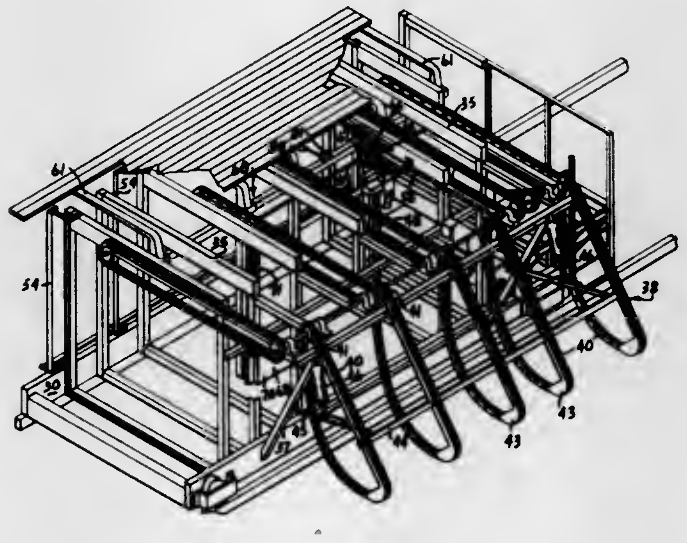
A system for yarding logs wherein a running skyline is rigged between a yarding tower and an outlying tail block. A suspension carriage rides on the running skyline and receives a two-part main line. A load line attaches to one part of the main line and extends over a load line sheave. The main line sheave and load line sheave are mechanically interconnected through a clutch and gear train so that the suspension carriage pulls slack in the load line.

3,531,001

LUMBER SORTING AND STACKING APPARATUS

Sidney L. Lunden, Spokane, Wash., assignor to Moore-Iem, Inc., Spokane, Wash., a corporation of Washington
Filed Nov. 12, 1968, Ser. No. 774,827
Int. Cl. B65g *57/10*
U.S. Cl. 214—6 **7 Claims**

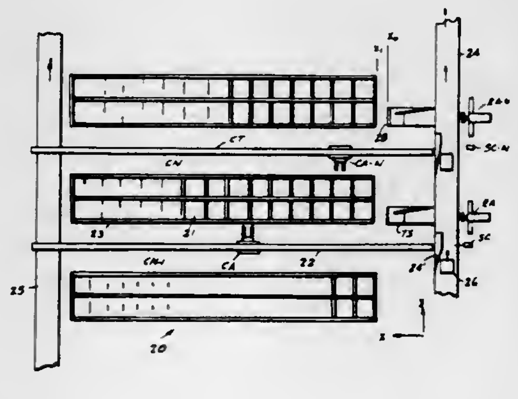
A sorting and stacking apparatus is disclosed having an elongated sorting device for sorting various size boards into a plurality of bins. A movable stacking device is mounted on tracks that run along side the bins for removing the boards from the bins, forming layers of boards and stacking the boards opposite the bins in orderly stacks. The movable stacking device has an extendable conveyor means for removing the boards from the bins and moving the boards onto the movable stacker. A forked layer support means moves forward to move a layer in front of stripping means and then lowers the layer onto the stack. The movable stacking device has a sensing device to determine when the layer is approaching the top of the stack to operate a drive means to pull the forked lumber support means back between the stripping means to deposit the layer on the stack. A further drive means drives the movable stacking device to bins selected by an operator.



3,531,002

AUTOMATIC STORAGE APPARATUS

Jerome H. Lemelson, Metuchen, N.J., assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Application Dec. 19, 1968, Ser. No. 785,868, which is a continuation of application Ser. No. 468,418, June 30, 1965, which in turn is a division of application Ser. No. 219,357, Aug. 13, 1962. Divided and this application July 15, 1969, Ser. No. 841,881
Int. Cl. B65g *47/00*
U.S. Cl. 214—16.4 **1 Claim**

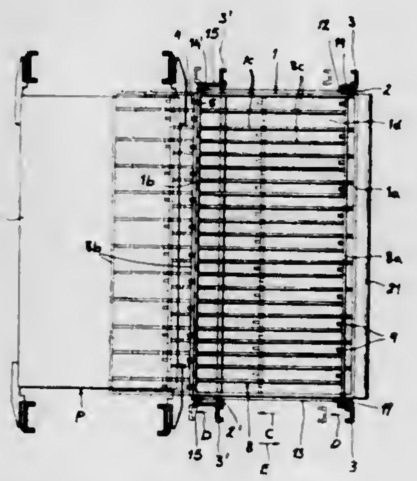


An automatic warehouse system has a plurality of storage racks arranged along suitable aisles in vertical and horizontal rows. A carrier moves along one of the aisles and is adapted to pick up an incoming load and deposit it in any selected position in the storage rack, or to remove a load from the storage rack and deliver the same to a discharge zone. One form of the invention involves discharge conveyors running parallel to the aisles of the storage rack system.

3,531,003

LOADING MECHANISM FOR MULTI-PLATEN HOT-PRESS

Seiho Kaji, Chita-gun, Japan, assignor to Kabushiki-kaisha Meiki Seisakusho, Shioiri-cho, Mizuho-ku, Nagoya, Japan, a corporation of Japan
Filed Sept. 16, 1968, Ser. No. 762,240
Claims priority, application Japan, Sept. 16, 1967, 42/59,293
Int. Cl. B65g *47/00*
U.S. Cl. 214—16.6 **10 Claims**

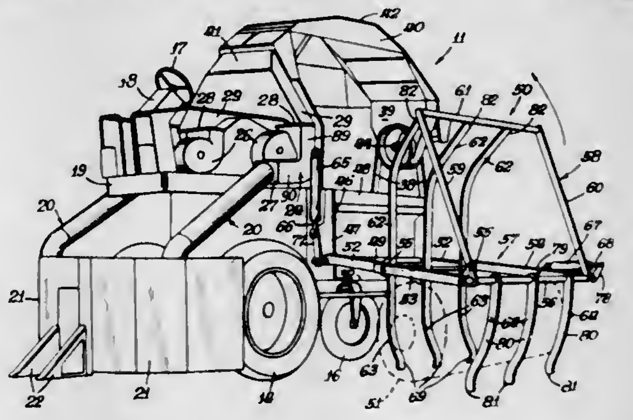


A system for the simultaneous charging of a multi-platen or multilevel press in which a charging rack is disposed adjacent the input side of the press and is provided with a number of fixed trays corresponding to the number of platens of the press. Each of the fixed trays cooperates with a movable tray therebelow so that the movable tray has an abutment overlying the fixed tray whereby a sheet-like body to be compressed is deposited upon a stationary tray, is advanced into the press on the movable tray upon reciprocation thereof, and is pushed off the movable tray during its retraction by engagement of the trailing edge of the sheet with the leading-edge abutment of the stationary tray. The charging rack may itself be movable toward and away from the press so as to position the leading edges of the stationary plates at the desired locations with respect to the platens, thereby accurately locating the sheets within the press.

3,531,004

CROP HARVESTER HAVING REMOVABLE CROP CONTAINER

Edward M. Gaul, Naperville, Ill., and Richard R. Steingas, Memphis, Tenn., assignors to International Harvester Company, a corporation of Delaware
Original application Oct. 22, 1965, Ser. No. 501,065, now Patent No. 3,466,857, dated Sept. 6, 1969. Divided and this application Apr. 18, 1969, Ser. No. 817,507
Int. Cl. B60p *1/48*
U.S. Cl. 214—147 **9 Claims**



A cotton harvester having a support removably mounting a receptacle on the harvester, and a cradle mechanism on the support for removing a filled receptacle and installing an empty receptacle in its place.

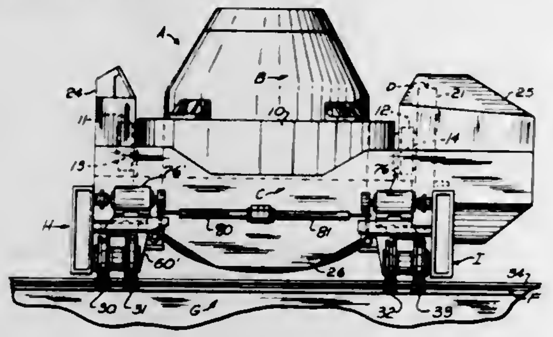
3,531,005
METHOD OF TRANSPORTING A STEELMAKING FURNACE

Ross B. McCready, Alliance, and Klaus W. Forster, Brecksville, Ohio, assignors, by mesne assignments, to The Alliance Machine Company, Alliance, Ohio, a corporation of Ohio

Application July 25, 1966, Ser. No. 567,721, now Patent No. 3,469,832, dated Sept. 30, 1969, which is a continuation-in-part of application Ser. No. 514,321, Dec. 16, 1965. Divided and this application Feb. 5, 1969, Ser. No. 840,548

Int. Cl. B61f *5/00;* **B61k** *5/02*

U.S. Cl. 214—152 2 Claims

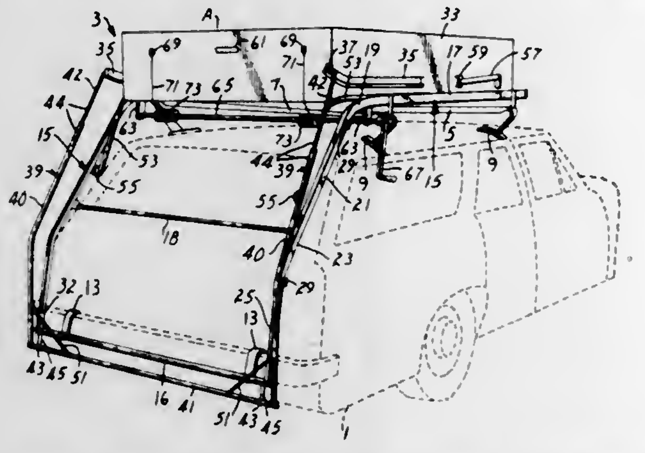


An apparatus for making steel by the basic oxygen process wherein the furnace includes a plurality of wheeled trucks for facilitating movement to and from normal operating or blowing position for such operation as charging, pouring, servicing, etc.

3,531,006
CARTOP CARRIER

Roy H. Farchmin, 2106 Scenic Place,
St. Paul, Minn. 55119
Filed Jan. 23, 1969, Ser. No. 793,367
Int. Cl. B60r *9/08*

U.S. Cl. 214—450 6 Claims



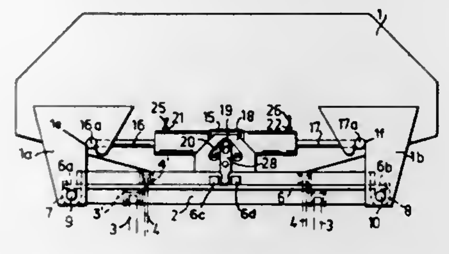
A cartop carrier having a cargo carrying rack which is moveable in a controlled manner between a transit position atop the car and a ground, takeoff position, the forward end of the rack being guided by a pair of primary tracks mounted on the car and rollers which engage such track, the rear end being guided by a pair of secondary or auxiliary tracks mounted on the sides of the rack in each of which slides a roller terminated radius arm pivoted from a position near the bumper line of the vehicle.

3,531,007
SIDE DUMP BUCKET ARRANGEMENT

Tage Nils Wilhelm Leijon, Sturevagen 18,
Stocksund, Sweden
Filed Oct. 3, 1968, Ser. No. 764,746
Claims priority, application Sweden, Sept. 20, 1968, 12,706/68
Int. Cl. E02f *3/70*

U.S. Cl. 214—768 5 Claims

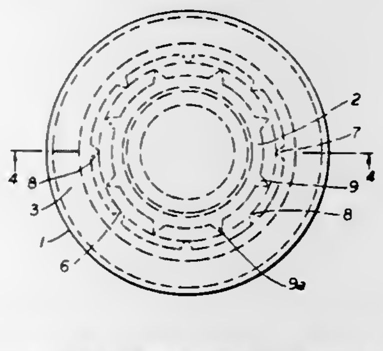
A side dumping bucket arrangement in which a single actuating means progressively unlocks one side of the bucket and then pivots the bucket about the locked opposite sid for dumping. The actuating means may be actuated in either lateral direction to selectively dump on either side.



3,531,008
SAFETY CLOSURES FOR CONTAINERS

Oscar R. Achabal, Edward Schmidt, and Miroslav Urochevich, Hamilton County, Ohio (all of 2230 Kroger Bldg., 1014 Vine St., Cincinnati, Ohio 45202)
Filed Jan. 2, 1969, Ser. No. 797,316
Int. Cl. A61j *1/00;* **B25d** *55/02*

U.S. Cl. 215—9 18 Claims

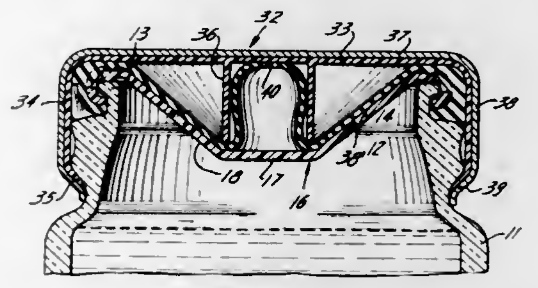


This invention discloses a safety closure means for containers having threaded or rotatable sealing caps. It comprises an inner sealing cap and an outer cap adapted to longitudinal movement in relation to the sealing cap adapted to be rotated independent of the sealing cap, and to be rotated together as a unit with the sealing cap during removal or replacing the sealing cap on the containers; together with radial projecting means to inhibit the separation of the outer cap from the sealing cap during pushing and pulling action to position the outer cap longitudinally in relation to the sealing cap.

3,531,009
CAP ASSEMBLY FOR INSTANT FEEDER

Sidney Saperstein, Hartsdale, N.Y., assignor to Borden Inc., New York, N.Y., a corporation of New Jersey
Filed Jan. 21, 1969, Ser. No. 792,532
Int. Cl. A61j *9/08*

U.S. Cl. 215—11 6 Claims

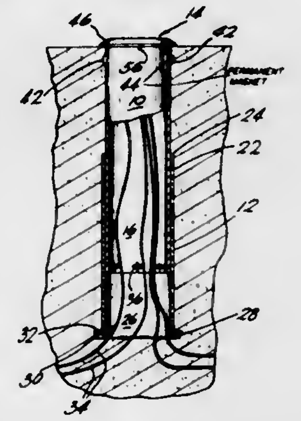


This invention relates to a cap assembly for a liquid containing vessel having an open mouth with a rim comprising an insert overlying said mouth, first and second apertures deposed in said insert, a flexible nipple overlying said insert, a cylindrical cover overlying said nipple and first and second sealing means deposed on said insert and second nipple respectively to preclude the entry of contaminants.

3,531,010
UNDERGROUND SERVICE WIRE ENCLOSURE

Harold E. Handley, Frank J. Perry, and Richard L. Bunnell, Jackson, Mich., assignors to Handley Industries, Inc., Jackson, Mich., a corporation of Michigan
Filed Dec. 11, 1968, Ser. No. 782,941
Int. Cl. H02g *9/10*

U.S. Cl. 220—40 1 Claim

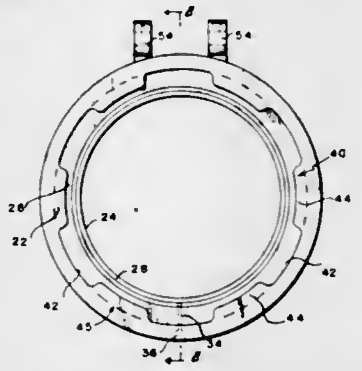


An underground service wire enclosure of a relatively inert material consisting of telescopingly assembled upper and lower housing portions utilizing a cap to enclose the upper end of the enclosure, and the lower end being open for receiving subterranean service wires.

3,531,011
LATCH SECURING MEANS FOR A CONTAINER

Russell C. Wolfe, Baltimore, Md., assignor to Dixie Manufacturing Company, Inc., Baltimore, Md., a corporation of Maryland
Filed Dec. 18, 1968, Ser. No. 784,755
Int. Cl. B65d *41/06*

U.S. Cl. 220—40 3 Claims



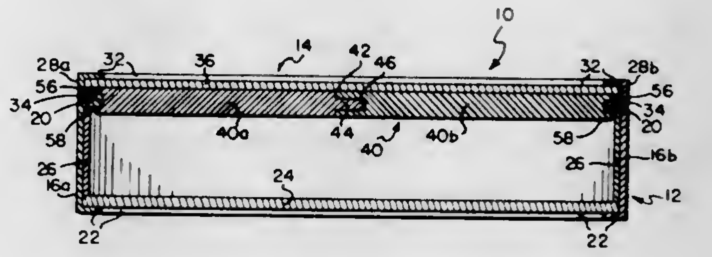
Securing means for an enclosure including a vessel with a hinged door thereon with said door having a plurality of lug means in the outer periphery thereof so that the door can be closed and the lug means can be rotated so as to provide a breeching or bayonet type action, without the usual wedge type configuration, and in which the door is provided with substantially flat opposing sides and liquid tight sealing means embodied in the vessel, including a continuous groove means adjacent one side of the door when it is in a closed position, with resilient sealing means therein, and means for supplying fluid pressure against the sealing means so that the sealing means is forced against said door side to provide a liquid tight seal.

3,531,012
SLIDING LID BOX CONSTRUCTION

George G. Bergh and Robert G. Bergh, North Attleboro, Mass., assignors to Bergh Bros. Co., Inc., Attleboro Falls, Mass., a corporation of Massachusetts
Filed Dec. 31, 1968, Ser. No. 788,251
Int. Cl. B65d *43/20*

U.S. Cl. 220—41 9 Claims

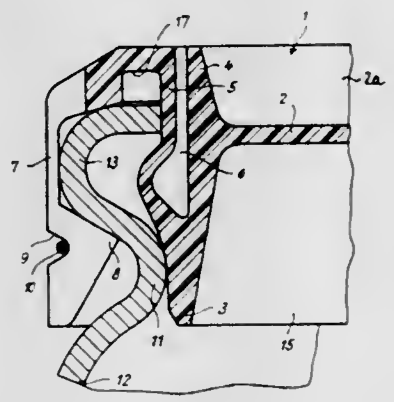
A box construction including a base covered by a lid. The lid, which may be slid in either of two directions in order to expose selected portions of the box interior, is slidably connected to an underlying stop member. The stop member is in turn slidably connected to the box side walls. The extent to which the lid may be moved in either direction is limited by engagement of the stop member between one end wall of the base and the opposite end of the lid.



3,531,013
CONTAINER CLOSURE HAVING FASTENING MEANS

Wilhelm Hammes, Seelscheid, Siegberg, Germany, assignor to Mauser-Kommandit-Gesellschaft, Cologne, Germany
Filed Oct. 23, 1968, Ser. No. 816,848
Claims priority, application Germany, Oct. 25, 1967, M 60,378; June 12, 1968, M 62,635
Int. Cl. A47j *27/08, 36/10;* **B65d** *45/00*

U.S. Cl. 220—55 10 Claims



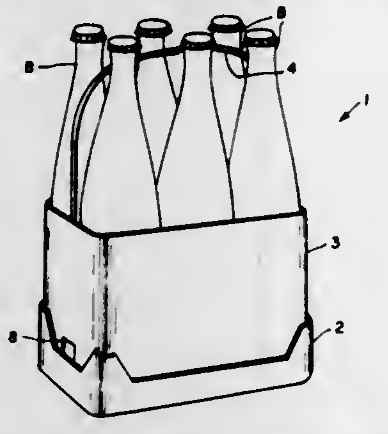
A closure for containers wherein the circumferential wall has an end portion bounding an open end and is provided adjacent the open end with an annular groove in the outer side of the wall. The closure is in form of a cap having an end wall and an inner and a concentric outer annular wall projecting to one side from the end wall so that the end portion of the circumferential wall of the container is located in the annular clearance between the annular walls. The outer annular wall is subdivided into a plurality of circumferentially distributed individual segments and connecting means applied externally of the outer annular wall urges the segments into the groove in the circumferential wall of the container.

3,531,014
CARRYING CASE FOR BOTTLES

William J. Lane, 218 Broadmoor Ave.,
Pittsburgh, Pa. 15228
Filed Dec. 4, 1967, Ser. No. 687,882
Int. Cl. B65d *25/14, 25/34*

U.S. Cl. 220—65 2 Claims

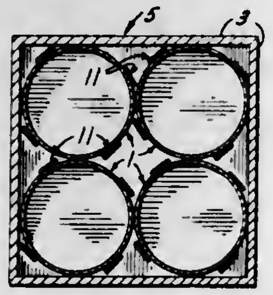
A carrying case for bottles containing soft drinks, beer and the like, which case comprises a plastic supporting frame, carried by a retractible carrying handle, and in which a disposable cover is provided, made of cardboard, foil, plastic sheets, or any other disposable material



which is easily and quickly replaceable at very little expense.

3,531,015
LOCKING MEANS FOR ICE CREAM CONTAINERS

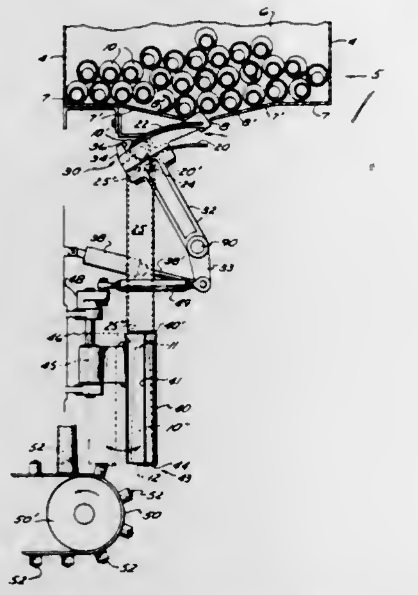
Maurice Makin, 630 Carroll Ave.,
Lasalle, Quebec, Canada
Filed Oct. 9, 1968, Ser. No. 766,123
Int. Cl. B65d *25/00*
U.S. Cl. 220—85 2 Claims



A cylindrical walled ice cream container having external tongue-like members extending substantially tangentially to the cylindrical wall and interlocking with tongue-like members on an adjacent container to prevent rotation of the first container in at least one direction when scooping out the ice cream.

3,531,016
BOBBIN ORIENTING AND LOADING APPARATUS

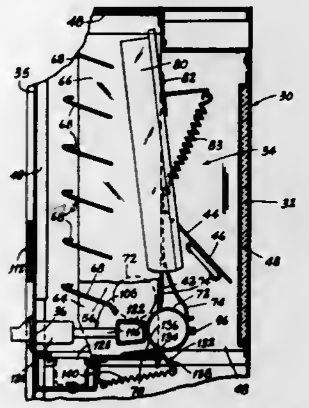
Lester W. Pray, Clemson, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 11, 1969, Ser. No. 798,389
Int. Cl. G07f *11/00*
U.S. Cl. 221—13 14 Claims



Apparatus for delivering tapered textile bobbins, one at a time and in a desired uniform orientation, from a supply source in which the bobbins are end-to-end randomly oriented and to a conveyor associated with mechanism for donning the bobbins upon a spinning frame or the like. The desired orientation of each bobbin is achieved during and without delaying or interrupting its transit. Pneumatic control means correlates the bobbin delivery to movement of the conveyor, which may be and preferably is continuously driven during the loading operation.

3,531,017
HOT CANNED FOOD VENDING MACHINE

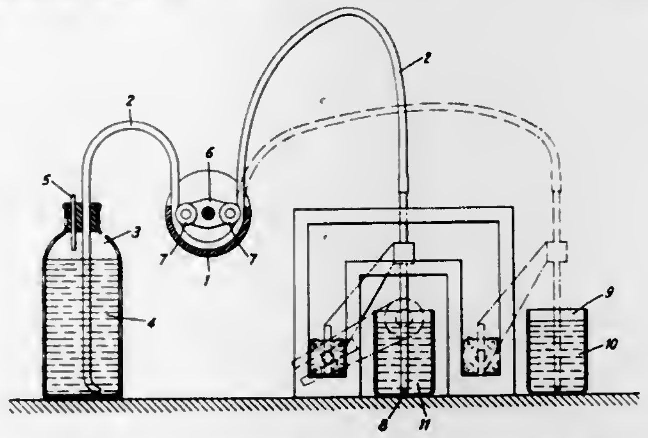
Willard Ray Abbott and Roderick L. Le Bron, Omaha, Nebr., assignors to Le Bron, Inc., Omaha, Nebr., a corporation of Nebraska
Filed Aug. 8, 1968, Ser. No. 751,117
Int. Cl. B65h *3/44*
U.S. Cl. 221—93 4 Claims



A coin operated vending machine for dispensing hot canned foods and crackers. The vending machine is of metallic construction and is heated by conduction to vertical chutes for varying types of canned foods, such that the cans dispensed at the bottom of the heating chamber are hotter than the reserve cans at the top. Shelves are provided, feeding into the chutes to provide a reservoir of can supply. The coin operating mechanism is provided with a pusher bar to push on the bottommost can in the chute to dispense it to a pull-out trough or delivery chute. An anti-theft device is provided against tampering. A "sold out" mechanism is operated by the cans to block the coin operated mechanism in the "sold out" condition. A companion chute is provided for the dispensing of crackers with the canned foods which is operated through the dispensing of the cans, such that the cans are part of the operating mechanism.

3,531,018
METHOD FOR CONTINUOUSLY PROVIDING TWO DIFFERENT LIQUIDS IN METERED AMOUNTS

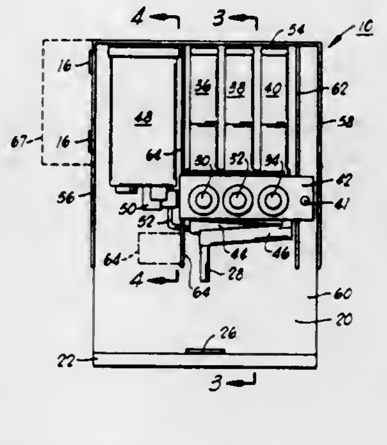
Roland Richterich, Bern, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
Filed Dec. 5, 1968, Ser. No. 781,335
Claims priority, application Switzerland, Dec. 15, 1967, 17,639/67
Int. Cl. B67d *5/48*
U.S. Cl. 222—1 2 Claims



The second liquid is sucked into the hose until the latter is filled to its free end, which is then submerged into the first liquid, which is drawn into the hose; the first liquid is expelled into a container while the hose sucks up the second liquid, which is also expelled into the container once the hose is emptied of the first liquid.

3,531,019
FOOD DISPENSING MACHINE WITH ADJUSTABLE AUGER

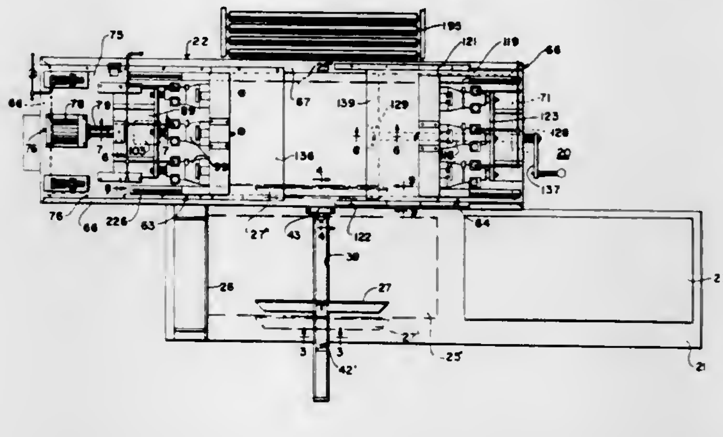
Burley G. Rodgers, Oklahoma City, Okla., assignor to Dispensing Systems, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed May 1, 1968, Ser. No. 725,819
Int. Cl. B67d *5/10*
U.S. Cl. 222—2 13 Claims



An apparatus for the dispensing of powdered food material for reconstitution with suitable liquid, the apparatus consisting of a vending machine type of housing which receives a plurality of canisters containing selected powdered food materials in supplying relationship to a plurality of metering assemblies which are individually controllable from the front of the housing. Selection of powdered food material is made by manipulation of selected ones of the metering assemblies to place powdered food material in a mixing section of a trough whereupon control is effected to dispense a liquid from an adjacent liquid supply into the mixing section whereupon the reconstituted food material is allowed to flow to a container for consumptive use.

3,531,020
MACHINE FOR STAPLING CARTONS

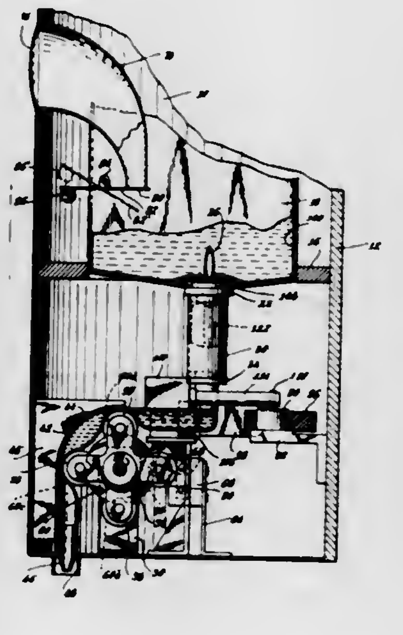
Mitchell H. Smaka, Huntington, Ind., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Sept. 4, 1968, Ser. No. 757,350
Int. Cl. B27f *7/06*
U.S. Cl. 227—7 5 Claims



A carton stapling machine having a pressure plate which engages the carton adjacent end flaps to load the carton with a predetermined load and stapler heads which are advanced into engagement with outer end flaps while the carton is held by the pressure plate to staple end flaps together, resilience of the material of the carton loading the end flaps in tension.

3,531,021
BREATH-OPERATED LIQUID DISPENSER

Roy C. Bassett, Box 102, West Redding, Conn. 06896
Filed Sept. 25, 1968, Ser. No. 762,425
Int. Cl. B67b *7/24*
U.S. Cl. 222—81 9 Claims

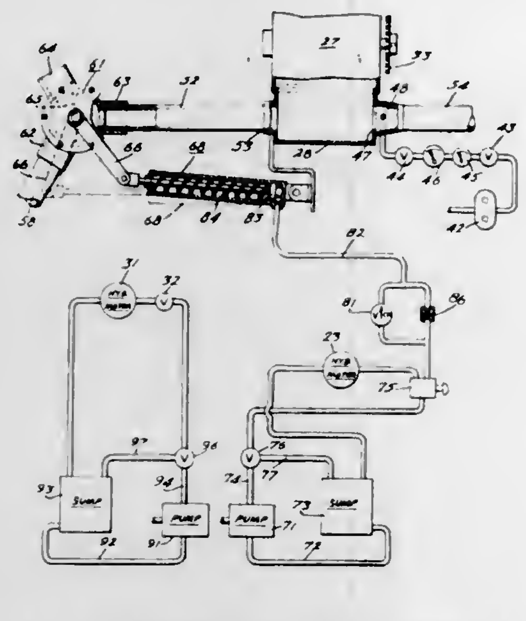


There is disclosed a surgical soap dispenser which may be operated by a surgeon without physical contact. A cabinet includes two compartments, each of which contains a disposable plastic bag of soap. Upon insertion, the bags are punctured by sharpened tubes in the bottoms of the compartments. The soap from each bag passes through a transparent chamber containing an opaque float. The chambers are connected by a flexible tube having a central T connecting to a flexible dispensing tube. A cam operated roller assembly forces preselected amounts of soap from the dispensing tube when actuated. The roller assembly, in turn, is actuated by a motor controlled from a pivoted vane against which the breath of the user may be blown. When the vane pivots, it permits a light beam to energize a photoelectric cell to actuate the motor. Each of the float chambers is provided with a light and photoelectric sensor. When the chambers are full, light passage is blocked by the float. When any bag becomes empty, the float drops and the photoelectric beam actuates a selector which closes off the compartment containing the empty bag, permitting flow to continue from the full bag.

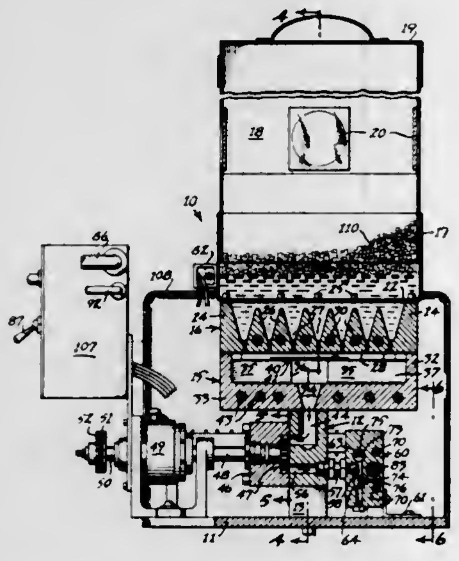
3,531,022
BULK DELIVERY APPARATUS

George F. Knotts, Coopersburg, Herbert K. Beyer, Royersford, and Robert C. Kolb, Spring City, Pa., assignors to Amerind-MacKissic, Incorporated, Parker Ford, Pa., a corporation of Pennsylvania
Filed Jan. 2, 1969, Ser. No. 788,416
Int. Cl. B67d *5/60*
U.S. Cl. 222—145 13 Claims

Bulk delivery apparatus including a hammer mill grinder, operable selectively to pulverize the solid ingredient prior to its feed into a mixing chamber where it is mixed with a liquid ingredient and subsequently discharged from the apparatus. The discharge is effected by pressurized air blown through the mixing chamber and controlled automatically to initiate flow of pressure air through the mixing chamber concurrently with the admission of the two ingredients thereinto, and to continue the flow of pressure air through the mixing chamber for a predetermined period after the arrest of the feed of the ingredients into the mixing chamber.



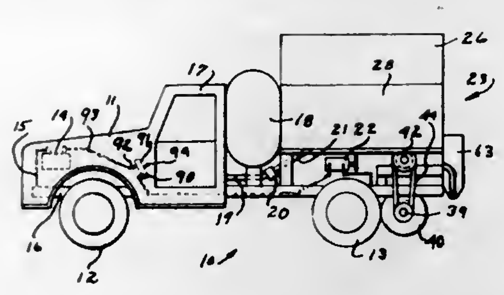
3,531,023
PROCESS AND APPARATUS FOR MELTING AND DISPENSING THERMOPLASTIC MATERIAL
Donald R. Mercer, Hendersonville, Tenn., assignor to Mercer Corporation, Hendersonville, Tenn., a corporation of Tennessee
Filed Apr. 30, 1968, Ser. No. 725,451
Int. Cl. B67d *5/62*
U.S. Cl. 222—146 12 Claims



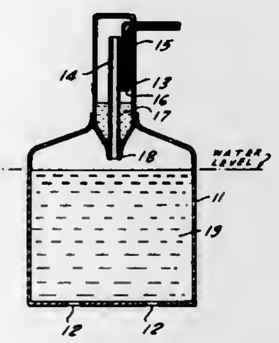
An apparatus for melting and dispensing thermoplastic material having a melting receptacle, a dispensing head and a pump, the bottom wall of the receptacle having a heated, undulated surface for quickly melting the thermoplastic material, and a pre-melt chamber above the melting receptacle for carrying a sufficient quantity of solid thermoplastic material to completely cover the melted material.

3,531,024
ELECTRICALLY OPERATED MEANS FOR MARKING THE EDGES OF A STRIP IN AN OPEN FIELD OR COUNTRY
Clifford L. Rosselot, P.O. Box 183, Owensville, Ohio 45160
Filed May 16, 1968, Ser. No. 729,722
Int. Cl. A01c *15/00*
U.S. Cl. 222—178 6 Claims

A land strip conditioner or the like including power driven means for actuating the same and for operating a marking device at one or both sides of the conditioned strip in the direction of the length of the strip. Said marking device including electrically operated means operable from the battery of the vehicle for intermittently effecting the operation of the marking mechanism either at definite time intervals or at definite spaced intervals.

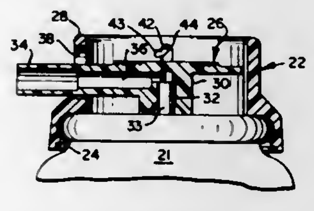


3,531,025
PERFUME DISPENSING DEVICES
Jack L. Richmond, Bronx, and Gustave J. Klein, Great Neck, N.Y., assignors to Knomark Inc. (formerly Salwish Products Corp.), a corporation of New York
Filed Oct. 17, 1968, Ser. No. 768,481
Int. Cl. B67d *3/00*
U.S. Cl. 222—187 8 Claims



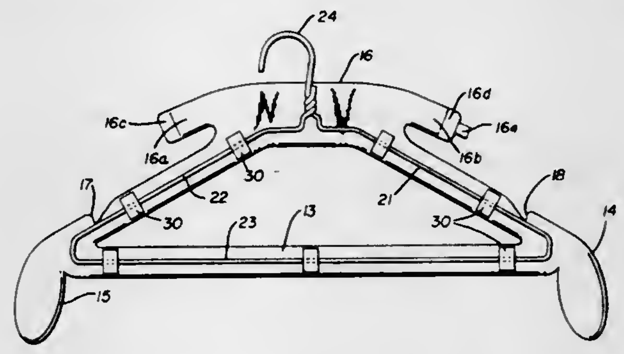
An automatic toilet perfume dispensing device for dispensing perfume from flush tanks is formed of a container suspended in the tank and a tubular member, containing perfume, attached to the container. The entire assembly is suspended in the tank. The container has openings at its bottom so that the water from the tank may enter, and in so doing the water forces out the perfume from the tubular member.

3,531,026
ACTUATOR-OVERCAP FOR AEROSOL DISPENSERS
Frank Venus, Jr., Watertown, Conn., assignor to The Risdon Manufacturing Company, Naugatuck, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 703,474, Feb. 6, 1968. This application Mar. 14, 1969, Ser. No. 807,338
Int. Cl. B65d *83/00*
U.S. Cl. 222—402.11 4 Claims



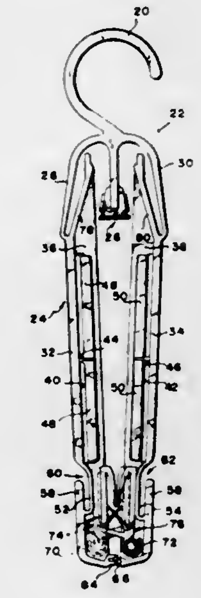
An actuator-overcap assembly for an aerosol dispenser or the like having a valve and projecting valve stem by which to effect dispensing of aerosol product, wherein the valve actuating button and associated cap member are molded in preassembled relation and are provided with mutually engaging, overlapping projections which restrain separation of the parts, prior to being mounted on the aerosol container, without constituting connecting means integrally joing the two members, the cap and button members having provision for avoiding valve-actuating engagement of the button with the valve stem upon mounting the preassembled members on an aerosol container.

3,531,027
INFLATABLE CUSHION FOR USE WITH GARMENT HANGERS
Oscar Malmin, 2075 S. Main St., Akron, Ohio 44301
Filed Apr. 15, 1969, Ser. No. 816,297
Int. Cl. A47j *51/08*
U.S. Cl. 223—88 3 Claims



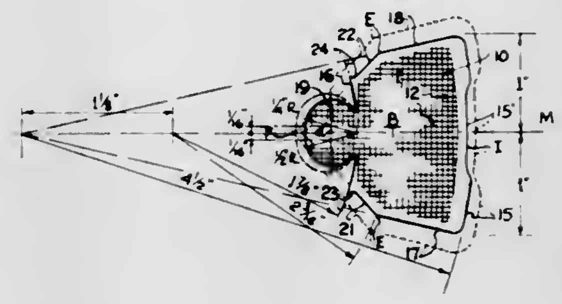
An inflatable, removable cushion to be used in conjunction with a conventional wire coat hanger. The inflatable cushion has a generally triangular planar configuration generally corresponding to the planar configuration of a conventional garment hanger but with a convex side to support the back-shoulder area. The cushion has a pair of opposed projections with these projections serving as arm-shoulder supports for the garment when the device is inflated. It also has a neck portion which consists of two opposed projections which can be joined together so that in inflated condition they give a natural shape to the neck and collar area for better support. The entire cushion can be releasably secured to a conventional hanger.

3,531,028
COLLAPSIBLE CLOTHES HANGER
Frank B. Vazquez, 7815 Lewinsville Road, McLean, Va. 22101
Filed Feb. 28, 1969, Ser. No. 803,296
Int. Cl. A47j *51/10*
U.S. Cl. 223—94 12 Claims



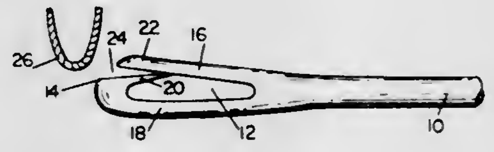
A collapsible clothes hanger of unitary construction including a hook portion, opposed arms extending outwardly below, and in spaced relation to, the hook portion, connector arms resilient throughout their lengths joining the hook portion to an intermediate section of each arm. A guide member depends from the hook portion between the connector arms, the guide member having guideways. The inner terminals of the arms are provided with guidelegs for sliding movement along the guideways upon folding or unfolding of the arms by flexing action of the connector arms. The guideway terminals are transversely grooved to receive the arm terminals for locking the clothes hanger in unfolded position for use. The remote terminals of the arms are provided with interengaging elements for locking the clothes hanger in folded position for storage. Article gripping devices are carried by an intermediate part of each arm.

3,531,029
WRAPAROUND THIMBLE
Kenneth P. Lee, 1517 San Ardo St., San Jose, Calif. 95125
Filed May 16, 1969, Ser. No. 832,546
Int. Cl. A41h *31/00*
U.S. Cl. 223—101 10 Claims



An open sided truncated cone shaped thimble to fit various sized thimble fingers and with a wider gap adjacent its closed end for relieving pressure against the fingernail of the finger wearing the thimble and an internal slip-proof surface to maintain the thimble on the finger as well as square seat dimple-like recess on its exterior surfaces for engaging the eye end of a needle during sewing.

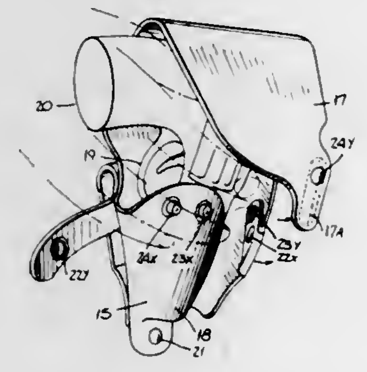
3,531,030
SELF-THREADING NEEDLE
Joseph G. Doiron, Quinn Road, Barre Plains, Mass. 01006
Filed Jan. 23, 1969, Ser. No. 793,328
Int. Cl. A41h *31/00*
U.S. Cl. 223—102 3 Claims



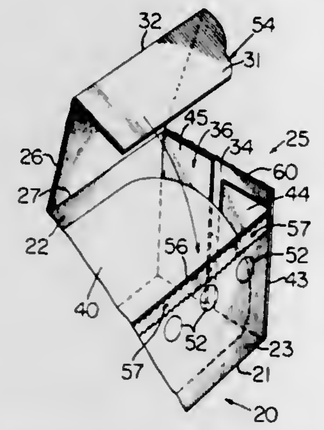
A needle having an eye and a slit from the extreme end of the needle adjacent the eye into the eye at one side of the longitudinal axis of the needle.

3,531,031
QUICK-DRAW GUN HOLSTER
Robert Angell, 514 E. 88th St., New York, N.Y. 10028
Filed Jan. 17, 1969, Ser. No. 792,106
Int. Cl. F41c *33/02*
U.S. Cl. 224—2 6 Claims

A holster affording maximum security for a pistol held therein and yet capable of being quickly released. The pocket of the holster is former from a single piece of leather which is contoured to form three flaps, two of which are relatively small and are designed to overlap to define a socket for accommodating the barrel and trigger of the pistol. A snap fastener is provided to hold the second or side flap in place over the first whereby when the fastener is released to break the socket, the pistol may then be withdrawn laterally and swung in a single stroke to a firing position. The third and larger flap served as a cover which overlies the grip of the pistol, the cover flap having a tongue which, when this flap is closed, is interposed between the second and first flaps and is held to the first flap by a snap fastener. To draw the pistol from the holster, the thumb of one hand is forced under the tongue to disengage the cover flap and thereby permit the hand to grasp the grip of the pistol. When the tongue is lifted it serves at the same time to release the side flap, thereby breaking open the holster and permitting lateral withdrawal of the gripped pistol.

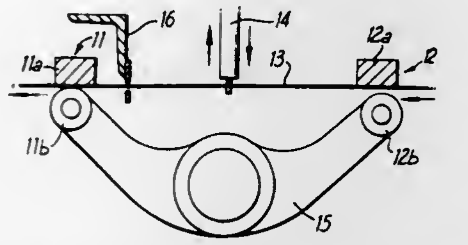


3,531,032
CONTAINER AND BLANK FOR MAKING SAME
Clyde L. Miles, Jr., Henrico County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 3, 1967, Ser. No. 672,484
Int. Cl. B26f *3/02*
U.S. Cl. 225—48 **14 Claims**



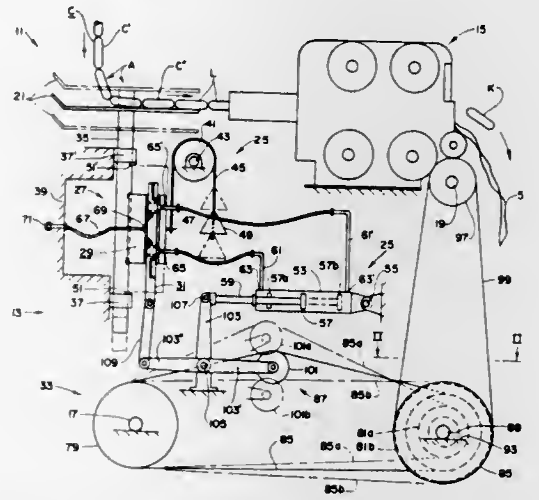
This disclosure relates to a dispensing container or carton, and a blank for making same, wherein such carton is particularly adapted for dispensing a roll of elongated sheet material carried therewithin. The carton has a hinged top wall which is easily opened and after pulling an end portion of the sheet material out of the carton the top wall is reclosed by inserting a flap provided at its terminal end against the front wall of the carton with such end portion sandwished therebetween. The carton is constructed so that the swinging end of such top wall may be pushed partially within the carton to enable easy grasping of a comparatively large area of such end portion so that a section of sheet material may be dispensed and severed by pulling it against a cutter defining the top edge of such front wall.

3,531,033
FEEDING OF YARNS
Ronald Parsons, Rishton, Blackburn, England, assignor to Singer-Cobble Limited, Blackburn, England
Filed Apr. 19, 1968, Ser. No. 722,679
Claims priority, application Great Britain, Apr. 19, 1967, 17,904/67
Int. Cl. B65h *17/42*
U.S. Cl. 226—8 **2 Claims**



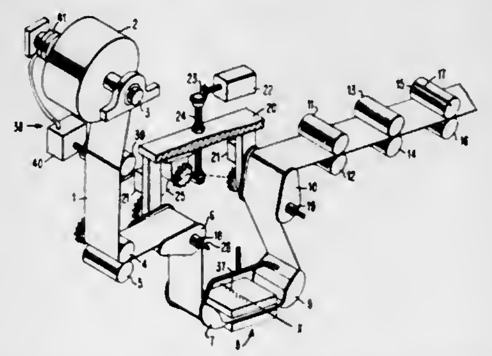
According to the present invention a method of feeding yarn comprises passing such yarn through spaced, selectively operable, stop means, and subjecting the yarn at a position between such means, to a transverse displacement thereby to vary the yarn path length between the said means, the yarn being drawn from a supply thereof through the first such stop means upon transverse displacement of the yarn, the other stop means being closed, and such yarn being drawn from the space between the stop means through the said other stop means when the means effecting the displacement is withdrawn from its position of extreme displacement and the first stop means is closed.

3,531,034
SPEED CONTROL APPARATUS
Thomas A. Klyce, Memphis, Tenn., assignor to Ranger Tool Co., Inc., Ellendale, Tenn., a corporation of Tennessee
Filed Feb. 10, 1969, Ser. No. 797,901
Int. Cl. A22c *21/00*
U.S. Cl. 226—26 **7 Claims**



Infinitely variable speed control means for controlling the speed of a machine in response to the amount or weight of accumulated work material on the infeed side of the machine. The speed control apparatus includes a floating counterweight balanced pan adapted to receive work material; variable speed change mechanism arranged in the power transmission means driving the machine; and, fluid actuator and control valve means for actuation of the speed change mechanism in response to upward and downward movement of the pan. An accumulation of work material in the pan, over or under a predetermined weight of work material, is effective for causing respectively downward or upward movement of the pan. Downward movement of the pan is operative through the fluid actuator and control valve means of the apparatus for powered actuation of the speed change mechanism to a faster speed and thus, actuation of the machine to a faster speed; an upward movement of the pan, as a result of a lessening of the accumulation and weight of the work material on the pan being effective for causing a decrease in speed of the machine.

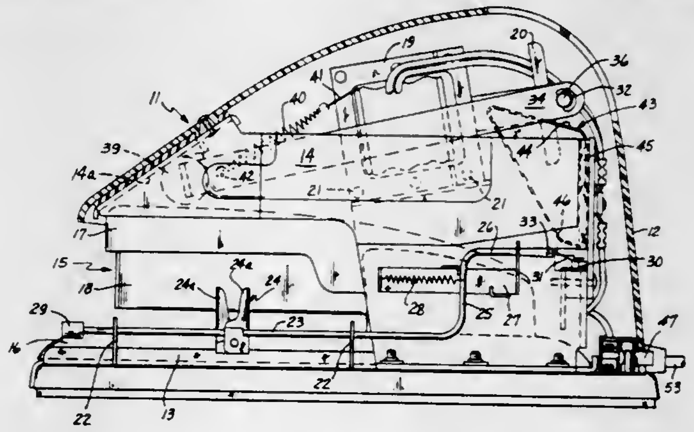
3,531,035
PATH-MODIFYING APPARATUS FOR CONTINUOUSLY MOVING WEB
Kenneth B. Maynard, Belle Mead, and Robert C. Miller, Englishtown, N.J., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 2, 1968, Ser. No. 749,713
Int. Cl. B65h *17/42*
U.S. Cl. 226—114 **5 Claims**



As a web is fed continuously at a substantially constant speed between two points, its path is modified by this apparatus without adverse inertia effects to intermittently reduce the speed of the web relative to a work station between said points so that a work operation may be performed as if the web were stationary. The web is entrained over a pair of rotating cams disposed at opposite ends of the work station and so configured that as one tends to elongate the web path the other correspondingly shortens it, thereby maintaining the total path length between said points constant. Friction is minimized by providing air-bearing supports at the cams and along any guide surfaces between said points.

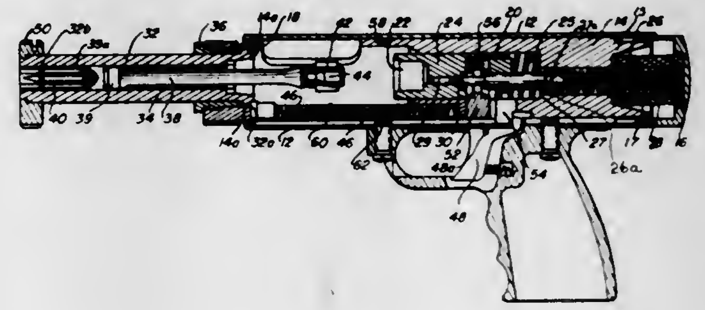
ERRATUM
For Class 227—7 see:
Patent No. 3,531,020

3,531,036
ELECTRICALLY DRIVEN ACTUATOR FOR STAPLING MACHINES
Ronald Felson, Laurelton, N.Y., assignor to Swingline Inc., Long Island City, N.Y., a corporation of New York
Filed Apr. 16, 1968, Ser. No. 721,707
Int. Cl. B27f *7/06*
U.S. Cl. 227—7 **9 Claims**



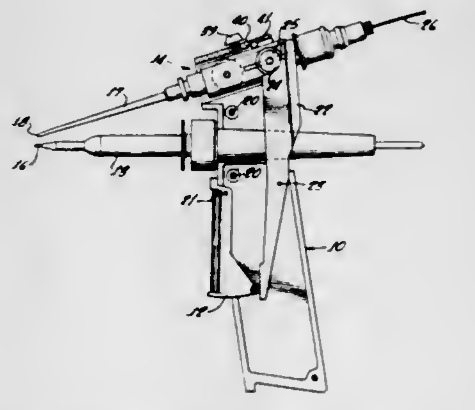
An actuating mechanism is shown which includes a solenoid having an armature which is secured to an inclined arm. The arm bears a spring which is also connected to the solenoid and biases the arm into retracted position. A tripping switch is manually actuated to produce a cycle of drive. A disengaging mechanism is operated by the arm and is tripped when the device is in cycle. This mechanism turns off the tripping switch upon completion of a drive cycle. The arm is disposable against the cap of a stapling machine so as to drive the same.

3,531,037
BOLT SETTING TOOL
Fritz Schneider, Bavaria, Germany, assignor to Impex-Essen G.m.b.H., Ansbach, Germany, a limited-liability company of Germany
Filed Oct. 2, 1967, Ser. No. 672,301
Claims priority, application Germany, Oct. 3, 1966, J 31,909
Int. Cl. B25c *1/14*
U.S. Cl. 227—10 **9 Claims**



A bolt setting tool for driving bolts, pins or similar fastening or securing means into surfaces of construction materials, which includes a barrel for containing the bolt, a piston for driving the bolt in the barrel, a cartridge and associated firing mechanism and combustion chamber for providing explosive impetus to the piston on firing of the cartridge, which tool is characterized by adaptability for a variety of bolt sizes, safety, simplicity of operation and reduced tendency to accumulate powder residue which would interfere with smooth operation of the piston and driving mechanisms.

3,531,038
SOLDERING DEVICE
John Dezzani, 10513 Downey-Norwalk Road, Norwalk, Calif. 90650
Filed June 16, 1967, Ser. No. 646,553
Int. Cl. B23k *1/00*
U.S. Cl. 228—41 **10 Claims**

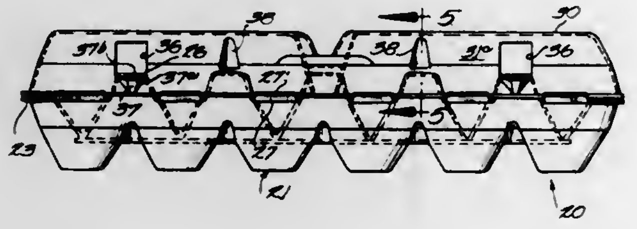


A soldering device including a support mounting a soldering iron with the tip projecting therefrom. The support carries a pivotal guide arrangement which receives a length of solder and directs it from an outlet adjacent the tip. Jaw means are in the guide arrangement for gripping the solder and advancing it through the stroke upon actuation of the device. As the solder is advanced, the guide arrangement is pivoted to bring its outlet adjacent the tip of the soldering iron to become heated. At other times, the outlet of the guide arrangement is remote from the tip of the soldering iron to minimize heat transfer to the solder within the guide.

3,531,039
CARTON CONSTRUCTION

Clifford H. Bessett, South Holland, Ill., and James W. Boyd, Crown Point, Ind., assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware

Filed Jan. 9, 1969, Ser. No. 790,055
Int. Cl. B65d *1/00, 45/00*
U.S. Cl. 229—2.5 7 Claims

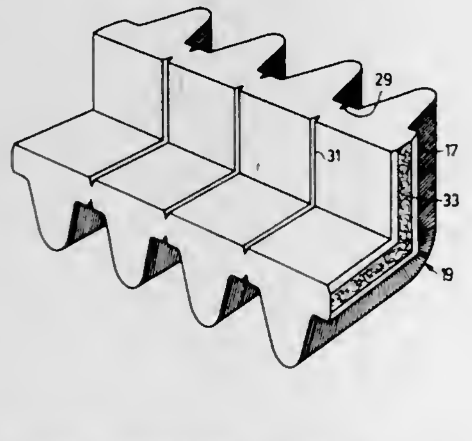


A carton construction is provided with a bottom section and a cover section, the latter being adapted to assume an overlying registered relation with respect to said bottom section. An upstanding wall of the bottom section is provided with spaced upwardly extending first and second protuberances. The first protuberance is provided with a pocket having an outwardly facing open side. The cover section has a depending wall which is adapted to be disposed adjacent to and overlie the open side of said first protuberance pocket, and is adapted to be disposed adjacent to and inwardly of said second protuberance, when the cover section assumes its overlying registered relation with respect to the bottom section. The cover section depending wall is provided with releasable lock means for interlockingly engaging the pocket of the first protuberance.

3,531,040
FOAM-PLASTIC BUFFER PACKAGING MATERIAL

Josephus Eduardus Myny, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 14, 1968, Ser. No. 775,597
Claims priority, application Netherlands, Nov. 24, 1967, 6715978
Int. Cl. B65d *5/40, 25/12*
U.S. Cl. 229—14 4 Claims

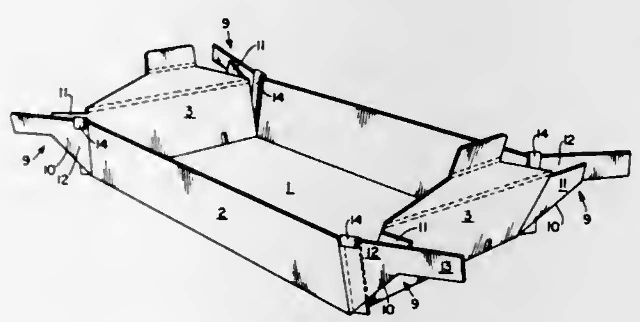


A foam-plastic packaging material for providing a shock-absorbing buffer when placed between an article to be packaged and the container. Improved elastic properties for the material are achieved by providing a series of rib-like projections, the upper edges of which contact the wall of the container. The lower edges of the ribs are defined by the rib flanks which are interconnected and provide a bearing surface for the article within the container. The buffer can be severed into sections by fracturing along predetermined weakened portions between the ribs.

3,531,041
CARTON

John J. Rohde, 2901 Penrose Drive, Richmond, Va. 23235

Filed Jan. 31, 1968, Ser. No. 702,064
Int. Cl. B65d *5/22*
U.S. Cl. 229—34 1 Claim

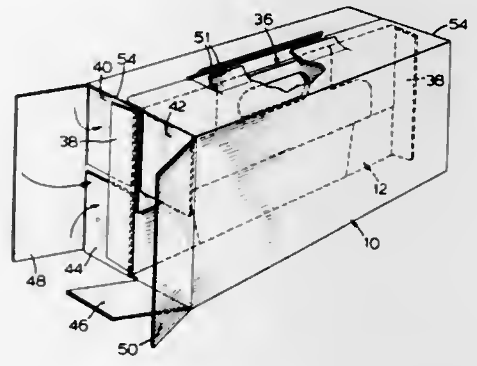


A carton formed from a unitary blank and having end flaps articulated to the top edges of the end walls which fold about and interlock with folded integral corner extensions of the side walls. In an additional embodiment the corner extensions are also integral with the end walls.

3,531,042
END STRUCTURE FOR AN END-LOADING CARTON HAVING A DIVIDER

William G. Atkinson, London, Ontario, Canada, assignor to Somerville Industries Limited, London, Ontario, Canada

Filed Oct. 2, 1968, Ser. No. 764,445
Claims priority, application Canada, Nov. 9, 1967, 004,614
Int. Cl. B65d *5/02, 75/00*
U.S. Cl. 229—37 1 Claim

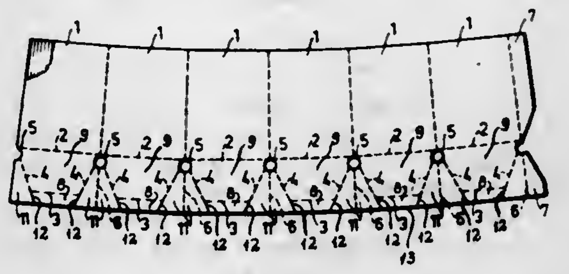


This invention relates to a carton having a longitudinal divider of the type commonly used to pack bottled beverages such as beer. The carton is loaded through an end and a longitudinal divider is separately formed and is secured into place in the carton by means of end flaps on the divider that are interlocked with the overlapping flaps that form the end closure. The carton is opened by forming an opening in the top wall. The whole construction is one wherein the divider can be simply formed and positively locked within the container as the container is closed.

3,531,043
REGULAR POLYGONAL TRANSPORT CONTAINERS FOR TETRAHEDRAL OBJECTS

Inge Lennart Carlsson, Lund, and Knut Gosta Verner Lydig, Malmo, Sweden, assignors to A.B. Tetra Pak, Lund, Sweden, a Swedish corporation

Filed Jan. 3, 1969, Ser. No. 788,892
Claims priority, application Sweden, Apr. 3, 1968, 4,398/68
Int. Cl. B65d *5/02, 71/00*
U.S. Cl. 229—37 8 Claims

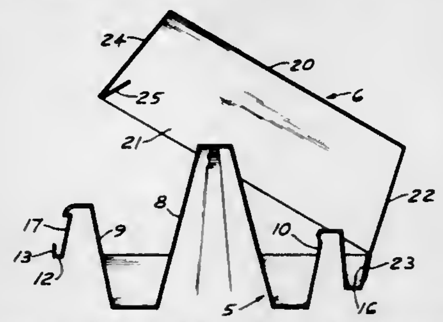


Regular polygonal transport container for tetrahedral objects and the blank therefor which has integral base fins secured in position by integral retaining flaps therebetween to prevent collapse of the base fins.

3,531,044
COMBINED PAPERBOARD AND PLASTIC EGG CARTON WITH SELF-LOCKING COVER

Theodore C. Baker, 1179 Ponus Ridge, New Canaan, Conn. 06840

Filed Mar. 17, 1969, Ser. No. 807,555
Int. Cl. B65d *1/00, 5/66*
U.S. Cl. 229—44 9 Claims



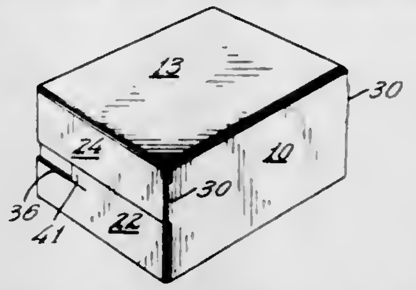
This invention is directed to an egg carton having a tray provided with a plurality of depending article-receiving cells, a median horizontal ledge extending outwardly from its front and end wall, and a plurality of upwardly extending front legs having forward extending abutment shoulders. A hollow cover is hingedly connected to the rear wall of the tray and is provided along the free edge of its front wall with an inwardly folded locking flap that has its free edge engaged beneath the abutment shoulders of the tray when the cover is closed to lock same in its closed position.

3,531,045
SEPARABLE CONTAINER

Ronald V. Johnson, Port Washington, Wis., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed May 22, 1968, Ser. No. 730,990
Int. Cl. B65d *5/54, 75/58*
U.S. Cl. 229—51 7 Claims

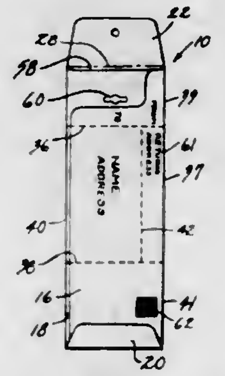
The present invention discloses an end opening separable container including a rear wall, a bottom wall, a front wall, a top wall and a glue flap secured in series along parallel fold lines. All of the walls have closure flaps thereupon, and the glue flaps have glue flap extensions hinged to the ends thereof. In connecting the container in tubular form, the glue flap extensions are adhered to the closure flaps on the rear wall. These rear wall closure flaps are split to provide an upper section and a lower section, the upper sections of the flaps being readily detachable from the rear wall. A removable tear strip extends across the front wall intermediate the height thereof, the tear strip also extending across the closure flaps attached to the front wall. By removing the tear strip and by detaching the upper portions of the closure flaps on the rear wall, the upper portion of the container may be removed to provide an open topped display tray.



3,531,046
DESTRUCTIBLE ENVELOPE WITH DETACHABLE BUILT-IN RETURN ENVELOPE

Robert J. Carrigan, Thompsonville, Conn., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine

Filed Nov. 8, 1968, Ser. No. 774,256
Int. Cl. B65d *27/06, 27/08*
U.S. Cl. 229—72 11 Claims



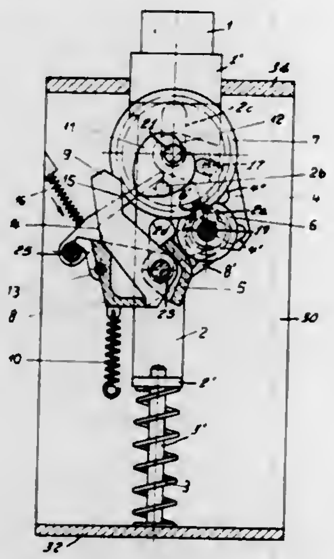
A destructible envelope with a built-in detachable return envelope made from a blank of sheet material including a plurality of connected panels folded into overlying relation and forming a main envelope compartment open at one end. Two of the panels are attached together in face-to-face relation forming a return envelope compartment with a mouth opening into and toward one side of the main compartment. The main envelope is divided into three separable sections by two spaced apart lines of weakening which extend transversely thereof. The return envelope is associated with the central section and becomes accessible after the main envelope has been destroyed by separating the sections thereof.

3,531,047
RESET DEVICE FOR COUNTERS

Horst Pfeiffer, Aldingen, Kreis Tuttlingen, Germany, assignor to J. Hengstler K.G. Zahlerfabrik, Aldingen, Kreis Tuttlingen, Germany

Filed June 26, 1968, Ser. No. 740,171
Claims priority, application Germany, Feb. 8, 1968, H 65,254
Int. Cl. G06c *15/42*
U.S. Cl. 235—144 5 Claims

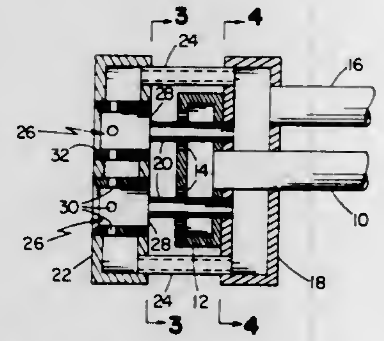
A reset device for counter wheels comprises a longitudinally movable reset-slide control having means for moving pinions which drive the counter wheels. The pinions are moved laterally by a pivotable lever out of engagement with the counter wheels before the counter wheels are turned to reset position. The counter wheels are turned by action of reset fingers on heart cams fixed with respect to the counter wheels. The pinions are carried on a pinion bridge which is retracted by the lever actuated by a fixed pin on the reset-slide. The reset fingers are held in engagement with the heart cams by a spring loaded pawl. The pawl engages a reset bridge carrying the reset fingers. When the reset slide is returned to original position the pivotable lever first returns the pinions to engagement with the counter wheels. Then another pin on the reset-slide



releases the pawl which releases the reset fingers from the cams to release the counter wheels.

3,531,048
SUPERSONIC STREAMING

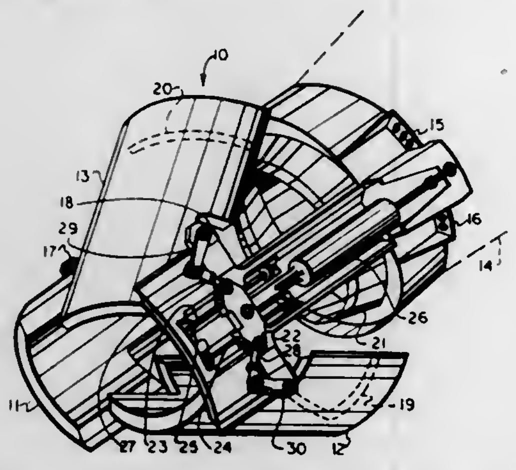
Nathaniel Hughes, Beverly Hills, Calif., assignor to Energy Sciences, Inc., Beverly Hills, Calif., a corporation of California
Filed Apr. 3, 1968, Ser. No. 718,447
Int. Cl. B05b *17/04*
U.S. Cl. 239—1 **17 Claims**



A small supersonic nozzle operating on very low inlet pressures, using planned boundary layer growth to sculp effective nozzle shape, and axially stabilized nozzle throat position.

3,531,049
UNITARY EJECTOR-THRUST REVERSER ASSEMBLY FOR JET-PROPULSION ENGINES

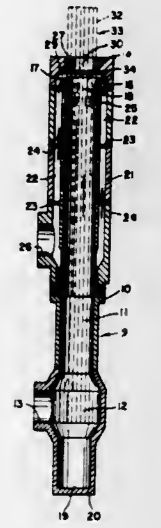
Felix Hom, La Mesa, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed Dec. 20, 1968, Ser. No. 785,525
Int. Cl. B64c *15/04*
U.S. Cl. 239—265.29 **11 Claims**



A unitary combination ejector-thrust reverser structure for jet engines is disclosed. The combination includes thrust-reversing blocker doors, which when in a stowed position form a portion of the ejector barrel, and a compact low-friction bogie-type actuating mechanism for moving the doors into a deployed position. The doors are provided with fixed end plates to improve their deflection of the gaseous discharge from the engine when the doors are in their deployed condition. A unique arrangement permits the doors to be stowed without the end plates interfering with flow through the ejector barrel.

3,531,050
TWO-PHASE HOMOGENIZER

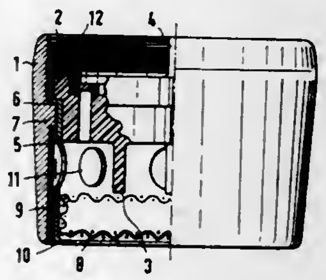
Stanley Charles Abraham, Somerville, Mass., and Edward Otto Moeck, Pierrefonds, Quebec, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed Feb. 12, 1968, Ser. No. 704,689
Claims priority, application Canada, Apr. 22, 1967, 988,609
Int. Cl. B05b *7/06*
U.S. Cl. 239—427.3 **2 Claims**



A nozzle having inner and outer coaxial tubes, the orifices of tubes coaxial to one another such that mixing takes place at interfaces between the orifices. The resulting mixture is substantially homogeneous and uniform in cross-section.

3,531,051
DEVICE FOR AERATING THE WATER JET EMERGING FROM A SPIGOT OR THE LIKE

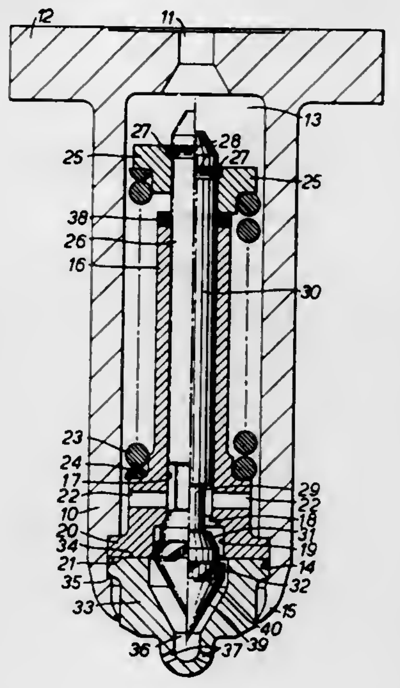
Hans-Heinrich Classen, Lobberich (Rhine), Germany, assignor to Firma Rokal G.m.b.H., Lobberich (Lower Rhine), Germany
Filed Mar. 6, 1968, Ser. No. 710,988
Claims priority, application Germany, Mar. 10, 1967, R 34,674
Int. Cl. E03c *1/08*
U.S. Cl. 239—428.5 **5 Claims**



Aerating device comprising an outer sleeve, a transverse perforated wall in the upper part of the sleeve, a double screen below the upper wall, which elements form a unitary assembly, and a sealing element at the upper end of the wall.

3,531,052
FUEL INJECTOR FOR INTERNAL COMBUSTION ENGINES

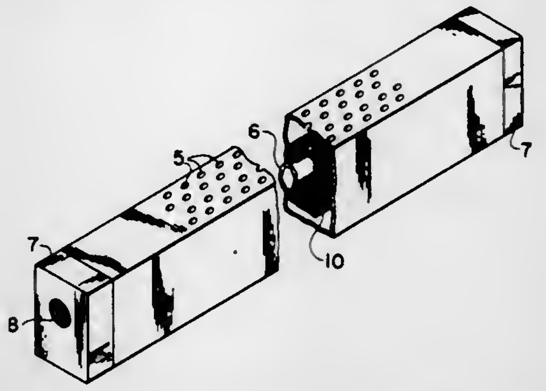
Martin J. Berlyn, Leeds, England, assignor, by mesne assignments, to Clayton Dewandre Holdings Limited, London, England, a company of Great Britain
Filed Feb. 19, 1968, Ser. No. 706,519
Int. Cl. B05b *1/30*
U.S. Cl. 239—533 **3 Claims**



A fuel injector of the multiple orifice type is provided with means for creating rotary swirl of the fuel in the sac hole of the nozzle tip.

3,531,053
STEAM DISTRIBUTION SYSTEM

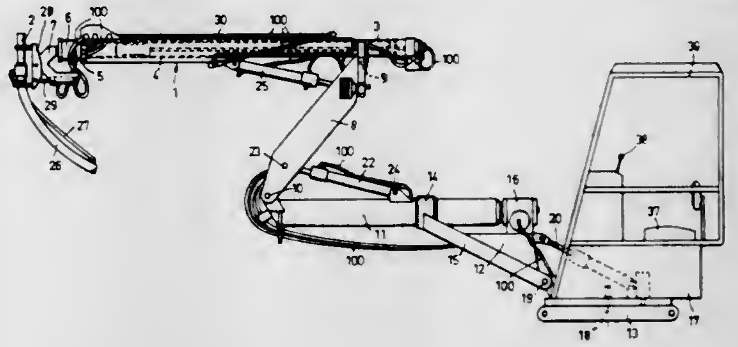
Kenyon W. Miller, Winchester, and Clifford D. Shelor, Covington, Va., assignors to Westvaco Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 673,487, Oct. 6, 1967. This application Oct. 9, 1969, Ser. No. 866,129
Int. Cl. B05b *1/14*
U.S. Cl. 239—553.3 **11 Claims**



A steam distribution chamber for applying a uniform blanket of steam to a moving web of paper or the like utilizes a feed manifold, hydrodynamically designed to have a uniform pressure throughout its length, to feed steam to the distributing chamber at equal pressures and velocities. The manifold may be positioned either internally or externally of the chamber and a baffle or baffles may be used to help disperse the steam as it issues from the manifold.

3,531,054
APPARATUS FOR APPLYING A SPRAYABLE MATERIAL TO A SURFACE, E.G. A ROCK WALL

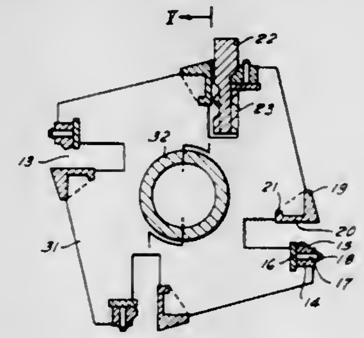
Elgas Pulk, Stockholm, Sweden, assignor to AB Skanska Cementgjuteriet, Stockholm, Sweden, a corporation of Sweden
Filed June 21, 1968, Ser. No. 739,108
Claims priority, application Sweden, July 3, 1968, 10,294/68
Int. Cl. B05b *15/08*
U.S. Cl. 239—587 **3 Claims**



Apparatus, supported on a platform, for spraying coating material on a rock wall or the like, in which the platform carries a support shaft on which there is rotatably mounted a link arm to which a nozzle-holding arm is articulated, the holder arm and link arm and support shaft cooperating to form a Z. The support shaft is journaled in a platform fitting so that the nozzle may be extended in any desired direction.

3,531,055
HAMMER CRUSHER

Günter Alt, Saargemunder Str. 59, Auersmacher (Saar), Germany
Filed Nov. 1, 1967, Ser. No. 679,762
Int. Cl. B02c *13/09, 13/28, 13/282*
U.S. Cl. 241—192 **5 Claims**

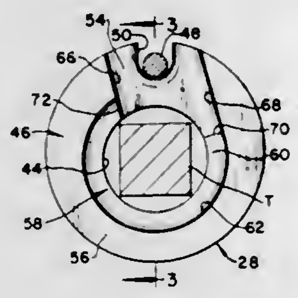


A hammer crusher wherein the internal surfaces of the housing (1) and breaker plates (A, B, C) are provided with tessellated armors composed of rectangular and/or triangular metallic sections (7, 8) having slotted projections (9) extending through openings in the housing and breaker plates and receiving elastic wedges (10). The feed inlet (1*a*) is adjacent to a chute (5) which is hinged to the housing, and the hammers (22) of the rotor (2) are held against radial and axial movement. The end plates (31) of the rotor are provided with protective shoes (19) in front of the hammers.

3,531,056
CONDUCTOR WRAPPING BIT

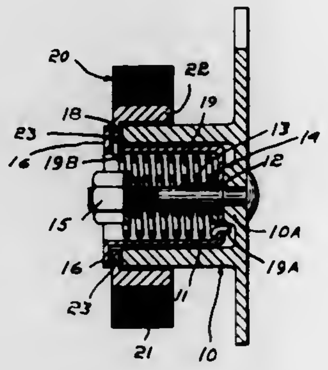
William J. Baker, Reed City, and Richard J. Hurst, Hersey, Mich., assignors to Gardner-Denver Company, a corporation of Delaware
Filed Nov. 16, 1967, Ser. No. 683,631
Int. Cl. H01b *13/00*
U.S. Cl. 242—7.17 **7 Claims**

A rotary bit for wrapping a wire conductor about a terminal in helical convolutions to form an electrical connection. The terminal-receiving bore is provided with a counterbore having surface portions, including a helical bottom wall, which are in intimate contact with a major portion of each successive wire convolution as it is formed about the terminal.



3,531,057
TAPE ROLLS AND MEANS FOR SUPPORTING THEM IN DISPENSERS

David G. Way, Boxborough, Mass., assignor to Tapeler Corporation, Newton, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 562,408, July 1, 1966. This application Jan. 9, 1969, Ser. No. 798,852
Int. Cl. B65h *19/00;* **A47k** *10/22*
U.S. Cl. 242—55.2 **17 Claims**

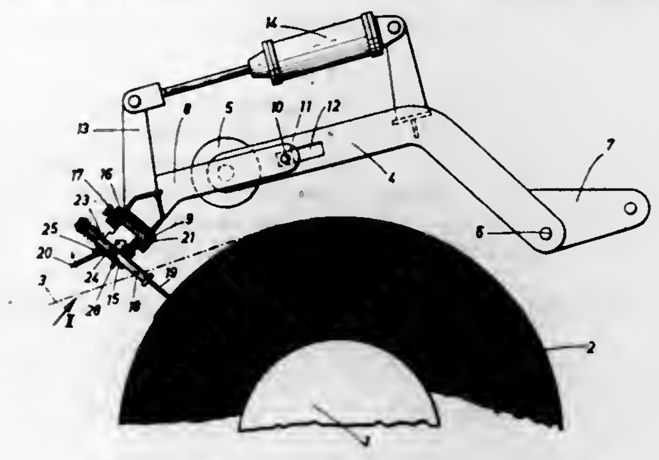


Tape and dispenser combinations comprising a core member mounted for rotation on a fixed support member, and a drag between the rotatable member and the support, and rotatable biasing means connected to the members and separable with respect to one of them thereby providing for the rotatable support of the roll and cushioning the pull on the tape during dispensing and providing a slack take-up. The releasable connection may be in the form of a lug on the core member and the lugs of varying width core members are located in a predetermined relation to the width of the wound tape to bring the center line of the wound tapes into the same position when located on the support member.

3,531,058
UPCOILER FOR STRIP

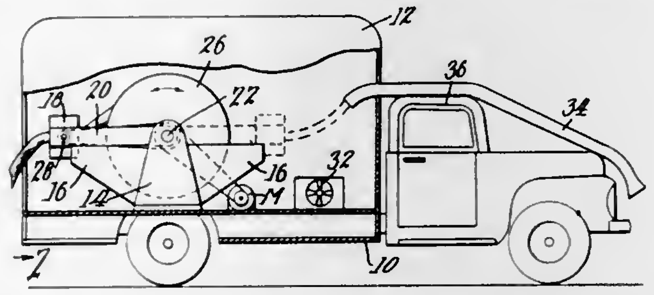
Bernhard Birschkus, Leonding, Austria, assignor to Vereinigte Osterreichische Eisen-und Stahlwerke Aktiengesellschaft, Linz, Austria
Filed Sept. 23, 1968, Ser. No. 761,534
Claims priority, application Austria, Oct. 2, 1967, A 8,892/67
Int. Cl. B21c *47/02*
U.S. Cl. 242—78.1 **19 Claims**

An upcoiler comprising a mandrel having pivoted coil-engaging means. A holding-down member has an end portion which is engageable with the periphery of the coil. Means is provided to move the end portion, the end portion being held in engagement with the coil when the coil-engaging means is lifted from the coil. A free space for a strap is left on the coil adjacent the holding-down member in the direction of the axis of the mandrel.



3,531,059
LOADER, CLEANER, AND DRIER FOR FIRE HOSE

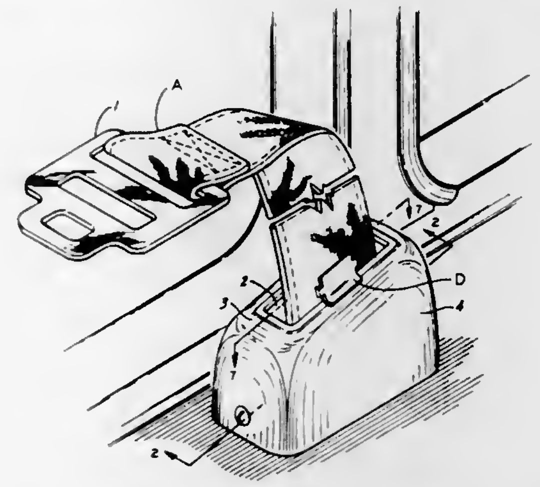
Thomas J. Walker, Wheeler Road, Ashby, Mass. 01431
Filed Nov. 26, 1968, Ser. No. 778,927
Int. Cl. B65h *75/40*
U.S. Cl. 242—86.2 **8 Claims**



A real for winding and unwinding fire hose having a traverse guide for the hose and a hose scraper in the guide, and means to dry the hose.

3,531,060
DETENT FOR SEAT BELT RETRACTOR

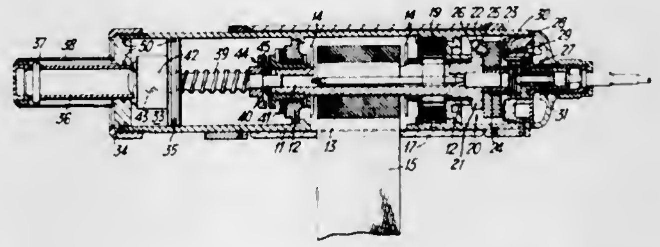
Edwin E. Foster, P.O. Box 714, Austin, Tex. 78767
Filed Sept. 11, 1968, Ser. No. 759,114
Int. Cl. B65h *75/48;* **A62b** *35/02*
U.S. Cl. 242—107.2 **5 Claims**



A detent or stop member for engagement upon a seat belt and having a flange for abutment against the rim of the opening in a seat belt housing so as, by such engagement, to maintain the belt in preselected disposition with respect to the user's body to prevent undue pressure while simultaneously assuring of proper safety tension.

3,531,061
SAFETY HARNESS REEL

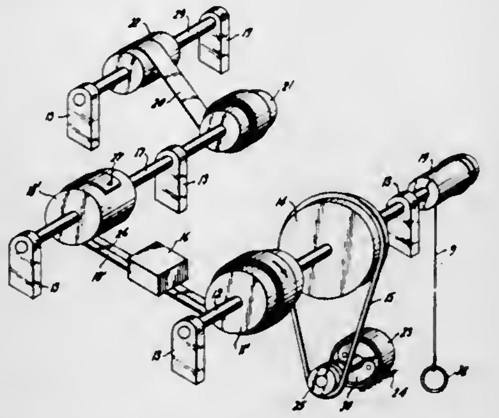
Ivor John Davies, Torpe Bay, England, assignor to Teleflex Products Limited, Basildon, Essex, England, a British company
Filed Mar. 20, 1968, Ser. No. 714,562
Claims priority, application Great Britain, Mar. 20, 1967, 13,042/67
Int. Cl. B65h *75/34*
U.S. Cl. 242—107.4 **6 Claims**



A ballistic inertia reel for airmen's safety harness is provided in which a harness-retracting gas-operated piston-and-cylinder unit is disposed in end-to-end relationship with the rotary harness reel spool and reel frame. The piston of the piston-and-cylinder unit is coaxial with the harness spool and is in screw-threaded engagement with a screwed shaft that extends axially from a screwed bore in the piston toward the harness spool. A dog clutch has one of its two cooperating rotary elements secured for rotation with the harness spool while the other dog clutch element is mounted on the end of the screwed shaft nearer the reel spool. The dog clutch elements are normally spring-loaded out of engagement. Upon the admission of pressure gas to the cylinder the resulting rectilinear movement of the piston first moves the screwed shaft endwise to engage the dog clutch and then causes forced rotation of the screwed shaft and reel spool.

3,531,062
MINIATURE TAPE PHONOGRAPH DRIVE SYSTEM

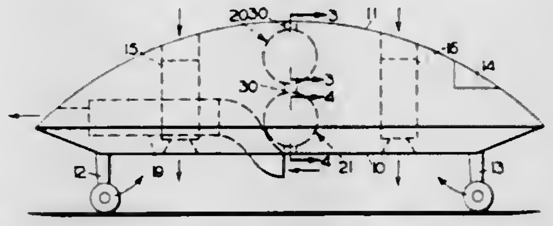
Norman E. Sindlinger, Medford Lakes, N.J., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,359
Int. Cl. G03b *1/12;* **G11b** *15/32;* **A63b** *3/33*
U.S. Cl. 242—201 **5 Claims**



A miniature tape audio device for use in toy dolls and the like. The recording on the tape is such that for proper play of the tape the linear speed must decrease from approximately 13 inches per second at the beginning of the play to about 7 inches per second at the end of the play. This is achieved by using small diameter take-up and supply drums compensating for tape build-up effects. In the prior art, where relatively constant tape speed has been a design necessity, large diameter drums and/or short tapes have been used to limit tape speed variations. In the invention, tape speed variations are purposely allowed to permit the use of small drums and the construction of the smallest possible unit, and at the same time to improve overall message quality.

3,531,063
VERTICAL TAKE-OFF AIRCRAFT WITH DUAL GYRO GUIDING SYSTEM

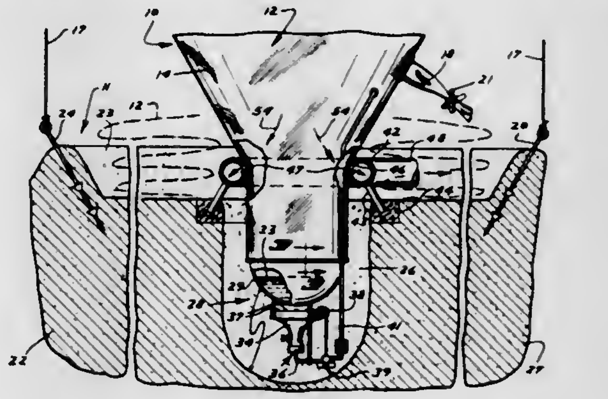
Jack A. Perseghetti, 3512 Q St., Vancouver, Wash. 98663
Filed May 16, 1968, Ser. No. 729,668
Int. Cl. B64c *29/04*
U.S. Cl. 244—23 **3 Claims**



A wingless aircraft employing jet propulsion means for vertical take-off and landing operations and separate jet propulsion means for flight travel, the guiding of the aircraft during flight travel being performed entirely through the intermediary of a pair of adjustable cooperating gyroscope assemblies.

3,531,064
METHOD AND APPARATUS FOR TRANSPORTING GAS

Bruce T. McCutchan, 200 Valley High Road, Burnsville, Minn. 55378
Filed Apr. 12, 1968, Ser. No. 721,032
Int. Cl. B64b *1/40, 1/62*
U.S. Cl. 244—31 **15 Claims**

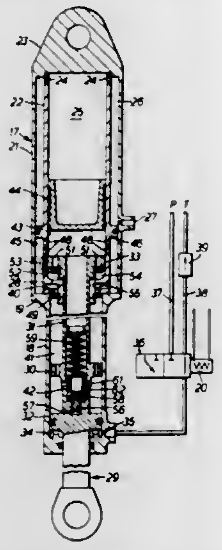


A light weight flexible bag used to collect and transport natural gas to a location for use or storage. The gas pressure inside the bag is regulated by a temperature control unit having a barometric control valve used to stabilize the pressure of the gas during periods of low external energy. The temperature control unit also functions as a ballast to control the flight elevation of the bag. A pump connected to a gas collecting ring operates to withdraw the gas from the bag.

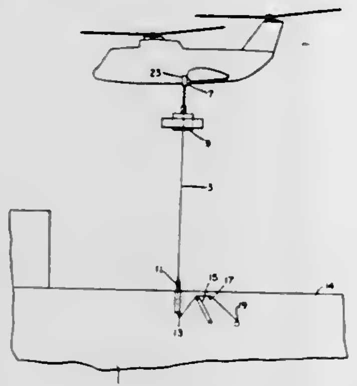
3,531,065
AIRCRAFT ARRESTING DEVICE

Reginald James Brown, Cheltenham, England, assignor to Dowty Rotol Limited
Filed Nov. 12, 1968, Ser. No. 774,948
Claims priority, application Great Britain, Nov. 13, 1967, 51,583/67
Int. Cl. B64c *25/68*
U.S. Cl. 244—110 **5 Claims**

In aircraft arresting devices of the kind having a hook arm on the aircraft which is engageable with a cable extending across the landing surface, the hook arm is controlled by a telescopic jack and damper unit which contains a compressed gas spring acting to extend the unit for lowering the arm, and which is contracted by connecting an external source of high fluid pressure to a jack chamber in the unit for raising the arm. When the arm is in the lowered position of use, contraction of the unit by an upward load on the arm is resisted by damping means in the unit, while extension movement is undamped except for the ultimate extension movement, the latter being controlled by a snubbing device in the unit.



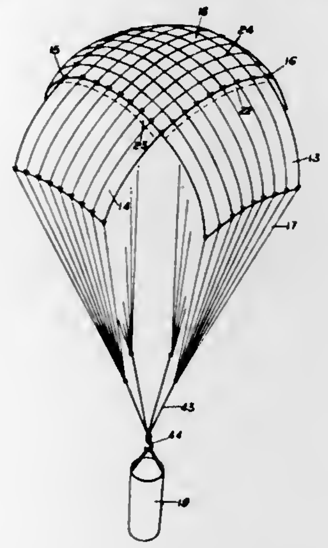
3,531,066
VERTICAL LOAD TRANSFER
Asbjorn Baekken, Dartmouth, Nova Scotia, Canada, assignor to Fairey Canada Ltd., Nova Scotia, Canada, a corporation of Canada
Filed Mar. 3, 1969, Ser. No. 803,881
Claims priority, application Canada, Mar. 5, 1968, 14,007
Int. Cl. B64d *1/00*
U.S. Cl. 244—137 **15 Claims**



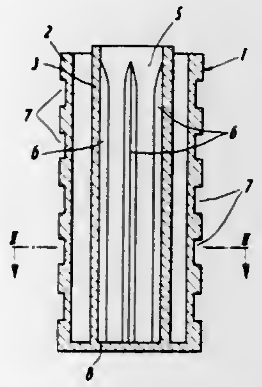
Transfer means to effect vertical transfer of a load between an upper station and a lower station with relative movement therebetween, praticularly between a helicopter and the deck of a ship at sea, comprising a coupling cable between the two stations, means for maintaining that cable at constant tension, a load carrier for movement between the stations while guided by the coupling cable, and at the lower station a receiving post to receive the load and position it against lateral movement even when the coupling cable is released.

3,531,067
PARACHUTES
John Rothwell Mitchell, Woking, England, assignor to G. Q. Parachute Company Limited, Woking, England, a British company
Filed Sept. 9, 1968, Ser. No. 758,281
Claims priority, application Great Britain, Oct. 4, 1967, 45,107/67; Mar. 2, 1968, 10,277/68
Int. Cl. B64d *17/02*
U.S. Cl. 244—145 **8 Claims**

A parachute has a canopy comprising a crown and a number of wings which are tied to the crown, the crown having a skirt which extends below the wings and bridges the gaps between the wings and the crown to prevent airflow through the gaps between the crown and the wings. The crown is made of one or more sections which can be tied together to give a larger crown. Each wing is made of one or more sections which can be tied together to give longer wings or placed side by side to give wider wings. The canopy is made from ribbons of polypropylene woven into a fabric. The canopy and wings are reinforced by tapes, extensions of the tapes being used to tie the parts of the parachute together.



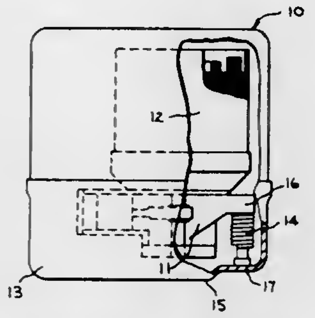
3,531,068
ANCHORING ELEMENT
Artur Fischer, Grunmettstetterstrasse 133, Tumlingen, Germany
Filed July 22, 1968, Ser. No. 746,399
Claims priority, application Germany, July 29, 1967, F 53,097
Int. Cl. G05d *19/00*
U.S. Cl. 248—15 **3 Claims**



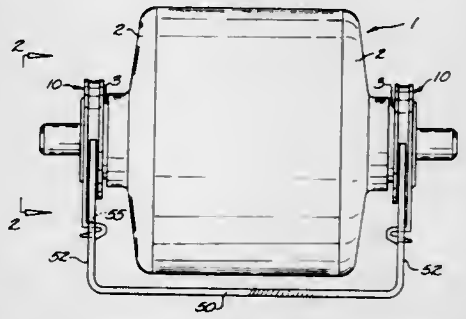
An anchoring element for anchoring to a support structure objects which are subject to vibratory movements. Two sleeves are arranged concentrically within one another with the outer sleeve adapted to be introduced into a hole provided in the support structure and the inner sleeve having an axially bore into which a fastening element can be threaded for connecting to the inner sleeve the object which is subject to vibratory movement. Elastically yieldable webs extend across the clearance between the inner and outer sleeve connecting the two together with freedom of elastic movement relative to one another.

3,531,069
VIBRATION MOUNT FOR COMPRESSORS AND THE LIKE
Charles A. Dubberley, Tyler, Tex., assignor to General Electric Company, a corporation of New York
Filed Nov. 27, 1968, Ser. No. 779,365
Int. Cl. F16f *3/00*
U.S. Cl. 248—15 **9 Claims**

A vibration mount including a compression coil spring for resiliently supporting a vertically disposed load such as a refrigerant motor-compressor unit, and a snubber spring which may be interference wound for assisting the compression spring in damping and resiliently limiting the amplitude of horizontal vibrations. One end of the compression spring is rigidly secured to a base member, and the other end is rigidly secured to a load member. The snubber spring is cantilevered from one of the members and disposed to extend beyond the normal loaded length of the compression coil spring to co-axially encircle in spaced relation thereto the compression coil spring and a portion of the other member.

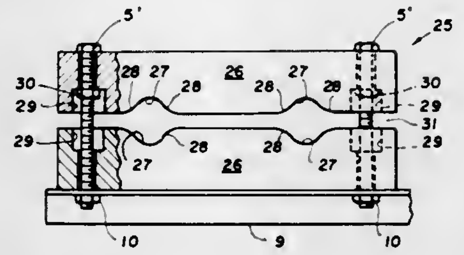


3,531,070
MOTOR MOUNTING
Joseph T. Roddy, Ballwin, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed June 18, 1969, Ser. No. 834,374
Int. Cl. F16f *15/00*
U.S. Cl. 248—15 **5 Claims**



In an electric motor mounting wherein an electric motor is supported by a mounting ring and a bracket having broad sides, a tongue is connected to the mounting ring and bracket and extends homeoplanarly with a broad side of the bracket. In an illustrative embodiment the bracket is sheet metal with an open-mouthed saddle in which the mounting ring is seated and the tongue extends in a direction away from the mouth of the saddle, the tongue and broad side having complementary anchoring means for fastening the tongue to the broad side.

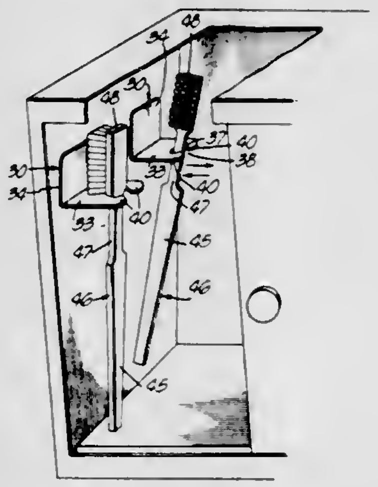
3,531,071
CABLE SUPPORT
Arthur F. Kubli, 519 Coal St., Pitcairn, Pa. 15140
Continuation-in-part of application Ser. No. 566,133, July 18, 1966. This application Aug. 16, 1968, Ser. No. 756,086
Int. Cl. F16l *3/12, 3/22*
U.S. Cl. 248—68 **2 Claims**



A cable support comprising a pair of support blocks held separated by springs, or by nuts, so that confronting substantially, semi-circular, chamfered cut-out portions between the blocks will allow cables to be freely pulled through the support without damaging the insulation.

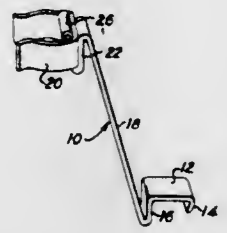
A modification comprises three or more support blocks having similar confronting cut-out portions so that cables may be spaced horizontally as well as vertically from each other, such as in a delta arrangement.

3,531,072
SELF-LOCKING TOOTHBRUSH HOLDER
Alberta M. Lindquist, 690 A Rand Ave., Oakland, Calif. 94610
Filed Jan. 26, 1968, Ser. No. 700,793
Int. Cl. A46b *17/00*
U.S. Cl. 248—113 **3 Claims**



A fixture including a horizontal platform element having an aperture therein for receiving the neck of the handle of a toothbrush for supporting the latter and a vertical back element provided with pressure adhesive for securing the fixture to a wall, said fixture being formed of thin, springy, but manually bendable sheet material which is bent near its middle transversely at a right angle to provide said elements, said aperture being connected with an edge of said platform element by a narrow slot with outwardly diverging sides engagement with which by a brush neck, when the latter is shifted broadside edgewise toward said slot with the brush inclined from vertical, deflects said slot sides upwardly and downwardly to widen said slot to admit said brush neck into said aperture, or to permit the withdrawal of said brush neck from said aperture.

3,531,073
BRUSH HOLDER
Anthony Cortina, 11 Perry St., New London, Conn. 16320
Filed Apr. 2, 1968, Ser. No. 718,063
Int. Cl. A46b *17/02*
U.S. Cl. 248—113 **7 Claims**

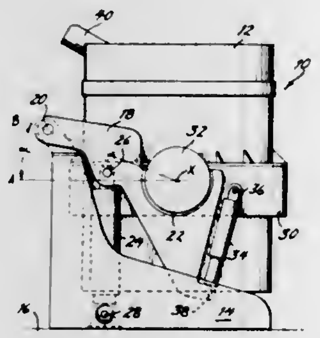


The presently-disclosed invention is a brush holder having an improved paint-type can gripping means which provides an adjustable brush holding means for vertically supporting a brush over a paint-type can at any one of a variety of levels.

3,531,074

TILTING AND SUPPORTING APPARATUS FOR FOUNDRY VESSELS

Herbert W. Zelley, Burlington, and Cletus R. Van Dine, Medford Lakes, N.J., assignors to Inductotherm Corporation, Rancocas, N.J., a corporation of New Jersey
Filed Mar. 18, 1968, Ser. No. 713,974
Int. Cl. A47f *5/12*
U.S. Cl. 248—141 **7 Claims**

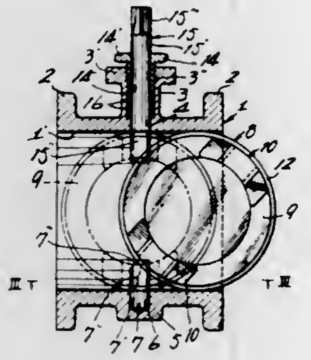


Tilting and supporting apparatus for foundry vessels or the like wherein a first movable support member is supported by a base, and a second movable support member is pivotably coupled to the first movable support member. Movement of the second movable support member in one direction augments the tilting movement relative to the base provided by the first movable support member. Tilting movement of the second movable support member in the opposite direction relative to the base provides for tilting of the vessel in such opposite direction.

3,531,075

BUTTERFLY VALVE

Kazuo Kitazawa, 21–13, 2-chome, Ohara, Setagaya-ku, Tokyo, Japan
Filed Apr. 8, 1968, Ser. No. 719,531
Claims priority, application Japan, Oct. 20, 1967, 42/67,188
Int. Cl. F16k *1/226, 25/00*
U.S. Cl. 251—306 **3 Claims**

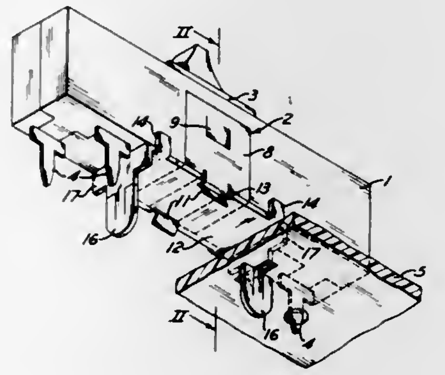


A butterfly valve for use in a piping system adapted to transport fluid under high pressure comprising a hollow cylindrical casing having an upwardly projecting neck portion provided with a bore and a recess formed on the inner bottom of the casing in alignment with said bore of the neck portion; a lower driven shaft received in said recess and partially projecting upwardly therefrom; an upper drive shaft received in said bore of the neck portion and partially projecting downwardly into the interior of said casing; a rotary disc assembly rotatably mounted on said shafts in such a manner that the assembly may be allowed to displace with respect to said shafts during the rotation of the assembly in unison with the shafts while maintaining a fluid tight sealing relation between the outer periphery of the disc assembly and the inner periphery of the casing.

3,531,076

ELECTRICAL CONTROL DEVICE WITH CLIP ENGAGING MOUNTING BRACKET MEANS

Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Aug. 6, 1968, Ser. No. 750,738
Int. Cl. G12b *9/08;* **H01c** *1/02*
U.S. Cl. 248—316 **4 Claims**

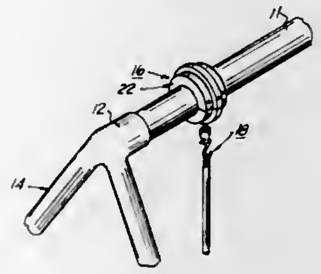


A U-shaped spring clip is clamped onto the housing of an electrical control and is provided with a pair of spring tongues struck out of its back and extending rearwardly therefrom. The tongues are formed for gripping a support in order to mount the housing on the support. The support may be a bracket provided with anchor tabs for attachment to another support, such as a panel or printed circuit board.

3,531,077

BEARING ASSEMBLY FOR A SWING STRUCTURE

Clifford J. Trottier, 8155 Huntington, Westland, Mich. 48155, and David A. Trottier, 30772 Rush, Garden City, Mich. 48135
Filed Apr. 7, 1969, Ser. No. 813,916
Int. Cl. F16m *13/00*
U.S. Cl. 248—370 **12 Claims**

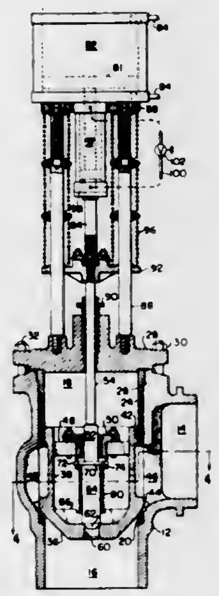


A bearing assembly for swings or similar playground or exercise equipment is attached to an overhead cross bar for the support and swinging or pivoting engagement with a hanger supporting the equipment. The bearing assembly includes a split inner race in the form of a double flanged collar which is fixed to the cross bar by means of tangentially fixed screws which pass through the flanged portions of both halves of the split inner race. The inner race accepts an outer race which is likewise split and loosely secured to the inner race by means of screws which extend tangentially through both halves to prevent the outer race from axial displacement relative to the inner race. Swing hangers or suspension bars are removably attached to the outer race.

3,531,078

ACTUATOR FOR SHUT-OFF VALVE

Alexander V. Hose, Marblehead, and Norman F. Prescott, Wenham, Mass., assignors to Atwood & Morrill Co., Salem, Mass., a corporation of Massachusetts
Original application June 7, 1966, Ser. No. 555,742, now Patent No. 3,428,090, dated Feb. 18, 1969. Divided and this application Feb. 7, 1969, Ser. No. 797,649
Int. Cl. F16k *31/143*
U.S. Cl. 251—54 **1 Claim**

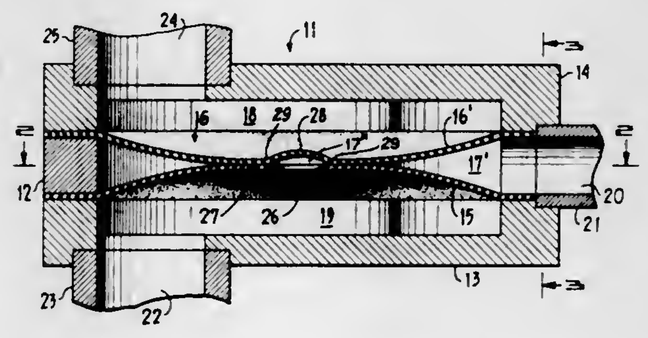


Actuating and control mechanism for large shut-off valves normally actuated by air or other gaseous medium under pressure. The mechanism includes pneumatic actuating means for moving the valve stem axially over the range of opening and closing movement of the valve. Hydraulic means mounted intermediate the pneumatic actuator and the valve body is provided with flow control means for controlling the flow of fluid from one side of the piston to the other to limit the rate of movement of the valve. Emergency fail-safe actuation is provided by springs prestressed to effect operation at the controlled rate in the event of loss of pneumatic pressure.

3,531,079

CONTROLLED FLUID VALVE

George B. Greene, Lafayette, Calif., assignor of ninety percent to Greene Engineering Company, a corporation
Filed Apr. 13, 1966, Ser. No. 542,583
Int. Cl. F16k *7/17*
U.S. Cl. 251—61.1 **5 Claims**

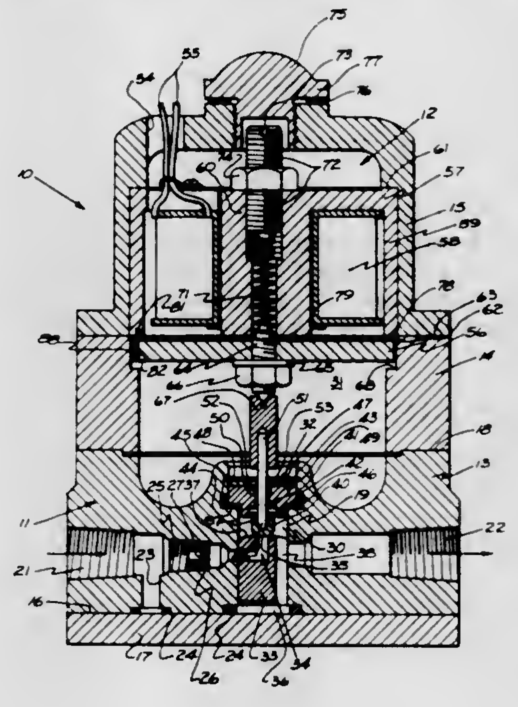


A fluid flow control valve having a chamber which is subdivided by a flexible and completely or largely inelastic partition which is capable of being formed by fluid pressure into a shape which contacts a wall of the chamber and thus cuts off fluid flow between two conduits which communicate with different parts of the chamber. In some forms of the invention the partition contacts a second flexible partition which is provided with a vent, rather than the wall of the chamber.

3,531,080

CONTROL VALVE

Leo H. Dillon, Columbus, Ohio, assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed May 7, 1968, Ser. No. 727,204
Int. Cl. F16k *31/06*
U.S. Cl. 251—129 **4 Claims**

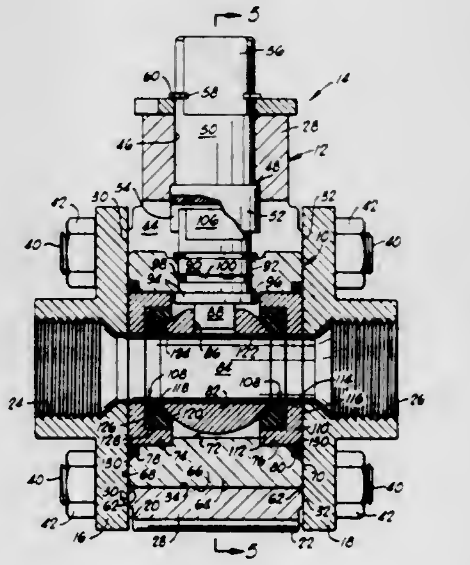


A failsafe or normally closed electromagnetically operated control valve for use in a fluid system. The valve is closed when no current is applied to the valve electromagnet and the pressure does not exceed a limiting or maximum relief value determined by a spring which biases the valve closed. The valve can be electrically adjusted to maintain a desired limiting pressure less than the maximum determined by the spring. The poppet type valve abuts and is centered by the armature, but is not positively connected to it.

3,531,081

VALVE ASSEMBLY WITH INSERTABLE VALVE UNIT

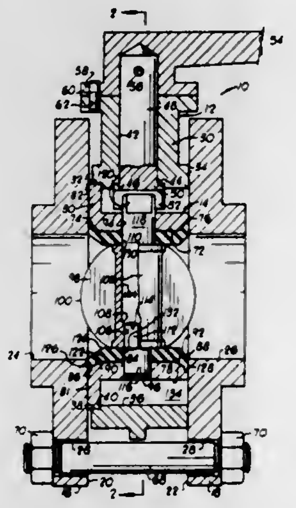
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Sept. 30, 1968, Ser. No. 763,644
Int. Cl. F16k *51/00*
U.S. Cl. 251—151 **54 Claims**



An improved valve assembly for use between flanges basically comprising two units; a valve unit and a housing unit. The valve unit contains all of the components which will be in contact with the fluid flowing through the valve and appropriate sealing means to isolate the fluid flow from the housing unit. The valve unit is sized to slidingly fit lengthwise into the housing unit, thereby providing a valve assembly wherein different valve units may be installed in a single housing unit. The valve unit, is also, provided with appropriate interconnecting means for transmitting the turning movement of a valve operator on the housing unit to the valve member within the valve unit, thereby turning the valve member between open and closed positions.

3,531,082
BUTTERFLY VALVE ASSEMBLY

Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Continuation-in-part of application Ser. No. 763,644, Sept. 30, 1968. This application Apr. 17, 1969, Ser. No. 818,185
Int. Cl. F16k *1/22*
U.S. Cl. 251—151 **22 Claims**

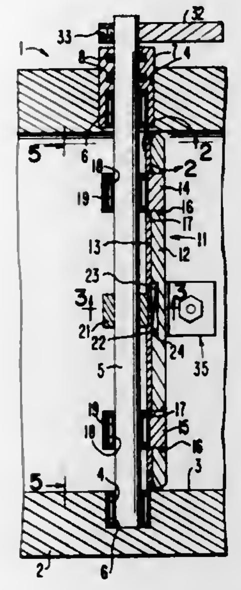


A butterfly valve assembly, particularly useful between flanges, which utilizes a housing unit and a separate valve unit. The housing unit and the valve unit are adapted so that a minimum contact area is established therebetween. The housing unit provides a supporting housing adapted to be supported between the flanges, and includes a valve operator and a first valve stem. The valve unit is sized to be inserted in the housing unit and includes a butterfly valve member, seats and a second valve stem. The second valve stem is interconnected to the first valve stem, and is insertable and removable through the valve body and through the butterfly valve member, and is journalled in the valve body. The second valve stem is interconnected to the butterfly valve member so that the turning movement of the first valve stem is transmitted to the butterfly valve member.

3,531,083
BUTTERFLY VALVE DISK WITH MECHANICAL MEANS FOR EXPANDING A PERIPHERAL SEALING RING

Daniel F. Rohrer, Hillsboro, Oreg., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 19, 1968, Ser. No. 706,493
Int. Cl. F16k *5/14*
U.S. Cl. 251—188 **7 Claims**

A butterfly valve assembly is disclosed which includes a valve housing having a bore therein to define a fluid passageway to be valved. A valve disk structure is pivotably supported in the fluid passageway on a valve stem which extends through the side wall of the housing to the outside for rotation. The valve disk structure includes a pair of axially spaced disk-shaped plates. The two plates are spring biased apart and one of the disks, at its outer periphery, includes an outwardly flared conical surface on which a sealing ring is disposed to seal the valve, a cam carried on the valve stem is operated against the spring bias force and causes the disks to be squeezed together to expand the inner diameter of the sealing ring by forcing such ring along the outwardly flared surface against the inner wall of the fluid passageway to form a fluid seal between the fluid passageway and the valve disk structure. To open the valve, the valve stem is rotated, causing the cam to release the squeezing pressure on the pair of valve disks and permitting the resilient sealing ring to contract and release the sealing engagement between the valve disk and the fluid passageway, thereby permitting rotation of the valve disk with the stem.

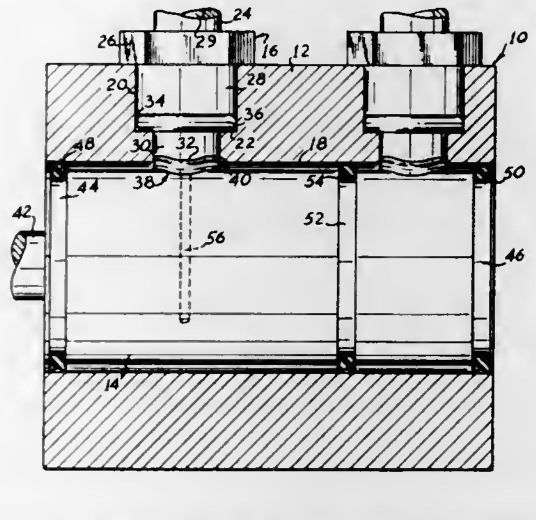


ERRATUM

For Class 251—306 see:
Patent No. 3,531,075

3,531,084
MULTIPORT VALVE

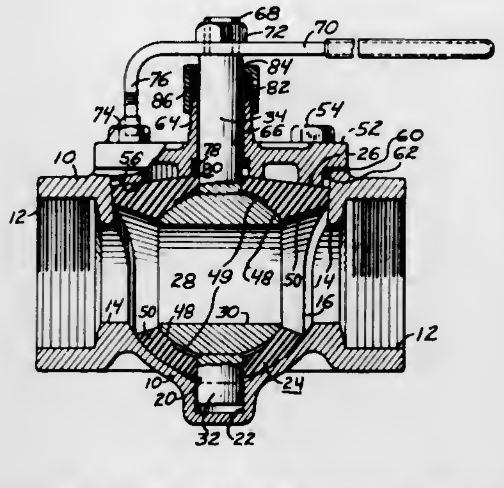
Warren P. Hendrix, Lawrenceville, Ga., assignor to Micromeritics Instrument Corporation, Norcross, Ga., a corporation of Georgia
Filed Sept. 9, 1968, Ser. No. 758,432
Int. Cl. F16k *5/04*
U.S. Cl. 251—314 **17 Claims**



A multiport valve for use in selectively controlling the flow of fluid from one conduit to at least one other conduit including a housing, at least two conduit fittings, a rotatable core and quad rings sealingly positioned between the base of the fittings and the outer surface of the rotatable core.

3,531,085
GEM BALL VALVE

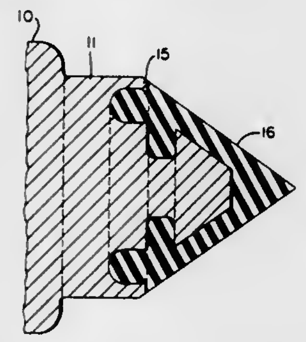
George E. Hansen, Elmwood Park, and Anton Korzenowski, Brookfield, Ill., assignors to Crane Co., Chicago, Ill., a corporation of Illinois
Filed Dec. 12, 1967, Ser. No. 689,998
Int. Cl. F16k *5/06*
U.S. Cl. 251—315 **6 Claims**



A ball valve of the type employing a two-piece flexible valve seat for encapsulation of a ported spheroidal valve closure member. The valve comprises a casing having a frusto-conical valve chamber which is open at its upper end and which has an essentially spheroidal lower surface portion. The lower portion of the two-piece valve seat is essentially congruent with the lower portion of the valve chamber, and includes means for resisting relative rotation therebetween. The ball closure member includes a trunnion portion which projects through the lower surface of the valve seat and into an aperture formed in the lower surface portion of the valve chamber. The closure member is also provided with a stem portion which projects through the upper surface of the valve seat. The upper surface of the valve seat has an essentially frusto-conical configuration, being slightly angled upwardly toward the stem. A cover closes the open end of the valve chamber and snugly overlies the upper surface of the valve seat. The lower surface of the cover may be provided with an annular recess for accommodating expansion of the valve seat. The stem projects through the cover to the exterior of the valve casing and may be sealed with an interior annular sealing ring and/or an exterior packing nut arrangement.

3,531,086
NEEDLE VALVE WITH RESILIENT TIP

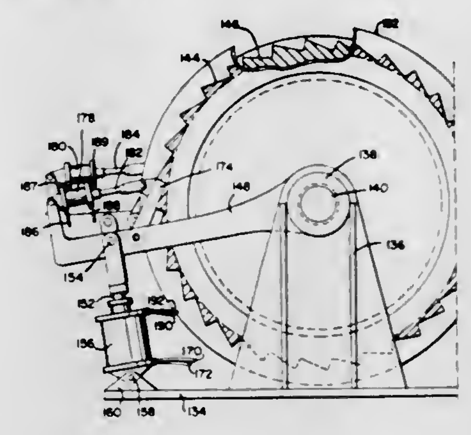
James P. Shannon, Painesville, Ohio, assignor to Industrial Electronic Rubber Company, Twinsburg, Ohio, a corporation of Ohio
Filed Sept. 17, 1968, Ser. No. 760,287
Int. Cl. F16k *21/00*
U.S. Cl. 251—356 **5 Claims**



A metal valve body has an integral preform of general spear shape at an end and a groove in the end face forming a ring which is crimped inwardly over the groove, an elastomeric tip being molded on the end about the preform and filling such groove.

3,531,087
HYDRAULICALLY ACTUATED WINCH MECHANISM

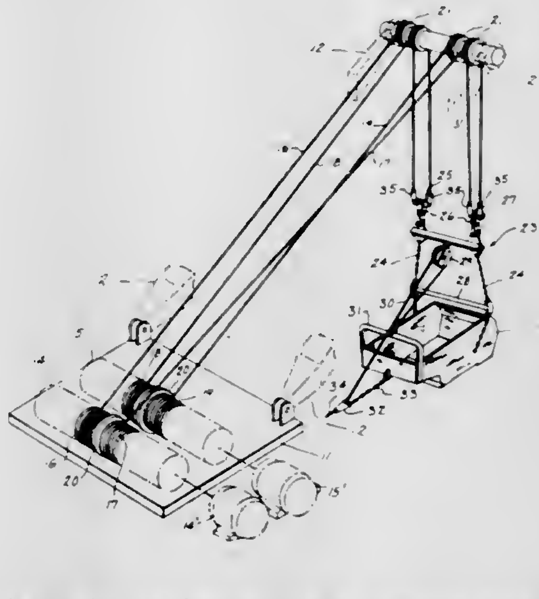
John Hart Wilson, % Wilson Mfg. Co., P.O. Box 1031, Wichita Falls, Tex. 76307
Original application Mar. 28, 1968, Ser. No. 716,813, now Patent No. 3,442,239, dated May 6, 1969. Divided and this application Apr. 9, 1969, Ser. No. 814,673
Int. Cl. B66d *1/30*
U.S. Cl. 254—150 **3 Claims**



A fluid actuated winching mechanism for rotating a winch drum in one direction to lift a load and to permit the winch drum to rotate in the opposite direction to lower the load. The winch drum is operated by a pair of levers, each having a pawl thereon. Each pawl is moved into and out of engagement with circumferentially spaced ratchets on each side of a drum and when the several fluid cylinders and plungers are actuated in sequence, the winch drum may be positively turned to lift the load or to lower the load. A programming valving mechanism may be associated with the various cylinders, so each cylinder will be actuated at the proper time for efficient operation of the winch.

3,531,088
HOIST MECHANISM FOR BUCKET

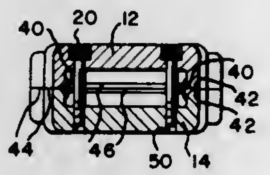
Melvin W. Kraschnewski, Racine, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,366
Int. Cl. B66d *1/26*
U.S. Cl. 254—184 **1 Claim**



A bucket hoist mechanism for a dragline excavator includes two independently driven hoist drums and two pairs of hoist cables. The drums are mounted on the working frame of the machine, and one pair of cables leads from each drum and passes about the tip of the boom to be attached to a suspension bar from which the bucket is suspended. One cable from each pair is attached to an equalizer beam at one end of the suspension bar, and the other cable from each pair is attached to the other end of the suspension bar, this arrangement resulting in equal sharing of the load by the two hoist drums.

3,531,089
ROPE BLOCK ASSEMBLY

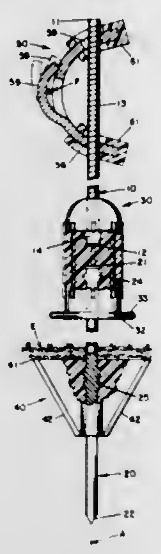
Harold S. Harding, Milan, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 695,028, Jan. 2, 1968. This application Nov. 7, 1969, Ser. No. 871,642
Int. Cl. B66d *1/36*
U.S. Cl. 254—192 **1 Claim**



The structure, and method of producing same, in which a single, hollow casting is split to form irregular-edged, mating surfaces in the halves. The hollow receives the rope supporting components, and the irregularity of the surfaces insures an intimate, aligned, and non-slip mating of the halves on reassembly.

3,531,090
ELECTRICAL FENCE POST WITH WIRE-CONNECTOR

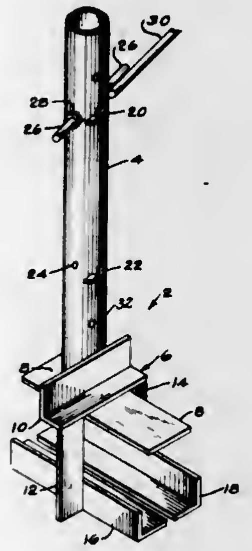
Ralph L. Laible, 14008 N. 24th St., Rte. 6, Omaha, Nebr. 68112
Filed July 28, 1969, Ser. No. 845,175
Int. Cl. A01k *3/00*
U.S. Cl. 256—10 **11 Claims**



This invention relates to electrical fencing and particularly to novel wire-connector members for attaching the electrically conductive wire portion to the incrementally spaced upright fence post portions whereby the electrically conductive wires are maintained in electrical insulation with respect to the earth and further maintained in substantial parallelism with the underlying terrain. The wire-connector member is of springy elongate strip form with two endward perforations each surrounding the fence post whereby the wire-connector is selectably slidbly vertically positionable along and frictionally engageable with upright fence posts including with novel dual-segment fence posts of the present invention wherein two vertically aligned metallic rod segments are maintained in electrically-insulative relationship with an intermediate resinous-insulator.

3,531,091
SAFETY BARRIER

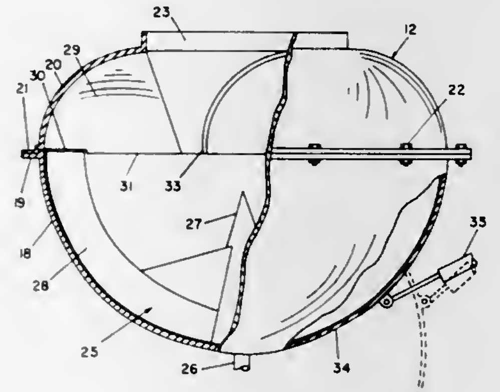
Edward F. Windham, Plantation, Fla., assignor, by mesne assignments, to Safety Development, Inc., a corporation of Florida
Filed Mar. 6, 1969, Ser. No. 804,874
Int. Cl. E04h *17/14*
U.S. Cl. 256—65 **7 Claims**



An open floor safety barrier support including a post supported adjacent only one end for use on the top floor of buildings during open floor construction. The safety barrier includes base supporting means connected to an upright post for supporting safety cables. The supporting means includes a screw driven clamping member for clamping the end of a construction beam between the clamping member and a fixed portion of the supporting means, the supporting means includes a removable brace member for lateral support.

3,531,092
ROTARY BATCH MIXER AND METHOD

Gerald H. Praschak and Dwight E. Howden, Jr., Marshfield, Wis., assignors to Praschak Machine Co., Inc., Marshfield, Wis., a corporation of Wisconsin
Filed Oct. 22, 1968, Ser. No. 769,522
Int. Cl. B01f *7/16*
U.S. Cl. 259—8 **11 Claims**

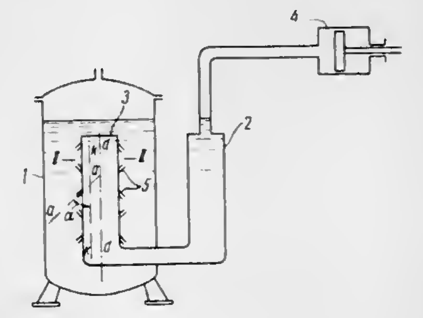


A batch mixer having a mixing chamber wherein the upper portion has a first inlet for introducing particulate material into the mixing chamber and a series of inlets circumferentially spaced about the top portion for rapid introduction of liquid material under pressure. A rotary impeller assembly is mounted in the bottom portion of the mixing chamber. A plurality of stationary curved baffle ducts are provided on the underside of the top portion of the mixing chamber.

The impeller blades impart an upward spiral flow to the mass of material. The baffles divide the upwardly spiraling mass into a plurality of converging flow streams directed at one another in opposed intermixing relation wherein the materials bombard one another. The intermixed material then falls by gravity and the conical hub of the impeller assembly imparts a deflected separation flow to the material.

3,531,093
DEVICE FOR PULSATING MIXING OF LIQUID REAGENTS AND LIQUID-AND-SOLID REAGENTS

Susanna Mikhailovna Karpacheva, 2 Schukinsky proezd 2 kv. 88; Vladimir Dmitrievich Ivanov, 2 Schukinsky proezd 11, kv. 6; Valerian Matveevich Muratov, Astakhovsky per. ½, kv. 118; Leonid Solomonovich Raginsky, Nikitinskaya ulitsa 29, korp 1, kv. 29; Alexandr Vladimirovich Romanov, Ulitsa Snezhnaya 19, korp. 3, kv. 58; Alexander Nikolaevich Shirsky, Ulitsa Volodarskogo 26–32, kv. 117; Igor Nikolaevich Klimov, Volokolamskoe Shosse 16, kv. 35; and Leonid Petrovich Simonov, Novaya-Bodraya 1/1, kv. 85, all of Moscow, U.S.S.R.
Filed Mar. 26, 1968, Ser. No. 716,037
Int. Cl. B01f *5/10*
U.S. Cl. 259—60 **2 Claims**

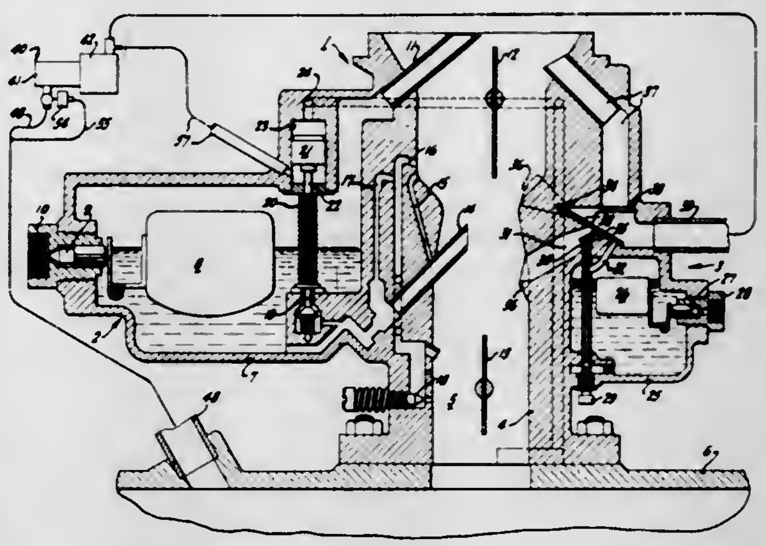


Device for pulsating mixing of liquid reagents or liquid-and-solid reagents which can or cannot be soluted one in the other and which have different or almost the same specific weights. The device has at least two intercommunicating vessels one of which is mounted in a reservoir for reagents to be mixed and the other is connected to a pulsator. A plurality of nozzles are disposed on the vessel mounted in the reservoir, which provide communication between that vessel and the reservoir to mix their contents when the pulsator is actuated.

3,531,094
AUXILIARY CARBURETOR

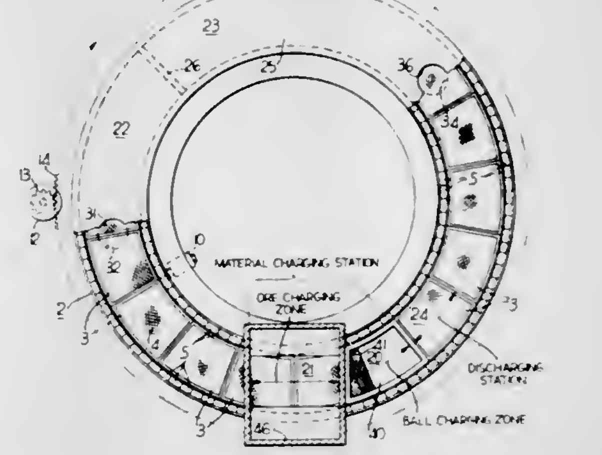
John Andrew, 15763 W. 1st Ave. N., Delhi, Calif. 95315
Filed Mar. 5, 1969, Ser. No. 804,426
Int. Cl. F02m *7/08*
U.S. Cl. 261—23 **10 Claims**

An auxiliary carburetor, arranged in conjunction with a main conventional carburetor and operative—automatically—to deliver a supplemental, well-atomized fuel-air mixture into the bore of the throttle body of the conventional carburetor, whereby to maintain engine efficiency during relatively short periods of partial fuel starvation due to a condition of low vacuum and which occurs, for example, when the throttle valve is quick-opened relatively wide for acceleration; the requisite air stream for the auxiliary carburetor, and as needed to produce the supplemental fuel-air mixture, being provided by an air pump which functions only in response to such a low vacuum condition.



3,531,095
ANNULAR ROTARY REACTOR

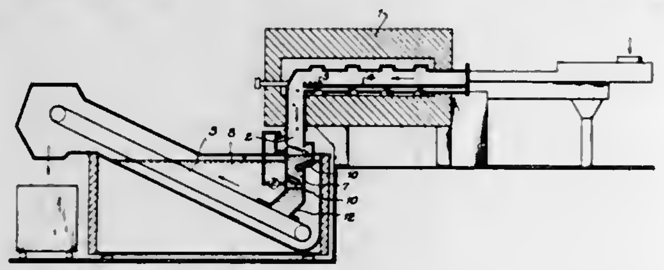
Robert D. Frans, Middleburg Heights, Ohio, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 1, 1968, Ser. No. 772,760
Int. Cl. F27b *9/16*
U.S. Cl. 263—7 **5 Claims**



An apparatus is disclosed including an annular rotary reactor assembly having at least two treatment chambers and an annular grate of perforated segments that rotate around an annular path in a horizontal plane and through the chambers. A ball charging zone is defined by a chute provided to deposit a bed of steel balls on the grate, with the balls being larger than perforations in the grate segments. A hopper is provided to hold a supply of particles of material to be treated, screened to be smaller than the steel balls, and the hopper is arranged to deposit these particles on top of the bed of steel balls for treatment in the chambers. While passing through the first chamber the steel balls pick up and store heat absorbed from a gas flow therethrough and while passing through the second chamber the steel balls give up the acquired heat to a cooler gas stream flowing therethrough. After traveling around the annular path and through the chambers, a segment with steel balls and material thereon arrives at a discharge station where the segment is tilted and both the steel balls and treated material are dumped to a screen that separates the steel balls from material that has been treated thereon. The steel balls being larger than the particles of treated material may be recovered substantially free of other material by screening and then returned to the chute for redeposit on the grate. The end of the discharge station is adjacent the beginning of the ball charging zone and substantially the entire grate is uniformly loaded with the steel balls, except for the grate segments passing through the discharge station.

3,531,096
APPARATUS FOR QUENCHING WORKPIECES

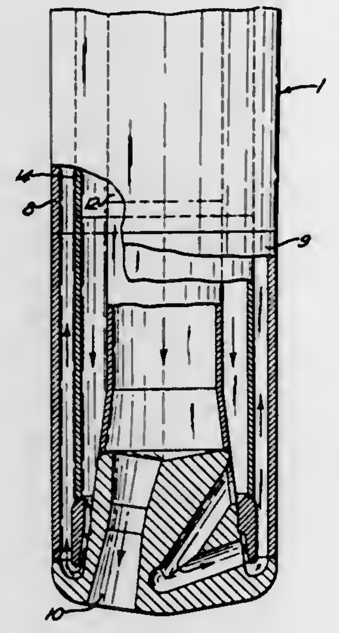
Ottwin Krach, Wolfgang, Helmuth Lohse, Frankfurt am Main, and Karl-Heinz Winter, Dornigheim, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed Aug. 14, 1968, Ser. No. 752,586
Claims priority, application Germany, Sept. 12, 1967, 1,583,354
Int. Cl. C21d *1/62*
U.S. Cl. 266—6 **4 Claims**



Hot workpieces are dropped from an airtight furnace down through a shoot into a tank of aqueous quenching liquid. The shoot contains a layer of oil to prevent water vapor from the quenching liquid reaching the furnace. Baffles in the shoot are used to trap any water vapor which may enter the oil layer.

3,531,097
OXYGEN LANCE

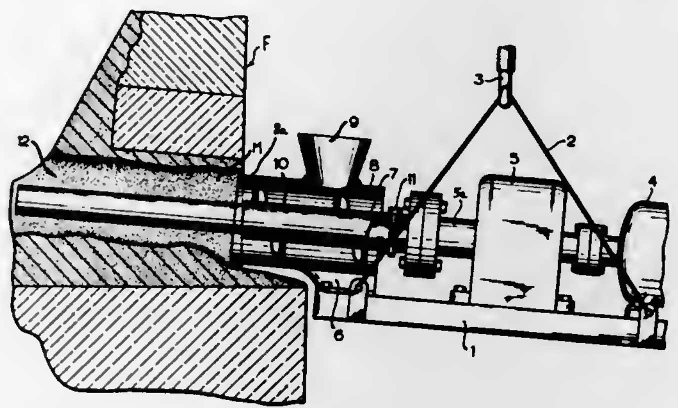
Michael Paulina, Perryopolis, Pa., assignor to Pittsburgh Steel Company, Pittsburgh, Pa., a corporation of Pittsburgh
Filed Mar. 24, 1967, Ser. No. 625,740
Int. Cl. C21c *5/32, 5/46*
U.S. Cl. 266—34 **2 Claims**



A basic oxygen furnace lance is formed from a vertical tube terminating in a nozzle. An oxygen pipe inside the tube has an annular cooling chamber around it extending substantially through the entire length of the nozzle. The upper end of the portion of the tube that is to be inserted down into the furnace is enlarged relative to the tube above it and tapers gradually downwardly therefrom to a point adjacent the nozzle, the taper being at least ⅛ inch per lineal foot.

3,531,098
APPARATUS FOR PLUGGING AND REPAIRING TAPHOLES IN METALLURGICAL FURNACES

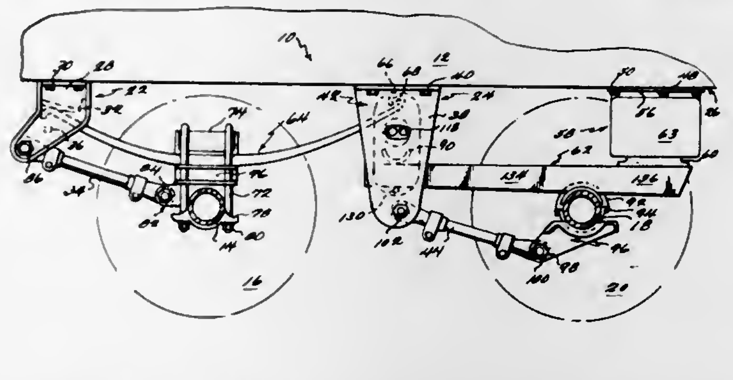
Werner Resch, Dortmund-Kirchhorde, and Oskar Fliege, Dortmund, Germany, assignors to Hoesch Aktiengesellschaft, Dortmund, Germany
Original application Oct. 11, 1967, Ser. No. 674,615. Divided and this application Aug. 19, 1969, Ser. No. 851,235
Claims priority, application Germany, Oct. 17, 1966, H 60,772
Int. Cl. C21b *7/12*
U.S. Cl. 266—42 **6 Claims**



Tapholes of open-hearth furnaces are plugged and repaired by admitting into their outer ends a mass of heat-resistant hardenable plastic material which is fed around a tapping pipe and is compacted radially by causing the pipe to rotate and to simultaneously wobble in the taphole. Axial compression or condensation of plastic material is effected by a feed screw which supports the tapping pipe and can be detached therefrom upon completion of the material admitting step. During introduction of plastic material from the outside, the inner end of the taphole is closed by a plug of hardened plastic material which is introduced from the interior of the furnace.

3,531,099
EQUALIZER ASSEMBLY

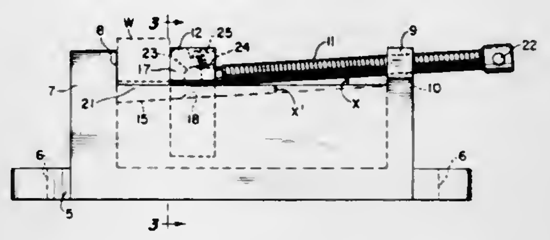
John B. King, Springfield, Mo., assignor to Hutchens and Son Metal Products, Inc., Springfield, Mo., a corporation of Missouri
Filed Jan. 26, 1968, Ser. No. 701,003
Int. Cl. B60g *11/04*
U.S. Cl. 267—56 **9 Claims**



Equalizer brackets are pivotally carried by hanger plates mounted on the frame of a vehicle with the longitudinal center lines of the brackets being substantially vertical. Leaf or air spring assemblies of a first axle are secured to the equalizer brackets at points spaced above the horizontal pivotal axes of the brackets; while lever arms of air spring assemblies associated with a second axle are in contact with the equalizer brackets at points spaced below the pivotal axes with the points of contact between the equalizer brackets and lever arms being altered by pivotal movement of the equalizer brackets about the pivot as axes to change the effective lengths of the lever arms.

3,531,100
VISE

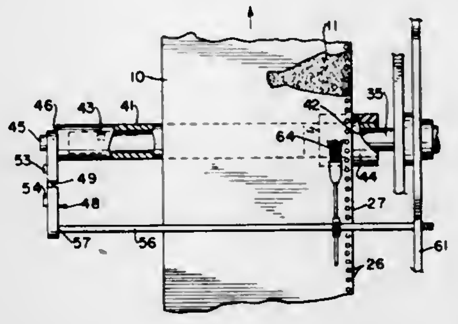
Martin G. Stromquist, 123 S. London Ave., Rockford, Ill. 61108
Continuation-in-part of application Ser. No. 429,256, Feb. 1, 1965. This application June 20, 1967, Ser. No. 653,587
Int. Cl. B23q *3/06*
U.S. Cl. 269—137 **1 Claim**



This vise has its clamping screw and the ways for the movable jaw inclined downwardly at a small angle from the horizontal, whereby to give the movable jaw that is slidable on and between said ways a downward component in clamping work between it and the fixed jaw. The movable jaw is vertical and parallel to the fixed jaw and guided closely in the ways to remain in truly parallel relationship to the fixed jaw in all positions of adjustment.

3,531,101
FEED RATE ADJUSTER FOR WEB COLLATOR

Rosario Paul Consalvo, Monroe, N.Y., assignor to Hygrade Printing Corp., New York, N.Y., a corporation of New York
Filed Jan. 29, 1968, Ser. No. 701,202
Int. Cl. B65h *39/00*
U.S. Cl. 270—52 **3 Claims**

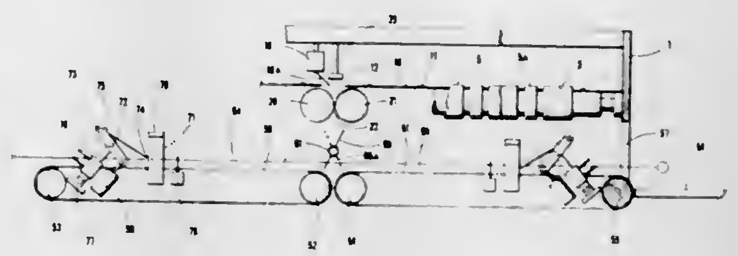


A method and apparatus for synchronizing the feed rate of a plurality of webs being driven in a roll-type collator wherein a frictional surface is formed on a driven arbor associated with the web to be synchronized and the web is forced into more substantial rolling contact with the arbor until its feed rate is synchronized. Apparatus comprises a tubular member having a collar of frictional material which is keyed to the driven arbor for rotation therewith; and, means for increasing the feed rate of the web supported adjacent the frictional collar for contact with the web surface at the point where the web passes over the frictional collar.

3,531,102
COMBINATION FOLDER HAVING SELECTIVE DELIVERY TO PLURAL CROSS-FOLDERS

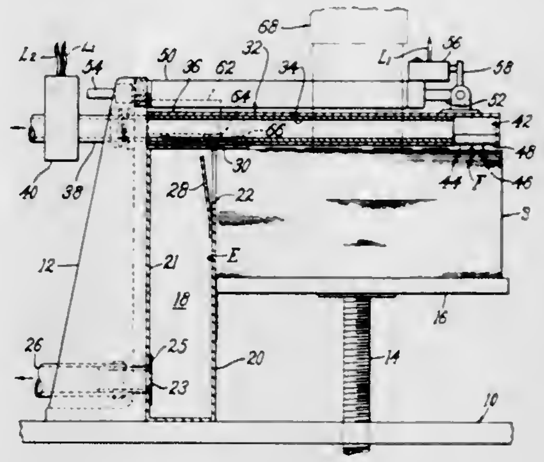
Robert L. Sjöström, Boca Raton, Fla., assignor to Sjostrom Automations, Inc., Boca Raton, Fla., a corporation of Florida
Filed July 13, 1967, Ser. No. 653,113
Int. Cl. B65h *45/12*
U.S. Cl. 270—62 **5 Claims**

A cross folder designed to make cross folds in bedsheets which have already been folded laterally consisting of a short forwardly moving conveyor belt system with a pair of nip rolls centrally located below and longitudinally parallel the upper level of the endless belts for effecting a first cross fold. A pair of sets of endless belts extend underneath and laterally from the nip rolls. A butterfly type deflector beneath the folding rolls is adapted to deflect sheets after passing between these folding rolls to one or the other of the pair of endless belts so that the cross folded sheet may be delivered selectively to either side of the folder.



3,531,103
FABRIC HANDLING

Richard R. Walton, Boston, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 21, 1967, Ser. No. 647,784
Int. Cl. B65h *3/08*
U.S. Cl. 271—26 **20 Claims**

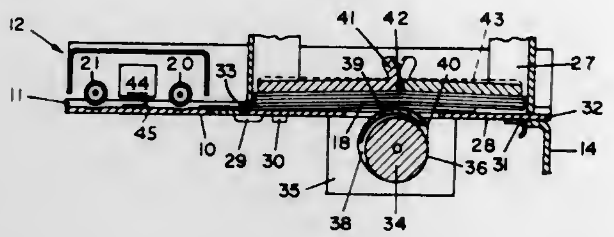


A machine for feeding fabric sheets singly from a stack of sheets and having novel means for effecting the release of only one sheet from the stack during each pick-off operation. The pick-off device of the machine is effective to cleanly remove a single fabric ply of regular or irregular shape from a stack and deposit the ply in one of a plurality of positions at a work station, conveyor or on another stack. It can position the sheet with a high degree of accuracy.

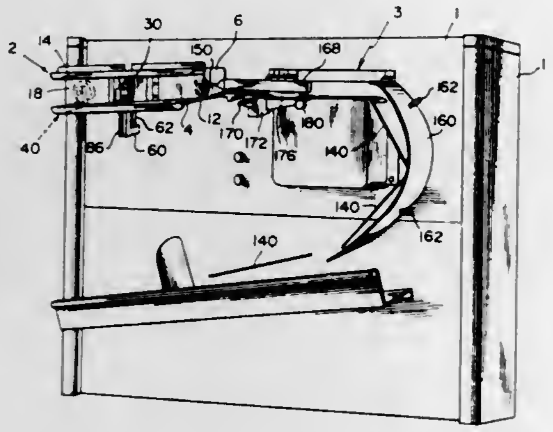
3,531,104
DOCUMENT FEEDING AND TRANSPORT MECHANISM

Albert V. Martin, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 13, 1967, Ser. No. 682,041
Int. Cl. B65h *3/06*
U.S. Cl. 271—36 **11 Claims**

Documents are selectively fed from a hopper containing a plurality of stacked documents by frictional engagement with a rotating cam located beneath the hopper which in a rest position permits all documents to lie flat. Upon rotation, the documents are first lifted slightly upwards and then engaged by a frictional portion of the cam for transporting the lowest one of such documents out from the stack of documents. Raising up the documents decreased the frictional engagement between adjacent documents and also the hopper bottom plate. An articulated weight is disposed over the documents for providing an even weight distribution during feedout. The above described hopper is snapped into place into a card reader having such cam drive for automatically feeding documents through the card reader, or in the alternative, the hopper is removed and a flat plate is disposed over the cam assembly for hand feeding the documents.



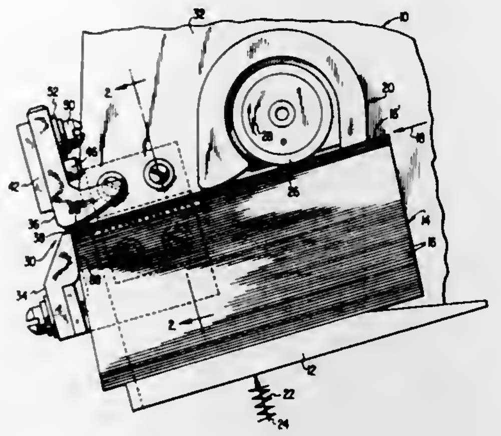
3,531,105
CARD FEEDING APPARATUS
Harry R. Frankle, 4021 River Oak Drive,
Des Moines, Iowa 50312
Filed Apr. 16, 1968, Ser. No. 721,680
Int. Cl. B65h *3/06*
U.S. Cl. 271—36 **9 Claims**



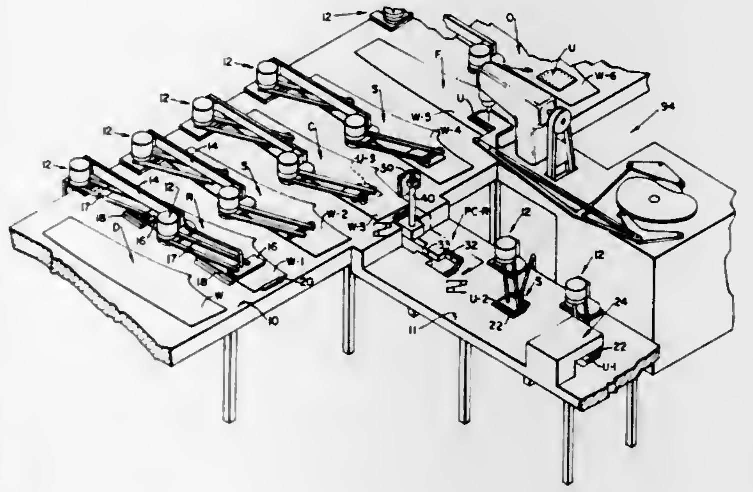
The invention is an apparatus for feeding punched cards one at a time into a reader. The apparatus comprises a hopper for containing the cards, the cards being mounted on a spindle slidably projecting upwardly through the base of the hopper. An arm overlies the upper end of the spindle and is separated therefrom by a gap slightly greater than the thickness of each of the cards. In use the arm rests on the top card of the stack, so that the top card is positioned to slide through the gap. A rubber roller or wheel slides the successive top cards from the stack and feeds them into the reader, only one card at a time being allowed to pass through the gap because of the latter's size.

3,531,106
FLOATING THROAT KNIFE
Curtis A. Larson and Richard J. Ullmer, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 22, 1968, Ser. No. 754,643
Int. Cl. B65h *3/06, 9/16*
U.S. Cl. 271—36 **11 Claims**

In a top feed mechanism for a card stack, a throat knife assembly formed by spaced upper and lower throat knives defining a constant dimension throat gap is supported for rotation about an axis parallel to the plane of card feed providing greater warped card acceptance while preventing simultaneous multiple card feed.

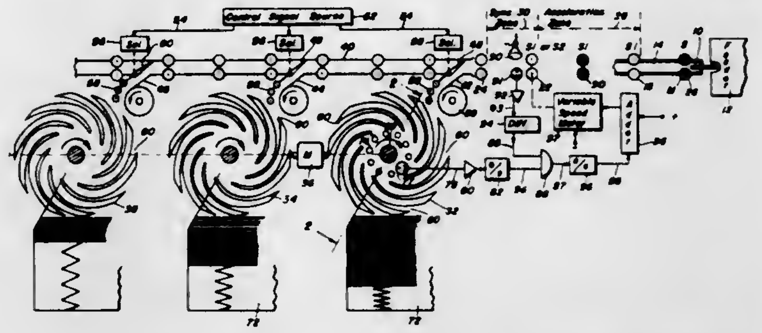


3,531,107
METHODS AND APPARATUS FOR AUTOMATICALLY REGISTERING FABRIC WORKPIECES
Herman Rovin, East Norwalk, and Fred J. Schiffmacher, New Canaan, Conn., assignors, by mesne assignments, to Ivanhoe Research Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 28, 1967, Ser. No. 619,302
Int. Cl. B65h *9/04*
U.S. Cl. 271—58 **21 Claims**



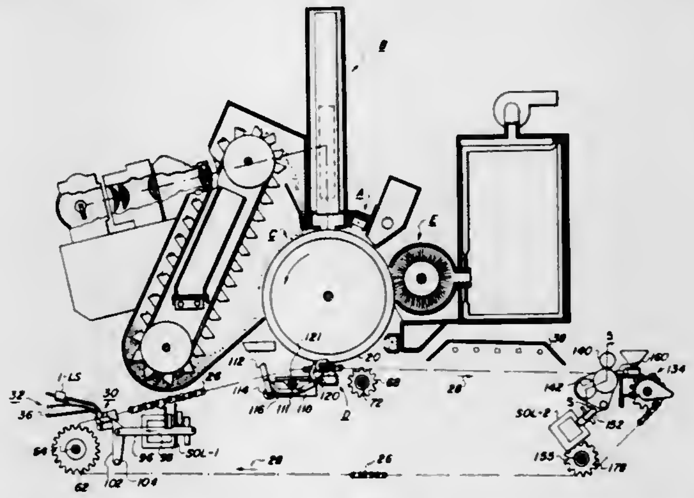
A method and apparatus for automatically registering fabric workpieces for use in a production line to bring an edge or edges of the workpieces into accurately known locations and then for combining the registered workpieces together in readiness for joining them. Force impulses are applied to the workpiece by pulsating air jets flowing beneath the workpiece, the pulses of air being generated by valving or fluttering vibrating reed elements or both for agitating the workpiece to reduce friction effects as the workpiece is impelled by the impulses edgewise toward stop surfaces to register it. In certain embodiments pulsating air jet units are mounted on a movable or invertible head which accomplishes the dual functions of registering a workpiece and then of moving or inverting the workpiece to combine it with another workpiece. The head holds the registered workpiece in position thereon by suction during motion. In modified embodiments a revolving suction member is mounted upon the movable head to provide the dual functions of registering and combining.

3,531,108
DOCUMENT STACKER AND/OR SORTER
Jacob Babinow, Bethesda, and William P. Gingras, Rockville, Md., assignors to Control Data Corporation, Rockville, Md.
Filed June 4, 1968, Ser. No. 734,271
Int. Cl. B65h *29/60*
U.S. Cl. 271—64 **8 Claims**



Apparatus which synchronizes the documents of a stream with a movable document-handling member of the type which requires the documents to be received in phase relationship with the member. This is accomplished on-the-fly by detecting the phase relationship between the document handling member and each ducument as it enters a zone in the path of the stream, and by adjusting the position of each document which is out of phase with the member. Position adjustment relative to the member is obtained by either accelerating or decelerating the document over a short distance sufficient to bring it into phase or synchronization with the document-handling member.

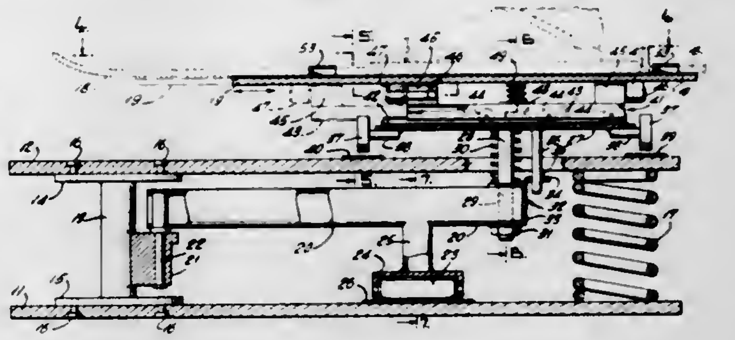
3,531,109
SHEET MATERIAL TRANSPORT SYSTEM
Edward H. Burnham and Edward J. Lavander, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 20, 1968, Ser. No. 730,465
Int. Cl. B65h *29/28*
U.S. Cl. 271—79 **4 Claims**



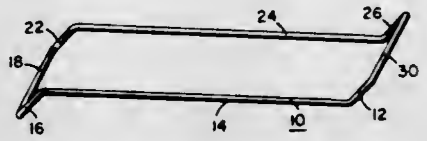
A sheet conveying system for carrying sheet material from a delivery station to a discharge station having a rod rotatably mounted for engagement with spring stock wherein the sheet material is secured between the rod and sheet material for positive gripping.

3,531,110
SKIING SIMULATOR WITH INDIVIDUALLY CONTROLLED SKI MOUNTS
Frederick Marchu, 45 Knowlton Ave.,
Mount Kisco, N.Y. 10549
Filed Apr. 23, 1968, Ser. No. 723,540
Int. Cl. A *23/04*
U.S. Cl. 272—57 **8 Claims**

A skiing simulator for teaching and practicing skiing maneuvers which includes mounts for releasably supporting and holding a pair of skiis. The mounts are independently pivotable about the longitudinal axis of the skiis and are independently movable in a plurality of planes, including vertical and horizontal, to simulate a wide variety of ski positions.

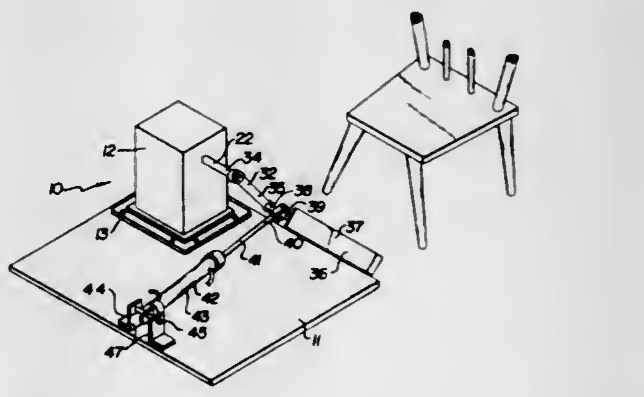


3,531,111
ROD JUMPING DEVICE
Elroy J. Shafer, 4184 Tungsten Drive,
La Mesa, Calif. 92041
Filed Oct. 9, 1968, Ser. No. 766,167
Int. Cl. A63b *5/22*
U.S. Cl. 272—74 **8 Claims**



An amusement device that will provide exercise and entertainment for the user in skipping, hopping, or jumping, having a pair of longitudinal rods connected together at their ends by curved in bent, outwardly projecting end portions that project in opposite directions at opposite ends and which curved portions have a connecting bar that spaces the rod members sufficiently to allow the user to be positioned therebetween, and which device is manipulated by the foot of the user to cause the amusement device to rotate over the head of the user and to come to rest in a new position wherein it is again operable by the foot to again rotate over the head of the user.

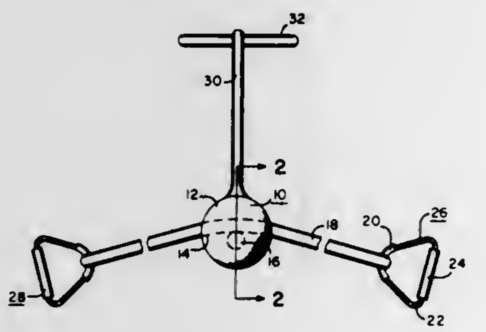
3,531,112
HYDRAULIC DAMPED PEDAL-TYPE EXERCISE APPARATUS
Thomas T. Gibbs, 1539 Edgeware Road,
Victoria, British Columbia, Canada
Filed Apr. 26, 1967, Ser. No. 633,950
Int. Cl. A63b *21/22*
U.S. Cl. 272—79 **2 Claims**



A pedal-type exerciser to be operated from a seated position, the pedal thereof being arranged to support the feet of an individual taking exercise in side by side relationship for rotation in unison. A rotatable flywheel is attached to the pedal through a crank arm, and a double acting hydraulic damper is attached to the crank arm to retard rotation.

3,531,113
FRICTIONAL RESISTANT TYPE EXERCISING DEVICE

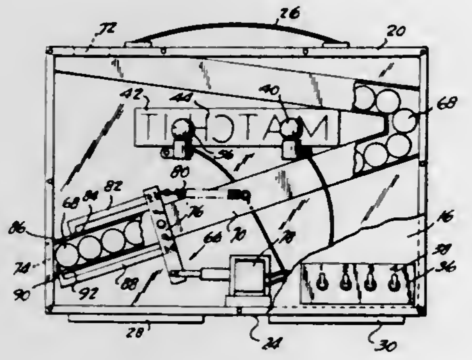
Benjamin F. Sherman, 8369 Mt. Vernon, Lemon Grove, Calif. 92045, and Hazel L. Alexander, 1934½ Edgemont St., San Diego, Calif. 92102
Filed Dec. 20, 1967, Ser. No. 692,226
Int. Cl. A63b *21/02*
U.S. Cl. 272—82 8 Claims



Apparatus generally comprising a pair of foot or leg receiving stirrups interconnected by a frictionally held resilient member wherein persons exercise their upper leg muscles by moving their legs and the stirrups in a lateral direction against the friction restraining force opposing translational movement of the resilient member due to an unbalanced force on one stirrup.

3,531,114
ELECTRICAL MATCHING GAME APPARATUS

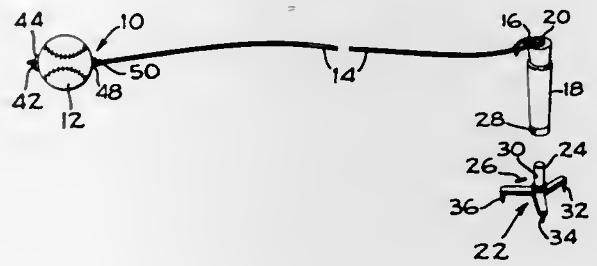
Lloyd Parks, 4300 S. 35th St. 22206, and Dwight C. Brown, 414 Granada 22203, both of Arlington, Va.
Filed Dec. 6, 1967, Ser. No. 688,591
Int. Cl. A63f *9/00*
U.S. Cl. 273—1 6 Claims



An amusement device including a twin series of electrical switches. A player manually activates a switch in one series, and a second player attempts to match the selection by the manual actuation of a corresponding switch in the second series. There is a light for each player. As each player actuates one of his switches his light is activated, and when both lights are activated this indicates that both players have made their selections. If the selection is correct, an electric circuit is completed and a mechanical escapement device is activated to dispense a token or a coin from the device. Players alternate their turns at matching, and the player with the highest total of tokens is declared the winner, after all the tokens have been dispensed.

3,531,115
BATTING PRACTICE DEVICE

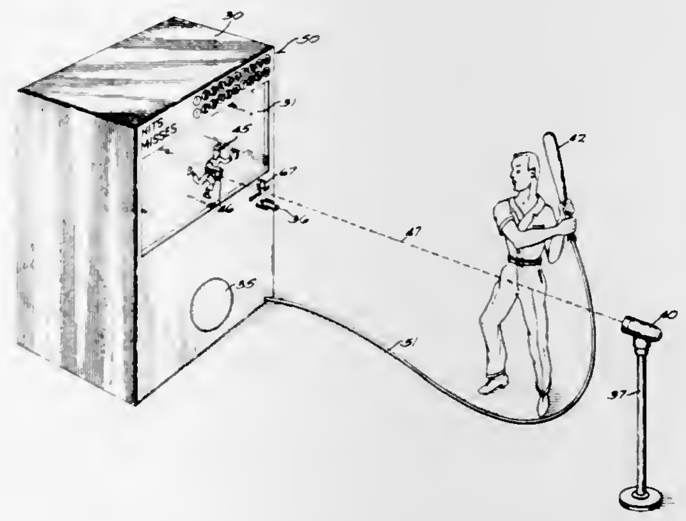
Robert A. Alexander, 465 Asbury St., San Jose, Calif. 95110
Filed Dec. 13, 1966, Ser. No. 601,519
Int. Cl. A63b *69/40, 37/06*
U.S. Cl. 273—26 2 Claims



A ball is secured to the end of a line and used for batting practice by swinging the ball in a circular path or by pitching the ball while an end of the line is anchored to the ground. The ball and line have different elastic characteristics and are connected in a manner to prevent differential elongation for unequal stress.

3,531,116
ELECTRIC BASEBALL BATTING GAME

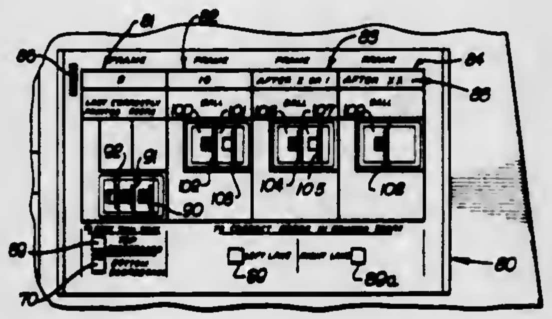
Joseph J. Trzesniewski, 1711 W. Lincoln Ave., Milwaukee, Wis. 53215
Filed Sept. 17, 1968, Ser. No. 760,219
Int. Cl. A63b *69/00*
U.S. Cl. 273—26 10 Claims



A baseball batting game of skill in which a movie is projected on a screen showing a baseball pitcher pitching a baseball. At the instant that the pitcher releases the ball, a beam of light is directed in the path of travel that the ball would take if it had actually been thrown by the pitcher. The beam of light actuates a photocell and it appears at approximately the same time that the baseball would reach the batter if it had actually been pitched by the pitcher shown on the movie screen. The individual playing the game stands between the screen and the photocell, and swings a bat at the pitched ball shown on the screen. If the swing is accurate, he interrupts the beam of light to indicate a hit. If the player is not accurate with his swing, he fails to interrupt the beam of light and a miss is scored.

3,531,117
BOWLING SCOREKEEPER APPARATUS

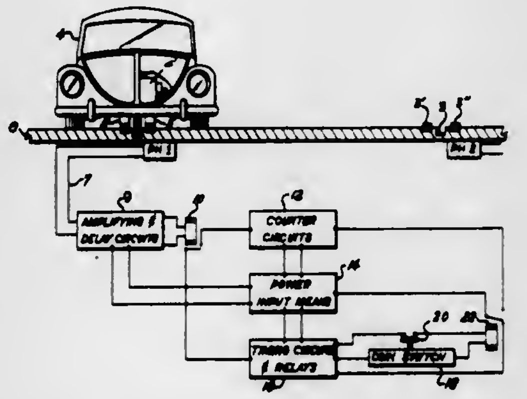
Howard G. Preston, Whittier, and Barclay R. Knerr and Phillip C. Halverson, Fullerton, George W. Spencer, Inglewood, and Richard F. Herlein, Fullerton, Calif., assignors to Brite-Lite Corporation of America, Phoenix, Ariz., a corporation of Delaware
Filed Aug. 13, 1965, Ser. No. 479,511
Int. Cl. A63d *5/00*
U.S. Cl. 273—54 20 Claims



A bowling score computing system including a score correction apparatus having a manually adjustable sequential frame number display. Associated with the frame display is a selector for indicating the correct cumulative score for a given frame and additional selectors for indicating the pitfall occurring in a plurality of frames subsequent to the given frame. Upon actuation of the computer, the above noted correct cumulative score is printed in the appropriate frame space of a score card and the computer prints the pinfall counts in the score card pinfall boxes and computes and prints the correct cumulative score for the subsequent frames for which the pinfall has been indicated by the additional selectors.

3,531,118
LAP COUNTER FOR VEHICULAR RACING GAME

Andrew R. Mabie, Prairie Village, and Marion C. Huckaby, Mission, Kans., assignors to Custom Control Manufacturer, Incorporated, Merriam, Kans., a corporation of Kansas
Filed Apr. 25, 1966, Ser. No. 545,016
Int. Cl. A63f *9/14*
U.S. Cl. 273—86 3 Claims

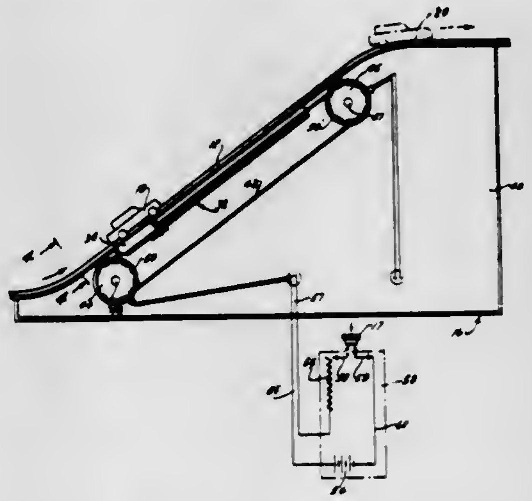


Sensing means responsive to the movement of a magnetic field in proximity thereto is positioned adjacent the track of a vehicular racing game arrangement having vehicles with electric driving motors therein receiving power through the track, the driving motor having a magnetic field associated therewith, and counting means are operatively connected to the sensing means and responsive to pulses created by the sensing means to indicate the completion of laps by the vehicles.

A timing circuit may be used to allot time for the race depending on the amount of money deposited in a coin switch.

3,531,119
RACING TOY HAVING PLAYER CONTROLLED VEHICLE PROPELLING MEANS

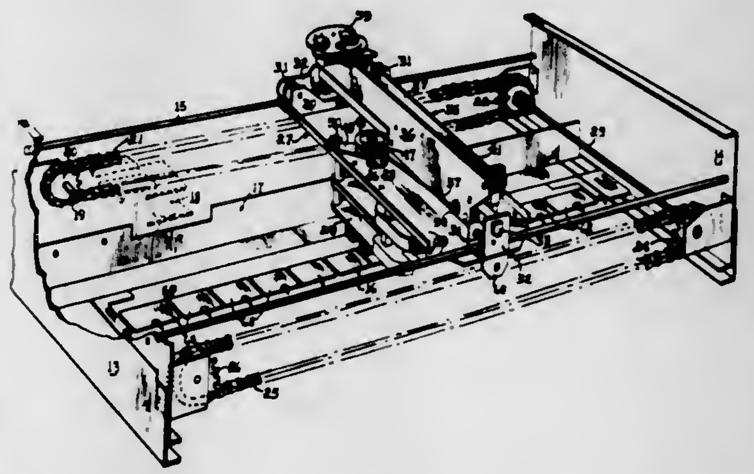
Joseph L. Bonanno, South Orange, N.J., assignor to Topper Corporation, a corporation of Delaware
Filed Feb. 26, 1969, Ser. No. 802,366
Int. Cl. A63f *9/14*
U.S. Cl. 273—86 13 Claims



Two side-by-side tracks of equal length support rollable vehicles each of which moves by gravity around entire track except for short uphill portion. Vehicle driving member movable along and beneath each uphill track portion by a driven belt in response to movement of a control operated by player. Driving member carries pawl or magnet for moving vehicle along uphill portion. Player control is a switch when electric motor is used to drive belt. Alternatively, spring driven pulley may drive belt, and player controls pawl and ratchet wheel for selectively permitting or preventing pulley rotation, manipulating a handle to tension the spring.

3,531,120
MOVING TARGET DEVICE WITH EXTENDABLE TARGET CARRIER

Henry S. Ross and Marcine P. Wolverton, Franklin Park, Ill., assignors to Midway Manufacturing Company, Franklin Park, Ill., a corporation of Illinois
Filed Apr. 29, 1968, Ser. No. 724,820
Int. Cl. A63b *63/04, 67/10*
U.S. Cl. 273—105.2 9 Claims



A moving target having a random trajectory through varying coordinates of a planar system, resulting from a drive mechanism, including reversible motors selectively energized. The apparatus includes a support for a movable target carriage which is adapted to be reciprocally moved over the supporting member out of an open simulated target area. The target carriage carries an elongated target carrier supporting member that extends transversely to its path of movement over the supporting member. Mounted on the target carrier supporting member is an extendable target carrier which is adapted to move relative to the long axis of the target carrier supporting member into and through the open target area. Associated with the reversible motors which can be selectively energized are mechanisms for extendably moving the target carrier as well as for independently moving the target carriage over the supporting member.

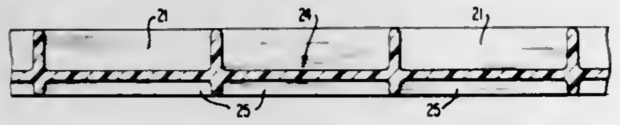
3,531,121
GAME OF SHOW RING COMPETITION

Viletta O. Anderson, R.R. 1, Box 22, and Kathryn E. Anderson and Marion M. Anderson, both of 1501 Division St., all of Burlington, Iowa 52601
Filed Oct. 18, 1967, Ser. No. 676,117
Int. Cl. A63b *67/00;* A63f *1/04, 3/02*
U.S. Cl. 273—134 1 Claim

A game simulating show ring competition at county and state fairs in which animals are identified by registration cards having printed thereon the names, the classes, the classification numbers and group symbols, if any, pertaining to the animals. The game is played using play money in various denominations, a special pair of dice by means of which numbers from 1 to 6 may be chosen at random, a show sheet setting out classes for competition, a pair of regular dice, prizes, playing pieces to move over spaces on a playing board and instruction cards to indicate various plays. On the board a trail through a fairgrounds is laid out, and during the traversing of the trail animals are bought from a sales barn and may be traded among the players.

3,531,122
TWO-SIDED CHECKERBOARD WITH RECESS-DEFINING RIBS

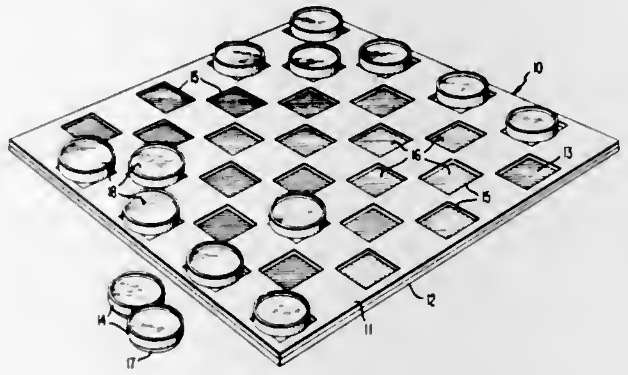
David Meade Peebles, 325 Marcy Ave., Oxon Hill, Md. 20021
Filed Jan. 18, 1968, Ser. No. 698,853
Int. Cl. A63f *3/02*
U.S. Cl. 273—136 1 Claim



A rigid non-folding molded plastic gameboard of the checkerboard type having supporting surfaces on opposite sides thereof and a grid work of upstanding right angular ribs formed integrally with the body portion of the gameboard, with the recesses formed by the ribs on one side of the board being relatively deep in comparison with the recesses formed on the opposite side.

3,531,123
CHECKERBOARD WITH RECESSED SQUARES AND PIECES DISPOSABLE THEREIN

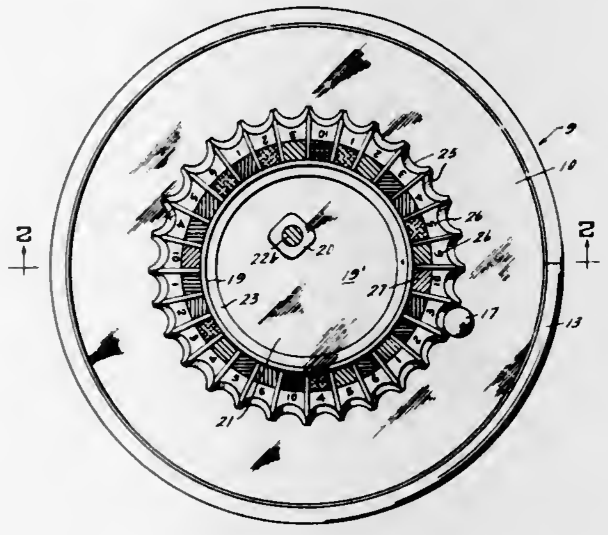
David Meade Peebles, 325 Marcy Ave., Oxon Hill, Md. 20021
Filed Feb. 23, 1968, Ser. No. 707,677
Int. Cl. A63f *3/02*
U.S. Cl. 273—136 1 Claim



A game board and set of player pieces for playing checkers or the like, characterized by the formation of rectangular recesses in the playing surface of the board at the numerous game playing positions. The player pieces have cylindrical projections which loosely interfit with the recesses to position the pieces on the board and preventing accidental sliding. The construction enables playing the game in moving vehicles and playing by handicapped people, small children and others who may lack the proper coordination for using conventional game apparatus. The player pieces may be imprinted with the alphabet letters for educational purposes.

3,531,124
GAME DEVICE

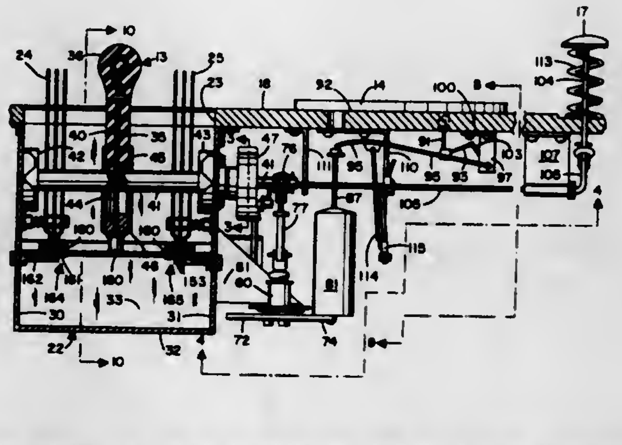
Clarence H. Vauter, Golf Manor, Ohio (2543 Vera Ave., Cincinnati, Ohio 45237)
Filed Mar. 15, 1967, Ser. No. 623,292
Int. Cl. A63b *71/06*
U.S. Cl. 273—138 4 Claims



A game device having two indicators, both mounted to roll inside a single shell and both actuated by movement of the shell to give separate chance indications. One indicator is a ball which rolls in a rollway. The other indicator is a die which moves in an enclosure inside the rollway. Both indicators are actuated by orbital swinging of the shell to cause the ball to roll in the rollway and to cause the die to tumble inside the enclosure. A wall of the enclosure extends upwardly almost to an upper transparent wall of the shell so that the ball and die are trapped in the rollway and enclosure respectively.

3,531,125
GOLF PRACTICING APPARATUS

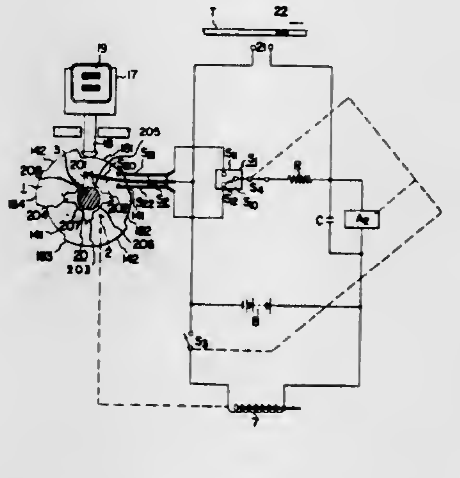
Anthony P. Anello, 3101 San Isidro, Tampa, Fla. 33609
Original application Oct. 24, 1966, Ser. No. 588,948, now Patent No. 3,453,889, dated July 8, 1969. Divided and this application Sept. 3, 1968, Ser. No. 770,464
Int. Cl. A63b *69/36*
U.S. Cl. 273—197 1 Claim



Apparatus for practicing golf ball driving includes a horizontal shaft to which is secured a simulated rubber golf ball having a shank section positioned in one end of a sleeve extending transversely of the shaft. A cable is contained within the simulated golf ball and extends therefrom through the shaft to the other end of the sleeve where it is secured.

3,531,126
DEVICE FOR ADJUSTING POSITION OF STEREOPHONIC HEAD OF MAGNETIC SOUND RECORDER-REPRODUCER

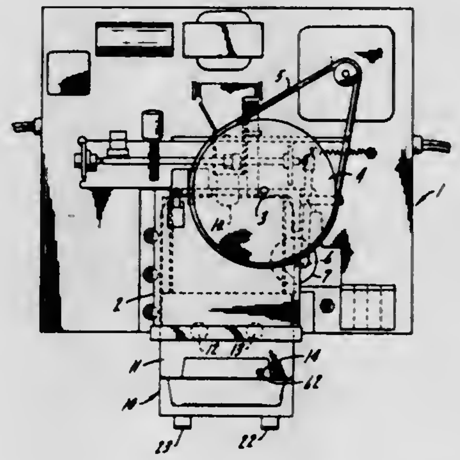
Tsunehiro Tsukagoshi, Tokyo-to, and Masaru Chichiiwa, Tokorozawa-shi, Japan, assignors to Pioneer Kabushiki Kaisha, Ota-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed Dec. 27, 1966, Ser. No. 604,821
Claims priority, application Japan, Dec. 29, 1965, 40/81,943; June 29, 1966, 41/42,504
Int. Cl. G11b *5/00*
U.S. Cl. 274—4 11 Claims



The magnetic head of a stereophonic tape recorder-reproducer is adjustably positioned by a cam mechanism controlled by an electrical circuit which is controlled by switches and contact means operated by mechanisms actuated by the cam mechanism, physical configurations of tape cartridges inserted, and an end mark on each tape to adjust the position of the magnetic head in accordance with the interchanging of cartridges of different numbers of tape tracks and with the selection of tracks of each tape for stereophonic operation.

3,531,127
CASSETTE RECORD PLAYER-RECORDER

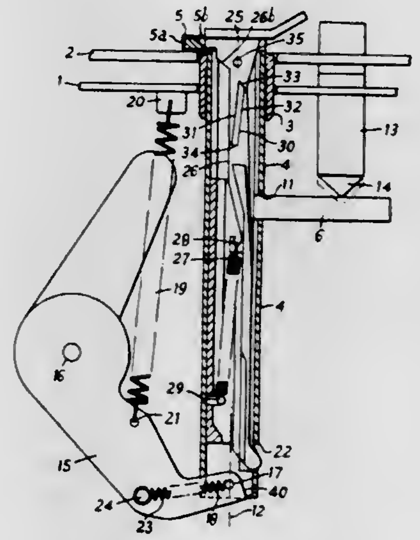
Kenneth B. Harper, Winnetka, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed May 21, 1968, Ser. No. 730,790
Int. Cl. G11b *23/04*
U.S. Cl. 274—4 13 Claims



A converter cartridge for reception and operation of a cassette record and insertion into a host cartridge player. The converter cartridge carries drive means for transporting the tape within the cassette; cam means for advancing and withdrawing tape heads and a pinch roller toward and away from the cassette in response to insertion and withdrawal of the converter cartridge; push buttons and associated linkage and drive elements effective to advance and reverse the tape within the cassette and to reinstate the playing or recording mode upon release of the appropriate push button; each of said buttons serving to lock the other when desired, the converter cartridge being capable of independent operation when fitted with power means.

3,531,128
RECORD STEADYING MEANS FOR RECORD CHANGERS

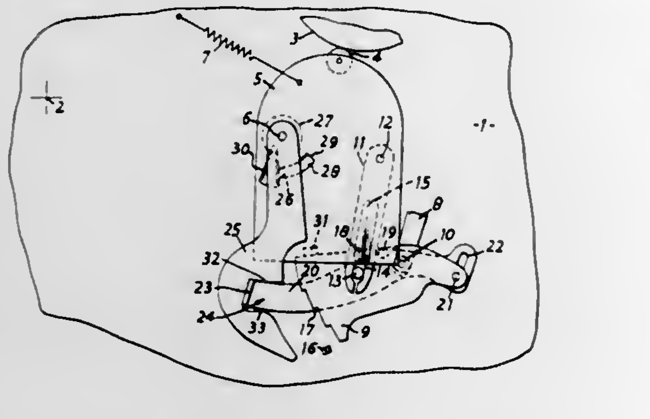
Alan William Say, Swindon, England, assignor to Gerrard Engineering Limited, Swindon, England, a British company
Filed Apr. 18, 1968, Ser. No. 722,292
Claims priority, application Great Britain, Apr. 20, 1967, 18,114/67
Int. Cl. G11b *17/18*
U.S. Cl. 274—10 2 Claims



A retractable record-edge steady for a centre-spindle record changer comprises a withdrawable column whose upper end forms a support for the edge of the bottom record, and a hook-like pawl whose stem is guided in the column by having a tail co-operating with a guide pin in the column and by guide-cam surfaces of the tail and column, causing the pawl to travel upwardly in an outwardly withdrawn position, and move downwardly, when resting on the topmost record, along a more inwardly advanced line. The column can, after release of a latch, be depressed against a spring and locked in a retracted position, from which the column will rise again to its operative position when the latch is once more withdrawn.

3,531,129
PICKUP-DEPOSITING MECHANISM IN GRAMOPHONE RECORD PLAYERS

Edward Thomas Humby, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Aug. 13, 1968, Ser. No. 752,239
Claims priority, application Great Britain, Sept. 1, 1967, 40,056/67
Int. Cl. G11b *17/06*
U.S. Cl. 274—15 **7 Claims**

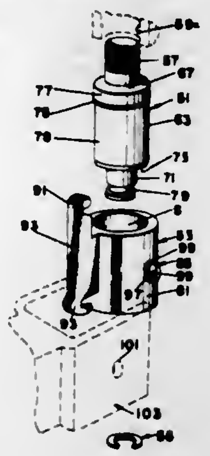


To prevent inward skating of the pickup stylus when deposited between the turns of the lead-in groove of a record, the pickup arm is held frictionally against movement after deposition of the pickup onto the record for a period sufficient to ensure engagement of the stylus with the lead-in groove. Preferably the frictional restraining element is, after pickup deposition, moved for a short distance in a direction tending to move the pickup away from the turntable centre, thus shortening the maximum time until the groove is met and providing a slight impulse tending to counteract initial skating.

3,531,130
PIVOTAL SUPPORT ASSEMBLY FOR PHONOGRAPH RECORD AND PLAYBACK ARMS

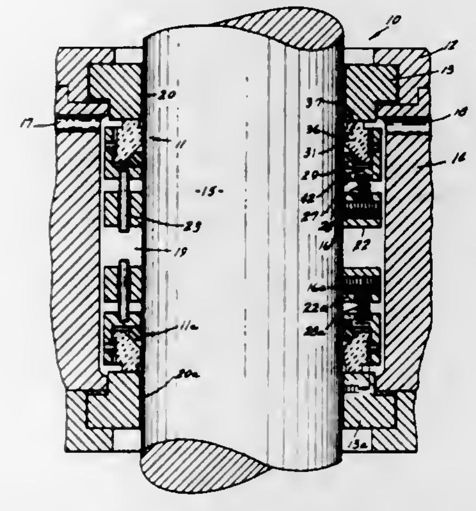
Jack L. Kelly, Bethel Park, Pa., and Ronald K. Wiandt, Decatur, Ill., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 609,579, Jan. 16, 1967. This application Dec. 6, 1968, Ser. No. 784,537
Int. Cl. G11b *3/30*
U.S. Cl. 274—23 **3 Claims**

A recording and reproducing device with a simple and efficient mechanism that pivotally supports a tone arm thereof for horizontal and vertical movement. This mechanism includes a one-piece bearing sleeve having a pair of opposed ears formed on its outer wall, a cylindrical stud which supports the sleeve for rotative movement about a vertical axis, and a pair of bearing apertures formed in opposed spaced apart walls of a tone arm. These apertures cooperate with the ears of the sleeve to facilitate rotative movement of the tone arm about a horizontal axis. The one-piece bearing sleeve also includes a pair of upper and lower hooks to facilitate the support of a tension spring used to bias the tone arm.



3,531,131
FLUID SEAL FOR ROTATING SHAFTS

Herbert B. Hummer, Schoolcraft Township, Kalamazoo County, Mich., assignor to Durametallic Corporation, Kalamazoo, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 510,172, Nov. 29, 1965. This application May 6, 1968, Ser. No. 738,364
Int. Cl. F16j *15/34*
U.S. Cl. 277—84 **6 Claims**

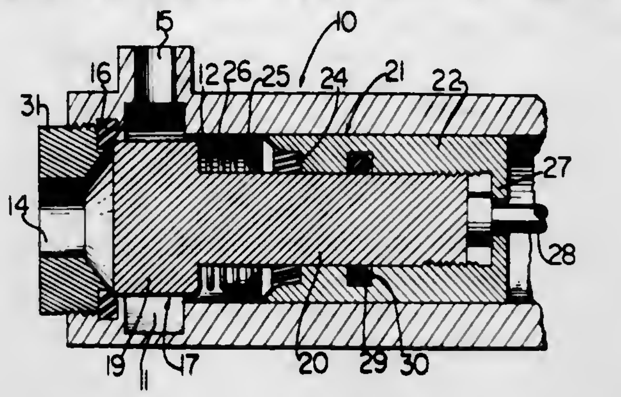


A mechanical seal for sealing a shaft with respect to a housing from which it extends, the housing having a fluid chamber therein. The seal includes a rotatable sealing member of a frangible material which is urged into sealing engagement with a nonrotatable sealing member. The rotatable sealing member is provided with a conical opening on the side thereof remote from the sealing face and a resilient O-ring is received within the conical opening. A cup-shaped pressure member surrounds the rotating sealing member and uniformly urges the O-ring against the shaft and the rotating sealing member for creating a sealing engagement therebetween.

3,531,132
PRESSURE ENERGIZED SEAL

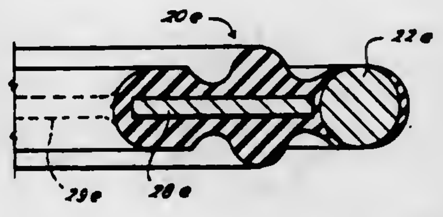
Frederic Lissau, Rego Park, Queens, N.Y., assignor to Walter Kidde & Company, Inc., Belleville, N.J., a corporation of Delaware
Filed July 22, 1968, Ser. No. 746,337
Int. Cl. F16j *15/00;* **F16r** *31/50;* **F01b** *31/00*
U.S. Cl. 277—115 **3 Claims**

An assembly for providing a pressure energized seal between a piston and a cooperating cylinder bore including a sleeve on the piston having a sloping seal shaping surface and an annular plastic seal provided with a thick base portion and a thin conical skirt portion of greater diametrical extent than the cylinder bore and capable of being permanently deformed by fluid pressure to conform to the shape of the surface of the sleeve and to seal against the cylinder bore and against the sleeve surface.



3,531,133
SEAL

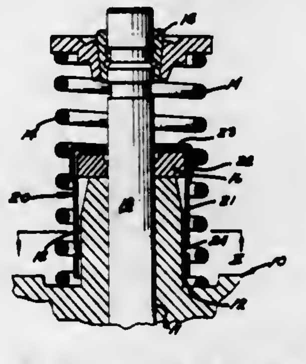
John M. Sheesley, Houston, and Ronald A. Gulick, Sugarland, Tex., assignors to Research Engineering Company, Houston, Tex., a corporation of Texas
Continuation-in-part of applications Ser. No. 685,888, Nov. 27, 1967, and Ser. No. 695,421, Jan. 3, 1968. This application Nov. 8, 1968, Ser. No. 774,284
Int. Cl. F16l *19/02;* **F16j** *15/00*
U.S. Cl. 277—180 **5 Claims**



Seal having concentric non-extrusion rings interconnected by a deformable sealing element having an undulating configuration. Variations utilize only a single non-extrusion ring, and/or substitute extrudible material of similar configuration for such non-extrusion rings. Further, an annular spacer ring may be positioned intermediate the radially outermost of said concentric rings and the bolts or fasteners used to join mated flanges. Such flanges may be grooved or recessed to receive the seal.

3,531,134
SEAL RETAINER

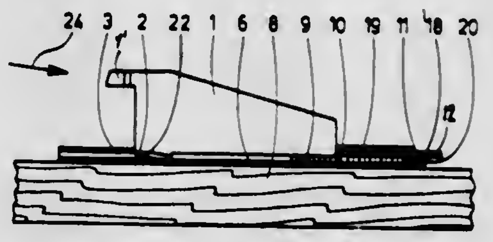
John H. Kammeraad, Holland, Mich., assignor to K-Line Industries, Inc., Holland, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 627,206, Mar. 30, 1967. This application June 6, 1969, Ser. No. 834,212
Int. Cl. F16j *15/00;* **F16k** *41/00*
U.S. Cl. 277—181 **8 Claims**



A metallic boot for retaining a valve stem seal in abutment with the protruding shoulder formed integrally with an engine head. The boot has a permanently deformable lip or indent extending inwardly about its entire periphery and this indent deforms permanently to accommodate minor dimensional variations in the shoulder when the boot is slid telescopically thereon.

3,531,135
ADJUSTABLE SKI CLAMP

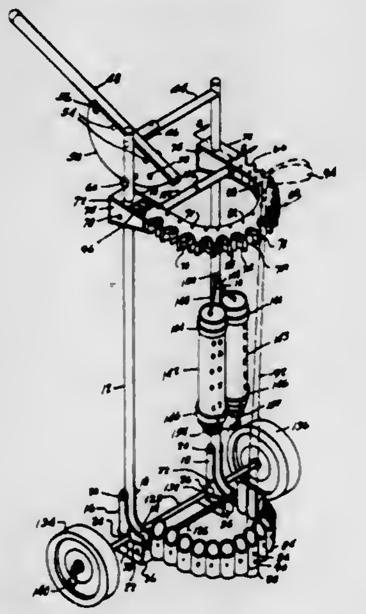
Georges P. J. Salomon, 34 Avenue de Loverchy, Annecy, Haute-Savoie, France
Filed Sept. 4, 1968, Ser. No. 757,385
Claims priority, application France, Sept. 5, 1967, 120,064
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 **10 Claims**



Heel clamp for ski binding, mounted on a baseplate with freedom of longitudinal sliding and vertical rocking whereby a set of teeth along its lateral bottom edges can be meshed, in different longitudinal positions of the clamp, with complementary serrations of a counterplate carried on the baseplate with limited rearward yieldability against a restoring force. A latch member slidably overlying the counterplate, having serrations alignable with those of the counterplate but normally maintained offset therefrom by a pair of springs supplying the restoring force, can be shifted against that force into an off-normal relative position in which the teeth of the clamp may be upwardly withdrawn from the aligned serrations and reinserted after a readjustment of the clamp.

3,531,136
GOLF CART AND CARRIER COMBINATION

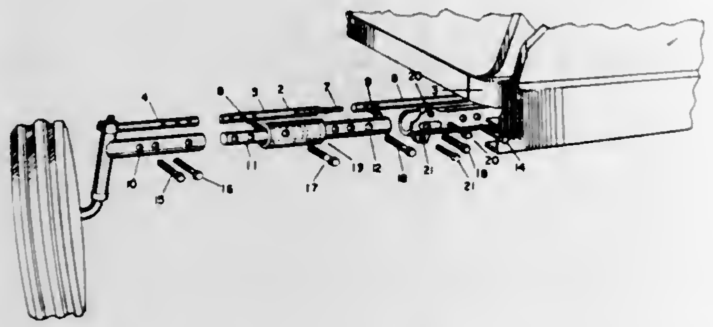
John C. Mobley, 130 Linden Ave., Portsmouth, Va. 23704
Filed July 18, 1968, Ser. No. 745,723
Int. Cl. A63b *55/08*
U.S. Cl. 280—30 **10 Claims**



A combination carrier and cart for golf clubs, balls, tees and an umbrella, the cart having an elongate frame with means for selectively supporting a wheel and axle assembly longitudinally in the frame, and for releasably securing the axle transversely of the frame in such a manner that the frame to which the ball, tee, umbrella and club carriers are attached may be used as a carrier of the golf bag type or as a golf cart.

3,531,137
TRACTORS

Adam E. Ganz and Royce A. Ganz, both of Exchange Road, R.D. 2, New London, Ohio 44851
Filed Nov. 21, 1967, Ser. No. 684,688
Int. Cl. B62d *21/14*
U.S. Cl. 280—34 **3 Claims**



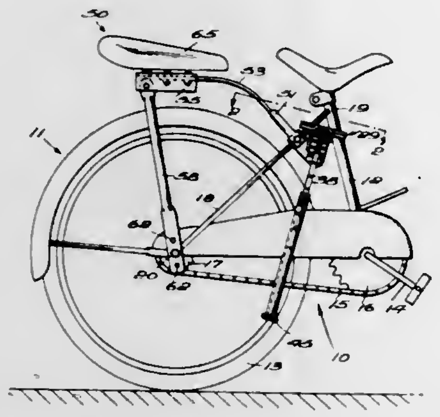
Means for extending the front right wheel of a tractor outwardly from alignment with its rear wheel when viewed from the rear of the tractor so that it will ride in the last previously ploughed furrow instead of on the land adjacent the furrow. For this purpose, a tie rod is provided which consists of alternately arranged tubes and rods, each having spaced apertures therein with the rods extending into the tubes and being secured thereto by bolts passing through aligned apertures in the rods and tubes.

The axle also has inner and outer tubular members and a rod interposed therebetween. Both of the tubes and the rods have spaced apertures therein. In addition, the axle is provided with a third tubular member which fits over the outer portion of the rod.

In assembling the device, the effective length of the two rods forming parts of the tie rod may be varied by extending them into the tube 5 to varied distances and the rod 7 in the tube 8 to a predetermined distance. The parts are held in their adjusted position by bolts extending through the aligned apertures in the tubes and rods. In the axle, the outer tube is adjusted inwardly between the rod 11 and the third tubular member and the inner enlarged portion of the rod is adjusted inwardly into the inner tubular member. The parts are fastened together in their adjusted position which may be varied by means of bolts.

3,531,138
BICYCLE SAFETY DEVICE

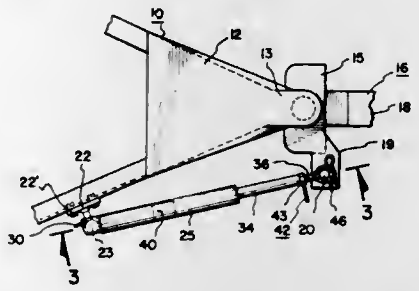
Walter H. Sorensen, Rte. 11, Box 160H, San Antonio, Tex. 78213
Filed Aug. 27, 1968, Ser. No. 755,754
Int. Cl. B62j *25/00*
U.S. Cl. 280—291 **3 Claims**



A bicycle safety device for carrying a second passenger including adjustable folding footrest and an adjustable seat mounted over the rear axle of the bicycle.

3,531,139
SWAY CONTROL FOR TRAILERS

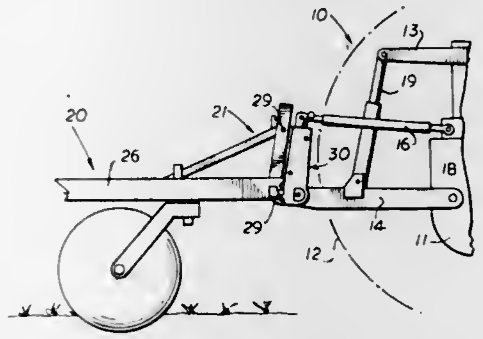
Edward B. Hedgepeth, Salt Lake City, Utah, assignor of one-third each to Clifton E. Hedgepeth, Royce Doyle Hedgepeth, and Jetta V. Vincent
Filed Mar. 3, 1969, Ser. No. 803,618
Int. Cl. B60d *1/06*
U.S. Cl. 280—446 **10 Claims**



The present invention consists of an improved sidesway control for trailer vehicles. The invention comprises an expandable and retractable, cylindrical friction brake mechanism the degree of braking resistance of which may be controlled at a point remote from the area at which friction is applied within the mechanism. The braking mechanism itself takes the form of a cylindrical brake having a friction-producing piston sleeve the externally applied, variable compression of which will effect a proper braking characteristic of the mechanism.

3,531,140
TRACTOR QUICK HITCH ATTACHMENT

Fosco L. Di Vita, Chicago, and Donald K. Fadden, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Jan. 26, 1968, Ser. No. 700,989
Int. Cl. B60d *1/00*
U.S. Cl. 280—477 **12 Claims**

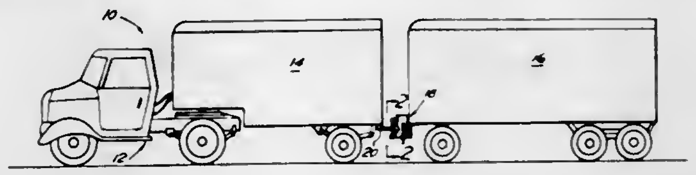


Apparatus for facilitating rapid attachment of an implement to a tractor of the three point hitch type having an inverted U-shaped frame made of a horizontal bar and two laterally spaced bars depending therefrom, hook means on said frame having a socket for engaging the attaching elements of an implement and an overcenter lock device attached to the laterally spaced bars for the purpose of engaging the attaching elements of the implement and locking the same within the socket.

3,531,141
PINTLE HOOK ASSEMBLY

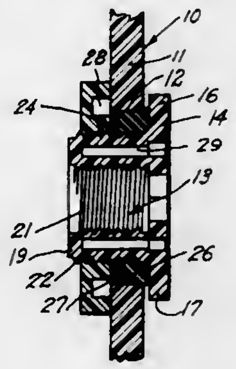
Thomas B. Dalton, Muskegon, Mich., assignor to Westran Corporation, Muskegon, Mich., a corporation of Michigan
Filed Nov. 20, 1968, Ser. No. 777,354
Int. Cl. B60d *1/04*
U.S. Cl. 280—506 **7 Claims**

An automatic pintle hook assembly for a draw bar hitch connection provided with a pivotal hook for an eye of a draw bar including a snubber or tumbler resiliently connected to the hook and adapted in a locked position of the pintle hook assembly to abut against a resilient cushion which functions as a shock absorber to eliminate play between the draw bar eye and the hook to thus reduce shock loads caused by the working of the draw bar eye on the hook and including an automatic safety lock to prevent the hook from disengagement.



3,531,142
TANK FITTING

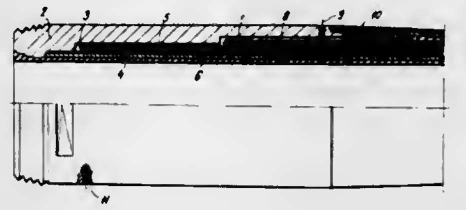
John A. Peasley, Sioux Falls, S. Dak., assignor to Raven Industries, Inc., Sioux Falls, S. Dak., a corporation of South Dakota
Filed Aug. 5, 1968, Ser. No. 750,060
Int. Cl. F16l *35/00*
U.S. Cl. 285—39 **2 Claims**



A tank fitting having a hollow bolt which receives a left-hand threaded nut and between which is mounted a flexible washer so as to provide a seal in an opening of a tank. The left-hand thread provides tightening of the fitting when a right-hand threaded pipe is screwed into the internal opening of the bolt.

3,531,143
HEAD-FORMATION OF FLEXIBLE HOSES, ESPECIALLY FOR DEEP-DRILLING HOSES

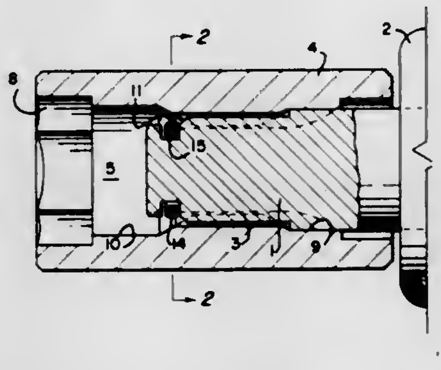
László Horvath, Gusztáv Gündisch, Mihály Árvai, and Sándor Antal, Budapest, Hungary, assignors to Orszagos Gumiipari Vallalat, Budapest, Hungary, a firm
Filed Jan. 18, 1968, Ser. No. 698,765
Claims priority, application Hungary, Jan. 20, 1967, OA–333
Int. Cl. F16l *39/00*
U.S. Cl. 285—149 **6 Claims**



A joint assembly for flexible hose having a plurality of coaxial load-bearing layers (e.g., of wire reinforcement). A feeding member of stepped profile with coaxial, axially staggered steps corresponding to those of the layers of reinforcement is joined to the hose with a thixotropic bonding agent between the respective feeding step and the reinforcement layer. The thixopropic adhesive may be an epoxy containing short lengths of metal or glass fiber as a filler.

3,531,144
RETAINER RING

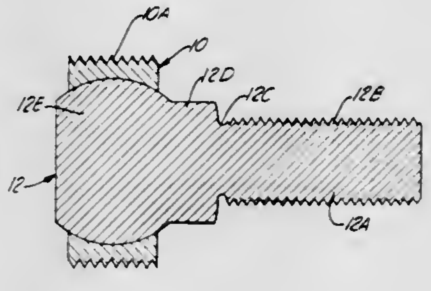
Paul K. Bizilia, Sayre, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 27, 1969, Ser. No. 803,002
Int. Cl. F16d *1/06*
U.S. Cl. 287—53 **2 Claims**



A retainer ring assembly for holding a socket on a tool spindle and including an annular groove on the spindle having a pair of parallel flats located in the bottom of the groove at diametrically opposed positions. A resilient retainer ring is provided having a gap with a predetermined spacing when the ring is relaxed which is slightly less than the distance between the flats in the annular groove. The ring is assembled in the groove by expanding its slightly and sliding its gap laterally over the flats.

3,531,145
BEARING CONSTRUCTION

Kenneth V. Hackman, Arcadia, Calif., assignor to Southwest Products Company, a corporation of California
Filed Dec. 26, 1968, Ser. No. 787,129
Int. Cl. F16c *11/06*
U.S. Cl. 287—87 **1 Claim**

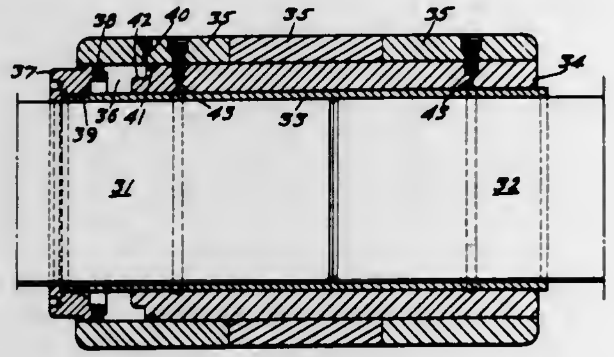


The outer race of a self-aligning spherical bearing is threaded as is also a shank which is integrally formed with the bearing ball portion retained by the race, and such shank has a hexagonal shouldered portion.

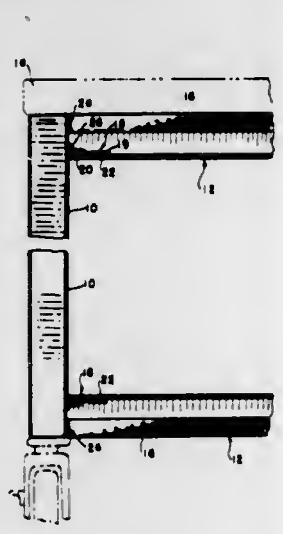
3,531,146
PRESS OR SHRINK FIT JOINTS

Nils August Blad, Hofors, and Axel Erland Bratt, Molndal, Sweden, assignors, by mesne assignments, to SKF Industries, Inc., Philadelphia, Pa., a corporation of Delaware
Filed June 6, 1968, Ser. No. 735,146
Claims priority, application Sweden, June 8, 1967, 8,040/67; Mar. 29, 1968, 4,168/68
Int. Cl. F16d *1/02;* **F16l** *21/00*
U.S. Cl. 287—114 **3 Claims**

A coupling for connecting a pair of shaft members in end-to-end relation including an inner sleeve spanning the juncture of the members. An outer sleeve circumscribes the inner sleeve and a plurality of rings are shrunk fit to the outer sleeve. The confronting surfaces of the inner and outer sleeves are complementary tapered. A passageway is provided for introducing a pressure medium between the tapered contacting surfaces to facilitate relative axial movement of the outer sleeve and rings relative to the inner sleeve. An annular chamber at one end of the coupling is pressurized with a fluid to effect relative axial displacement of the sleeve members.



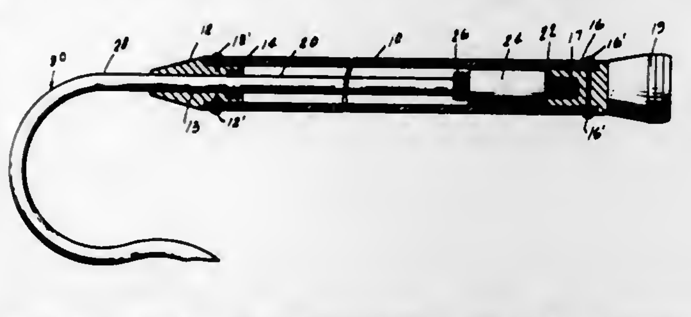
3,531,147
CONCEALED WELD CONSTRUCTION
John H. Johnson, Jamestown, N.Y., assignor to Art Metal, Inc., Jamestown, N.Y.
Original application Feb. 14, 1967, Ser. No. 616,761. Divided and this application Apr. 14, 1969, Ser. No. 836,184
Int. Cl. F16b *7/00, 12/50*
U.S. Cl. 287—189.36 **7 Claims**



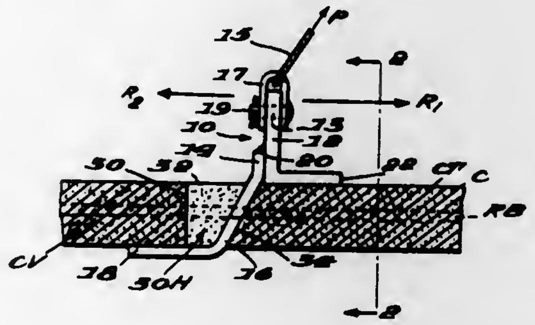
A welding means and method for use in constructing metal furniture joints or the like, providing a joint of superior mechanical strength while all evidences of welding heat disfigurement are confined within areas not normally viewable when the product is in use.

3,531,148
EXTENSIBLE TOOL CARRYING IMPLEMENT
William J. Rohde, Sycamore, Ill., assignor, by mesne assignments, to Olin Corporation, Stamford, Conn., a corporation of Virginia
Filed Dec. 11, 1968, Ser. No. 783,055
Int. Cl. B65g *7/12*
U.S. Cl. 294—26 **3 Claims**

An extensible implement of a series of inner and outer nesting coaxial elongated elements includes an extension member having a connector on one end telescopically received within a body member having positive locking means at both ends thereof alternately detachably connectible to said connector whereby a positive locked connection between the elements in either an extended or retracted position is made possible.



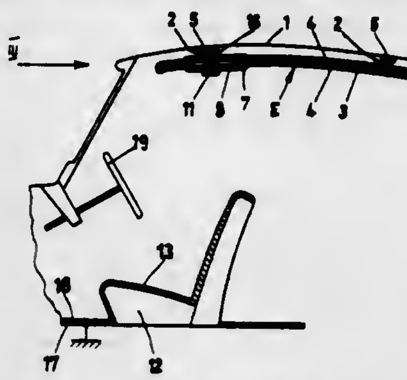
3,531,149
LIFT HOOK AND METHOD FOR HANDLING PREFABRICATED MATERIALS
William J. Klueber, Bethlehem, Pa.
(588 Harvard Ave., Hillside, N.J. 07205)
Filed Apr. 29, 1969, Ser. No. 820,152
Int. Cl. B66c *1/22*
U.S. Cl. 294—89 **4 Claims**



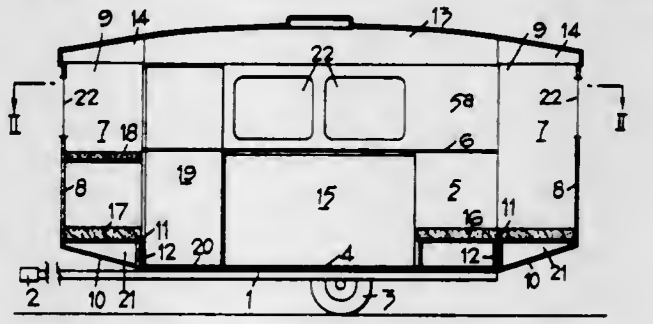
Disclosed is an improved lift hook and method for handling prefabricated materials, particularly precast concrete slabs useful for example for floors or roofs. The hook and method of this invention involve inserting the hook from the upper side of the slab, through a tapered opening extending through the slab with the hook so constructed that it engages the slab and exerts compressive lifting forces against at least two and in many cases three separate areas of the slab. This causes the hook to bind and securely fasten to and grip the slab during lifting and does not cause undesirable tensile stresses, noting that while concrete is normally strong in compression it can be notoriously weak in tension. Release of the lifting force and simple rotation of the hook permits easy removal of the hook conveniently from the upper side of the slab without disturbing its orientation or requiring movement of the slab.

3,531,150
ELECTROSTATIC CONDITIONING ARRANGEMENT
Herbert Jahnke, Unterthingau, Allgau, Germany, assignor to Constantin Graf von Berckheim, Weinheim an der Bergstrasse, Germany
Filed June 5, 1968, Ser. No. 734,639
Claims priority, application Germany, June 6, 1967, B 71,299
Int. Cl. B60r *18/00*
U.S. Cl. 296—1 **14 Claims**

An arrangement for electrostatically conditioning the air in the passenger compartment of a motor vehicle includes an electrode which is mounted on the ceiling of the passenger compartment electrically insulated from the body of the vehicle. A source of direct current supplies between 90 and 150 volts and is conductively connected to the electrode with one of its poles whereas its other pole is actively connected to mass. At least one of the various interior surfaces in the compartment with which a passenger comes into contact, such as the surfaces of the seats or the steering wheel of the vehicle is electrically conductive and is conductively connected to mass.

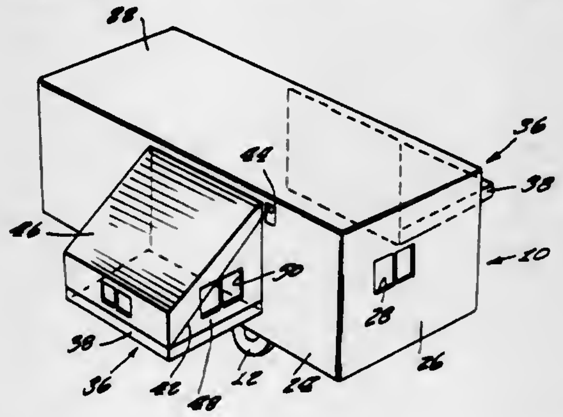


3,531,151
HOUSE TRAILER
Malcolm M. Branfield, Queenstown, Cape Province, Republic of South Africa, assignor of one-half to Cyril E. Nissen, Wembley, Pietermaritzburg, Natal, Republic of South Africa
Filed Apr. 11, 1968, Ser. No. 720,512
Claims priority, application Republic of South Africa, Feb. 29, 1968, 68/1,288, addition to Apr. 24, 1967, 67/2,425
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **4 Claims**



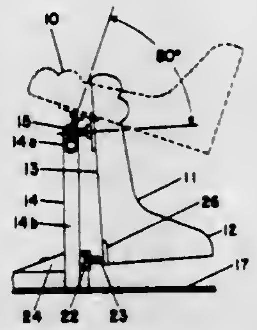
Folding trailers including sections of rigid construction both when in the folded and erected positions. In one embodiment both the height and the length of the trailer are reduced when the trailer is in the folded position and in a second embodiment the trailer roof is continuously supported during the folding operation by strut means pivotally connecting the end walls and the roof.

3,531,152
MOTOR HOME
Felton J. Tyler, 2780 Crestline Drive, Macon, Ga. 31204
Filed Feb. 25, 1969, Ser. No. 813,793
Int. Cl. B60p *3/32*
U.S. Cl. 296—23 **1 Claim**



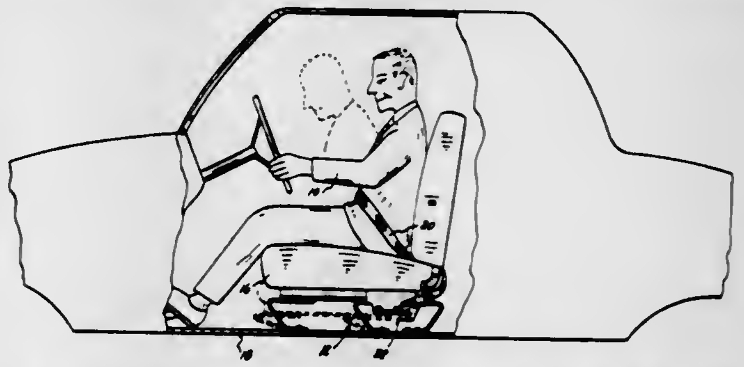
A mobile home drawn by a vehicle having a bed mounted pivotably on each side wall which can fold outwardly to provide sleeping facilities.

3,531,153
PIVOTABLE SAFETY SEAT FOR MOTOR VEHICLES
Bruce B. Mohs, Waunakee, Wis. 53597
Filed Oct. 7, 1968, Ser. No. 765,558
Int. Cl. B60n *1/02*
U.S. Cl. 296—65 **2 Claims**



A bucket-type motor vehicle seat suspended from a rigid support member affixed to and extending laterally inward from the side wall of the vehicle. The seat is pivotally suspended above the floor of the vehicle for swinging about both longitudinal and transverse axes. A break-away backstop abuts a bearing plate on the back of the seat to permit the seat to swing rearwardly on impact from the rear of the vehicle.

3,531,154
ENERGY ABSORBING SEAT MOUNTING DEVICE
Oakley La Fleche, Eureka Springs, Ark., assignor to Howell Industries, Incorporated, Detroit, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 620,339, Mar. 3, 1967. This application Apr. 21, 1969, Ser. No. 826,757
Int. Cl. B60n *1/08*
U.S. Cl. 296—65 **15 Claims**

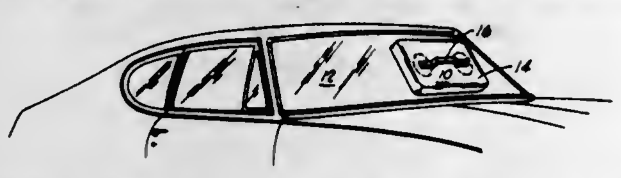


A vehicle seat mounting device having upper and lower support members interconnected to provide a longitudinally adjustable support between a seat unit and the floor of the vehicle. A seat belt is anchored to the upper support member to restrain relative movement of an occupant of the seat unit with respect to the interior of the vehicle during a sudden deceleration of the vehicle.

The lower support member has elastically deformable members arranged to gradually reduce the momentum created by the weight of the occupant during a sudden acceleration or deceleration so that the occupant experiences a cushioned rather than a sudden stop.

3,531,155
PROTECTIVE DEVICE FOR WINDSHIELDS AND THE LIKE
Wilbur B. Wilbanks, 3104 Southwest 45, Oklahoma City, Okla. 73119
Filed July 8, 1968, Ser. No. 743,094
Int. Cl. B60j *11/00*
U.S. Cl. 296—95 **2 Claims**

Apparatus which is readily attachable to a windshield or such for the purpose of shielding it from inclement weather during periods of non-use, the apparatus consisting of a suitable cover panel enclosure for placement on



an area of glass and having a handle affixed externally with suction means affixed internally to provide adherence to the glass and maintain the enclosure in place.

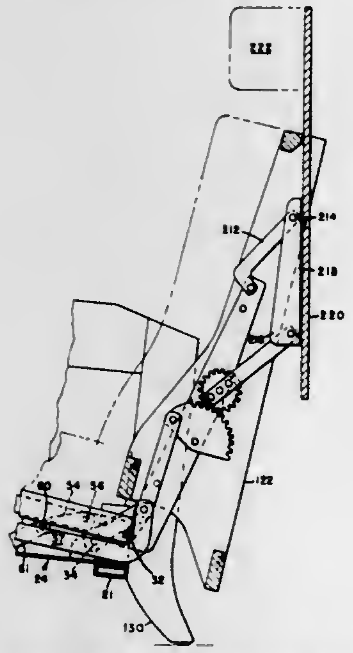
3,531,156
RECLINING CHAIR WITH MOVABLE HEADREST

Allan H. Crawford, Amsterdam, N.Y., assignor to Mohasco Industries, Inc., Amsterdam, N.Y., a corporation of New York

Filed July 26, 1968, Ser. No. 748,040

Int. Cl. A47c *1/037*

U.S. Cl. 297—61 **5 Claims**



A reclining chair having a headrest located in a recess in the back of the chair and which is automatically elevated to head supporting position upon reclining movement of the chair and which is automatically returned to its nested position upon movement of the chair from its reclining position to its normal upright sitting position.

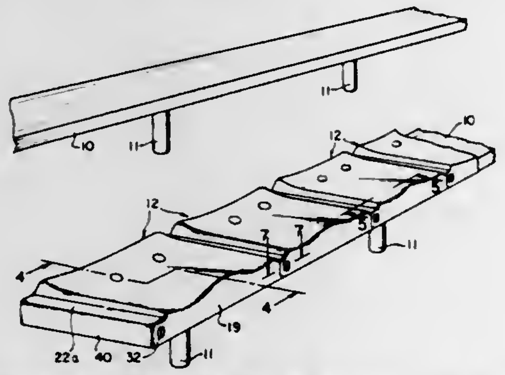
3,531,157
SEAT CONSTRUCTION

John W. Duckett, Tiburon, Paul W. Poehlmann, San Anselmo, and George E. Scott, San Francisco, Calif., assignors to Composite Structures Incorporated, Sausalito, Calif., a corporation of California

Filed Aug. 23, 1968, Ser. No. 754,857

Int. Cl. A47c *1/16*

U.S. Cl. 297—248 **18 Claims**



A plurality of plastic seats are secured in overlapping relationship on a wooden bench or the like to form a multiple seating arrangement. Each seat is contoured to afford high structural integrity thereto and to provide end portions which snugly nest with overlapping end portions of adjacent seats. Fastening means project through such overlapping end portions and are secured to the bench.

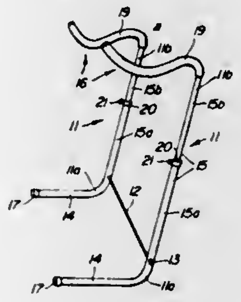
3,531,158
DEVICE FOR THE SUPPORT OF SEATED PERSONS

Louis Lynn Allen, 489 12th Ave., Salt Lake City, Utah 84111

Filed May 20, 1968, Ser. No. 730,254

Int. Cl. A47c *31/00;* **A62b** *35/00*

U.S. Cl. 297—390 **5 Claims**



A device for supporting the upper body of persons who must remain seated for prolonged periods of time. The device includes either one or two support elements, each of which has a base member, a central connecting member, and a crutch member. The base member is adapted to rest on the seat of a chair while the crutch member is adapted for placement beneath the armpit of a seated person. The connecting member is adjustable in length to permit the use of the same device by persons of different heights. The device may be attached to an automotive-type seat and may include, as an additional element, an automotive safety belt.

3,531,159
AUTOMATIC CONTROL SYSTEMS FOR USE IN LONGWALL MINE WORKINGS

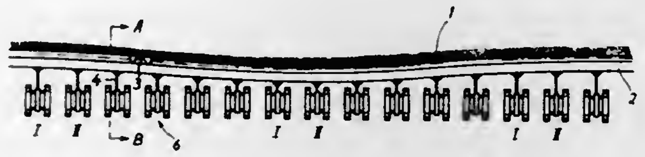
Helmut Schmidt, Essen-Haarzopf, Germany, assignor to Bergwerksverband GmbH, Essen, Germany, a company of Germany

Filed Sept. 11, 1968, Ser. No. 759,023

Claims priority, application Germany, Dec. 14, 1967, 1,583,073

Int. Cl. E21c *35/14, 35/24*

U.S. Cl. 299—1 **6 Claims**



The invention relates to an automatic control system which aligns and in given cases turns a longwall mine working, whose desired nominal path is indicated by a straight line or a curve and whose actual path is indicated by positive or negative measurements gauged relative to the desired path, these measurements being produced in the form of digital pulses which are processed by a logic system to form control signals utilised to bring the actual path into correspondence with the desired path by locally differentiated cutting operations on the coal-face being worked.

3,531,160
PRODUCTION OF SOUR GAS-SULFUR WELLS EMPLOYING A SULFUR SOLVENT

Henry B. Fisher, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 18, 1968, Ser. No. 760,705

Int. Cl. E21b *21/00, 43/28*

U.S. Cl. 299—5 **6 Claims**

Elemental sulfur is removed from a sour gas-sulfur well by circulating into and from the well a liquid alkyl sulfide and/or a liquid alkyl disulfide. N-butyl sulfide, di-tert-butyl disulfide, and polysulfides are solvents useful in sour gas-sulfur production to remove sulfur which otherwise may cause plugging problems. Sulfur dissolved in polysulfides employed can be recovered by contacting the used solvent with a low boiling solvent such as ketone or hydrocarbon, e.g., acetone, pentane, hexane. The recovered organic sulfur compound can be reused for recovery of further sulfur. Sulfur dissolved in n-butyl sufide or di-tert-butyl disulfide is recovered by a distillation or other process.

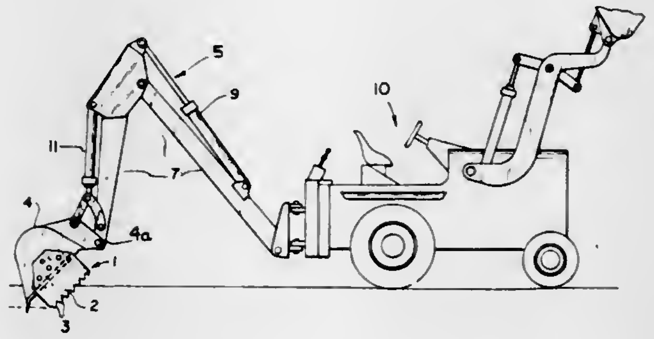
3,531,161
BACK HOE SAW ATTACHMENT

Gilbert F. Conn, Bridgeville, Pa. (1314 Old Meadow Road, Pittsburgh, Pa. 15241)

Filed Feb. 27, 1967, Ser. No. 623,501

Int. Cl. E02f *3/32;* **E21c** *37/00*

U.S. Cl. 299—18 **2 Claims**



A saw attachment for an earth moving machine, such as a back hoe, which has one or two saw blades with large teeth removably fastened to the sides of the bucket for sawing strips of frozen ground and other uses.

3,531,162
METERED SUPPLY OF PRESSURE FLUID FOR LONGWALL ADVANCE SYSTEM

Joseph Ashurst, Hindley, Wigan, England, assignor to Gullick Limited, Wigan, England, a British company

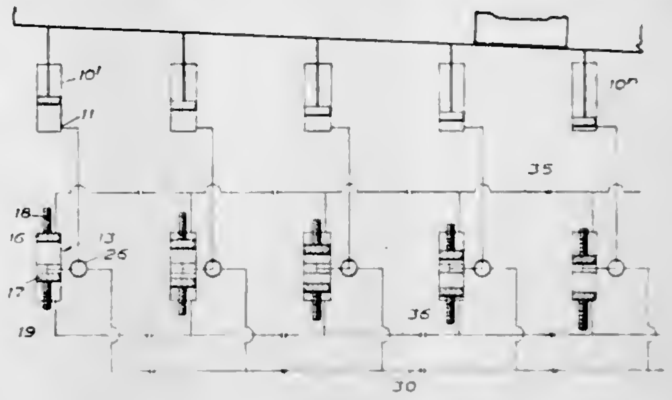
Filed Oct. 25, 1968, Ser. No. 770,564

Claims priority, application Great Britain, Dec. 9, 1967, 56,100/67; Jan. 4, 1968, 621/68

Int. Cl. E21c *35/14*

U.S. Cl. 299—32 **15 Claims**

A system for controlling the pressure-fluid-operated advance of mining apparatus (e.g. a mineral cutting machine) at a mineral face, which is worked alternately in opposite directions along its length, includes metering means for dispensing pressure-fluid to advancing devices for said apparatus in amounts which are predetermined and differ according to the direction, along its length, in which the mineral face is being worked. In one arrangement the advancing devices are hydraulic rams which advance a mineral face conveyor, on which a mineral cutting machine travels, towards the mineral face obliquely or by different amounts according to the direction in which the machine is travelling along the conveyor.



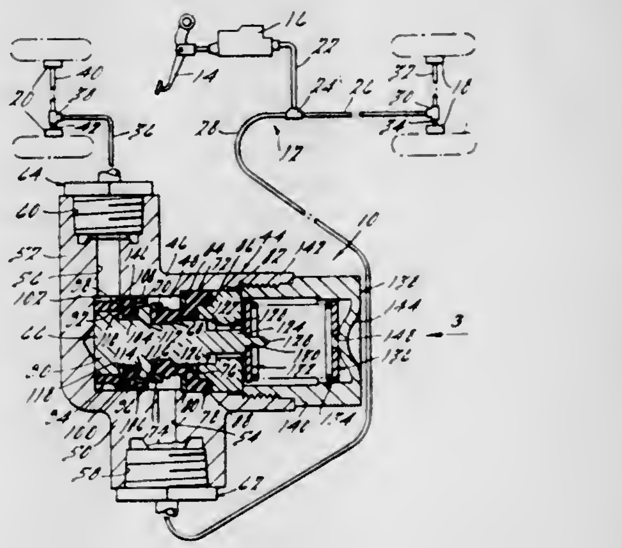
3,531,163
VALVE ASSEMBLY

William Stelzer, Milford, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware

Filed Sept. 17, 1968, Ser. No. 760,263

Int. Cl. B60t *8/26*

U.S. Cl. 303—6 **1 Claim**



A valve assembly including a valve housing defining an internal valve chamber having means therein defining a valve seat; a valve member disposed within the chamber; a valve spring disposed adjacent the valve member and adapted to resiliently bias the same toward engagement with the valve seat, and a deformable member arranged adjacent the end of the valve spring opposite the valve member and adapted to be selectively deformed interiorly of the housing and thereby compress the valve spring some predetermined amount so as to control the effective resilient force exerted by the spring against the valve member.

3,531,164
BRAKING DEVICES FOR SELF-PROPELLED VEHICLES

Jean Georges François, Blanc Mesnil, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France

Filed Aug. 8, 1968, Ser. No. 751,247

Claims priority, application France, Aug. 10, 1967, 117,474

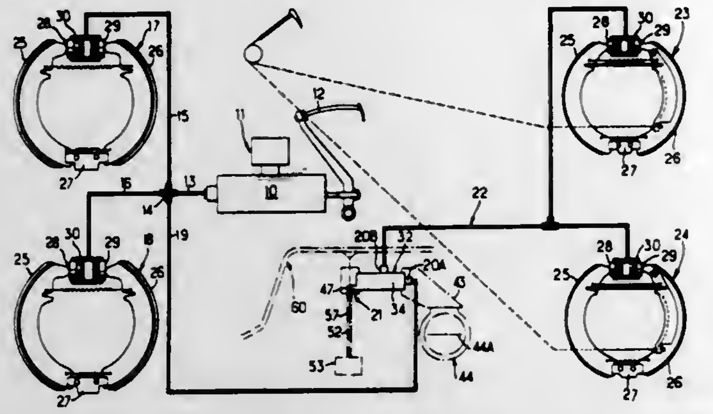
Int. Cl. B60t *8/14, 8/18, 8/26*

U.S. Cl. 303—24 **35 Claims**

A rolling stock braking device comprising fluid operated braking devices having revolving elements rotating with the stock wheels and supplied with fluid from an actuating element, a braking corrector interposed between the actuating element and the braking device co-ordinated therewith and responsive to instantaneous vehicle deceleration or acceleration and to the dynamic load applied to the corresponding vehicle wheels, whereby the braking force applied to the elements is a function of the dynamic loading and the deceleration or acceleration, said function being represented by

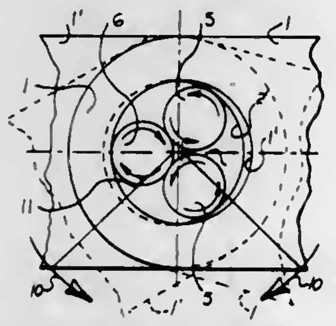
$$Z=aXY+bX+CY+d$$

wherein in magnitude and sign Z is the braking force applied to each revolving element, X is the vehicle deceleration, Y is the dynamic load on the vehicle wheel or wheels, and *a*, *b*, *c*, *d* are structural parameters.



3,531,165
PIVOTAL CONNECTION FOR ELEMENTS UNDER TENSION

Edouard Martin Comellas, 40 De la Fonderie St., Cap de la Madelene, Quebec, Canada
Filed Oct. 21, 1968, Ser. No. 769,224
Int. Cl. B62d *55/20*
U.S. Cl. 305—59 13 Claims

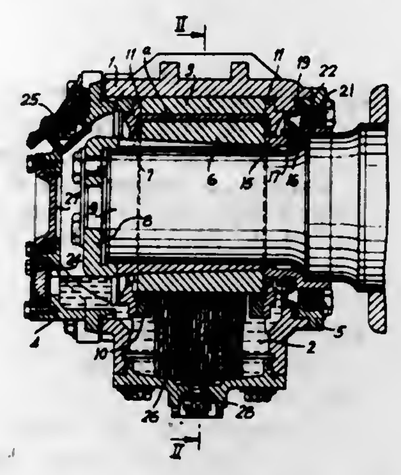


A pivotal connection adapted to interconnect elements under tension such as staggered lugs forming an endless track for tractors, comprising three rods extending through cylindrical holes in the element, said holes having a greater diameter than the diameter of the circle circumscribing the rods, so as to form a low friction pivotal connection.

3,531,166
AXLE-BOX FOR THE AXLE OF PAIR OF WHEELS OF ROLLING STOCK

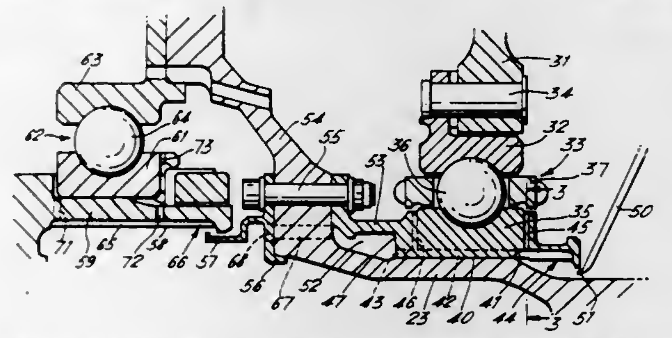
Vitaly Vasilievich Dudin, Novo-Basmannaya ul. 4/6, kv. 229, and Konstantin Vasilievich Latyshev, Bolshoi Sukharevsky per. 15, kv. 29, both of Moscow, U.S.S.R.
Filed Sept. 6, 1968, Ser. No. 757,812
Int. Cl. B61f *17/02*
U.S. Cl. 308—83 3 Claims

An axle-box for supporting a wheel-carrying axle, is provided with a fixed cylindrical bearing in which is rotatably journaled an end portion of an axle. Fixed on the axle is a cylindrical rest bushing for rotating with the axle internally of the bearing. Thrust rings are fixed at the opposite ends of the bearing for constraining the rest bushing therebetween. An oil tank is provided in the axle-box for lubricating the system and a collar cooperating with a corrugated sealing sleeve is fixed on the axle for preventing oil leakage from the axle-box.



3,531,167
BEARING ASSEMBLY

Robert George Edge, Cyril Blea, Peter King, and Samuel Charles Smith, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Jan. 23, 1969, Ser. No. 793,457
Claims priority, application Great Britain, Feb. 6, 1968, 5,828/68
Int. Cl. F16c *1/24*
U.S. Cl. 308—187 7 Claims

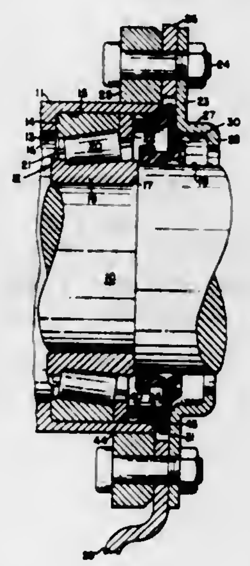


A bearing assembly comprises a bearing having an annular outer race and a rotatable annular inner race which is mounted concentrically within the said outer race and which is spaced therefrom by rolling elements which are in rolling contact with said inner and outer races, the internal surface of the inner race having a plurality of angularly spaced apart, axially extending grooves formed therein, means disposed radially inwardly of the said internal surface for directing lubricant radially outwardly onto a common region of the internal surface with which all the said grooves communicate, and radially extending ducts by means of which some only of the different grooves in operation supply lubricant to the rolling elements from axially spaced opposite sides of the bearing, the said common region being disposed on one said side of the bearing, and the remaining said grooves communicating directly with a lubricant conduit which extends axially from the other side of the bearing.

3,531,168
SHAFT SEAL TRANSMITTING THRUST TO ROLLER BEARING

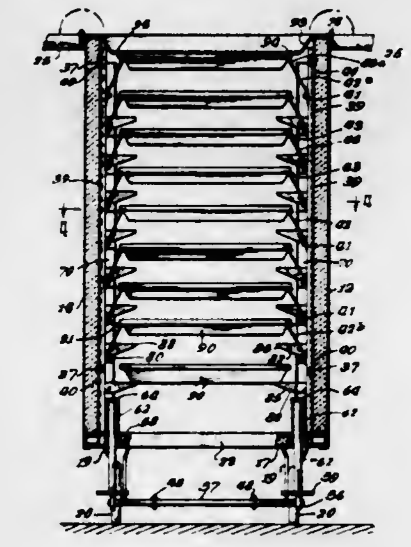
Dean R. Bainard, Novi, Mich., assignor to Federal-Mogul Corporation, Southfield, Mich., a corporation of Michigan
Filed Nov. 14, 1968, Ser. No. 775,814
Int. Cl. F16c *33/78;* **F16j** *15/32*
U.S. Cl. 308—187.1 10 Claims

A seal unit for use with roller bearings between a stationary bore and a rotating housing where pressure against the outer race of the bearing is transmitted through the seal. The seal has a rigid metallic reinforcing member with a cylindrical portion having a radially flat free end with a plurality of a radially outwardly extending spacers for slip-fit bore contact, spacing the free end inside the bore. The opposite end of the cylindrical portion leads to a radially outwardly extending shoulder portion and from there a doubled-back portion leads to an inwardly extending radial flange. An elastomeric lip-type seal is supported by a radially inner peripheral portion of the radial flange. A separate O-ring gasket on the outer surface of the cylindrical portion abuts the shoulder and seals between the seal unit and the bore.



3,531,169
FOOD SERVICE CART

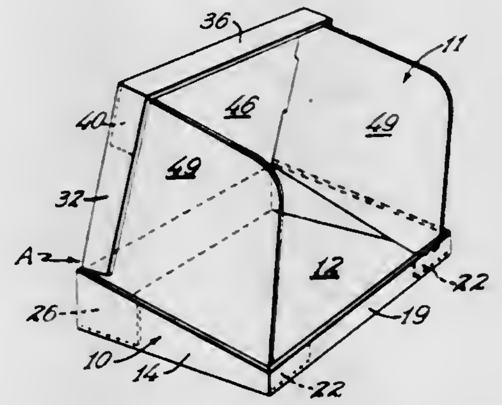
Carter Clifford Hoffmann, Lake Forest, and Irving W. Anderson, Waukegan, Ill., assignors to Carter-Hoffmann Corporation, Mundelein, Ill., a corporation of Illinois
Filed Aug. 1, 1968, Ser. No. 749,494
Int. Cl. A47b *67/02*
U.S. Cl. 312—236 13 Claims



A temperature insulated food service cart is provided with an externally actuated means for raising one or more trays adapted to carry food located inside the cart such that the top tray, when at the top of the cart, is accessible through a door opening thereinto. Food can be served from said top tray or the top tray can be removed through the access opening. Each operation of the actuating means will raise all the trays in the cart one level. The cart is designed so that all parts, including the heating or cooling element, can be removed from inside the cart for cleaning purposes.

3,531,170
VOTING BOOTH

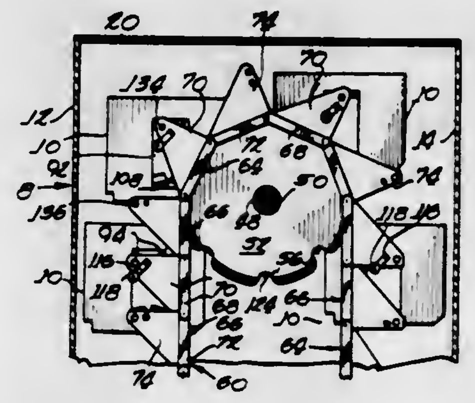
Gary W. Boyer, Sand Springs, Okla., assignor to Hoerner Waldorf Corporation, St. Paul, Minn., a corporation of Delaware
Filed Jan. 3, 1969, Ser. No. 788,839
Int. Cl. A47b *43/00, 17/06;* **B65d** *5/22*
U.S. Cl. 312—259 7 Claims



A collapsible portable voting booth includes a tray-shaped bottom section and a tray-shaped cover section hingedly connected along the rear edges thereof. A side wing member includes an intermediate panel secured to the top panel of the cover section and a pair of side wings hinged to opposite side edges thereof. These side wings fold into overlapping relation between the sections when the booth is closed. These side wings are foldable into right angular relation to the cover section and form sides for the booth in open position thereof.

3,531,171
VERTICAL MECHANICAL FILING CABINET

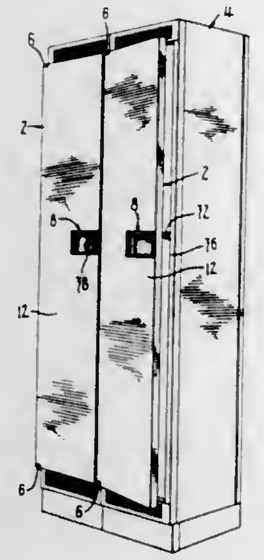
Ralph C. Raabe, Letts, and Clifford M. Brown, Muscatine, Iowa, assignors to Hon Industries Inc., Muscatine, Iowa, a corporation of Iowa
Filed July 5, 1968, Ser. No. 742,807
Int. Cl. A47b *49/00*
U.S. Cl. 312—268 8 Claims



A vertical power-operated filing cabinet having regular octal sprocket wheels and carrier support chains consisting of rigid links, each link being of an effective length corresponding to the chordal dimension of the sprocket wheels and including an offset support extending outwardly from its pivotal connection with an adjacent link, and a series of carriers pivotally suspended on the offset supports of alternate links by end pivot pins engaging the offset supports directly outward of such link connections, the remaining links having rollers engaging alignment detents on the superjacent carriers during traversing of the vertical runs of the chains to stabilize the carriers during their vertical travel.

3,531,172
INSERT FOR LOCKER DOOR

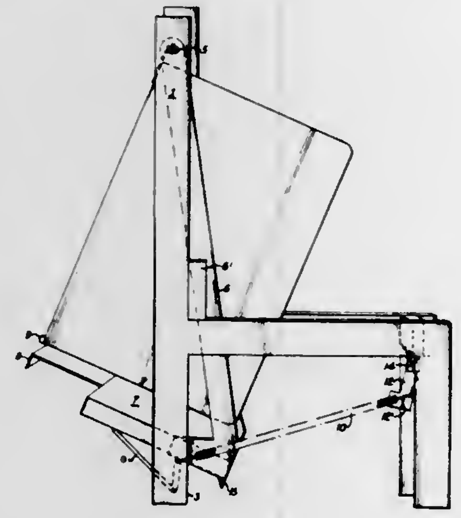
Howard A. Schnarr, Waterloo, Ontario, Canada, assignor to Massey-Ferguson Industries Limited, Toronto, Ontario, Canada, a corporation of Ontario, Canada
Filed July 23, 1968, Ser. No. 746,885
Claims priority, application Canada, Oct. 4, 1967, 1,651
Int. Cl. A47b *95/02*
U.S. Cl. 312—320 7 Claims



A double-walled metal door for clothing lockers and the like has a locking hasp and hand grip arrangement which does not extend significantly beyond the outer face of the door. This comprises a box like insert of flexible plastic material retained in an opening in the outer wall of the door by engagement with the edges of the opening and by abutment with the inner wall of the door. A padlock receiving hasp projects through the inner wall and the insert to receive a padlock in recessed location relative to the outer door panel.

3,531,173
TILTING FILE FOR FOLDERS

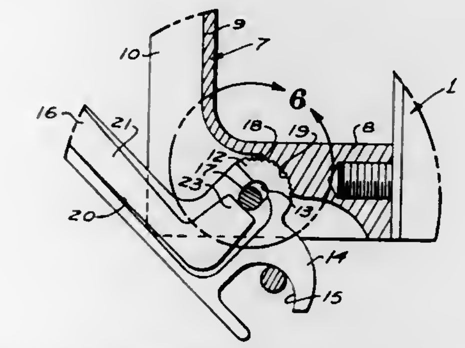
Alexandre Dreux, Rua Luis Afonso 66, Porto Alegre, Brazil
Filed Aug. 14, 1968, Ser. No. 752,614
Claims priority, application Brazil, Aug. 14, 1967, 192,083
Int. Cl. A47b *88/00*
U.S. Cl. 312—328 12 Claims



A tilting file is provided in which a casing includes a framework on which is mounted a horizontal rod from which is suspended a cradle-type platform adapted for supporting a plurality of flat folders having at the upper corner extremities thereof hooks which are hooked over and therefore pivotally engaged with the horizontal rod. A catch is provided for retaining the platform within the casing, there being further provided a release or control by means of which the catch is rendered ineffective so that the platform under the influence of gravity will pivot outwardly from the casing so that the folders protrude angularly from the casing. A limit device is provided to limit the amount by which the files will protrude and a masking device is provided to conceal the bottom of the platform and to move yieldingly against the bottom of the platform as the platform moves into its protruding position.

3,531,174
LIMITED LOAD LATCH

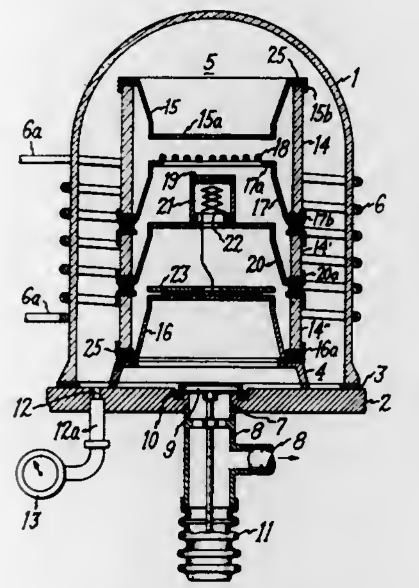
Lloyd Richard Poe, Beverly Hills, Calif., assignor to Hartwell Corporation, Los Angeles, Calif., a corporation of California
Filed Dec. 6, 1968, Ser. No. 781,927
Int. Cl. A47b *88/00;* **E05c** *19/12*
U.S. Cl. 312—333 8 Claims



A limited load latch in which a latch lever is provided with a slot which receives a journal pin and is capable of lateral movement within the limits of the slot; and, in which a pair of leaf springs, operable edgewise, are secured to the sides of the latch lever to bear against the spring and apply a relatively strong but yieldable force, holding the pin at one extremity of the slot.

3,531,175
METHOD OF MANUFACTURING EVACUATED DEVICES

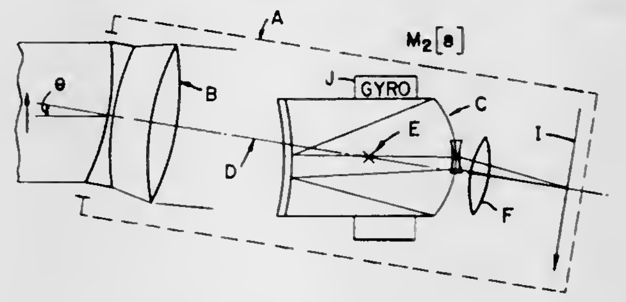
Sidney R. Smith, Jr., Mrytle Beach, S.C., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1968, Ser. No. 706,295
Int. Cl. H01j *17/26*
U.S. Cl. 316—25 4 Claims



An economical and easily implemented method for manufacturing evacuated devices having a hard vacuum chamber therein comprising the steps of simultaneously lowering the pressure in the chamber by a simple mechanical pumping process, sealing a temperature responsivesive material capable of desorbing gas at high temperatures and sorbing gas at a lower temperature in the chamber while maintaining the material at an abnormally high temperature and while maintaining the lowered pressure in the chamber; then allowing the chamber to cool so the material sorbs substantially all of the gas remaining in the chamber.

3,531,176
MULTIPLE TELESCOPE STABILIZING OPTICAL SYSTEM

William E. Humphrey, Oakland, Calif., assignor to Optical Research and Development Corporation, Oakland, Calif., a corporation of California
Filed Sept. 4, 1968, Ser. No. 757,306
Int. Cl. G02b *23/00*
U.S. Cl. 350—16 11 Claims



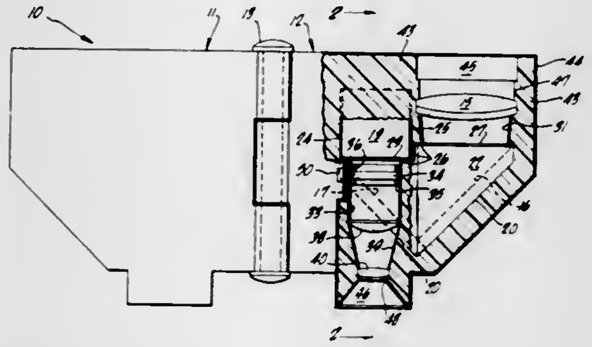
An optical stabilizing device comprising two optically aligned telescopes, the first of said telescopes having a magnification power of M_1 and the second telescope having a magnification power of M_2 adapted to receive light from the first telescope in which the second of said two telescopes is inertially stabilized and the magnification of said two telescopes is related by the formula

$$\pm M_1 = \left(1 - \frac{1}{M_2}\right)$$

and also incorporating in one embodiment of said stabilizer the projection of an image display screen mounted within one of the two telescopes.

3,531,177
BINOCULAR CONSTRUCTION USING PLASTIC FOAM AND MAGNETS

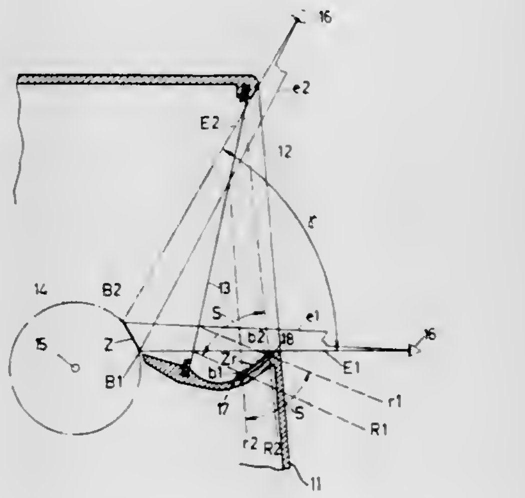
Alfred A. Akin, Jr., West Covina, Calif., assignor to David P. Bushnell, Pasadena, Calif.
Filed Jan. 26, 1967, Ser. No. 611,872
Int. Cl. G02b *21/20, 23/00*
U.S. Cl. 350—36 4 Claims



An optical binocular in which optical components including image-erecting prisms or mirrors are mounted in a body of plastic foam material. The foam material is packed in place around the image-erecting system while all the optical elements of the binocular are held in alignment, and hardens to form a permanent support structure. A negative lens is positioned in the binocular housing and is movable to focus the binocular. The negative lens carries a ferromagnetic body, and a magnet is movably mounted on the outside of the housing. The magnet and ferromagnetic body are magnetically coupled whereby changes in position of the magnet cause corresponding changes in position of the negative element to focus the instrument.

3,531,178
GLARE PREVENTION FOR AN INDICATING DATA DISPLAY DEVICE

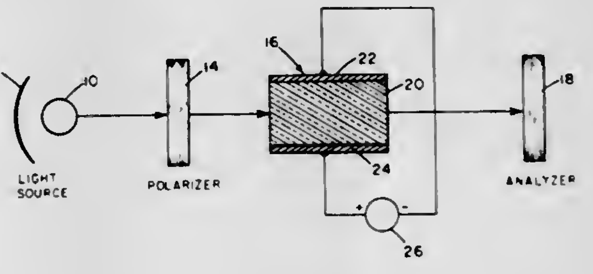
Armin Wirth, Zurich, Switzerland, assignor to Gallo Wirth & Co., Zurich, Switzerland
Filed Sept. 9, 1968, Ser. No. 758,394
Claims priority, application Switzerland, Sept. 25, 1967, 13,393/67
Int. Cl. G02b *27/02*
U.S. Cl. 350—113 9 Claims



A display device for indicating data to two oppositely facing viewers in a manner whereby both may easily view said data from different eye levels. The invention includes the use of a window whose edges determine the angularity of four marginal incident rays and the use of an optically dark surface extending through the field of such rays.

3,531,179
ELECTRO-OPTICAL LIGHT MODULATOR

Hans Jaffe, Cleveland Heights, Lebo R. Shiozawa, Richmond Heights, and Todd R. Sliker, East Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Oct. 1, 1965, Ser. No. 492,248
Int. Cl. G02f *1/26*
U.S. Cl. 350—150 5 Claims

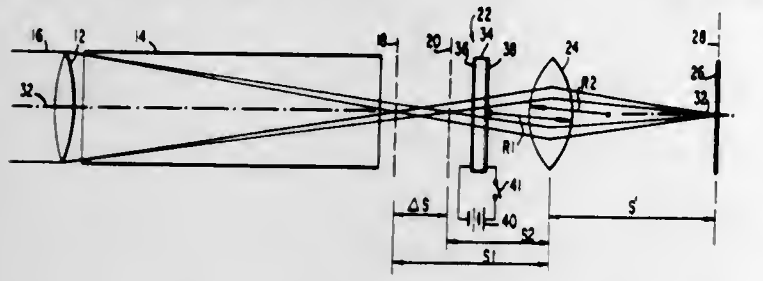


There is disclosed an electro-optical crystal element for use in an apparatus for modulating polarized light, said crystal element comprising a cubic zinc telluride crystal having an effective concentration of acceptors such as to possess a high resistivity exceeding 10^5 ohm-cm. and electrode means on opposite surfaces of said crystal. The zinc telluride crystal is formed from zinc telluride crystalline powder, to which is added a donor impurity, by sublimation and vapor deposition. Fluid phase of zinc and tellurium can be also used to grow zinc telluride crystals.

3,531,180
DISPERSION COMPENSATED DISPLAY SYSTEM

Harold Fleisher and Thomas J. Harris, Poughkeepsie, N.Y., and Erhard Max, Baden, Wurttemberg, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 26, 1967, Ser. No. 678,444
Int. Cl. G02f *1/26, 1/40*
U.S. Cl. 350—150 7 Claims

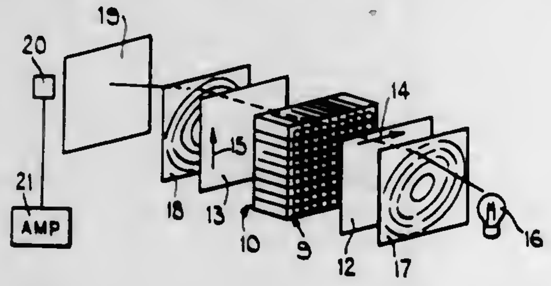


An optical display system which is compensated for focal plane dispersion and position dispersion so that spot images of two different colors or wavelengths of laser light have the same size and position on a display screen located in an image plane at the output of the system. Compensation is provided by the combination of an electro-optic polarization rotator and a birefringent lens whose optic axis is oriented so that the lens has two focal points corresponding to its ordinary and extraordinary indices of refraction. The electro-optic rotator operates on the polarization directions of the two wavelengths so that one wavelength follows the path of the ordinary ray through the berefringent lens and the other wavelength follows the path of the extraordinary ray. The lens material and the radii of curvature of the lens surfaces are chosen such that both the focal plane dispersion and the position dispersion of the deflector are effectively cancelled. Consequently, spot images of both colors have the same size and are in focus in the same image plane or screen position. In a modification, a birefringent plate may be introduced to relax the requirements on the lens for compensating for the focal plane dispersion and for providing dispersion compensation for three different colors. Alternatively, the dispersion compensation may be provided by a Fresnel zone plate which has anomalous dispersion.

3,531,181
LIGHT GUIDE ELECTRO-OPTICAL DEVICES

Gordon George Scarrott, Welwyn Garden City, England, assignor to International Computers and Tabulators Limited

Filed Feb. 7, 1968, Ser. No. 703,626
Claims priority, application Great Britain, Feb. 18, 1967, 7,841/67
Int. Cl. G02f *1/26;* G02b *5/14*
U.S. Cl. 350—150 9 Claims

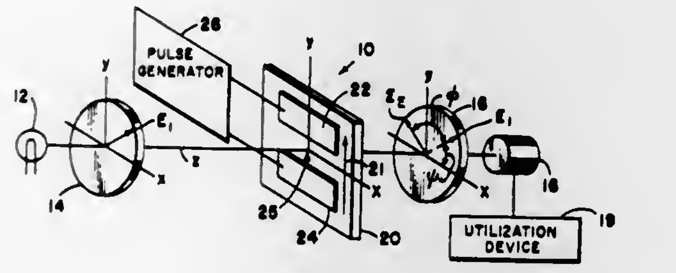


An electro-optical switching device consists of two groups of mutually perpendicular printed circuit boards which are interlocked with one another to form a matrix of cells. Each cell contains a glass tube approximately 1 mm. in diameter and 2 cm. long which is filled with a liquid electro-optic material, such as nitrobenzene. A parallel beam of plane polarised light is directed through the nitrobenzene in each tube and due to the different refractive indices of the glass tube and the nitrobenzene total internal reflection of the light beam occurs in the tubes. By applying an electrical potential between pairs of printed circuit boards on opposite side of a selected cell, the polarisation of transmitted light is modified.

3,531,182
MULTIREMANENT FERROELECTRIC CERAMIC OPTICAL DEVICES

Cecil E. Land and Donald G. Schueler, Albuquerque, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 11, 1968, Ser. No. 758,958
Int. Cl. G02f *3/00*
U.S. Cl. 350—150 13 Claims

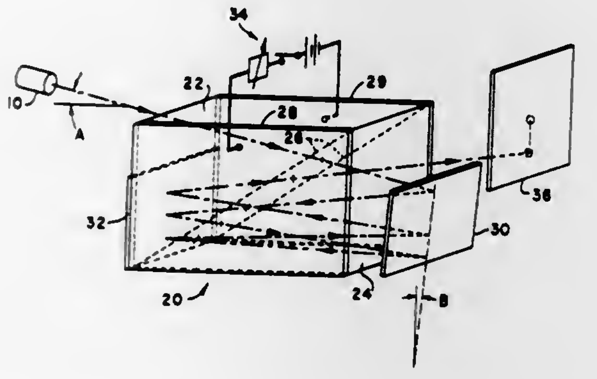


Plane polarized light, optical retardation devices comprising a hot-pressed, fine grained, ferroelectric ceramic plate having an initial ferroelectric remanent polarization and means for changing the magnitude of said remanent polarization for varying the optical retardation of said plate.

3,531,183
LIGHT BEAM DEFLECTOR

Roger L. Aagard, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

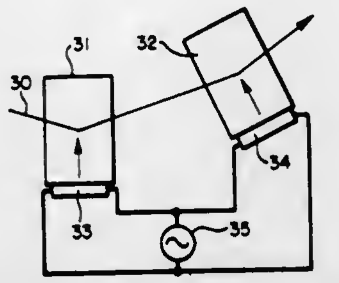
Filed Oct. 30, 1967, Ser. No. 678,858
Int. Cl. G02f *1/28*
U.S. Cl. 350—160 5 Claims



A light beam deflector wherein the electro-optic deflecting medium is enclosed between two oppositely disposed non-parallel reflective surfaces for reflecting the light beam back and forth through the deflecting medium. The non-parallel configuration causes the reflecting beam to follow a descending and then ascending path through the deflecting medium whereby increased cumulative deflection is obtained.

3,531,184
MONOCHROMATIC LIGHT BEAM DEFLECTION APPARATUS HAVING TWO TRAINS OF FREQUENCY SCANNED ACOUSTIC WAVES FOR EFFECTING BRAGG DIFFRACTION

Robert Adler, Northfield, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 476,797, Aug. 3, 1965. This application June 17, 1968, Ser. No. 737,492
Int. Cl. G02f *1/32*
U.S. Cl. 350—161 15 Claims

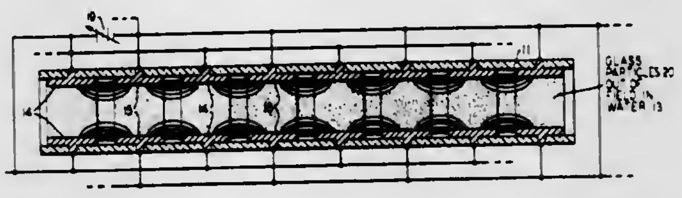


A beam of light is diffracted, and thus deflected, by a train of acoustic waves the frequency of which is scanned throughout a range. By reason of the change in sound frequency across the width of the beam, the waves together exhibit a certain refractive power for the light. In one approach, such refraction is compensated by the disposition in the beam path of a lens exhibiting a complementary refractive power for the light. In another approach, the compensating lens effect is obtained by again diffracting the beam with a train of acoustic waves the frequency of which also is scanned throughout a range. The use of successive diffractions of the beam by a plurality of trains of such waves also is employed to multiply the angle of beam deflection while at the same time significantly increasing the image resolution of the system.

3,531,185
LIQUID LENS OPTICAL GUIDE EMPLOYING NEUTRAL PARTICLES SUPPORTED IN THE LIQUID

Solomon J. Buchsbaum, Westfield, and Daniel Weiner, Keyport, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

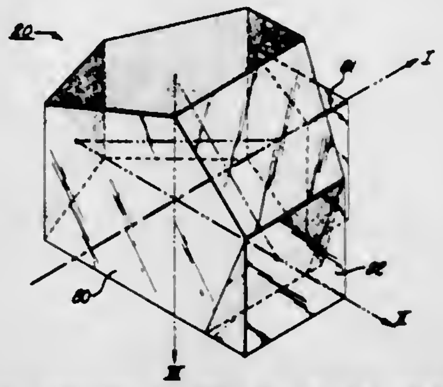
Filed Oct. 25, 1967, Ser. No. 677,926
Int. Cl. G02b *1/06, 5/14*
U.S. Cl. 350—179 16 Claims



Liquid lenses for focusing transmission in optical communication systems are disclosed. The lenses employ liquid supporting particles that scatter light coherently in the forward direction and can be controlled by application of an electric or magnetic field to the assembly to produce a lens-like distribution of the particles. The liquid or the particles, or both, can be directly responsive to the applied field. Either can have permanent or induced magnetic or electric dipole moments.

3,531,186
THREE-DIRECTIONAL OPTICAL ELEMENT

Robert E. Brasier, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Original application Mar. 8, 1965, Ser. No. 437,705. Divided and this application Jan. 22, 1969, Ser. No. 793,071
Int. Cl. G02b *5/04*
U.S. Cl. 350—286 8 Claims

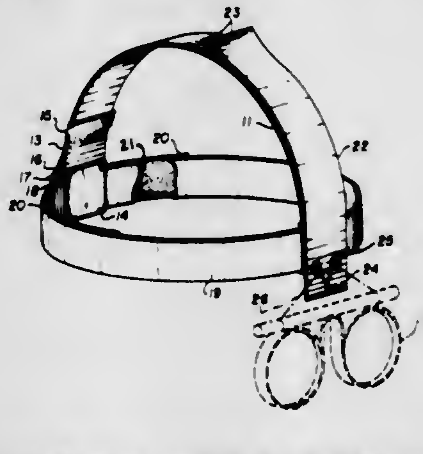


A novel optical element is described which receives light from three mutually perpendicular directions and causes the same to be directed along a single path. In one preferred embodiment the element is a polyhedron of light transmitting material having selected surfaces coated with a light reflecting material to cause the desired reflection of light within the element.

3,531,187
EYE TEST FRAME SUPPORT

William H. Brown, 503 1st Ave., Elizabeth, N.J. 07206

Filed Aug. 27, 1968, Ser. No. 755,676
Int. Cl. A61b *3/04;* G02c *3/00*
U.S. Cl. 351—19 2 Claims

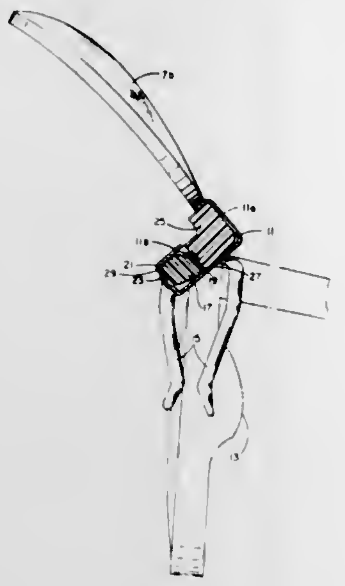


A test frame support which is lightweight and comfortable, providing a latitudinal girth strap for the cranium above the brow; interengaging ends on the girth strap adjustable to suit the cranium; longitudinal straps with interengaging inner end portions and outer end portions attached to the girth strap to maintain the latitudinal girth strap above the brow; a support strap adjustably attached to the longitudinal strap and attachable to suspend a test frame support.

3,531,188
FLIP-UP LENSES FOR SPECTACLES

Conrad L. Leblanc and Jack Bloch, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Continuation-in-part of application Ser. No. 527,008, Feb. 14, 1966. This application May 31, 1968, Ser. No. 723,643
Int. Cl. G02c *9/04*
U.S. Cl. 351—48 4 Claims

Spectacle lenses of either the regular or clip-on type in which the lenses are pivotable at the top from the normal position in front of the eyes, to a position out of the line of sight, simply by flipping the lenses upwardly. The bridge joining the lenses is biased against a support member by



a metal spring clip which coacts with the support member and bridge to maintain the lenses in the selected position.

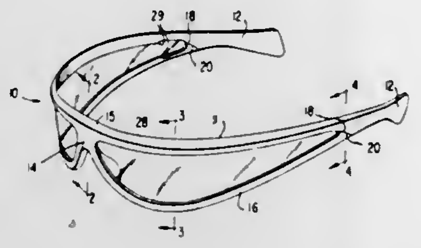
3,531,189
EYEGLASS FRAME

Albert C. Petito, Hudson, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

Continuation of application Ser. No. 577,321, Sept. 6, 1966. This application Sept. 2, 1969, Ser. No. 854,799

Int. Cl. G02c *1/08*

U.S. Cl. 351—90 **6 Claims**



An eyeglass frame comprising a U-shaped lens frame and temple member in which the lens frame and lenses therein extend around the sides of the wearer's head a substantial amount. The frame includes lower rim portions which are so constructed so as to allow molding of the frame by a pair of simple mold blocks. The lower rim portions may be split at their ends away from the remainder of the frame and joined to the frames before inserting the lenses in their lens openings. Ledges forming grooves for receiving the lenses in the frame may terminate a substantial distance before the ends of the lens openings to allow insertion of lenses after joining of the split lower rims to the remainder of the frames.

3,531,190
SPECTACLE FRAME ASSEMBLY

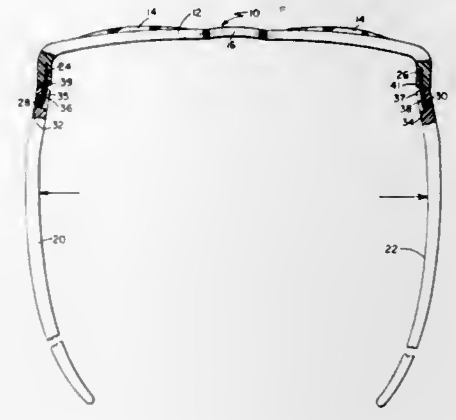
Conrad L. Leblanc, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

Continuation of application Ser. No. 623,389, Mar. 15, 1967. This application June 18, 1969, Ser. No. 835,305

Int. Cl. G02c *5/16*

U.S. Cl. 351—113 **1 Claim**

This disclosure concerns a spectacle frame assembly having means for allowing the temple portions of the frame to conform to a wide range of sizes or distances between the opposed temple portions, and throughout this size range, to be under sufficient tension or tautness to fit snugly on a wearer's head. This is accomplished by the provision of a special connecting member positioned between the front lens retaining portion and the temple portions. The connecting member includes a hinge or the like which will allow pivotal movement of the temple



portion through a predetermined angle relative to the front lens retaining portion, and a resilient, flexible portion which will allow further spreading or outward movement when stressed by pushing the ends of the temple portions outwardly. Adjacent parts of the front lens retaining portion and the temple portions may conveniently be shaped to cooperate, to the fullest extent, with the connecting members.

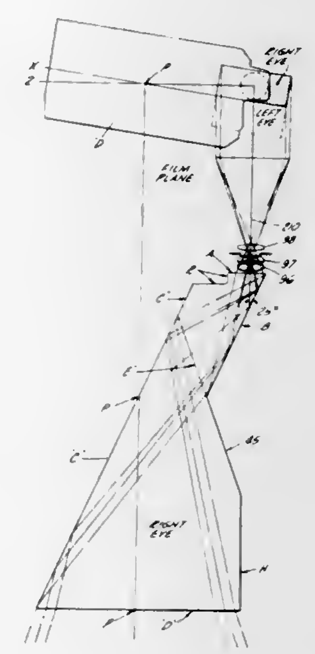
3,531,191
THREE DIMENSIONAL CINEMATOGRAPHY

Robert V. Bernler, Saugus, Calif., assignor to Tru-D Company, a corporation of California

Filed Oct. 21, 1966, Ser. No. 588,574

Int. Cl. G03b *35/10*

U.S. Cl. 352—57 **24 Claims**



An attachment for a conventional motion picture camera to permit the filming of stereoscopic images on a motion picture film. Particular wide angle prisms are disclosed, as are mechanisms in the attachment for convergence and focusing control, and apparatus for establishing a clean line of demarcation and preventing fogging or confusion between the upper and lower images of a frame.

3,531,192
MOTION-PICTURE PROJECTOR FOR CASSETTES

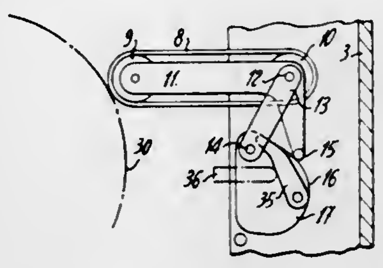
Walter Etter, Grandson, Vaud, Switzerland, assignor to Paillard S.A., Vaud, Switzerland, a company of Switzerland

Filed Oct. 31, 1968, Ser. No. 772,205

Claims priority, application Switzerland, Dec. 12, 1967, 17,385/67

Int. Cl. G02b *21/02;* **G11b** *15/32*

U.S. Cl. 352—72 **10 Claims**



Projector, for cassettes of different sizes and holding films of different lengths, has a pivotally mounted belt film drive of which the movement is controlled by one of two cams, in dependence on the size of the cassette loaded, so as to ensure that the belt drive partly enters the cassette and drivingly engages the film.

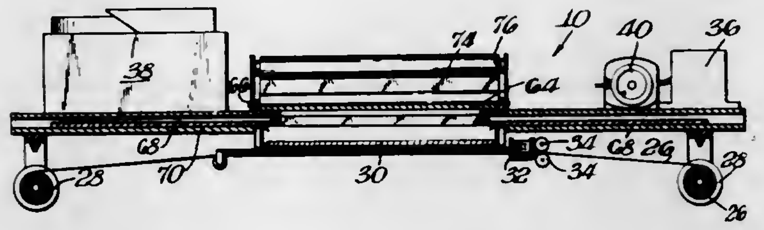
3,531,193
TRANSPARENCY HOLDER FOR OVERHEAD PROJECTIONS

Robert B. Diehl, 242 Potomac Road,
Fairfax, Wilmington, Del. 19803

Filed Aug. 11, 1967, Ser. No. 659,979

Int. Cl. G03b *21/14*

U.S. Cl. 352—87 **12 Claims**



A transparency holder includes components such as rollers for moving a transparency into and out of the projection area with cleaning apparatus provided to clean the transparency as it is moved out of the projection area and with a masking device provided to control the effective size of the projection area. The transparency itself may be in the form of individual cards and an elongated transparent casing which includes a plurality of compartments for removably housing the individual cards and with the casing being capable of being marked without deforming or tearing.

3,531,194
MOTION PICTURE CAMERA WITH ADJUSTABLE SHUTTER

Alfred Roppel, Munich, and Johann Roth, Schwabhausen, Germany, assignors to Niezoldi & Kramer G.m.b.H., Munich, Germany

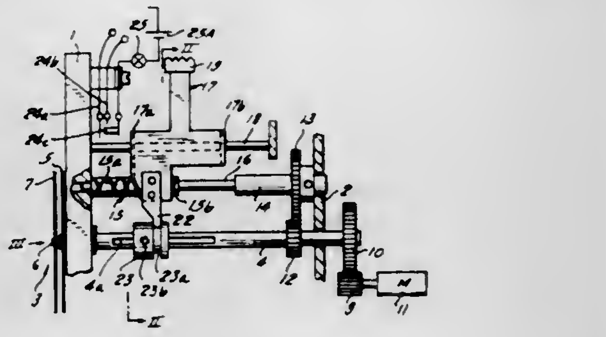
Filed Oct. 10, 1968, Ser. No. 766,429

Claims priority, application Germany, Oct. 17, 1967, 1,597,340

Int. Cl. G03b *9/12, 9/62*

U.S. Cl. 352—216 **21 Claims**

A motion picture camera wherein the motor drives a hollow shaft carrying a first shutter blade and the hollow shaft accommodates a second shaft carrying a second shutter blade. The second shaft is turnable in the hollow shaft so that the angular positions of the two blades can be changed in order to furnish a shutter opening of greater or lesser size. The means for changing the angular position of the second shaft comprises a sleeve which is movable axially on the outer shaft and has a pin extending into a helical groove of the second shaft and through an axially parallel slot of the outer shaft so that the outer shaft invariably drives the inner shaft but the pin can change the angular position of the inner shaft in response to axial movement of the sleeve. The sleeve is movable



axially by a manually operable selector which is normally biased to a neutral position in which it can be shifted by hand in parallelism with the common axis of the shafts to thereby change the axial position of the sleeve. In addition, the selector is pivotable in two directions from its neutral position to thereby receive motion from the motor which drives the outer shaft. The arrangement is such that the selector moves the sleeve in one axial direction in response to pivoting to one side of its neutral position and that the selector moves the sleeve in the other axial direction in response to pivoting to the other side of its neutral position.

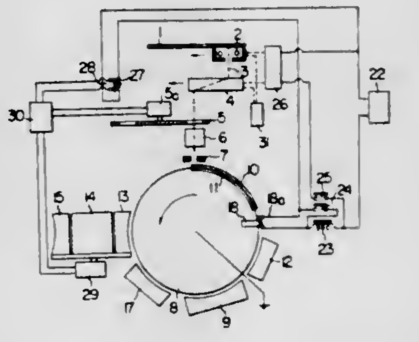
3,531,195
METHOD AND APPARATUS FOR MULTICOLOR PRINTING

Makoto Tanaka, Tokyo-to, Keiji Yoshida, Kawasaki-shi, and Kazuyoshi Kawafune and Hiroshi Kitagawa, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Continuation-in-part of application Ser. No. 384,314, July 22, 1964. This application Sept. 27, 1967, Ser. No. 670,922

Int. Cl. G03g *15/22*

U.S. Cl. 355—4 **12 Claims**

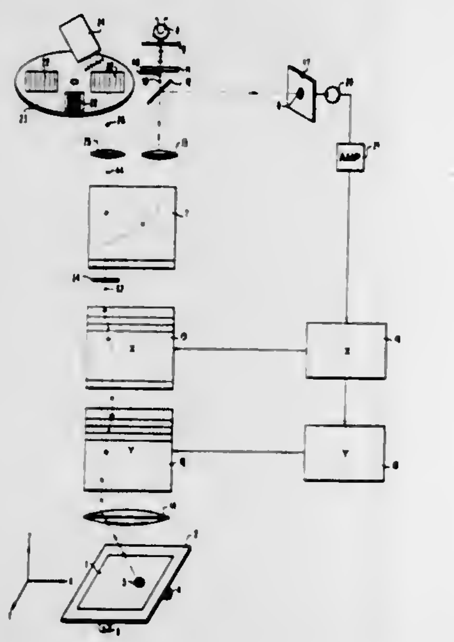


A method of printing of multicolor copies from a multicolor original pattern, carried out in a quick and easy manner by multicolor electro-photographic printing technique which first renders light passing through or being reflected from a multicolor original pattern monochromatic through a filter device, and then performs formation of a latent image and development thereof for each monochromatic light of different colors on a rotating drum, on which a photoconductive insulating substance is coated or held. The abovementioned rotating body is so constructed that it commences irradiation and scanning of the multicolor original pattern by a light source, when the signal detector provided outside of the rotating body detects a signal generated from signal generator provided within the first-mentioned rotating body or another rotating body which rotates in contact with first-mentioned rotating body for every rotation of the drum. By continuous and successive rotation of this rotating drum, desired multicolor printing can be accomplished without accompanying any discrepancy in color. The invention also proposes an apparatus to accomplish this multicolor printing.

3,531,196
OPTICAL REGISTRATION OF AN OBJECT WITH REFERENCE TO A COORDINATE SYSTEM

Kurt M. Kosanke, Werner Wolfgang Kulcke, and Erhard Max, Boblingen, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 19, 1967, Ser. No. 654,465
Claims priority, application Germany, July 21, 1966, J 31,372
Int. Cl. G03b *27/32*
U.S. Cl. 355—18 15 Claims



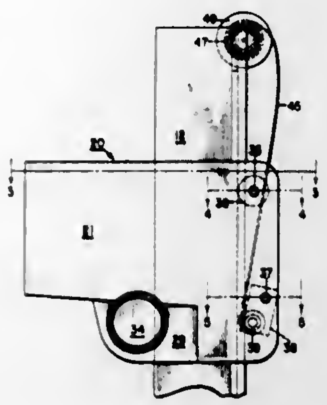
Apparatus for optical registration of an object with reference to a coordinate system wherein a light path of an image of the object is automatically shifted by electro-optical light deflectors and switches until it coincides in a desired registration with the coordinate system. Thereafter with the adjustment of the light deflectors remaining unchanged, a copy of a suitable pattern is projected through the light deflector onto the object. The image of the pattern is accurately aligned with respect to the coordinate system.

3,531,197
PHOTOGRAPHIC APPARATUS SUPPORT STRUCTURE

Charles R. King, East Rochester, N.Y., assignor, by mesne assignments, to Kinex Corporation, Rochester, N.Y., a corporation of New York

Filed Dec. 7, 1967, Ser. No. 688,863
Int. Cl. G03b *27/32*
U.S. Cl. 355—18 22 Claims

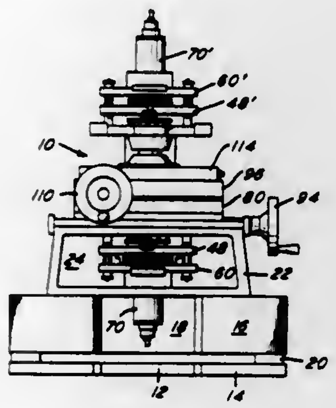
A carriage for supporting a vertically movable camera or enlarger on a triangular column has wheels arranged to bear on the column as follows: a lower front friction wheel with an adjustment knob bears against the apex of the column; an upper rear wheel bears against the back of the column; an adjustable lower rear location wheel engages a rear edge of the column; a pivoted bracket at the lower rear of the column supports a wheel that is biased against the other rear edge of the column; and counterbalance spring strips engage and pivot the bracket to urge the bias wheel into firm engagement with the column. The spring strips are arranged to lift the bracket to pivot it and counterbalance the equipment, and the curl tendency of the spring strips is also used to pivot the bracket for additionally forcing the bias wheel against the rear of the column. The lower front and upper rear wheels support the overhung weight of the equipment, the lower rear location wheel helps set the lateral position of the equipment, and the bias wheel holds all the wheels snugly and firmly in place for smooth and accurate motion of the carriage up and down the column.



3,531,198
METHOD OF PRINTING IMAGES ON OPPOSITE SIDES OF A SUBSTRATE

Winner F. Delp, Fort Washington, Pa., assignor to The Jade Corporation, Beth Ayres, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 455,857, May 14, 1965. This application June 27, 1966, Ser. No. 560,454
Int. Cl. G03b *27/32*
U.S. Cl. 355—26 2 Claims

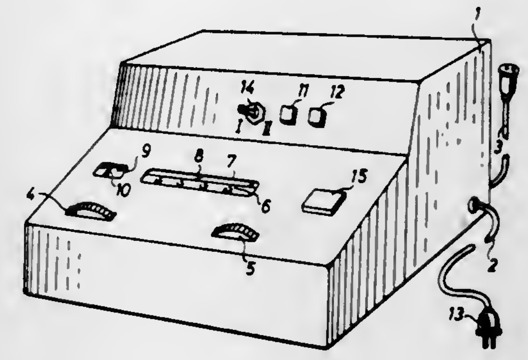


Apparatus and method for producing aligned images on opposite sides of a planar substrate. Two photographic plates are aligned and an opaque barrier is then inserted therebetween. The plates are simultaneously exposed. The plates are simultaneously moved to expose other areas. The plates are moved together by the same mechanism so that any displacement error will effect both plates in an identical manner. After exposure is completed, the plates are removed and developed. The developed plates are then placed in close proximity and re-aligned. A substrate is then inserted between the plates and is contact printed thereby.

3,531,199
APPARATUS FOR CONTROLLING EXPOSURE DURING PHOTOGRAPHIC PRINTING OF VARIABLE CONTRAST MATERIAL

Theodor Burger, Munich, and Erhard Hellmig, Leverkusen, Germany, Jacques Leon Vanheerentals, Schoten, and Luc Yves Natens, Berchem, Belgium, and Gert Breidenbach, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Mar. 19, 1968, Ser. No. 714,188
Claims priority, application Germany, Apr. 26, 1967, A 55,554
Int. Cl. G03b *27/76*
U.S. Cl. 355—71 34 Claims

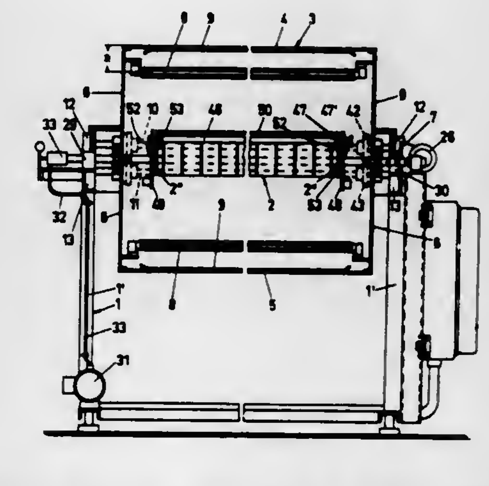


Apparatus for controlling exposure during photographic printing of variable contrast paper which is exposed to light passing through a negative in two extreme colors and whose gradation is different for each extreme color comprises an electronic timer wherein a first knob selects the total exposure time as a function of the density of a negative and by considering the sensitivity of paper. A second knob selects the ratio of exposures to light in two extreme colors within the total exposure time by way of a calibration curve which is determined in advance for the particular contrast grade of paper as a function of the density range of a negative.

3,531,200
CIRCULAR EXPOSING DEVICE

Werner Moll, Haaner Strasse 162, Solingen-Wald, Germany

Filed Nov. 30, 1967, Ser. No. 687,062
Claims priority, application Germany, Nov. 30, 1966, M 71,843
Int. Cl. G03b *27/04*
U.S. Cl. 355—85 6 Claims

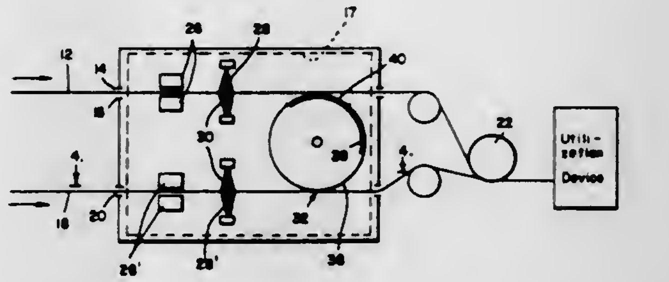


A printing device comprising a supporting cylinder rotatably mounted about an axle with a cylindrical envelope face for printing plates and having a longitudinal groove at a portion of the periphery of the envelope face. A clamping rod is disposed in the groove and holds the face end of a transparent foil covering the printing plates and wound from a storage roller. The latter is carried by extension arms mounted on the cylinder axle and rollably positioned on the envelope face. The rod is snappingly retained in the longitudinal groove with a part of its peripheral face entering the groove by a spring force when the transparent foil surrounds the supporting cylinder.

3,531,201
PREPROCESSOR

Russell E. Prentice, Pasadena, Calif., assignor to Hycon Mfg. Company, Monrovia, Calif.

Filed Apr. 11, 1968, Ser. No. 720,677
Int. Cl. G03b
U.S. Cl. 355—133 4 Claims

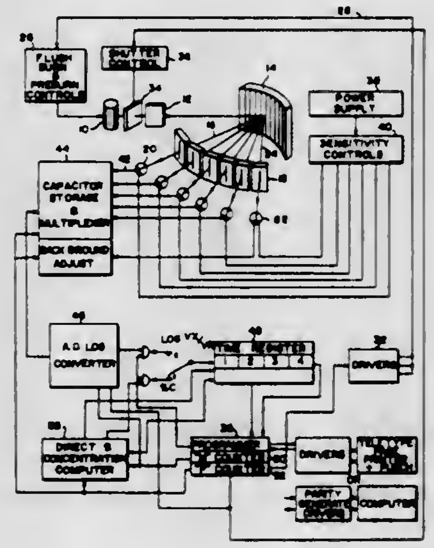


Apparatus cleans positive and negative film stock prior to being placed into intimate surface contact utilizing pairs of opposed radioactive ionizers and opposed brushes which intercept the positive and negative film for removing contaminants from the film surfaces. The positive film, where appropriate also pass over a preexposer, which controllably preexposes the raw positive prior to a contact printing step. A high capacity vacuum line "pulls" a large volume of air at high velocity across the film surfaces, transverse to the direction of film travel, to "sweep" surface contaminants from the vicinity of the film, to continuously agitate the brushes to prevent the retention of contaminants and to cool the preexposer light source.

3,531,202
SPECTROMETER READOUT SYSTEM

Hugh Malcolm Wilkinson, Winchester, and Philip Spergel, Lexington, Mass., assignors to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Nov. 14, 1966, Ser. No. 593,796
Int. Cl. G01j *3/36*
U.S. Cl. 356—81 5 Claims

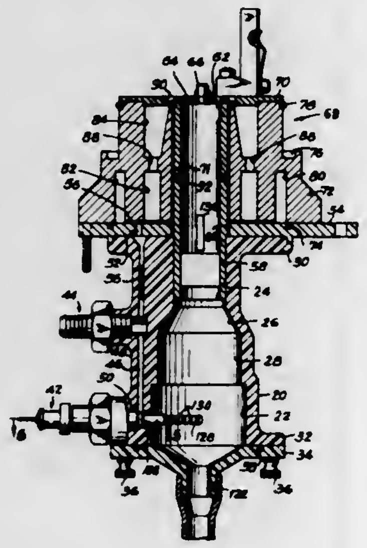


Information as to the concentration of a selected monitored element in an emission spectrometer is provided through a direct readout system. An analog-digital converter changes the voltage stored on capacitors charged by spectrum responsive photo-multiplier tubes to an output which is the log discharge time period this being measured and stored by a scaler. A computer and programmer are connected to the converter and the scaler to provide an output representing the direct percentage of concentration of the monitored element.

3,531,203
SPECTRAL FLAME PHOTOMETER BURNER

Jack Isreell, Mamaroneck, and Edward W. Larrabee, Bronxville, N.Y., assignors to Technicon Instruments Corporation, Chauncey, Ardsley, N.Y., a corporation of New York

Filed Oct. 14, 1966, Ser. No. 586,685
Int. Cl. F23d *13/00, 13/40*
U.S. Cl. 356—87 11 Claims

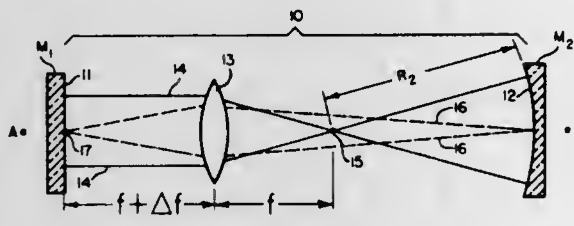


A spectral flame photometer burner having a substantially circular mixing chamber with means to introduce a flow of combustion supporting gas and an atomized liquid sample into said chamber in such a manner as to produce a swirling motion therein and means to introduce a fuel gas into a relatively low pressure region created in the flow path of said combustion supporting gas and said atomized sample.

3,531,204
OPTICAL ENCLOSURES OF THE INTERFEROMETER TYPE

Thomas E. Holland, Sunnyvale, and Willard E. Buck, Los Gatos, Calif., assignors to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware

Filed Nov. 8, 1966, Ser. No. 592,800
Int. Cl. G01b *9/02;* **G02f** *1/28*
U.S. Cl. 356—112 12 Claims

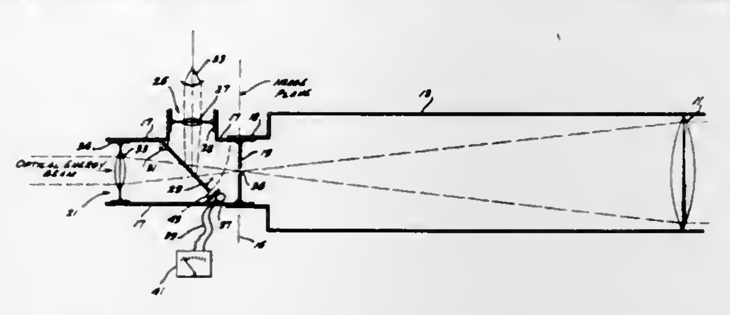


An optical enclosure bounded by first and second spaced-apart partially transparent mirrors having between them a lens system for imaging each mirror on the other. The lens system focuses light from the first mirror substantially to a point between the lens system and the second mirror, and the second mirror is concavely curved on a radius centered at that point. The lens system is preferably of a type which has the ability to focus collimated light substantially equally from either direction. A reversed Steinheil doublet corrected for spherical aberration for parallel light passing in either direction is preferred. The enclosure is illuminated through the first mirror, for example, by a laser. The first mirror may be plane, concave, or convex; if concave, it is curved on a radius longer than the distance to the first-named point.

3,531,205
LIGHT BEAM AIMING DEVICE

Thomas A. Nussmeier, Thousand Oaks, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Jan. 15, 1968, Ser. No. 697,838
Int. Cl. G01j *1/00;* **G01b** *11/26*
U.S. Cl. 356—121 11 Claims

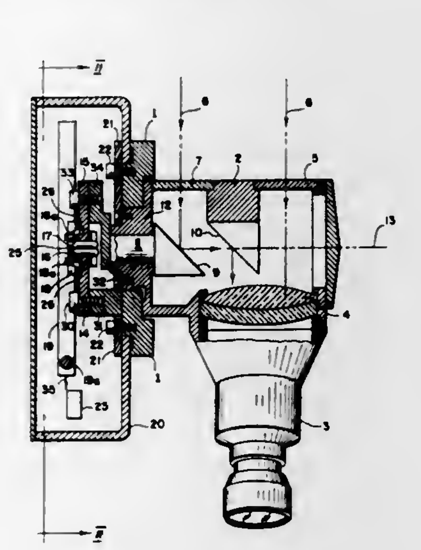


This is a device for aiming a beam of optical frequency energy at a specific target. The device includes a substantially transparent plate having a hole through its thin dimension and that is placed in an image plane of an objective element. A beam of optical energy is focused on the image plane and positioned to pass through the hole in the plate and onto the objective element. An optical energy detector is positioned to be responsive to the optical energy for determining when the beam passes through the hole in the plate. The device is sighted by viewing the target through an optical system coupled to the plate and focused on the image plane, which system receives substantially only visible light energy on the image plane propagating through the plate from the objective element.

3,531,206
SURVEYING INSTRUMENT

Evert Arne Bjerhammar, Brinken 3, Stocksund, Sweden

Filed Nov. 28, 1966, Ser. No. 597,323
Claims priority, application Sweden, Dec. 9, 1965, 15,936/65
Int. Cl. G01c *1/00*
U.S. Cl. 356—144 20 Claims

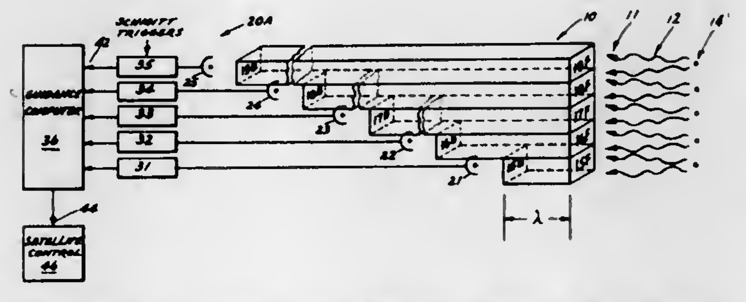


An optical instrument for ascertaining the vertical angle between a pair of optical axes. A telescope has an objective lens and a primary optical axis adjustable about a horizontal axis perpendicular to the primary optical axis, and first beam of light passing long the primary optical axis is visible at the objective lens. A first reflector deflects a second beam of light to the objective lens from a point on the horizontal axis; and a second reflector deflects the second beam along the horizontal axis to that point from a direction at right angles to the horizontal axis, wherein the path of the second beam of light forms a secondary optical axis of the telescope. The first and second reflectors are mounted in front of the objective lens of the telescope and the second reflector is rotatable about the horizontal axis relative to the first reflector. The vertical angle formed between the primary and secondary axes is indicated as a result of rotation of the second reflector relative to the first reflector.

3,531,207
DIGITAL SPECTRAL LINE IDENTIFIER

Walter W. Lee, Allendale, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Dec. 20, 1965, Ser. No. 514,982
Int. Cl. G01b *9/02*
U.S. Cl. 356—112 7 Claims



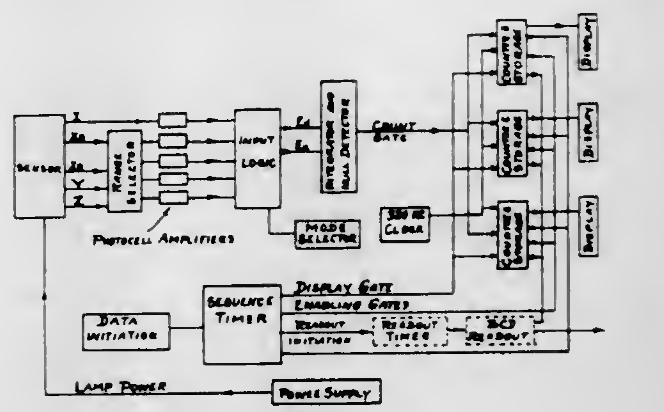
A device for measuring the wave length of light utilizing an array of paired interference plates having semi reflective surfaces, the two plates of each pair being arranged in a predetermined spaced relation different than the spaced relation of the two plates of the other of said pairs of plates dependent upon the wave length of the light to be measured, each of said pairs of plates including an input plate and an output plate, the input plate being arranged to receive there through the light for measurement and passage through both plates of each pair of plates, and sensing means adjacent the output plate of each of said array of paired plates, said array of paired plates being responsive to the wave length of the light for producing at the output plate of said array of paired plates a predetermined light pattern sensed by said sensing means and having a predetermined relation to a binary number system and jointly dependent on the distance the light traveled between the two plates of each pair of plates and the wave length of the light directed from said light source.

3,531,208
AUTOMATIC DIGITAL COLORIMETER

John W. Ward, Charlottesville, Va., assignor to Teledyne, Inc., Hawthorne, Calif.

Filed May 10, 1966, Ser. No. 548,966
Int. Cl. H01s *3/50;* **G08c** *9/00*
U.S. Cl. 356—176 6 Claims

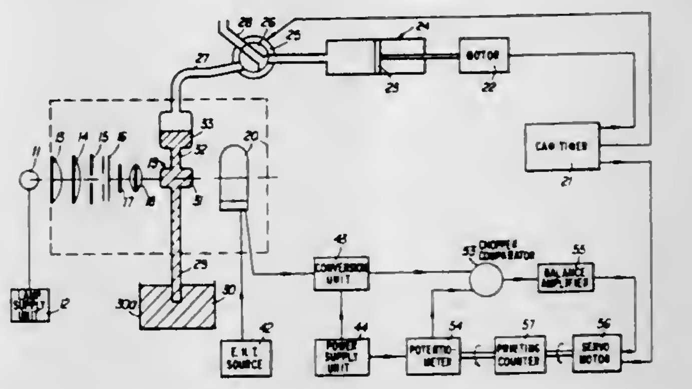
This digital colorimeter functions in CIE color notation and reads directly in CIE tristimulus values X, Y and Z in CIE chromaticity coordinates *x* and *y* and tristimulus value Y. The present invention differs from earlier colorimeters in that its operation is entirely automatic; once initiated, either by an internal timing cycle or an external operation, it uses a combination of an internal sequence timer and a manually-set logic to cause the measurement, calculation, display and encoding of the colorimetric data for a specific sample in less than one-half of a second. Accuracy of measurement and calculation is to greater than three significant figures. Provision is made for internal calibration. Colorimetric evaluation is based on a 4-filter photovoltaic cell system, with a constantly-monitored illumination source. The numerical values, representing sample coloration, are computed from electrical analogs of illumination and sample spectral distribution by means of operational amplifiers, conversion of the colorimetric values to a time interval with a precise integrator, measuring the duration of the time interval with an accurate clock and counter and displaying and encoding this data for utilization.



3,531,209
DIGITAL PRINTOUT SPECTROPHOTOMETER

Vivian Roy Williamson and Kenneth John Riggs, Braintree, England, assignors to Evans Electroselenium Limited, Braintree, Essex, England, a British company

Filed Sept. 11, 1967, Ser. No. 666,773
Claims priority, application Great Britain, Sept. 9, 1966, 40,329/66
Int. Cl. G01j *3/46*
U.S. Cl. 356—180 6 Claims



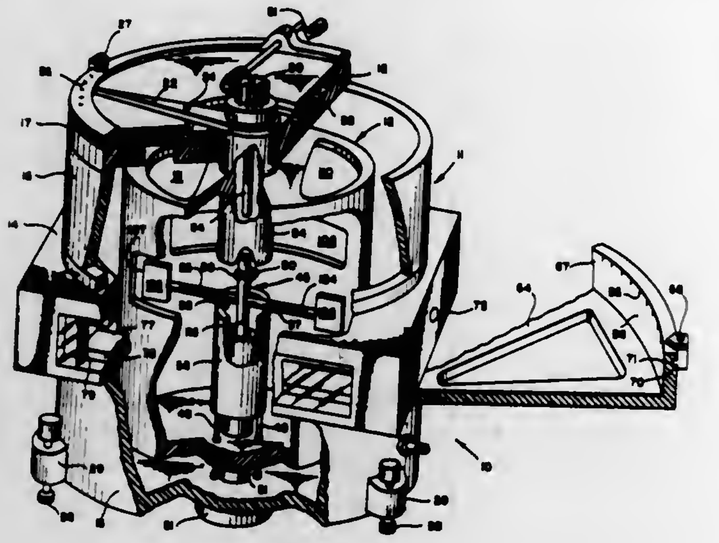
A continuously cycling automatic printout spectrophotometer in which a liquid sample is drawn into a cuvette, a beam of light is projected through the sample on to a photoelectric element, output of the photoelectric element is electronically processed to produce an analogue voltage corresponding to a chemical characteristic of the sample, the analogue voltage is converted to a digital voltage, the result is printed out, and the sample is ejected from the cuvette in preparation for the succeeding cycle of sampling and measurement.

3,531,210
APPARATUS FOR MONITORING SURFACE DEGRADATION AND MEASURING SURFACE REFLECTANCE OF MATERIAL UNDERGOING PHOTON BOMBARDMENT BY OBSERVING THE TORQUE ON THE SAMPLE

Firouz Shahrokhi and Herman T. Clark, Tullahoma, Tenn., assignors to The University of Tennessee Research Corporation, Knoxville, Tenn., a corporation of Tennessee

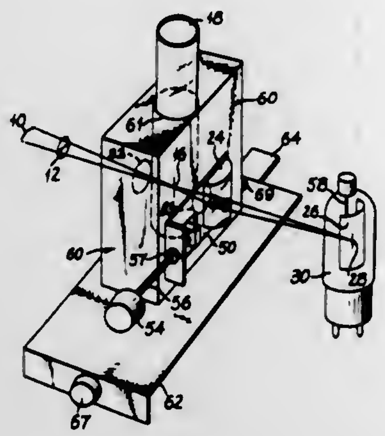
Filed Apr. 8, 1968, Ser. No. 719,305
Int. Cl. G01j *1/56;* **G01n** *21/48*
U.S. Cl. 356—209 10 Claims

A mechanical-optical device capable of optical, mechanical or electrical readout of deflection angles of surface deflections of irradiated samples is provided. Samples of test materials are carried on the torque arm of a suspension system and are mounted within an evacuated chamber where the materials are irradiated by a monochromatic photon source of a desired frequency and intensity.



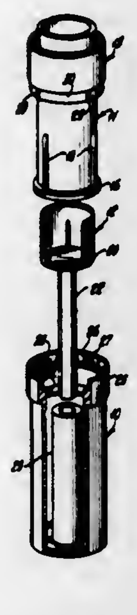
Changes in position of the torque arm due to forces exerted on the materials by the photons are monitored, and a torquing crank is provided to continually adjust the torque arm to its balanced position after time zero, while the materials are irradiated.

3,531,211
OPTICAL SYSTEM AND METHOD FOR CYLINDRICAL CUVETTES
John J. J. Staunton, Oak Park, Ill., assignor, by mesne assignments, to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Apr. 5, 1965, Ser. No. 445,668
Int. Cl. G01n *1/10, 21/06*
U.S. Cl. 356—244 **4 Claims**



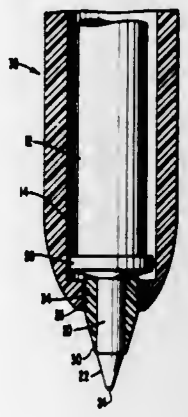
Apparatus for locating a cylindrical spectrophotometric cuvette in an instrument having a spectrophotometric beam projected from a light source through the cuvette to a photoreceptor for measurement of the sample in the cuvette, means being provided to locate the center axis of the cuvette at a horizontal focal point of the beam to minimize variation in photoreceptor output due to lensing power of the cuvette and further means comprising a horizontally adjustable cylindrical lens following the cuvette to refocus the beam on a selected narrow region of the photoreceptor cathode to minimize variations in photoreceptor output due to both random horizontal and rotational variations in cuvette position. The method of adjusting this apparatus also extends the useful range of the measuring instrument by utilizing the most sensitive area of the photoreceptor cathode.

3,531,212
COSMETIC CONTAINER OR THE LIKE
William James Landen, Cheshire, Conn., assignor to The International Silver Company, Meriden, Conn., a corporation of Connecticut
Filed Mar. 19, 1968, Ser. No. 714,244
Int. Cl. A45d *40/06*
U.S. Cl. 401—75 **14 Claims**



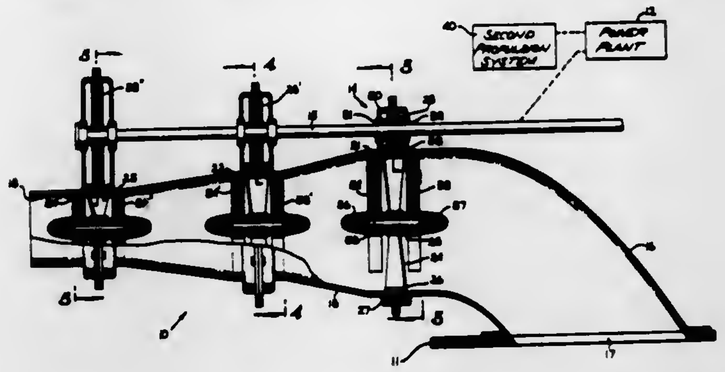
The invention contemplates application to a propel-repel construction in which inner and outer tubular members are rotatable to selectively propel and repel a carrier which is guided within the inner tubular member. To minimize the number of parts the propulsion is achieved by cam and follower means involving direct engagement between the carrier and the two rotatable tubular members. But to permit maximum flexibility in the application of external decorative effects, the propulsion mechanism avoids any reliance upon the wall of the outer tubular member.

3,531,213
INTERCHANGEABLE REFILL CARTRIDGE FOR BALLPOINT PENS
Herbert W. Sams, Atlanta, Ga., assignor to Scripto, Inc., Atlanta, Ga., a corporation of Georgia
Filed Jan. 29, 1969, Ser. No. 794,871
Int. Cl. B43k *7/02*
U.S. Cl. 401—209 **4 Claims**



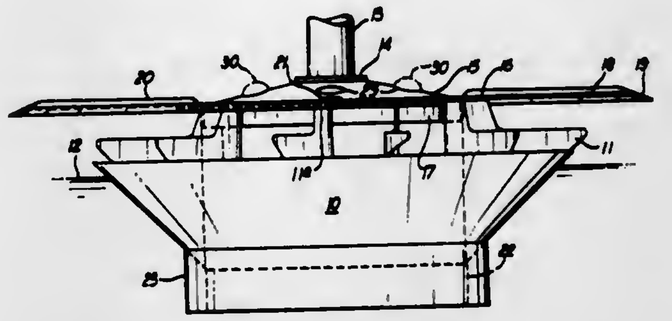
The tip end of a ballpoint pen refill cartridge is provided with a removable sleeve which allows the cartridge to be used in a pen body having a large bore for receiving the tip or, when the sleeve is removed, the cartridge may be used in a pen body having a smaller bore.

3,531,214
RADIAL-DRIVEN, MULTISTAGE JET PUMP
Franz W. Abramson, Los Angeles, Calif.
(4523 N. Lone Pine Lane, La Canada, Calif. 91011)
Filed Dec. 9, 1968, Ser. No. 782,339
Int. Cl. F04d *3/02;* **B63h** *11/00, 1/40*
U.S. Cl. 415—68 **19 Claims**



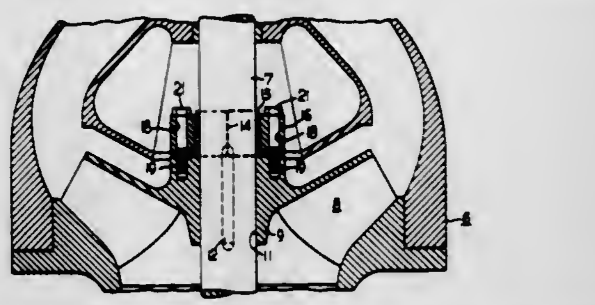
An axial pump is disclosed herein having a tubular, tapered housing in which a plurality of impeller stages are installed capable of rotating at high speed to induce high velocity fluid flow through a passageway defined by the housing. Each impeller stage includes an annular ring having peripheral gear teeth projecting exteriorly of the passageway and a plurality of impeller vanes radially disposed across the inner diameter of the ring. Drive gears, carried on a common drive shaft, mesh with the peripheral ring gear teeth to rotate all impeller stages simultaneously. Suitable bearings and seals are placed between the ring gear and the housing to reduce rotational friction and restrict fluid flow therebetween.

3,531,215
SURFACE AERATION OF LIQUIDS
Frank Sanderson, 5 Spring Bank Lane, Norden, Rochdale, Lancashire, England
Filed July 23, 1968, Ser. No. 746,847
Claims priority, application Great Britain, Jan. 16, 1968, 2,241/68
Int. Cl. C02c *1/32;* **B01f** *5/18*
U.S. Cl. 416—181 **10 Claims**



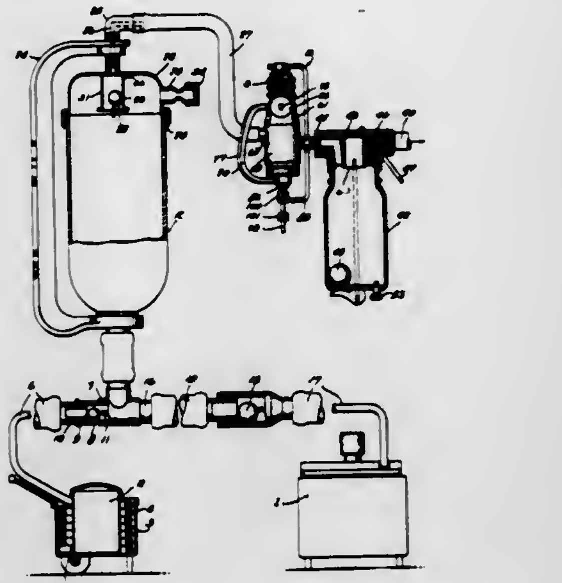
A surface aeration apparatus comprises an inverted truncated cone mounted for rotation about a vertical axis whilst partially submerged in the liquid to be treated, blades fixed to the interior surface of the cone so that liquid entering at the bottom opening of the latter is discharged upwardly and outwardly at its upper edge by centrifugal force, and a substantially flat annular shroud arranged concentric with the cone in a horizontal plane spaced above its upper edge and extending into the path of the discharged liquid to deflect the same downwardly. Preferably the shroud, which may be of circular or polygonal planform, overhangs the outer periphery of the cone and terminates in a downwardly-inclined lip. The inner periphery of the cone, which may be formed in several sections lap jointed each to the next, may serve to connect a driving disc to a concentric ring reinforcing the upper ends of the internal blades or be secured to spokes connecting a driving hub to the said reinforcing ring. The cone may have external blades leading to a flat peripheral lip thereon.

3,531,216
SHAFT ATTACHING MEANS FOR PUMP IMPELLER
Thomas R. Callahan, Milford, Ohio, assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 23, 1968, Ser. No. 786,204
Int. Cl. B60b *27/06;* **F04d** *1/00, 29/26*
U.S. Cl. 416—244 **2 Claims**



The pump impeller is keyed to the shaft in the conventional manner to transmit rotary motion. An axially split ring is slipped over the shaft and abuts against the impeller hub. The outer surface of the ring has an axial taper. An outer ring slips over the inner ring and is bolted to the impeller hub. As the outer ring is pulled toward the impeller hub, it causes a binding engagement with the outer taper of the inner ring forcing the split ring into tight engagement with the shaft.

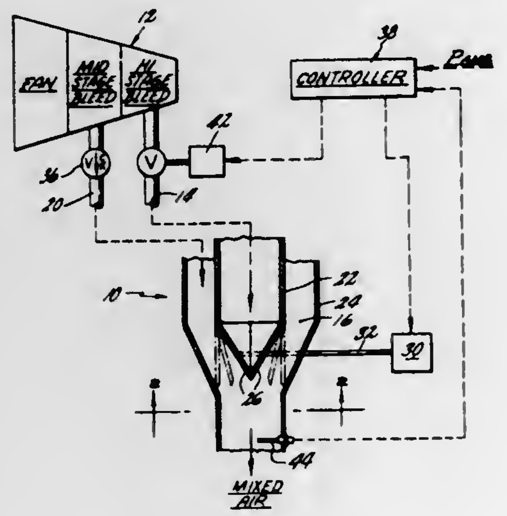
3,531,217
VACUUM OPERATED TIMING DEVICE FOR FLUID CONVEYING APPARATUS
Lloyd F. Bender, Hayward, Wis. 54843
Filed Jan. 6, 1969, Ser. No. 789,334
Int. Cl. A01j *7/00;* **F04f** *3/00;* **F16k** *31/36*
U.S. Cl. 417—134 **4 Claims**



Fluid conveying apparatus having a fluid receiver for alternately accumulating fluid and then releasing the fluid, including an improved automatic and vacuum operated timing device for alternately permitting vacuum or atmosphere to enter the receiver. The apparatus is used to convey fluid from one location to another, for example, milk from a transfer tank to a cooler. After conveying the fluid, the apparatus can also be rearranged so as to circulate a cleaning solution through the entire apparatus for complete and thorough in-place-cleaning.

3,531,218
EJECTOR

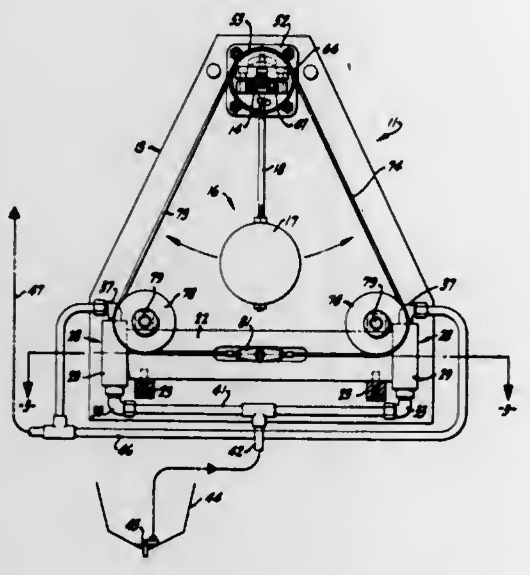
John L. Warner, Simsbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed June 27, 1968, Ser. No. 740,610
Int. Cl. F04f *5/00, 5/48*
U.S. Cl. 417—183 **6 Claims**



The areas of the primary and secondary nozzles are concomitantly changed by pivotally mounted flaps extending from the end of a duct supplying the primary fluid which is movable from a closed to a full open position while cooperating with the wall of the second passage to define a secondary nozzle, movable to a full closed and opened position.

3,531,219
AUTOMATIC BILGE PUMP

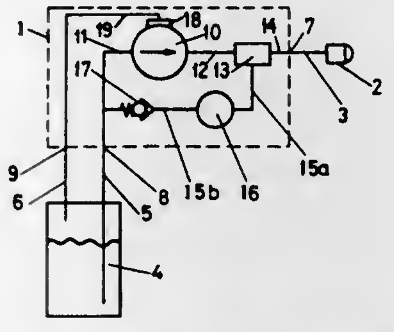
Francis K. Fox, 3821 Nevle St., Oakland, Calif. 94601, and John W. Munce, Oakland, Calif. (14578 Tiburon Road, San Leandro, Calif. 94577)
Filed Mar. 10, 1969, Ser. No. 805,427
Int. Cl. F04b *9/06, 21/02*
U.S. Cl. 417—211 **6 Claims**



A self-priming pump having a double-acting piston driven by a pendulum subject to wave motion, and particularly adapted for automatic bilge pumping. An adjustable, double belt drive through fixed pulleys transmits power to the piston from the pendulum, and ball check valves control pump suction and discharge. Non-slip belt drive operates pump piston in response to slightest pendulum motion, and with equal efficiency for a wide angle of pendulum positions.

3,531,220
OIL-FEED EQUIPMENT OPERABLE AS A SINGLE-LINE OR DOUBLE-LINE SYSTEM

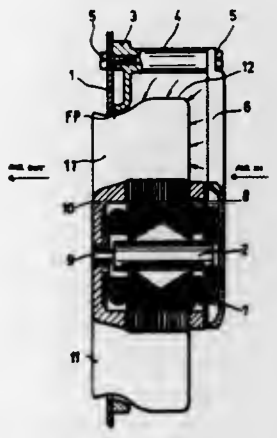
Arne F. Enemark, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Aug. 15, 1968, Ser. No. 752,987
Int. Cl. F04b *49/08;* **F04d** *29/00*
U.S. Cl. 417—310 **8 Claims**



The invention relates to oil pumping apparatus of the type used for oil burning equipment. The pumping apparatus includes air separating means on the pressure side of the pumping apparatus having a conduit associated therewith for venting the separated air. Means are provided for making the air separating means operative, at the option of the user, for particular installations such as where the tank is located below the pump or, if not needed, the air separating means may be made inoperative. The pumping apparatus also includes a pressure regulator valve which, in connection with its pressure regulating function, returns excess oil to the suction side of the pumping apparatus through a return line which has no functional connection with the air separating means. The operation of the pressure regulator valve is the same, and the same return line is used, regardless of whether or not the pumping apparatus is set to utilize the function of the air separating means.

3,531,221
VENTILATOR WITH AXIAL PROPELLER WHEEL

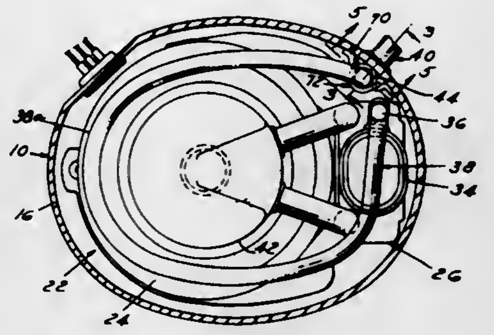
Engelbert Herberg, Villingen, Black Forest, and Hermann Papst, St. Georgen, Black Forest, Germany, assignors to Papst-Motoren KG, St. Georgen, Black Forest, Germany
Filed Aug. 21, 1968, Ser. No. 767,878
Claims priority, application Germany, Aug. 23, 1967, 1,628,353
Int. Cl. F04d *25/06, 19/00, 29/26*
U.S. Cl. 230—117 **14 Claims**



A ventilator has a housing provided with a flow passage surrounded by a guiding wall having an open inlet end and an open outlet end. A fan assembly is mounted for rotation in this passage and includes a plurality of fan blades which project at least at the entrance side in axial direction beyond said guiding wall and outside said guiding wall in radial direction freely beyond the diameter of said passage.

3,531,222
HERMETIC COMPRESSOR DISCHARGE TUBE CONSTRUCTION

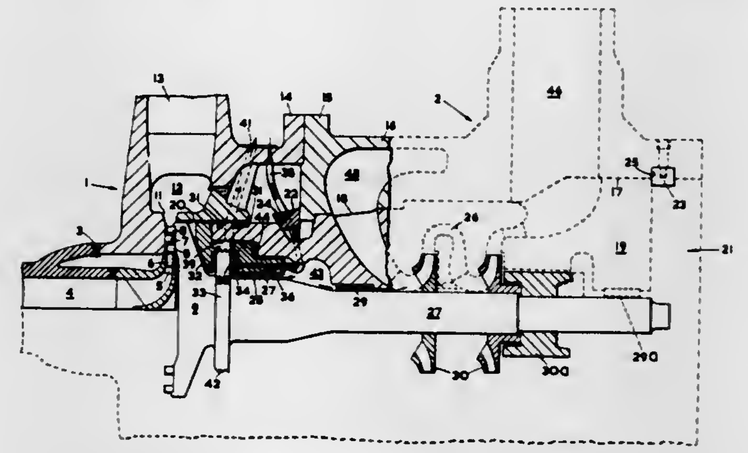
Freddie D. Randall and James S. Utley, Tecumseh, Mich., assignors to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan
Filed Aug. 8, 1968, Ser. No. 751,123
Int. Cl. F04b *39/00;* **B61l** *21/00*
U.S. Cl. 417—363 **8 Claims**



A hermetic compressor in which a motor-compressor unit is resiliently suspended within a hermetic housing and a discharge tube extends within the housing from the compressor outlet to a connector tube which extends through the wall of the housing to the exterior of the compressor. The connector tube is in part supported on the wall of the housing by a rigid connection. The connector tube is also supported at a point spaced from the rigid connection and adjacent the discharge tube-connector tube interconnection by a bracket secured to the wall of the housing, and by a spring clip having legs inserted through the bracket and a center portion encircling the connector tube. The clip is self-retaining when mounted in assembled relation with the bracket and tube and also provides a resilient support for the tubes allowing limited flexure at their interconnection to relieve stresses.

3,531,223
TURBO-FEED PUMP ASSEMBLY

John Harold Daltry and Geoffrey Bernard Thomas, Rugby, England, assignors to The English Electric Company Limited, London England, a British company
Filed Jan. 28, 1969, Ser. No. 794,490
Claims priority, application Great Britain, Jan. 31, 1968, 4,952/68
Int. Cl. F04d *13/02, 25/02*
U.S. Cl. 417—409 **7 Claims**

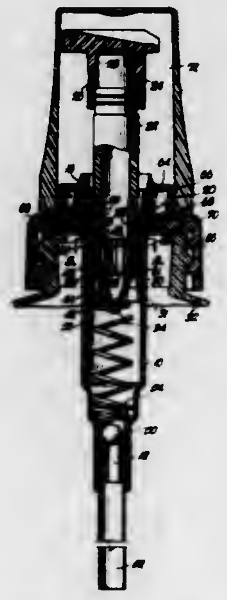


A turbo-feed pump assembly has a shaft **27** common to the turbine and feed pump units **1** and **2** respectively. The shaft **27** is rotatably mounted in a capsule **19** which is located in the bores **17**, **18** and **20** respectively of said units. The capsule **19** also carries various components of the turbine and feed pump units.

The arrangement is such that the capsule **19** may be withdrawn from the units **1** and **2** as a complete assembly including the shaft **27** to facilitate servicing.

3,531,224
HAND PUMP HAVING FREE FLOATING VALVE

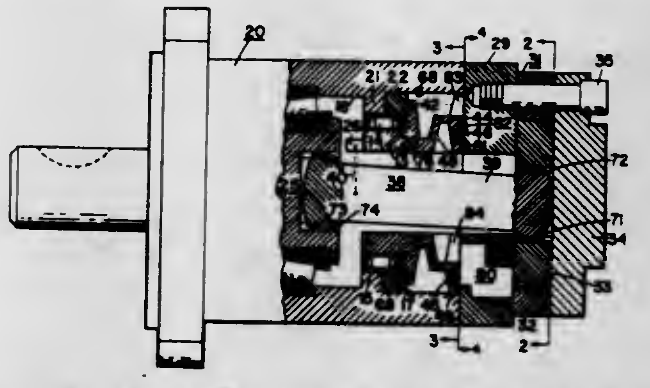
Juel D. Clevenger, Raytown, Asa Pickinpaugh, Kansas City, and Michael A. Waters, Independence, Mo., assignors to Cook Chemical Company, Kansas City, Mo., a corporation of Missouri
Continuation-in-part of application Ser. No. 741,509, July 1, 1968. This application Apr. 7, 1969, Ser. No. 813,904
Int. Cl. F04b *21/04, 33/00;* **G01f** *11/02*
U.S. Cl. 417—513 **2 Claims**



A reciprocable plunger hand pump has a floating sleeve slidable in a barrel and limited in axial movement relative to the plunger by a check valve integral with the sleeve, spaced from the plunger and alternately engageable with spaced valve seats surrounding the plunger. A liquid seal is established when the sleeve is wedged between the barrel and a collar; at the same time, the valve closes liquid inlet orifices in the plunger by engagement with one of the seats. The collar has a skirt adapted to support a cover cap and shiftable to mount container caps of various top thicknesses.

3,531,225
VALVE SYSTEM MEANS FOR STATOR-ROTOR MECHANISM

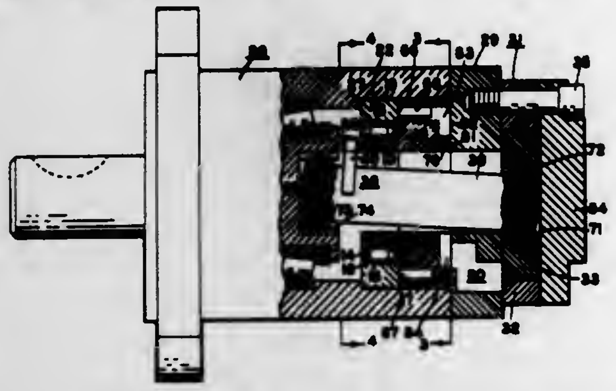
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Filed Mar. 22, 1968, Ser. No. 715,247
Int. Cl. F01c *1/10;* **F04c** *1/06*
U.S. Cl. 418—61 **2 Claims**



Stationary valve and rotary valve for an orbital device having operating fluid chambers, in which the stationary valve has a stationary valve face and a plurality of fluid openings communicating with the fluid chambers. The rotary valve is mounted between the stationary valve face and an annular bushing which is axially supported by an internal housing rim. The rotary valve terminates in flange means comprising an external-rim flange and an internal-rim flange interconnected by a common intermediate annular body portion which has an end face defining substantially a circular sealing band disposed between first and second series of commutating fluid connection means commutatingly registering with the fluid openings in the stationary valve face.

3,531,226
BEARING SUPPORT MEANS AND DRIVE FOR ROTARY VALVE IN FLUID PRESSURE DEVICE

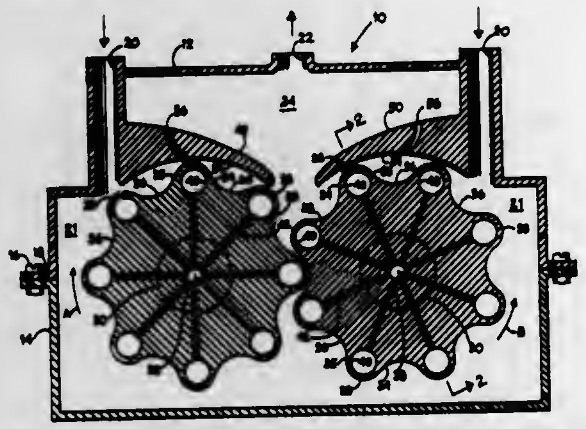
George V. Woodling, 22077 W. Lake Road,
Rocky River, Ohio 44116
Continuation of application Ser. No. 684,705, Nov. 21, 1967. This application June 2, 1969, Ser. No. 829,268
Int. Cl. F01c *1/04*
U.S. Cl. 418—61 **5 Claims**



The rotary valve is especially adapted to operate in a fluid pressure device having a stator element and a rotor element constituting a fluid stator-rotor mechanism, in which the stator element has a fixed axis and in which the rotor element has a movable axis with said rotor element having a rotational movement about its own axis and an orbit movement about the fixed axis. The rotary valve has a hollow shaft extending therefrom. Bearing support means having first and second sides rotatively supports the hollow shaft with the rotary valve disposed on the second side of the bearing support means. Actuating means drives the rotary valve from the rotor element with the actuating means engaging the hollow shaft from the first side of the bearing support means. The bearing support means preferably comprises antifriction bearings. The actuating means may embody rotational phasing.

3,531,227
GEAR COMPRESSORS AND EXPANDERS

Roger C. Weatherston, Williamsville, N.Y., assignor to Cornell Aeronautical Laboratory, Inc., Buffalo, N.Y., a corporation of New York
Filed July 5, 1968, Ser. No. 742,890
Int. Cl. F04c *17/04, 29/04*
U.S. Cl. 418—94 **6 Claims**

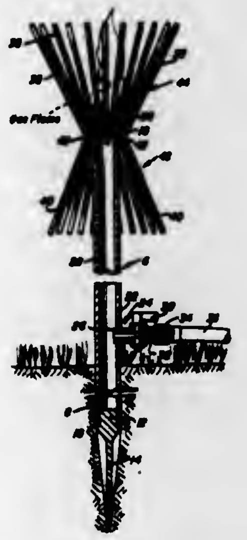


A gear compressor apparatus having mating gear elements having spaced lobes, with a network of internal cooling passages and a low pressure fluid inlet and a high pressure fluid outlet and feedback passages providing communication between the outlet and the space between the lobes of the gear elements before the lobes are exposed to the outlet.

A gear expander apparatus having mating gear elements having spaced lobes and a high pressure inlet and a low pressure outlet and passages associated with the space between each of the lobes of the gear elements providing communication with the outlet before the gear elements are exposed to the outlet.

3,531,228
GAS TORCH

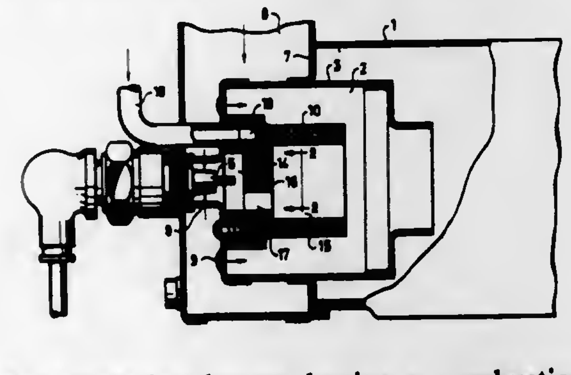
James D. Reese, 11937 Ave. 274,
Visalia, Calif. 93277
Filed Oct. 18, 1968, Ser. No. 768,759
Int. Cl. F23d *11/44;* **F23c** *13/24*
U.S. Cl. 431—202 **2 Claims**



A gas flame torch which lends itself admirably well for outdoor use when erected on a front lawn as a visitor's welcoming light, as a flower garden illuminating and display light or as a patio ornamenting and utility light. It may be and preferably is a permanent adaptation and is characterized by a gas pipe which is staked in the ground and provides a standard. A gas emitting cap on the upper end provides a burner or tip and is equipped with systematically attached V-shaped rods which provide uniquely performing upwardly and downwardly flaring fingers. Gas is supplied to the gas pipe from a suitable source to a valved fitting on the pipe.

3,531,229
BURNER

Lars Göran Gobriel Berglund, Enkoping, Sweden, assignor to Aktiebolaget Bahco, Stockholm, Sweden, a joint-stock company of Sweden
Filed Apr. 17, 1969, Ser. No. 817,021
Claims priority, application Sweden, Apr. 18, 1968, 5,203/68
Int. Cl. F23q *7/08*
U.S. Cl. 431—262 **5 Claims**



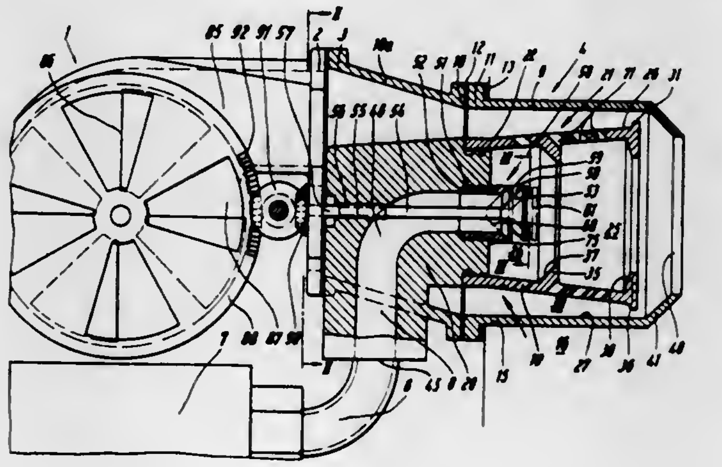
A carburation burner having a combustion chamber, a fuel vaporizing body consisting of a heat-resistant, porous material arranged in the chamber, means supplying liquid fuel to the vaporizing body in the chamber, ignition means arranged in connection with an auxiliary chamber for igniting the fuel, a main chamber in the body communicating through a constricted portion with the auxiliary chamber to form together therewith a through-flow passage passing through the body, the body being so arranged that air for combustion is supplied through the through-flow passages.

ERRATA

For Classes 99—329 thru 166—285 see:
Patent Nos. 3,531,231 thru 3,531,236

3,531,230
INTERNALLY FIRED BLAST BURNER

Edmund Apolinarski, 17 Piusstrasse, 473 Ahlen, Westphalia, Germany
Filed May 21, 1968, Ser. No. 730,779
Claims priority, application Germany, Apr. 21, 1967, 1,551,760
Int. Cl. F23d *15/02*
U.S. Cl. 431—352 **8 Claims**

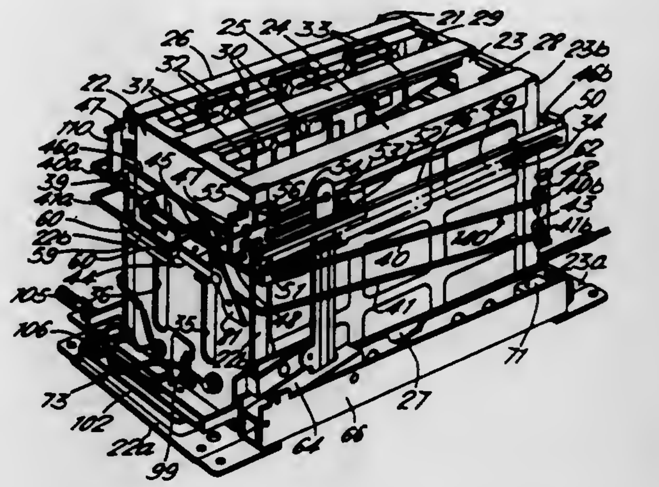


A blast blower of the type having air supplying means concentrically enclosing the gas flow and provided with a conical regulating device at the inlet of the fuel flow and forwardly located mixing chambers. The blower of the present invention is particularly characterized in that these mixing chambers extend conically and that nozzles concentrically surrounding the mixing chambers extend downwardly in relation to the flow and at an acute angle to the axis of the burner to supply fresh air along coaxial conical surfaces; an annular recoil wall is located opposite the regulating device and serves as the closure for the first mixing chamber, the wall being inclined downwardly in relation to the flow and being provided with jets, while a ring guide which is inclined downwardly in relation to the flow serves as a closure for the second mixing chamber and to narrow the combustion mixture.

3,531,231
TOASTER

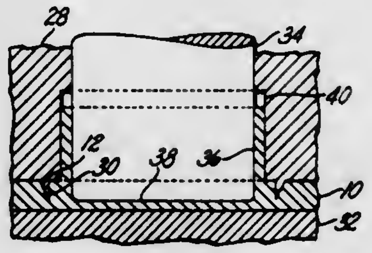
Nobuyuki Kawamura, Nara, Japan, assignor to Sanyo Electric Co., Ltd., and Yamano Electric Manufacturing Co., Ltd., both of Osaka, Japan, and both corporations of Japan
Filed Feb. 6, 1969, Ser. No. 797,158
Claims priority, application Japan, Feb. 9, 1968, 43/8,065, 43/8,066, 43/9,086
Int. Cl. A47j *37/08*
U.S. Cl. 99—329 **7 Claims**

An electric toaster in which a bread receiving bar in a toasting chamber is moved from its upper, non-toasting position to its lower, toasting position upon depositing a slice of bread on the bread receiving bar and upon completion of the toasting of the bread, respectively, through the utilization of a particular movable spring end holder to which one end of a tensile spring for suspension of the lever structure supporting the bread receiving bar is connected, the tension of the spring being varied with the movement of the spring end holder between said two positions.



3,531,232
METHODS OF SECURING TWO PARTS TOGETHER

Charles P. Cardani, South Hamilton, and Raymond L. Peterson, Beverly Farms, Mass., assignors to USM Corporation, Flemington, N.J., a corporation of New Jersey
Original application Feb. 18, 1965, Ser. No. 433,646, now Patent No. 3,343,714, dated Sept. 26, 1967. Divided and this application June 5, 1967, Ser. No. 643,693
Int. Cl. B21d *51/00, 39/00;* **B23p** *11/00*
U.S. Cl. 113—121 **3 Claims**

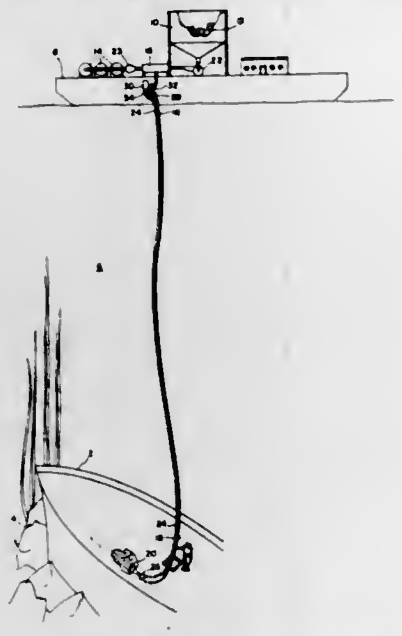


A method of securing two parts together such as an opening tool to a can top in which an integral tubular rivet is formed on the can top by locally thinning an area of the can top by a high energy rate forming blow and guiding the displaced material to form a tubular rivet which is thereafter headed to secure the tool.

3,531,233
METHOD FOR RAISING SUBMERGED OBJECTS

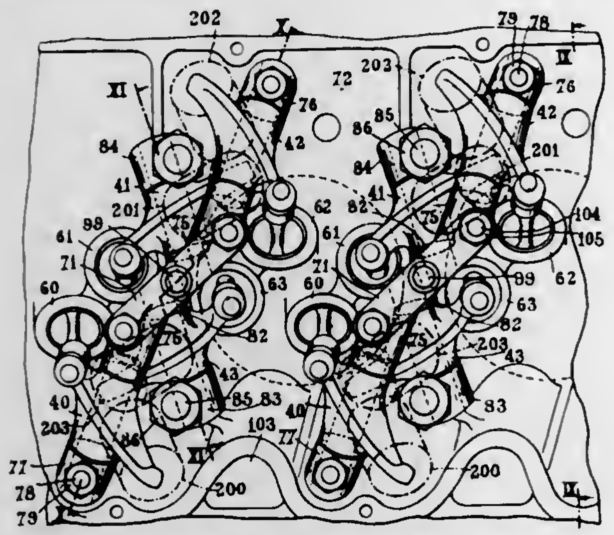
John K. Max, 5901 Broadway,
Oakland, Calif. 94618
Filed Apr. 17, 1968, Ser. No. 722,130
Int. Cl. B63c *7/12*
U.S. Cl. 114—50 **15 Claims**

Wax and an expanding agent are selected so that their mixture either has a melting point below that of the wax alone, in which case the mixture is maintained at a temperature intermediate the melting point of the mixture and the wax alone; or so that the latent heat of vaporization of the expanding agent is sufficient upon its evaporation to reduce the temperature of the wax from the mixture temperature to below the melting point of the wax. The mixture is conducted to compartments of a submerged vessel and it is released, causing a substantially simultaneous evaporation of the blowing agent. The wax solidifies with great numbers of small cells which reduce its density and thereby impart buoyancy to the vessel.



3,531,234
CAMSHAFT VALVE GEAR FOR ENGINE CYLINDER HEAD

Raymond A. Ravenel, Sceaux, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French company
Filed July 15, 1968, Ser. No. 744,930
Claims priority, application France, July 19, 1967, 114,801; June 11, 1968, 154,575
Int. Cl. F01l *1/04, 1/18;* **F01m** *9/10;* **F02b** *75/20*
U.S. Cl. 123—59 **5 Claims**

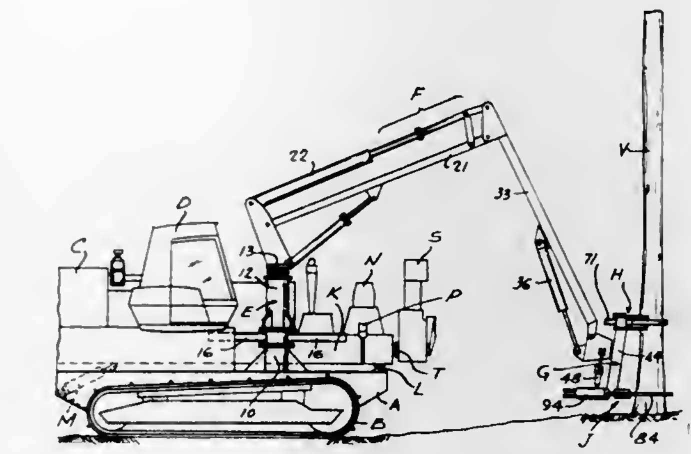


The valve axes of this valve gear are not parallel; the tappets interposed between the cams and the rockers consist of cups slidably mounted in bores disposed at right angles to the camshaft and of a connecting member having one ball-shaped end mounted in the bottom of said cup and the opposite end formed with a part-spherical cavity for receiving the ball-shaped driven end of the relevant rocker.

3,531,235
TIMBER HARVESTER

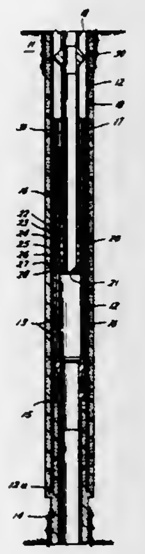
John H. Boyd and Anthony M. Paladino, Woodstock, Ontario, Canada, assignors to Timberjack Machines Limited, Woodstock, Ontario, Canada
Filed July 22, 1968, Ser. No. 746,431
Claims priority, application Canada, Feb. 14, 1968, 12,441
Int. Cl. A01g *23/08*
U.S. Cl. 144—2 **9 Claims**

A fluid operated cylinder assembly for driving a delimbing head in a timber harvesting machine. On the outward (delimbing) stroke the cylinder is operated pneumatically; on the return stroke, which serves to propel the tree, the cylinder is operated hydraulically, the pneumatic pressure being retained but overcome by the hydraulic pressure. Control of the outward stroke is thus achieved by release of the overriding hydraulic pressure.



3,531,236
METHODS AND APPARATUS FOR COMPLETING OIL AND GAS WELLS

Britt O. Braddick, Houston, Hiram E. Lindsey, Jr., Midland, and Charles J. McKiearnan, Odessa, Tex., assignors to Texas Iron Works, Inc., a corporation of Texas
Filed Feb. 17, 1969, Ser. No. 799,657
Int. Cl. E21b *33/12;* **F16j** *15/20;* **F16l** *27/12*
U.S. Cl. 166—285 **35 Claims**



A fluid seal is provided between a permanent production liner string and a removable production tubing string by connecting an elongated tubular receptacle into the liner string at the point at which the seal is desired. The interior of the receptacle is coated with Teflon and the receptacle is permanently cemented into place in the oil or gas well borehole along with the liner string. A tubular sealing assembly is connected to the lower end of the production tubing string. Such sealing assembly includes a series of exteriorly located annular packing seal units and is run into the Teflon coated liner string receptacle to provide the desired fluid seal. A sealing unit may consist of a stack of chevron shaped sealing rings composed of a mixture of fluoroelastomer and asbestos, with fluorocarbon plastic adapter rings at each end of the stack.

CHEMICAL

3,531,237
PROCESS FOR HEAT-SETTING AND DYEING SYNTHETIC FIBERS

Jack Kalish, 1139 Rosse Ave., New Milford, N.J. 07646
No Drawing. Continuation-in-part of application Ser. No. 480,818, Aug. 18, 1965. This application Sept. 22, 1966, Ser. No. 581,184
Int. Cl. D06p *5/00, 7/00*
U.S. Cl. 8—17 **26 Claims**

A process for the heat-setting, dyeing and stabilizing of dimensions of a substantially externally tension-free synthetic resin fiber selected from the group consisting of nylon, polyester, acrylic, modacrylic and triacetate fibers which comprises adding said fiber in a condition substantially free from external tension to an aqueous dyebath at a temperature at least as high as about 135° F. containing a sulfonated vegetable oil, a sulfonated animal oil or a blend thereof, which sulfonated oil is substantially non-substantive to said fiber in said dyebath, and heating said fiber in said dyebath to dye and heat-set said fiber.

3,531,238
PROCESS FOR THE CONTINUOUS DYEING OR PRINTING WITH BASIC DYESTUFFS OF TEXTILE MATERIALS CONSISTING OF POLYACRYLONITRILE

Udo Hendricks, Cologne-Stammheim, Robert Kuth, Cologne-Muengersdorf, Werner Langmann, Cologne-Flittard, and Mathieu Quaedvlieg, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,192
Claims priority, application Germany, Mar. 23, 1966, F 48,733
Int. Cl. D06p *5/06*
U.S. Cl. 8—172 **9 Claims**

A process for continuously dyeing or printing textile materials containing polyacrylonitrile with basic dyestuffs, wherein said textile materials are impregnated with a aqueous solution of a water soluble cyanoethylated polyol or cyanoethylated hydroxy methyl ether of a polyol, and thereafter thermally after-treating the material.

3,531,239
METHOD AND COMPOSITION FOR RETARDING WATER EVAPORATION

John J. Rowlette, 2644 S. Mayflower Ave., Arcadia, Calif. 91006
No Drawing. Filed Oct. 2, 1968, Ser. No. 764,632
Int. Cl. B01j *1/18*
U.S. Cl. 21—60.5 **9 Claims**

A method and composition for forming thin films of evaporation-reducing agents upon a water surface by adding to the water a solid admixture which includes a saturated aliphatic interface-active hydrocarbon intermixed with a water-soluble material, said water-soluble material being capable of generating a gas when contacted by water.

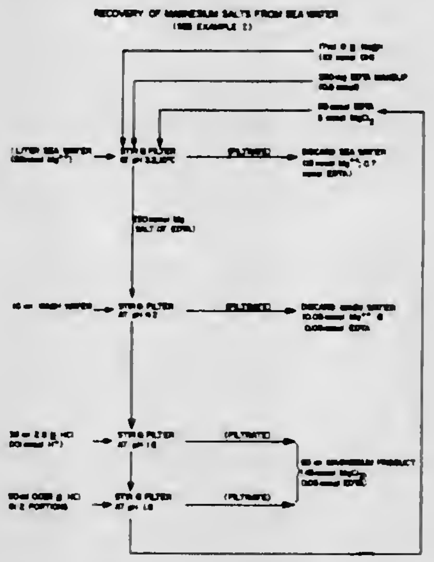
3,531,240
PROCESS FOR THE PRODUCTION OF SODIUM BICARBONATE AND SODA ASH

Herbert Furkert, Starenweg, Germany, assignor to Chemiebau Dr. A. Zieren GmbH & Co., KG, Cologne, Braunsfeld, Germany
Filed Feb. 13, 1968, Ser. No. 705,192
Claims priority, application Germany, Feb. 24, 1967, C 41,606
Int. Cl. C01d *7/00, 7/12*
U.S. Cl. 23—63 **10 Claims**

A process for the preparation of sodium carbonate comprising: (a) reacting sodium amalgam produced by mercury cathode cells of the chlorine process with an aqueous sodium bicarbonate solution to form a solution containing sodium carbonate and sodium hydroxide; (b) treating the sodium carbonate and sodium hydroxide solution with carbon dioxide to form sodium bicarbonate; (c) separating solid sodium bicarbonate and a sodium bicarbonate containing mother liquor; (d) recirculating the sodium bicarbonate containing mother liquor to react with the sodium amalgam; and (e) calcining the separated sodium bicarbonate to produce sodium carbonate.

3,531,241
MAGNESIUM RECOVERY FROM SEA WATER

Charles R. Porter, 1251 Avondale, Montgomery, Ala. 36109, and Bernd Kahn, 2621 Briarcliffe Ave., Cincinnati, Ohio 45212
Filed Oct. 23, 1968, Ser. No. 770,014
Int. Cl. C01f *5/00, 5/30, 5/38*
U.S. Cl. 23—91 **10 Claims**



This invention relates to a method of recovering magnesium from sea water and provides an improved method of treating sea water and similar brines with EDTA at about pH 3.2±0.2 and separating the magnesium salt precipitate therefrom and subsequently adjusting to a more acid of pH of about 1.6±0.3 with HCl to solubilize the magnesium as magnesium chloride in more concentrated aqueous solution, while crystallizing the EDTA component and reducing substantially the amounts of other constituents normally found in such brines. Alternatively, other mineral acids providing soluble anions may be used vice HCl such as HNO_3, etc.

3,531,242
METHOD OF PREPARING HIGHLY PURE CRYSTALS OF SALTS OF PHOSPHORIC ACID

Masashi Hayakawa, Tokyo, and Yoshito Yasutake, Shisei Fujita, and Mitsuhiko Ohmura, Yamaguchi-ken, Japan, assignors to Central Glass Co., Ltd., Yamaguchi-ken, Japan
No Drawing. Continuation-in-part of application Ser. No. 472,031, July 14, 1965. This application Apr. 10, 1969, Ser. No. 815,207
Claims priority, application Japan, Mar. 29, 1965, 40/18,149
Int. Cl. C01b *25/28, 25/30*
U.S. Cl. 23—107 **18 Claims**

Substantially pure crystals of sodium ammonium hydrogen phosphate are prepared from a wet process phosphoric acid by: neutralizing a wet process phosphoric acid with ammonia to a pH-value between 3.0 and 6.5 without cooling the resultant solution, to form ammonium dihydrogen phosphate as a main component dissolved therein and also precipitated impurities, roughly separating said solution into two parts, a first of which is a solution containing a fine portion of said precipitates in the form of a suspension and a precipitate consisting of coarse and heavy portions of said precipitated impurities, adding to the solution containing fine precipitates at least one sodium salt selected from the group consisting of sodium hydroxide, sodium carbonate and sodium bicarbonate to form a solution containing sodium ammonium hydrogen phosphate, crystallizing said sodium ammonium hydrogen phosphate, crystallizing said sodium ammonium hydrogen phosphate in said solution to form crystals having a particle size not less than 0.3 mm., separating said crystals from the mother liquor containing fine precipitates by using a separating means, through which said mother liquor and precipitates suspended therein are passable but said crystals are not passable, whereby the said crystals remain on said separating means, and then washing said crystals with water.

3,531,243
PREPARATION OF MORDENITE

Robert William Aitken, Chamberley, Surrey, and Ian Montgomery Keen, Ashford, England, assignors to The British Petroleum Company, London, England, a corporation of England
No Drawing. Filed Aug. 30, 1967, Ser. No. 664,307
Claims priority, application Great Britain, Sept. 14, 1966, 41,079/66
Int. Cl. C01b *33/28*
U.S. Cl. 23—113 2 Claims

The synthetic gel which is the precursor for the preparation of mordenite is aged, preferably at atmospheric temperature and pressure, for at least 1 week before it is hydrothermally converted to mordenite. The mordenites produced are of high surface area, due, it is believed, to the absence of amorphous material.

Preferably, the gel has its pH adjusted to 10–10.8 before the ageing and it may have the following ratios of components.

$Na_2O:SiO_2$	0.195–0.215:1
$SiO_2:Al_2O_3$	11.6–11.8:1
$H_2O:Na_2O$	60–104:1
$Na_2O:Al_2O_3$	2.3–2.5:1

3,531,244
METHOD OF OBTAINING CONCENTRATED POTASSIUM HYDROXIDE IN A COLORLESS CONDITION

Italo Ferrara, Siracusa, Italy, assignor to Sincat-Societa Industriale Catanese S.p.A., Palermo, Italy, a corporation of Italy
Original application Sept. 12, 1966, Ser. No. 578,846, now Patent No. 3,436,178, dated Apr. 1, 1969. Divided and this application Sept. 26, 1968, Ser. No. 762,924
Claims priority, application Italy, Sept. 14, 1965, 20,480/65
Int. Cl. C01d *1/42*
U.S. Cl. 23—184 8 Claims

Method of decoloring potassium hydroxide after concentration thereof by evaporation, wherein a reducing agent from the group of alkali-metal metabisulfites, hydrosulfites, sulfites and bisulfites (preferably sodium metabisulfites, sodium hydrosulfite or sodium bisulfite) is added to the potassium hydroxide while the latter is at a temperature between substantially 250° C. and 300° C. (preferably above 270° C.). The proportions of sodium metabisulfite, sodium hydrosulfite, sodium sulfite and sodium bisulfite preferably are in the following ranges: 0.001–0.005%, 0.001–0.005%, 0.002–0.02% and 0.005–0.01%, respectively.

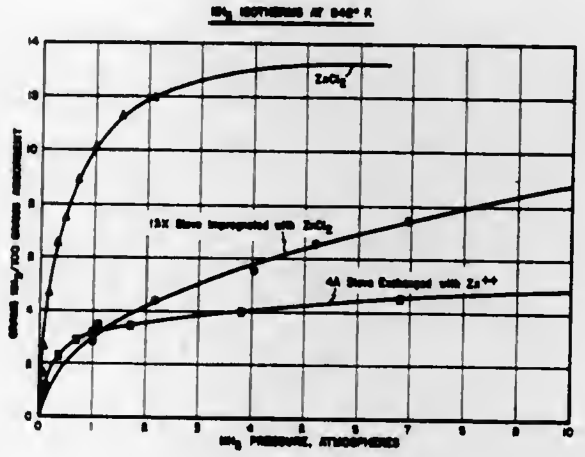
3,531,245
MAGNESIUM-ALUMINUM NITRIDES

John W. Dietz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 1, 1968, Ser. No. 717,901
Int. Cl. C01b *21/06;* C22c *29/00*
U.S. Cl. 23—192 20 Claims

Ternary nitrides of magnesium and aluminum, such as Mg_3AlN_3, $Mg_3Al_2N_4$ or $Mg_3Al_3N_5$, prepared by heating a mixture of fine magnesium metal powder and fine aluminum metal powder in an atmosphere of ammonia or nitrogen, are useful as a high temperature refractory material particularly in contact with molten metals.

3,531,246
MOLECULAR SIEVE SORBENT AND PROCESS FOR THE MANUFACTURE OF AMMONIA

John M. Matsen, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Apr. 8, 1964, Ser. No. 358,331
Int. Cl. B01d *53/02;* B01j *11/78;* C01c *1/04*
U.S. Cl. 23—199 7 Claims



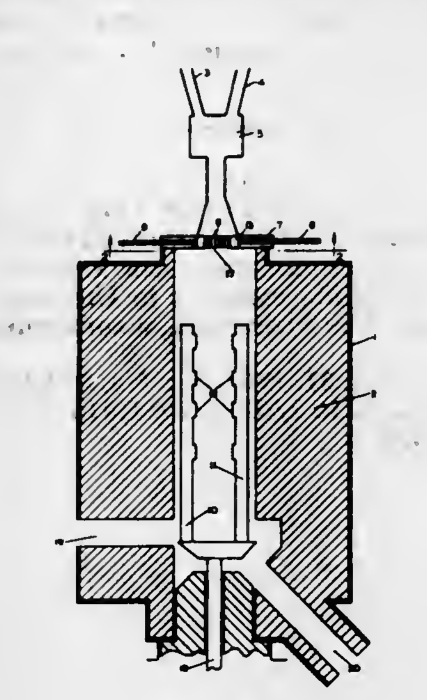
Improved selective sorbents for driving equilibria controlled reactions to completion are shown. A solid sorbent material is impregnated with a selective dissociable complexing agent, and the preferred solid sorbents are molecular sieves. The preferred complexing agents are metal halides such as zinc chloride and magnesium bromide, for improved ammonia synthesis, and olefin complexing salts such as copper chloride are employed for improved olefin separations.

3,531,247
PROCESS FOR THE PRODUCTION OF FINELY-DIVIDED METAL OXIDES BY MULTIPLE OXIDATION

Alan Edward Comyns, Pittsburgh, Pa., and Derek Howden, Middlesbrough, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom
Continuation-in-part of application Ser. No. 508,144, Nov. 16, 1965. This application July 2, 1969, Ser. No. 840,598
Claims priority, application Great Britain, Nov. 27, 1964, 48,305/64
Int. Cl. C01g *23/04*
U.S. Cl. 23—202 17 Claims

A process for producing finely-divided metal oxides, particularly white metal oxides such as titanium dioxide, is described. A stream of hot gas containing initially solid, fine particles of metal oxide is produced by the interaction of a first oxygenating gas, a fuel gas and a first oxidizable metal halide. The particle-containing stream is then

passed to a reaction zone into which a second oxidizable metal halide and a second oxygenating gas are introduced. At least one of the reactants is introduced through a plurality of inlets longitudinally of the gas flow. The second metal halide is converted to metal oxide by the second oxygenating gas and finely-divided metal oxide is then recovered from the reaction zone.



3.531,248
FORMING GRAPHITIC MATERIAL FROM FURFURYL ALCOHOL CATALYZED WITH ZIRCONYL NITRATE

Haskell Sheinberg, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Apr. 3, 1968, Ser. No. 718,351
Int. Cl. C01b *31/04*
U.S. Cl. 23—209.1 1 Claim

Catalyzing furfuryl alcohol with zirconyl nitrate followed by thermal treatment to about a temperature of 2500° C. yields graphitic material.

3,531,249
PYROLYTIC GRAPHITE FILAMENTS

Michael Turkat, Bayside, N.Y., assignor, by mesne assignments, to Pfizer Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 361,480, Apr. 21, 1964, which is a continuation-in-part of application Ser. No. 130,153, Aug. 8, 1961, now abandoned, which in turn is a continuation-in-part of application Ser. No. 361,492, Apr. 21, 1964, now Patent No. 3,375,308, dated Mar. 26, 1968. This application Nov. 7, 1966, Ser. No. 592,584
Int. Cl. C01b *31/04, 31/07*
U.S. Cl. 23—209.2 5 Claims

High purity and non-melting ablative material, particularly pyrolytic graphite, having substantially enhanced physical properties as a result of longitudinal stretching at elevated temperatures. Thermal conductivity at room temperature parallel to the basal planes is higher than that of any known material. Thermal conductivity perpendicular thereto is lower by several orders of magnitude. Tensile strength at room temperature exceeds 20,000 p.s.i. and at 5000° F. reaches as high as 80,000 p.s.i. The method of manufacture, also disclosed, yields polycrystalline material having high degrees of electrical anisotropy.

3,531,250
PROCESS FOR UTILIZING PHOSPHATE SLUDGE

Arnulf Hinz, Knapsack, near Cologne, Heinz Harnisch, Lovenich, near Cologne, and Hans Werner Ziegler, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
No Drawing. Filed June 16, 1966, Ser. No. 557,929
Claims priority, application Germany, July 14, 1965, K 56,612
Int. Cl. C01b *25/00, 25/02*
U.S. Cl. 23—223 14 Claims

1. A process for utilizing sludge obtained on neutralizing wet phosphoric acid and which consists essentially of phosphates of iron, aluminum, calcium and magnesium and adhering alkali metal phosphate solution which comprises mixing the sludge with fine ground phosphate ore, making phosphate shapes of the resulting mixture, the sludge determined as dry substance being used in a quantitative proportion of less than 15% by weight referred to the phosphate ore and using the phosphate shapes in the electrothermal production of phosphorus.

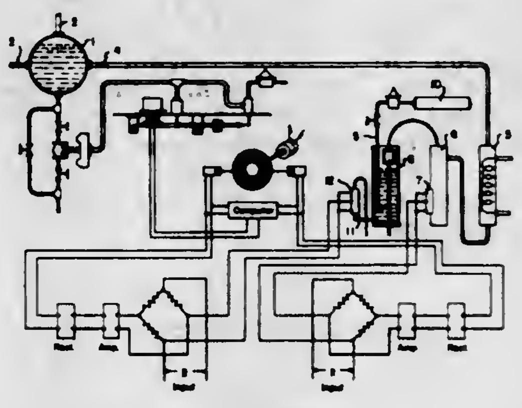
3,531,251
RECOVERING ELEMENTAL SULFUR FROM WATERS CONTAINING HYDROGEN SULFIDE

Vas Hubert Brogdon, Greenwich, Conn., assignor to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 652,853, July 12, 1967. This application Mar. 11, 1969, Ser. No. 806,128
Int. Cl. C01b *17/06*
U.S. Cl. 23—225 11 Claims

Water, containing hydrogen sulfide, is stripped of hydrogen sulfide with nitrogen gas, without the introduction of external heat, a portion, about one-third, of the hydrogen sulfide removed from the water is oxidized to sulfur dioxide and the resulting sulfur dioxide reacted with the remainder of the hydrogen sulfide to produce elemental sulfur. The elemental sulfur is cooled, collected and removed from the system. The remaining uncondensed inert gases, consisting primarily of nitrogen, are recycled to strip hydrogen sulfide from additional amounts of water containing it.

3,531,252
METHODS OF ANALYZING CONDUCTIVE SOLUTIONS

Hubert M. Rivers, Upper St. Clair Township, Allegheny County, Pa., assignor, by mesne assignments, to Calgon Corporation, a corporation of Delaware
Filed Oct. 17, 1966, Ser. No. 587,312
Int. Cl. F22b *37/54;* G01n *27/10*
U.S. Cl. 23—230 6 Claims



Method and apparatus for determining the amount of ionized constituents in solution by the steps of measuring the conductivity of the solution, adding a reaction reagent such that a substantial excess beyond the point of neutralization will not affect the conductivity of the solution and capable of reacting with said constituent in an amount in excess of that necessary for reaction, measuring the conductivity of the solution following the addition of reagent, measuring the difference between the two conductivities and determining the amount of constituent present from a curve of differential conductivity versus concentration prepared from known concentrations of the same constituent reacted with the same reagent.

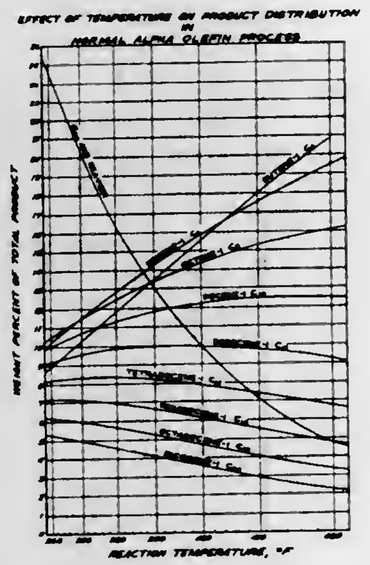
3,531,253
METHOD FOR DETERMINING THE EXTENT OF CONVERSION OF ETHYLENE TO ALPHA OLEFINS

Herbert B. Fernald and William Gall, Glenshaw, and Alfred N. Kreage, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,028

Int. Cl. C07c *3/10;* **G01n** *31/08*

U.S. Cl. 23—230 10 Claims



A method for determining changes in the conversion level of ethylene in a process wherein ethylene is converted in the presence of an organometallic catalyst in a controlled temperature range to a product comprising predominantly liquid alpha olefins together with gaseous alpha olefins wherein the total liquid and gaseous alpha olefin product is determined indirectly by measuring the amount in a sample of the liquid phase of the product of the particular alpha olefin component contained therein whose proportion in the total alpha olefin product remains relatively steady with temperature fluctuations within said temperature range.

3,531,254
TEST ARTICLE AND METHOD FOR THE DETECTION OF UREA

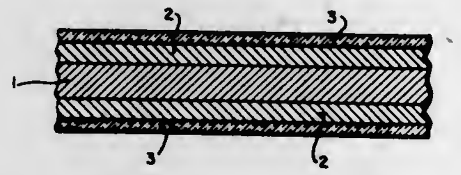
Kiyoshi Okuda, Osaka, Japan, assignor to Chugai Seiyaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Oct. 23, 1967, Ser. No. 677,239

Claims priority, application Japan, Nov. 11, 1966, 41/74,143

Int. Cl. G01m *21/06, 31/04, 33/16*

U.S. Cl. 23—230 5 Claims



A test article and a method of testing blood or urine samples for the qualitative and quantitative determination of urea therein wherein the test article comprises a permeable base material containing a strong cation exchange resin therein and coated with an acidic solution of p-dimethylamino cinnamaldehyde. The test article may be overcoated with a semi-permeable membrane. The blood or urine is tested by contacting a sample thereof with the test article and noting the red coloration that develops therein.

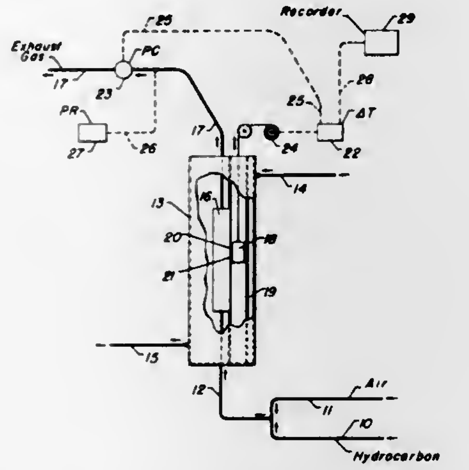
3,531,255
METHOD AND APPARATUS FOR ANALYZING HYDROCARBON COMPOSITIONS

Ellsworth R. Fenske, Palatine, and Leonard F. Pasik, Mount Prospect, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Oct. 31, 1967, Ser. No. 679,450

Int. Cl. F23n *1/02, 5/10;* **G01n** *25/32*

U.S. Cl. 23—230 7 Claims



Method and apparatus for analyzing hydrocarbon compositions whereby, for example, octane rating of a stream is obtained. The hydrocarbon to be analyzed is burned in an apparatus under conditions which produce a cool flame. The position of the flame in the combustion chamber is located and the output signal from such flame position is correlated with a composition parameter, such as octane number.

3,531,256
METHOD FOR CONTROLLING SENSITIVITY OF GAS CHROMATOGRAPH

Jaroslaw Kaczaj, 502 Franklin Ave., Cheltenham, Pa. 19012

No Drawing. Filed Apr. 29, 1968, Ser. No. 725,159

Int. Cl. G01n *31/08, 31/12*

U.S. Cl. 23—232 10 Claims

Method of restoring maximum sensitivity of a gas chromatograph equipped with a flame ionization detector which comprises injecting in to the chromatograph a minor quantity of a substance selected from the group consisting of fluorinated alcohols and esters of fluorinated alcohols and allowing said substance to pass through the chromatograph.

3,531,257
METHOD AND APPARATUS FOR MEASURING VOLUME VARIATION IN CHEMICAL, PHYSIOLOGICAL AND BIOCHEMICAL SYSTEMS

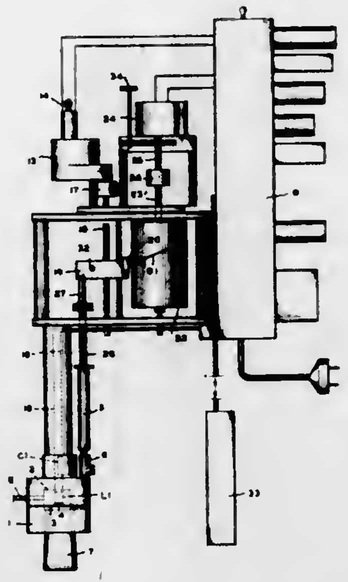
William R. Harvey, 73 Massasoit St., Northampton, Mass. 01060, and Donald F. Knowles, Ashford, Conn. (Box 208, R.F.D. 3, Stafford Springs, Conn. 06076)

Filed Aug. 5, 1964, Ser. No. 387,588

Int. Cl. G01l *9/10, 9/12;* **G01n** *7/10*

U.S. Cl. 23—232 7 Claims

Method and apparatus for continuously measuring consumption of gas particularly in chemical, physiological and biochemical activities which comprises a closed reaction chamber and a closed compensating chamber separated from the reaction chamber by a thin glass membrane having substantial elastic recoil properties and also having a ferrite component mounted thereupon. An electrical sensing device, having a fixed capacitance and inductor responsive to gas volume change in the reaction chamber, is provided together with a device for converting varying inductance into varying voltage. A system responsive to said varying voltage functions to restore gas volume and pressure in the reaction chamber to the initial value and means also is also provided for measuring the amount of gas change.



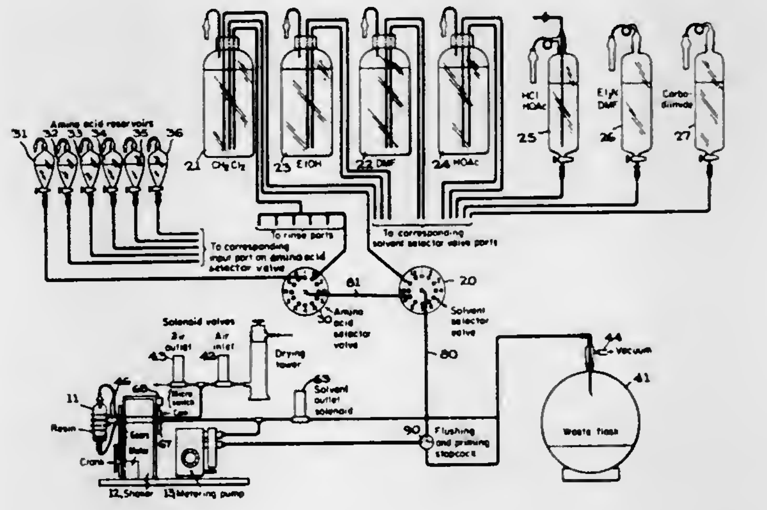
3,531,258
APPARATUS FOR THE AUTOMATED SYNTHESIS OF PEPTIDES

Robert Bruce Merrifield, John M. Stewart, and Nils Jernberg, New York, N.Y., assignors to the United States of America as represented by the Secretary, Department of Health, Education, and Welfare

Filed Nov. 16, 1967, Ser. No. 683,665

Int. Cl. C07c *103/52*

U.S. Cl. 23—252 11 Claims



Apparatus to select reagents and solvents by means of solvent and amino acid selector valves, which liquids are transferred by a metering pump from one of a plurality of reservoirs to a reaction vessel which contains peptide-resin. After mixing by a shaker, the solvents, excess reagents, and by-products are removed to a waste flask by vacuum filtration with the operations repeated in prearranged sequence under electrical control until the synthesis of the desired peptide chain is complete.

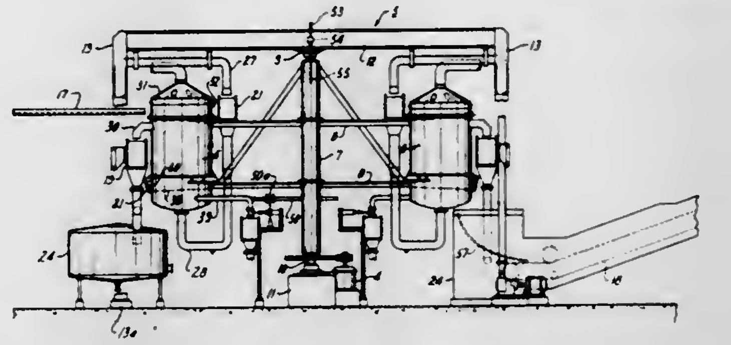
3,531,259
APPARATUS FOR ROTARY CONTINUOUS COUNTERCURRENT EXTRACTION

George B. Karnofsky, Arthur F. Saxon, and Robert D. Good, Pittsburgh, Pa., assignors to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware

Filed Feb. 15, 1967, Ser. No. 616,372

Int. Cl. B01d *11/02*

U.S. Cl. 23—269 10 Claims



This invention relates to a continuous system for contacting solid particulate material with a liquid. More particularly, this invention pertains to apparatus and processes by which a generally counter-gravitational or upflow of liquid is directed through a solids mass to effect thorough submergence thereof and to provide contact of the liquid with all surfaces of the particles of the mass, to free residual extract so that soluble components of such solids may be carried away in solution. A major feature of this invention is the additional concept of providing a continuous countercurrent flow of liquid which upwardly floods the solids material in successive stages to provide a continuous countercurrent contacting system.

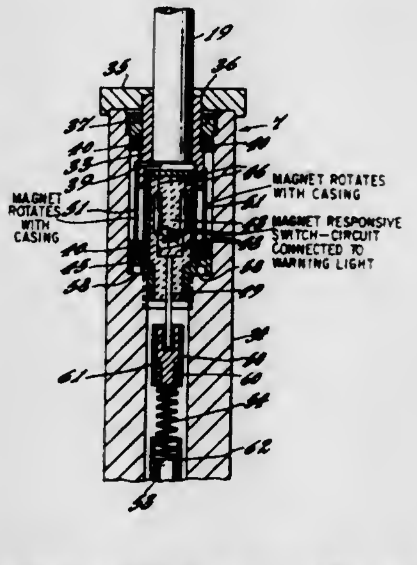
3,531,260
FLUID-COOLED CHUCK WITH A FREEZE-THROUGH SENSOR

Walter H. Diehl and Adolph K. Lagarde, Jr., Allentown, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 28, 1967, Ser. No. 656,910

Int. Cl. B01j *17/10;* **G08b** *21/00;* **H01h** *36/00*

U.S. Cl. 23—273 7 Claims


19
35
36
MAGNET ROTATES WITH CASING
MAGNET RESPONSIVE SWITCH-CIRCUIT CONNECTED TO WARNING LIGHT
MAGNET ROTATES WITH CASING
61
62

A system of employing a fluid-cooled chuck assembly for suspending a fusible material during a float zone melting operation and sensing a freeze-through from relative motion of a rod attached to the chuck assembly.

3,531,261

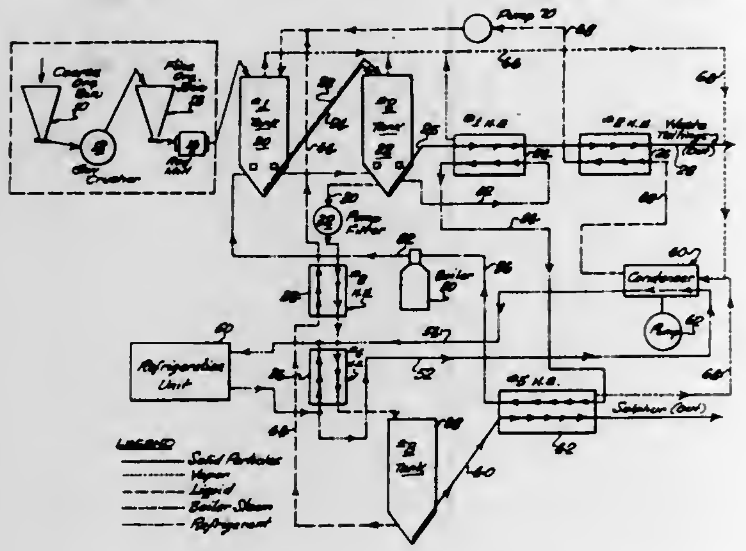
SULFUR ORE REFINING PROCESS

Jean P. Champagne, Santa Monica, Calif., assignor, by mesne assignments, to Bramada Resources Limited, Vancouver, British Columbia, Canada

Filed July 17, 1967, Ser. No. 653,989

Int. Cl. B01d *11/02;* **C01b** *17/08*

U.S. Cl. 23—312 **6 Claims**



A method of extracting sulfur from its ore comprising the steps of, crushing the sulfur and passing the ore sequentially through two absorption tanks containing hot solvent; passing the hot tailings from the second absorption tank through a heat exchanger thereby heating incoming solvents passing through the heat exchanger so that the solvent is preheated before it enters the first absorption tank. Extracting the sulfur from its ore by hot solvation (utilizing preheated solvent) then passing the hot solvent through a heat exchanger which is also conducting refrigerant, thereby partially cooling the hot solvent, and finally cooling the sulfur laden solvent to a point where the sulfur precipitates out.

3,531,262

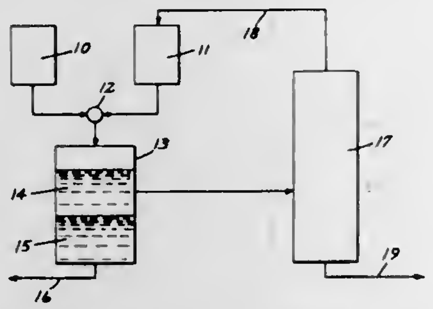
TREATMENT OF USED CHROMIC ACID ETCHING SOLUTIONS BY EXTRACTION WITH ACETONE

Robert R. Dougherty, Minneapolis, Minn., assignor, by mesne assignments, to Control Data Corporation, Minneapolis, Minn., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 707,837

Int. Cl. B01d *11/04;* **C01g** *37/12, 37/14*

U.S. Cl. 23—312 **7 Claims**



Spent or used aqueous chromic acid etchants are treated to separate chromic acid from by-products of the etching process which are dissolved or suspended in the spent etchants, thereby permitting the chromic acid to be reused and permitting the by-products of the etching process to be concentrated or isolated for waste disposal and/or recovery of the metal values contained therein. In a typical process, chromic acid and water are separated from the by-products by acetone extraction. The extract is then stripped of the acetone to produce an aqueous solution of chromic acid which can be reused in the etching process. The raffinate is rich in the by-products of the etching process.

3,531,263

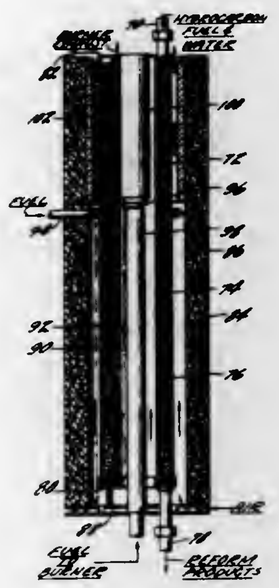
INTEGRATED REFORMER UNIT

Richard A. Sederquist, Newington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 5, 1968, Ser. No. 750,333

Int. Cl. C01b *1/13;* **B01j** *7/00*

U.S. Cl. 48—61 **10 Claims**



The apparatus is comprised of a simple can type of structure which houses the major reaction components of a system for converting hydrocarbon feedstocks, wherein the feedstock passes through a reactor cavity and the hydrocarbon fuel stream reacts to produce a hydrogen-rich stream. The converted stream passes through a products cooler which is in heat exchange relationship with an air stream to reduce the temperature of the reaction products. At a decreased temperature, the stream passes through a shift-conversion cavity where substantially all of the carbon monoxide in the stream is converted to carbon dioxide and hydrogen. The hydrogen-rich effluent leaves the fuel processing section and is directed to the operating fuel cell or other process equipment. Utilizing this inline concept, other process equipment can be easily added.

3,531,264

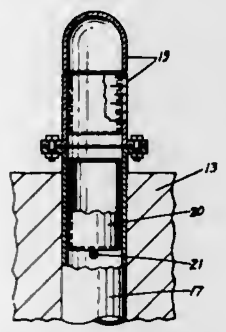
SAFETY LEAK DETECTOR

Frank J. Greipel, 49 Larpenteur Ave. E., St. Paul, Minn. 55109

Filed Oct. 3, 1967, Ser. No. 672,576

Int. Cl. G01m *3/04*

U.S. Cl. 48—193 **7 Claims**



A system for detecting and locating leaks in buried fluid pipelines including an elongated hood partially enclosing the pipeline and extending along its length spaced from the top of the pipe to provide an open channel, and at least one vertical tubular riser intersecting that open channel. The open channel provides a path of least resistance for escaping fluid. The top of each riser includes a floatable visual signalling device which is normally out of sight but comes into view when lifted under pressure of escaping fluid. The appearance of the signalling device locates the leak as in the segment of pipeline monitored by it. Where the system includes a plurality of spaced apart risers the appearance of the signalling device in both of a pair of risers locates the leak as between them.

3,531,265

SYNTHESIS GAS PURIFICATION

Roger M. Dille, La Habra, Calif., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 29, 1968, Ser. No. 732,868

Int. Cl. C10j *3/84;* **C10k** *1/00, 1/08*

U.S. Cl. 48—196 **15 Claims**

Continuous process for the recovery of essentially all the particulate carbon from a stream of raw synthesis gas made by the partial oxidation of a feedstock comprising a mixture of hydrocarbon oil and a concentrated iron hydroxide flocced carbon-water slurry at an autogenous temperature within the range of 1800–3000° F. and a pressure within the range of about 100–3000 p.s.i.g., wherein the formic acid produced in the reaction zone and in the gas quench and scrubbing zone is reacted with iron from the iron hydroxide floc to form a water-soluble iron formate floccing agent which dissolves in the acidic water in the quench and scrubbing zone and contacts the particulate carbon in the carbon-water dispersion formed therein when the effluent gaseous stream from the reaction zone of the generator is quenched and scrubbed with said water; and then by the addition of ammonia the iron formate is converted to gelatinous iron hydroxide which flocs the carbon and forms a flocced carbon-water slurry which is concentrated by filtration or sedimentation, and the excess water is returned to the quench and scrubbing zone while the concentrated flocced carbon-water slurry is mixed with a hydrocarbon liquid to constitute the aforesaid feedstock.

3,531,266

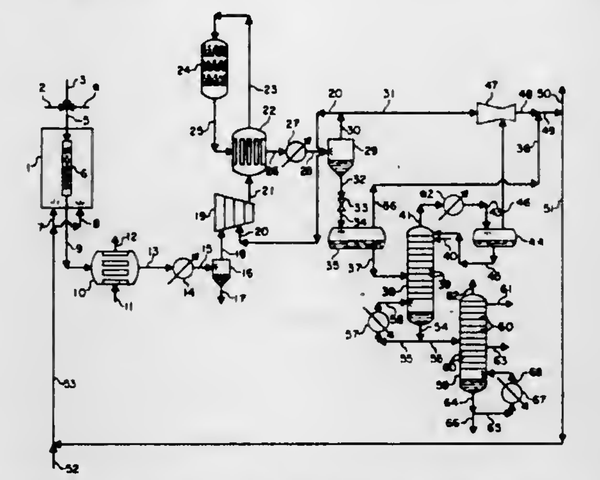
PRODUCTION OF SYNTHETIC METHANOL

Benjamin Chernoff, Brooklyn, N.Y., assignor to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 31, 1968, Ser. No. 702,030

Int. Cl. C07c *29/16;* **C10l** *3/00*

U.S. Cl. 48—197 **9 Claims**



Synthetic methanol is produced by a catalytic process in which crude liquid methanol and a high pressure purge gas stream are discharged from the synthesis loop. The crude methanol is distilled at a reduced pressure to produce purified methanol, and an overhead vapor stream is discharged at low pressure from the distillation procedure. The high pressure purge gas stream is expanded to an intermediate pressure in an aspirator or jet ejector, and the low pressure overhead vapor stream from methanol distillation is inducted or aspirated into the purge gas stream in the aspirator, which discharges a mixed fuel gas at an intermediate pressure. The fuel gas is preferably employed as combustion fuel for heating the steam reformer which prepares makeup methanol synthesis gas by the catalytic steam reforming of a fluid hydrocarbon.

3,531,267

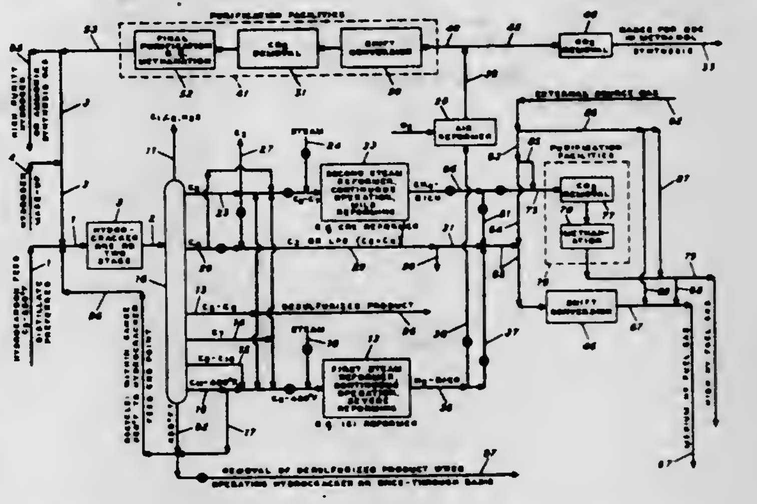
PROCESS FOR MANUFACTURING FUEL GAS AND SYNTHESIS GAS

George D. Gould, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed June 17, 1965, Ser. No. 464,620

Int. Cl. C01b *2/14;* **C10g** *13/00, 13/30*

U.S. Cl. 48—213 **18 Claims**



A process for producing a valuable gas from a hydrocarbon distillate containing organic sulfur compounds which comprises:

(a) catalytically hydrocracking said distillate at a temperature between 500 and 800° F., by contacting a mixture of said distillate and hydrogen with a catalyst containing a hydrogenation-dehydrogenation component to obtain an effluent stream comprised of effluent hydrocarbons and hydrogen sulfide,

(b) separating the hydrogen sulfide from at least a portion of the effluent hydrocarbons to obtain a hydrocarbon stream of low sulfur content, and

(c) steam reforming at least a portion of the hydrocarbon stream of low sulfur content.

3,531,268

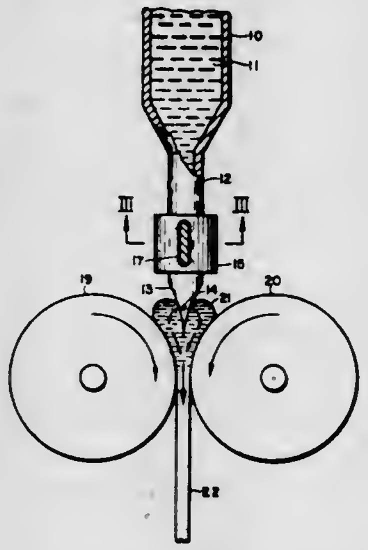
HEATED DELIVERY TIP FOR LIQUID GLASS

Richard E. Allen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Nov. 8, 1966, Ser. No. 592,833

Int. Cl. C03b *25/00, 5/26*

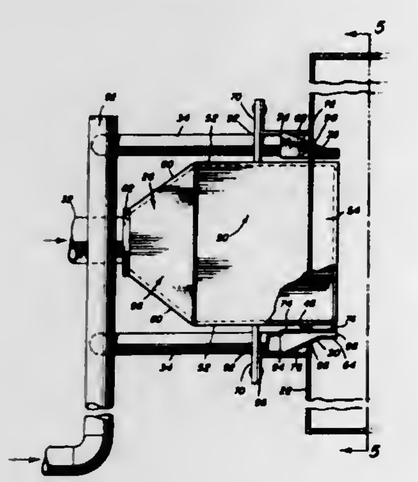
U.S. Cl. 65—12 **5 Claims**



Apparatus for forming thin, vitreous glass ceramic ribbon from a readily devitrifiable glass having high surface tension and low viscosity. The apparatus comprises a hollow resistance heater surrounding and in contact with a delivery tube having a pointed end which terminates at the bite of the forming rollers.

3,531,269
MOLTEN STEEL SLAG HANDLING PROCESS AND APPARATUS

John J. Grady, New Florence, Pa., assignor to International Steel Slag Corporation, Washington, D.C., a corporation of the District of Columbia
Continuation-in-part of application Ser. No. 428,519, Jan. 27, 1965, which is a continuation-in-part of application Ser. No. 126,792, June 28, 1961. This application Apr. 21, 1967, Ser. No. 632,825
The portion of the term of the patent subsequent to Apr. 25, 1984, has been disclaimed
Int. Cl. C03b *5/18, 19/08*
U.S. Cl. 65—19 **22 Claims**

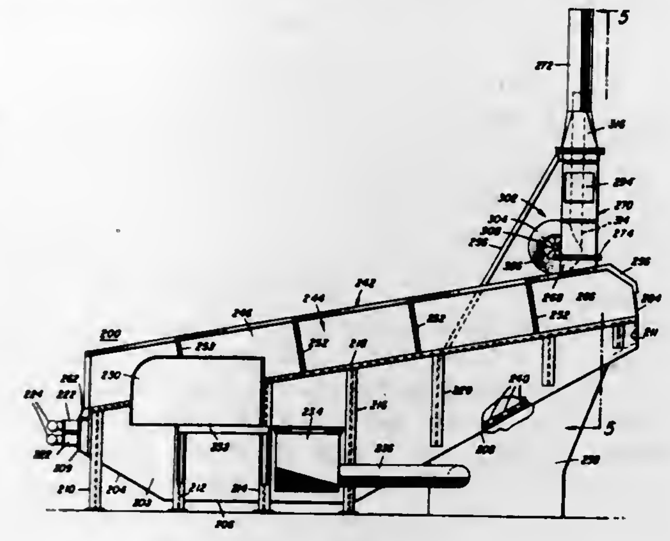


An improved system is described for processing and disposing of molten steel slag produced during the steel making process. The system includes a steel slag granulator including a receptacle and nozzle means for injecting into the granulator one or more jet streams of water in the form of a trough of water. The nozzle means has a horizontally extended bottom portion and vertical side portions for injecting the trough of water which intercepts molten slag poured into the receptacle to rapidly cool and granulate the slag prior to disposal.

3,531,270
MOLTEN STEEL SLAG HANDLING METHOD AND APPARATUS

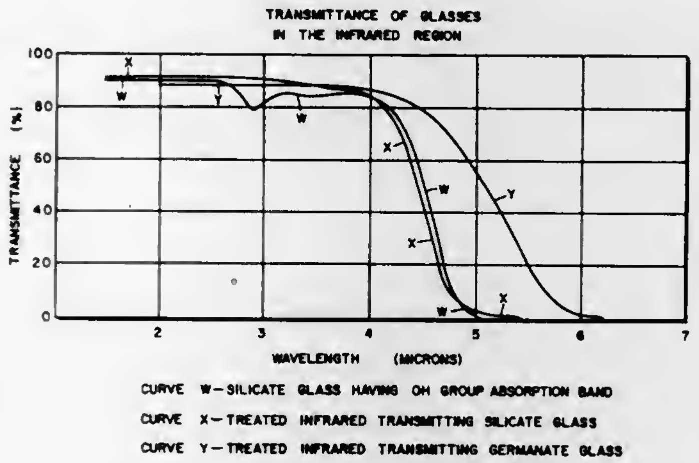
John J. Grady, New Florence, Pa., assignor to International Steel Slag Corporation, Washington, D.C., a corporation of the District of Columbia
Continuation-in-part of application Ser. No. 428,519, Jan. 27, 1965, which is a continuation-in-part of application Ser. No. 126,792, June 28, 1961. This application Apr. 10, 1967, Ser. No. 629,755
The portion of the term of the patent subsequent to Apr. 25, 1984, has been disclaimed
Int. Cl. C03b *5/18*
U.S. Cl. 65—19 **18 Claims**

A system is described for the improved processing and disposal of molten steel slag formed during the steel making operations. The system comprises a steel slag granulator having steam collecting and disposal means for collecting and transferring to a suitable disposal point, the steam generated during the slag granulation process. There is provided steam retaining means in the form of a suspended or bolted hood partially covering the slag granulator to prevent undesirable venting of steam at the granulator location. The steam collection means may comprise a common manifold and a series of connecting pipes, or alternatively, a breeching arrangement common to one or more granulators. The disposal means comprise a conduit of suitable construction, preferably including aspirator means cooperating with the steam collection means to establish a pressure differential between the interior of the granulator and the interior of the collection means for removal of steam from the granulator into the collection means and the disposal means.



3,531,271
METHOD OF DRYING GLASSES BY AN ANHYDROUS AGENT

William H. Dumbaugh, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 605,677, Dec. 29, 1966. This application Nov. 13, 1967, Ser. No. 682,332
Int. Cl. C03b *5/16*
U.S. Cl. 65—32 **10 Claims**

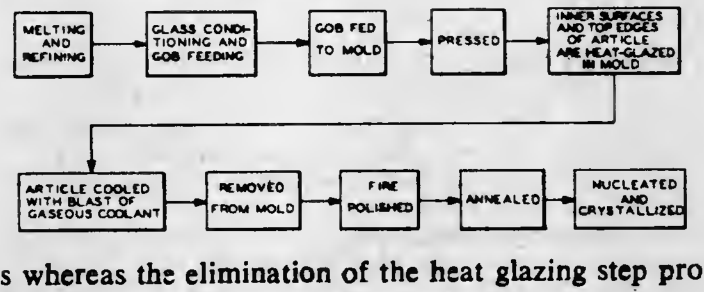


A method of making glasses having a very low water content and particularly a method of making improved infrared transmitting glasses by substantially removing the water absorption band in the region of about 2.9 microns.

3,531,272
INTERNAL FLAME TREATMENT OF CRYSTALLIZABLE GLASS

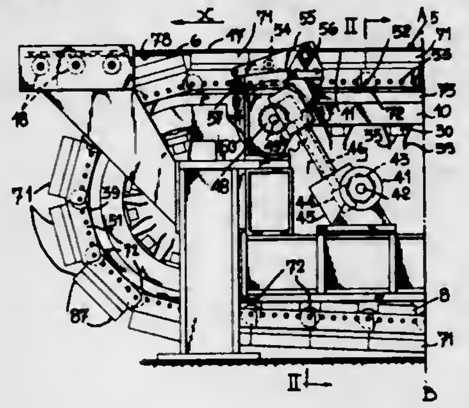
Charles E. Menear, Muncie, Ind., assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation of application Ser. No. 468,851, July 1, 1965. This application Oct. 18, 1968, Ser. No. 781,678
Int. Cl. C03b *29/00, 21/00*
U.S. Cl. 65—33 **6 Claims**

Production of haze-free, glass-ceramic articles by heat glazing the inner surfaces of the hot, shaped, crystallizable glass article by applying external heat to the inner surfaces while the article is in the forming mold, the heat glazing being sufficient to initiate uniform softening of the crystallizable glass but insufficient to cause premature crystallization thereof. The heat glazing step, which is preferably accomplished by using a directly applied flame with a temperature of about 2500° F. to 3300° F. for about 0.2 to 3 seconds, provides haze-free final products whereas the elimination of the heat glazing step provides products with undesirable haze.


MELTING AND REFINING
GLASS CONDITIONING AND GOB FEEDING
GOB FED TO MOLD
PRESSED
INNER SURFACES AND TOP EDGES OF ARTICLE ARE HEAT-GLAZED IN MOLD
ARTICLE COOLED WITH BLAST OF GASEOUS COOLANT
REMOVED FROM MOLD
FIRE POLISHED
ANNEALED
NUCLEATED AND CRYSTALLIZED

3,531,273
METHODS FOR THE PRODUCTION OF RIBBED GLASS SHEETS

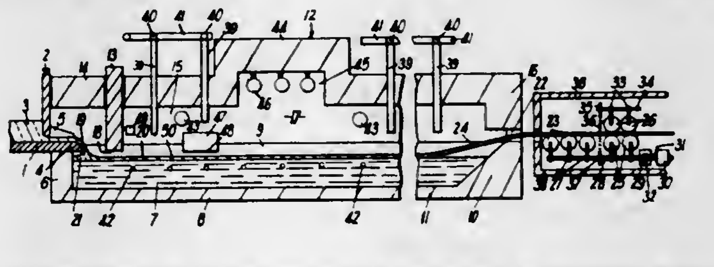
Henri Discry, Ixelles, Belgium, assignor to Glaverbel, Brussels, Belgium
Original application Sept. 13, 1965, Ser. No. 486,732, now Patent No. 3,459,525. Divided and this application Apr. 24, 1969, Ser. No. 818,959
Claims priority, application Luxemburg, Sept. 17, 1964, 46,970
The portion of the term of the patent subsequent to Aug. 5, 1986, has been disclaimed
Int. Cl. C03b *13/08*
U.S. Cl. 65—94 **7 Claims**



A method for the production of sheets of glass having at least one surface with ribs wherein molten glass is passed between a rotary roller and a spaced advancing surface having grooves therein such that the molten glass is forced into the grooves to form a sheet with ribs extending into the grooves, thereafter moving the advancing surface away from the sheet while temporarily supporting the ribs and then engaging the sheet at a location where it has solidified to remove the sheet.

3,531,274
METHOD FOR THE MANUFACTURE OF FLOAT GLASS

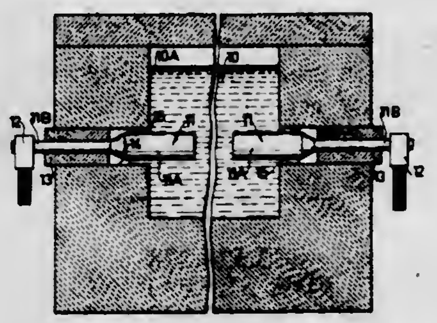
George Alfred Dickinson, Brian W. Oxley, and James E. C. Thomas, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain
Continuation of application Ser. No. 675,745, Sept. 29, 1967, which is a continuation-in-part of application Ser. No. 324,678, Nov. 19, 1963. This application Jan. 21, 1969, Ser. No. 792,262
Int. Cl. C03b *18/02*
U.S. Cl. 65—99 **4 Claims**



Float glass of simultaneously reduced width and thickness is manufactured on a bath of molten metal by interrelated control of the longitudinal viscosity gradient subsisting in the ribbon of glass advancing along the glass and of the tractive effort applied to the ribbon.

3,531,275
USE OF SILICIDE ELECTRODE IN GLASS MELTING

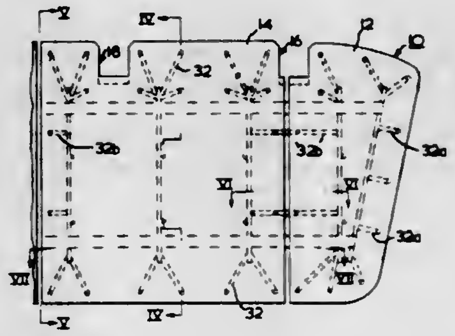
Bengt Magnusson and Venanzio Bizzarri, Hallstahammar, Sweden, assignors to Aktiebolaget Kanthal, Hallstahammar, Sweden
Continuation-in-part of application Ser. No. 505,270, Oct. 26, 1965. This application Oct. 25, 1968, Ser. No. 770,778
Int. Cl. C03b *5/16*
U.S. Cl. 65—134 **4 Claims**



Electrode, agitator, pyrometer-protecting tube and the like bodies, intended for use in contact with molten glass, is made at least as far as those portions which come into contact with the glass of a composition consisting of about 90% by weight of molybdenum silicide or tungsten silicide, the remainder being constituted by vitreous oxide.

3,531,276
PRESS BENDING APPARATUS WITH THIN RIGID PRESSING PLATES

Ronald E. Richardson, Oshawa, Ontario, Canada, assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1967, Ser. No. 667,151
Claims priority, application Canada, June 16, 1967, 993,157
Int. Cl. C03b *23/02*
U.S. Cl. 65—287 **9 Claims**



A glass shaping member for use in an apparatus for press bending heat softened glass sheets between a pair of such shaping members; each said shaping member includes a relatively thin but rigid shaping plate having a predetermined surface contour corresponding to that desired for the bent glass sheet, with each of the sections thereof having a maximum dimension of approximately 2 feet. The margins of each section of the shaping member are spaced a sufficient distance from the margins of other sections to permit thermal expansion of each section as a result of the temperatures reached during press bending. The shaping plate sections are supported on a relatively rigid planar grid and are held in spaced relation with respect to the latter by means of a plurality of elongated rods which connect spaced points on the shaping plate sections to the grid. These rods are so arranged and distributed throughout the extent of the rigid grid and the shaping plates that the latter are permitted to expand thermally without distorting from their desired local configurations while at the same time proper alignment between the grid and the shaping plates is maintained.

3,531,277
HERBICIDAL COMPOSITION AND METHOD

Alan J. Lemin, Richland Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 85,189, Jan. 27, 1961. This application Feb. 4, 1965, Ser. No. 430,483
Int. Cl. A01n *9/20*
U.S. Cl. 71—118 **4 Claims**

This application pertains to compositions and methods for preventing germination of undesired plant seeds and controlling noxious weeds with N-alkylchlorobenzamides.

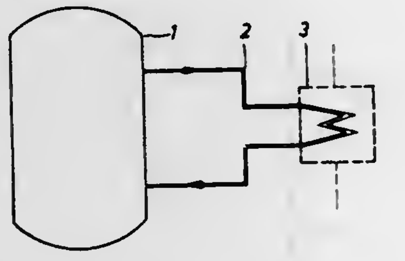
3,531,278
PROCESS FOR PREPARING SODIUM BORATE COMPOSITIONS

Nelson P. Nies, Laguna Beach, Calif., assignor to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Filed Mar. 20, 1967, Ser. No. 624,206
Int. Cl. A01n *11/00*
U.S. Cl. 71—128 **11 Claims**

Noncaking and dust free sodium borate compositions having a mole ratio of Na_2O/B_2O_3 of less than 0.5 are prepared in the form of particles containing sodium pentaborate by adding 3 to 12 percent water to a tumbling mixture of particles of either boric acid, boric oxide, metaboric acid or sodium pentaborate with anhydrous borax, borax pentahydrate, borax decahydrate or sodium pentaborate and heating the moist tumbling mixture to a temperature of 70–115° C.

3,531,279
FERRITIC COLUMBIUM CONTAINING, CHROMIUM - MOLYBDENUM STEEL, CONTAINING NICKEL

Ewald Baerlecken, Dusseldorf, Germany, assignor, by mesne assignments, to August Thyssen-Hutte Aktiengesellschaft, Duisburg-Hamborn, Germany, a corporation of Germany
Filed Dec. 3, 1965, Ser. No. 511,426
Claims priority, application Germany, Dec. 5, 1964, P 24,450
Int. Cl. C22c *39/14*
U.S. Cl. 75—128 **5 Claims**



Reduction in toughness of ferritic steels resulting from including columbium in the steel for the purpose of reducing the susceptibility of the steel to decarbonization, is effected by including 0.3–1.0% nickel in the steel. Such steels can be used in the cooling system of sodium cooled nuclear reactors, wherein austenitic steels are in the reactor.

3,531,280
HETEROGENEITY BY MIXING DIVERSE POWDERS PRIOR TO CONSOLIDATION

Ralph K. Iler, Wilmington, Del., and Geoffrey W. Meadows, Kennett Square, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 23, 1969, Ser. No. 835,815
Int. Cl. C22c *29/00*
U.S. Cl. 75—204 **2 Claims**

Dense bodies of tungsten carbide bonded with from 3 to 25% by weight of heterogeneous cobalt-tungsten solid-solution alloy are prepared by intimately mixing a carbon-rich powder containing tungsten carbide with a carbon-deficient powder containing tungsten carbide, either powder also containing cobalt, then heating the mixed powders to a temperature above 1000° C. and consolidating the hot mixture to a density of at least 98% of its theoretical density. The resultant bodies are strong, hard and impact resistant and useful in cutting and shaping very hard materials.

3,531,281
PHOTOPOLYMER FIXATION PROCESS

John B. Rust, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,649
Int. Cl. G03c *5/24, 1/68*
U.S. Cl. 96—48 **35 Claims**

Fixation process for a polymerization effecting photooxidant and catalyst system contained in a photopolymerizable monomer system, compositions therefor and products, utilizing a silver compound as the fixing agent of said catalyst system after activation thereof.

3,531,282
PHOTOPOLYMER POLYMERIZATION FIXATION PROCESS AND PRODUCTS

Leroy J. Miller, Canoga Park, and John B. Rust, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,650
Int. Cl. G03c *1/68, 5/24*
U.S. Cl. 96—48 **32 Claims**

A method of fixing a photopolymerizable monomer system containing a photo-redox polymerization catalyst system by heating the catalyst system.

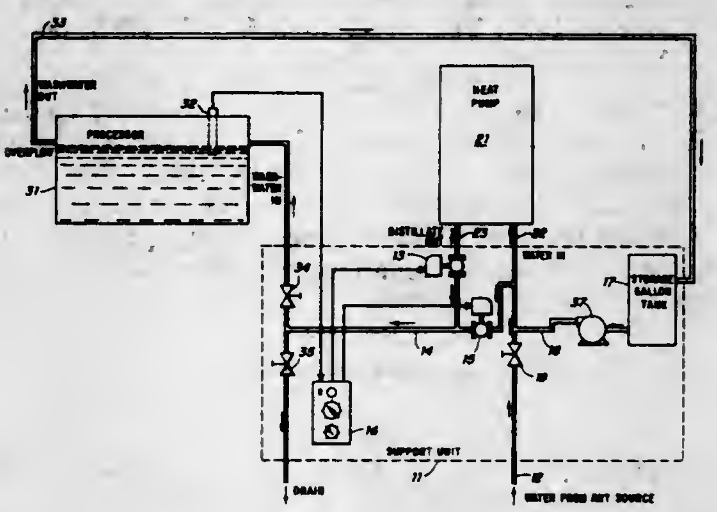
3,531,283
PREPARATION OF DIRECT POSITIVES BY DEVELOPMENT WITH LEUCO DERIVATIVES

Anne-Marie Accary-Venet and Jacques Pouradier, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 1, 1965, Ser. No. 444,830
Claims priority, application France, Dec. 1, 1964, 996,929
Int. Cl. G03c *7/00*
U.S. Cl. 96—54 **15 Claims**

Direct positive dye images are advantageously produced by developing a latent image in a silver halide emulsion layer of a photographic element with an aqueous solution of a leuco dye compound which is oxidizable to a dye, then contacting the developed emulsion with an aqueous solution of a hydrobalic acid containing a dissolved oxidizing agent such as atmospheric oxygen which removes the negative silver image in exposed areas of the emulsion and produces a positive dye image in unexposed areas of the emulsion.

3,531,284
METHOD AND APPARATUS FOR WASHING OF PHOTOGRAPHIC MATERIAL

Clarence J. Armstrong, Lowell, and Alvin Cronig, Lexington, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Jan. 18, 1967, Ser. No. 610,127
Int. Cl. G03c *5/38*
U.S. Cl. 96—61 **10 Claims**



A method and apparatus for the control of the contamination level of photo wash water supporting an environment for ionic substitution of simple thiosulfate salts in the water with complex argento thiosulfates on the photographic emulsion surface. A water purifier is placed in closed loop with the wash tank to control the level of contamination.

3,531,285
ACTIVATOR PRECURSORS FOR STABILIZERS FOR PHOTOGRAPHIC IMAGES

Grant Milford Haist and Wilbert Jeptha Humphlett, Rochester, N.Y., and Dee Lynn Johnson, Princeton, N.J., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 371,124, May 28, 1964. This application Jan. 27, 1967, Ser. No. 612,079
Int. Cl. G03c *1/06, 5/38*
U.S. Cl. 96—61 **14 Claims**

Activator precursors for photographic silver halide elements containing a stabilizer precursor which causes stablization of silver halide by substantially dry processing.

3,531,286
LIGHT-SENSITIVE, HEAT DEVELOPABLE COPY-SHEETS FOR PRODUCING COLOR IMAGES

Edgar E. Renfrew, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Oct. 31, 1966, Ser. No. 590,551
Int. Cl. G03c *1/02*
U.S. Cl. 96—67 **3 Claims**

Color images are formed by dry photography using a sheet or film containing a phenolic or acive methylene color coupler component in conjunction with a photosensitive silver halide catalyst progenitor in catalytic proximity with major amounts of a catalyzable heat-sensitive light-stable silver salt and a p-phenylenediamine reducing agent.

3,531,287
COLOR SEPARATION FILM CONTAINING LIGHT-ABSORBING DYE

Eugene D. Salesin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Jan. 16, 1967, Ser. No. 609,357
Int. Cl. G03c *1/84, 1/40*
U.S. Cl. 96—84 **17 Claims**

Black-and-white panchromatically sensitized silver halide gelatin emulsion in which the red to green to blue exposure contrast relationship is adjusted by incorporating a removable light-absorbing dye having its principal absorption in the region of the spectrum to which the color exposure contrast is too high for color separation negative film designed for machine processing.

3,531,288
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING EXCESS IODIDE

Evan T. Jones, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New York
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,320
Int. Cl. G03c *1/08*
U.S. Cl. 96—108 **24 Claims**

Direct positive photographic silver halide emulsion, the halide of which is at least 50 mole percent bromide, contains an electron acceptor and has iodide on the surface thereof.

3,531,289
SILVER HALIDE PHOTOGRAPHIC EMULSIONS IMPROVED BY NEW PRECIPITATION METHODS

George F. L. Wood, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,610
Int. Cl. G03c *1/28*
U.S. Cl. 96—108 **19 Claims**

An improved process for making developing-out-type silver halide photographic emulsions comprising an initial emulsification and a digestion step wherein the silver halide grains are formed in an aqueous medium in the presence of a peptizer, the improvement comprising the use or presence of a combination of a rhodium salt and an organic thioether silver halide solvent during said emulsification step and said digestion step.

3,531,290
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING EXCESS HALIDE

Roberta A. Litzerman, Newton, Mass., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 24, 1967, Ser. No. 618,354
Int. Cl. G03c *1/08*
U.S. Cl. 96—108 **29 Claims**

Direct positive silver halide photographic emulsions, in which the halide is at least 50 mole percent chloride, have on the surface thereof an electron acceptor or a halogen acceptor and sufficient bromide, or bromide together with iodide, to increase the speed of the silver halide grains.

3,531,291
SILVER HALIDE EMULSIONS CAPABLE OF BEING CHEMICALLY OR PHOTO DEVELOPED

Robert E. Bacon, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Apr. 7, 1967, Ser. No. 629,090
Int. Cl. G03c *1/28*
U.S. Cl. 96—108 **16 Claims**

A photographic silver halide emulsion containing silver halide grains formed in the presence of tetravalent metal ions, said silver halide system having a halogen acceptor contiguous to said tetravalent metal-containing silver halide grains. In a preferred embodiment the silver halide is precipitated in acidic media. The emulsions of this invention yield good print-out emulsions which can be chemically developed to a high contrast with several types of developing solutions.

3,531,292

3,4 DICHLORO-2-FURANONES AS GELATIN HARDENING AGENTS

Salvatore Emmi, Binghamton, N.Y., assignor to GAF Corporation, a corporation of Delaware
No Drawing. Filed Sept. 29, 1967, Ser. No. 671,587
Int. Cl. G03c *1/30*
U.S. Cl. 96—111 9 Claims

Delayed action hardening agents for gelatin coating compositions comprising 3,4-dichloro-2-furanones.

3,531,293

ANIMAL FEED COMPOSITION

Werner R. Boehme, Somerville, N.J., assignor to Dawe's Laboratories, Inc., Chicago, Ill., a corporation of Illinois
No Drawing. Filed Oct. 20, 1966, Ser. No. 593,623
Int. Cl. A23k *1/00*
U.S. Cl. 99—2 14 Claims

A vitamin K animal food composition of improved stability comprising the additional product of menadione and a water soluble bisulfite salt and a non-toxic acireductone.

3,531,294

PREPARATION OF A BAKING AGENT FOR USE IN YEAST-LEAVENED PRODUCTS

Charles A. Glabau, 114 E. Midland Ave.,
Paramus, N.J. 07652
No Drawing. Filed Jan. 30, 1968, Ser. No. 701,551
Int. Cl. A21d *2/04;* **A23c** *21/00*
U.S. Cl. 99—57 10 Claims

A baking additive for use in making yeast-leavened products is prepared by heating a suspension of soy flour, liquid whey and/or liquid non-fat milk in the presence of calcium peroxide.

3,531,295

FREEZE CONCENTRATION OF COFFEE EXTRACT

Neophytos Ganiaris, Riverdale, N.Y., assignor, by mesne assignments, to Struthers Patent Corporation, Houston, Tex., a corporation of Texas
Continuation of application Ser. No. 512,365, Dec. 8, 1965. This application Apr. 16, 1969, Ser. No. 816,596
Int. Cl. A23f *1/08*
U.S. Cl. 99—71 5 Claims

A process of freeze concentrating coffee extract is described in which a mixture of ice and coffee is separated in a centrifuge. The ice is thereafter washed to include a finite amount of coffee and melted to recover entrained coffee solids therefrom.

3,531,296

BUFFERED INSTANT TEA EXTRACT

Ronald H. Smithies, Teaneck, N.J., assignor to Thomas J. Lipton, Inc., Englewood Cliffs, N.J., a corporation of Delaware
No Drawing. Filed Mar. 7, 1967, Ser. No. 621,146
Int. Cl. A23f *3/00*
U.S. Cl. 99—77 7 Claims

A powdered instant tea extract containing an edible acid/alkali metal salt buffer system to control the pH of the final tea beverage and prevent cloudiness, discoloration and scum formation in the tea beverage, and a process for preparing the buffered tea extract comprising treating an aqueous tea extract with an ion exchange resin, adding an edible acid/alkali metal salt buffer system and drying.

3,531,297

MANUFACTURE OF PASTA CHEESE

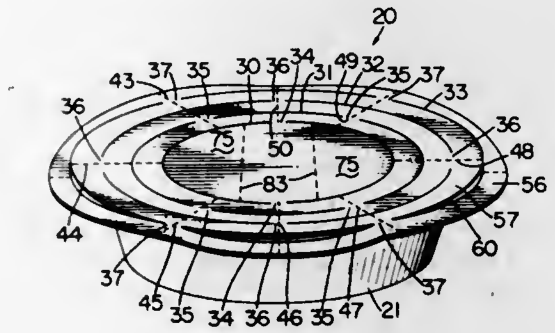
Lester O. Kielsmeier, Wheatridge, and James G. Leprino, Gosden, Colo., assignors to Leprino Cheese Mfg. Co., Denver, Colo., a corporation of Colorado
Continuation-in-part of application Ser. No. 643,372, June 5, 1967. This application Oct. 7, 1968, Ser. No. 775,980
Int. Cl. A23c *19/02*
U.S. Cl. 99—116 7 Claims

Pasta filata cheese is prepared by a process wherein cheddaring is substituted by soaking the curd, after draining the whey, in a water bath to reduce its internal pH and lactose content. Thereafter the curd is separated from the water bath and the separated curd is mixed in a confined zone under pressure.

3,531,298

PROTECTIVE COVER MEANS AND BLANKS FOR MAKING SUCH COVER MEANS

Gary M. Donahue, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed June 2, 1967, Ser. No. 643,209
Int. Cl. B65b *25/22*
U.S. Cl. 99—171 19 Claims



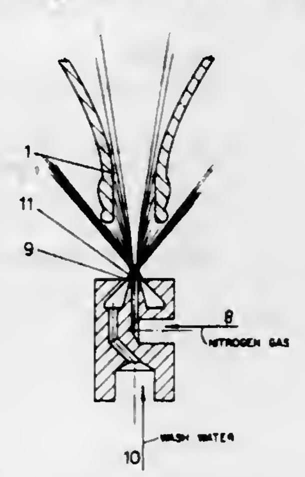
This disclosure relates to a protective cover means which has central surface means which may be expanded outwardly to define a resilient structure used to hold a product such as a frozen pastry product and its dish-like container in an enclosing carton during transportation and handling thereof; also, such central surface means may be adjustably expanded outwardly to define opening means in such protective cover means which allows heated air to surround the pastry product during heating thereof in an oven. This disclosure also relates to a method of baking using such protective cover means.

3,531,299

PROCESS OF WASHING AND FILLING CONTAINERS WITH BEVERAGE USING INERT GAS

Lucas Benjamins, Clairionlaan 9,
Santpoort, Netherlands
Continuation-in-part of application Ser. No. 500,154, Oct. 21, 1965. This application May 27, 1968, Ser. No. 732,400
Claims priority, application Netherlands, Jan. 5, 1965, 6500035
Int. Cl. A23b *1/14*
U.S. Cl. 99—189 2 Claims

A process for filling a bottle or can with a beverage, particularly beer, including the step of washing the container, introducing nitrogen gas into the container simultaneously with washing water used in the washing step, and displacing the nitrogen by introducing the beverage into the container.



3,531,300

PROCESS FOR HEAT TREATING FOOD SEALED WITHIN FLEXIBLE CONTAINERS

Sheldon I. Greenberg, Calvin G. Norris, Edward L. Fritzberg, and Selwyn Jones, Minneapolis, Minn., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Nov. 17, 1964, Ser. No. 411,777
Int. Cl. A23l *3/10*
U.S. Cl. 99—214 8 Claims

An expandable food product is hermetically sealed within a flexible package and heat treated. The expansion of the package is sensed and the application of external pressure is varied accordingly so as to limit expansion to a prescribed volume. During subsequent heating and cooling the external pressure is adjusted so as to maintain the food product in the expanded state.

3,531,301

PLATING PROCESS

John D. Watson, Indianapolis, Ind., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 26, 1968, Ser. No. 755,377
Int. Cl. C23c *3/02*
U.S. Cl. 106—1 10 Claims

The present invention relates to compositions and processes for chemical nickel plating. More particularly this invention relates to novel plating baths and to processes for the plating of solid substrates of either a conductive or non-conductive nature and, in particular, such solid substrates which require low temperature plating conditions.

3,531,302

HEAT SET PRINTING INK VEHICLE

Ludwig P. Horn, Deerfield, Ill., assignor to Lawter Chemicals, Inc., Chicago, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 499,081, Oct. 20, 1965, which is a continuation-in-part of application Ser. No. 343,442, Jan. 29, 1964, which in turn is a continuation-in-part of application Ser. No. 188,266, Apr. 17, 1962. This application Nov. 20, 1967, Ser. No. 684,547
Int. Cl. C09d *11/06, 11/08*
U.S. Cl. 106—27 10 Claims

The invention comprises the preparation of a vehicle for heat set printing inks in which the vehicle includes a solvent component which facilitates the application of the ink but is flashed off during setting of the ink in which the invention resides in the vehicle and its method of preparation in which the resinous component is prepared by reacting a polyvalent metal alcoholate in which the alcohol groups of the alcoholate are formed of alcohols having from 1 to 5 carbon atoms and in which the polyvalent metal alcoholate is first reacted with a monohydroxy compounds selected from the group consisting of a monohydroxy glycol ester, a monohydroxy glycerol ether, a monohydroxy glycol ester, a monohydroxy glycerol ester, a monohydroxy oxo-alcohol and mono-hydroxy fatty alcohol in which the reaction is carried out at a temperature above the boiling point temperature of the alcoholate and reacting the reaction product with a varnish formed of a modified rosin or resin having at least one free carboxyl group selected from the group consisting of a rosin ester, a dibasic acid modified rosin ester and a rosin ester modified phenolic resin and a resin soluble in aliphatic solvents having a KB value of 20–40 in which the reaction is carried out at a temperature in excess of 300° F. with the reaction product combined with the resin in the amount within the range of 0.2 to 15 percent by weight of the varnish component and with the monohydroxy compound being present in at least equal molecular proportions with the polyvalent metal alcohol during the formation of the reaction product.

3,531,303

ALKALINE EARTH ALUMINOSILICATE GLASS-CERAMIC ARTICLES

Dov Bahat, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed May 22, 1967, Ser. No. 640,364
Int. Cl. C04b *35/18*
U.S. Cl. 106—39 7 Claims

This invention relates to the manufacture of glass-ceramic articles in the alkaline earth aluminosilicate composition field wherein a hexagonal alkaline earth feldspar normally constitutes the predominant crystal phase, although occasionally the triclinic form can be obtained in a substantial amount, or even as the principal crystal phase. These articles possess very high refractoriness, rendering some of them capable of service temperatures between about 1600°–1700° C., and in some instances are highly translucent, making those articles eminently useful as candidates for high temperature lamp envelopes.

3,531,304

INFRARED TRANSPARENT GLASSES

Heinz Bromer, Kreis Wetzlar, and Norbert Meinert and Johann Spincic, Wetzlar, Germany, assignors to Ernst Leitz, G.m.b.H., Wetzlar (Lahn), Germany
Filed June 1, 1966, Ser. No. 554,469
Claims priority, application Germany, June 3, 1965, L 50,843
Int. Cl. C03c *3/12, 3/30*
U.S. Cl. 106—47 5 Claims

Glasses which are transparent to infrared radiation consist essentially of 63–98 parts by weight of at least two members selected from the oxides of W in a quantity up to 46 parts by weight, Mo in a quantity up to 60 parts by weight, Bi in a quantity up to 50 parts by weight or As in a quantity up to 55 parts by weight, the selection including at least one member of the sub-group consisting of molybdenum oxide or arsenic oxide. The glass also contains from 2–37 parts by weight of at least one member selected from the oxides of Mg, Ca, Sr, Ba or Pb. Such glasses may contain in addition up to 25 parts by weight of atimony oxide and up to 15 parts by weight of at least one member selected from the group consisting of the oxides of Zr, Th, Te, Ta, or Ni. The glasses are substantially free of phosphates.

3,531,305
METHOD OF MAKING INFRARED TRANSMITTING GERMANATE GLASSES

William H. Dumbaugh, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 6, 1967, Ser. No. 620,793
Int. Cl. C03c *3/00*
U.S. Cl. 106—47 **4 Claims**

Glasses having improved infrared transmitting properties based on a calcium oxide-aluminum oxide-germanium oxide system and a method of making such glasses having a very low water content to improve the transmission in the region of about 2.9 microns.

3,531,306
METHOD OF MAKING INFRARED TRANSMITTING SILICATE GLASSES

William H. Dumbaugh, Jr., Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,677
Int. Cl. C03c *3/04*
U.S. Cl. 106—52 **4 Claims**

A method of improving the infrared transmittance of a glass body consisting essentially as calculated from the batch on the oxide basis of 35–45 mole percent silica, 10–30 mole percent aluminum oxide and 30–40 mole percent calcium oxide. The method involves mixing the batch ingredients together with an effective amount of a chemically reactive, chlorine containing agent and melting the batch at the glass fusion temperatures in the presence of a dry atmosphere flowing directly over the glass melt.

3,531,307
CERAMIC ARTICLE AND METHOD FOR PRODUCING SAME

Jack Alvin Rubin, Glendale, William J. Denk, Burbank, and Jeremy Bleecher, Los Angeles, Calif., assignors to International Pipe and Ceramics Corporation, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,852
Int. Cl. C04b *35/18*
U.S. Cl. 106—62 **12 Claims**

A ceramic article which is resistant to thermal shock and has an extremely low coefficient of thermal expansion, said article consisting predominantly of a crystalline phase of alpha cordierite and a quantity of magnesium aluminum titanate distributed throughout. A method for producing said article by firing a proper mixture of SiO_2, Al_2O_3, MgO, and TiO_2.

3,531,308
TRANSPARENT SPINEL BODY

Rodney D. Bagley, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Oct. 9, 1967, Ser. No. 674,001
Int. Cl. C04b *35/44*
U.S. Cl. 106—62 **10 Claims**

Polycrystalline magnesium aluminate spinel bodies of improved transmittance of visible light and of infrared radiation are formed by sintering, in either a vacuum or a hydrogen atmosphere, a preformed green body of an intimate mixture of the spinel and a small but effective amount of magnesium oxide. Sintering is carried out at from about 1500° C., to about 1900° C., the preferred temperature range being from about 1550° C. to about 1850° C. Optimum results are obtained when the mol ratio of magnesium oxide to the spinel does not exceed about 0.04:1 although from less than about 0.04 up to about 0.35 mol of the oxide per mol of spinel may be employed.

3,531,309
COMPOSITIONS COMPRISING 1 - CYANO - 2,3-PHTHALOYL - 7,8 - BENZOPYRROCOLINES AND A CARRIER

Lester Weinberger, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
No Drawing. Original application Apr. 2, 1965, Ser. No. 445,235, now Patent No. 3,402,177, dated Sept. 17, 1968. Divided and this application Nov. 21, 1967, Ser. No. 709,511
Int. Cl. C08k *1/52;* **C08b** *17/26*
U.S. Cl. 106—193 **3 Claims**

A composition comprising yellow pigments of 1-cyano-2, 3-phthaloyl-7, 8-benzopyrrocolines and carriers.

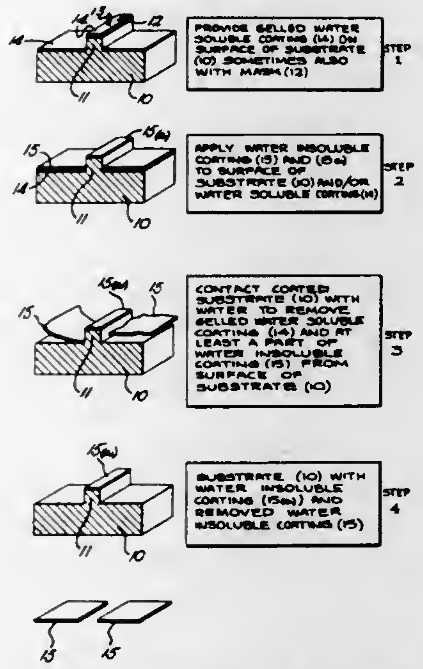
3,531,310
PRODUCTION OF IMPROVED METAL OXIDE PIGMENT

Neil C. Goodspeed and Russell R. May, Jr., Wadsworth, and Joseph Ross, Barberton, Ohio, assignors to PPG Industries, Inc., a corporation of Pennsylvania
Filed May 29, 1967, Ser. No. 641,844
Int. Cl. B02c *19/06;* **B03b** *7/00;* **C09c** *1/36*
U.S. Cl. 106—300 **10 Claims**

The enhancement of the pigmentary properties of inorganic pigments and particularly of pigmentary metal oxides, such as titanium dioxide, is discussed. The incorporation characteristics of such pigments is improved by fluid energy milling with steam, followed by a further fluid energy milling with a substantially liquid-free gas chemically inert to the pigment. The preparation of titanium dioxide is described.

3,531,311
METHOD OF APPLYING GELLED WATER SOLUBLE COATINGS AS PARTING AGENTS

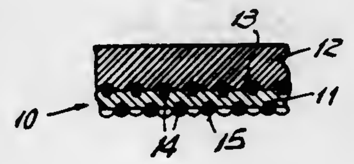
William L. Prior, Newark, Ohio, assignor to Apyrco, Inc., Newark, Ohio, a corporation of Ohio
Filed Oct. 31, 1967, Ser. No. 679,445
Int. Cl. B44d *1/52, 3/30*
U.S. Cl. 117—6 **9 Claims**


14
14
13
12
PROVIDE GELLED WATER SOLUBLE COATING (14) ON SURFACE OF SUBSTRATE (10) SOMETIMES ALSO WITH MASK (12)
STEP 1
11
10
15(a)
15
14
APPLY WATER INSOLUBLE COATING (15) AND (15a) TO SURFACE OF SUBSTRATE (10) AND/OR WATER SOLUBLE COATING (14)
STEP 2
11
10
15(a)
15
15
CONTACT COATED SUBSTRATE (10) WITH WATER TO REMOVE GELLED WATER SOLUBLE COATING (14) AND AT LEAST A PART OF WATER INSOLUBLE COATING (15) FROM SURFACE OF SUBSTRATE (10)
STEP 3
11
10
15(a)
SUBSTRATE (10) WITH WATER INSOLUBLE COATING (15a) AND REMOVED WATER INSOLUBLE COATING (15)
STEP 4
11
10
15
15

The method of application of aqueous solutions of water soluble materials to various substrates to produce gelled water soluble coatings for use as parting agents is described. Particularly described are gelled water soluble coating compositions used as parting agents for masking means or templates and the like. Both inorganic and organic gelled water soluble coating compositions are described. Gas forming agents admixed in the gelled water soluble coatings which facilitate the solubilization of the gelled water soluble coatings by forming a gas in contact with water at elevated temperatures are described. Improvements in high production coating or paint machines utilizing spray masks are also described.

3,531,312
METHOD FOR MAKING A PRESSURE-SENSITIVE TRANSFER ELEMENT AND THE RESULTING ARTICLE

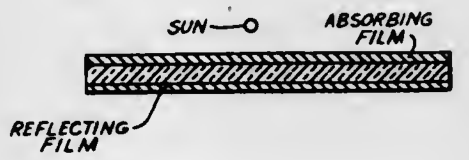
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co., Inc., Glen Cove, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 615,938, Feb. 14, 1967. This application Jan. 10, 1968, Ser. No. 696,930
Int. Cl. B32b *3/00;* **B41c** *1/06*
U.S. Cl. 117—7 **4 Claims**



Process for producing a novel pressure-sensitive transfer element such as a carbon paper or business machine ribbon. A liquid ink composition is applied to a film foundation containing filler to provide a rough finish or to a plastic intermediate layer on such a film foundation, and the ink composition is solidified to cause it to bond to the irregular surface of the film foundation or to the irregular surface of the undercoating which conforms to the surface of the film foundation, to form a pressure-sensitive transfer element.

3,531,313
RADIATION-REFLECTING MEDIUM

Harold F. Dates, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 404,557, Oct. 8, 1964, which is a continuation of application Ser. No. 156,385, Dec. 1, 1961. This application May 19, 1967, Ser. No. 643,013
Int. Cl. C03c *17/06;* **C02b** *1/10*
U.S. Cl. 117—33.3 **7 Claims**

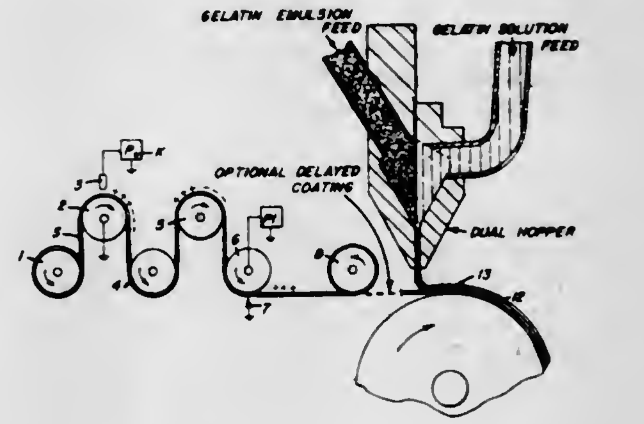


A window which has the ability to transmit substantial amounts of solar light energy while reflecting a substantial portion of the heat energy contained in solar radiation. The window is formed of a sheet of glass having thereon two films, each film comprising a mixture of the oxides of tin and antimony.

3,531,314
TREATMENT OF POLYMER SURFACES FOR COATING WITH PHOTOGRAPHIC LAYERS

William C. Kerr, Middlesex, and Thomas G. Hanley and Charles R. Witmer, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 13, 1968, Ser. No. 728,641
Int. Cl. B44d *1/12*
U.S. Cl. 117—34 **11 Claims**

Processes for coating photographic layers on polymer surfaces includes corona activation of the polymer surfaces and treatment of the activated surfaces in a DC field to at least reduce the irregularity of the resultant electrostatic charge. Apparatus for intermittent and continuous operation are provided.



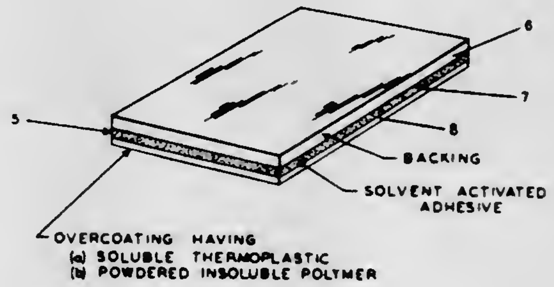
3,531,315
MECHANICAL PLATING

Michael Golben, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed July 17, 1967, Ser. No. 653,657
Int. Cl. C23c *17/00*
U.S. Cl. 117—50 **23 Claims**

Ferrous or other metal parts are acid-cleaned and mechanically metal-plated without any intervening rinsing step, using the acid employed for scale removal. Superior results are attained by providing means for dispersing and inhibiting corrosion of the plating metal particles. Cleaned ferrous metal parts are desirably flash-plated by displacement and/or galvanomechanical techniques prior to the mechanical plating step.

3,531,316
ANTI-BLOCKING OVERCOATING COMPOSITION FOR ADHESIVES

Richard S. Sternasty, Milwaukee, Wis., assignor to W. H. Brady Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 7, 1966, Ser. No. 592,351
Int. Cl. C09j *7/04;* **B44d** *1/14*
U.S. Cl. 117—76 **3 Claims**


6
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BACKING
SOLVENT ACTIVATED ADHESIVE
OVERCOATING HAVING
(a) SOLUBLE THERMOPLASTIC
(b) POWDERED INSOLUBLE POLYMER

Adhesive articles having adhesive that is activatable with an organic solvent system and which include, over the adhesive, an anti-block coating comprising (1) a thermoplastic film-former that is soluble in the solvent system which activates the adhesive, and (2) a powdered ingredient that is insoluble in said solvent system.

3,531,317
PROCESS FOR HARDENING POLYESTER MOULDING AND COATING MASSES BY ELECTRON IRRADIATION

Manfred Patheiger, Krefeld-Uerdingen, and Clemens Niehaus and Otto Bendszus, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 15, 1968, Ser. No. 744,672
Claims priority, application Germany, Aug. 3, 1967, F 53,131
Int. Cl. C08f *1/20, 1/24, 45/14*
U.S. Cl. 117—93.31 3 Claims

Customarily when preparing polyester moulding and coating masses or compositions, a small amount of wax or paraffin is added. When curing takes place, the wax ordinarily comes to the surface to form a layer to protect the composition from air inhibition. This effect is not realized when using electron beam curing. In the method of this invention, the wax containing composition is first irradiated with ultraviolet light, thus beginning the cure and allowing the wax to surface. After the protective wax layer is formed, the curing is finished using electron beam irradiation.

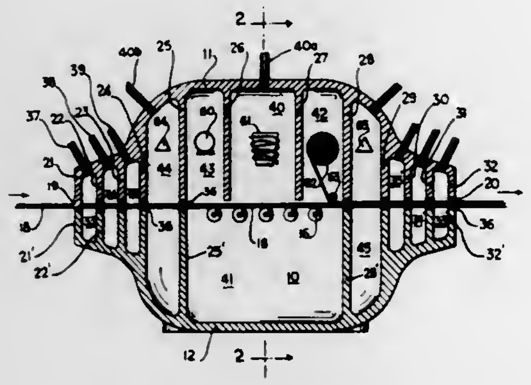
3,531,318
METHOD OF COATING A CRUCIBLE WITH SODIUM CHLORIDE

Robert A. Booth, Austintown, and Richard M. Scriver, North Jackson, Ohio, assignors to Reactive Metals, Inc., a corporation of Delaware
No Drawing. Filed Sept. 26, 1967, Ser. No. 670,774
Int. Cl. F27b *14/10*
U.S. Cl. 117—95 2 Claims

A method of coating the interior surface of tubular structures by disposing within the structure a mixture of a coating composition in a volatilizable vehicle. The mixture is confined within the structure and the structure is rotated and heated to volatilize the vehicle and deposit a uniform and continuous coating on the interior surface of the structure.

3,531,319
METHOD AND APPARATUS FOR THE COATING IN VACUO OF A MOVING RIBBON

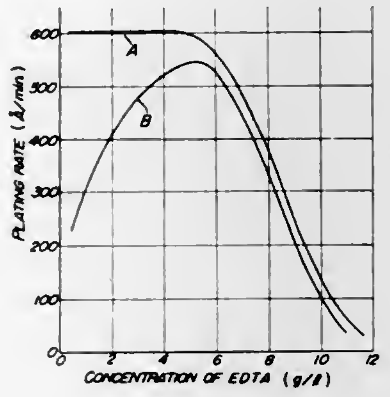
Salvatore Martorana, Milan, Italy, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Sept. 9, 1964, Ser. No. 395,254
Claims priority, application Italy, Sept. 16, 1963, 39,021/63
Int. Cl. C23c *11/00*
U.S. Cl. 117—107.1 12 Claims



Method and apparatus for the coating in vacuo of a ribbon of material such as glass, paper or plastic, moving continuously through the coating chamber. The coating chamber is constructed and arranged so that the ribbon itself acts as a septum dividing the chamber into upper and lower compartments. Discrete connections for exhaustion of air from the upper and lower compartments enable a higher absolute pressure in the lower one, so that the pressure differential acts per se to support that portion of the ribbon instantaneously traversing the chamber. Discrete sequential chambers in advance of, and downstream of the coating chamber are maintained respectively, at successively decreasing and increasing absolute pressures. The invention may be used to coat ribbons having a width greater than the effective width of the apparatus.

3,531,320
METHOD OF MAKING A SEMICONDUCTOR DEVICE

Hitoo Iwasa, Toyonaka-shi, Masami Yokozawa, Takatsuki-shi, Hideo Tai, Toyonaka-shi, and Iwao Teramoto, Ibaragi-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan
Filed Nov. 13, 1967, Ser. No. 682,084
Claims priority, application Japan, Nov. 17, 1966, 41/76,004
Int. Cl. C23c *3/00*
U.S. Cl. 117—227 1 Claim



A small amount of ethylene diamine tetra acetic acid salt (EDTA salt) is added to a nickel plating bath including nickel salt, sodium hypophosphite and ammonium chloride as principal component when setting electrodes to a semiconductor device comprising P-N junctions so as to obviate the difference in the nickel plating rate between the surfaces of a P-type region and an N-type region. This method has the advantages that substantially no difference in the plating rate between the surfaces of a P-type region and an N-type region appears even if the plating is done on the surfaces of the P-type and N-type regions of a semiconductor device simultaneously and that the chemically stable properties of said plating bath can be preserved for a long period.

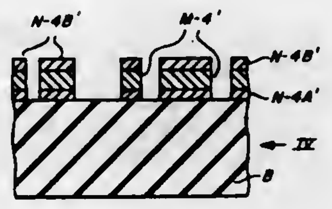
3,531,321
IMPREGNATING COILS, WINDINGS OR INSULATING MATERIALS WITH DIGLYCIDYL-O-PHTHALATE OF HIGH EPOXIDE CONTENT AND CURING

Hans Batzer, Arlesheim, Karl Metzger, Aesch, Ulrich Niklaus, Muenchenstein, and Alfred Heer, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Apr. 2, 1968, Ser. No. 718,245
Claims priority, application Switzerland, Apr. 10, 1967, 5,084/67; Aug. 4, 1967, 11,013/67
Int. Cl. H01b *3/40;* **B32b** *27/38;* **B44d** *1/36*
U.S. Cl. 117—232 1 Claim

The invention relates to diglycidyl-o-phthalate having an epoxide content of at least 5.5 epoxide equivalents/kg. It is used in curable compositions, especially impregnating compositions, conjointly with usual curing agents for epoxy resins.

3,531,322
PLATED SUPER-COAT AND ELECTROLYTE

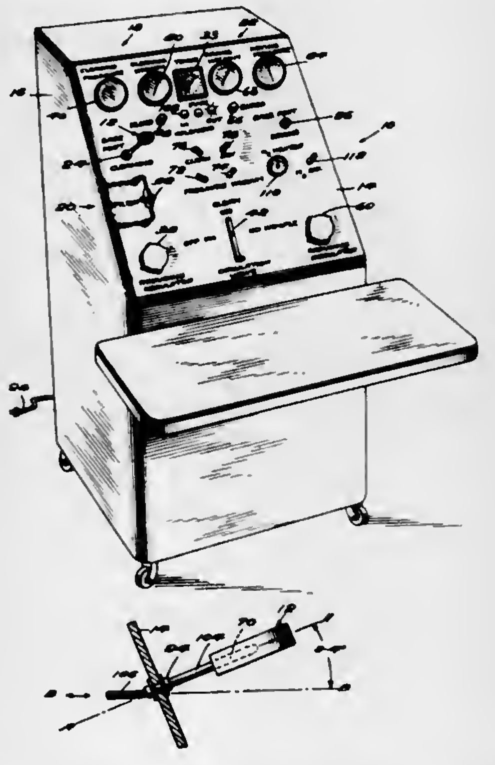
John H. Kefalas, Billerica, and Joseph A. Loycano, Bellingham, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,374
Int. Cl. G11b *5/72*
U.S. Cl. 117—236 9 Claims



Multi-layered magnetic record surfaces having a non-magnetic nickel super-coat, electroless plated on the magnetic layer for protection against wear and corrosion, especially with non-metal substrates; also allowing superposition of identical magnetic layers with proper magnetic separation and for providing an etchable substrate strike for safer plating of discrete patterns of magnetic films. Also, methods and solutions for electroless plating such non-magnetic films by simple, convenient modifications of a reliable magnetic electroless plating method.

3,531,323
CLEANING APPARATUS AND METHOD

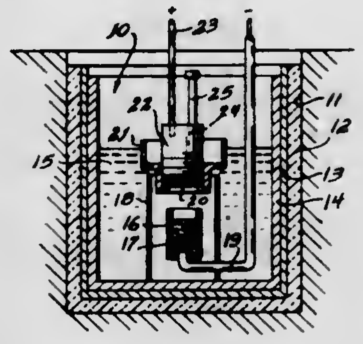
Richard D. Carpenter, Satellite Beach, Jerry L. Schad, Melbourne, Jess M. Delozier, Titusville, John H. Brown, Eau Gallie, and William G. Roy, Satellite Beach, Fla., assignors to Aerospace Tools, Inc., Satellite Beach, Fla., a corporation of Florida
Filed Mar. 15, 1967, Ser. No. 623,354
Int. Cl. B08b *7/02, 9/02*
U.S. Cl. 134—1 23 Claims



An apparatus and method for cleaning closed-end instruments and components such as Bourdon gages, which includes alternately pressure-surging a quantity of a cleaning solvent into the component which has been evacuated, and vacuum-withdrawing the cleaning solvent and contaminants dispersed therein. A filter is provided for sampling the cleaning solvent as it is being withdrawn for the purpose of determining the degree of cleanliness of the component. The cleaned component is dried by alternately pressure-surging a heated gas under pressure into the component and vacuum-withdrawing the gas from the component.

3,531,324
SECONDARY POWER-PRODUCING CELL

Albert K. Fischer, Western Springs, Victor A. Maroni, Riverside, Arthur D. Tevebaugh, Hinsdale, and Elton J. Cairns, Downers Grove, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 15, 1969, Ser. No. 841,828
Int. Cl. H01m *35/00*
U.S. Cl. 136—20 7 Claims



A secondary power-producing cell includes a molten metal anode consisting of a metal of low electronegativity such as lithium, a molten fused salt electrolyte, and a cathode consisting of a molten mixture of phosphorus and sulfur having a composition between that of P_4S_3 and P_4S_{10}.

3,531,325
PROCESS OF PREPARING SILVER OXIDE ELECTRODE

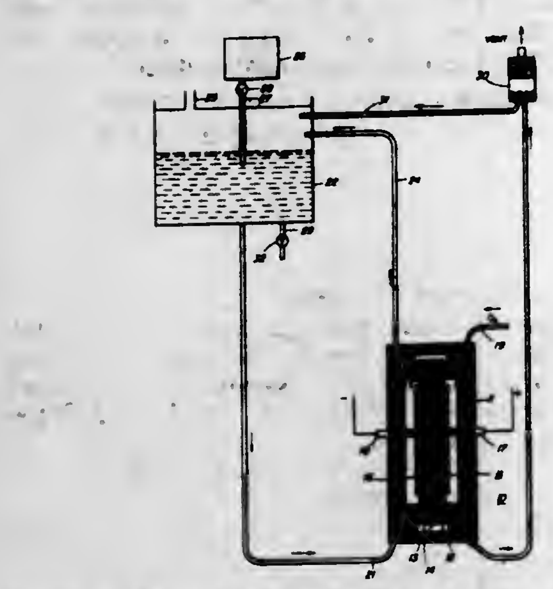
Walter Karl Lux, Kelkheim, and Tsvetko Chobanov, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany,
No Drawing. Filed June 2, 1969, Ser. No. 829,735
Claims priority, application Germany, June 4, 1968, 1,771,522
Int. Cl. H01m *35/02, 13/00*
U.S. Cl. 136—20 2 Claims

Process of preparing a silver oxide electrode suitable for use in alkaline primary and secondary cells comprising a metal carrier constituting a part of an electrode wherein a paste prepared from AgO and a cold flowing polymerizate is pulverized and applied to at least one side of the carrier.

3,531,326
METHOD OF GENERATING ELECTRICITY USING GAS TO RECYCLE LIQUID REACTANT

Anthony J. Stankavich, Syracuse, N.Y., assignor to Carrier Corporation, Carrier Parkway, N.Y., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,133
Int. Cl. H01m *11/00, 27/00*
U.S. Cl. 136—86 6 Claims

In a fuel cell utilizing as a reactant liquid fuel dissolved in an aqueous electrolyte, circulation of the reactant liquid to replace spent liquid with fresh liquid is effected without external pumping means by introducing to the liquid exhaust passage the insoluble gaseous product of the reaction to effect a difference apparent density between the fresh and spent liquids to cause gravity circulation.



3,531,327
METAL/AIR BATTERIES

Anthony M. Moos, New York, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 8, 1967, Ser. No. 614,684
Int. Cl. H01m *27/04, 29/04*
U.S. Cl. 136—86 **20 Claims**

A liquid impermeable package containing a consumable metal anode and electrolyte for replenishing a mechanically rechargeable cell is described. A plurality (the number needed to recharge a complete battery) of the packaged anodes are stored and shipped in a protected compartment. Exceptional shelf life for the packaged fresh anodes is realized.

3,531,328
LIGHT METAL-COPPER CHLORIDE ORGANIC ELECTROLYTE CELL

Per Bro, Andover, and Arabinda N. Dey, Needham, Mass., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Nov. 13, 1968, Ser. No. 775,487
Int. Cl. H01m *17/00*
U.S. Cl. 136—100 **14 Claims**

A light metal anode-copper chloride cathode cell employing an organic electrolyte containing a metallic salt is provided with improved cell separator means. The halides of lead, mercury, iron, cobalt, nickel, silver, gold, cadmium and other halides of copper are also cathode materials. Ion exchange membranes exhibiting compatibility with organic solvents and having high exchange capacity and high electrical conductivity have been determined to be suitable for use as cell separators and to have such physical and electrostatic characteristics as to provide improved cell utilization efficiency and extended shelf life.

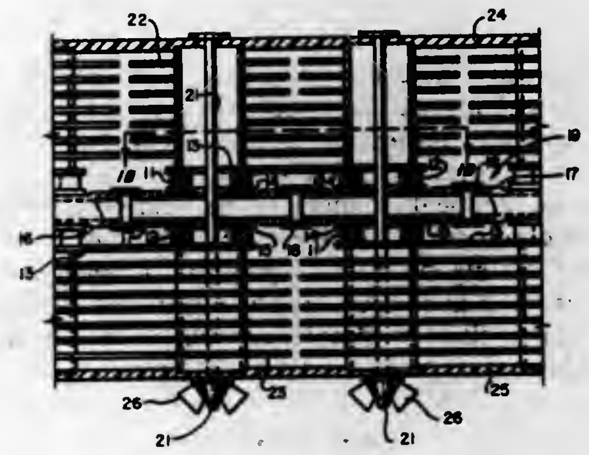
3,531,329
FUEL CELL ANODE COMPOSITION AND METHOD OF PREPARATION

Charles M. Selwitz, Pitcairn, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 129,084, Aug. 3, 1961. This application Nov. 7, 1966, Ser. No. 600,328
Int. Cl. H01m *13/00, 27/00*
U.S. Cl. 136—120 **18 Claims**

A fuel cell anode composition and method of preparation are proposed. The anode is prepared by depositing a Group VIII metal on the surfaces of a finely divided electrically conductive material, such as carbon, admixing the catalyzed carbon with a lyophobic plastic binder material such as polyethylene and pressure-forming the desired anode electrode to provide electrically conductive contact between the carbon particles.

3,531,330
THERMOELECTRIC ASSEMBLIES

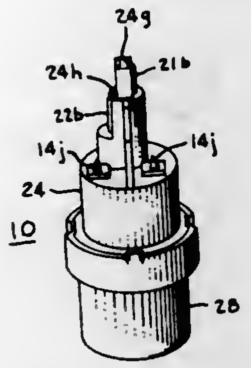
Thore M. Elfving, 433 Fairfax Ave.,
San Mateo, Calif. 94402
Filed Oct. 27, 1966, Ser. No. 590,070
Int. Cl. H01v *1/30*
U.S. Cl. 136—203 **15 Claims**



A thermoelectric assembly including couples or subcouples each having a separate heat exchanger to air in direct electrical and heat conductive contact with the corresponding junction bridge and means forcing the heat exchanger against the junction bridge to provide good electrical and heat conductive contact between the parts of the assembly.

3,531,331
EXPENDABLE IMMERSION TEMPERATURE RESPONSIVE UNIT AND HEAT-SENSING ASSEMBLY THEREFOR

Roy E. Davies, Roslyn, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1966, Ser. No. 529,533
Int. Cl. H01v *1/04, 1/10*
U.S. Cl. 136—234 **7 Claims**



An improved heat-sensing assembly which includes a support for the heat-sensing element and its electrical contacts and preferably is provided as a sub-assembly during the manufacture of the expendable immersion temperature responsive units.

3,531,332
PROCESS FOR TREATING ALUMINUM BASE ARTICLES

John A. Scott, North Haven, and William H. Anthony, Guilford, Conn., assignors to Olin Corporation, a corporation of Virginia
Continuation-in-part of application Ser. No. 448,288, Apr. 15, 1965. This application Sept. 24, 1968, Ser. No. 761,933
Int. Cl. C23f *7/06*
U.S. Cl. 148—6.27 **14 Claims**

The process which comprises contacting aluminum for from 5 seconds to less than 15 seconds with a solution consisting essentially of purified water and from 0.001 to 0.3% by weight of a substance selected from the group consisting of triethanolamine, diethylenetriamine and hydrazine which maintain an aqueous solution pH in the range 7 to 11, said solution being at a temperature of 85° C. to boiling and a pH of 7 to 11, and then applying an organic coating to the so-treated aluminum, the treatment resulting in said coating having improved adherence to said aluminum.

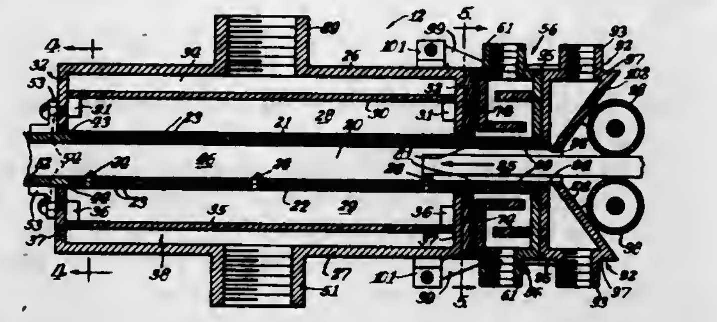
3,531,333
METHOD OF HEAT TREATING STEEL STRIP OR THE LIKE

Robert R. Hill, Westlake, Ohio, assignor to Wilson, Lee Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed June 24, 1968, Ser. No. 739,180
Int. Cl. C21d *1/26*
U.S. Cl. 148—16.7 **4 Claims**

Coils of strip steel are subjected to heat treatment in a protective atmosphere of hydrogen and nitrogen. During the heat treatment, the percentage of hydrocarbon gas, produced from oil on the surface of the strip, in the protective atmosphere is determined. The composition of the protective atmosphere is controlled during treatment so that the percentage of the hydrocarbon gas relative to the percentage of hydrogen in the protective atmosphere is maintained below that at which carbon deposition will occur.

3,531,334
QUENCH SYSTEM

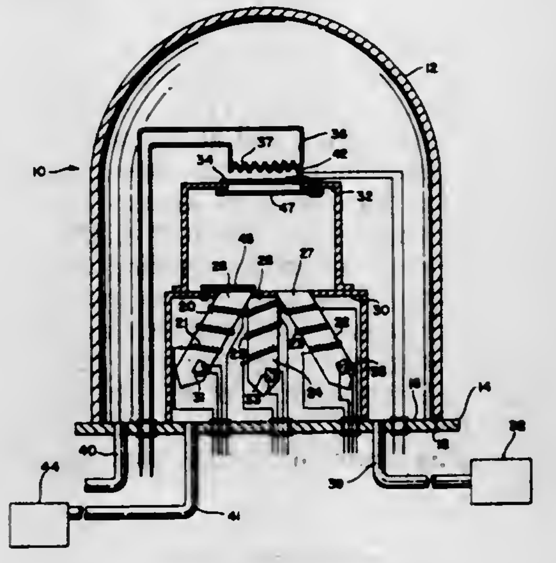
Carlton F. Schrader, Chesterton, and Harold L. Taylor, Hammond, Ind., and William E. Heltmann, Dolton, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,516
Int. Cl. C21d *1/00*
U.S. Cl. 148—153 **7 Claims**



A heated metal work-piece, particularly a metal plate, is quenched by passing it through an elongated restricted quench channel filled with quench liquid flowing at high velocity. Quench liquid is supplied at the channel inlet in the form of submerged liquid sheets directed angularly against opposite sides of the work-piece. Sealing liquid is provided upstream from the liquid sheets to prevent air aspiration into the channel. Submerged jets of quench liquid may be introduced into the channel downstream from the liquid sheets. Sealing rolls may be provided adjacent the channel inlet for sealing engagement with the work-piece during entry into the channel.

3,531,335
METHOD OF PREPARING FILMS OF CONTROLLED RESISTIVITY

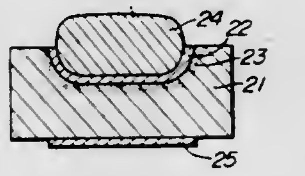
Norman E. Heyerdahl, Cleveland, and Donald J. Harvey, Findlay, Ohio, assignors, by mesne assignments, to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware
Filed May 9, 1966, Ser. No. 548,781
Int. Cl. H01l *7/36*
U.S. Cl. 148—174 **18 Claims**



This invention comprises a method of preparing a compound semi-conductor film having controlled resistivity, involving the steps of supporting a substrate, such as glass, molybdenum, etc., in an atmosphere-controlled chamber, simultaneously vaporizing in said chamber a Periodic Group VI material such as sulfur, selenium or tellurium, and a Periodic Group II material such as zinc, cadmium or mercury, while said substrate is heated to a temperature between 150° C. and 500° C., allowing said vaporized materials to form a compound film on an exposed surface of said substrate, and after formation of said compound film discontinuing vaporization of the Group VI material and allowing the film to cool while still being bombarded by vapor of said Group II material. The resultant films have low resistivity and serve as an efficient photovoltaic cell having a low ratio weight to external generated electrical energy.

3,531,336
METHOD OF MAKING A SWITCHING ELEMENT

Masaru Tanaka, Toyonaka-shi, Akio Yamashita, Ikeda-shi, and Takashi Fujita, Toyonaka-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Aug. 10, 1967, Ser. No. 659,752
Claims priority, application Japan, Dec. 13, 1966, 41/82,592; Dec. 29, 1966, 42/1,165; Mar. 13, 1967, 42/16,190
Int. Cl. H01l *7/46*
U.S. Cl. 148—178 **6 Claims**



Semiconductor switching elements having negative resistance characteristics being characterized in that a region having a high concentration of deep-level impurity is formed in the vicinity of the electrical junction surface of the semiconductor, which has hitherto been considered to be difficult.

3,531,337
HARD ALUMINUM ALLOY
Ichiro Kawakatsu, 31 Yayoicho, Itabashi-ku, Tokyo, Japan
No Drawing. Filed Dec. 26, 1967, Ser. No. 693,100
Claims priority, application Japan, Dec. 26, 1966, 41/84,560
Int. Cl. C22c *21/00*
U.S. Cl. 148—32.5 **4 Claims**

An aluminum alloy having high hardness and abrasion resistance elevated by subjecting an alloy containing 2.6–7.8% zinc, and 0.6–3.8% magnesium as principal additive elements to be the principal aging hardeners, in addition thereto, 0.2–1.2% of each of iron, nickel and cobalt of transition metal of Group IV, 0.1–1.2% manganese, 0.5% or below chromium, and at the same time containing 0.05–1.2% zirconium (in some cases, replaced in part with titanium or hafnium) of Group IV, 0.05–0.3% boron which is a metalloid, and 0.05–0.85% silicon and the remainder of aluminum to nitriding treatment while the alloy is molten state, and then to the solution treatment at a temperature 450°–490° C. as being cast or after worked, thereafter applying the aging hardening to the alloy at a temperature of 85° to 130° C. and in some cases, before the hardness reaches the maximum point in the aging treatment, further applying plastic work to the alloy.

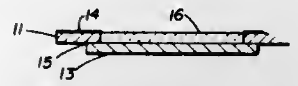
3,531,338
PROPELLANT CONTAINING GUANIDINE PERCHLORATE-LITHIUM PERCHLORATE EUTECTIC IN HOMOGENEOUS PHASE WITH POLYMERIC BINDER
Joseph J. Byrne, Marblehead, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 25, 1964, Ser. No. 370,757
Int. Cl. C06d *5/00*
U.S. Cl. 149—19 **6 Claims**

1. A propellant composition comprising polymer produced by the polymerization of monomers having a functional group including a donor selected from the group consisting of oxygen, sulfur, and nitrogen and an oxidant amount of an intimate combination of guanidine perchlorate and lithium perchlorate selected from the class consisting of the 4:3 ratio guanidine perchlorate/lithium perchlorate complex salt, the 70/30 weight ratio guanidine perchlorate/lithium perchlorate eutectic melting at about 126.5° C. and the 57.5/42.5 weight ratio guanidine perchlorate/lithium perchlorate eutectic melting at about 110° C., said composition including at least sufficient oxidant to make combustion of said system self-supporting.

3,531,339
PROPELLANT COMPOSITIONS COMPRISING SOLID SOLUTION OF LITHIUM PERCHLORATE IN A POLYUREA BINDER
Lucius G. Gilman, Wakefield, and Robert I. Lait, Swampscott, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 2, 1962, Ser. No. 207,470
Int. Cl. C06d *5/00*
U.S. Cl. 149—83 **11 Claims**

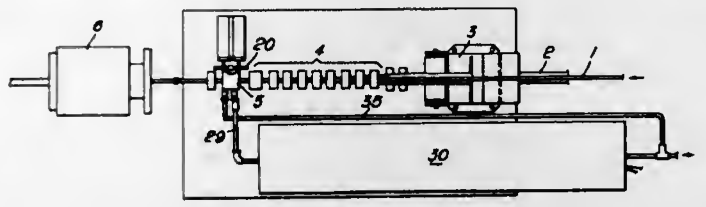
1. The method of forming a polymeric solid solution of lithium perchlorate wherein lithium perchlorate and the polymer are in the same homogeneous phase which comprises polymerizing an active hydrogen difunctional amino monomer, selected from the class consisting of diamines and amino alcohols, with a diisocyanate, in the presence of an oxidant amount of dissolved lithium perchlorate.

3,531,340
METHOD FOR MOUNTING THIN BERYLLIUM WINDOWS
Rointan F. Bunshah, Livermore, and Robert S. Juntz, Hayward, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 24, 1968, Ser. No. 786,580
Int. Cl. C23f *1/02*
U.S. Cl. 156—8 **7 Claims**



A method for mounting thin metal windows such as beryllium foils. Beryllium is deposited by plating or evaporating techniques to the required thickness onto a copper sheet. The sheet is then masked along its edges with an acid-resistant material, and the sheet is etched in nitric acid which eats away the copper, except where it is masked, to provide a beryllium foil mounted in a copper frame. A variation of the method is accomplished by first depositing, such as by plating, on a Monel sheet, silver or copper, then plating with beryllium, masking, and etching away the undesired copper or silver and the Monel, to provide a beryllium foil mounted in a Monel frame. The frame, copper or Monel, may then be brazed or soldered to a desired supporting structure for use such as in X-ray or gamma-ray counters.

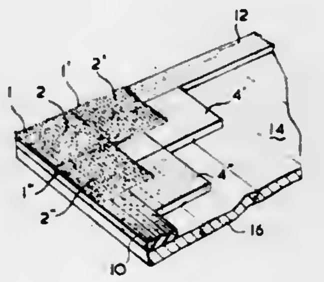
3,531,341
ELECTRIC CABLES
Anthony McNamee, Prescot, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed Sept. 20, 1968, Ser. No. 761,231
Claims priority, application Great Britain, Sept. 22, 1967, 43,307/67
Int. Cl. H01b *13/10, 13/24*
U.S. Cl. 156—54 **13 Claims**



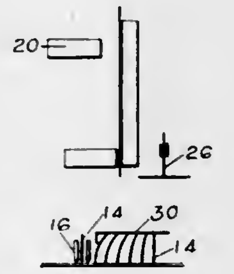
In a method of forming about a cable core a tubular conductor by drawing a thermoplastics coated metal foil tape and the cable core through a tape-folding device which bends the tape transversely to its length to embrace the cable core, a bond between a longitudinally extending strip of the folded tape and an underlying surface is obtained by simultaneously heating and pressing together the overlying strip and underlying surface by maintaining a film of a hot gaseous fluid under superatmospheric pressure in contact with at least that part of the outer surface of the strip of the coated metal foil tape that overlies and makes contact with the underlying surface. The film of hot gaseous fluid is maintained for a period of time sufficient for the thermoplastic material between the strip and the underlying surface to become sufficiently softened to enable the required bond to be effected.

3,531,342
METHOD OF COVERING A BASE SURFACE WITH DECORATIVE CARPET TILES
Alexander Dorn, 489 Rushton Road, Toronto 10, Ontario, Canada
Filed Sept. 25, 1967, Ser. No. 670,293
Int. Cl. E04f *13/16*
U.S. Cl. 156—71 **3 Claims**

A floor surface is carpeted using individual carpet tiles which are secured to the floor in edge abutment with each other. Each such tile includes a rectangular backing layer of underpadding material and a rectangular upper layer of carpet material, the upper layer of each such tile having the same dimensions as the backing layer but being bonded to the latter so as to be offset therefrom with two adjacent edges of the upper layer being parallel to but outwardly offset with respect to corresponding adjacent edges of the backing layer to provide an outwardly offset upper layer portion. The tiles are secured to the floor surface by their backing layers so that the outwardly offset upper layer portions overlie the exposed portions of the backing layers of adjacent tiles. Elongated strips of backing layer material are used along two mutually perpendicular edges of the floor surface to support the offset portions of the outermost tiles.



3,531,343
MANUFACTURE OF PILE FABRICS
Pierre Couquet, Domaine-de-Mazerettes, pres Mirepoix, France, assignor to Debron Carpets Limited, Kidderminster, Worcestershire, England
Filed May 22, 1968, Ser. No. 745,646
Claims priority, application Great Britain, May 23, 1967, 23,991/67
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. D05c *15/00*
U.S. Cl. 156—72 **1 Claim**

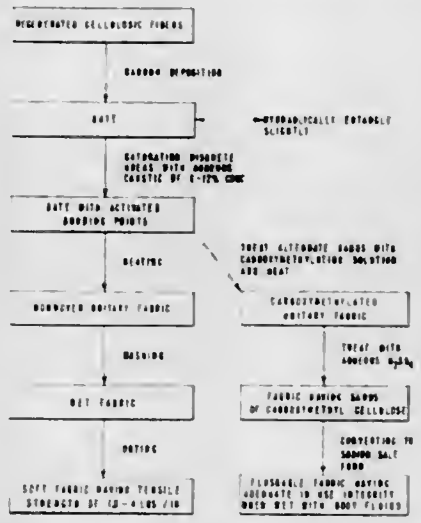


This invention relates to a process for the production of a pile fabric by implanting a series of rows of upright tufts into a layer of hardenable material in which the adjacent previously implanted row of tufts is pulled aside during implanting of a new row of tufts so as to allow the rows of tufts to be implanted relatively closely without disturbing the already implanted rows.

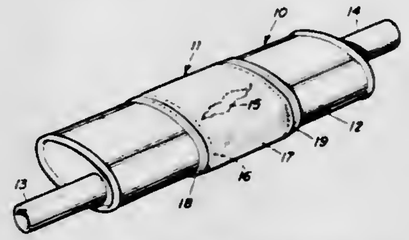
3,531,344
PROCESS FOR MAKING NONWOVEN FABRIC OF REGENERATED CELLULOSIC FIBERS
Edwin V. Beebe, Newark, Del., and John A. Lynch, Jr., Chadds Ford, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 14, 1968, Ser. No. 705,404
Int. Cl. B32b *31/14*
U.S. Cl. 156—83 **7 Claims**

Nonwoven fabrics of regenerated cellulose fibers are made by (a) treating a batt of the fibers with aqueous caustic in numerous small discrete areas, (b) heating the batt, (c) washing the fabric and drying.

Also a water-disposable nonwoven fabric is made by treating the batt after step (a) with an alkaline, cellulose-etherifying reagent to form a grid of intersecting bands enclosing areas of untreated fibers, said areas having a maximum dimension of less than 2 inches, heating to bond the batt and etherify the grid, removing excess reagents and converting the cellulose ether portions to a highly swellable form.

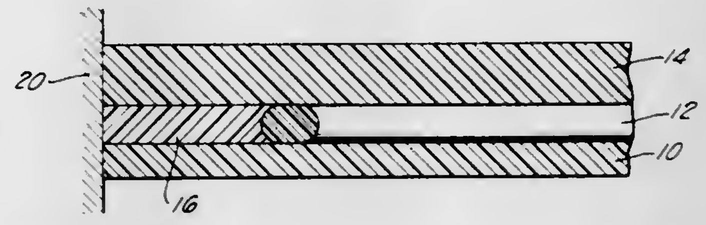


3,531,345
REPAIR OF AUTOMOTIVE EXHAUST SYSTEM
Theodore M. Torosian, 190 Russell St., Worcester, Mass. 01609
Continuation of application Ser. No. 633,657, Apr. 3, 1967, which is a continuation of application Ser. No. 394,671, Sept. 8, 1964. This application Nov. 8, 1968, Ser. No. 774,542
Int. Cl. B32b *7/00, 35/00;* **F16l** *55/16*
U.S. Cl. 156—94 **2 Claims**



This invention relates to the repair of an automotive exhaust system and, more particularly, to a method for reconstructing the muffler of an automobile when corrosion has formed a leak which renders it ineffective.

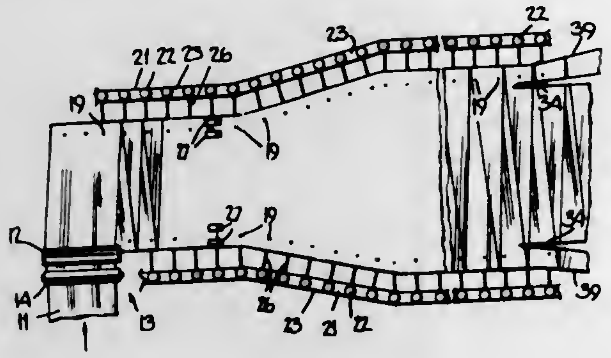
3,531,346
METHOD OF FABRICATING A CAST SPACER-BLOCK
John E. Jameson, Buena Park, Calif., assignor to Swedlow, Inc., Garden Grove, Calif., a corporation of California
Filed May 15, 1967, Ser. No. 638,336
Int. Cl. B32b *17/00*
U.S. Cl. 156—107 **7 Claims**



Method of joining a plurality of transparent sheets around the viewing area with a cast-in-place spacer block which comprises placing a flexible compressible seal between the layers to be joined to maintain a sealed space therebetween, the pattern of the seal corresponding to the periphery of the viewing area desired, establishing the desired spacing between said sheets by the compression of the seal, placing a curable liquid resin composition in the area between the seal and the edges of the sheets, and permitting the resin to cure in place to provide a strong adherent bond of the resin to the sheets.

3,531,347
METHOD AND APPARATUS FOR BONDING BATTINGS OF CROSS-LAPPED WEBS OF CONTINUOUS FILAMENTS

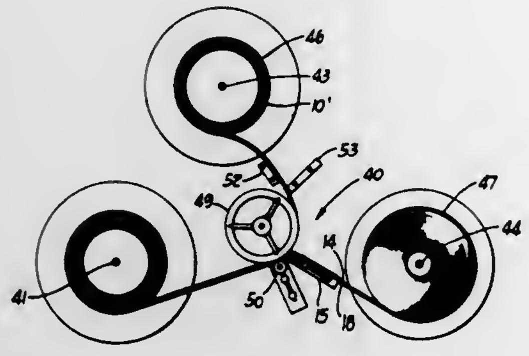
Robert L. Stultz, Jr., Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 574,970
Int. Cl. B32b *31/12*
U.S. Cl. 156—164 **10 Claims**



Process and apparatus for treating cross-lapped batting by holding the batting in a taut condition utilizing edge engaging means, spraying bonding agent onto the batting while precluding deposition of the bonding agent onto the edge engaging means and adjacent portions of the batting.

3,531,348
METHOD OF MAKING PROTECTIVE AND DECORATIVE MOLDING

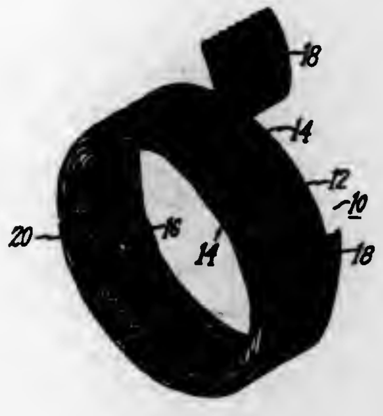
Alex Kunevicius, Independence, Ohio, assignor to Custom Trim Products, Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 601,473, Dec. 13, 1966, now Patent No. 3,439,950, which is a continuation-in-part of application Ser. No. 477,273, Aug. 4, 1965. This application Aug. 6, 1968, Ser. No. 750,691
Int. Cl. B32b *31/08;* **B29c** *27/10*
U.S. Cl. 156—164 **5 Claims**



Method of making a self-adhering protective and decorative molding for motor vehicles and other purposes in which a flexible, resilient body member is prestressed and bowed; method for making such a molding in which the body member is preconditioned by preheating prior to application of a cushion member thereto; method and means for adhering the protected cushion member of such a molding to the body member by uniting the same at a predetermined angle to preserve the adhesive protective and method of simultaneous formation of the body member in such a molding and the decorative effect on an outer surface thereof.

3,531,349
CROSS-WOUND OPEN MESH COIL AND METHOD OF MAKING

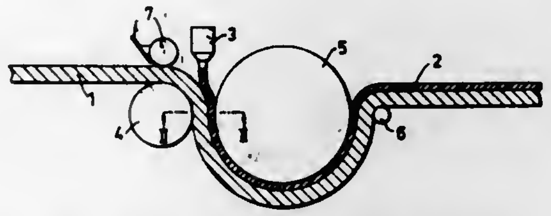
Richard E. Whipple, Rochester, N.H., assignor to General Electric Company, a corporation of New York
Original application Nov. 1, 1965, Ser. No. 505,824, now Patent No. 3,396,356, dated Aug. 6, 1968. Divided and this application Feb. 23, 1968, Ser. No. 730,965
Int. Cl. B65h *81/00*
U.S. Cl. 156—173 **3 Claims**



A novel cross-wound, open mesh coil and method of winding such coil. The open mesh coil is cross-wound on a flanged arbor using a thin-wall, hollow needle which presses the wire against the flange with a slight overthrow to help position the wire before the next traverse of the wire across the arbor. The cross-over points within the coil are bonded together by an adhesive overcoat on the wire, which is cured. An open mesh resin material is applied to the inner and outer surfaces of the coil and bonded thereto by curing. A specific machine for winding the coil is also disclosed.

3,531,350
METHOD APPLICABLE TO A LAMINATE OF A CARRIER MATERIAL AND A COATING MATERIAL FOR PRODUCING A WEB HAVING A STRIP OF THE COATING MATERIAL PROJECTING BEYOND THE CARRIER MATERIAL BY PREVENTING ADHESION ON THE CARRIER MATERIAL

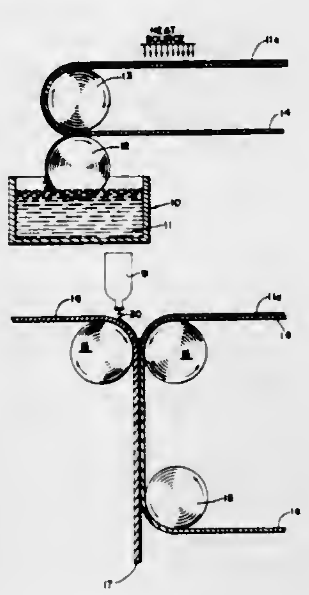
Hans Anders Rausing, Gad Anders Rausing, Torsten Lennartson Lindh, and Karl-Erik Ekström, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company
Filed Mar. 31, 1966, Ser. No. 539,204
Claims priority, application Sweden, Apr. 15, 1965, 5,003/65
Int. Cl. B29b *1/00*
U.S. Cl. 156—244 **6 Claims**



Method to provide a web material having a carrier material and a coating material thereon which is wider than the carrier material. The carrier material is coated and then a portion of the carrier material is cut away leaving a portion of the coated material exposed.

3,531,351
PREPARATION OF LIGHT-POLARIZING FILM

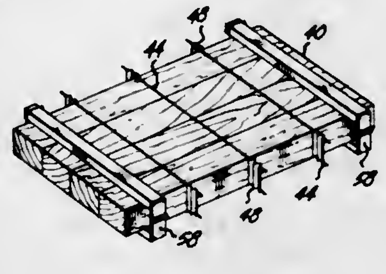
Harold O. Buzzell, Wollaston, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 1, 1967, Ser. No. 634,980
Int. Cl. B32b *31/08*
U.S. Cl. 156—249 **9 Claims**



A composite light-polarizing material is fabricated by casting an aqueous solution of a dyeable material capable of forming a molecularly orientable film onto an optically smooth surface, laminating a film of polyvinyl alcohol thereto, removing the resultant composite structure from the optically smooth surface, molecularly orienting the structure, and, during the fabrication of said light-polarizing material, contacting the dyeable material with a dye which, upon orientation. renders said oriented film light-polarizing.

3,531,352
METHOD OF MANUFACTURING GLUED WOOD BOARDS AND PANELS FROM NARROWER PIECES USING TEMPORARY TENSIONED WIRES

Minoru Fujii, 5601 52nd Ave. S., Seattle, Wash. 98118
Filed Oct. 5, 1966, Ser. No. 584,464
Int. Cl. B27m *3/00*
U.S. Cl. 156—304 **11 Claims**

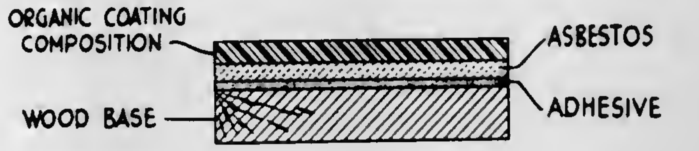


1. A method for producing edge glued and glued up wood panels and boards derived from narrower wood strips and boards, comprising:

(a) applying adhesive to bond surfaces of narrower wood strips that are to be joined to others;
(b) crowding the glue treated narrower wood strips into wider board widths of predetermined sizes using antibuckling forces as necessary;
(c) passing wire-like tension members across the crowded glue treated narrower wood strips at selected locations;
(d) securing the wire-like tension members in tension across the crowded glue treated narrower wood strips by holding them securely in retaining means;
(e) curing the glue of the resulting wider board under specified conditions; and
(f) removing the tensioned wires and their retaining means after sufficient curing of glue.

3,531,353
METHOD OF COATING WOOD

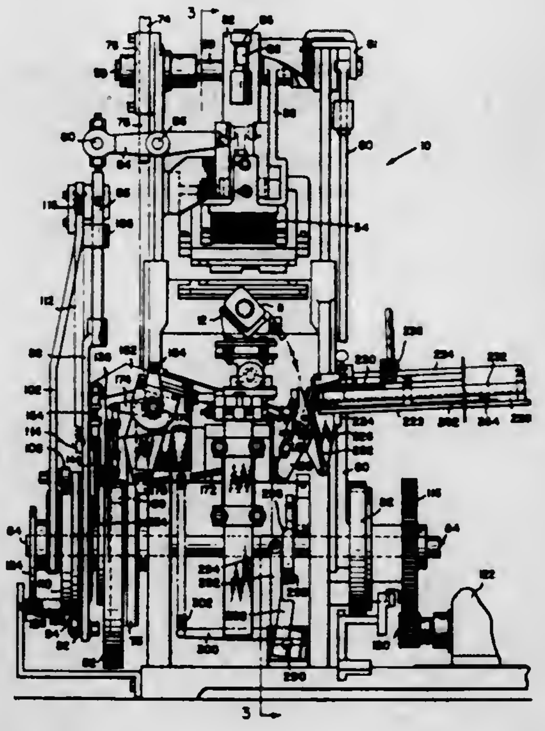
Rowland S. Hartzell, Gibsonia, and Gene Gerek, Cheswick, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1966, Ser. No. 561,625
Int. Cl. B32b *19/04, 21/08, 27/12*
U.S. Cl. 156—327 **11 Claims**



Durable, composite wood articles comprise a wood material base and bonded to an exposed surface thereof a layer of asbestos having thereon an organic resin finish. The use of asbestos sheet material in this manner permits the coating of wood articles with heat-curing or heat-fusing resins which require baking at temperatures which are sufficient to cause deterioration of the wood material.

3,531,354
DEVICE FOR INSERTING AN ARTICLE BETWEEN A CONTAINER AND A LABEL

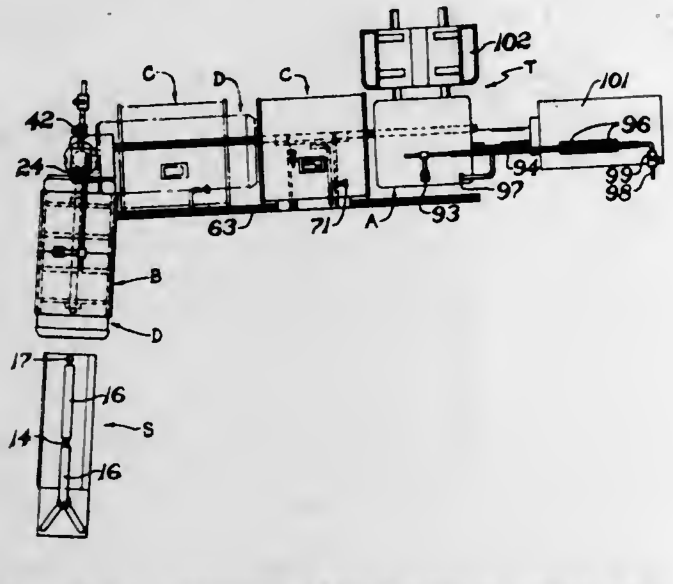
Paul C. Hetzinger, Ardsley, Pa., and Alten E. Whitecar, Westville, N.J., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1965, Ser. No. 495,652
Int. Cl. B65c *9/08*
U.S. Cl. 156—383 **5 Claims**



A labeling machine having a mechanism for inserting an article between a container and a label which is applied to the container, which mechanism comprises a reciprocating means which picks up the article from a supply thereof, moves it to a position close to the surface of the container and holds it in this position as the label is applied to the container, whereby the article is inserted and retained between the label and the container.

3,531,355
TIRE BAND APPLYING APPARATUS

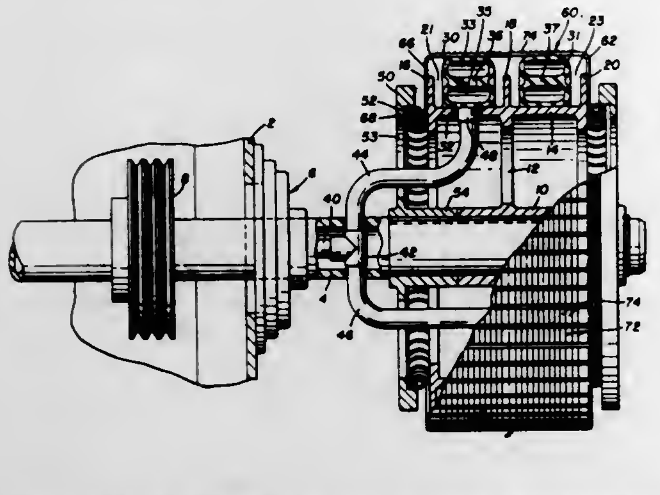
William J. Riddle, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Nov. 2, 1966, Ser. No. 591,582
Int. Cl. B29h *17/20*
U.S. Cl. 156—394 **8 Claims**



An inflatable member having control means for controlling the uniform radial expansion of the inflatable member to facilitate the transferring of an endless band of rubberized fabric material to a cylindrical carrier shell after which such shell is telescoped over a tire building drum for depositing such band onto such drum; and wherein an inflatable member through control means is adapted to be expanded in progressively stepped diameters to facilitate the support of the outboard end portions of plies as the diameter of the tire carcass on the tire building drum is increased to provide adequate support for the respective side edge portions of the plies as they are positioned and stitched into a smooth band during the tire carcass construction.

3,531,356
EXPANSIBLE DRUM FOR THE ASSEMBLY OF CERTAIN INEXTENSIBLE TIRE COMPONENTS

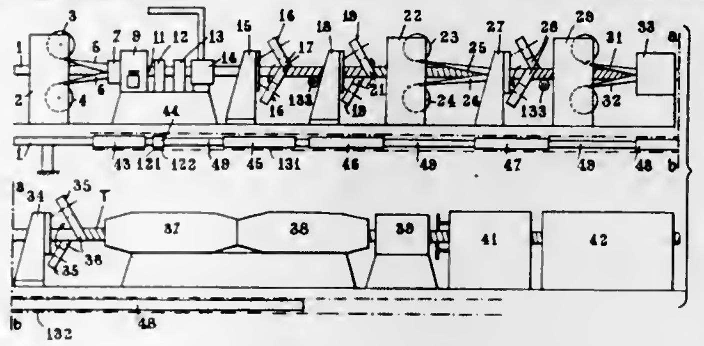
Virgil E. Henley, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio
Filed Nov. 22, 1967, Ser. No. 685,202
Int. Cl. B29h *17/16*
U.S. Cl. 156—416 **6 Claims**



Cylindrical drums used in tire building operations often have radially expansible outer surfaces which include thin, radially movable, metal segments with flat outer faces. The holding characteristics of these metal segments can be improved by securing a thin elastomeric strip to each along the outer face thereof. Each elastomeric strip is preferably provided with a plurality of raised projections which serve as guides for placement of tire components on the drum and to further enhance the holding or gripping characteristics of the segments.

3,531,357
MACHINES FOR THE CONTINUOUS PRODUCTION OF REINFORCED PLASTIC TUBES

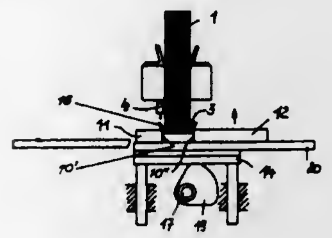
Claude Heckly, 134 Boulevard Bineau, 92 Neuilly-sur-Seine, France
Filed Nov. 24, 1967, Ser. No. 685,436
Claims priority, application France, Nov. 23, 1966, 84,654
Int. Cl. B31c *3/00, 11/04, 13/00*
U.S. Cl. 156—425 **34 Claims**



This machine for the continuous manufacture of a reinforced plastic tube comprising a longitudinal mandrel extending along the greater part of the longitudinal dimension of the machine, is characterized in that said mandrel comprises a plurality of sections of a diameter corresponding substantially to the inner diameter of the tube being manufactured, said sections being interconnected by tubular members of smaller diameter, and that a section of relatively large diameter of said mandrel is provided at each reinforcing tape coil-winding station, at said impregnating means and along the greater part of the longitudinal dimension of the heating oven, and that furthermore annular seals are provided on some of said mandrel sections.

3,531,358
APPARATUS FOR THE BINDING OF STACKED SHEETS

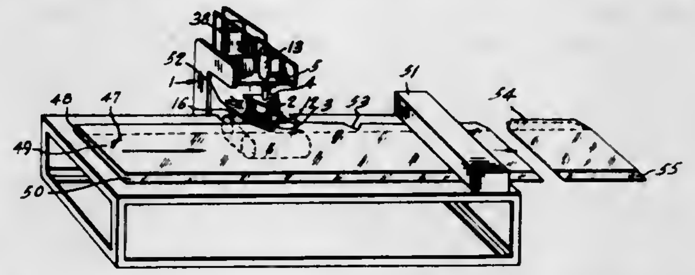
Heinz Rost and Otto Buchmann, Thansau, near Rosenheim, and Karl-Heinz Hesselmann, Rosenheim, Germany, and Wilhelm Hesselmann, deceased, late of Rosenheim, Germany, by Charlotte Hesselmann, Harald Hesselmann, Karl-Heinz Hesselmann, Peter Hesselmann, Theodor Hesselmann, Hans-Jürgen Hesselmann, and Herbert Hesselmann, heirs, Rosenheim, Germany, assignors to Planatolwerk W. Hesselmann Chemische- und Maschinenfabrik für Klebetechnik, Rosenheim-Thansau, Upper Bavaria, Germany, a corporation of Germany
Filed Apr. 25, 1967, Ser. No. 640,769
Claims priority, application Germany, Apr. 26, 1966, P 39,289
Int. Cl. B29c *24/00*
U.S. Cl. 156—475 **12 Claims**



Apparatus for the adhesive binding of stacks of sheets or leaves whereby the stack is jogged with an edge against a supporting plate and the plate is heated and withdrawn from the stack which is held in a clamp while a foil of thermally flowable solid adhesive is placed between the hot plate and the juxtaposed edge of the stack in the form of a slip fold, the latter being then bonded to the edge and around the cover and backing sheets of the stack between split sections of the heated plate. The slip fold comprises a reinforcing web of paper, gauze cellulose hydrate as a backing layer coated by the thermally sensitive adhesive or a reinforcing web embedded therein.

3,531,359
APPARATUS FOR HEAT-SEALING OF PLASTIC MATERIALS

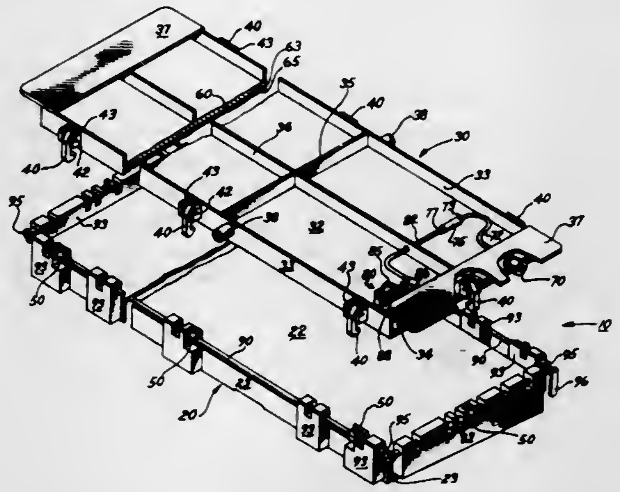
Elwyn David Jones, Beloeil, Quebec, and David James Parker, Otterburn Park, Quebec, Canada, assignors to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Mar. 27, 1967, Ser. No. 626,296
Int. Cl. B32b *31/08, 31/20*
U.S. Cl. 156—515 **10 Claims**



A hot blade sealer for concurrent heat-sealing and cutting of superimposed layers of plastic film having a movable resilient heat-resistant film support which is moved after each sealing operation so that the position of contact of the sealer blade with the film support is continually being changed. The use of a movable resilient film support avoids fouling of the support by melted plastic during continuous operation of the sealer.

3,531,360
FIXTURE FOR MACHINE PROCESSING A LAMINATED PRODUCT

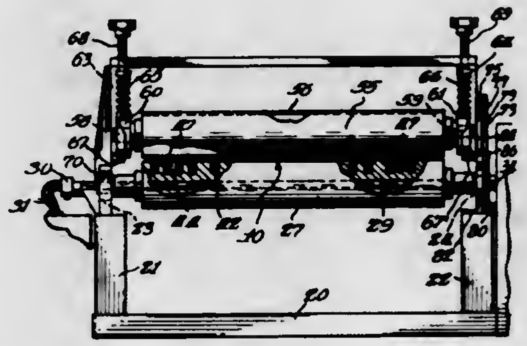
Donald E. Cantrill, East Moline, Ill., assignor, by mesne assignments, to Home Comfort Products Co., Princeville, Ill., a corporation of Illinois
Filed Nov. 29, 1967, Ser. No. 686,674
Int. Cl. B32b *31/20*
U.S. Cl. 156—580 **13 Claims**



A fixture having a pneumatic chamber with pressure plate for clamping together a laminated product while traveling through a processing machine therefor. The lid and base of the fixture are automatically clamped by spring biased hooks and automatically unclamped by rotation of detent blocks engaged by the hooks. The rotation, by linkage to a trip lever, positions a release chamfer of the detent blocks opposite the hooks. Retractable pegs for positioning the product within the fixture, are cam actuated by the linkage rotation, to extend and retract simultaneously with the clamping and unclamping, respectively. Pneumatic pressure is admitted through an insert receptacle to the chamber against the pressure plate and laminated product. A release valve opened by the depression of an inclined lever provides for automatic pressure relief.

3,531,361
PRINTING PLATE ASSEMBLY COMPACTING APPARATUS

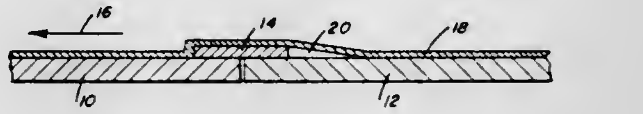
Attilio Grandinetti, Villa Park, Ill., assignor to Electrographic Corporation, New York, N.Y., a corporation of Delaware
Original application June 2, 1964, Ser. No. 372,052, now Patent No. 3,484,326. Divided and this application Sept. 21, 1967, Ser. No. 679,953
Int. Cl. B32b *31/12;* **B29d** *9/02*
U.S. Cl. 156—582 **2 Claims**



Apparatus for compacting layers of electrotype, backing material and a mounting plate into an integral printing plate assembly, wherein the compacting pressure is directed along a line extending across the printing plate components by means of an opposed pair of rotatable rollers maintained under a predetermined pressure, one of the rollers including retractable locating pins for locking the printing plate components against relative movement upon the initial application of pressure thereto by the pressure rollers. The rollers are selectively driven in both forward and reverse directions so as to move the line of compacting pressure therebetween from the point intermediate the ends of the components back and forth over the entire area of the assembly.

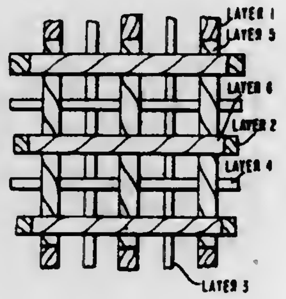
3,531,362
SPLICED JOINT IN COATED WEB MATERIAL AND METHOD OF FORMING SAID JOINT

Richard T. Bourns and Lawrence G. McDonald, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 30, 1967, Ser. No. 679,083
Int. Cl. B32b *3/06*
U.S. Cl. 161—39 **10 Claims**



A method for reducing coating disturbances at splices in a web being coated by treating the trailing edge of the splicing tape and the adjacent web surface with a material to prevent air entrainment in the coating.

3,531,363
NONWOVEN FABRIC
Charles Shambelan, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Jan. 6, 1967, Ser. No. 607,842
Int. Cl. D04h *3/04*
U.S. Cl. 161—72 **2 Claims**



Nonwoven fabric having conformability and drape similar to woven fabrics is provided by an assembly of three or more layers of warp-like arrays of filaments or yarns. At least two layers are arranged with the filaments or yarns in superimposed relationship and at an angle to those of one or more other layers, preferably crossing at a 90° angle. The superimposed filaments or yarns are united between the intersections with crossing filaments, or yarns, to hold the assembly together, whereas mobility is provided at the intersections of crossing filaments or yarns. The union between intersections may be accomplished by self-bonding or adhesive-bonding, or by fiber-interentangling with fine streams of liquid jetted at high pressure.

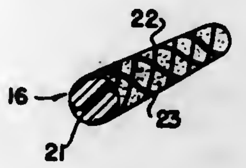
3,531,364
COATING COMPOSITION, LAMINATE AND METHOD FOR MAKING LAMINATE
Claude J. Schmidle, Hudson, and Donald Van Wagenen, Alliance, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,795
Int. Cl. B32b *27/40;* **C08d** *13/16;* **C08g** *41/04*
U.S. Cl. 161—88 **9 Claims**

An isocyanate containing polyesterurethane is reacted with a low molecular weight terpolymer of acrylate, alkacrylate and hydroxy containing acrylate and/or alkacrylate monomers of an inherent viscosity of 0.3 to 0.75 and an OH number of from 30 to 90 to make a product which is flexible, resistant to scratching and resistant to dry cleaning solvents (tack free or essentially tack free). The product is useful in forming laminates which have excellent hand and slip and which may be used in the manufacture of clothing such as windbreakers, raincoats and so forth.

3,531,365
HEAT-SEALABLE FABRIC SUPPORTED VINYL FILM
Harold R. Melin, Bloomfield Hills, Mich., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 14, 1966, Ser. No. 586,640
Int. Cl. D03d *11/00;* **D06m** *17/00*
U.S. Cl. 161—89 **2 Claims**

A fabric backed polyvinyl chloride sheet which is heat sealed while simultaneously effecting a tear-seal, the fabric comprising one of a non-woven scrim, woven fabric or scrim or a knitted fabric made up of synthetic yarns, the fibers of which are derived from polymers capable of accepting a heat seal.

3,531,366
SEAMING LACE ASSEMBLY FILLER AND METHOD OF FORMING SAME
Jere B. Ambrose, Birmingham, Mich., assignor to Northern Fibre Products Company, Birmingham, Mich.
Filed Dec. 12, 1967, Ser. No. 689,837
Int. Cl. B32b *5/28, 27/12*
U.S. Cl. 161—89 **2 Claims**

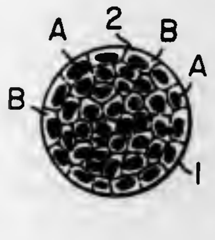


A seaming lace assembly filler used for forming upholstered furniture welted seams, composed of a core formed of a thin, flexible, thermoplastic rod having an open braided mesh surrounding the rod and formed of a higher melting point thread, and a hot application, permanently tacky adhesive covering the filled and thread, with the thread secured to the core by both heat bonding and adhesive bonding. The filler is made by mechanically braiding the thread about the core, then applying the adhesive to the braided core at a temperature sufficient to momentarily soften the surface of the core to thereby heat bond the thread to the core as well as adhesively bond the thread to the core.

3,531,367
PANELS OF POLYOLEFIN FILM AND FOAMED POLYSTYRENE AND METHOD
Ralph Karsten, Chicago, Ill., assignor to Chicago Screen Print, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 22, 1966, Ser. No. 581,298
Int. Cl. B32b *5/28;* **C09j** *5/02*
U.S. Cl. 161—160 **9 Claims**

A method of producing a sandwiched panel of foamed polystyrene and sheet polyolefin and the product therefrom, wherein the surfaces of the polyolefin sheets to be bonded are wetted with a solution of an organic solvent in which the foamed polystyrene is soluble and having dissolved therein a polystyrene polymer, and then processing the polystyrene and sheet polyolefin together until the bond is set between the surfaces. In accordance with another embodiment an ethyl cellulosic-phenolic resin is used in place of the polystyrene in the solvent solution.

3,531,368
SYNTHETIC FILAMENTS AND THE LIKE
Miyoshi Okamoto, Ohtsu-shi, Koji Watanabe, Sonoyama, Yasuhiko Nukushina, Kyoto, and Tsuneo Aizawa, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Jan. 4, 1967, Ser. No. 607,302
Claims priority, application Japan, Jan. 7, 1966, 41/560; Nov. 18, 1966, 41/75,446
Int. Cl. D01d *7/04;* **D02g** *3/04*
U.S. Cl. 161—175 **11 Claims**

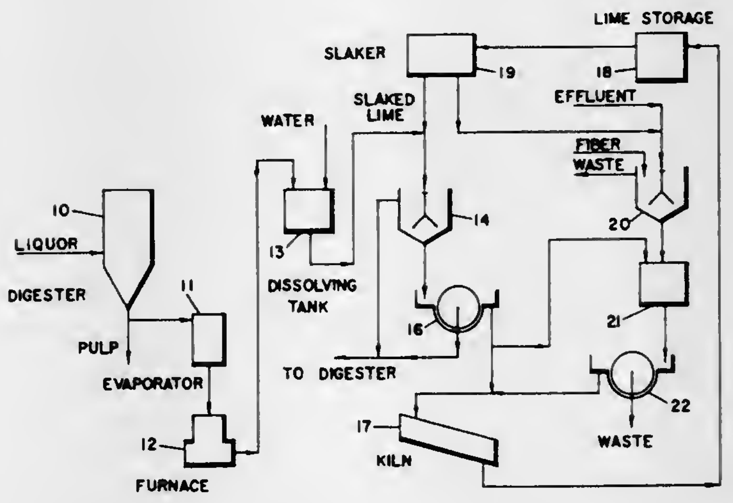


New synthetic filament consisting of an assembly of a plurality of extremely fine filament parts being closely in contact with one another without gap, the filament part having at least two polymer elements of a different composition, and each element of the same polymer being continuous along the fiber axis, and also method and apparatus of the manufacture of the above-mentioned filament.

3,531,369
GLASS REINFORCED THERMOPLASTIC SHEET
John A. Baumann, Lebanon, and Glen E. Ingraham, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed June 16, 1966, Ser. No. 557,906
Int. Cl. B32b *17/04;* **C03c** *27/12*
U.S. Cl. 161—187 **17 Claims**

This invention relates to glass fibers bonded by a thermally degraded resin which is either a styrene-acrylonitrile polymer, a polyvinyl chloride resin, a polyhydroxy ether resin or a polyarylene ether resin wherein the resin is thermally degraded, by heat, to an extent sufficient to improve the physical properties thereof. The glass fiber reinforced thermoplastics are used in laminating applications and also in molding applications.

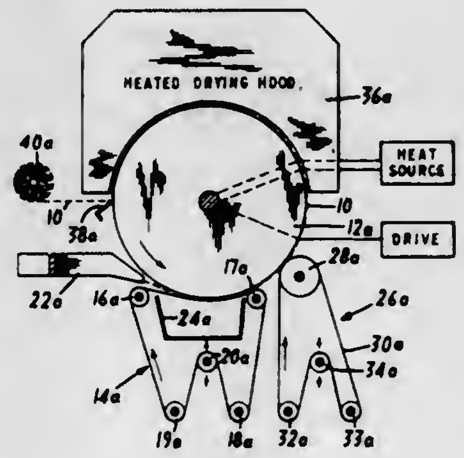
3,531,370
COLOR REMOVAL FROM WASTE EFFLUENTS
Matthew Gould, Portland, Oreg., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia
Filed Nov. 4. 1968, Ser. No. 772,908
Int. Cl. D21c *11/12*
U.S. Cl. 162—33 **8 Claims**



A process for removing color bodies from kraft pulping process waste effluents by precipitating the color bodies with lime and calcining the product to recover the lime values and burn the color bodies.

3,531,371
APPARATUS FOR MAKING PAPER
Lars Bengt Jordansson and Karl O. Larsson, Karlstad, Sweden, and Per Börje Wahlström, Rosemont, Pa., assignors to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden
Filed May 19, 1966, Ser. No. 551,276
Claims priority, application Sweden, May 21, 1965, 6,641/65
Int. Cl. D21f *9/04*
U.S. Cl. 162—298 **16 Claims**

A paper-making machine according to the exemplary embodiments comprises a moving impermeable surface, which may be either a cylinder or a movable endless belt, upon which a fibrous stock is deposited and formed into a web. The web is pressed to partially dry it, and is then exposed to heat to further dry it, preferably substantially completely. All of these steps, forming, pressing and drying, are accomplished on the impermeable surface so that the finished web is removed for a final drying, if necessary, or for winding into a roll. The apparatus includes a movable, endless, foraminous belt defining with the impermeable surface a web-forming space and is arranged adjacent the impermeable surface to squeeze water from the stock. The drying equipment includes a heated chamber positioned adjacent the surface for heating the web to evaporate the moisture from it.



3,531,372
PROCESS OF PRODUCING DIAMINOPIMELIC ACID
Kiyoshi Nakayama, Sagamihara-shi, and Hiroshi Hagino, Tokyo-to, Japan, assignors to Kyowa Hakko Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a body corporate of Japan
No Drawing. Continuation-in-part of application Ser. No. 559,380, June 22, 1966. This application May 8, 1969, Ser. No. 823,155
Claims priority, application Japan, July 3, 1965, 40/39,564
Int. Cl. C12d *13/06*
U.S. Cl. 195—29 **6 Claims**

A process of producing diaminopimelic acid by means of inoculating a fermentation medium with a diaminopimelic acid microorganism belonging to the auxotrophic mutants of *Bacilus subtilus.*

3,531,373
METHOD AND DEVICE FOR CONTROLLING THE INTAKE AND/OR DISCHARGE DURING THE BIOLOGICAL OXIDATION OF ALCOHOL TO ACETIC ACID
Karl Eder, Vienna, Austria, assignor to Vogelbusch Gesellschaft m.b.H., Vienna, Austria, a company of Austria
Filed Dec. 7, 1967, Ser. No. 688,726
Int. Cl. C12j *1/04, 1/10*
U.S. Cl. 195—49 **10 Claims**

A method of controlling the intake and/or discharge of fermentation material in the biological oxidation of alcohol to acetic acid by fermentation with respect to the alcohol concentration of the waste gases leaving the fermentation in which the waste gases are washed with water so as to maintain a substantially constant concentration of alcohol in the washed waste gases and the rate of flow of wash water is used to control the intake and/or discharge of fermentation material from the fermentation; a process for the production of acetic acid, both batchwise and continuously, including the said control process and apparatus for carrying out the control process and the preparation of acetic acid using the control process.

3,531,374
DIAGNOSTIC TEST FOR GAUCHER'S DISEASE AND NIEMANN-PICK DISEASE

Roscoe O. Brady, Jr., Arlington, Va., and John P. Kampine, Wood, Wis., assignors to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare

No Drawing. Filed Dec. 27, 1967, Ser. No. 693,771

Int. Cl. C12k *1/04*

U.S. Cl. 195—103.5 **9 Claims**

A method for diagnostic testing for Gaucher's and Niemann-Pick diseases. The test are based on the discovery that enzymes for the cleavage of specific sphingolipids are normally present in the leukocytes. The activity of the glucocerebroside-cleaving enzyme and of the sphingomyelin-cleaving enzyme was found to decrease in the presence of Gaucher's and of Niemann-Pick diseases respectively. The decrease in enzyme activity is proportional to the severity of the disease. By utilizing ^{14}C labeled glucocerebroside and sphingomyelin respectively, and determining the amount of cleavage by use of liquid scintillation spectrometry, the presence, rate of progression, and severity can be determined.

3,531,375
METHOD OF AND APPARATUS FOR OXIDATION OF BITUMEN

Oscar Cheracci, 7006 Edgecliff Drive,
Parma, Ohio 44134

Filed June 6, 1966, Ser. No. 555,635

Int. Cl. B01d *3/08;* **C01c** *3/04*

U.S. Cl. 196—123 **2 Claims**

Apparatus and method for oxidizing bitumen. The bitumen to be oxidized is partially charged into an upright cylindrical boiler, oxidizing air is introduced into the lower part of the charge at a multiplicity of circumferentially spaced, separate points in the charge; causing said air to withdraw bitumen from the lower portion of the charge at said spaced points to become intimately commingled with the drawn bitumen; simultaneously causing said mixture of commingled bitumen and air to be conveyed upwardly through the charge in a multiplicity of circumferentially spaced, separate confined streams independent of the remainder of the charge to a point spaced above the top of the charge, and thereafter discharging said bitumen by gravity back into the charge for recirculation.

3,531,376
PURIFICATION OF ACETONE BY EXTRACTIVE DISTILLATION AND RECTIFICATION WITH SIMULTANEOUS ALKALI-CONTAINING ACETONE SOLUTION CONTACT AND HALOGEN IMPURITY SIDE STREAM REMOVAL

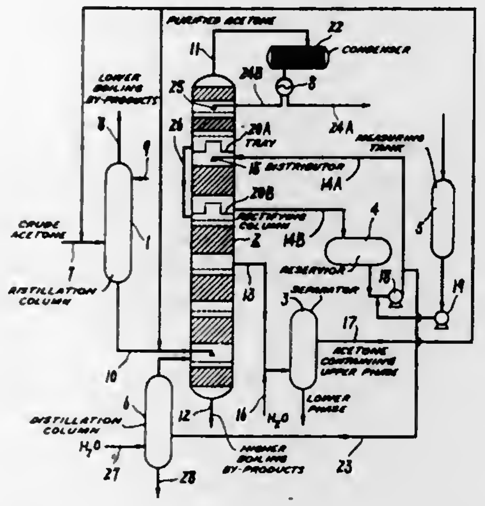
Shigehiko Minoda, Tokuzo Shimizu, Takeyoshi Matsumoto, and Toshihiro Maeda, Kurashiki-shi, Japan, assignors to Mitsubishi Chemical Industries Limited, a corporation of Japan

Continuation-in-part of application Ser. No. 659,681, Aug. 10, 1967. This application Dec. 23, 1968, Ser. No. 797,309

Int. Cl. B01d *3/34;* **C07c** *45/24*

U.S. Cl. 203—33 **14 Claims**

A process for the purification of acetone. Acetone manufactured by the Wacker process is subjected to a water extractive distillation, then rectified. An acetone solution or suspension containing alkali metal carbonate or hydroxide is contacted, in the upper portion of a rectifying column, with a countercurrent of acetone vapor ascending through said column.



3,531,377
PROCESS FOR THE OXIDATION OF GALLIUM-ARSENIDE

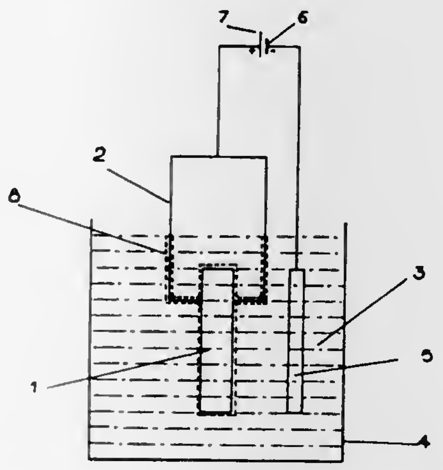
Michel Croset, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed May 31, 1967, Ser. No. 642,485

Claims priority, application France, June 3, 1966, 64,147

Int. Cl. C23b *5/00*

U.S. Cl. 204—14 **2 Claims**



A process of oxidizing the surfaces of a gallium-arsenide component, giving rise to the formation of a gallium-arsenide oxide film which can be employed in the manufacture of semiconductor devices. The component to be treated is immersed in a bath of electrolyte in which oxidized gallium-arsenide is insoluble, said electrolyte bath containing a conductive salt dissolved in a non-aqueous solvent, said solvent being saturated with arsenic anhydride.

3,531,378
PROCESS FOR OXIDIZING TELLURIUM

Michel Croset, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed May 31, 1967, Ser. No. 642,489

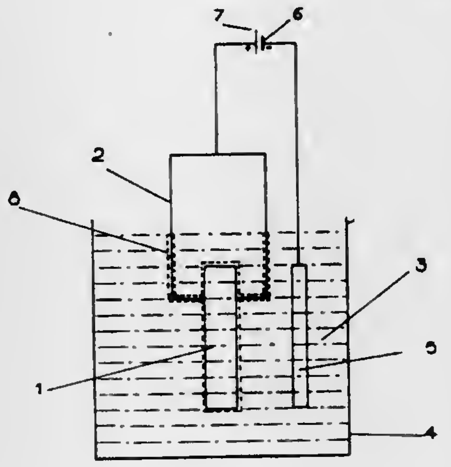
Claims priority, application France, June 3, 1966, 64,146

Int. Cl. C23b *5/00*

U.S. Cl. 204—14 **2 Claims**

A novel process for oxidizing the surface of a monocrystalline tellurium component, giving rise to the formation of a tellurium oxide film which can be used in the manufacture of semiconductor devices.

The component to be treated is immersed in an electrolyte bath in which tellurium oxide is insoluble or soluble only to a very small extent, said electrolyte bath being formed by a non-aqueous solvent saturated with tellurium oxide and containing water in precisely predetermined proportions to avoid porosity of the oxide layer.



3,531,379
PROCESS OF COATING ALUMINUM WITH OTHER METALS

Arthur Leslie Peach, St. Petersburg, Fla., assignor to Micral Industries, Inc., St. Petersburg, Fla., a corporation of Florida

No Drawing. Filed July 28, 1965, Ser. No. 475,594

Int. Cl. C23b *3/02, 5/50, 9/02*

The portion of the term of the patent subsequent to Feb. 7, 1984, has been disclaimed

U.S. Cl. 204—33 **5 Claims**

A process of forming a tenaciously adherent plating on an aluminum object consisting of

degreasing the surface of the object,

etching briefly in a hot solution of sodium hydroxide,

rinsing,

etching in a mixture of 75% nitric acid and 75% hydrofluoric acid,

rinsing,

immersing as an iodide in an 85% phosphoric acid electrolyte and passing a current therethrough,

rinsing,

immersing as a cathode in an electrolyte of nickel sulphate, sodium citrate and sodium hypophosphite, and passing a current at about 2 volts therethrough.

3,531,380
METHOD OF PRETREATING FERROUS METAL SUBSTRATES PRIOR TO ELECTROPLATING WITH AN ALUMINUM-CONTAINING COATING

Lowell W. Austin, Weirton, W. Va., and Charles A. Brubaker, Waterbury, Conn., assignors to National Steel Corporation, a corporation of Delaware

No Drawing. Filed Mar. 7, 1967, Ser. No. 621,118

Int. Cl. C23b *1/00, 3/00, 5/50*

U.S. Cl. 204—34 **11 Claims**

Improved aluminum-containing electrodeposited coatings are produced on ferrous metal substrates by pretreating the substrate with hydrogen halide, iron halide, or ammonium halide to activate the surface, and then electrodepositing the aluminum-containing coating thereon.

3,531,381
METHOD OF IMPROVING THE CORROSION RESISTANCE OF OXIDIZED METAL SURFACES

Charles J. Amore and James F. Murphy, Hamden, Conn., assignors to Olin Corporation, a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 354,162, Mar. 23, 1964. This application July 7, 1965, Ser. No. 470,248

Int. Cl. C23b *5/50*

U.S. Cl. 204—35 **12 Claims**

Discloses a method of improving the corrosion resistance of oxidized metal articles and the metal article obtained thereby characterized by immersing the oxide coated metal in an aqueous solution maintained at an elevated temperature, immersing the oxide coated metal in a bath of an aqueous solution containing from 0.001% to saturation of an organic phosphate and passing an electric current through said bath between an inert cathode and the oxide coated metal as anode, with the bath being maintained at an elevated temperature.

3,531,382
DRY OXIDE CAPACITORS AND METALLIZING PROCESS FOR MAKING THE CAPACITORS

Robert A. West, Hudson Falls, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,103

Int. Cl. C23f *17/00;* **H01g** *9/00, 13/00*

U.S. Cl. 204—38 **8 Claims**

An anodic oxide coated capacitor electrode is provided with a counter-electrode by etching the base electrode and forming an oxide coating thereon to follow the etched contours so as to be a rough or irregular surface. The oxide coating is contacted with a heat decomposable metal carbonyl compound in the gaseous state and then temperature of the metal compound is increased to above its decomposition temperature to decompose the compound and deposit the metal counter-electrode on the exposed surface of the anodic oxide layer as well as on those surfaces forming the pores and interstices thereof defined by the etching process.

3,531,383
METHOD OF PRODUCING ELECTRIC CAPACITORS

Gunter Lochmann, Heidenheim, Hans Winter, Hamburg, and Reimar Schmitt, Heidenheim, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany

No Drawing. Filed Aug. 5, 1966, Ser. No. 570,409

Int. Cl. C23f *17/00;* **H01g** *9/05*

U.S. Cl. 204—38 **4 Claims**

Electric capacitors are produced by coating an anode body of aluminum, tantalum or niobium with forming a suitable dielectric oxide layer on the body and then forming a counter-electrode on the oxide layer by thermic decomposition of a solution of manganous nitrate and manganous acetate, the amount of acetate being sufficient to produce a manganese dioxide layer deficient in oxygen.

3,531,384
PROCESS OF TREATING SURFACES OF METALLIC ARTICLES

Katsuya Inouye, 38 Shimizu-cho, Suginami-ku, Tokyo, Japan, and Hideya Okada, 64 Ida-sanmai-cho, Kawasaki, Japan

No Drawing. Continuation-in-part of application Ser. No. 260,886, Feb. 25, 1963. This application Dec. 26, 1967, Ser. No. 693,131

Claims priority, application Japan, Feb. 24, 1962, 37/7,155

Int. Cl. A23b *11/00, 11/02*

U.S. Cl. 204—56 **12 Claims**

A metal surface is protected by depositing chromium oxide thereon by a process of electrolyzing between an anode surface and a cathode surface of said metal, an aqueous solution of ionic compounds of hexavalent chromium ions and an additive. The additive is selected from acids, alkali salts and oxides which form anions in solution of elements of the group consisting of zirconium, titanium, tungsten, molybdenum, selenium, tellurium, vanadium and arsenic. The additive may also be a monobasic fatty acid or monobasic fatty acid salt.

3,531,385
METHOD OF FORMING ELECTRICAL INSULATING FILM ON ALUMINIUM METALS

Takashi Suzuki, Toyonaka-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed Dec. 13, 1968, Ser. No. 783,582

Int. Cl. C23b *5/02, 11/002*

U.S. Cl. 204—58 **2 Claims**

Method of forming an electrical insulating film on a surface of aluminum metal (aluminium and its alloy) characterized by carrying an anodic oxidation in a spark discharge range of an electrolytic voltage.

3,531,386
ELECTROCHEMICAL PROCESS FOR RECOVERING SULFUR VALUES

Laszlo A. Heredy, Canoga Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Original application May 15, 1967, Ser. No. 638,364, now Patent No. 3,479,261, dated Nov. 18, 1969. Divided and this application Nov. 26, 1968, Ser. No. 779,119

The portion of the term of the patent subsequent to Oct. 14, 1986, has been disclaimed

Int. Cl. B01k *1/00*

U.S. Cl. 204—61 **5 Claims**

A method for recovering sulfur values from a molten salt mixture containing alkali metal sulfate or sulfite by electrochemically converting the alkali metal sulfate or sulfite to sulfur oxides and oxygen as a recoverable product with simultaneous formation of alkali metal carbonates in the molten salt.

3,531,387
PRODUCTION OF OLEFINIC HYDROCARBONS

Henryk A. Cyba and James J. Louvar, Evanston, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Oct. 27, 1967, Ser. No. 678,504

Int. Cl. C07c *11/02*

U.S. Cl. 204—72 **10 Claims**

Olefinic hydrocarbons are prepared from paraffinic type carboxylic acids by subjecting said carboxylic acids to electrolysis in an electrolytic cell in the presence of certain metal salts, a specific example being the electrolysis of caprylic acid in the presence of cupric acetate to form 1-heptene.

3,531,388
METHOD FOR PROMOTING A CHEMICAL REACTION WITH RADIOACTIVE GAS

Tomomichi Kasamatsu, Gunma-ken, Japan, assignor to Japan Atomic Energy Research Institute, Tokyo, Japan

Filed Jan. 28, 1966, Ser. No. 523,639

Claims priority, application Japan, Feb. 2, 1965, 40/5,275

Int. Cl. B01j *1/10*

U.S. Cl. 204—157.1 **6 Claims**

Chemical reactions in a liquid medium are promoted by bubbling krypton 85 through the medium. The dose rate obtained from the finely dispersed gas is very high. Apparatus for performing the method is disclosed.

3,531,389
TWO STAGE RADIATION POLYMERIZATION OF ETHYLENE IN THE PRESENCE OF A CARBON DIOXIDE MEDIUM

Tsutomu Kagiya, Kyoto-shi, and Hiroshi Mitsui, Sueo Machi, and Miyuki Hagiwara, Takasaki-shi, Japan, assignors to Japan Atomic Energy Research Institute

No Drawing. Filed July 10, 1967, Ser. No. 652,010

Claims priority, application Japan, Aug. 3, 1966, 41/50,502

Int. Cl. C08d *1/00;* **C08f** *1/16*

U.S. Cl. 204—159.22 **9 Claims**

The present invention relates to a two stage radiation polymerization of ethylene using carbon dioxide as a reaction medium in which the polymerization is carried out in two stages, that is, a first stage of high dose rate irradiation and a second stage of low dose rate irradiation which follows the first. Efficiency of utilization of the radiation energy is improved by this method.

3,531,390
ELECTRODEPOSITION METHOD

Louis R. Le Bras, Gibsonia, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,608

Int. Cl. B01k *5/02;* **C23b** *13/00*

U.S. Cl. 204—181 **8 Claims**

This invention relates to a method of improving the uniformity of the coating on an article applied by an electrodeposition process in which the article to be coated is entered into the electrodeposition bath under an applied voltage. The invention comprises prewetting the article to be electrocoated prior to its entry into the electrodeposition bath.

3,531,391
USE OF OXIDES OF MANGANESE IN ELECTRODEPOSITABLE COMPOSITIONS

Thomas Palaika, Arnold, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 591,708, Nov. 3, 1966. This application Apr. 24, 1969, Ser. No. 819,096

Int. Cl. C23b *13/00;* **B01k** *5/02*

U.S. Cl. 204—181 **13 Claims**

Oxides of manganese are dispersed in an aqueous bath comprising ionically solubilized synthetic vehicle resin, forming an electrolyte to produce black or dark-colored electrodeposits upon an article made the electrode in an electrolytic cell and to produce a drying effect in the deposited film.

3,531,392
ARRANGEMENT FOR MEASURING THE CURRENT INTENSITY AT THE SINGLE ELECTRODES OF ELECTROLYTIC CELLS

Kurt Schmeiser, Cologne-Lindenthal, Germany, assignor to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

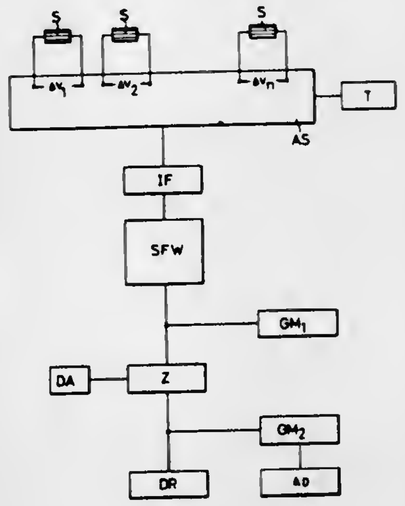
Filed Sept. 8, 1966, Ser. No. 578,072

Claims priority, application Germany, Nov. 11, 1965, K 57,638

Int. Cl. B01k *3/00, 1/00*

U.S. Cl. 204—225 **8 Claims**

Adjustment of the spacing between a plurality of electrodes in electrolytic cells is governed by cyclically measuring the currents in individual electrodes (by measuring the voltage drop across resistances in series with each of them) determining which cell currents are outside of a predetermined tolerance band and adjusting the spacing of the electrodes of such cells. The tolerance of the band is decreased as the spacing approaches optimum values. Apparatus for accomplishing this method includes a selective switching mechanism which cyclically connects resistances in series with each of the electrodes to a digital read-out device having a limiting-value indicator with a tolerance band of variable width. A voltage-frequency converter efficiently accomplishes current measurement across equal lengths of the tapes which conduct current to the electrodes and facilitates digital indication thereof.



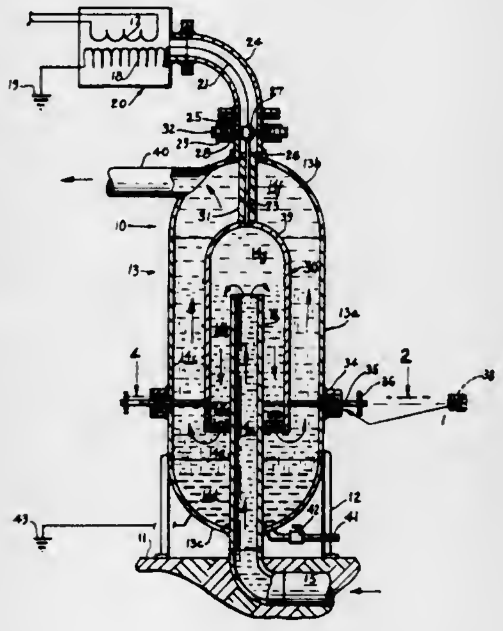
3,531,393
ELECTRICAL DE-EMULSIFIER FOR PETROLEUM CARRYING EMULSION

Robert J. Roberts, 9833 Moyers, Houston, Tex. 77042

Filed Jan. 2, 1968, Ser. No. 694,619

Int. Cl. B01d *17/04, 17/06*

U.S. Cl. 204—302 **10 Claims**



The invention provides a de-emulsifier for petroleum carrying emulsions which comprises a central, grounded emulsion inlet tube, and a pressure vessel shell constructed with concentricity therearound, and suspends a bell-shaped electrode, open end down, intermediate the inlet tube and the shell, such electrode being mechanically adjustable for substantially exact concentric disposition between inlet tube and shell, the emulsion thus following a continuous path subjected to substantially equal potential gradient from the top of inlet past the lower, or open end of the bell and back upwardly to the vicinity of discharge.

3,531,394
ANTIFOULANT ADDITIVE FOR STEAM-CRACKING PROCESS

Ihor Koszman, Parsippany, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Apr. 25, 1968, Ser. No. 724,264

Int. Cl. C10g *9/16, 9/36;* **C07c** *11/04*

U.S. Cl. 208—48 **27 Claims**

In the thermal cracking of petroleum fractions in admixture with steam, severe process problems due to carbon formation, such as coke deposition, carbon monoxide formation, metal dusting, and erosion are eliminated or substantially reduced by providing for the presence of phosphorus and/or bismuth-containing compounds in the cracking zone.

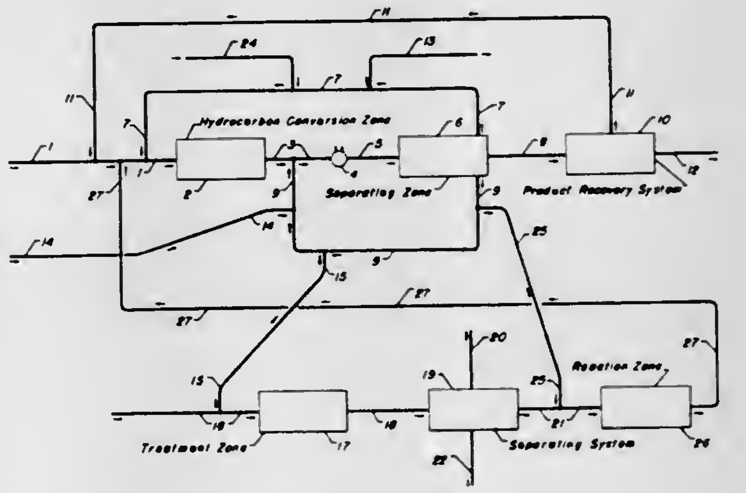
3,531,395
TREATMENT OF AN AQUEOUS WASTE STREAM FROM A HYDROCARBON CONVERSION PLANT WITH CONTINUOUS RECYCLE OF THE TREATED AQUEOUS STREAM

Peter Urban, Northbrook, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Sept. 16, 1968, Ser. No. 760,047

Int. Cl. C10g *13/00*

U.S. Cl. 208—108 **15 Claims**



A hydrocarbon charge stock containing sulfurous and nitrogenous contaminants is converted and elemental sulfur and ammonia is simultaneously recovered by the steps of: (a) contacting in a hydrocarbon conversion zone the hydrocarbon charge stock, hydrogen and an aqueous recycle stream containing ammonium polysulfide with a hydrocarbon conversion catalyst at conversion conditions sufficient to form an effluent stream containing substantially sulfur-free and nitrogen-free hydrocarbons, hydrogen, NH_3, H_2S, and H_2O; (b) cooling and separating the effluent stream from step (a) to form a hydrogen-rich gaseous stream, a hydrocarbon-rich liquid product stream, and an aqueous waste stream containing NH_4HS; (c) catalytically treating the aqueous waste stream from step (b) with oxygen at oxidizing conditions effective to produce an effluent stream containing NH_4OH, $(NH_4)_2S_2O_3$, and elemental sulfur or ammonium polysulfide; (d) separating sulfur and ammonia from the effluent stream from step (c) to produce an aqueous stream containing $(NH_4)_2S_2O_3$; (e) subjecting the aqueous stream from step (d), and a sulfide-containing stream to reduction conditions effective to form the aqueous recycle stream containing ammonium polysulfide; and (f) passing this last aqueous stream to step (a). Key feature of the resulting process is the continuous recycle of the treated water back to the hydrocarbon conversion process with consequential abatement of water pollution problems and substantial reduction of requirements for make-up water.

3,531,396

HYDROCRACKING IN THE PRESENCE OF HYDROGEN CONTAINING A MINOR AMOUNT OF CARBON MONOXIDE

Donald A. Messing, Wappingers Falls, and Edward T. Child, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 25, 1968, Ser. No. 739,647

Int. Cl. C10g *13/02*

U.S. Cl. 208—111 **7 Claims**

Hydrocarbon oils are hydrocracked in the presence of hydrogen containing a minor amount of carbon monoxide without significant catalyst poisoning by conducting the hydrocracking in the presence of a catalyst comprising sulfided nickel and tungsten supported on a base comprising a zeolite of low alkali metal content.

3,531,397

METHOD OF CATALYST PREPARATION

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 11, 1967, Ser. No. 689,272

Int. Cl. C10g *11/02;* **B01j** *11/40*

U.S. Cl. 208—120 **17 Claims**

A method of catalyst preparation. The catalyst is a crystalline aluminosilicate dispersed in a silica matrix. A crystalline alkali metal aluminosilicate-mother liquor mixture is dispersed in a silica sol and treated in contact with a solution comprising hydrogen ions at a pH of 3.5–4.0, before or after gelation, to provide an improved catalyst, particularly with respect to the catalytic cracking of petroleum hydrocarbons.

3,531,398

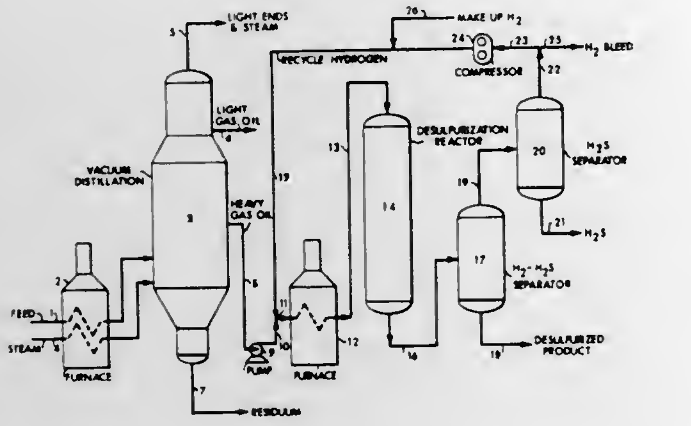
HYDRODESULFURIZATION OF HEAVY PETROLEUM DISTILLATES

Clark E. Adams and William T. House, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed May 3, 1968, Ser. No. 726,450

Int. Cl. C10g *23/00*

U.S. Cl. 208—216 **8 Claims**



A process for the production of low-sulfur fuel oil by means of a continuous liquid phase hydrodesulfurization process for petroleum gas oil feed having an end point in the range of 750° to 1300° F. The process is applied to atmospheric gas oils, vacuum gas oils and the like, containing about 0.1 up to 5.0 weight percent sulfur. The catalyst used is a mixture of a Group VIII metal salt with a Group VI-B metal salt deposited on a silica-stabilized alumina, characterized by having a high surface area, a maximum of the total surface area in pores having a diameter of 30 to 70 A., there also being a minimum of the pore volume in pores having a diameter greater than 100 A.

3,531,399

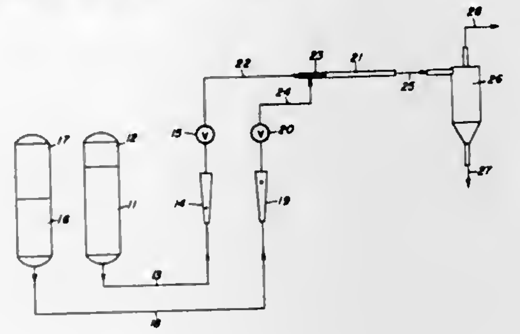
ANNULAR FLOW CONTACTING SYSTEM

Norman L. Carr, Allison Park, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Mar. 6, 1968, Ser. No. 710,978

Int. Cl. C10g *19/00, 31/00*

U.S. Cl. 208—230 **6 Claims**



Continuous contacting of fluids is conducted under annular flow conditions with a centrally-provided fluid jet-injected stream being surrounded by a parallel, coaxial fluid stream that is relatively immiscible with the jet-injected fluid stream.

3,531,400

DESORPTION OF HYDROCARBONS FROM A MOLECULAR SIEVE IN THE PRESENCE OF WATER AND AMMONIA

Klaus Wehner, Jürgen Welker, and Gunther Seidel, Leuna, Germany, assignors to VEB Leuna-Werke "Walter Ulbricht," Leuna, Germany

No Drawing. Filed Feb. 2, 1968, Ser. No. 702,530

Int. Cl. C10g *25/04;* **C07c** *7/12*

U.S. Cl. 208—310 **10 Claims**

There is provided an improved method of separating hydrocarbons from hydrocarbon mixtures by adsorption on natural or synthetic molecular sieves and, if necessary, rinsing the sieve between the adsorption and the desorption steps of a temperature above 250° C., in which the desorption is carried out with a mixture of water vapor and ammonia and/or in the case of separating hydrocarbon mixtures containing water, the adsorption and, if necessary, the rinsing of the molecular sieve, are carried out in the presence of ammonia.

3,531,401

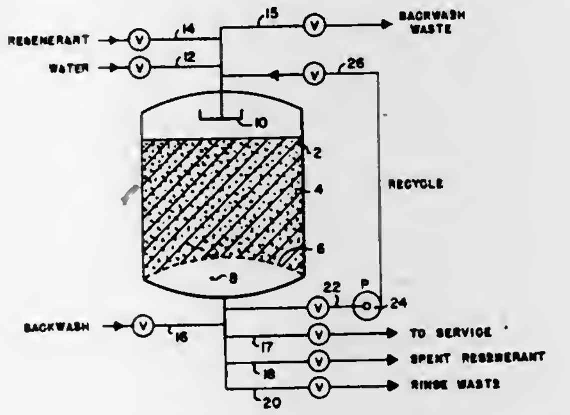
METHOD OF REGENERATING ION EXCHANGERS

George J. Crits, Havertown, Pa., assignor to Crane Co., Chicago, Ill., a corporation of Illinois

Filed Jan. 23, 1968, Ser. No. 699,940

Int. Cl. B01d *15/06*

U.S. Cl. 210—34 **4 Claims**



Following a conventional regenerating step of an ion exchanger, a regenerating electrolyte is recirculated through an ion exchange bed in the direction of service flow to displace potential leakage ions from the effluent region of the bed to the influent region.

3,531,402

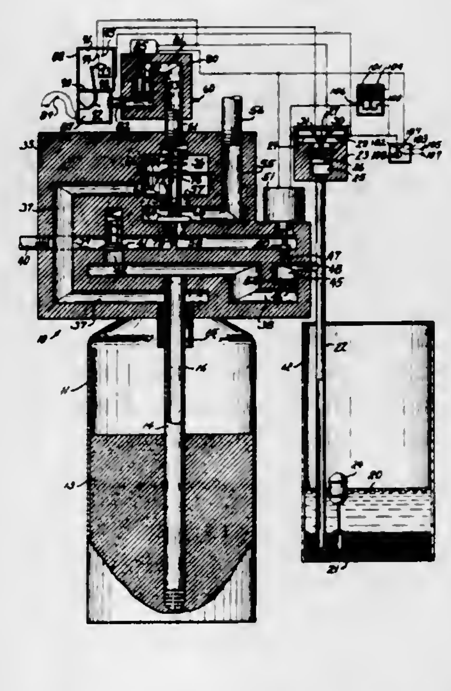
APPARATUS AND METHOD FOR REGENERATING A WATER SOFTENING SYSTEM

Richard G. Thompson, Stillwater, Minn., assignor to The Landa Company, a division of L & A Products, Inc., St. Paul, Minn., a corporation of Minnesota

Filed Jan. 17, 1969, Ser. No. 791,975

Int. Cl. B01d *15/06*

U.S. Cl. 210—35 **10 Claims**



A water softening system including a softener tank with first and second ports at the top thereof and a mineral bed therein, a brine tank, a source of untreated water, a drain and a treated water supply system and regeneration control apparatus including a valve system with a main valve for normally connecting the source of untreated water to one of the ports and the treated water supply system to the other of the parts and connecting the brine tank to the second port and the first port to the drain with an aspirator in the path to produce a flow of the brine through the mineral bed during regeneration thereof. A sensor in the drain to determine when the fluid flowing in the drain is essentially pure brine and electrical means associated therewith for closing the drain valve to cause the untreated water source to force the unused brine back into the brine tank. A backwash valve electrically operated after the brine is forced back into the brine tank and the drain valve is again opened, to cause untreated water from the source to flow through the mineral bed and out the drain to rinse the remaining salt from the system.

3,531,403

METHOD FOR DECONTAMINATING FLUID

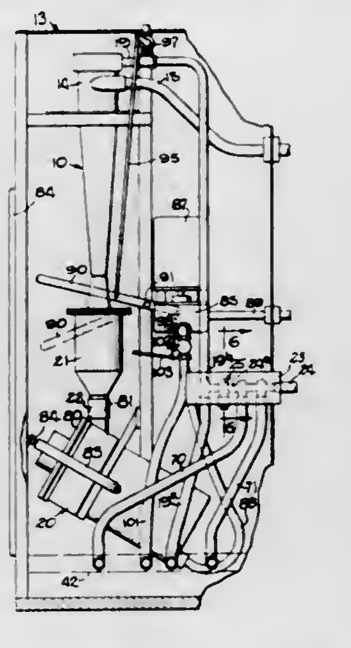
Mark R. Estabrook, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois

Filed Mar. 7, 1968, Ser. No. 711,276

Int. Cl. B01d *21/29*

U.S. Cl. 210—39 **3 Claims**

A decontaminating method having a hydroclone separator into which fluid is injected and delivering precleaned fluid through one exit for final cleaning while solid contaminants are collected in an inclined underflow pot in a disposable bag. The precleaned fluid passes through a manifold block where part is routed to a final cleaning station having disposable charcoal and paper filter cartridge connected in parallel on a manifold base, the output from the cartridges being returned to the manifold block and mixed with the remainder of the precleaned flow. Adjustable flow controllers restrict the by-pass flow through the block and also the flow from the charcoal cartridge to determine the proportions of the respective flows, and a centrifugal pump is provided for exhausting the underflow pot when the bag is to be changed and the cartridge chamber or chambers when the cartridges are to be changed.



3,531,404

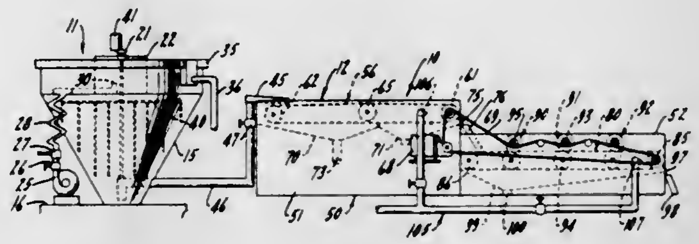
SEWAGE TREATMENT SYSTEM

Brian L. Goodman, Overland Park, Kans., Robert M. Appleberry, Independence, Mo., John W. Struewing, Overland Park, Kans., and Frank G. Weis, Kansas City, Mo., assignors, by mesne assignments, to Union Tank Car Company, a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,507

Int. Cl. B01d *33/04;* **C02c** *3/00*

U.S. Cl. 210—54 **8 Claims**



A process and apparatus for de-watering sewage sludge or the like. The sludge is first flocculated with a coagulent and then gravity fed onto a primary, large mesh, moving screen, which is flexed intermediate its ends. Water drains from the sludge through the screen, its flow enhanced by flexing of the sludge cake which is forming. Partially de-watered sludge is then scraped onto a secondary large mesh, moving screen, which carries the sludge between a series of pairs of compression rollers, providing successively greater compression to further de-water the sludge.

3,531,405

METHOD AND APPARATUS FOR TREATING WASTE

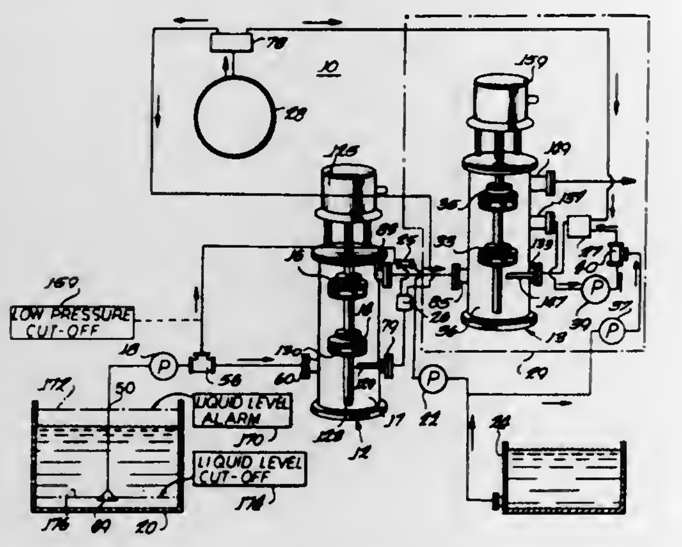
James F. Zievers, Clay W. Riley, and Richard W. Crain, La Grange, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois

Filed Apr. 3, 1968, Ser. No. 723,347

Int. Cl. C02b *1/36*

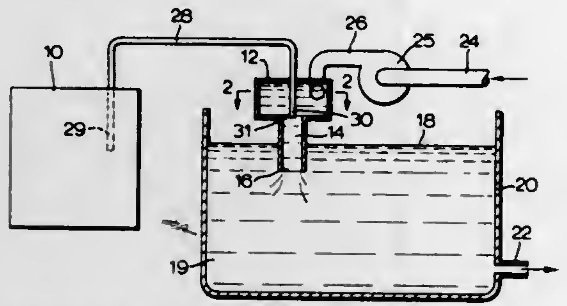
U.S. Cl. 210—60 **9 Claims**

A system for treating waste rinses from metal finishing includes a plurality of vertically-spaced, motor-driven impellers in a vertical mixing chamber and a sump pump for discharging continuously a portion of the waste liquid to be treated into one inlet of the mixing chamber and for discharging continuously the remaining portion of the waste into another inlet of the chamber near one of the impellers via an eductor which continuously pre-mixes a treating chemical, which may be toxic or corrosive, with the waste liquid by diffusing the treating chemical into the waste liquid flowing through the eductor so that the toxic or corrosive chemical does not enter the chamber in the absence of waste liquid.



3,531,406
METHOD AND APPARATUS FOR THE FAIL-SAFE INTRODUCTION OF A BACTERICIDAL GAS INTO LIQUID SEWAGE

Duncan K. Smith, and Anthony J. Last, Oakville, Ontario, Canada, assignors to Ontario Research Foundation, Sheridan Park, Ontario, Canada
Filed Aug. 23, 1968, Ser. No. 754,906
Int. Cl. C02b *3/06, 5/02*
U.S. Cl. 210—62 **4 Claims**



A method and apparatus for introducing a fluid, such as chlorine gas, into a liquid, such as liquid sewage. A vortex of low-pressure is created in the liquid by injecting it tangentially into a vortex chamber having a coaxial outlet tube. As the rotating liquid passes from the chamber into the tube it increases its rotational speed and creates a zone of low pressure. This low pressure is utilized to draw the fluid into contact with the liquid at the low-pressure zone.

3,531,407
FOAM COMPATIBLE FIRE-EXTINGUISHING POWDERS CONTAINING COPPER PHTHALOCYANINE OR ONE OF ITS DERIVATIVES

David Arthur Phillips, Winnington, Northwich, and John Lewis Milliet, Blackley, Manchester, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain
No Drawing. Filed Nov. 15, 1968, Ser. No. 776,260
Claims priority, application Great Britain, Nov. 28, 1967, 54,121/67
Int. Cl. A62d *1/00*
U.S. Cl. 252—2 **6 Claims**

To render powdered fire-extinguishing agents compatible with fire-extinguishing foams, for example, foams based on proteins, a minor proportion of copper phthalocyanine or one of its derivatives is incorporated in the powder. Examples of foam-compatible compositions so obtained are mixtures of sodium bicarbonate or potassium bicarbonate, or the fire-extinguishing agent made by heating urea with potassium bicarbonate below 150° C., with copper phthalocyanine the proportion of the latter in the mixture being 0.01 to 10% by weight. Free-flowing and anti-caking agents may be included in the foam-compatible compositions.

3,531,408
DRILLING FLUID

Jack H. Kolaian, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 25, 1967, Ser. No. 633,433
Int. Cl. C10m *3/34, 3/26*
U.S. Cl. 252—8.5 **11 Claims**

An aqueous drilling fluid dispersant and a method of drilling wells using said drilling fluid which contains a substituted naphthalene as the dispersant, namely, 1-nitroso-2-hydroxy-3,6-disulfonaphthalene, 3,5-dihydroxy-2-carboxynaphthalene, the corresponding water soluble salts and mixtures of these compounds and salts.

3,531,409
SOLID SOLUTIONS OF CORROSION INHIBITORS FOR USE IN TREATING OIL WELLS

William E. Seffens and James B. Jochens, St. Louis, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 6, 1967, Ser. No. 607,645
Int. Cl. C23f *11/10;* **E21b** *43/25;* **C09k** *3/00*
U.S. Cl. 252—8.55 **8 Claims**

Solid solutions of chemicals dissolved in a solid carrier, as illustrated by chemicals capable of being employed in petroleum operations such as corrosion inhibitors, demulsifiers, bactericides, scale preventitives, paraffin removers, etc. dissolved in a carrier comprising for example polymers and waxes, where the chemical is eluted into the system while the carrier is substantially insoluble in the system.

3,531,410
TITANIFEROUS BIOTITE LUBRICANT

Warren L. Taylor, Littleton, Colo., assignor to Titan Products Company, Dallas, Tex., a corporation of Colorado
No Drawing. Filed Mar. 14, 1968, Ser. No. 712,947
Int. Cl. C10m *5/02*
U.S. Cl. 252—28 **9 Claims**

A method for converting titaniferous biotite ore into a lubricating composition by grinding the ore into small particles, expanding the particles by heating to 1000 to 1400° F., cooling the particles, treating the particles with nitric acid at least 5 N, washing the ore particles with an alkaline solution, and heating the particles below 1400° F. until dry. In preferred embodiments, a second acid treatment with phosphoric acid at least 1 N is used after nitric acid treatment; the alkaline solution is a sodium hydroxide solution; the ore is ground to 0.5 to 400 microns; and the expansion and drying steps are carried out below 1250° F.

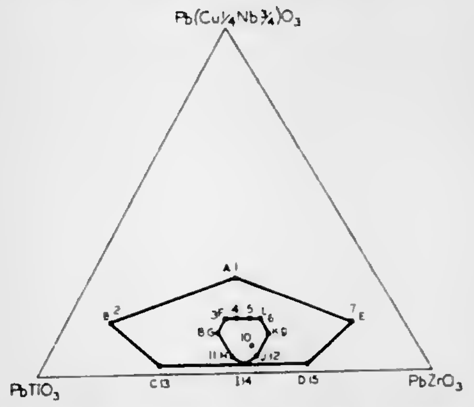
3,531,411
LUBRICANT COMPOSITIONS

Albert Benson, Fairlawn, and Gerhart Karg, Pompton Lakes, N.J., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 17, 1968, Ser. No. 698,397
Int. Cl. C10m *3/02, 3/40*
U.S. Cl. 252—32.5 **7 Claims**

Chemically stable, aqueous-based lubricants, particularly for extreme pressure applications, having the combined properties of corrosion inhibition, low foam formation and anti-wear protection which compromise a solution containing minor amounts of an amine salt of phosphoric acid mono- and di-esters of condensation products or adducts of 1 mole of phenol with 1 to 6 moles of alkylene oxide.

3,531,412
PIEZOELECTRIC CERAMIC COMPOSITIONS

Masamitsu Nishida and Hiromu Ouchi, Toyonaka-shi, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Kadoma, Osaka, Japan
Filed Aug. 16, 1968, Ser. No. 753,087
Claims priority, application Japan, Aug. 21, 1967, 42/54,167
Int. Cl. C04d *35/00;* **H01v** *7/02*
U.S. Cl. 252—62.9 **4 Claims**



Ceramic materials within particular ranges of the ternary system $Pb(Cu_{1/4}Nb_{3/4})O_3$—$PbTiO_3$—$PbZrO_3$ in solid solution-form exhibit high dielectric constant along with high planar coupling coefficient, and are useful in electromechanical transducers. The ceramic materials are those within the area A, B, C, D, and E and the area F, G, H, I, J, K and L of FIG. 2.

3,531,413
METHOD OF SUBSTITUTING ONE FERROFLUID SOLVENT FOR ANOTHER

Ronald E. Rosensweig, Lexington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Sept. 22, 1967, Ser. No. 669,938
Int. Cl. B01d *21/01*
U.S. Cl. 252—62.62 **6 Claims**

This invention covers a method of substituting one ferrofluid solvent for another. A typical class of ferrofluid contains magnetic particles with a polar surfactant adsorbed on the surface thereof suspended in a non-polar solvent. To substitute one solvent for another in accordance with the invention, a polar flocculating solvent is introduced into the ferrofluid causing the particles with the adsorbed surfactant to flocculate, and to settle out of solution.

3,531,414
CORROSION-INHIBITING AGENTS

Donald Richard Randell, Heaton Mersey, Stockport, and Donald Kearey Howard, Manchester, England, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 479,344, Aug. 12, 1965, now Patent No. 3,452,038. This application Oct. 25, 1968, Ser. No. 770,851
Claims priority, application Great Britain, Aug. 14, 1964, 33,366/64
Int. Cl. C11d *1/02, 3/28*
U.S. Cl. 252—152 **30 Claims**

A process for treating metallic surfaces with bis-benzotriazoles in the molecules of which two benzotriazole moieties are linked by means of a direct carbon-to-carbon bond, or by a straight chain or branched alkylene, cycloalkyl, carbonyl, sulphonyl, oxygen or sulphur bridge, whereby tarnishing and corrosion of such surfaces are inhibited and compositions, among them functional materials, containing such bis-benzotriazoles and producing such inhibition or metallic surfaces, are described.

3,531,415
LIQUID FORMS OF CHLORENDIC ACID BASED ESTER POLYOLS

Harold E. Reymore, Jr., Wallingford, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,318
Int. Cl. C09c *69/62;* **C08g** *22/24;* **C09k** *3/00*
U.S. Cl. 252—182 **3 Claims**

Blends of (a) 85 to 50 percent by weight of the tetrol obtained by esterifying chlorendic acid (or anhydride) with substantially 2 molar proportions of trimethylolpropane and (b) 15 to 50 percent by weight of dipropylene glycol are liquids. They can be used as the sole polyol component in making fire retardant polyurethane foams which have comparable properties to those obtained from closely related, but solid (and therefore difficult to handle), chlorendic acid based resins.

3,531,416
PROCESS FOR PRODUCING UO_2-PuO_2 OXIDE COMPOSITIONS

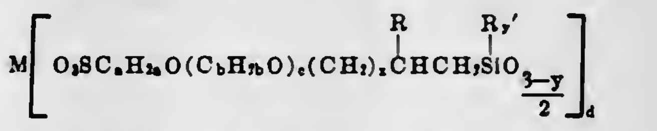
Hideo Akutsu, Kazuhiko Yoshioka, and Naomi Tsunoda, Naka-gun, Ibaragi Prefecture, Japan, assignors to Power Reactor and Nuclear Fuel Development Corporation
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,429
Claims priority, application Japan, Feb. 25, 1967, 42/11,716, 42/11,717
Int. Cl. C09k *3/00;* **G21c** *19/42*
U.S. Cl. 252—301.1 **12 Claims**

A UO_2-PuO_2 oxide composition of high density having coarse particles, suitable for accomplishing vibratory compaction in the preparation of fuel rods, produced by mixing uranium hydroxide gel and plutonium compounds in different states such as gel, precipitate, or powder, followed by drying, dehydrating, and sintering.

3,531,417
SILOXANE ETHER SULFONATES

Edward L. Morehouse, New City, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Apr. 21, 1967, Ser. No. 632,554
Int. Cl. B01f *17/02;* **C07f** *7/08, 15/00*
U.S. Cl. 252—312 **21 Claims**

Novel siloxanes containing 1 to 100 mole percent of units having the formula:



$$M\left[O_3SC_aH_{2a}O(C_bH_{2b}O)_c(CH_2)_x\overset{R}{\overset{|}{C}}HCH_2\overset{R_y'}{\overset{|}{Si}}O_{\frac{3-y}{2}}\right]_d$$

wherein M is a cation selected from the class consisting of monovalent, divalent, trivalent and tetravalent cations, R is a member of the class consisting of hydrogen and alkyl having 1 to 18 carbon atoms, R′ is a monovalent hydrocarbon group free of aliphatic unsaturation and having 1 to 18 carbon atoms, *a* is an integer of 2 to 4, *b* is an integer of 2 to 4, *c* is an integer of 1 to 100, *x* is an integer of 0 to 1, *y* is an integer of 0 to 2, and *d* is an integer of 1 to 4 and is equal to the valence of M, and 0 to 99 mole percent of units having the formula:

$$Z_nSiO_{\frac{4-n}{2}}$$

wherein Z is selected from the class consisting of hydrogen, monovalent hydrocarbon groups free of aliphatic unsaturation and having 1 to 18 carbon atoms, and monovalent polyoxyalkylene groups having the formula: $DO(C_eH_{2e}O)_s(OC)_tC_fH_{2f}$—wherein D is selected from the class consisting of hydrogen, alkyl, acyl and aryl and has no more than 18 carbon atoms, (OC) is carbonyl, *e* is an integer of 2 to 4, *f* is an integer of 2 to 4, *t* is an integer of 0 to 1, and *s* is an integer of 1 to 100, and *z* is an integer of 0 to 3.The novel siloxanes have excellent surfactant properties and are useful as wetting agents, emulsifiers foaming agents and detergents.

3,531,418
EN MASSE ENCAPSULATION PROCESS

Gene O. Fanger and Robert E. Miller, Dayton, Ohio, and Richard G. McNiff, Kokomo, Ind., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Aug. 18, 1965, Ser. No. 480,770

Int. Cl. A61k *9/04;* **B01j** *13/02;* **B44d** *1/09*

U.S. Cl. 252—316 **5 Claims**

A process is disclosed for manufacturing minute capsules, en masse, in a liquid manufacturing vehicle wherein only a single kind of polymeric capsule wall-forming material is deposited from solution onto dispersed particles of capsule core material by cooling the solution of polymeric material below a critical liquid-liquid phase separation temperature. The disclosed process utilizes, as an encapsulating system, only a single kind of polymeric material which is soluble, above a certain critical temperature, in a selected "poor" solvent system. At temperatures slightly below the critical temperature, the polymeric material emerges from its initial solution to deposit, as a separate, polymer-rich, liquid phase, onto intended capsule core entitles to produce capsules. At lower temperatures, the deposited polymeric capsule wall material becomes rigid and self-supporting. No phase-separation-inducing agents are utilized in the disclosed process.

3,531,419
CATALYST COMPRISING DIALKYL ALUMINUM DIFLUORIDE AND $TiCl_4$ OLEFINS

Edwin A. Schmall, Springfield, and Stanley B. Mirviss, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed May 24, 1961, Ser. No. 113,053

Int. Cl. B01j *11/78*

U.S. Cl. 252—429 **6 Claims**

2. A catalyst composition mixture of dialkyl aluminum difluoramine and titanium tetrachloride in a proportion of 0.1 to 6 moles of Al per mole of Ti, the alkyl radical in the dialkyl aluminum difluoramine containing 1 to 4 carbon atoms.

5. In the polymerization of C_2 to C_3 alkene to polymers, the improvement of catalyzing polymerization of the alkene in an inert liquid diluent containing dispersed dialkyl aluminum difluoramine having 1 to 4 carbon atoms in the alkyl radical and containing dissolved titanium tetrachloride in a proportion of 0.1 to 6 moles of Al per mole of Ti.

3,531,420
TETRAHALIDES OF TRANSITION METALS REDUCED WITH ACTIVATED ALUMINUM POWDER

Erik Tornqvist, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 351,848, Mar. 13, 1964; Ser. No. 431,641, Feb. 10, 1965; and Ser. No. 574,933, Aug. 25, 1966. This application Oct. 19, 1966, Ser. No. 587,698

The portion of the term of the patent subsequent to Jan. 7, 1986, has been disclaimed

Int. Cl. B01j *11/78, 11/84*

U.S. Cl. 252—442 **11 Claims**

A superior method for preparing reduced titanium or vanadium halides used as a catalyst component, by use of an aluminum powder reducing agent which has been activated. The activation is accomplished by grinding the aluminum powder with an inert metal halide prior to reacting with the titanium or vanadium composition being reduced. Superior catalyst components are obtained which are secured in better yields with shorter reaction times.

3,531,421
CERAMIC COMPONENT FOR ELECTRODES

Marc Foex, Montlouis, Anne-Marie Anthony, Meudon, and David Yerouchalmi, Le Mesnil-Saint-Denis, France, assignors to Commissariat a l'Energie Atomique, Paris, France

No Drawing. Filed Jan. 30, 1968, Ser. No. 701,552

Claims priority, application France, Feb. 8, 1967, 94,180

Int. Cl. H01b *1/06;* **G21d** *7/02*

U.S. Cl. 252—520 **8 Claims**

A ceramic component for electrodes, said component being essentially constituted at least by a solid solution of two mixed oxides having a perovskite structure and corresponding to the formula ABC_3 wherein A is an alkaline-earth metal or a rare-earth metal and B is a different metal from A. One of these mixed oxides is a rare-earth chromite having the general formula $RCrO_3$ wherein R designates a metal which forms part of the rare-earth group.

3,531,422
POLYMERIC COMPOUNDS CONTAINING NITROGEN AND PHOSPHORUS

Michael Green, Chew Stoke, Somerset, Robert Neville Haszeldine, Disley, and Gordon Stanley Anderson Hopkins, Poynton, England, assignors to National Research Development Corporation, London, England, a British corporation

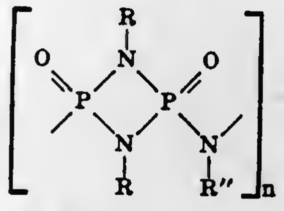
No Drawing. Filed Dec. 27, 1966, Ser. No. 604,548

Claims priority, application Great Britain, Dec. 29, 1965, 55,147/65, 55,148/65

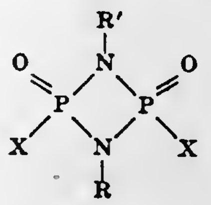
Int. Cl. C08g *33/16*

U.S. Cl. 260—2 **11 Claims**

Polymers having the repeating structural unit



wherein R, R′, and R″ are alkyl radicals having from 1–10 carbon atoms, substituted alkyl radicals, aryl radicals, or substituted aryl radicals, and *n* is an integer greater than 1. A process for the manufacture of these polymers from N,N′-disubstituted-dihalodiazadiphosphetidine-2,4-dioxides of the structural formula:



wherein R and R′ are as previously defined, and X represents a chlorine, bromine or iodine atom, by reaction with an amine R‴N(R″)R⁗, wherein R″ is as previously defined, and R‴ and R⁗ are hydrogen atoms or alkyl substituted silyl radicals. The polymers have good thermal and solvent resistance and are suitable for use as heat resistant coatings, sealants, gaskets, and the like.

3,531,423
THERMAL AND OXIDATIVE STABILIZED POLYAMIDES

Kenneth B. Stokes and Stuart Harrison, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Mar. 7, 1968, Ser. No. 711,191

Int. Cl. C08g *51/60*

U.S. Cl. 260—18 **7 Claims**

There is disclosed polyamides stabilized against the action of air and/or heat, and in particular to stabilized polymeric fat acid polyamides. The stabilizers are pyrazolidone compounds such as 1-phenyl-3-pyrazolidone or 1-(4-phenoxyphenyl)-3-pyrazolidone.

3,531,424
SILICONE-CONTAINING ROOM-TEMPERATURE VULCANIZING COMPOSITIONS

Gerald Bradley Swanson, Adrian, Mich., assignor, by mesne assignments, to Stauffer-Wacker Silicone Corporation, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 576,528, Sept. 1, 1966. This application Aug. 21, 1969, Ser. No. 853,608

Int. Cl. C08f *19/14*

U.S. Cl. 260—18 **12 Claims**

A room-temperature vulcanizing composition based on a hydroxy-organopolysiloxane having an organic group grafted to at least one silicon atom through an alkylene group. This organic group is constituted of recurring units derived from unsaturated organic compounds. The composition incorporates a metal salt of a high molecular weight fatty acid, e.g., stearic acid, as a reinforcing and flow-control agent.

3,531,425
MONOMERIC AND POLYMERIC HYDROXAMATES AND THEIR DERIVATIVES AND PROCESSES FOR MAKING AND USING SAME

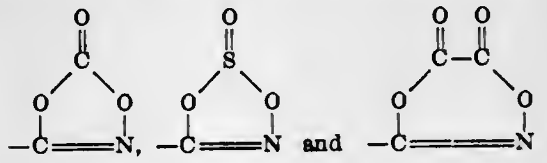
Emmett H. Burk, Jr., Glenwood, Larry G. Wolgemuth, Lansing, and Helmuth W. Kutta, Harvey, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,288

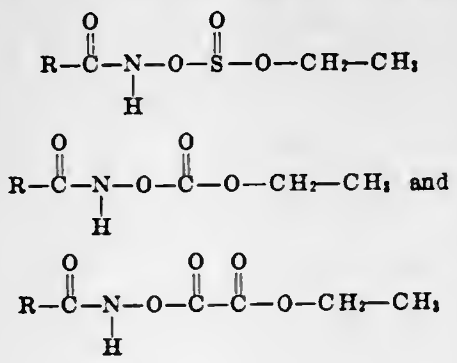
Int. Cl. C08d *13/08;* **C08g** *22/18*

U.S. Cl. 260—22 **47 Claims**

Compounds containing one or more of the reactive groups,



enter into a ring-opening, addition reaction with nucleophilic compounds containing a reactive hydrogen atom, or a positive metal ion or a positive ammonium ion to yield novel hydroxamates. Illustrative of the hydroxamates are those formed when the above reactive groups are attached to R groups and the nucleophile is ethanol:

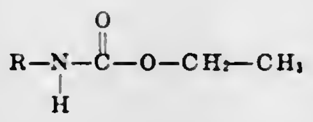


$$R-\overset{O}{\overset{\|}{C}}-\underset{H}{\underset{|}{N}}-O-\overset{O}{\overset{\|}{S}}-O-CH_2-CH_3$$

$$R-\overset{O}{\overset{\|}{C}}-\underset{H}{\underset{|}{N}}-O-\overset{O}{\overset{\|}{C}}-O-CH_2-CH_3 \text{ and}$$

$$R-\overset{O}{\overset{\|}{C}}-\underset{H}{\underset{|}{N}}-O-\overset{O}{\overset{\|}{C}}-\overset{O}{\overset{\|}{C}}-O-CH_2-CH_3$$

The hydroxamates can, in turn, be decomposed, releasing either SO_2, CO_2 or a mixture of CO and CO_2 and reversing the positions of the carbonyl group and the nitrogen atom, to yield, for example, urethanes, ureas, urea-urethanes, etc. Thus, for example, all of the above hydroxamates decompose to give the urethane product:



$$R-\underset{H}{\underset{|}{N}}-\overset{O}{\overset{\|}{C}}-O-CH_2-CH_3$$

3,531,426
ASPHALTS CONTAINING COPOLYMERS OF OLEFIN HYDROCARBONS AND MALEIC DERIVATIVES AS DUCTILITY IMPROVERS

Joosup Shim, Wenonah, and Paul Y. C. Gee, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 6, 1967, Ser. No. 688,368

Int. Cl. C08f *45/52*

U.S. Cl. 260—28.5 **5 Claims**

Improved asphaltic compositions are provided which contain, in an amount sufficient to improve the ductility of such compositions, a polymeric material selected from the group consisting of copolymers of a hydrocarbon having an olefin linkage and an alkyl maleate, and an alkyl ester of a copolymer of such hydrocarbons and maleic anhydride.

3,531,427
STABILIZED AQUEOUS SOLUTIONS OF ALKYL VINYL ETHER-UNSATURATED POLYBASIC ACID COPOLYMERS

Irene R. Kervenski, Kingston, and Clarence R. Stahl, Easton, Pa., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 2, 1967, Ser. No. 619,952

Int. Cl. C08f *15/02, 45/60*

U.S. Cl. 260—29.6 **22 Claims**

A stabilized composition of matter comprising: (1) an aqueous solution of an interpolymer of (a) an alpha, beta-unsaturated polybasic acid or anhydride and (b) an alkyl vinyl ether; and (2) a stabilizing amount of a synergistic mixture of (a) (ethylenedinitrilo) tetraacetic acid and (b) a second component selected from the group consisting of thiourea, allylthiourea, ammonium thiocyanate, tannic acid, pyrrolidone, vinyl pyrrolidone, pyrogallol, dimethyl sulfoxide, polyvinyl pyrrolidone, sodium diethyldithiocarbamate, resorcinol, gallic acid, 2,2′,4,4′-tetrahydroxybenzophenone, phloroglucinol, tartaric acid, citric acid, gluconic acid, and glycolic acid.

3,531,428
PROCESS FOR PREPARING POLYMER LATEXES

Jack Dickstein, Ping Kang Shen, and Eugene Alfred Duchesneau, Leominster, Worcester, Mass., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 26, 1967, Ser. No. 633,691

Int. Cl. C08f *1/13, 15/40, 37/00*

U.S. Cl. 260—29.6 **8 Claims**

This invention relates to a process for preparing mechanical and freeze-thaw stable polyvinyl chloride polymer latexes. More particularly, this invention relates to a process for preparing a polymer latex wherein a monomeric vinyl halide, an alpha-unsaturated carboxylic acid and, an ester of an alpha-methylene aliphatic monocarboxylic acid are copolymerized. The ester is continuously added to the reaction vessel during up to about the first 30–80% of the total reaction time. The reaction thereafter continues and unreacted monomeric vinyl halide is thereafter stripped from the reaction mass.

3,531,429

METHOD FOR PRODUCING MODIFIED RUBBERY LATICES

George F. Schmidt and Emil G. Sammak, Dover, Del., assignors to Standard Brands Chemical Industries, Inc., Dover, Del., a corporation of Delaware

No Drawing. Filed June 17, 1965, Ser. No. 464,823

Int. Cl. C08d *1/09*

U.S. Cl. 260—29.7 **5 Claims**

A modified latex characterized by enhanced bonding properties for non-woven fibrous articles comprising (a) a copolymer prepared by the emulsion polymerization of monomeric material containing at least one aliphatic conjugated diene and at least one monoolefinic monomer, and (b) up to about 20 parts per 100 parts of copolymer solids in the latex of a polyisocyanate compound having isocyanate groups which are insensitive to water.

A method for preparing the modified latex is also disclosed. This method includes the steps of mixing in an aqueous medium containing at least one emulsifier, a monomeric material comprising at least one aliphatic conjugated diene and at least one monoolefinic monomer, adding to the aqueous medium up to about 20 parts per 100 parts of monomeric material of a polyisocyanate compound having isocyanate groups that are insensitive to water, and thereafter emulsion polymerizing the monomeric material under such conditions that the polyisocyanate compound substantially does not react with the monomeric material.

3,531,430

EPDM POLYMER COMPOSITION HAVING IMPROVED BUILDING TACK AND PLASTICITY

Edwin Robert Evans, 2406 London Drive, Chalfonte, Wilmington, Del. 19803

No Drawing. Filed May 4, 1967, Ser. No. 636,008

Int. Cl. C08f *15/40*

U.S. Cl. 260—31.2 **9 Claims**

An EPDM polymer is plasticized and tackified by mixing with a compound of the formula Ar—X where Ar is a cyclic group having one or more hydrocarbon substituents, which substituents contain a total of at least ten carbon atoms and X is a hydrophilic group such as hydroxyl.

3,531,431

PROCESS FOR THE POLYMERIZATION OF VINYL PYRIDINE

Joseph S. Nissan, Watertown, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Sept. 21, 1966, Ser. No. 580,931

Int. Cl. C08f *5/00, 7/12*

U.S. Cl. 260—32.8 **16 Claims**

Novel process for preparing vinylpyridine polymer free bases and for preparing compositions including the same for washing and protecting photographic silver images.

3,531,432

FLUOROCARBON POLYMER COMPOSITION HAVING SELF-LUBRICATING CHARACTERISTICS

Clair Warren Graver, King of Prussia, Pa., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 730,631, May 20, 1968. This application Oct. 1, 1968, Ser. No. 764,336

Int. Cl. C08f *3/28, 29/22*

U.S. Cl. 260—41 **6 Claims**

A moldable, self-lubricating fluorocarbon polymer composition is comprised of from about 40 to about 75 wt. percent vinylidene fluoride polymer, from about 10 to about 35 wt. percent tetrafluoroethylene polymer and from about 5 to about 30 wt. percent of telomers of the structure $R—(CF_2CF_2)_nX$ where R is perfluoroalkyl or monochloroperfluoroalkyl of one to four carbon atoms, X is chlorine, fluorine or iodine, and n is an integer from 6 to 16. The composition may be molded to form sleeve bearings, ball joint sockets, and other bearing shapes.

3,531,433

MICROBE-INHIBITED POLYESTERURETHANES

Otto C. Elmer, Akron, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 30, 1968, Ser. No. 763,928

Int. Cl. C08g *51/60, 51/64*

U.S. Cl. 260—45.8 **12 Claims**

This invention relates to the preparation of a microbe-inhibited polyesterurethane composition prepared by compounding the polymer composition with a microbe inhibiting amount of a halogenated sulfonyl or sulfinyl pyridine compound, preferably in combination with a polycarbodiimide.

3,531,434

STABILIZED POLYETHYLENE SULFIDE

Raymond Isaac, Elgin, Ill., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Aug. 10, 1967, Ser. No. 659,584

Int. Cl. C08f *45/56*

U.S. Cl. 260—45.75 **18 Claims**

Salts of dithiocarbamic acids are used alone, and in conjunction with various other compounds such as organic nitrogen compounds, as stabilizers for moldable ethylene sulfide polymers to prevent the thermal degradation of such polymers during the use of the articles molded therefrom under atmospheric conditions.

3,531,435

FILM-FORMING AROMATIC POLYKETOESTER POLYMERS AND PERCURSORS

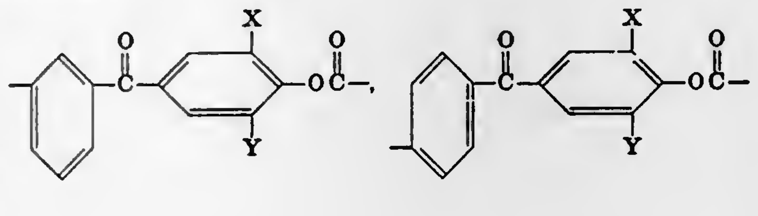
Robert L. Wear, West St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Sept. 1, 1965, Ser. No. 484,427

Int. Cl. C07c *65/20, 69/76;* **C08g** *17/00*

U.S. Cl. 260—47 **27 Claims**

High temperature-stable films can be formed from polymeric ketoesters having repeating units consisting essentially of



or both, wherein X is H, CH_3 or Cl, Y is H or CH_3, Y being H when X is Cl. Novel monomers and keto-aromatic precursor compounds are also disclosed.

3,531,436

POLYIMIDES OF SUBSTITUTED PHTHALIC ANHYDRIDE

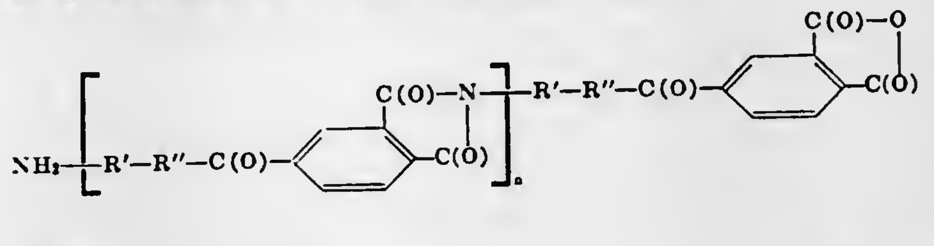
Stanley Robert Sandler, Springfield, Florence Ray Berg, Philadelphia, and George Kitazawa, Yardley, Pa., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 493,237, Oct. 5, 1965. This application Apr. 21, 1969, Ser. No. 818,200

Int. Cl. C08g *20/32*

U.S. Cl. 260—47 **7 Claims**

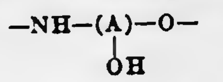
The present invention relates to imides and polyimides having the general structural formula



wherein:

(1) R' is a hydrocarbon moiety;

(2) R'' is selected from the group consisting of (a)



$$-NH-\underset{\displaystyle OH}{\underset{|}{(A)}}-O-$$

wherein A is the hydrocarbon moiety of a monohydric alcohol containing at least one epoxy group, and (b) —NH—; and

(3) n is an integer up to about 100.

3,531,437

DIMETHYLFORMAMIDE SOLUBLE PHOSPHORUS-CONTAINING POLYPYROMELLIMIDES

André Louis Armand Rio, Lyon, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Continuation-in-part of application Ser. No. 722,217, Apr. 18, 1968. This application Apr. 29, 1969, Ser. No. 820,313

Claims priority, application France, Apr. 26, 1967, 103,924; Jan. 18, 1968, 136,554

Int. Cl. C08g *20/32*

U.S. Cl. 260—47 **7 Claims**

The invention provides novel polypyromellimides in which pyromellitic diimide units are linked via units derived from bis (m - aminophenyl)alkylphosphine oxide with up to 80% of units derived from a second bis-(aminophenyl) compound. These new polymers can be made into nonflammable films and moulded articles of high melting point.

3,531,438

PROCESS FOR THE STEPWISE HARDENING OF UNSATURATED POLYESTERS

Hermann Schnell, Krefeld-Urdingen, and Hans Rudolph and Klaus Prater, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 30, 1965, Ser. No. 468,606

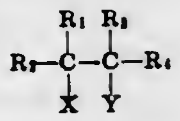
Claims priority, application Germany, Aug. 8, 1964, F 43,711

The portion of the term of the patent subsequent to Apr. 11, 1984, has been disclaimed

Int. Cl. C08g *17/10, 17/12*

U.S. Cl. 260—75 **3 Claims**

Production of a gel stage prepolymer from an unsaturated polyester by heating a monomer-free unsaturated polyester in the presence of a catalytic amount of a catalyst of the formula



$$R_2-\overset{\displaystyle R_1}{\overset{|}{\underset{\underset{\displaystyle X}{|}}{C}}}-\overset{\displaystyle R_3}{\overset{|}{\underset{\underset{\displaystyle Y}{|}}{C}}}-R_4$$

wherein R_1 and R_2 are phenyl radicals, R_3 is hydrogen, methyl or phenyl, R_4 is methyl or phenyl and X and Y are hydroxyl, amino, halogen, benzoxy or phenoxy or together with the adjacent carbon atoms complete a cyclic carbonate or sulfite moiety, until a gel stage prepolymer is obtained and then interrupting said heating and cooling the gel stage prepolymer to room temperature, said gel stage prepolymer being useful for the production of moulded articles on further heating.

3,531,439

METHOD OF MANUFACTURING FLEXIBLE FIBROUS SHEET MATERIALS

Osamu Fukushima, Kurashiki, and Katsutoshi Hosoda, Takatsuki, Osaka-fu, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan

No Drawing. Continuation-in-part of application Ser. No. 485,527, Sept. 7, 1965. This application Apr. 7, 1969, Ser. No. 814,187

Claims priority, application Japan, Sept. 25, 1964, 39/54,359

Int. Cl. C09j *5/00*

U.S. Cl. 260—75 **10 Claims**

A method of making flexible fibrous sheet material which comprises forming a fibrous sheet from fibers of a blended polymeric composition without impregnating the sheet with a solution or emulsion of a polymeric material, and dissolving out from the sheet at least one of the polymeric materials constituting the fibers of blended polymeric composition.

3,531,440

ESTER MODIFIED POLYMERS AS FUEL DISPERSANTS

Enver Mehmedbasich, El Cerrito, and Eddie G. Lindstrom, Martinez, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Original application Apr. 28, 1965, Ser. No. 451,663. Divided and this application Feb. 10, 1969, Ser. No. 816,449

Int. Cl. C08f *27/00*

U.S. Cl. 260—78.4 **6 Claims**

Succinic substituted polymers of alpha-olefins are employed as dispersants in fuels. The polymers are of at least 100,000 molecular weight, the carbon atoms of the olefins have an average number in the range of 6 to 18 and the esters have hydrocarbon groups of from 1 to 30 carbon atoms.

3,531,441

INTERPOLYMERS OF VINYL FLUORIDE

Frederic B. Stilmar, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 1, 1966, Ser. No. 530,770

Int. Cl. C05d *15/00*

U.S. Cl. 260—78.5 **36 Claims**

Normally solid interpolymers of vinyl fluoride, 0.05 to 0.5 mole tetrafluoroethylene and 0.05 to 1.0 mole of a non-halogenated neutral polymerizable vinyl monomer free of aromatic groups. Moles present are based on one mole of vinyl fluoride. Additionally, the interpolymer may contain 0.005 to 0.1 mole of a selected olefinic acid or derivative thereof. The polymers are useful as protective coatings when applied from pigment-containing compositions.

3,531,442

ALPHA-SULFO-N,N'-ALKYLIDENE BIS-AMIDE POLYMERS

Leonard E. Miller, Chagrin Falls, and Donald L. Murfin, Mayfield Heights, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 2, 1967, Ser. No. 619,923

Int. Cl. C07c *143/16;* **C08f** *3/88, 3/90*

U.S. Cl. 260—79.3 **10 Claims**

Alpha-sulfo-N,N'-alkylidene bis-amides, i.e., alkylidene gem-bis-amides having a sulfo substituent on the carbon atom adjacent to the carbon atom bearing the two amido groups, are novel compounds which find use in applications where amides and sulfonic compounds are useful. Bis-acrylamides or the like are useful as monomers from which polymers, i.e., homopolymers and interpolymers, are readily derived. The polymers are useful as gelling agents for aqueous systems. The polymers are useful also for the preparation of fibers, plastics, resins, etc.

3,531,443

POLY-m- AND p-CARBORANYLENEDISULFIDES

Stelvio Papetti, Hamden, Nick S. Semenuk, New Haven, and Hansjuergen A. Schroeder, Hamden, Conn., assignors to Olin Corporation, a corporation of Virginia

No Drawing. Filed July 22, 1968, Ser. No. 746,290

Int. Cl. C08g *23/00, 33/00*

U.S. Cl. 260—79 **9 Claims**

Polycarboranylene disulfides consisting essentially of recurring units of the formula:

$$\left[S-M-S \right]$$

wherein M is the meta or para carboranylene radical, are prepared, for example, by reacting absolute ethanol with a bis(halosulfenyl)-m-carborane or a bis(halosulfenyl)-p-carborane. These polymeric products are useful as high energy fuels when compounded with oxidizers.

3,531,444

VULCANIZATION ACCELERATOR COMBINATION

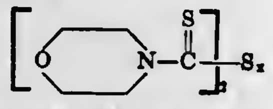
Rudolf Adolf Behrens, Sparta, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 634,461, Apr. 28, 1967. This application Oct. 25, 1967, Ser. No. 677,885

Int. Cl. C08f *27/06*

U.S. Cl. 260—79.5 **9 Claims**

A vulcanizable composition comprising sulfur, zinc oxide, a sulfur vulcanizable hydrocarbon elastomer such as butyl rubber, and a vulcanization accelerator composition comprising a combination of a bis(morpholinothiocarbonyl)sulfide of the formula



wherein *x* is an integer of 1 through 6, and a thiuramsulfide or a metal dithiocarbamate.

3,531,445

PROCESS FOR HYDROGENATING POLYMERS

Toshio Yoshimoto, Seiya Kaneko, Hiroshi Yoshii, and Takashi Sasaki, Tokyo, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan

No Drawing. Filed Apr. 15, 1969, Ser. No. 816,406

Claims priority, application Japan, Apr. 23, 1968, 43/26,925

Int. Cl. C08f *27/25*

U.S. Cl. 260—80.7 **24 Claims**

A new catalyst for hydrogenation of a polymer having hydrogenatable unsaturated bonds in a viscous solution form with hydrogen is prepared by mixing under an inert atmosphere

(1) At least one hydrocarbon polymer having at least 5 mole percent of carbon-carbon double bonds,

(2) At least one organic compound selected from the group consisting of a metal carboxylate and a metal chelate compound, in which chelating groups are attached to the metal through a pair of two oxygen atoms, said metal being selected from the group consisting of nickel, cobalt and iron and

(3) At least one metal compound reducing agent having the formula

$$M'R'_{n'}$$

wherein M' is a metal selected from the group consisting of lithium, magnesium and aluminium, R' is a member selected from the group consisting of a hydrocarbon radical having from 1 to 12 carbon atoms and an alkoxy radical having from 1 to 12 carbon atoms and *n'* is a valence number of M', the molar ratio of said organic compound to the carbon-carbon double bonds of said hydrocarbon polymer being from 1:0.1 to 1:50.

3,531,446

PROCESS FOR THE MANUFACTURE OF AMORPHOUS COPOLYMERS FROM ETHYLENE AND HIGHER α-OLEFINS IN SUSPENSION

Siegfried Sommer, Bad Soden, Taunus, and Johannes Brandrup, Neu-Isenburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 23, 1968, Ser. No. 707,474

Claims priority, application Germany, Mar. 10, 1967, F 51,785

Int. Cl. C08f *1/11*

U.S. Cl. 260—80.78 **6 Claims**

The present invention relates to a process for the manufacture of copolymers from ethylene and higher α-olefins and of terpolymers from ethylene, a higher α-olefin and a non-conjugated diene. Although these polymers may have rubber-like features, they are obtained according to the invention in form of small particles which do not stick together. This is effected by carrying out the polymerization in a halohydrocarbon as dispersion medium and a finely divided inert solid organic polymer as separating agent.

3,531,447

SULFUR-VULCANIZABLE COPOLYMERS OF ETHYLENE, PROPYLENE AND 5-(2'- AND/OR 3'-METHYL-2-BUTENYL-)-NORBORNENE-(2) AND PROCESS FOR PREPARING THEM

Albert Gustav Martin Gumboldt, Frankfurt am Main, Jürgen Helberg, Kelkheim, Taunus, and Hans-Dieter Stemmer, Hattersheim (Main), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 16, 1967, Ser. No. 623,538

Claims priority, application Germany, Mar. 19, 1966, F 48,705

Int. Cl. C08d *3/04;* **C08f** *15/40, 27/06*

U.S. Cl. 260—80.78 **7 Claims**

Sulfur-vulcanizable copolymers of ethylene, propylene and 5-(2'-methyl-2'-butenyl-)-norbornene-(2) or 5-(3'-methyl-2'-butenyl-)-norbornene-(2) prepared in the presence of a mixed catalyst of a vanadium compound soluble in inert solvents, an organoaluminum compound, alkyl aluminum sesquichloride or alkylaluminum dichloride and activators such as trichloroacetic acid ester, thionyl chloride, hexachlorocyclopentadiene or hexachlorocyclopentenone.

3,531,448

PROCESS FOR REMOVAL OF HYDROGENATION CATALYST FROM HYROGENATED POLYMERS

Marvin M. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 6, 1968, Ser. No. 773,953

Int. Cl. C08d *5/02;* **C08f** *27/25*

U.S. Cl. 260—85.1 **5 Claims**

The removal of hydrogenation catalyst residue from hydrogenated thermoplastic or elastomeric polymers in solution is readily achieved by treating the hydrogenated, catalyst-containing polymer solution with an aqueous solution of an ammonium phosphate prior to separation.

3,531,449

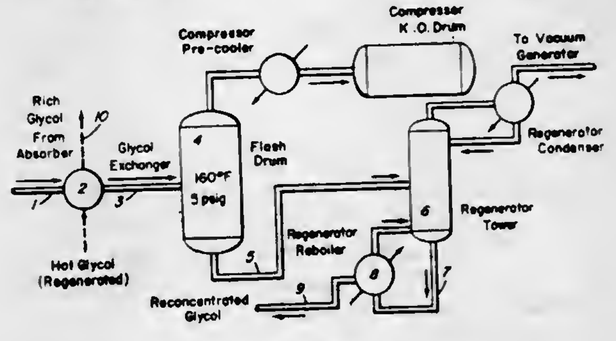
GLYCOL DRYING IN A METHYL CHLORIDE DEHYDRATION PLANT

Jose A. Alvarez, Parsippany, Edward F. Upchurch, Chatham, and Charles C. Wolfe, West Millington, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 31, 1968, Ser. No. 772,308

Int. Cl. C08d *3/04*

U.S. Cl. 260—85.3 **6 Claims**



CONVENTIONAL GLYCOL REGENERATION SYSTEM

Spent glycol is regenerated by flashing at reduced pressure and temperature followed by fractionation. The process results in substantially reduced glycol losses and elimination of corrosion problems attending conventional regeneration processes.

3,531,450

THREE COMPONENT HYDROGENATION CATALYSTS AND A PROCESS FOR HYDROGENATING POLYMERS BY THE USE OF THEM

Toshio Yoshimoto, Kodaira, Tokyo, Seiya Kaneko, Musashino, Tokyo, Tsuneaki Narumiya, Kodaira, Tokyo, and Hiroshi Yoshii, Higashi-Murayama, Tokyo, Japan, assignors to Bridgestone Tire Company Limited, Tokyo, Japan

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,054

Claims priority, application Japan, Oct. 31, 1966, 41/71,349; July 20, 1967, 42/46,302

Int. Cl. C08d *5/00;* **C08f** *1/88, 27/25*

U.S. Cl. 260—85.1 **25 Claims**

Catalytic hydrogenation of the hydrogenatable unsaturated bonds of polymer in a viscous solution form with hydrogen by using a three component catalyst consisting of

(1) at least one kind of an unsaturated hydrocarbon selected from the group consisting of an olefinically unsaturated, hydrocarbon and an acetylenically unsaturated hydrocarbon,

(2) at least one kind of an organic compound of the metal selected from the group consisting of nickel, cobalt and iron and

(3) at least one kind of a metal compound reducing agent.

3,531,451

PROCESS FOR THE MANUFACTURE OF HIGH MOLECULAR WEIGHT HOMO- AND COPOLYMERS OF N-VINYLAZETIDINONES

Michael Lederer, Frankfurt am Main, and Horst Schnabel, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,487

Claims priority, application Germany, May 17, 1966, F 49,223

Int. Cl. C08f *7/00*

U.S. Cl. 260—85.5 **11 Claims**

Homo- and copolymers of determined N-vinylazetidinones are prepared according to the polymerization process known per se, wherein compounds having polymerizable olefinic double bonds are used as comonomers for the copolymerization.

3,531,452

TEMPERATURE-RESISTANT ARTICLES

Russell K. Griffith, Chagrin Falls, and Roman Zorska, Cleveland, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 11, 1967, Ser. No. 674,632

Int. Cl. C08f *3/76, 15/22, 15/28*

U.S. Cl. 260—88.7 **5 Claims**

Temperature resistant, flame resistant molded articles are prepared from oriented acrylonitrile polymers by molding at elevated temperature and pressure and heat treating at a temperature of from about 140 to 250° C.

3,531,453

POLY(VINYL CHLORIDE) OF IMPROVED THERMAL STABILITY

Norman G. Gaylord, New Providence, and Akio Takahashi, Parsippany, N.J., assignors to Gaylord Associates Inc., Newark, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 11, 1968, Ser. No. 711,844

Int. Cl. C08f *27/00, 3/30*

U.S. Cl. 260—92.8 **5 Claims**

Poly(vinyl chloride) with improved thermal stability is prepared by contacting vinyl chloride homopolymer with a dialkylaluminum halide followed by treatment with a lower alkanol.

3,531,454

PROCESS FOR PRODUCING VINYL CHLORIDE POLYMER RESINS

Iko Ito, Mutuo Goto and Hachizo Tamai, Niihama-shi, Japan, assignor to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed July 1, 1968, Ser. No. 741,345

Claims priority, application Japan, July 7, 1967, 42/43,885

Int. Cl. C08f *1/13, 3/30*

U.S. Cl. 260—92.8 **6 Claims**

An improvement in an air release property of a paste of vinyl chloride polymer resin by conducting emulsion polymerization of monomers of vinyl chloride or vinyl chloride with other ethylenically unsaturated compounds in the presence of 0.1 to 1% by weight, based on the monomer, of an alkali metal or ammonium salt of branched chain alkyl sulfate as a polymerization emulsifier.

3,531,455

PEROXIDE-CURED CHLORINATED POLYETHYLENE

Robert Michael Straub, Heritage Park, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 28, 1967, Ser. No. 634,508

Int. Cl. C08f *27/00*

U.S. Cl. 260—94.9 **9 Claims**

A curable chlorinated polyethylene composition comprising a chlorinated polyethylene containing 20–50% by weight chlorine and having a molecular weight of at least 20,000, 1–10 parts of an organic peroxide and about 0.5–5 parts of triallylcyanurate per 100 parts of polymer. The combination of organic peroxide and triallyl cyanurate provides a curing system for chlorinated polyethylenes which upon being subjected to heat gives tightly vulcanized products and has a high degree of processing safety.

3,531,456

5-ARYLAZO-PYRIMIDINE MONOAZO DYESTUFFS

Hans Ackermann, Werner Bossard, Jacques Voltz, and Hans Wegmuller, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Nov. 8, 1967, Ser. No. 681,551
Claims priority, application Switzerland, Apr. 28, 1967, 6,126/67
Int. Cl. C09b *24/36;* **D06p** *1/02*

U.S. Cl. 260—154 **9 Claims**

Dispersible dyes which are 5 - arylazo-pyrimidines wherein the carbon atoms in 2-, 4- and 6-position of the pyrimidine ring are substituted by aliphatically, araliphatically or cycloliphatically mono-substituted amino groups and the arylazo moiety comprises preferably a nitrophenyl radical or a benzothiazole radical; such dyestuffs being distinguished by good affinity especially for polyester fibers, affording dyeings on these fibers which have good fastness properties and especially good light fastness; processes for dyeing polyester fibers with the aforesaid dyestuffs; and compositions containing polyester fiber materials and such dyestuffs.

3,531,457

5-ARYLAZO-PYRIMIDINE MONOAZO DYESTUFFS

Hans Ackermann, Werner Bossard, Jacques Voltz, and Hans Wegmuller, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Nov. 8, 1967, Ser. No. 681,552
Claims priority, application Switzerland, Apr. 28, 1967, 6,126/67
Int. Cl. C09d *29/36;* **D06p** *1/02*

U.S. Cl. 260—154 **5 Claims**

Dispersible dyes which are 5 - arylazopyrimidines wherein one of the carbon atoms in 2-, 4- and 6-position of the pyrimidine ring is substituted by an aliphatic, araliphatic, cycloaliphatic or carbocyclic aromatic radical bound by way of an —O— or —S— bridge to the pyrimidine nucleus and the remaining carbon atoms in the aforesaid positions are substituted by aliphatically, araliphatically or cycloaliphatically mono-substituted amino groups and the arylazo moiety comprises preferably a nitrophenyl radical; such dyestuffs being distinguished by good affinity especially for polyester fibers, affording dyeings on these fibers which have good fastness properties and especially good light fastness; processes for dyeing polyester fibers with the aforesaid dyestuffs; and compositions containing polyester fiber materials and such dyestuffs.

3,531,458

5-ARYLAZO-PYRIMIDINE MONOAZO DYESTUFFS

Hans Ackermann, Werner Bossard, Jacques Voltz, and Hans Wegmuller, Riehen, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Nov. 8, 1967, Ser. No. 681,553
Claims priority, application Switzerland, Apr. 27, 1967, 6,054/67
Int. Cl. C09b *19/36;* **D06p** *1/02*

U.S. Cl. 260—154 **8 Claims**

Dispensible dyestuffs which are 5-arylazo-pyrimidines wherein one of the carbon atoms in 2-, 4- and 6-position of the pyrimidine ring is occupied by a substituted hydroxyl or mercapto group and the other two carbon atoms by amino groups, at least one of the substituents of the nitrogen atoms of the last-mentioned amino groups being an unsubstituted or non-ionogenically substituted phenyl radical; such dyestuffs being distinguished by good affinity especially for polyester fibres and affording dyeings on these fibres which have excellent fastness properties; processes for dyeing polyester fibers with these dyestuffs; and compositions containing polyester fibres and such dyestuffs.

3,531,459

MONOAZO-DYESTUFFS CONTAINING FIBER-REACTIVE AND WATER SOLUBILIZING RADICALS

Max Eugene Chiddix and Harlan B. Freyermuth, Easton, Pa., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,506
Int. Cl. C09b *29/22;* **D06p** *1/02*

U.S. Cl. 260—163 **7 Claims**

An azo, anthraquinone or phthalocyanine dyestuff devoid of nuclearly substituted sulfonic and carboxylic acid groups and containing 1 to 4 nuclearly substituted fiber-reactive radicals which in free acid form have the formula —$(CH_2)_n$—$SO_2CH_2CH_2$—X and 1 to 4 nuclearly substituted water-solubilizing radicals which in free acid form have the formula —$(Y)_p$—$(CH_2)_m$—X wherein X is sulfato, phosphato, or sulfobenzenesulfonyloxy, Y is —NZ—, SO_2NZ—, or —O—, Z is —H or —$(CH_2)_m$—X, n and p each has a value of 0 or 1, and m is an integer of 2 to 3, said dyestuffs being reactive with fibrous materials when applied under acid binding conditions.

3,531,460

ERYTHROMYCIN TETRACYCLINE CONTAINING ANTIBIOTIC DERIVATIVES

Rodolfo Ferrari, Giuseppe Ghielmetti, and Sergio Magnaghi, Milan, Italy, assignors to SPA-Societa Prodotti Antibiotici S.p.A., Milan, Italy

No Drawing. Filed Jan. 23, 1968, Ser. No. 699,783
Claims priority, application Great Britain, Jan. 25, 1967, 3,776/67
Int. Cl. C07c *47/18*

U.S. Cl. 260—210 **15 Claims**

There are described new salts of antibiotics with phosphorylated hexoses and with non-toxic inorganic and organic acids. Of primary interest are the reaction products of a hexose mono- or di-phosphate with a known tetracycline antibiotic and with both erythromycin and a known tetracycline antibiotic, also said latter mixed antibiotic product further reacted with pyrrolidine and formaldehyde, and non-hexose products such as phosphoric, sulfuric or citric acid salts of both erythromycin and a known tetracycline antibiotic and, finally, said phosphoric or sulfuric or citric acid salt further reacted with pyrrolidine and formaldehyde. The new compounds have the pharmaceutical utilities associated with the known antibiotics per se.

3,531,461

PRODUCTION AND RECOVERY OF METHYL α-D-MANNOPYRANOSIDE

John Kelvin Hamilton and Franklin W. Herrick, Shelton, and Jim D. Wilson, Olympia, Wash., assignors to ITT Rayonier Incorporated

No Drawing. Filed Nov. 2, 1967, Ser. No. 680,019
Int. Cl. C07c *47/18*

U.S. Cl. 260—210 **11 Claims**

A method is disclosed for producing, isolating and recovering essentially pure crystalline methyl α-D-mannopyranoside from plant materials and their extracts that contain wood sugars and/or lower molecular weight oligo- and polysaccharides among which are D-mannose and polymers and copolymers thereof. The crude mannose-containing plant material is treated under essentially andhydrous conditions at an elevated temperature with methanol containing a mineral acid such as HCl or H_2SO_4 to convert the carbohydrates to simple wood sugar methyl glycosides. The hot, acidic, glycoside-containing mixture is then cooled to ambient temperature or below whereupon crude methyl α-D-mannopyranoside preferentially crystallizes out of solution and is recovered. The crude methyl α-D-mannopyranoside thus obtained can be purified by redissolving it in hot solvent, removing the color with an adsorptive material such as activated carbon, filtering the hot solution, cooling it and recrystallizing the methyl α-D-mannopyranoside as before.

3,531,462

CARBONATES OF CARDENOLIDE TRIDIGITOXOSIDES AND ESTER DERIVATIVES THEREOF

Daisuke Satoh, Nishinomiya-shi, and Tetuo Minesita, Suita-shi, Japan, assignors to Shionogi & Co., Ltd., Osaka, Japan

No Drawing. Filed May 13, 1968, Ser. No. 728,845
Claims priority, application Japan, May 19, 1967, 42/31,877; May 29, 1967, 42/34,095; June 20, 1967, 42/39,488, 42/39,489
Int. Cl. C07c *173/00*

U.S. Cl. 260—210.5 **45 Claims**

Carbonates of cardenolide tridigitoxosides or ester derivatives thereof, a pharmaceutical preparation containing the compounds of the present invention, and a process for preparing them by reacting a carbonating agent with a cardenolide tridigitoxoside or ester derivative thereof said carbonates being useful as cardiotonic agents.

3,531,463

ENRICHMENT AND/OR SEPARATION OF AN ORGANIC COMPOUND BY ADSORPTION PROCESSES

Richard L. Gustafson, Horsham, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 435,058, Feb. 24, 1965. This application Jan. 31, 1967, Ser. No. 612,771
Int. Cl. C07d *51/50;* **C07c** *103/19*

U.S. Cl. 260—211.5 **15 Claims**

Disclosed herein is a process for separating from an aqueous medium water-soluble substances having hydrophobic and hydrophilic portions in their molecules. The process involves contacting the aqueous medium with particles of a non-ionogenic, macroreticular water-insoluble cross-linked polymer of polymerizable ethylenically unsaturated molecules comprising about 2 to 100 weight percent of at least one polyvinylbenzene monomer selected from the group consisting of divinylbenzene, trivinylbenzene, alkyldivinylbenzenes having from 1 to 4 alkyl groups of 1 to 2 carbon atoms substituted in the benzene nucleus and alkyltrivinylbenzenes having from 1 to 3 alkyl groups of 1 to 2 carbon atoms substituted in the benzene nucleus.

3,531,464

ALTERNATIVE SYNTHESIS OF 2′-DEOXY-5-(TRIFLUOROMETHYL)-URIDINE AND THE ALPHA-ANOMER THEREOF

Kenneth J. Ryan, Redwood City, Edward M. Acton, Menlo Park, and Leon Goodman, Palo Alto, Calif., assignors to the United States of America as represented by the Secretary of the Department of Health, Education and Welfare

No Drawing. Filed Oct. 21, 1966, Ser. No. 588,284
Int. Cl. C07d *51/52*

U.S. Cl. 260—211.5 **5 Claims**

2-deoxy-5-(trifluoromethyl) uridine and its alpha-anomer are prepared by condensing 5-(trifluoromethyluracil, as the bis-(trimethylsilyl) derivative, with 3,5-bis-(p-nitrobenzoate) of 2-deoxyribo-furanosyl chloride, in benzene in the presence of mercuric acetate, and deacylating p-nitrobenzoate esters resulting from said condensation. Cooperating separation and deacylation steps are also disclosed.

3,531,465

PREPARATION OF ORGANIC DERIVATIVES FROM DECAUSTICIZED XANTHATES

Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 416,795, Dec. 8, 1964, which is a continuation-in-part of application Ser. No. 200,621, June 7, 1962. This application Aug. 21, 1968, Ser. No. 754,447
Int. Cl. C08b *9/00, 21/18*

U.S. Cl. 260—214 **13 Claims**

Various organic derivatives are prepared by reaction of a decausticized polymeric alcohol xanthate, either as a dried powder or as a solution in an inert aqueous or non-aqueous medium, by nucleophilic addition or displacement reaction with an electrophilic material. By use of decausticized polymeric xanthates it is possible to carry out nucleophilic addition or displacement reactions in high yield with substantial elimination of by-products other than those originating in the nucleophilic reaction. In some cases, the best nucleophilic reactions require the use of polymeric xanthate which is not only decausticized but also substantially deionized.

Typical nucleophilic reactions carried out in accordance with this invention involves the reaction of decausticized cellulose xanthate, amylose xanthate, starch xanthate, dextran xanthate, polyvinyl alcohol xanthate, polyallyl xanthate, etc. Either as a dry solid or in aqueous or non-aqueous solution with electrophilic reagents such as alkyl halides, isocyanates, nitriles, acyl halides, various halogenated organic compounds, etc.

3,531,466

PROCESS FOR THE PRODUCTION OF IMINOSTILBENE

Helmut Beschke, Heerstrasse 148, Frankfurt am Main, Germany, and Wilhelm Alfons Schuler, Am Elisabethenbrunnen 17, Bad Homburg, vor der Hohe, Germany

No Drawing. Filed May 4, 1966, Ser. No. 547,424
Claims priority, application Germany, May 14, 1965, D 47,262
Int. Cl. C07d *41/08*

U.S. Cl. 260—239 **13 Claims**

Iminostilbene is produced from iminodibenzyl vapor in a conversion of at least 60% and in yields of at least 60% by heating at 300 to 700° C. with a dehydrogenation catalyst containing at least one non-noble metal of the transition elements. Preferably, the catalyst is employed on a non-metallic carrier of 10 to 500 m.^{2}/g.

3,531,467

PROCESS FOR THE PREPARATION OF 2,3,4,5-TETRAHYDRO - 5 - ARYL - 1H - 1,4 - BENZODIAZEPINE DERIVATIVES

Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,201
Int. Cl. C07d *53/06*

U.S. Cl. 260—239 **1 Claim**

Process for the preparation of 2,3,4,5-tetrahydro-5-aryl-1H-1,4-benzodiazepine derivatives comprising intramolecularly condensing the corresponding glycine compounds to form benzodiazepin-3-one derivatives and reducing the keto group of said compounds to obtain the tetrahydro derivatives. The 2,3,4,5-tetrahydro-5-aryl-1H-1,4-benzodiazepine derivatives are useful as anti-convulsant agents.

3,531,468

MACROBICYCLIC COMPOUNDS

Chung Ho Park and Howard E. Simmons, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 1, 1967, Ser. No. 634,903

Int. Cl. C07d *41/00, 53/00*

U.S. Cl. 260—239 **5 Claims**

Macrobicyclic organic compounds having two nitrogen bridgehead atoms and having chains of 6 or more methylene groups joining the two bridgeheads, exist in two isomeric forms in which the bridgehead links are directed inwardly or outwardly from the cage structure. The compounds can be used as polymerization catalysts, curing agents for vinylidene fluoride polymers, polymer intermediates, and as selective encapsulating agents for anions.

3,531,469

DERIVATIVES OF PENICILLANIC ACID

Peter Bamberg, Enhorna, and Bertil Åke Ekström and Berndt Olof Harald Sjöberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Continuation-in-part of application Ser. No. 640,835, May 24, 1967. This application Dec. 18, 1968, Ser. No. 784,912

Claims priority, application Great Britain, June 3, 1966, 24,900/66

Int. Cl. C07d *99/16*

U.S. Cl. 260—239.1 **8 Claims**

Penicillins containing a quinolymethyl radical in the side chain and a process for preparing them, said penicillins having effectiveness as antibacterial agents, nutritional supplements for animals, and for the treatment of diseases caused by micro-organisms.

3,531,470

α-AMINO-2,4,6-CYCLOHEPTATRIENYLMETHYLPENICILLINS

Patrick Andrew Diassi, Westfield, Frank Lee Weisenborn, Somerset, and Jack Bernstein, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 2, 1969, Ser. No. 821,498

Int. Cl. C07d *99/16*

U.S. Cl. 260—239.1 **6 Claims**

This invention relates to α-amino-2,4,6-cycloheptatrienylmethylpenicillins as well as their salts, which are useful as antibacterial agents.

3,531,471

PROCESS FOR PREPARING N-VINYL COMPOUNDS

Robert Hartwimmer, Hofheim, Taunus, and Wolfram Schwiersch, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,228

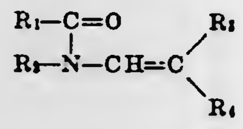
Claims priority, application Germany, Mar. 20, 1965, F 45,580

The portion of the term of the patent subsequent to Apr. 9, 1985, has been disclaimed

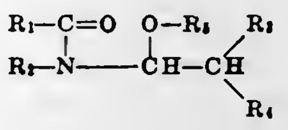
Int. Cl. C07d *41/06*

U.S. Cl. 260—239.3 **2 Claims**

An improved process has been provided for preparing a N-vinyl compound of the formula



in which R_1 and R_2 each represents a lower alkyl group or in which R_1 and R_2 represent joined and alkylene group having 3 to 11 carbon atoms and R_3 and R_4 each represents a hydrogen atom or a lower alkyl group from N-(α-alkoxyalkyl) compound precursor of the formula



in which R_1, R_2, R_3, and R_4 have the meanings defined above and R_5 represents a lower alkyl group, said process being carried out by heating the precursor to a temperature between about 50° and 200° C. in the presence of a nonvolatile, insoluble, weakly acidic substance having a high surface area, wherein the weakly acidic substance is selected from the group consisting of oxides of aluminum, beryllium, zirconium, tungsten; phosphates of calcium, aluminum boron and tungsten; and aluminum silicate in the H form. The improvement consists of performing the reaction in a gaseous phase.

3,531,472

CYCLIC HYDROXAMIC ACID DERIVATIVES

Michio Nakanishi, Oita Nakatsu, and Tadao Okada and Takanori Oe, Chikujogun, Fukuoka, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

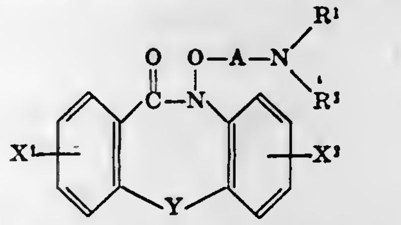
No Drawing. Filed Apr. 8, 1968, Ser. No. 719,757

Claims priority, application Japan, Apr. 8, 1967, 42/22,520

Int. Cl. C07d *93/42, 89/20, 53/02*

U.S. Cl. 260—239.3 **17 Claims**

Cyclic hydroxamic acid derivatives of the formula



wherein each of X^1 and X^2 is H, halogen, lower alkyl, lower alkoxy, lower alkylthio or trifluoromethyl, Y is —O—, —S—, —SO_2— or —N(R)— (R being lower alkyl), A is alkylene of 2 to 4 carbon atoms, and —$N(R^1)$ (R^2) is lower alkylamino, di(lower alkyl) amino, cyclohexylamino, (phenyl-lower alkyl)amino, piperidino, morpholino, 4-lower alkyl - 1-piperazinyl or 4-(hydroxy-lower alkyl)-1-piperazinyl, and pharmaceutically acceptable acid addition salts thereof are useful as anti-allergic agents or antidepressants.

3,531,473

PREPARATION OF 3-HYDROXY-1,4-BENZODIAZEPINES

Arthur Stempel, Teaneck, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Application Dec. 6, 1966, Ser. No. 600,347, now Patent No. 3,420,817, dated Jan. 7, 1969, which is a continuation-in-part of application Ser. No. 522,397, Jan. 24, 1966. Divided and this application Oct. 17, 1968, Ser. No. 768,545

Int. Cl. C07d *53/06*

U.S. Cl. 260—239.3 **10 Claims**

A process for preparing a 3-hydroxy-1,4-benzodiazepin-2-ones by treating 4,1,5-benzoxadiazocin-2-ones with base.

3,531,474

BRIDGED BENZODIAZEPINONES

Hans Ott, Convent Station, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J.

No Drawing. Original application Dec. 9, 1966, Ser. No. 600,404, now Patent No. 3,480,629, dated Nov. 25, 1969. Divided and this application May 14, 1969, Ser. No. 842,755

Int. Cl. C07d *53/06*

U.S. Cl. 260—239.3 **2 Claims**

Disclosed are 1,4-methano bridged 5-phenyl-benzodiazepin-2-ones, and process for preparation involving the intermediates which are 3-carbalkoxymethyl-4-phenyl-3,4-dihydroquinazolines, 3-carboxymethyl-4-phenyl-3,4-dihydroquinazolines and 3-carboxymethyl-4-phenyl-1,2,3,4-tetrahydroquinazolines. These 1,4-methano bridged 5-phenyl-benzodiazepin-2-ones are useful as tranquilizers.

3,531,475

PROCESS FOR THE OXIDATION OF ALCOHOLS AND OXIDIZING AGENT UTILIZED THEREIN

Marcel Fetizon, Leflageolet, and Michael Golfier, Paris, France, assignors to Société de Recherches Biologiques d'Asnieres, a limited-liability company, Levallois, France

No Drawing. Filed Aug. 13, 1968, Ser. No. 752,184

Claims priority, application France, Aug. 21, 1967, 118,383

Int. Cl. C07c *169/08, 169/10*

U.S. Cl. 260—239.55 **18 Claims**

A process for oxidizing primary and secondary alcohols to aldehydes and ketones in neutral media and in excellent yields comprises reacting a primary or secondary alcohol with an oxidizing agent comprising silver carbonate on an inert carrier, a preferred carrier being diatomaceous earth, particularly Celite. This process is extremely useful when applied to steroidal alcohols, particularly in the oxidation of saturated-A-ring-3-hydroxy steroids to saturated-A-ring-3-keto-steroids.

3,531,476

METHOD FOR THE PRODUCTION OF PYRIDINE DERIVATIVES

Seiji Miyano and Akiko Abe, Fukuoka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan

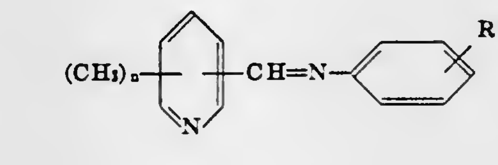
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,415

Claims priority, application Japan, Mar. 28, 1966, 41/19,510

Int. Cl. C07d *31/26, 31/28*

U.S. Cl. 260—240 **13 Claims**

Compounds of the formula



and pharmaceutically acceptable acid addition salts thereof, wherein

R′ is H, lower alkyl, lower alkoxy or halogen atom,

n is 0 or 1, at least one CH_3 group being present on the pyridine ring when R' is H,

are non-narcotic and non-pyrazolone-type analgesics of low acute toxicity.

3,531,477

WATER SOLUBLE ALKALI METAL SALTS OF 1-(5′-NITROFURFURYLIDENEAMINO)-HYDANTOIN VINYLOGS

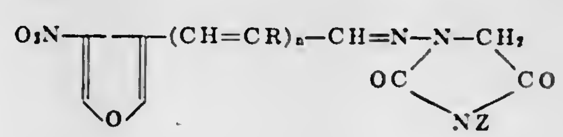
Solomon Aronovich Giller, Ulitsa Pernavas 10, kv. 76; Maria Vladislavovna Shimanskaya, Ulitsa Exporta 2-a, kv. 15; Vitold Edgarovich Egert, Ulitsa Gospitalju 53, kv. 4; and Karl Karlovich Venter, Ulitsa Kr. Barona 109, kv. 22, all of Riga, U.S.S.R.

No Drawing. Filed Apr. 3, 1967, Ser. No. 627,606

Int. Cl. C07d *49/32*

U.S. Cl. 260—240 **3 Claims**

Water soluble bacteriocidal agents of the formula:



wherein R is hydrogen alkyl or alkoxymethyl, *n* is one or two, and Z is sodium or potassium,

are prepared by dissolving a 1-(5′-nitrofurfurylideneamino)-hydantoin vinylog in an organic solvent and reacting the solution with an equimolecular amount of an alkali reagent in an alcohol solution.

3,531,478

METHINE DYES CONTAINING AN ISOINDOLOBENZIMIDAZOLIUM OR A BENZOPYRROLOPERIMIDINIUM NUCLEUS

Gether Irick, Jr., Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 29, 1967, Ser. No. 642,238

Int. Cl. C09b *23/04, 23/10*

U.S. Cl. 260—240 **13 Claims**

Isoindolobenzimidazolium, benzopyrroloperimidinium compounds and methine dyes derived therefrom having utility as dyes for synthetic materials and as intermediates in the preparation thereof.

3,531,479

LIGHT STABLE COLORANTS AND ULTRAVIOLET INHIBITORS FOR PLASTICS

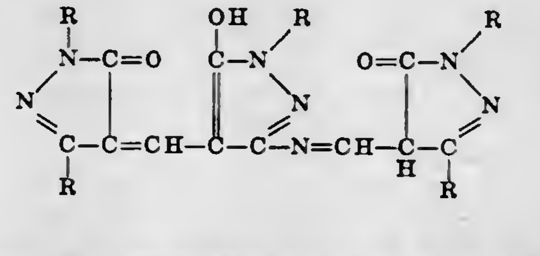
Raymond C. Harris and Gordon C. Newland, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 493,541, Oct. 6, 1965. This application Sept. 3, 1968, Ser. No. 757,089

Int. Cl. C07d *49/16*

U.S. Cl. 260—240.1 **6 Claims**

Light stable compounds, which are useful as colorants and UV inhibitors for various plastics, are defined by the formula



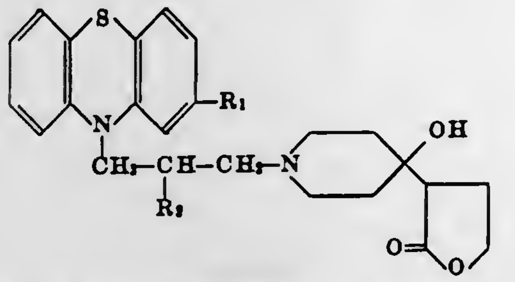
wherein each R, independently, is hydrogen, alkyl, substituted alkyl, phenyl, substituted phenyl, benzamido, substituted benzamido, alkyl sulfamino, carboalkoxy, alkylamido, or alkylamino.

3,531,480
PHENOTHIAZINE DERIVATIVES

Ernst Jucker, Ettingen, Anton Ebnöther, Reinach, Basel-Land, and Erwin Rissi, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Apr. 17, 1968, Ser. No. 721,949
Claims priority, application Switzerland, Apr. 19, 1967, 5,589/67; Dec. 6, 1967, 17,056/67
Int. Cl. C07d *93/14*
U.S. Cl. 260—243 **8 Claims**

The invention provides phenothiazine derivatives of the formula:



wherein R_1 is hydrogen, chlorine, bromine, trifluoromethyl, cyano or lower alkanoyl, and R_2 is hydrogen or methyl, and pharmaceutically acceptable acid addition salts thereof.

3,531,481
METHOD FOR MANUFACTURE OF CRYSTALLINE CEPHALOSPORIN

Ralph R. Pfeiffer, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 21, 1969, Ser. No. 818,125
Int. Cl. C07d *99/24*
U.S. Cl. 260—243 **8 Claims**

Cephalexin monohydrate crystals, dense, large crystals, useful in formulations of the antibiotic, are prepared by precipitating cephalexin from an aqueous solution of its salt at a temperature above about 60° C.

3,531,482
PYRAZOLO[1,5-c]QUINAZOLINES

Hans Ott, Convent Station, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J.

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,362
Int. Cl. C07d *87/40*
U.S. Cl. 260—247.5 **3 Claims**

The invention discloses 5-substituted pyrazolo[1,5-c] quinazolines useful as anti-inflammatory agents. The compounds may be prepared by reaction of the corresponding 5-methylthio derivatives with an appropriate amine, e.g. ammonia, morpholine and the like. The methylthio derivative may be prepared from the corresponding thione by reaction thereof with methyl iodide.

3,531,483
HYDROXYPHENYLALKYLENEYL ISOCYANURATES

Jack C. Gilles, Shaker Heights, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 25, 1968, Ser. No. 770,863
Int. Cl. C07d *55/38*
U.S. Cl. 260—248 **14 Claims**

Novel hydroxyphenylalkyleneyl isocyanurates have been prepared. These compounds stabilize organic materials against the deleterious effects of oxygen, heat and light. The stability of α-monoolefin homopolymers and copolymers is particularly enhanced by incorporating stabilizing amounts of the hydroxybenzyl isocyanurates therein.

3,531,484
1-(3-AMINOPYRAZINOYL)-4,5,5-TRISUBSTITUTED BIGUANIDE PRODUCTS

John B. Bicking and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 14, 1968, Ser. No. 705,273
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 **6 Claims**

1-(3-aminopyrazinoyl)-4,5,5 - trisubstituted biguanides having natriuretic properties but substantially devoid of kaliuretic properties and optionally having a substituent group attached to one or both of the 5- and 6-positions of the pyrazine nucleus are prepared by the reaction of the selected biguanide with a lower alkyl ester of a 3-aminopyrazinoic acid.

3,531,485
ARYL-SUBSTITUTED DIAZABICYCLOALKANES

Meier E. Freed, Philadelphia, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,210
Int. Cl. C07d *51/72*
U.S. Cl. 260—268 **10 Claims**

Aryl-substituted-diazabicycloalkane bases (I) are prepared, for example, by treating a 1-(β-haloethyl- or γ-halopropyl) - 2-halomethyl or β-haloethylpyrrolidine or -piperidine with ammonia or a primary amine and, if desired, the bases are converted to acid-addition salts. Compounds (I), especially 3-aryl-1,4-diazabicyclo[4.3.0]nonanes (Ia) and their salts are useful as anticonvulsants, depressants and analgesics.

3,531,486
2-PIPERIDYL KETONE HYDRAZONES

Goetz E. Hardtmann, Florham Park, N.J., assignor to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Original application Apr. 20, 1967, Ser. No. 632,204, now Patent No. 3,459,750. Divided and this application Feb. 15, 1968, Ser. No. 705,598
Int. Cl. C07d *29/28*
U.S. Cl. 260—293 **3 Claims**

The compounds are of the class of 6,7,8,9-tetrahydro-9aH-pyrido[1,2-d]as-triazines, which are substituted at the 1-position by methyl, ethyl, propyl or aryl and may be substituted at the 4-position by methyl or ethyl, e.g., 1 - phenyl - 6,7,8,9-tetrahydro - 9aH - pyrido[1,2-d]as-triazine. The compounds and non-toxic pharmaceutically acceptable acid addition salts thereof are useful as central nervous system stimulants and as hypotensives. The compounds are prepared by reacting the hydrazone of a suitable 2-piperidyl ketone with a suitable carboxylic acid or ortho ester thereof.

3,531,487
4-(N,N-DISUBSTITUTED-AMINO)-PIPERIDINES

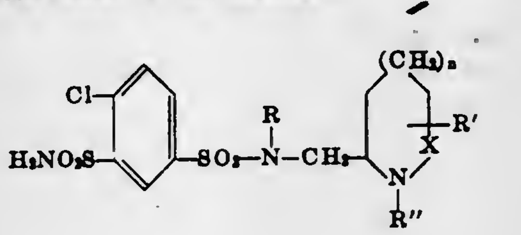
Leo Berger, Montclair, Alfred John Corraz, Wayne, and John Lee, Stockton, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Oct. 25, 1966, Ser. No. 589,246
Int. Cl. C07d *29/28*
U.S. Cl. 260—293 **23 Claims**

This disclosure relates to 4 - (N - methyl - N - aralkylamino) piperidines and to processes for their preperation. The aforesaid compounds are useful as analgesics and as mild appetite suppressants.

3,531,488
DISULPHONAMIDES

Hartmund Wollweber, Wuppertal - Elberfeld, Harald Horstmann, Wuppertal-Vohwinkel, and Karl Meng, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 5, 1967, Ser. No. 636,269
Claims priority, application Germany, May 12, 1966, F 49,189
Int. Cl. C07d *27/08*
U.S. Cl. 260—293.4 **12 Claims**

Disulphonamides of the formula:

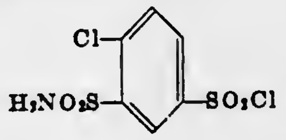


III

wherein

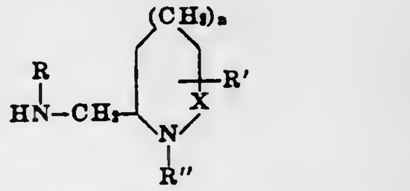
R is hydrogen or methyl,
R′ is hydrogen or lower alkyl,
R″ is hydrogen, lower alkyl, alkoxyalkyl, aryl or aralkyl,
X is CH_2 or CO and
n is 0 or 1

and their pharmaceutically acceptable non-toxic salts are produced by reacting 4-chloro-3-sulphonamido-benzene-sulphochloride of the formula:



I

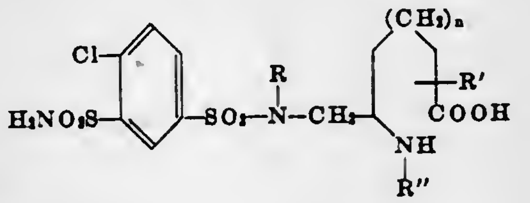
with an amine or salt thereof of the formula:



II

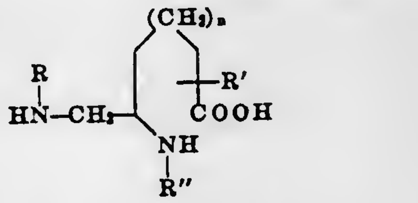
wherein R, R′, R″, X and *n* have the above meanings.

Disulphonamides of the formula:



V

and their pharmaceutically acceptable non-toxic salts are produced by reacting the 4-chloro-3-sulphonamido-benzene-sulphochloride of compound (I) with an amine of the formula:



IV

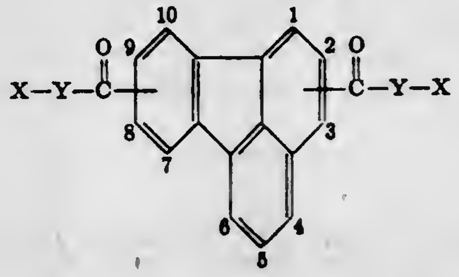
wherein R, R′, R″ and *n* are as defined above.

These disulphonamides are useful as saluretics and salts of the disulphonamides with organic non-toxic acids and bases may be used for parenteral administration in an aqueous solution in which solubilizers are not necessary.

3,531,489
BIS-BASIC ESTERS AND THIOESTERS OF FLUORANTHENE

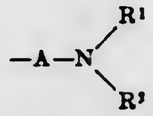
William L. Albrecht and Robert W. Fleming, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 18, 1968, Ser. No. 768,893
Int. Cl. C07d *51/70*
U.S. Cl. 260—294.3 **12 Claims**

Novel bis-basic ester and thioester compounds of fluoranthene selected from a base of the formula



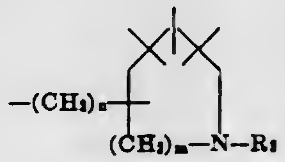
Formula I

wherein each Y is oxygen or sulfur, and each X is: (A) the group



wherein each A is alkylene of 2 to about 8 carbon atoms which separates the amino nitrogen and Y by an alkylene chain of at least 2 carbon atoms and each R^1 and R^2 is hydrogen, (lower) alkyl, cycloalkyl of 3 to 6 carbon atoms, alkenyl of 3 to 6 carbon atoms having the vinyl unsaturation in other than the 1-position of the alkenyl group, or each set of R^1 and R^2 taken together with the nitrogen atom to which they are attached is a saturated monocyclic heterocyclic; or each X is

(B) the group



wherein *n* is an integer of 0 to 2, *m* is 1 or 2 and R^3 is hydrogen, (lower) alkyl, or alkenyl of 3 to 6 carbon atoms having the vinyl unsaturation in other than the 1-position of the alkenyl group; or a pharmaceutically acceptable acid addition salt of said base. The compounds of this invention have antiviral activity and can be administered to warm-blooded animals for the prevention or treatment of a viral disease. The compounds of this invention cover both the free base form or simply bases and non-toxic or pharmaceutically acceptable acid addition salts of such bases.

3,531,490
S-β-(4-PYRIDYLETHYL)-L-CYSTEINE

Mendel Friedman and James F. Cavins, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Sept. 6, 1968, Ser. No. 758,151
Int. Cl. C07d *31/50*
U.S. Cl. 260—294.8 **1 Claim**

S-β-(4-pyridylethyl)-L-cysteine, a novel amino acid produced by reacting L-cysteine and 4-vinylpyridine in the presence of triethylamine, is ninhydrin-positive and very highly resistant to acid hydrolysis. It is particularly useful as an internal standard for chromatographic analyses of basic amino acids.

3,531,491

CERTAIN 6-HEXANOYL OR 6-(1-HYDROXYHEXYL)BICYCLO[2.2.1]HEPT - 2 - ENE - 5 - CARBOXYLIC ACIDS, ESTERS THEREOF AND 5-YL-KETONES

Masateru Miyano, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 8, 1967, Ser. No. 688,981

Int. Cl. C07d *31/32*

U.S. Cl. 260—297 **7 Claims**

5,6 - disubstituted bicyclo[2.2.1]hept - 2 - enes useful as anti-inflammatory, pepsin-inhibitory, anti-ulcerogenic, anti-bacterial, anti-fungal, anti-protozoal, anti-algal and dicotyledonous seed germination-inhibitory agents and preparable by modification of the carboxyl and hexanoyl functions of trans - 6 - hexanoylbicyclo[2.2.1]hept-2-en-5-oic acid.

3,531,492

MERCAPTOBENZOTHIAZOLE PROCESS WITH MERCURY OR RED PHOSPHOROUS CATALYST

Hanno Maria Merlin, Somerville, and James Salvatore Marchese, North Plainfield, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 10, 1967, Ser. No. 674,091

Int. Cl. C07d *91/48*

U.S. Cl. 260—306 **4 Claims**

This invention relates to a novel process for making 2-mercaptobenzothiazole. More particularly, this invention relates to a novel catalytic process for making 2-mercaptobenzothiazole by the reaction of aniline, carbon disulfide and sulfur in the presence of an effective amount of a catalyst comprising red phosphorous or mercury.

3,531,493

DIPHENYLAMINE DERIVATIVES

Maurice Ward Gittos and John Williams James, Buckinghamshire, England, assignors to Aspro-Nicholas Limited, a British company

No Drawing. Filed Jan. 11, 1967, Ser. No. 608,518

Claims priority, application Great Britain, Jan. 15, 1966, 2,004/66

Int. Cl. C07c *101/54*

U.S. Cl. 260—307 **4 Claims**

A group of now compounds comprising N-(2,3,5,6-tetrafluorophenyl) anthranilic acid and certain derivatives thereof, mainly esters, are provided. These compounds have a low toxicity and display anti-inflammatory and analgesic activity. The free acid has an anti-inflammatory activity at least as great as indomethacin. The other compounds achieve a similar degree of activity after continued dosage. The preferred formulations are dosage unit forms containing from 10 to 250 mg. of the active compound. Pharmacologically active ingredients may be included in these formulations.

3,531,494

MONOHYDROXY ALKYL IMIDAZOLES

Heinrich Adolphi, 11 Kalmitweg, Limburgerhof, Pfalz, Germany; Anna Steimmig, 9 Freinsheimerstrasse, Ludwigshafen (Rhine), Germany; and Hermann Spaenig, 5 Eschkopfstrasse, Limburgerhof, Pfalz, Germany

No Drawing. Filed July 11, 1966, Ser. No. 563,964

Claims priority, application Germany, July 22, 1965, 1,542,690

Int. Cl. C07d *49/36*

U.S. Cl. 260—309 **2 Claims**

Imidazole derivatives having the structural formula indicated below and uses thereof as insecticide ingredients in admixture with pyrethrins, carbamates and phosphoric acid esters.

3,531,495

2-TRIFLUOROMETHYLBENZIMIDAZOLES

Dennis Ernest Burton, Ickleton, near Saffron Walden, Alan James Lambie, Kidderminster, Geoffrey Tattersall Newbold, Saffron Walden, Albert Percival, Hauxton, and Michael Barry Purdew, Cambridge, England, assignors to Fisons Pest Control Limited, Harston, England

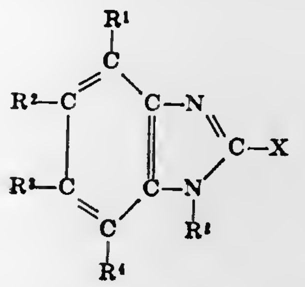
No Drawing. Continuation of application Ser. No. 496,712, Oct. 15, 1965. This application Nov. 18, 1968, Ser. No. 778,011

Claims priority, application Great Britain, Nov. 5, 1964, 45,093/64

Int. Cl. C07d *49/38*

U.S. Cl. 260—309.2 **6 Claims**

There are disclosed new substituted benzimidazoles of the formula:



as well as salts thereof wherein the groups R^1, R^2, R^3, R^4, R^5 and X have the significance indicated in the specification. Also disclosed are physiologically active compositions containing the indicated compounds as active ingredients. Methods are also disclosed for the treatment of plants, materials, soil, land or aquatic areas comprising applying to such substances a physiologically active composition containing the indicated compounds as active ingredient.

3,531,496

CYCLIC AMIDINE POLYMERS

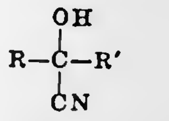
Robert R. Annand, Derek Redmore, and Brian M. Rushton, St. Louis, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,636

Int. Cl. C07d *49/34*

U.S. Cl. 260—309.6 **7 Claims**

Polymers formed by reacting cyanohydrins, such as



$$R-\overset{\displaystyle OH}{\underset{\displaystyle CN}{C}}-R'$$

with cyclic amidine-forming polyamines to form polyamino nitriles and by further reacting said so-formed polyamino nitriles intermolecularly with itself or with a polyamine under cyclic amidine-forming conditions, said polymers having utility for breaking oil-in-water emulsions, for clarifying water and for corrosion inhibition, among other uses.

3,531,497

2,4,5 - TRIPHENYL - (AND SUBSTITUTED TRIPHENYL) - 3 - ACETONITRILES OF PYRROLE

Gilbert A. Youngdale, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,490

Int. Cl. C07d *5/16, 27/22, 27/26*

U.S. Cl. 260—326.5 **5 Claims**

New 2,4,5-triphenyl-(and substituted triphenyl)-3-acetonitriles of pyrrole have use as topical, oral and injectable anti-inflammatory and analgesic agents for the treatment of allergic and rheumatic conditions of mammals and birds. These compounds can be prepared by several methods, e.g., (1) treating the corresponding 2,4,5-triphenyl-(and substituted triphenyl)-pyrroles with formaldehyde or acetaldehyde and a secondary amine; treating the thus-obtained tertiary amine with an alkyl halide and the thus-obtained quaternary ammonium halide with sodium cyanide; or (2) treating the corresponding 2,4,5-triphenyl-(and substituted triphenyl)-pyrroles with formaldehyde and hydrogen bromide or chloride and then with sodium cyanide.

3,531,498

PROCESS FOR THE PREPARATION OF 2-CARBOXYTHIOLANES

Pierre Legendre, Pau, France, assignor to Societe Nationale des Petroles d'Aquitaine, Courbevoie, France

No Drawing. Filed May 6, 1968, Ser. No. 727,029

Claims priority, application France, May 8, 1967, 105,624

Int. Cl. C07d *63/04*

U.S. Cl. 260—332.2 **5 Claims**

This invention has to do with the preparation of 2-carboxythiolanes by subjecting a 2-trihalomethyl-thiolane to hydrolysis with an organic aliphatic acid and an alkali metal salt of a weak acid.

3,531,499

3,4-ALKYLENE-DIOXYBENZYL BIGUANIDES

Laszlo Beregi, Boulogne-sur-Seine, Pierre Hugon, Rueil-Malmaison, and Jacques Duhault, Chatou, France, assignors to Societe en nom collectif Science Union et Cie, Societe Francaise de Recherche Medicale, Suresnes, France, a French society

No Drawing. Filed Apr. 2, 1968, Ser. No. 718,235

Claims priority, application Great Britain, Apr. 11, 1967, 16,470/67

Int. Cl. C07d *13/10, 15/18*

U.S. Cl. 260—340.5 **4 Claims**

N_1-(3,4-methylene- or ethylenedioxy-benzyl) biguanides optionally N_1 and N_5 substituted by lower-alkyl up to C_4 inclusive, and acid addition salts thereof.

These compounds possess hypoglycemic and lipid metabolism regulating properties.

3,531,500

TRIS(DINITRATOMETHYL)TRIOXANE

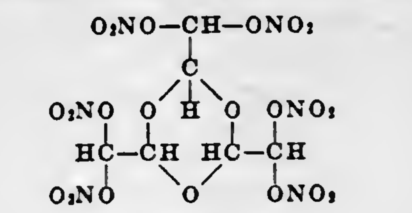
John A. Brown, Berkeley Heights, N.J., assignor to Esso Research Engineering Company, a corporation of Delaware

No Drawing. Filed July 25, 1962, Ser. No. 214,161

Int. Cl. C07d *19/00*

U.S. Cl. 260—340.7 **2 Claims**

1. Tris(dinitratomethyl)trioxane having the formula:



3,531,501

PROCESS FOR THE PRODUCTION OF UNSATURATED δ-DECALACTONE

Lambertus Gerke Heeringa, Middletown, Robert J. Fehn, Holmdel, James D. Grossman, Elizabeth, and Braja D. Mookherjee, Keyport, N.J., assignors to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 16, 1967, Ser. No. 675,292

Int. Cl. C07d *7/06*

U.S. Cl. 260—343.5 **6 Claims**

Process for the preparation of unsaturated δ-decalactone which comprises reacting an alkynylcyclopentanone with an aliphatic percarboxylic acid at about 10° to about 50° C. and, if desired, partially hydrogenating the δ-alkynyllactone so obtained to produce a δ-alkenyllactone.

3,531,502

ANTHRAQUINONE DYES

Grégoire Kalopissis, Paris, Jack Bertrand, Tremblay-les-Gonesses, and Andrée Bugaut, born Ormancey, Boulogne-sur-Seine, France, assignors to Societe Anonyme dite: L'Oreal, Paris, France

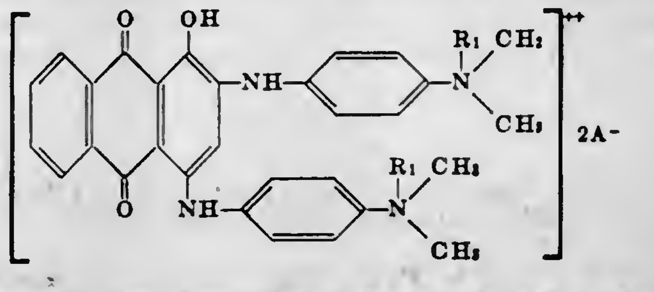
No Drawing. Filed Jan. 28, 1965, Ser. No. 428,867

Claims priority, application France, Feb. 5, 1964, 962,659

Int. Cl. C09b *1/50;* **C07c** *97/14*

U.S. Cl. 260—380 **5 Claims**

The new compounds 1-hydroxy-2,4 bis-(p-dimethylaminophenyl)aminoanthraquinone and a quaternary salt of the compound of claim 1, which has the formula:



in which R_1 is a lower alkyl having 1–4 carbon atoms and A^- is an anion; and hair dye compositions containing these compounds.

The process of reacting 1,3,4-trihydroxyanthraquinone with N,N-dimethyl-p-phenylenediamine to (p-dimethylaminophenyl)aminoanthraquinone.

3,531,503

TETRACYCLIC COMPOUNDS AND PROCESSES

Marco Cereghetti and Andor Fürst, Basel, Switzerland, and Gabriel Saucy, Essex Fells, and Milan Radoje Uskokovic, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 400,221, Sept. 29, 1964. This application Feb. 15, 1967, Ser. No. 616,157

Claims priority, application Switzerland, Nov. 6, 1963, 13,632/63

Int. Cl. C07c *169/22, 169/23*

U.S. Cl. 260—397.3 **19 Claims**

10α- or 9β,10α-steroids are synthesized from normal steroids and by a variety of pathways are converted to desA-9-ene-5-one compounds. The latter are then react to form $\Delta^{9(11)}$-10α-5-hydroxy-3-one compounds which in turn are converted either by dehydration followed by hydrogenation or by hydrogenation followed by dehydration into 10α- or 9β,10α-steroids.

3,531,504

PROCESS FOR THE PREPARATION OF CYCLIC KETONES AND CYCLIC ALDEHYDES AND PRODUCTS PRODUCED THEREBY

Jean-Marie Conia, Caen, France, assignor, by mesne assignments, to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 536,078, July 6, 1966. This application May 31, 1967, Ser. No. 642,352

Claims priority, application France, July 13, 1965, 24,548; Nov. 4, 1966, 82,589, 82,590; Feb. 21, 1967, 95,867

Int. Cl. C07c *167/04*

U.S. Cl. 260—397.4 **19 Claims**

Described herein is a novel thermocyclization process for the preparation of carbonyl substituted alicyclic compounds from straight chain and branched chain ketones and aldehydes, a process useful in the construction of polycyclic molecules, particularly steroids, many of which are known, useful compounds.

The process described comprises heating at elevated temperatures an unsaturated aliphatic ketone or aldehyde having a straight chain moiety of at least seven carbon atoms wherein there is an unsaturated bond at one end and a carbonyl function at the other end (or a carbonyl derivative thereof) and a hydrogen on the carbon alpha to the carbonyl function whereby is formed an alicyclic compound having an alkyl substituent and a vicinal carbonyl substituent, wherein the alicyclic ring has two carbons less than were in the straight chain moiety of the starting ketone or aldehyde.

Examples illustrating the process include those describing the thermocyclization of simple alkenones, alkinones, alkenals and alkinals as well as of polycyclic ketone and aldehyde structures such as those in steroid molecules. Also included are examples illustrating the thermocyclization of ketone and aldehyde derivatives of the foregoing whereby are obtained the same vicinally substituted alicyclic compounds as are derived from the thermocyclization of the corresponding free ketones or aldehydes.

3,531,505
PROCESS FOR THE PRODUCTION OF ALPHA,ALPHA - DIHYDROXY PERFLUOROALKYL CARBOXYLIC ACIDS

Ralph I. Coon, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Application Oct. 30, 1967, Ser. No. 679,160, which is a continuation-in-part of application Ser. No. 449,269, Apr. 19, 1965. Divided and this application Dec. 9, 1968, Ser. No. 812,496

Int. Cl. C07c *59/10*

U.S. Cl. 260—408 **1 Claim**

Fluoroalkyl gem-diols and their derivatives are formed by treating a 1,2-epoxy perfluoroalkane with water to produce alpha,alpha-dihydroxy perfluoroalkane carboxylic acids, which are then converted to amides, esters, and numerous other carbonyl-derived derivatives. The compounds have useful properties based upon the combination of the gem-diol group and their fluorine content.

3,531,506
COLOR STABILIZATION OF FATTY-ACID FORERUNNINGS

Sasanka Sekhar Naskar, Witten (Ruhr), Hans Leo Hülsmann, Wengern, and Gustav Renckhoff, Witten (Ruhr), Germany, assignors to Dynamit Nobel Aktiengesellschaft, Witten (Ruhr), Germany

No Drawing. Filed June 25, 1969, Ser. No. 836,624
Claims priority, application Germany, June 26, 1968, 1,767,866

Int. Cl. C11c *1/10*

U.S. Cl. 260—419 **11 Claims**

Discoloration and subsequent darkening of fatty-acid forerunnings are prevented by heating the fatty acids with at least one alkyl ester of silicic acid, polysilicic acid and/or carbonic acid at a temperature of approximately 180–250° C., and then distilling the resultant mixture to recover the fatty acids. The heating step is carried out for about 0.5–8 hours.

3,531,507
NOVEL ORGANOSILICON COMPOUNDS

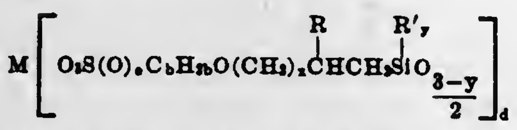
Edward L. Morehouse, New City, N.Y., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 574,576, Aug. 24, 1966. This application Apr. 21, 1967, Ser. No. 632,534

Int. Cl. C07f *7/08, 15/00, 15/07*

U.S. Cl. 260—448.2 **14 Claims**

Novel wetting agents comprising one unit of the formula:



$$M\left[O_3S(O)_cC_bH_{2b}O(CH_2)_x\overset{R}{\overset{|}{C}}HCH_2\overset{R'_y}{\overset{|}{Si}}O_{\frac{3-y}{2}}\right]_d$$

wherein M is a cation having a valence of 1 to 4, R is hydrogen or alkyl, R′ is monovalent hydrocarbon, b is 2 to 4, c is 0 to 1, x is 0 to 1, y is 0 to 2, and d is 1 to 4, and 1 to 4 units of the formula:

$$Z_zSiO_{\frac{4-z}{2}}$$

wherein Z is monovalent hydrocarbon and z is 0 to 3, and aqueous solutions thereof. Novel alkenyl organic ether sulfur compounds of the formula:

$$M[O_3S(O)_cC_bH_{2b}O(CH_2)_xC(R)=CH_2]_d$$

wherein M, R, b, c, and d are as defined above.

3,531,508
NITRILE SUBSTITUTED ORGANO-POLYSILOXANE POLYMERS

Gordon K. Goldman, Los Angeles, and Lester Morris, Encino, Calif., assignors to Products Research & Chemical Corporation, Burbank, Calif., a corporation of California

No Drawing. Filed June 26, 1967, Ser. No. 648,980

Int. Cl. C07f *7/10*

U.S. Cl. 260—448.2 **6 Claims**

A method for producing a viscous, liquid polysiloxane nitrile substituted polymer which is highly resistant to hydrocarbon solvents and which can be cured to a solid rubbery substance which also is highly resistant to hydrocarbon solvents, said method comprising reacting an organic polysiloxane hydride liquid polymer with an olefinic hydrocarbon (or halogenated hydrocarbon) nitrile, the double bond in said nitrile compound being at least one carbon atom away from the nitrile group (e.g. allyl nitrile), in the presence of a catalyst, the amount of nitrile compound and reaction time being sufficient to react 50 to 100% of the hydride groups present in the organic polysiloxane hydride liquid polymer with said nitrile.

3,531,509
PREPARATION OF o-ISOCYANATO-BENZOYL CHLORIDES

Adnan A. R. Sayigh, North Haven, and Henri Ulrich, North Branford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 20, 1966, Ser. No. 603,112

Int. Cl. C07c *119/04;* **C08g** *22/18, 22/44*

U.S. Cl. 260—453 **6 Claims**

Isatoic anhydride, unsubstituted or substituted by inert groups (i.e. groups unaffected by phosgenation), is converted to the corresponding o-isocyanatobenzoyl chloride in high yield by phosgenation in the presence of certain catalysts. The latter are N-alkyl-N-(alkyl or aryl)-formamides or alkanoamides, N-alkyllactams, N-alkyl-N-(alkyl or aryl)-N′-arylformamidines or alkanamidines, and N,N′-dialkyl-N,N′-di(alkyl or aryl)-N″-arylguanidines. The o-isocyanatobenzoyl chlorides are intermediates e.g. reaction with alkanolamines yields aminoalkyl N-(aminoalkoxycarbonyl)-anthranilates which are phosgenated to the corresponding diisocyanates, useful in the preparation of polyurethanes.

A process for the conversion of isatoic anhydride, either unsubstituted or substituted by inert groups, to the corresponding o-isocyanatobenzoyl chlorides in high yield. The process requires phosgenation of the isatoic anhydride in the presence of a catalytic amount of an N-alkyl-N-(alkyl or aryl)-substituted formamide or alkanoamide, an N-alkyl-lactam, an N-alkyl-N(alkyl or aryl)-N′-arylformamidine or alkanamidine, or an N,N′-dialkyl-N,N′-di(alkyl or aryl)-N″-arylguanidine.

3,531,510
TRIMETHYL OCTENE NITRILES

Jack H. Blumenthal, Oakhurst, N.J., assignor to International Flavors & Fragrances, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 21, 1967, Ser. No. 661,813

Int. Cl. C07c *121/30*

U.S. Cl. 260—465.9 **8 Claims**

This disclosure describes methods for the preparation and isolation of a variety of 5,7,7-trimethyl-2-octenyl nitriles and 5,7,7-trimethyl-3-octenyl nitriles by condensation of cyanoacetic acid with 3,5,5-trimethyl hexanal in the presence of an amine or an amine salt at a temperature of from about 40° C. to 180° C. A mixture of nitriles is produced in the condensation reaction. The relative proportion of each nitrile in the mixture can be controlled by control of the alkalinity of the reaction medium. The compounds and mixtures are useful as olfactory agents.

3,531,511
NOVEL ALLYL CARBAMATES

Donald R. Cassady, Robert D. Dillard, and Nelson R. Easton, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 533,405, Mar. 11, 1966. This application Oct. 13, 1967, Ser. No. 675,058

Int. Cl. C07c *25/06;* **C07d** *27/02, 29/24*

U.S. Cl. 260—468 **6 Claims**

Novel allyl carbamates, useful for their antibacterial and antiviral properties.

3,531,512
PROCESS OF PRODUCING URETHANES

William Baptist Hardy, Bound Brook, and Robert Putnam Bennett, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 496,687, Oct. 15, 1965, now Patent No. 3,467,694, Sept. 16, 1969. This application Apr. 18, 1967, Ser. No. 631,586

Int. Cl. C07c *101/44*

U.S. Cl. 260—471 **8 Claims**

A process of preparing a urethane which comprises reacting, in the presence of an effective amount of a catalyst consisting essentially of palladium and a Lewis acid, carbon monoxide, an hydroxyl-containing compound and an aromatic polynitro compound, said reaction being conducted under substantially anhydrous and hydrogen-free conditions under a pressure of at least 1,000 p.s.i., and at a temperature above about 140° C., but below that at which the starting materials and the product decompose.

3,531,513
OIL-SOLUBLE ACYLATED HYDROXYL-CONTAINING DIENE POLYMERS HAVING AT LEAST ONE PRIMARY, TERMINAL, ALLYLIC ACYL GROUP

Donald D. Carlos, Crown Point, Ind., and Robert R. Chambers, Chicago, and David W. Young, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Nov. 25, 1966, Ser. No. 596,791, now Patent No. 3,449,252, dated June 10, 1969. Divided and this application Jan. 9, 1969, Ser. No. 801,906

Int. Cl. C07c *69/16, 69/78*

U.S. Cl. 260—476 **11 Claims**

Oil-soluble acylated hydroxyl-containing diene polymers are provided having a Staudinger molecular weight of about 240 to 25,500 and having an unsaturated hydrocarbon backbone chain with primary terminal, allylic hydroxyl groups separated by the unsaturated carbon-carbon backbone chain, at lease one of the terminal hydroxyl groups being acylated with an aliphatic or aromatic hydrocarbon acyl group, such as acetyl, propionyl or benzoyl. The hydroxyl-containing diene polymer has an average of greater than two predominantly primary, terminal, allylic hydroxyl groups per polymer molecule and is an addition polymer of a 1,3-diene of 4 to 12 carbon atoms, such as 1,3-butadiene, and has more than 50% of its unsaturation in the chain. These oil-soluble acylated hydroxyl-containing diene polymers when added in small amounts to a base mineral oil are effective as cutting oil compositions in machining aluminum and copper, especially in reducing torque and improving surface finish.

3,531,514
PHOSPHONIUM COMPOUNDS AND/OR ETHYLENE GLYCOL - BIS-(TRIALKYLPHOSPHONIUM ACETATES)

Derek Redmore, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,771

Int. Cl. C07f *9/54*

U.S. Cl. 260—478 **3 Claims**

Polyphosphonium compounds wherein the phosphonium groups are in the linear chain and their use in inhibiting the corrosion of metals, particularly iron, steel and other ferrous alloys.

3,531,515
2,6-DI-TERT-BUTYL-4-METHYLPHENYL N-DICHLOROACETYL-N-METHYLCARBAMATE

Albert H. Haubein, Newark, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,553

Int. Cl. C07c *69/62*

U.S. Cl. 260—479 **1 Claim**

2,6-di-t-butyl-4-methylphenyl N - dichloroacetyl - N-methylcarbamate is a solid compound having a melting point of 153–155° C. It is useful as a pre-emergence herbicide for annual weedy grasses in rice fields.

3,531,516
CERTAIN PEROXIDES HAVING AT LEAST ONE BETA SUBSTITUENT

Orville Leonard Mageli, Kenmore, and Wilbur H. McKellin, Buffalo, N.Y., assignors to Pennwalt Corporation, a corporation of Pennsylvania

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,037

Int. Cl. C07c *73/02*

U.S. Cl. 260—488 **4 Claims**

An alkanoyl peroxide having at least 3 carbon atoms in one alkanoyl portion and at least one substituent "sub" positioned on a carbon atom which is at least beta to the carbonyl carbon atom, where "sub" is R_6COO— and R_6 is aliphatic or cycloaliphatic. Example: 2,2-bis(isobutyrloxymethyl)propionyl peroxide.

3,531,517
17,20-DIHYDROXY-A-NORPREGN-3-EN-2-ONES AND ESTERS

Seymour D. Levine, North Brunswick, and Pacifico A. Principe, South River, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1968, Ser. No. 749,349

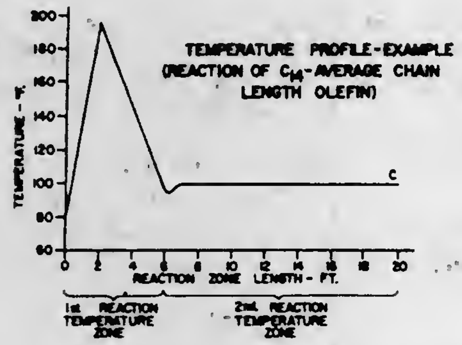
Int. Cl. C07c *49/44, 69/16, 69/78*

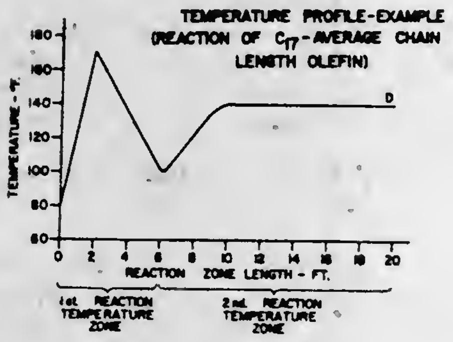
U.S. Cl. 260—488 **7 Claims**

This invention relates to a process for preparing 20α, 17α-dihydroxy-A-norprogesterones and derivatives thereof. In accordance with the processes of this invention, a 17α-hydroxyprogesterone is subjected to the action of enzymes of certain microorganisms, whereby the carbonyl group in the 20-position is reduced. The new products of this invention are physiologically active steroids which possess anti-androgenic activity.

3,531,518
PROCESS FOR THE REACTION OF ALPHA-OLEFINS AND GASEOUS SULFUR TRIOXIDE

Tom H. Ohren, Golf Manor, and Ronald L. Jacobsen, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed July 14, 1966, Ser. No. 565,262
Int. Cl. C07c *143/02*
U.S. Cl. 260—513 **2 Claims**





In the film sulfonation of fatty alpha-olefin, the increase in temperature during reaction is controlled and thereafter particular temperatures are maintained. Due to the temperature control greater than 85% reaction completeness is achieved, and detergent of commercially acceptable color is produced after a minimum amount of bleaching. For example, the temperature of reaction for C_{14}-alpha-olefin is controlled to a peak temperature of 197° F. and thereafter maintained at 100° F. to provide 96% reaction completeness, and the reaction mixture is converted to detergent which after mild bleaching has a Coleman Color reading of 85.

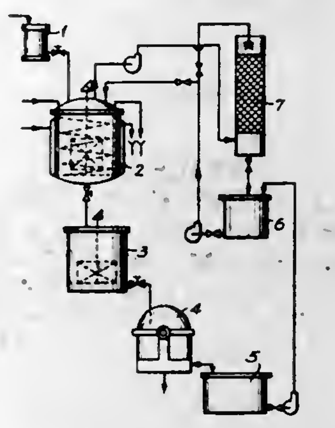
3,531,519
OXIDATION PROCESS

Christopher Parkin, Dunstable, Anthony M. Hildon, Leighton-Buzzard, and Peter J. Proctor, Dunstable, England, assignors to Laporte Chemicals Limited
Filed Aug. 16, 1967, Ser. No. 660,958
Claims priority, application Great Britain, Aug. 23, 1966, 37,777/66
Int. Cl. C07c *31/14, 47/52, 63/02*
U.S. Cl. 260—524 **8 Claims**

The α-positions of alkyl-substituted aromatic compounds can be oxidised using hydrogen peroxide using a ferric, titanic, chromic or cupric ion as catalyst.

3,531,520
METHOD FOR PREPARING OXALIC ACID

Evgeny Vasilievich Obmornov, Ul. Komsomolskaya 36/14, kv. 20; Vladimir Gerasimovich Karetnik, Ul. Trudovye rezervu 44, kv. 6; Valery Ivanovich Koptelov, Ul. Trudovye rezervy 46/12, kv. 31; Natalya Alexandrovna Dosovitskaya, Ul. Pochtovaya 13, kv. 12; Zinaida Petrovna Koptelova, Ul. Trudovye rezervy 46/12, kv. 31; Galina Pavlovna Masalova, Ul. Komsomolskaya 36/14, kv. 106; Efim Izrailevich Dosovitsky, Ul. Pochtovaya 13, kv. 12; and Vera Nikolaevna Ostrovskaya, Ul. Komsomolskaya 36/14, kv. 41, all of Novomoskovsk, Tulskoi oblasti, U.S.S.R.
Filed Sept. 15, 1966, Ser. No. 579,700
Int. Cl. C07c *51/26*
U.S. Cl. 260—531 **3 Claims**



Oxalic acid is produced by oxidizing ethylene glycol with sulfuric and nitric acid in the presence of vanadium pentoxide at a temperature of 50°–70° C.

3,531,521
METHOD FOR SYNTHESIS OF UREA

Nobuo Zen, Toshio Ozu, Takao Okano, and Yutaka Goda, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan
Filed Feb. 9, 1967, Ser. No. 614,847
Claims priority, application Japan, Feb. 15, 1966, 41/9,013
Int. Cl. C07c *127/00*
U.S. Cl. 260—555 **1 Claim**

An improved process for producing urea from ammonia and carbon dioxide in which urea synthetic process reaction product is pressure-decreased by use of ejector and the unconverted gaseous raw materials are separated in multi-stage decomposition steps from the reaction product, among which the separated gas of the second stage is recycled into ejector, whereby together with the separated gas of the first stage the separated gas of the second stage is absorbed in absorbing liquid at a higher temperature and pressure and the heat generated by the absorbing is utilized in the decomposition of ammonium carbamate, and the amount of the unconverted gaseous raw materials to be separated and absorbed at a low pressure stage is decreased by the recycle of the separated gas of the second stage into the ejector.

3,531,522
4′-PHENOXYALKANESULFONANILIDES

Norman A. Nelson, Charlestown Township, Kalamazoo County, and Gary E. Vanden Berg, Texas Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed July 18, 1967, Ser. No. 654,064
Int. Cl. A01n *9/16;* **C07c** *143/74*
U.S. Cl. 260—556 **4 Claims**

Disclosed are lipid-normalizing 4′-phenoxyalkanesulfonanilides which are derived from p-phenoxyanilines.

3,531,523
N-(PHENOXYPHENYL)SULFAMIDES

Norman A. Nelson, Charlestown Township, Kalamazoo County, and Gary E. Vanden Berg, Texas Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed July 18, 1967, Ser. No. 654,081
Int. Cl. A01n *9/16;* **C07c** *143/74*
U.S. Cl. 260—556 **2 Claims**

Disclosed are lipid-normalizing N-(phenoxyphenyl)sulfamides. These compounds are prepared by reacting a phenoxyaniline with a suitable sulfamoyl halide.

3,531,524
N-CARBOXYACYL-N′-POLYCHLOROALKYLTHIO CARBODIIMIDES

Melancthon S. Brown, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 648,976, June 26, 1967. This application July 30, 1969, Ser. No. 846,273
Int. Cl. C07c *103/30*
U.S. Cl. 260—558 **3 Claims**

N-carboxyacyl - N′ - polychloroalkylthio carbodiimides in which the carboxyacyl group is alkanoyl of 2 to 10 carbon atoms or monocyclic aroyl of 7 to 10 carbon atoms and the polychloroalkyl group is of 1 or 2 carbon atoms and 3 to 5 chlorine atoms, at least one of which is bonded to the alpha carbon atom of the alkyl group. They are made by reacting a sulfenyl halide with an alkali metal salt of a carboxyacyl cyanamide. Carbodiimides of this group are fungicidal and may be used as chemical intermediates.

3,531,525
PREPARATION OF N-3-HYDROXYALKYL ACRYLAMIDES BY HYDROLYSIS OF VINYL OXAZINES

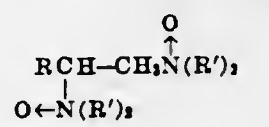
Donald I. Hoke, Chagrin Falls, and Donald L. Surbey, Mayfield Heights, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 713,788, Mar. 18, 1968. This application Jan. 3, 1969, Ser. No. 788,819
Int. Cl. C07c *103/60*
U.S. Cl. 260—561 **7 Claims**

N-3-hydroxyalkyl acrylamides, and substituted derivatives thereof, are prepared by (1) reduction of an N-3-oxohydrocarbon-substituted acrylamide, (2) addition of an alcohol to the N-3-oxohydrocarbon-substituted acrylamide, followed by hydrogenation of the carbonyl group and elimination of the alcohol, or (3) hydroylsis of a 2-vinyl-5,6-dihydro-1,3-oxazine. The acrylamides are useful as monomers for conversion to polymers with a number of interesting properties, including utility as membranes for desalination of water by hyperfiltration. The polymers may be crosslinked by the action of such reagents as diisocyanates, dicarboxylic acid halides, and aldehydes in acidic solution.

3,531,526
DIAMINE DIOXIDE DETERGENT COMPOUNDS

Ted J. Logan, Colerain Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 21, 1966, Ser. No. 603,439
Int. Cl. C07c *87/14*
U.S. Cl. 260—583 **3 Claims**

A detergent diamine dioxide having the structural formula



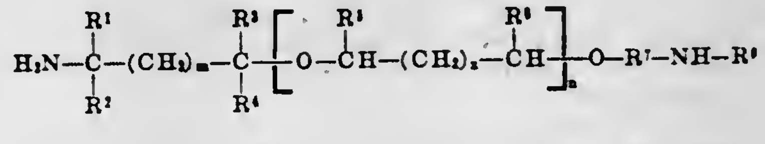
$$\begin{array}{l} \overset{O}{\uparrow} \\ RCH-CH_2N(R')_2 \\ \ \ | \\ O\leftarrow N(R')_2 \end{array}$$

wherein R is an alkyl radical containing from about 8 to about 18 carbon atoms and each R′ is selected from the group consisting of methyl, ethyl, propyl, hydroxyethyl, and hydroxypropyl radicals. Preferred members of the class which are especially mild are those wherein R contains from about 8 to about 10 carbon atoms, for example, N,N,N′,N′-tetramethyl-1,2-diaminodecane - N, N′-dioxide and N,N,N′,N′-tetramethyl - 1,2-diaminododecane-N,N′-dioxide. Detergent compositions containing these diamine dioxides and builders and/or other compounds especially detergent alkylbenzene sulfonates.

3,531,527
PROCESS FOR PREPARING AMINE-TERMINATED POLYETHERS

Tsi Tieh Li, Milltown, Guido Mino, Murray Hill, and Samuel Kaizerman, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 596,800, Nov. 25, 1966. This application Mar. 10, 1969, Ser. No. 805,834
Int. Cl. C07c *93/02*
U.S. Cl. 260—584 **10 Claims**

Amine-terminated polyethers of the structure



$$H_2N-\underset{R^2}{\overset{R^1}{\underset{|}{\overset{|}{C}}}}-(CH_2)_m-\underset{R^4}{\overset{R^3}{\underset{|}{\overset{|}{C}}}}-\left[O-\overset{R^5}{\overset{|}{C}}H-(CH_2)_x-\overset{R^6}{\overset{|}{C}}H\right]_n-O-R^7-NH-R^8$$

are prepared by (a) preparing an initiator complex by contacting a Lewis acid-type salt and a cyclic imine such as aziridine, (b) polymerizing an alkylene oxide in the presence of the initiator complex, and (c) terminating the polymerization by addition of an alkanolamine such as ethanolamine, wherein R^1, R^2, R^3 and R^4 individually are hydrogen or alkyl (C_1–C_4); R^5 and R^6 individually are hydrogen or alkyl (C_1–C_4); R^7 is alkylene (C_2–C_6); R^8 is hydrogen or alkyl (C_1–C_6); x is 0–2; m is 0–1; and n is 5–100. The polyethers may be reacted with polyepoxides to form resinous products.

3,531,528
5,6 - DIPHENYL - 4a - LOWER - ALKYL - 4,4a,7,8-TETRAHYDRO - 2(3H) - NAPHTHALENONES AND PROCESS

Daniel Lednicer, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Application May 24, 1968, Ser. No. 731,706, now Patent No. 3,454,648, dated July 8, 1969, which is a continuation-in-part of application Ser. No. 545,555, Apr. 27, 1966. Divided and this application July 1, 1968, Ser. No. 741,347
Int. Cl. C07c *49/76, 49/80*
U.S. Cl. 260—590 **4 Claims**

Novel 5,6-diphenyl-4,6,7,8-tetrahydro-2(3H)-naphthalenones, 5,6-diphenyl-4a-lower-alkyl-4,4a,7,8-tetrahydro-2(3H)-naphthalenones and processes for the preparation thereof. The compounds of this invention are all active as estrogenic and cholesterol lowering agents and are of particular value as antifertility agents.

3,531,529
1 - PHENYL - 1 - HYDROXY - 6 - METHOXY - 3,4-DIHYDRO-2(1H)-NAPHTHALENONES

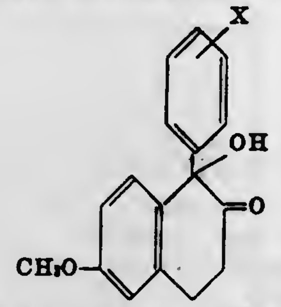
Daniel Lednicer, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Aug. 17, 1966, Ser. No. 572,889, now Patent No. 3,452,102, dated June 24, 1969. Divided and this application Jan. 14, 1969, Ser. No. 791,190

Int. Cl. C07c *49/80, 49/82*

U.S. Cl. 260—590 **2 Claims**

Novel 1 - phenyl - 1 - hydroxy-6-methoxy-3,4-dihydro-2(1H)-naphthalenones of the formula:



wherein X is hydrogen, halogen, trifluoromethyl or lower-alkyl. These compounds are useful intermediates in the preparation of the corresponding 1,2-diphenyl - 6-methoxy - 1,2,3,4 - tetrahydro-1,2-naphthalenediols.

3,531,530
PROCESS FOR THE MANUFACTURE OF A MIXTURE OF FORMYLCYCLODODECANE AND CYCLODODECENE

Hans Dalla Torre, Domat-Ems, Grisons, and Peter Jaeger, Chur, Grisons, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland

No Drawing. Filed Aug. 17, 1967, Ser. No. 661,187

Claims priority, application Switzerland, Aug. 17, 1966, 11,904/66

Int. Cl. C07c *45/08*

U.S. Cl. 260—598 **8 Claims**

A process for the manufacture of a mixture of formylcyclododecane and cyclododecene by reacting 1,5,9-cyclododecatriene with carbon monoxide and hydrogen in the presence of less than 1% cobalt, preferably in the presence of a solvent, and in given molar proportions of cyclododecatriene to hydrogen and of hydrogen to carbon monoxide. The resulting product is a starting material in the production of nylon-12.

3,531,531
PROCESS FOR PRODUCING ACETALDEHYDE FROM ETHYLENE

Harry B. Copelin, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 23, 1965, Ser. No. 466,474

Int. Cl. C07c *45/04*

U.S. Cl. 260—604 **8 Claims**

The invention comprises the synthesis of acetaldehyde from ethylene employing a reaction medium of acetic acid containing a palladium salt catalyst in the presence of a zinc chloride/cupric acetate redox mixture.

3,531,532
NOVEL FRAGRANCE MATERIALS AND PROCESSES

James D. Grossman, Madison Township, Middlesex County, N.J., assignor to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 8, 1968, Ser. No. 765,992

Int. Cl. C07c *43/18*

U.S. Cl. 260—611 **6 Claims**

Lower alkyl ethers of dihydrocaryophyllene alcohol and dihydroisocaryophyllene alcohol and their use in perfume and fragrance compositions, and articles containing same.

3,531,533
2,2'-METHYLENEBIS(TRANS-3,5-DIHYDROXYSTILBENE)

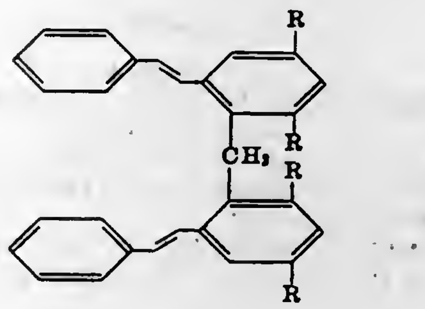
Herbert George Arlt, Jr., Ridgefield, and Natalie Elaine Conroy, New Canaan, Conn., assignors, by mesne assignments, to Arizona Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 28, 1968, Ser. No. 771,359

Int. Cl. C07c *43/20*

U.S. Cl. 260—613 **3 Claims**

New stilbene derivatives having the following formula:



wherein R is methoxy or hydroxy; and a method for destroying or inhibiting microorganisms using the new stilbene derivatives.

3,531,534
BISFLUORODINITRO ETHERS AND THEIR PREPARATION

Horst G. Adolph, Beltsville, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Continuation-in-part of application Ser. No. 605,129, Dec. 21, 1966. This application Feb. 10, 1969, Ser. No. 806,770

Int. Cl. C07c *43/00, 43/02*

U.S. Cl. 260—614 **10 Claims**

An energetic plasticizer bis(2-fluoro-2,2-dinitroethyl) ether is prepared by reacting a new stable intermediate bis(2,2-dinitro-3-hydroxypropyl) ether with a fluorinating agent in the presence of base.

3,531,535
PROCESS FOR THE PREPARATION OF ALKYL, PERFLUOROALKYL AND ARYL IODIDES

Leonard S. Silbert, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Feb. 28, 1968, Ser. No. 708,804

Int. Cl. C07c *19/02*

U.S. Cl. 260—652 **8 Claims**

High yields of alkyl, perfluoroalkyl and aryl iodides are prepared directly from their corresponding carboxylic acids by reaction in solution with iodine and aroyl peroxide or t-butylperoxy isopropyl carbonate. The reaction is conducted at a temperature of about 110–125° C. for about two to three hours in solvents such as 1,3-dichloropropane, 1,3-dibromopropane and 1,1,2,2-tetrachlorodifluorethane. Solvents such as 1,2-dichloroethane and carbon tetrachloride can be used as solvents but they require longer reaction times.

3,531,536
AROMATIC HYDROGENATION PROCESS

Clarence G. Gerhold, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

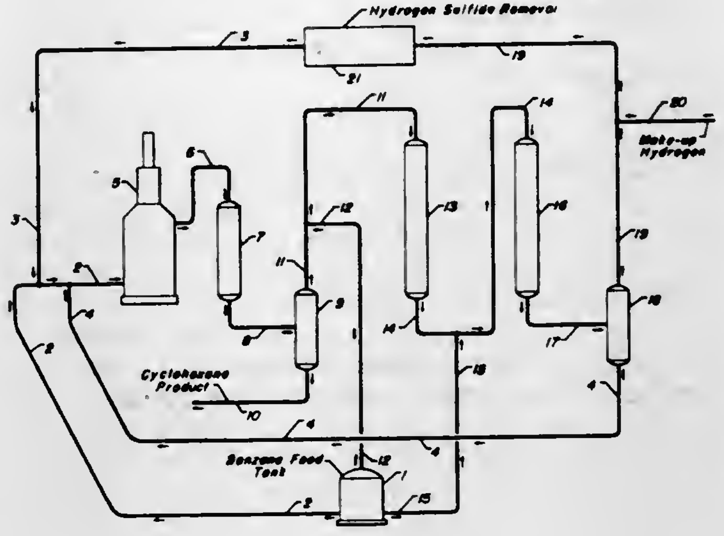
Filed June 2, 1969, Ser. No. 829,662

Int. Cl. C07c *5/10*

U.S. Cl. 260—667 **10 Claims**

A multiple-stage hydrogenation system wherein the hydrogenated product is removed from the process at a

locus other than the last reaction zone. The process is especially applicable in situations involving sulfurous feed stock. A preferred embodiment constitutes cyclohexane production from a benzene concentrate.



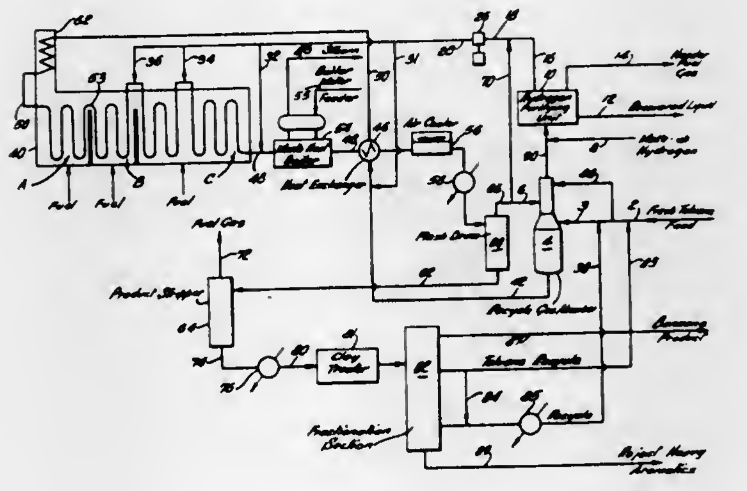
3,531,537
BENZENE BY HYDRODEMETHYLATION OF TOLUENE IN FIRED COIL WITH QUENCH AND ZONED HEAT FLUX

Randlow Smith and Dale Williams, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 636,359, May 5, 1967. This application June 30, 1969, Ser. No. 848,132

Int. Cl. C07c *3/00, 3/58;* **C10g** *9/16*

U.S. Cl. 260—672 **10 Claims**



This invention relates to the preparation of an aromatic compound. Benzene and methane are prepared by non-adiabatic thermal dealkylation of a mixture of hydrogen and toluene in a series of three heating zones. In the first zone an average heat flux of 12,000–20,000 B.t.u./hr./ft.^{2} brings the mixture up to the reaction initiation temperature. In the second zone a heat flux of 200–500 B.t.u./lb.-mole/sec. augments the exothermic heat reaction producing a reaction mixture temperature of 1325–1425° F. A hydrogen quench reduces the temperature of the mixture to 1250–1350° F. before it passes into the third zone where a heat flux of 50–250 B.t.u./lb.-mole/sec. combined with hydrogen quench at one or more points maintains a reaction temperature of 1250–1425° F. Benzene selectivities in excess of 95% are obtained.

3,531,538
PREVENTION OF FOULING AND HYDRIDING IN ORGANIC COOLANT SYSTEMS

John Hugo Duerksen, Hamilton, Ontario, Allan Robertson Bancroft, Deep River, Ontario, Stanley Ronald Hatcher and John Boulton, Pinawa, Manitoba, and Donald Hector Charlesworth, Deep River, Ontario, Canada, assignors to Atomic Energy of Canada Limited, Ottawa, Ontario, Canada, a company of Canada

No Drawing. Filed Sept. 2, 1965, Ser. No. 484,751

Int. Cl. C07c *7/00*

U.S. Cl. 260—674 **5 Claims**

Fouling and zirconium alloy hydriding in organic coolant systems are prevented by repeatedly (a) contacting the coolant at elevated temperatures with a palladium catalyst or Mg metal or (b) venting-degassing the coolant at above about 200° C., preferably in combination.

3,531,539
ISOBUTENE SEPARATION WITH A MOLECULAR SIEVE

Calvin M. Tidwell, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Feb. 15, 1968, Ser. No. 705,630

Int. Cl. C07c *3/10, 11/02*

U.S. Cl. 260—677 **17 Claims**

Process for separation of isobutene and production of di-isobutene under pressure using molecular sieves having a pore opening of about 8 A. to 8.2 A.

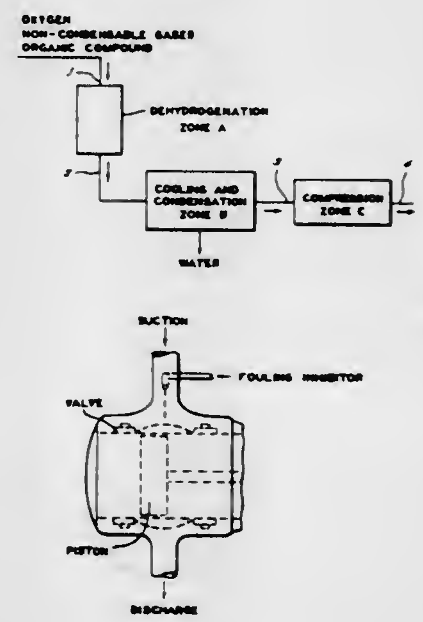
3,531,540
OXIDATIVE DEHYDROGENATION PROCESS WITH INHIBITED COMPRESSOR FOULING

David W. Marshall, Pasadena, and William H. Taylor, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

Filed Jan. 6, 1969, Ser. No. 789,188

Int. Cl. C07c *5/18, 7/18*

U.S. Cl. 260—680 **15 Claims**

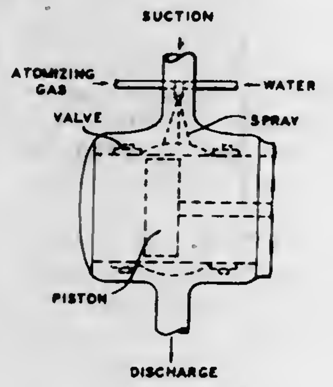


Reducing fouling of compressor pistons and cylinders used for the compression of gaseous compositions comprising unsaturated organic compounds and carbonyl compounds by adding an alcohol or thiol into the suction side of the compressor. Preferred source of gaseous composition is from oxidative dehydrogenation process.

3,531,541

FOULING REDUCTION IN OXIDATIVE DEHYDROGENATION PROCESS

Rudolph C. Woerner, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 775,632
Int. Cl. C07c *3/00, 7/00, 5/18*
U.S. Cl. 260—680 **18 Claims**

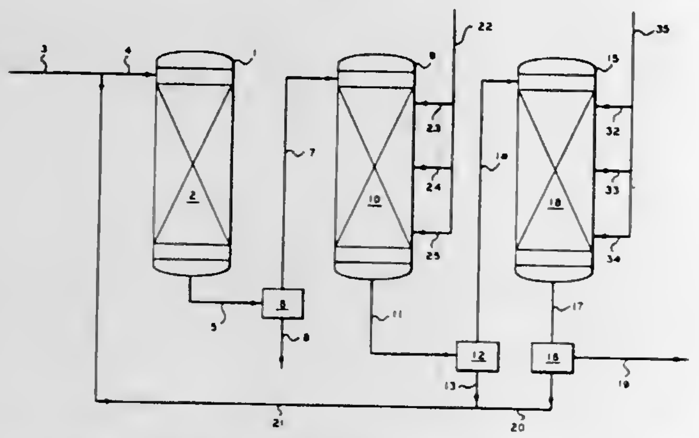


Reducing fouling of compressor pistons and cylinders used for the compression of gaseous compositions comprising unsaturated organic compounds and carbonyl compounds by spraying water into the suction side of the compressor. Preferred source of gaseous composition is from oxidative dehydrogenation process.

3,531,542

OLEFIN ISOMERIZATION PROCESS

John W. Myers and Elliott P. Doane, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 4, 1968, Ser. No. 757,246
Int. Cl. C07c *5/22*
U.S. Cl. 260—683.2 **5 Claims**



An olefin isomerization process in which skeletal isomerization is first promoted to produce the desired isomer in a reaction product mixture, with controlled double bond isomerization being conducted thereafter to facilitate the separation of the desired product.

3,531,543

GROUP VIII NOBLE METAL, TIN AND SOLID INORGANIC REFRACTORY METAL OXIDE CATALYST COMPOSITES AND THEIR USE IN HYDROCARBON DEHYDROGENATIONS

Everett Clippinger, San Rafael, and Bernard F. Mulaskey, Pinole, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,588
Int. Cl. B01j *11/12;* **C07c** *5/18*
U.S. Cl. 260—683.3 **19 Claims**

Composites of a Group VIII noble metal, tin and an inorganic, solid, refractory oxide carrier have excellent dehydrogenation activities and little or no isomerization and cracking activities.

3,531,544

SELECTIVE DEHYDROGENATION OF LONG-CHAIN NORMAL PARAFFIN HYDROCARBONS

Roy C. Berg, Park Ridge, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Apr. 22, 1968, Ser. No. 723,264
Int. Cl. C07c *5/18*
U.S. Cl. 260—683.3 **8 Claims**

An inprovement in a process for the selective dehydrogenation of long-chain normal paraffin hydrocarbons to form a product stream containing normal mono-olefins, unreacted normal paraffins, and aromatic contaminants; separation of the normal mono-olefins from the resultant product stream to produce a mixture of unreacted normal paraffin hydrocarbons and the aromatic contaminants; and recycling of this mixture back to the dehydrogenation step. The build-up of the aromatic contaminants in this normal paraffin recycle stream results in deterioration of the activity and selectivity of the catalyst used in the dehydrogenation step. Solution embodied herein comprehends acid treating at least a portion of the normal paraffin-containing recycle stream, prior to its being recycled to the dehydrogenation step to produce a substantially aromatic contaminant-free hydrocarbon stream and passing the resultant treated stream to the dehydrogenation step. Control of aromatics contaminant to 1.1% resulted in deactivation rate of 0.09 degrees F. per barrel per pound of cat. (BPP) at 105 BBP compared to 1.6 degrees F. BBP for 3.0% uncontrolled contaminant.

3,531,545

ISOMERIZATION OF 1-OLEFINS TO 2-OLEFINS

James W. Garner and Bruce C. Benedict, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 27, 1969, Ser. No. 803,094
Int. Cl. C07c *5/24, 5/30*
U.S. Cl. 260—683.2 **12 Claims**

Isomerization of 1-olefins to 2-olefins over catalysts of the noble metals of Group VIII on alumina in the presence of hydrogen. Sulfur compounds effectively reduce hydrogenation of the olefins while maintaining double bond isomerization activity of the catalyst.

3,531,546

ALKYLATION OF ORGANIC COMPOUNDS

George L. Hervert, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Nov. 29, 1967, Ser. No. 686,690
Int. Cl. C07c *3/54, 39/06*
U.S. Cl. 260—683.51 **4 Claims**

The alkylation of organic compounds is effected in the presence of a novel catalyst comprising the hydrogen fluoride-carbon dioxide complex to prepare alkylated products possessing certain desirable configurations.

3,531,547

COMPOSITION, METHOD AND ARTICLE

Stanley M. Hazen, Cheswick, and William J. Heilman, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Dec. 27, 1967, Ser. No. 693,756
Int. Cl. C08f *15/00, 37/00*
U.S. Cl. 260—78.5 **13 Claims**

Liquid compositions, curable to infusible resins and articles containing the same, comprising an unsaturated monoepoxy compound, curable by a free radical mechanism, such as glycidyl methacrylate, and a monohydride of a carboxylic acid, such as maleic anhydride or phthalic anhydride, are provided. A third vinyl monomer, curable by a free radical mechanism, such as styrene, is optional, as is a monooxirane compound having as its only functional group a single oxirane oxygen atom, such as epichlorohydrin. In the case of an unsaturated monoanhydride, any vinyl comonomer, whether normally curable by a free radical mechanism or not, such as hexene-1, is useful. In another embodiment, any monoepoxide is used in combination with a maleic anhydride, and a vinyl monomer capable of free radical polymerization. Curing is effected by establishing free radicals, as by heat or by the use of peroxy compounds, for example. The articles include castings and for certain of the resins, coatings are provided.

3,531,548

TWO-STEP POLYMERIZATION PROCESSES FOR THE PRODUCTION OF HIGH IMPACT ABS-TYPE RESINS

Gerald Goldberg, Parkersburg, W. Va., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
No Drawing. Filed Dec. 7, 1964, Ser. No. 416,631
Int. Cl. C08f *19/08, 19/18*
U.S. Cl. 260—880 **6 Claims**

Process for producing an ABS-type polymer in which a dialkacyl peroxide is used as an initiator in an amount of 1.1% to 1.5%, a molecular weight modifier is present, and the polymerization is conducted at 65° C. to 110° C.

3,531,549

CATECHOL HALF ESTERS OF BETA-HALOETHYLPHOSPHONIC ACID

David I. Randall, Easton, Pa., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 23, 1967, Ser. No. 617,820
Int. Cl. A01n *9/36;* **C07f** *9/12*
U.S. Cl. 260—953 **11 Claims**

The compounds are catechol or substituted catechol half esters of beta-haloethylphosphonic acid, e.g., the catechol half ester of beta-chloroethylphosphonic acid. The compounds possess plant growth regulating properties, e.g., control of apical dominance, and are prepared by the hydrolysis of the catechol and substituted catechol cyclic esters of beta-haloethylphosphonic acid.

3,531,550

PHOSPHORUS ESTER AMIDES

John F. Herber, St. Louis, Mo., and Quentin E. Thompson, Belleville, Ill., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 479,319, Aug. 12, 1965. This application Feb. 3, 1966, Ser. No. 524,871
Int. Cl. C07f *9/22, 9/24;* **C09k** *3/02*
U.S. Cl. 260—959 **8 Claims**

This invention relates to amides of an acid of phosphorus and to the use of such compounds as functional fluids. There is also a method of producing phosphorotriamidates.

3,531,551

DIELECTRIC CURING OF SPANDEX

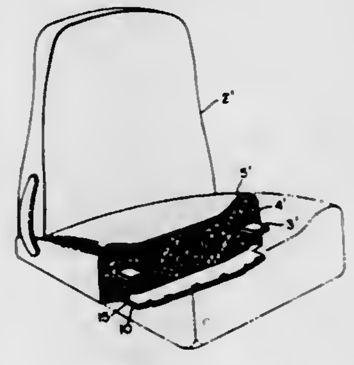
Charles Franklin McDonough, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 9, 1967, Ser. No. 644,806
Int. Cl. B29c *25/00;* **B29f** *3/00*
U.S. Cl. 264—25 **7 Claims**

This invention relates to a process for curing spandex fibers with dielectric heat. In accordance with this invention, uncured wet-spun spandex thread is passed through a radio frequency field, the spandex material acts as a capacitor and the energy passing therethrough develops heat which cures the fiber. This curing process gives uniformity of curing so the resultant fibers have better physical properties than they would have if cured by conventional means.

3,531,552

METHOD OF MAKING COMPOSITE LOAD SUPPORTING STRUCTURE

Edward T. Getz, Cleveland Heights, and Matthew Pacak, Solon, Ohio, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Original application Apr. 11, 1966, Ser. No. 549,233. Divided and this application May 4, 1967, Ser. No. 662,218
Int. Cl. B29d *9/00*
U.S. Cl. 264—45 **2 Claims**

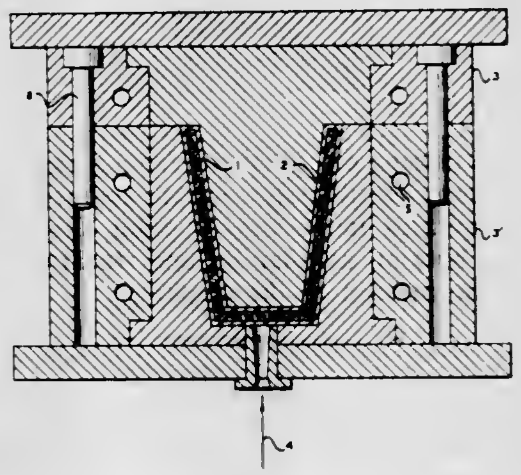


Method of molding an integral foam cushion unit including positioning a support frame and a preformed flexible insert in a mold, and dividing the mold with the insert to isolate the mounting means of the frame, and foaming in surrounding relation to the frame and against one side of the insert, absorbing foaming gases into the insert to render the foam free of voids, and producing an interface between the insert and the foam which is tough and of a higher strength to provide reinforcement to the cushion structure.

3,531,553

METHOD OF INJECTION MOLDING OLEFIN PLASTIC ARTICLES WITH A FOAMED INTERIOR AND UNFOAMED SURFACE

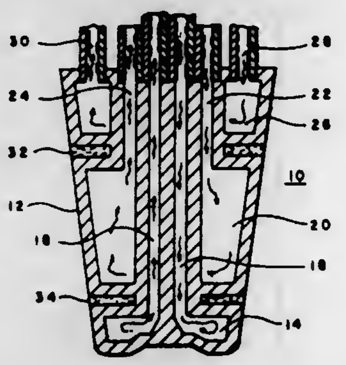
Roy L. Bodkins, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,283
Int. Cl. B29d *23/02*
U.S. Cl. 264—45 **6 Claims**



A method for producing a molded article having a foamed interior and a nonfoamed glossy exterior comprising: providing a first section of olefin polymer at elevated temperature and pressure which does not contain a foaming agent and a second section of olefin polymer at elevated temperature and pressure containing a foaming agent, injecting the first section and then the second section into a mold which is at a pressure below that of the polymers and a temperature below 100° F.

3,531,554
PLASTIC ARTICLES OF MANUFACTURE

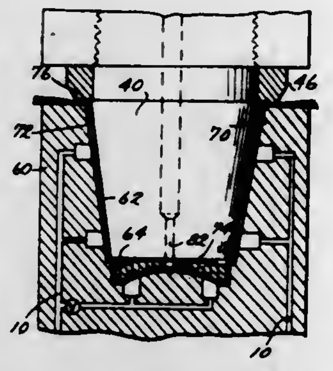
Richard K. Shelby, Downers Grove, Ill., and Ardashus A. Aykanian, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation of application Ser. No. 381,133, July 8, 1964. This application Feb. 21, 1968, Ser. No. 707,334
Int. Cl. B29d *27/00*
U.S. Cl. 264—53 **2 Claims**



This invention relates to a process for foaming a selected portion of a predetermined surface area on a plastic article by exposing one side of the article to an absorbable medium and applying a heated surface to selected portions of the opposite side of the article to produce a foam in the selected area portions only.

3,531,555
PROCESS FOR FORMING FOAMED CONTAINERS

James R. Tiffin and Walter O. Weber, Newark, Del., assignors, by mesne assignments, to Haskon, Inc., New Castle County, Del., a corporation of Delaware
Continuation of application Ser. No. 261,993, Mar. 1, 1963. This application Feb. 20, 1967, Ser. No. 632,858
Int. Cl. B29c *17/04*
U.S. Cl. 264—92 **2 Claims**

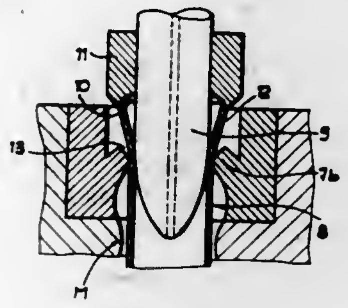


Thermoforming of containers from a sheet or blank of foamed thermoplastic polymers, the foamed polymer having a nonporous inner and/or outer skin with a foam core. The bottom, annular lip and stacking shoulder are compression molded on the container.

3,531,556
BLOW MOLDING METHOD

Horst Mehnert, Berlin, Germany, assignor to Bekum, Berliner Kunststoff-Verarbeitung G.m.b.H., Berlin-Mariendorf, Germany
Filed Aug. 3, 1966, Ser. No. 569,885
Claims priority, application Germany, Nov. 27, 1965, M 67,443
Int. Cl. B29c *7/07, 23/00*
U.S. Cl. 264—98 **5 Claims**

A method of producing the neck portion of plastic bottles during a blow molding process by clamping an annular portion downwardly spaced from the open end of a parison from within and without and subsequently thereto axially compressing the material of the parison between the open end and the clamped annular portion thereof while supporting the internal surface of the parison above the clamped portion to cause the material to expand radially outwardly and to form an annular bead above the clamped portion.



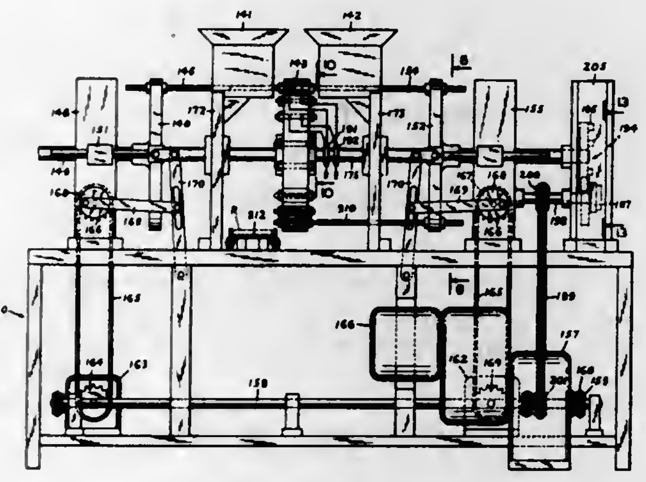
3,531,557
PROCESS FOR PREPARING SALINE SOLUTIONS OF ACRYLONITRILE POLYMERS

Robert Harbes Becker and Allan Olaf Mogensen, Somerville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Jan. 26, 1968, Ser. No. 700,724
Int. Cl. B29b *1/00;* **C08f** *47/16*
U.S. Cl. 264—101 **5 Claims**

A process for preparing aqueous salt solutions of polymers of acrylonitrile comprising dispersing the polymer in an aqueous salt solution containing less than the critical concentration of salt. The dispersion is formed into a film which is heated while applying shear forces thereto to evaporate water therefrom. Sufficient water is evaporated to increase the salt concentration above the critical concentration and thereby dissolve the polymer. The polymer solution can be used to produce shaped articles such as fibers.

3,531,558
METHOD OF MAKING CIGARETTE FILTERS

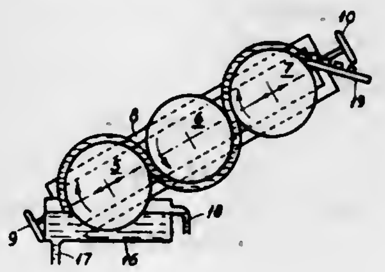
Henry Ganz, West Englewood, N.J., assignor to Lorillard Corporation, a corporation of Delaware
Original application Oct. 22, 1964, Ser. No. 405,745. Divided and this application Jan. 2, 1968, Ser. No. 694,979
Int. Cl. A24c *5/50*
U.S. Cl. 264—122 **4 Claims**



A method of making filter tips for cigarettes and the like in which granular adsorbent materials, such as activated carbon or charcoal, silica gel, other silicious adsorbent materials and the like are mixed with a thermoplastic resin in an amount not exceeding about 15% by weight and introduced into a mold wherein the mixture is heated to soften the resin adjacent to the surface of the rod to form a self-sustaining body, transferring the body from the mold, then heating the body further to soften the resin throughout the body to bond the granular material together and cooling the body.

3,531,559
METHOD AND APPARATUS FOR THE PRODUCTION OF A CANDLE MATERIAL GRANULATE

Niels Georg Barfred, Hojbjerghus, Holte, Denmark
Filed Oct. 18, 1967, Ser. No. 676,093
Claims priority, application Great Britain, Oct. 21, 1966, 47,329/66
Int. Cl. B02c *4/10;* **B29c** *23/00*
U.S. Cl. 264—144 **5 Claims**



A method and apparatus for the production of a composite candle material granulate, the main components of which are paraffin and stearin, are disclosed. The material which is initially in a melted homogenized form is deposited onto a cooled surface and then passed through a space defined by the cooled surface and a second cooled surface such that the cooled surfaces confine the material to a predetermined thickness. A series of rollers are used to progressively decrease the thickness of the material while the material continues to be cooled. Finally, the material is scraped from the last cooled surface in a solidified granulate form so as to be suitable for extrusion in a candle extruder.

3,531,560
SPINNING OF VISCOSE

Donald M. MacDonald, Hawkesbury, Ontario, and Edgardo J. Alvarez, St. Foy, Quebec, Canada, assignors to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
No Drawing. Filed Oct. 28, 1968, Ser. No. 771,282
Int. Cl. D01f *3/12*
U.S. Cl. 264—189 **6 Claims**

In the manufacture of rayon by the viscose process, the incorporation in a zinc-free spinbath of a tertiary monoamine hydrating agent having a minimum of three and a maximum of nine carbon atoms and a maximum of four carbon atoms in any single radical and wherein at least one of the radicals is a single carbon radical with one hydroxyl radical bonded thereto, has been found to produce a low elongation rayon filament having improved strength and wet modulus properties.

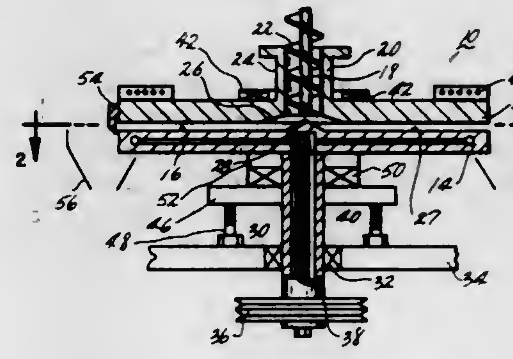
3,531,561
SUTURE PREPARATION

Yves Michel Trehu, Wilmington, Del., assignor, by mesne assignments, to Ethicon, Inc., a corporation of New Jersey
No Drawing. Filed Apr. 20, 1965, Ser. No. 449,621
Int. Cl. A61h *17/00*
U.S. Cl. 264—210 **15 Claims**

A surgical suture is prepared by extruding a high molecular weight polylactide and drawing the extrudate at a ratio of about 5/1 to about 11/1 in a nontoxic liquid that is nonsolvent for the lactide and is maintained at a temperature in the range of 80 to 140° C.

3,531,562
INCREASING THE DENSITY OF THERMOPLASTIC FOAM SCRAP

Mario Serrano and William D. Wolf, Simsbury, Conn., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 705,443, Feb. 14, 1968. This application Mar. 12, 1969, Ser. No. 806,587
Int. Cl. B29c *29/00*
U.S. Cl. 264—310 **3 Claims**



A method for densifying thermoplastic foam wherein the foam cells are crushed by mulling within a narrow chamber formed by members mounted for relative rotation with respect to each other. The densified foam emerges as a high density curd-like material at the periphery of the members.

3,531,563
UREA PARTICLES COATED WITH TETRACYCLINE ANTIBIOTICS

Irving Klothen, Princeton, and Armin Wolfgang Brahm, Robbinsville, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 16, 1967, Ser. No. 660,923
Int. Cl. A23k *1/17, 1/22*
U.S. Cl. 424—21 **9 Claims**

The invention relates to the preparation of free-flowing compositions of urea and a tetracycline antibiotic for use in feeding ruminant animals. The invention provides antibiotic-stable, free-flowing compositions for feeding ruminant animals composed of discrete, free-flowing particles containing an inner core of urea, coated with a protective fatty substance, which is, in turn, coated with a tetracycline antibiotic.

3,531,564
FLUORIDE DENTAL PREPARATION

Alexander Wayne Bouchal, Westfield, and Gerhard M. Salzmann, Franklin Lakes, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 15, 1966, Ser. No. 579,497
Int. Cl. A61r *7/16*
U.S. Cl. 424—52 **15 Claims**

Dental preparation containing a water-soluble fluoride compound and an olefin sulfonate detergent material which comprises at least about 95% water-soluble detergent compound, said detergent material including at least about 62% of a water-soluble long chain alkenyl sulfonate.

This preparation does not cause an adverse "orange juice effect" and is not susceptible to loss of undesirably great amounts of fluoride ion.

3,531,565

STABLE ADJUVANT EMULSION COMPOSITIONS COMPRISING HYDRATED SALTS OF A POLYVALENT METALLIC CATION AND A HIGHER FATTY ACID

Richard Lansing Webb, Darien, Edward Strazdins, Stamford, Conn., and Victor Jack Cabasso, Moraga, Calif., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation-in-part of application Ser. No. 654,987, July 27, 1967. This application Sept. 25, 1969, Ser. No. 861,131

Int. Cl. C12k *5/00*

U.S. Cl. 424—92 **6 Claims**

Adjuvant emulsions of the water-in-oil-in-water type, particularly those containing antigenic material in one or both water phases, are formed without special emulsifying agents by using only polyvalent metallic cations, such as aluminum, in the form of hydrated salts of fatty acids to form and stabilize the emulsions. The oil phase is a physiologically acceptable oil, preferably a triglyceride oil.

3,531,566

STERILIZATION OF FEMALE MOSQUITOES WITH A HORMONE DERIVED FROM MALE MOSQUITOES

George B. Craig, Jr., South Bend, Ind., assignor to The United States of America, as represented by the Secretary of the Department of Health, Education and Welfare

No Drawing. Filed Nov. 28, 1967, Ser. No. 686,337

Int. Cl. A01n *9/00, 23/00;* **C07q** *17/00*

U.S. Cl. 424—95 **5 Claims**

A method of sterilizing female mosquitoes with a substance extracted from the accessory glands of male mosquitoes, the method of extracting and purifying the substance, and the purified material, named "matrone." Matrone is obtained from the male terminalia by extraction with saline solution or, alternatively, by extracting whole male bodies with organic solvents, followed by extraction of matrone with saline solution. Matrone can be lyophilized and stored. Female mosquitoes to which matrone has been administered by injection or feeding are sterilized for life.

3,531,567

XEROSIN FRACTIONS AND METHOD OF PREPARATION

Frank M. Berger, Princeton, Bernard J. Ludwig, North Brunswick, and Jean Pierre Rosselet, Princeton, N.J., assignors to Carter-Wallace, Inc., New York, N.Y., a corporation of Maryland

No Drawing. Filed July 27, 1966, Ser. No. 568,139

Int. Cl. A61k *21/00*

U.S. Cl. 424—123 **4 Claims**

A method for separating a xerosin fraction which is non-precipitable under acid condition from a xerosin fermentation mixture which consists of a liquid phase and solid whole cell material admixtured therewith. The material is separated from the liquid phase, autolyzed or mechanically ruptured and the spent material is removed from the resulting second liquid phase. The second liquid phase is acidified to pH 2–4, the resulting acid insoluble precipitate is removed therefrom, and neutralized. The addition of the precipitating agent causes precipitation of the desired fraction.

The first liquid phase is treated in a similar manner to obtain additional material.

3,531,568

MEDICATED POULTRY DRINKING COMPOSITION COMPRISING A TETRACYCLINE ANTIBIOTIC AND A SULFATE COMPOUND AND THE USE THEREOF

Joseph Michael Pensack, Trenton, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of applications Ser. No. 313,171, Oct. 2, 1963, and Ser. No. 515,759, Dec. 22, 1965. This application June 28, 1966, Ser. No. 561,053

Int. Cl. A61k *21/00*

U.S. Cl. 424—164 **4 Claims**

Compositions comprising water, a tetracycline antibiotic and a sulfate ion used for controlling infectious diseases in poultry.

3,531,569

17α-CARBOETHYNYL-3,17β-ESTRADIOL DERIVATIVES

Sandor Barcza, West Orange, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 707,991, Feb. 26, 1968, and Ser. No. 737,339, June 17, 1968. This application Jan. 6, 1969, Ser. No. 789,405

Int. Cl. A61k *17/06*

U.S. Cl. 424—241 **16 Claims**

Derivatives of 17α-carboxyethynyl-3,17β-estradiols, e.g., the 3-methyl ether of 17α-carbomethoxyethynyl-3,17β-estradiol are useful pharmaceutically, and are obtainable from estrone or analogs thereof.

3,531,570

METHOD OF TRANQUILIZING OR ANTI-DEPRESSANT TREATMENT WITH ALKALOID DERIVATIVES

Richard W. Rees, Newton Square, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 590,512 and Ser. No. 590,513, both Oct. 31, 1966. This application Apr. 3, 1967, Ser. No. 628,288

Int. Cl. A61k *27/00*

U.S. Cl. 424—262 **12 Claims**

A method for the application of anti-depressant therapy or tranquillizing mammals by the administration of the reduction products of strychnine, brucine and their congeners.

3,531,571

METHOD AND COMPOSITION FOR REGULATING ANIMAL GROWTH

Frank E. Halleck, Wayzata, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 149,857, Nov. 3, 1961. This application Aug. 14, 1963, Ser. No. 301,997

Int. Cl. A61k *27/00*

U.S. Cl. 424—265 **23 Claims**

A composition for stimulating animal growth which contains an animal feed and a peristalsis-regulating substance, specifically a parasympatholytic or anti-chlorinergic agent.

3,531,572

USE OF MONOHALOPHENYL THIAZOLYL UREAS AS NEMATOCIDES

Patrick Robert Driscoll, Fords, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application May 8, 1967, Ser. No. 636,589. Divided and this application Feb. 17, 1969, Ser. No. 822,341

Int. Cl. A01n *7/04, 9/12, 9/20*

U.S. Cl. 424—270 **2 Claims**

Monohalophenyl thiazolyl ureas are new compounds that are effective for the control of plant parasitic nematodes and are not phytotoxic to plants. A particularly effective material is 1 - methyl-3-[4-(p-chlorophenyl)-2-thiazolyl] urea.

3,531,573

ANTIDEPRESSANT COMPOSITIONS AND METHODS USING α-ETHYLTRYPTAMINE

William C. Anthony, Kalamazoo Township, Kalamazoo County, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 792,704, Feb. 12, 1959, and Ser. No. 68,677, Nov. 14, 1960. This application Aug. 4, 1964, Ser. No. 387,513

Int. Cl. A61k *27/00*

U.S. Cl. 424—274 **10 Claims**

This invention relates to antidepressant compositions and, more particularly, to compositions containing α-ethyltryptamine or acid addition salts thereof as the primary active ingredient and to a method for using the same.

ELECTRICAL

3,531,574

HEAT TREATING APPARATUS

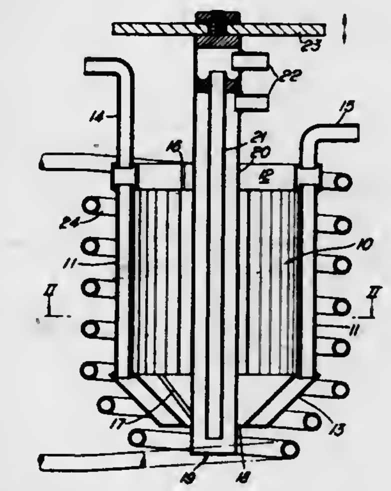
Henley Frank Sterling, Harlow, and Edward Harold Edwards, Hemel Hempstead, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 5, 1968, Ser. No. 734,614

Claims priority, application Great Britain, June 16, 1967, 27,783/67

Int. Cl. H05p *5/12*

U.S. Cl. 13—27 **4 Claims**



Crucibles for melting highly reactive materials, such as titanium or nickel alloys, are constructed from metals having high electrical and thermal conductivity. The crucible walls are fluid cooled. The crucible has a pouring hole at its base closed by a movable fluid-cooled hollow copper plug. Use of the crucible results in the absence of charge contamination by the material of the crucible which is important in treatment of high-purity alloys, such as are used for gas-turbine blades.

3,531,575

REPEAT MAGNETIC TAPE MACHINE

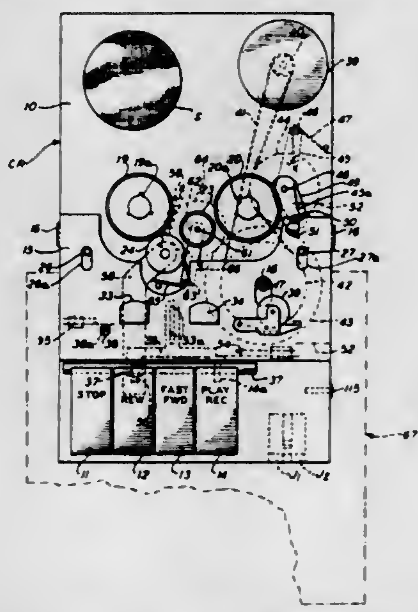
Richard Kobler, West Orange, and Bruce N. Whitlock, Morris Plains, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Sept. 3, 1968, Ser. No. 757,000

Int. Cl. G09b *5/04;* **G11b** *15/18*

U.S. Cl. 35—35 **16 Claims**

The invention relates to a magnetic tape recording which is conditioned to rewind automatically to start position the instant the play-record button is released. Thus, whether the pupil has finished a recording or has finished playing a recording the machine is made ready to play back the recording, repeat the playback thereof or to make a new recording the instant the play-record button is released. The machine is battery operated and therefore to preserve battery life a timing circuit is provided to shut off the power when either the record or play button is released and not reoperated within a predetermined time interval. In a preferred example of the invention an adapter is provided which is attachable to a standard commercial cartridge tape recorder to condition the recorder to operate in the manner described as a repeat machine without requiring any internal or external alteration of the cartridge recorder.



ERRATUM

For Class 81—1.15 see:
Patent No. 3,530,756

3,531,576

COAXIAL HIGH FREQUENCY CABLE

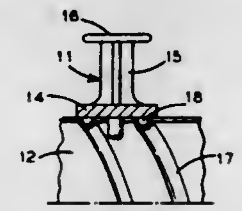
Helmut Hildebrand, Langenhagen, Germany, assignor to Kabel- und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany, a corporation of Germany

Filed May 24, 1968, Ser. No. 731,985

Claims priority, application Germany, May 26, 1967, K 62,374

Int. Cl. H01b *11/18*

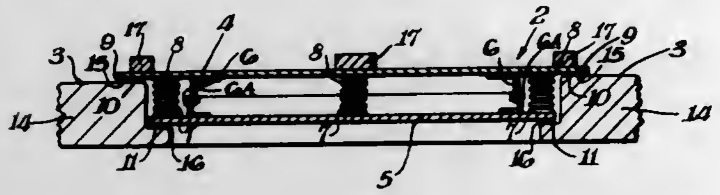
U.S. Cl. 174—28 **1 Claim**



A coaxial high frequency cable having dielectric spacers between the inner and outer conductors thereof, which are in separated relation to each other and are of a construction which minimizes losses.

3,531,577
DOOR FOR A SHIELDED ENCLOSURE

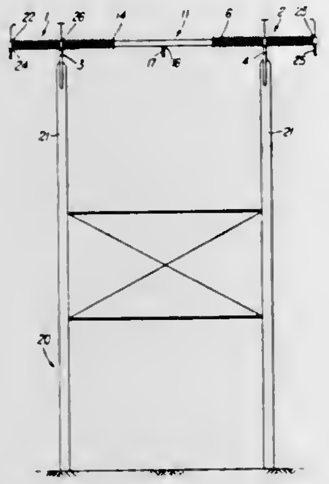
Frank E. Garlington, Palos Verdes Estates, Calif., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed July 10, 1968, Ser. No. 743,850
Int. Cl. H05k *9/00*
U.S. Cl. 174—35 **6 Claims**



A door closure for an opening in a shielded enclosure comprising a plurality of door panels independently seated against stepped surfaces of a door frame. The panels improve electromagnetic shielding by offering multiple and parallel resistance and reluctance paths to the impinging energy.

3,531,578
STRUCTURES FOR SUPPORTING OVERHEAD ELECTRIC POWER LINES

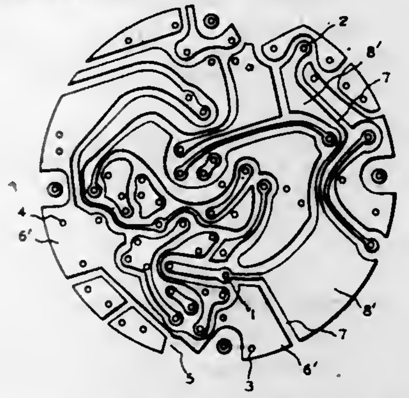
Phanibhusan Dey, New Barnet, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed Dec. 13, 1968, Ser. No. 783,621
Claims priority, application Great Britain, Dec. 22, 1967, 58,346/67
Int. Cl. H02g *7/20;* **E04h** *12/24*
U.S. Cl. 174—43 **13 Claims**



A cross-arm for carrying conductors of an overhead electric power line and a power line including supporting structures having the cross-arm. The cross-arm is divided into three separable parts: two end parts and an intermediate part which has greater rigidity than the end parts. The end parts are made substantially of insulating material and the intermediate part substantially of metal. The length of the intermediate part is at least one-fifth of the total length of the cross-arm.

3,531,579
PRINTED CIRCUIT BOARD WITH AUGMENTED CONDUCTIVE HEAT-DISSIPATING AREAS

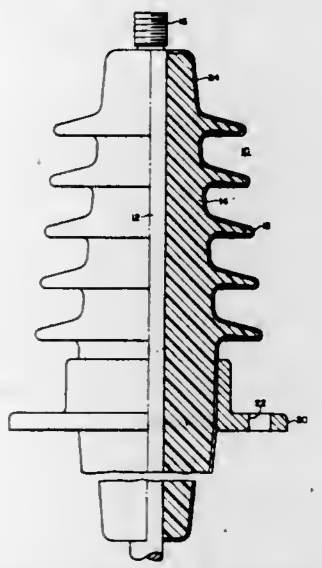
Leonhard Katz, Woburn, Mass., assignor to Astro Dynamics, Inc., Burlington, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 686,349, Nov. 28, 1967, which is a continuation of application Ser. No. 595,235, Nov. 17, 1966. This application Oct. 31, 1968, Ser. No. 795,371
Int. Cl. H05k *1/02, 3/02*
U.S. Cl. 174—68.5 **1 Claim**



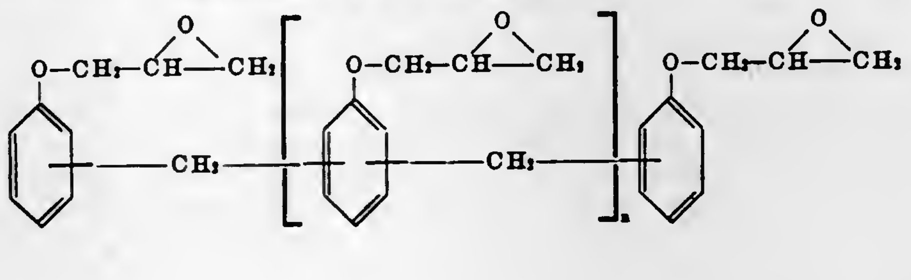
Printed circuit board in which terminal-interconnecting conductors of the board are expanded in two dimensions so that a heat-dissipating conductive surface layer directly connected to the heat-generating components covers substantially ninety percent of the active side of the board. Heat-dissipation is optimized by covering the opposite side of the board with another conductive layer having apertures adjacent to the terminals of the board.

3,531,580
EPOXY ELECTRICAL INSULATING MEMBERS WITH WEATHER RESISTANT POLYESTER COATING

Newton C. Foster, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 15, 1966, Ser. No. 569,786
Int. Cl. H01b *17/50*
U.S. Cl. 174—152 **5 Claims**



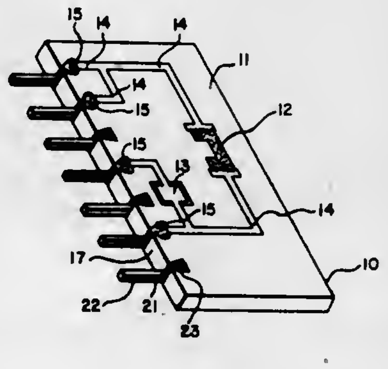
1. A weather resistant electrical insulating member for an electrical conductor comprising at least one bushing having a central bore adapted to receive an electrical conductor, the bushing consisting essentially of a cured epoxy resin reaction product of (a) an epoxy novolac resin having the following structure:



where *n* has an average value of from 1 to 20, (b) acid anhydride, (c) vinyl monomer, and (d) catalysts, a weather protective layer of polyester resin bonded to the outer surface of the bushing and having a thickness ranging from, not less than 5 to 75 mils, and the polyester resin being a reaction product of an unsaturated polyester resin with a monomeric acrylic acid derivative selected from the group consisting of acrylic and methacrylic acid esters.

3,531,581
ELECTRICAL ASSEMBLY AND TERMINAL LEAD CONSTRUCTION

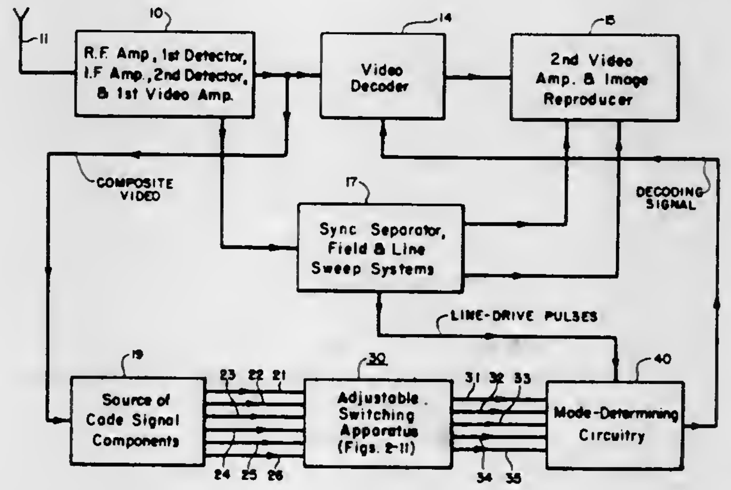
James R. Chesemore, Orange, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 11, 1968, Ser. No. 712,230
Int. Cl. H05k *1/04*
U.S. Cl. 174—68.5 **17 Claims**



An electrical assembly formed of a nonconductive base member adapted to receive and support a variety of electrical components on at least one surface thereof and including at least one terminal pin attached within a slot formed in an edge of the base member. The terminal pin is provided with a pin section and a head section, the head section being upset within the slot to provide a positive mechanical interference fit between the sides of the slot and the head section with the pin section protruding outwardly from the base member for connecting the device into an electrical circuit.

3,531,582
SUBSCRIPTION TELEVISION RECEIVER WITH REMOVABLE CODE-BEARING ELEMENT

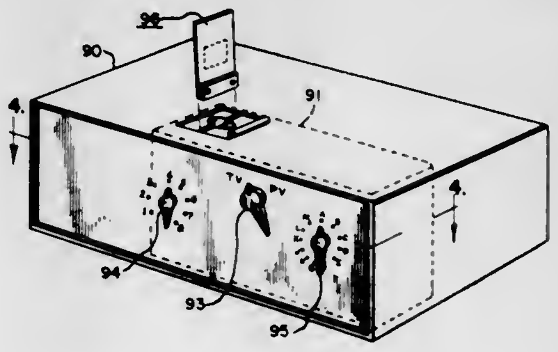
Emil C. Walker, Woodstock, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 514,050
Int. Cl. H04n *1/00*
U.S. Cl. 178—5.1 **9 Claims**


11
10
R.F. Amp, 1st Detector, I.F Amp., 2nd Detector, & 1st Video Amp.
14
Video Decoder
15
2nd Video Amp. & Image Reproducer
COMPOSITE VIDEO
17
Sync Separator, Field & Line Sweep Systems
DECODING SIGNAL
LINE-DRIVE PULSES
19
Source of Code Signal Components
23 22 21
24 25 26
30
Adjustable Switching Apparatus (Figs. 2-11)
31 32 33
34 35
40
Mode-Determining Circuitry

Code information, required to effect decoding of a given subscription television program, is stored in a removable code-bearing element by means of a plurality of concealed conductive circuit paths insulated from and overlaying each other. Sensing of the hidden code information is made possible by conductive lancing probes or pins that pierce the code-bearing element and engage the conductive paths. The decoding operation may be controlled by a switching apparatus having input and output conductors permutably interconnected via and in accordance with the conductive paths.

3,531,583
SUBSCRIPTION TELEVISION RECEIVER

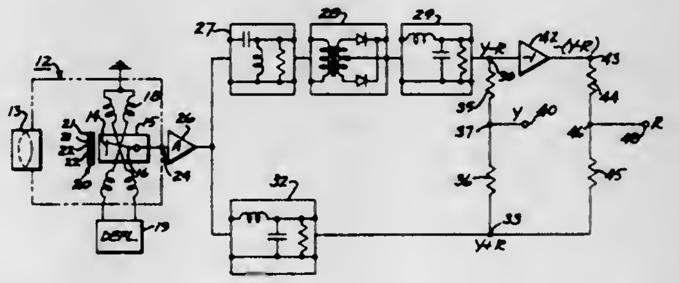
Emil C. Walker, Woodstock, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 28, 1966, Ser. No. 568,599
Int. Cl. H04n *1/32*
U.S. Cl. 178—5.1 **15 Claims**



The disclosed subscription receiver includes a recording arrangement for registering separate charges, within a two-dimensional field on a removable planar element such as a card, only for those television programs viewed. An adjustable apparatus, controlled by the subscriber, must be positioned differently for each program before the television signal for that program may be intelligibly reproduced. Each recorded charge has a unique set of ordinate and abscissa coordinates within the two-dimensional field determined by the adjustment of the adjustable apparatus. The locations of the charges thus represent the identity of the specific programs viewed.

3,531,584
COLOR VIDEO CAMERA AND IMAGE RECORDING SYSTEMS UTILIZING STRIPED FILTERS

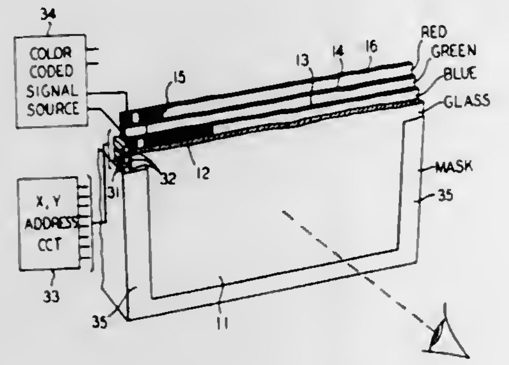
Norton W. Bell, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Oct. 10, 1967, Ser. No. 674,171
Int. Cl. H04n *9/06*
U.S. Cl. 178—5.4 **41 Claims**



Apparatus for producing electrical signals indicative of a predetermined color content of a colored image, comprising means for producing a waveform composed of alternating first components representing light impressions within a first spectral range and second components representing light impression within a second spectral range, means for producing first and second signals being respectively proportional to the difference and to the sum of the mentioned first and second components, and means for combining these first and second signals in different senses to produce third and fourth signals being respectively proportional to the light impression within the mentioned first spectral range and to the light impression within the mentioned second spectral range; and apparatus which exploit these principles to provide tricolor video signals and to permit the recording of color video scenes on monochromatic media.

3,531,585
SOLID-STATE DISPLAY DEVICE EMPLOYING CONTINUOUS PHOSPHOR LAYERS

Robert J. Strain, Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Mar. 15, 1967, Ser. No. 623,305
Int. Cl. H04n *3/28*
U.S. Cl. 178—5.4 **2 Claims**

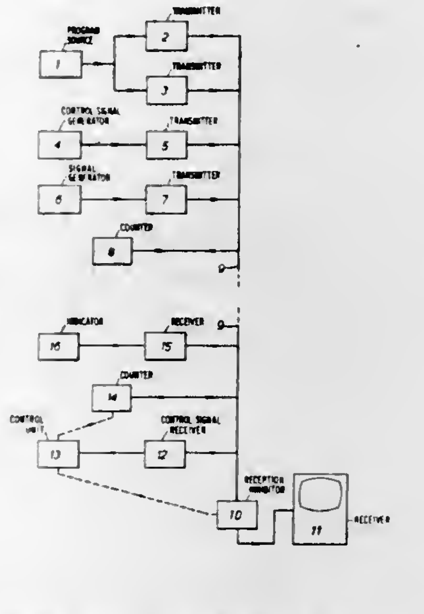


Solid-state color television utilizes an electroluminescent display device employing photoconductive coordinate access to an electroluminescent display matrix in which continuous layers of the blue, green and red phosphors are stacked in that order upon the ground glass viewing screen and interleaved with four sets of transparent electrodes, a Y-coordinate set succeeding an X-coordinate set and vice versa. All three colors will travel to the viewing screen without substantial absorption in the intervening layers because of the respective sizes of the band gaps of the layers. The access arrangement includes at each X or Y position two photoconductors each separating one of four address bus bars from one electrode in one of the four sets of X and Y electrodes. Color coding is achieved simply through appropriate combinations of currents in the four bus bars.

3,531,586
SUBSCRIPTION PROGRAM SYSTEM WITH DEBIT AND CREDIT SIGNALLING

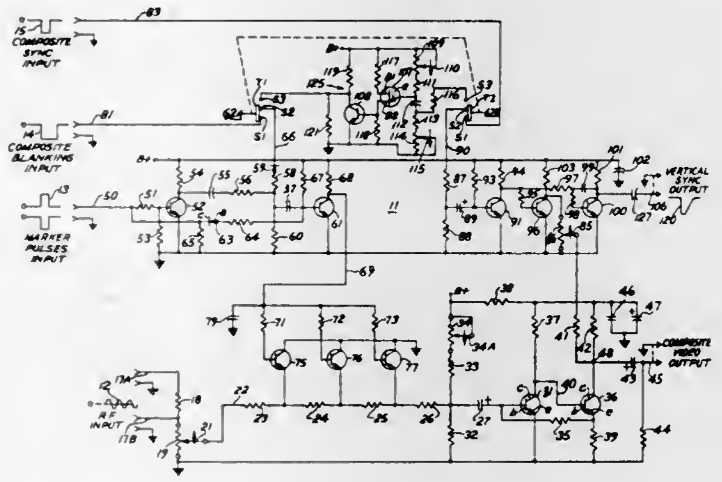
Patrick Bass, London, and Peter John Waller, Chelmsford, England, assignors to R. & R. Research Limited
Filed Apr. 19, 1965, Ser. No. 449,066
Claims priority, application Great Britain, Apr. 21, 1964, 16,567/64
Int. Cl. H04n *7/10, 7/16, 7/18*
U.S. Cl. 178—6 **41 Claims**

Subscription program television system comprising means for transmitting debit signals to receiving stations which have durations related to the price of a proffered program and means by which credit signals may be transmitted to receiving stations to restore credit established thereat. The system includes receiving apparatus having means responsive to debit signals to establish a program price and on acceptance of the program to deduct the price from a previous credit, together with means responsive to transmitted debit cancelling signals to return the price establishing means to its initial condition.



3,531,587
VIDEO SIGNAL MULTIPLEXER FOR TEST SIGNAL GENERATION

Donald N. James, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Nov. 15, 1967, Ser. No. 683,192
Int. Cl. H03k *5/00, 17/02;* **H04n** *7/02*
U.S. Cl. 178—6 **10 Claims**

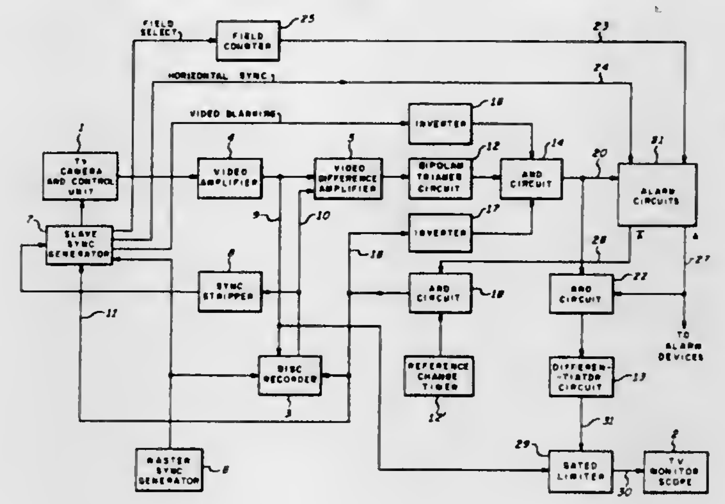


A system is disclosed for providing test signals for television equipment to permit the frequency response of the equipment to be tested without the necessity of disabling the clamp circuits associated therewith.

3,531,588
TELEVISION AUTOMATIC INTRUSION DETECTION SYSTEM

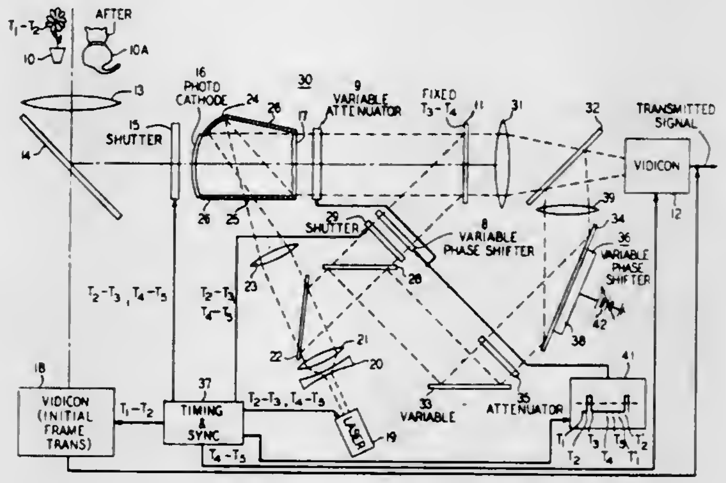
Earl M. Kartchner, Salt Lake City, Utah, assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Aug. 15, 1967, Ser. No. 660,732
Int. Cl. H04n *7/02*
U.S. Cl. 178—6 **15 Claims**

Automatic television apparatus for continuously scanning a security-protected scene and for periodically storing a complete frame of live television signals representing the scene. The live television signals and the stored television signals are amplitude compared and pulses representing any differences are coupled by digitalized logic circuits to alarm devices. Upon an alarm, the pulses actuate a gated limiter through which the television signals are applied to a picture tube whereby the signals are clamped to a white level upon each actuation thus outlining any scene intrusion with a white border.



3,531,589
HOLOGRAPHIC METHOD OF SELECTIVELY TRANSMITTING CHANGES IN A SCENE

Robert J. Collier, New Providence, and Keith S. Pennington, Basking Ridge, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,782
Int. Cl. H04n *5/30, 5/38*
U.S. Cl. 178—7.2 **3 Claims**

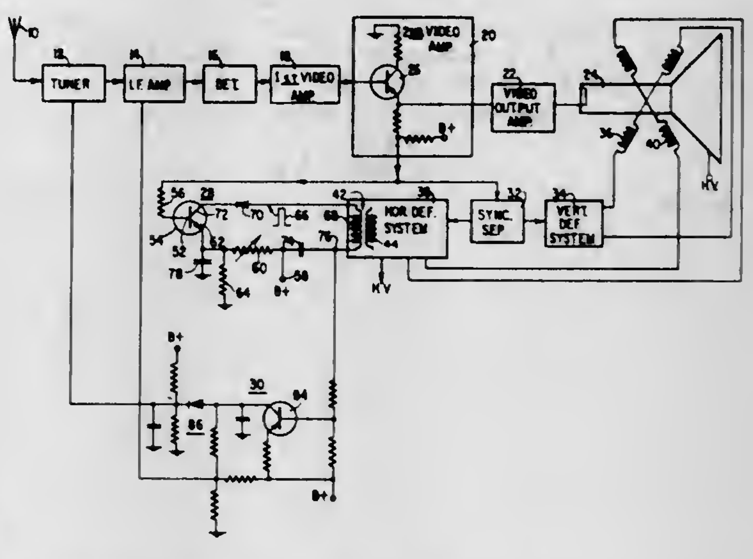


A real-time tranmission-bandwidth-reduction technique for television systems is disclosed in which a hologram is derived and developed in response to an original phase-object display, and subtraction of the unchanged portion of a subsequent phase-object display is achieved by shifting the phase of a reference beam used in making the hologram by π radians and continuing to apply both a light wavefront from the display and the reference beam throughout wavefront reconstruction of an image of the changed display.

Each phase-object display is created from a conventional image by electron beam modification of a deformable oil film. The phase modulation of the output from the hologram is converted to intensity modulation by interference with a secondary phase-related reference beam having an effective $\pi/2$ radians phase shift relative to the average phase of the phase-modulated output light.

3,531,590
AUTOMATIC GAIN CONTROL CIRCUIT

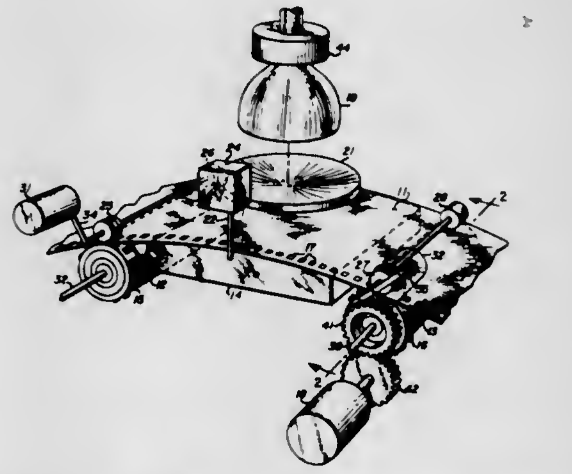
Paul L. Jachim, Franklin Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 5, 1966, Ser. No. 599,102
Int. Cl. H04n *5/52*
U.S. Cl. 178—7.5 **9 Claims**



An automatic gain control (AGC) circuit for a television receiver rapidly responds to changes in the level of a received television signal by using an AGC control transistor responsive to the synchronizing pulse components of the composite video signal, and including a short time constant current differentiating circuit coupled to the output of the transistor for providing current pulses having a energy content dependent on the amplitude of the synchronizing pulse components and relatively independent of the width of the synchronizing pulse components, with a further integrating circuit including a low value capacitance responsive to the current pulses for developing the automatic gain control signal.

3,531,591
FILM TRANSPORT AND FILM POSITIONING DEVICE

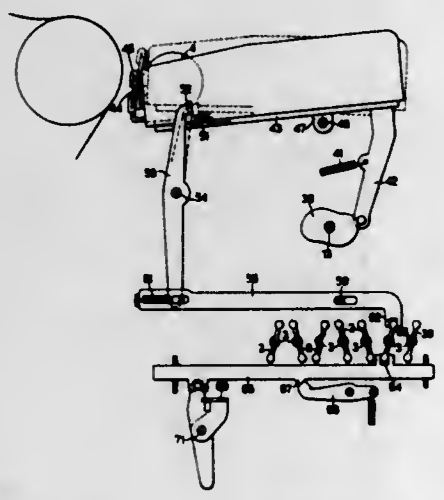
Howard I. Jarmy, San Francisco, Calif., assignor to Singer-General Precision, Inc., Binghamton, N.Y., a corporation of Delaware
Filed Sept. 19, 1966, Ser. No. 580,336
Int. Cl. H04n *3/22*
U.S. Cl. 178—7.7 **3 Claims**



The disclosed embodiment of the present invention is a film transport which includes a pair of capstan rollers for translating the film, a pair of sprockets associated with the capstan rollers for edge guiding the film, and a curved platen for supporting the film at a flying spot scanner station. An encoder is connected to one sprocket for sensing longitudinal movement of the film and a finger engages and senses the position of an edge of the film. A signal corresponding to the position of the edge of the film is supplied to the deflection circuitry of the flying spot scanner to alter to raster position thereof accordingly.

3,531,592
BICOLOR RIBBON CONTROL DEVICE FOR A START-STOP TELEPRINTER

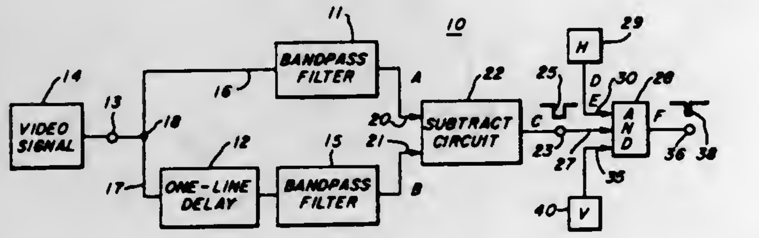
Bruno Sandrone, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 20, 1968, Ser. No. 714,489
Claims priority, application Italy, Mar. 24, 1967, 794,405
Int. Cl. H04l *13/02*
U.S. Cl. 178—33 **6 Claims**



A bicolor ribbon control device for a start-stop teleprinter, wherein a printing mechanism is operated by a continuously rotating driving shaft through a one-cycle clutch engageable in a predetermined angular position of the driving shaft, comprises an additional bar adapted to assume a first position when the teleprinter is not transmitting and to be brought into a second position by said transmission shaft when it is so rotated. The additional bar is returned to the first position under the control of a delay device restored step by step by said driving shaft after the transmission of the last code combination.

3,531,593
APPARATUS FOR PROVIDING FIELD-RECOGNITION SIGNALS FOR INTERLACE-DISPLAY VIDEO

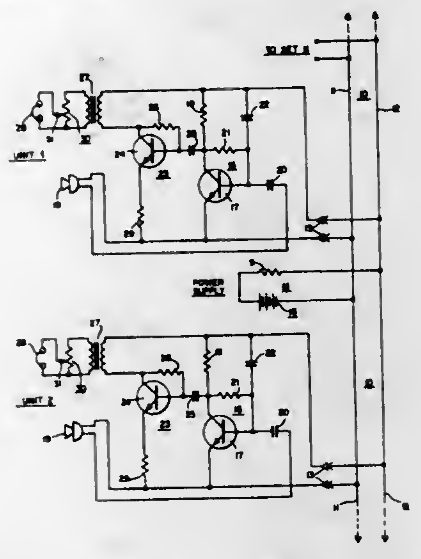
Norton W. Bell, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed July 27, 1967, Ser. No. 656,574
Int. Cl. H04n *5/06*
U.S. Cl. 178—69.5 **4 Claims**



An apparatus for providing field-recognition signals for interlace-display video images includes a gate for providing, in response to gating signals and horizontal sync signals, pulses which identify one field for each image frame. The gating signals are provided in response to a comparison of relatively undelayed vertical sync signals with vertical sync signals that have been delayed by amounts of time corresponding to intervals between successive horizontal sync signals.

3,531,594
TWO-WIRE MULTIUNIT INTERCOM SYSTEM

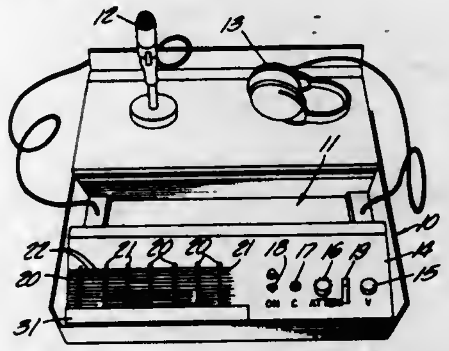
Nathaniel Dickerson, 640 W. Phil-Ellena, Philadelphia, Pa. 19119
Filed Aug. 5, 1968, Ser. No. 750,044
Int. Cl. H04m *9/02*
U.S. Cl. 179—1 **3 Claims**



A multiunit intercom system which employs a two wire conductor on which there is imposed a DC bias. Each of the intercom units includes a first amplifier circuit which derives its input power from the DC bias and is so connected across the two conductors of the transmission cable that an audio input bias to the amplifier will be reflected into the transmission cable and be superimposed as an AC signal upon the DC bias. Each of the intercom units includes capacitive coupling which is responsive to the audio signal superimposed upon the DC bias to provide a second audio input to the other amplifiers along the transmission cable. Each of the intercom units includes an earphone responsive through a second stage amplifier to the output of the first amplifier circuit to provide the audio output for the intercom.

3,531,595
METHOD AND APPARATUS FOR THE TESTING AND TREATMENT OF HEARING DEFICIENCIES

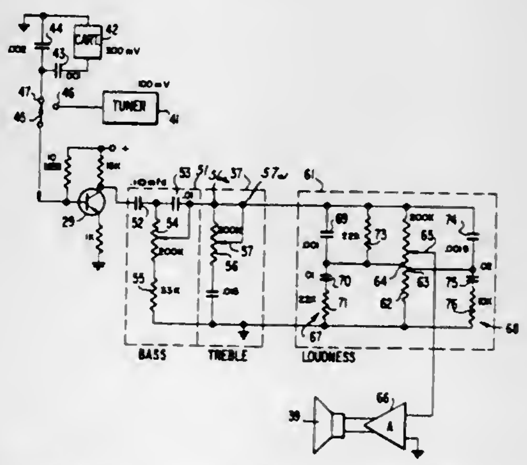
Michael S. Demaree, 5248 Shearin Ave., Los Angeles, Calif. 90041
Filed Oct. 31, 1966, Ser. No. 590,759
Int. Cl. H04r *29/00*
U.S. Cl. 179—1 **3 Claims**



The present invention relates generally to a method for testing and treating hearing deficiencies, and in addition, to apparatus for carrying out such method. More specifically, the present invention provides an apparatus with which an individual's hearing can be treated to determine the characteristics of his hearing deficiencies, whereupon the apparatus can be employed to treat those hearing deficiencies by adjusting the apparatus to compensate for the individual's hearing loss characteristics. The apparatus includes an amplifying device which first divides an incoming signal into a plurality of signals each having a discrete bandwidth the plurality of which span the audible frequency spectrum and which are separated by approximately octave steps. Means is then provided to vary the attenuation in each bandwidth so that the frequency response of the amplifier can be matched to an individual's hearing loss characteristics. Following the individual attenuators, the outputs are recombined in a mixing stage and then fed to an output amplifier. The apparatus also includes a unique method for easily setting the frequency response characteristics of the device.

3,531,596
TREBLE AND BASS CONTROL CIRCUIT

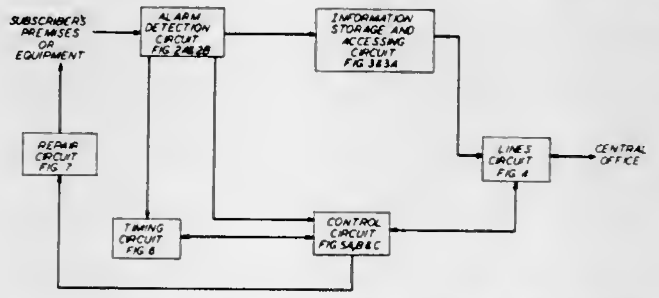
Charles Yagher, Jr., Decatur, Ill., assignor to General Electric Company, a corporation of New York
Filed Jan. 26, 1967, Ser. No. 611,992
Int. Cl. H04r *3/04*
U.S. Cl. 179—1 **2 Claims**



An audio frequency tone control circuit which includes separate treble and bass control networks and a loudness control. The treble control network comprises a common emitter transistor connected so that all of the voltage at its collector, at midband and treble frequencies, is fed to a shunt circuit that includes a series connected variable resistor and a fixed capacitor. The bass control network includes a pair of capacitors series connected between the collector of the transistor and the input terminal of an amplifier, and a variable resistance connected to shunt one of the capacitors.

3,531,597
TELEPHONE REPORTING SET

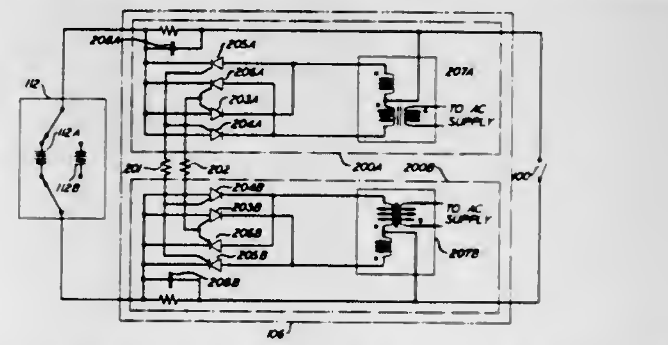
Raymond J. Andrews, San Diego, Gary C. Fields, Oakland, and Harold K. Thompson, San Anselmo, Calif., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York
Filed Feb. 6, 1967, Ser. No. 614,310
Int. Cl. H04m *11/04*
U.S. Cl. 179—5 **12 Claims**


SUBSCRIBER'S PREMISES OR EQUIPMENT
ALARM DETECTION CIRCUIT FIG 2A&2B
INFORMATION STORAGE AND ACCESSING CIRCUIT FIG 3&3A
REPAIR CIRCUIT FIG 7
LINES CIRCUIT FIG 4
CENTRAL OFFICE
TIMING CIRCUIT FIG 6
CONTROL CIRCUIT FIG 5A,B&C

An alarm reporting telephone in which the closure of any one of a plurality of alarm responsive switches initiates the operation of a tape deck that selectively plays one of four tracks recorded on an endless loop of tape. Each track has information recorded thereon in the form of multifrequency tone bursts and/or verbal statements. The multifrequency tone bursts are converted into corresponding switch closures by a multifrequency signal receiver to interrupt a telephone line so as to transmit pulses thereover corresponding to a predetermined telephone number, to cause the tape deck to switch from one tape track to another, and to reset thermal timers. The verbal statements are transmitted out on the telephone line to the called station which exercises control over the reporting telephone by the transmission thereto of three different multifrequency tones. One of the three multifrequency tones initiates the operation of equipment for correcting the alarm condition, while a second multifrequency tone initiates the shutting down of the reporting telephone.

3,531,598
POLARITY SENSITIVE VOLTAGE INSERTION CIRCUIT FOR LONG SUBSCRIBER LOOPS

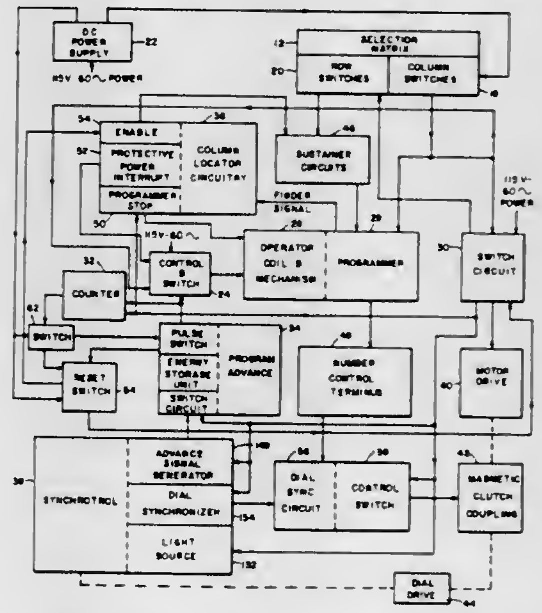
Irving M. McNair, Jr., Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 17, 1967, Ser. No. 675,853
Int. Cl. H04m *19/00*
U.S. Cl. 179—16 **15 Claims**



Circuitry is disclosed whereby a voltage in addition to that of the central office battery may be inserted in high resistance telephone lines, particularly those employed in step-by-step central offices which employ reverse battery signaling. The circuitry senses the instantaneous polarity of the central office battery and inserts the additional voltage in the line with the proper polarity so as to increase the applied potential to the line.

3,531,599
AUTOMATIC ENCODER FOR A COMMUNICATIONS SYSTEM

William G. Bodie, 1703 Wilma Circle, SE., Huntsville, Ala. 35801
Filed Dec. 18, 1967, Ser. No. 691,476
Int. Cl. H04m *11/45*
U.S. Cl. 179—90 **6 Claims**

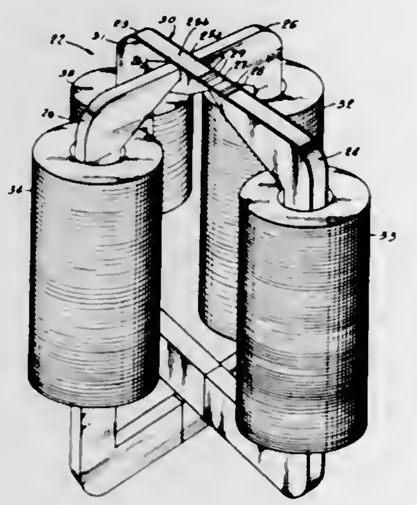


An automatic calling system for a telephone in which names of parties frequently called are alphabetically arranged and displayed in columns and rows and by means of a column push-button and row push-button any desired party may be called, telephone encoding being accomplished by the automatic control of electrical or mechanical linkage between this system and the phone to which it is linked.

3,531,600

MAGNETIC TRANSDUCER HAVING CONDUCTIVE MEANS SPANNING POLE FOR SUPPLYING BIAS

Marvin Camras, Glencoe, Ill., assignor to IIT Research Institute, Chicago, Ill., a corporation of Illinois
Continuation-in-part of applications Ser. No. 126,121, July 24, 1961; Ser. No. 389,021, Aug. 12, 1964; and Ser. No. 401,832, Oct. 6, 1964. This application Oct. 5, 1965, Ser. No. 493,271
Int. Cl. G11b *5/20, 5/24, 5/56*
U.S. Cl. 179—100.2 4 Claims

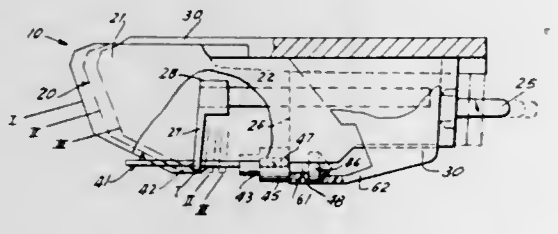


A transduced system comprising a longitudinal scan transducer head, tape deck and related electronics enabling the recording of audio and video signals wherein a pair of cross field conductors traverse the poles of the transducer head in a symmetrical configuration for producing a cross field component during recording operation in either direction of tape movement. The playback amplifier includes a frequency responsive feedback network providing a signal phase shift related to the phase shift which occurs in the response of high and low impedance playback windings as a function of playback signal frequency.

3,531,601

PHONOGRAPH PICKUP CARTRIDGE WITH SELECTIVELY SETTABLE COMPLIANCE

Richard P. Muttick, Yorktown Heights, N.Y., assignor to Sonotone Corporation, Elmsford, N.Y., a corporation of New York
Filed June 26, 1968, Ser. No. 740,210
Int. Cl. H04r *17/08;* **G11b** *3/02*
U.S. Cl. 179—100.41 9 Claims

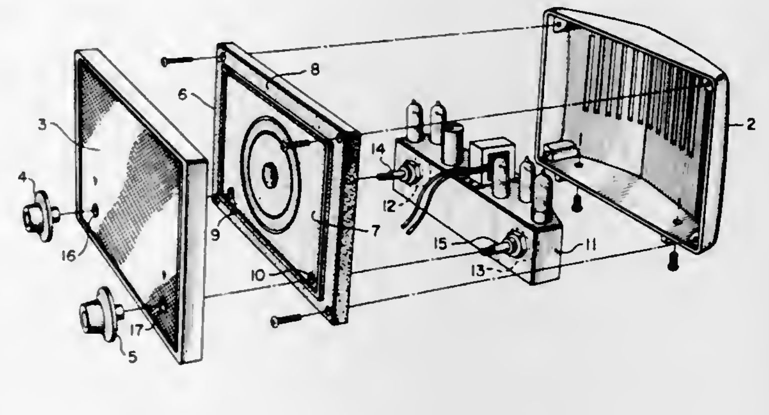


A transducer-carrying structure with at least one stylus-driven mechano-electric transducer and its stylus coupler—is movable to a plurality of position-settings longitudinally displaced along a guideway of the cartridge structure carried at a fixed position by the tone arm. The cartridge structure carries the stylus in the same fixed stylus-set-down dimension and with the same fixed stylus-mounting-dimension in each of the different position-settings of the transducer-carrying structure or tone-arm for operating with a corresponding selected different compliance or sensitivity setting.

3,531,602

RADIO OR THE LIKE WITH CONTROL SHAFT EXTENDING THROUGH SPEAKER DIAPHRAGM

Jesse E. Brown, Glencoe, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Mar. 29, 1968, Ser. No. 717,082
Int. Cl. H04r *7/02*
U.S. Cl. 179—115 3 Claims

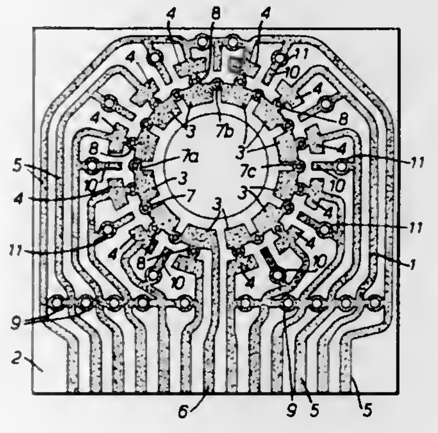


An appliance utilizes a loudspeaker with holes formed in the speaker diaphragm so as to allow appliance control shafts to extend through the diaphragm. Front panel operation of controls is thus provided in conjunction with a loudspeaker with the same area as the front panel, allowing maximum low frequency audio response for a given appliance cabinet size.

3,531,603

MULTI-POSITION ROTARY ELECTRIC SWITCHES

John R. Ashman, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Dec. 2, 1968, Ser. No. 780,416
Int. Cl. H01h *19/58, 21/78*
U.S. Cl. 200—11 5 Claims

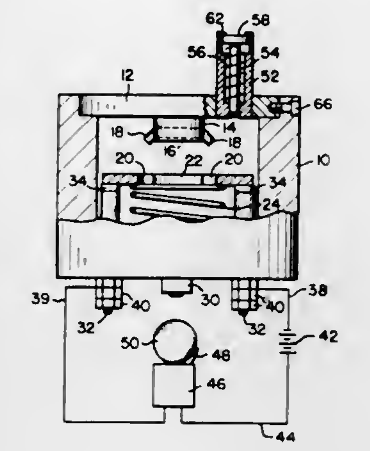


A printed switch wafer for use in a rotary switch having bridging contact means comprises two rings of contact pads which have associated with them and with printed conductors interconnecting parts of relatively small surface area which can be selectively removed according to circuit requirements. The switch also has a novel bridging contact arrangement.

3,531,604

TRIGGER SWITCH FOR ACTUATING AN ALARM

John J. Imburgia, 1581 Creek St., Rochester, N.Y. 14625
Filed June 4, 1969, Ser. No. 830,315
Int. Cl. H01h *37/76*
U.S. Cl. 200—61.04 8 Claims

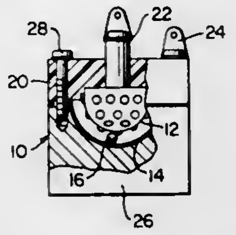


Two spaced electrical contacts in the bottom of a housing are connected in circuit with an alarm, which is energized when the contacts are bridged by a metal plate that is fastened intermediate its ends in the housing to a tension spring, which normally urges it towards the contacts. The plate can be drawn manually away from the contacts and releasably fastened to a cap on the upper end of the housing by means including a plug adapted either to dissolve in water, or to melt in response to intense heat, thereby to release the spring-loaded plate and permit it to reengage the electrical contacts and to trigger the alarm.

3,531,605

ANTI-DISTURBANCE SWITCH

Moreton F. Schrichte, Hamilton, Ohio, assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware
Filed Mar. 12, 1969, Ser. No. 806,595
Int. Cl. H01h *35/14*
U.S. Cl. 200—61.45 10 Claims



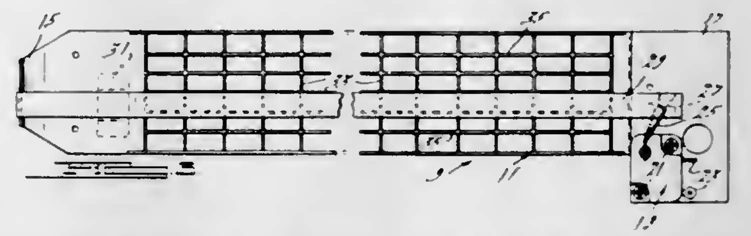
An anti-disturbance switch has been disclosed which operates in conjunction with an electric circuit to indicate or signal that the attitude of the object or munition to which the switch is attached is being or has been disturbed or reoriented from an initial "at-rest" position.

3,531,606

SWITCH ACTUATING DEVICE

Chester H. Thompson, Xenia, and Jesse E. Cooper, Dayton, Ohio, assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 715,345
Int. Cl. H01h *35/40*
U.S. Cl. 200—81.9 8 Claims

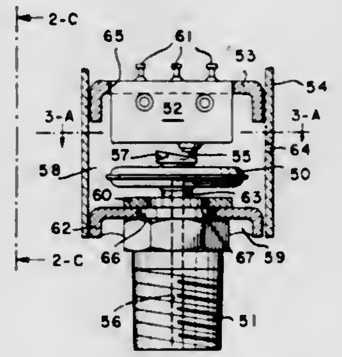
Switching apparatus for actuating a switch in response to air flow. An elongated ribbon or strip is connected to a grill-shaped bracket adapted to extend across a fluid duct. The strip is connected to a switch arm and a predetermined air flow causes the strip to be blown from a position in which the switch arm is in one mode to a position in which the switch arm is moved to another mode.



3,531,607

SWITCH ASSEMBLY

Simeon J. Donahue, Cheshire, Conn., and Edward J. Kosowicz, deceased, late of Trumbull, Conn., by John P. Evans, executor, Easton, Conn.; said Donahue assignor to American Chain & Cable Company, Bridgeport, Conn., a corporation of New York
Filed Apr. 5, 1968, Ser. No. 719,273
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 14 Claims

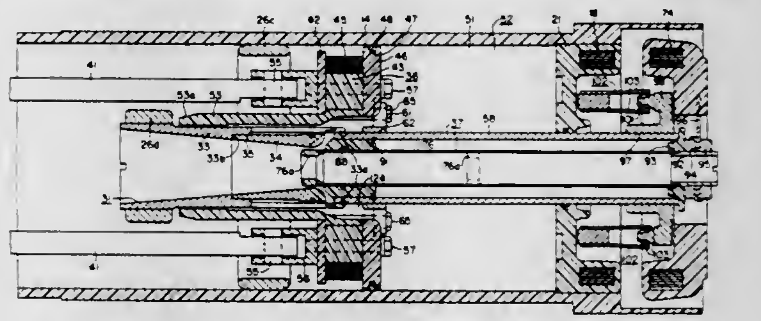


A pressure sensitive switch assembly in which a diaphragm, bellows or other pressure responsive element is effective to operate the actuating member of an electric switch at a preset operating point. Either the pressure responsive element or the switch supporting structure is provided with an inclined ramp which is arranged such that the operating point of the assembly may be readily adjusted by moving the pressure responsive element relative to the switch.

3,531,608

FLUID-BLAST CIRCUIT INTERRUPTER WITH PISTON ASSEMBLY AND ELECTROMAGNETIC DRIVING MEANS INCLUDING THREE COILS

Edmond Bateman, Glasgow, Scotland, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 29, 1966, Ser. No. 582,925
Int. Cl. H01h *33/82*
U.S. Cl. 200—148 7 Claims

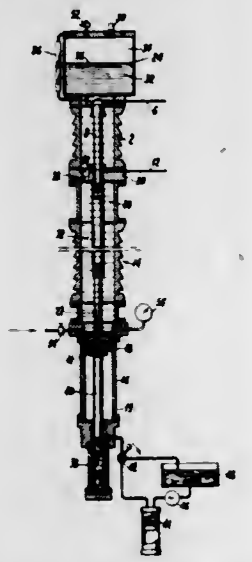


A fluid-blast circuit interrupter of the piston type is provided having three accelerating coils, instead of two, for more uniformly grading the magnetic impulse force throughout the length of the piston stroke. The movable piston member, carrying the movable contact structure, additionally carries a movable accelerating coil. The base portion of the stationary operating cylinder supports a stationary accelerating coil. A driver unit, carrying a second movable accelerating coil, wound in magnetic opposition to the aforesaid two accelerating coils, is attached to, and movable with the piston assembly to thereby accelerate the same. Insertion of the three accelerating coils serially into the series circuit is achieved by fluid blast action to a movable arcing horn constituting a portion of the movable contact assembly.

3,531,609

ELECTRICAL CIRCUIT BREAKER

Jean Louis Gratzmuller, 66 Boulevard Maurice Barres, Neuilly-sur-Seine, Hauts-de-Seine, France
Filed Apr. 12, 1967, Ser. No. 630,303
Claims priority, application France, Apr. 15, 1966, 57,727
Int. Cl. H01h *33/68*
U.S. Cl. 200—150 **13 Claims**

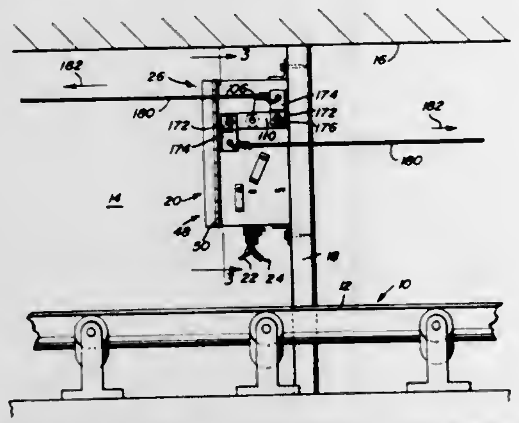


An electrical circuit breaker has a liquid dielectric which is kept under permanent pressure by resilient means such as a cushion of gas, under pressure. The movable contact of the breaker communicates with the space filled with pressurized liquid dielectric and thus is permanently subject to a downward force which tends to push aside the movable contact from the fixed contact to release the circuit breaker.

3,531,610

PULL CORD TYPE CONVEYOR BELT CONTROL SWITCH

Louis Berezansky and Mervin C. Hill, Seward, Pa., assignors to Band B Company, a corporation of Pennsylvania
Filed Oct. 30. 1967, Ser. No. 678,863
Int. Cl. H01n *17/08*
U.S. Cl. 200—156 **6 Claims**

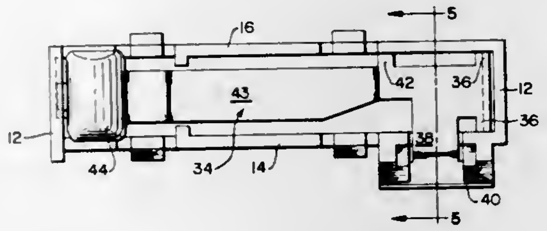


An electrical circuit control switch mechanism including an actuator extending along the path of movement of a portion of a machine powered by motor means controlled by the electrical circuit and being operative upon being twice pulled along said path to close the electrical circuit after the circuit has been opened and to open the electrical circuit in response to the actuator being pulled along said path only once after the circuit has been closed.

3,531,611

IGNITION BUZZER SWITCH SUBASSEMBLY

Edward B. Mitchell, Belmont, and Collier D. Simmons, Sharon, Mass., assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 29, 1969, Ser. No. 794,967
Int. Cl. H01h *9/02*
U.S. Cl. 200—166 **6 Claims**

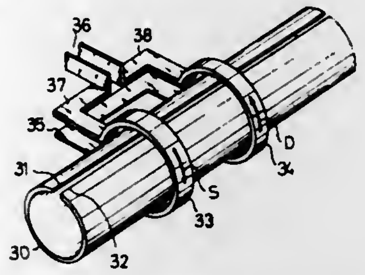


This invention is directed at the combination of a switch subassembly housing and contact in which the housing has a pair of ramp portions with lower angular surfaces in abutting parallel relationship to a bar portion of a T-shaped extension of the contact to assure that the lower portion of the contact is held rigidly in engagement with the housing when the rest of the contact is placed within the housing.

3,531,612

MEANS FOR HEATING BY INDUCTION

Fernand Viart, Marcinelle, Belgium, assignor to Ateliers de Constructions Electriques de Charleroi (ACEC), Brussels, Belgium, and Vallourec, Paris, France
Original application Aug. 29, 1966, Ser. No. 575,750, now Patent No. 3,472,987, dated Oct. 14, 1969. Divided and this application Nov. 21, 1968, Ser. No. 777,729
Int. Cl. H05b *5/00;* **B23k** *13/02*
U.S. Cl. 219—8.5 **3 Claims**



This invention relates to means for the induction heating of the adjacent edges of a metallic element wherein the metallic element is folded to define the adjacent edges. The means comprises at least two inductors placed side-by-side at a certain distance from one another and surrounding the metallic element in a plane perpendicular to the longitudinal direction of the element. The inductors are connected to one or more electric current sources of suitable frequency in such a way that two adjacent inductors are fed with electric currents in phase opposition.

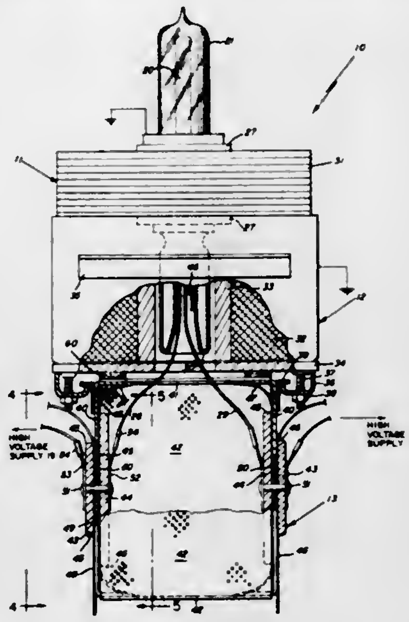
3,531,613

CAPACITIVE FILTER FOR SUPPRESSION OF SPURIOUS ELECTRICAL RADIATION

Carlo P. Domenichini, Lexington, and Leo Terjenian, Natick, Mass., assignors to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Aug. 22, 1968, Ser. No. 754,641
Int. Cl. H05b *9/06, 5/00*
U.S. Cl. 219—10.55 **7 Claims**

A capacitive filter arrangement coupled to the voltage supply circuit of an electrical energy generator to reduce

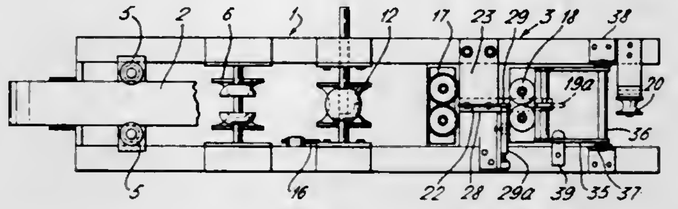
undesired radiation of energy to acceptable levels in accordance with Federal Communications Commission specifications and requirements for such generators when employed in certain electronic equipment. Elimination of corona discharge at predetermined levels of alternating current and no breakdown of insulation material at predetermined levels of direct current are other characteristics of the structure of the invention.



3,531,614

METHODS OF FORMING METAL TUBING AND/OR APPARATUS THEREFOR

Kenneth Arthur Wallis, % Upright Products Limited, 18 Rongotai Road, Wellington, North Island, New Zealand
Filed Mar. 31, 1967, Ser. No. 627,361
Claims priority, application New Zealand, Apr. 4, 1966, 144,678
Int. Cl. B23k *1/16*
U.S. Cl. 219—66 **3 Claims**



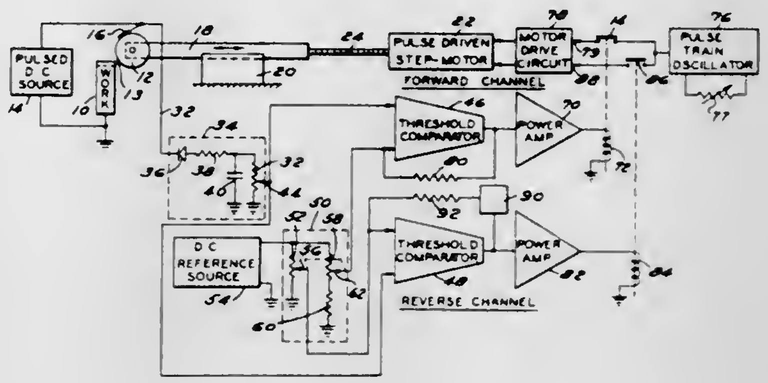
Apparatus for continuously forming tube from a thin strip of metal by folding the strip to a tubular form through a plurality of sets of forming rollers prior to passing the tube through a welding station having an internal and external wheel electrode with the internal electrode supported on an L shaped support member with one arm extending through the converging edges of the formed strip and the other arm extending forwardly through the formed tube with the welding wheel mounted in the end thereof.

3,531,615

ELECTRICAL DISCHARGE MACHINING WITH STEP DRIVEN ELECTRODE

Frank X. Zammit, West Bloomfield, Mich., assignor to F. Joseph Lamb Company, Detroit, Mich., a corporation of Michigan
Filed Sept. 8, 1966, Ser. No. 577,920
Int. Cl. B23p *1/14*
U.S. Cl. 219—69 **11 Claims**

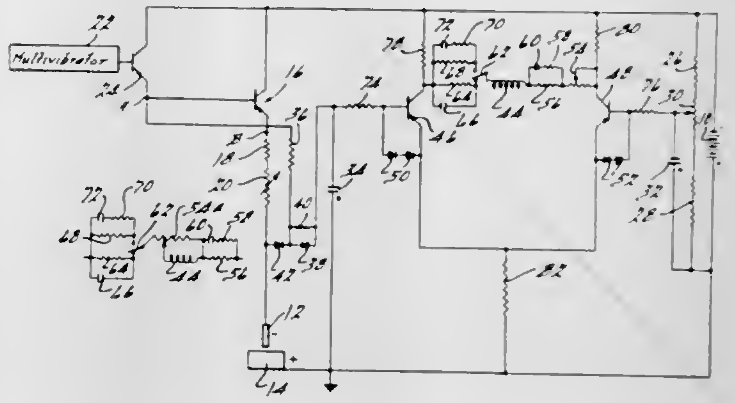
Electrical discharge machining apparatus wherein a stepping motor drives the electrode into the workpiece in precise increments at a substantially constant rate during a machining operation. The stepping motor is controlled by an error circuit responsive to variations in the discharge gap outside of predetermined limits to obtain the aforementioned continuous motion of the electrode into the workpiece unless a short occurs at the gap. The repetition rate of the pulse source which drives the motor is selected so that the electrode moves into the workpiece at the fastest possible rate. The gap is held to an optimum gap within predetermined limits by comparing the average gap voltage with two separate references in the error circuit.



3,531,616

SERVOCONTROL CIRCUIT FOR ELECTRICAL DISCHARGE MACHINING APPARATUS

Kurt H. Sennowitz, Royal Oak, Mich., assignor to Elox Inc., Troy, Mich., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 705,258
Int. Cl. B23p *1/14*
U.S. Cl. 219—69 **6 Claims**



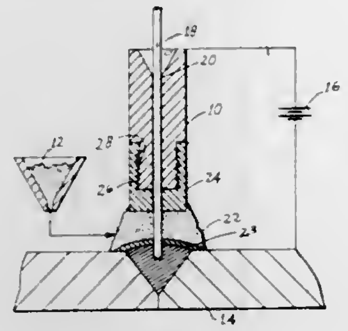
A circuit for maintaining relatively constant gap spacing between an electrical discharge machining electrode and workpiece wherein a control signal for a motive means is derived from a sensing network connected between a drive signal source and the gap. The drive signal source may be multivibrator whose output pulses trigger an electronic switch that supplies machining pulses to the erosion gap.

3,531,617

PLASTIC TIP FOR SUBMERGED ARC WELDING APPARATUS

Shelby G. Ingram and Charles E. Ingram, Middletown, Ohio, assignors to Armo Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed Oct. 28, 1968, Ser. No. 771,029
Int. Cl. B23k *9/18, 25/00*
U.S. Cl. 219—73 **5 Claims**

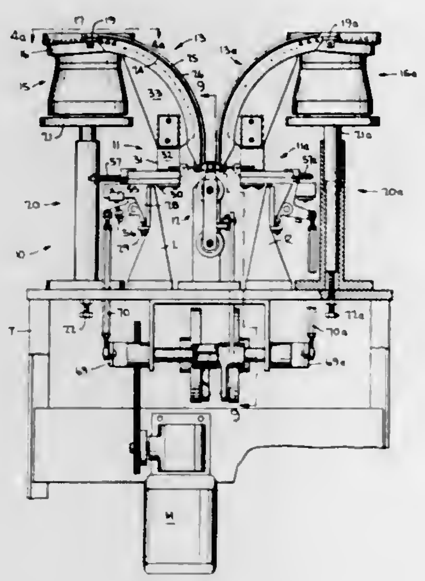
A protective cap for submerged arc welding apparatus composed of an organic or inorganic polymeric material



selected from the group consisting of inorganic plastics, fluoroplastics, polyimides, silicones, and allyl, polyester, epoxy, and alkyd resins, alone or in combination with filler substances.

3,531,618
AUTOMATIC WELDING MACHINE

Chester O. Merchant, Owensboro, Ky., assignor to Kentucky Electronics Inc., Owensboro, Ky., a corporation of Kentucky
Filed Aug. 19, 1966, Ser. No. 573,524
Int. Cl. B23k *9/02, 11/02, 11/04*
U.S. Cl. 219—103 **9 Claims**

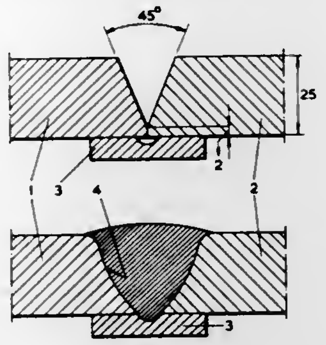


An improved automatic machine is provided for welding mounting brackets to cylindrical electrodes of a cathode ray tube in precise positions. Generally U-shaped brackets with a curvature conforming to the cylindrical electrode are fed into and along a special track confining them for sequential positioning by a movable welding member into final exact position against the surface of the cylindrical electrode.

3,531,619
PROCESS FOR POWDER SHIELD OR GAS-SHIELD ARC WELDING WITH A CONSUMABLE ELECTRODE

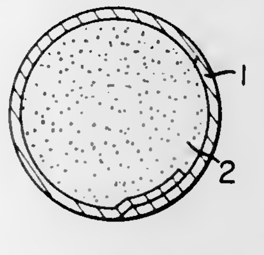
Johannes Jacobus Broodman, Breskens, Netherlands, assignor to N.V. Koninklijke Maatschappij "De Schelde," Vlissingen, Netherlands
Filed Oct. 25, 1968, Ser. No. 770,667
Claims priority, application Netherlands, Oct. 27, 1967, 6714667
Int. Cl. B23k *9/00*
U.S. Cl. 219—137 **17 Claims**

A process for powder shielded or gas shielded arc welding of plates and/or shapes in a single pass by means of a consumable electrode. A groove is provided between the elements to be welded, having an upper V-portion and an adjoining lower abutting portion. An electric arc is fired between the electrode and the groove while varying the welding current according to a predetermined curve with alternating intervals of high and low current intensity during movement of the electric arc along the groove.



3,531,620
ARC WELDING ELECTRODE FOR STEEL WITHOUT USING GAS OR THE LIKE

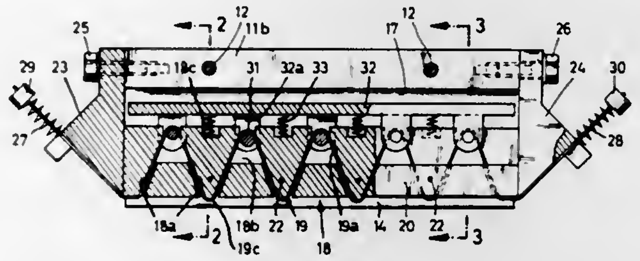
Masayasu Arikawa, Fujisawa-shi, Izumi Ichihara, Kamakura-shi, and Shou Horiuchi, Fujisawa-shi, Japan, assignors to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan
Filed June 30, 1967, Ser. No. 650,319
Claims priority, application Japan, July 8, 1966, 41/44,710
Int. Cl. B23k *35/22*
U.S. Cl. 219—146 **8 Claims**



The present invention relates to a continuous and consumable electrode being used for automatic arc welding of steel without using shielding gas or the like. The structure of said electrode comprises a steel casing filled with a powder of special composition, said powder improving the efficiency of arc welding of steel.

3,531,621
PUNCH FOR HOT-SEALING FOILS FOR WRAPPINGS

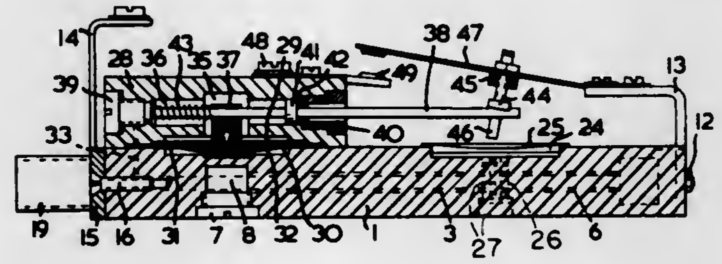
Hans Beck, 27 Urbanstrasse, 7440 Nurtingen, Germany
Filed Aug. 14, 1968, Ser. No. 752,634
Claims priority, application Germany, Aug. 16, 1967, B 93,991
Int. Cl. B30b *15/34;* **B32b** *31/20;* **H05b** *3/02*
U.S. Cl. 219—243 **5 Claims**



A welding ram, especially for use in connection with a wrapping machine having means for hot sealing two foils to each other to produce a wrapping envelope, which includes longitudinally extending frame means, a rail member extending in the longitudinal direction of and mounted in said frame means and having one longitudinal edge surface exposed to the outside thereof, said rail member being provided with passage means extending from said one longitudinal edge surface in the direction toward the opposite side thereof in the interior of said frame means, supporting means associated with said passage means and located within said frame means, and a heating wire adapted to be connected to a source of electric current and while extending in the longitudinal direction of said rail member alternately passing over sections of said one longitudinal edge surface and said supporting means through said passage means.

3,531,622
ELECTRIC FLOW HEATER

Josef Kaiser, Reid, Innkreis, Vogelweg 24, Austria
Filed May 9, 1966, Ser. No. 548,461
Int. Cl. H05b *1/02;* **G01k** *13/02*
U.S. Cl. 219—309 **5 Claims**

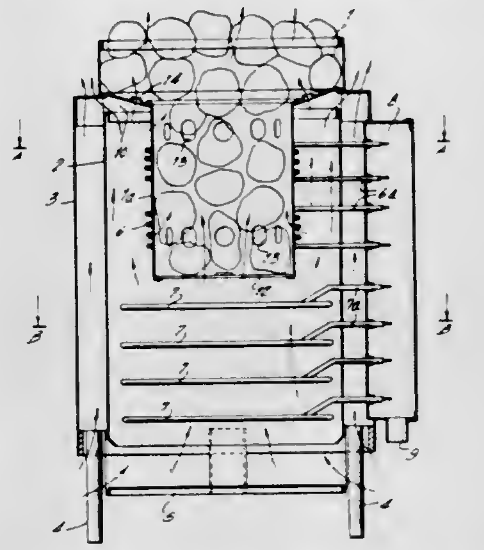


A continuous flow hot water heater has a block of insulating material with intermediate passageways for water and resistance heating wire coils in some parts of the passageways. A constriction in one of the passageways causes a pressure drop when water flows; this drop actuates a diaphragm housing which operates to switch current on. This same switch is operated by a temperature responsive element containing material such as ethylene dichloride. This element is in contact with the water and expands to switch off current when predetermined temperature is reached and thus acts as a temperature thermostat. The diaphragm is sandwiched between one portion of a major block face towards one end of a diaphragm housing, diaphragm housing provides the fixed contacts and the switch operating bar is a two-arm rocker lever which extends from inside the diaphragm housing along the uncovered portion of the major face of the insulating block where it operated the switch. The oven temperature thermostat is also accommodated on this face of the insulating block resulting in all the operation taking place in a compact space at one side of the insulating block face. Preferably the switch does not control the current to the heater coils directly but instead operates a contactor which in turn performs the high power switching required for the heating element. A single block with coils adapted for heating by three phase current is also shown.

3,531,623
ELECTRICALLY HEATED SAUNA UNIT

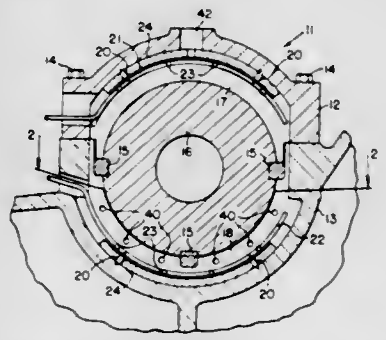
Niilo Heikki Teeri, Kivihaantie 6A, Helsinki, Finland
Filed Mar. 13, 1967, Ser. No. 622,787
Claims priority, application Finland, Mar. 17, 1966, 680/66
Int. Cl. A61h *33/06;* **F24h** *7/02*
U.S. Cl. 219—367 **3 Claims**

An electrically heated sauna oven having spaced inner and outer mantles to permit air circulation from the bottom to the top of the oven through the space between the mantles. A stone-receiving container has a portion thereof extending into the upper end of the inner mantle. A first group of resistance elements encircles that portion of the stone-receiving container extending into the inner mantle. A second group of resistance elements is disposed below the container. The first and second groups of resistance elements are operable independently of one another. The resistance elements are connected to a power source and are operable to heat the circulating air passing thereover to thereby heat the air entering the bath house (sauna) and the stone pile in the container. The resistance elements also contribute to the heating of the stones.



3,531,624
HEATER FOR EXTRUSION PRESS CONTAINER

Charles V. Henneberger, Penfield, N.Y., assignor to Farrel Corporation, Rochester, N.Y., a corporation of Connecticut
Filed June 13, 1968, Ser. No. 736,677
Int. Cl. F27b *14/06, 14/14*
U.S. Cl. 219—422 **2 Claims**

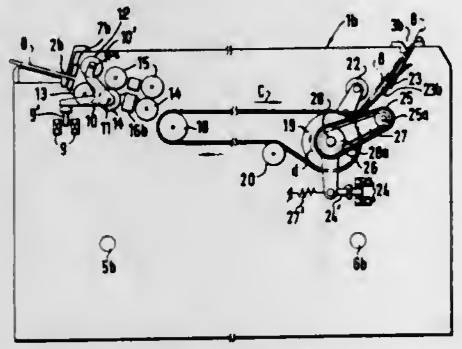


Two arcuate heater coils are mounted, respectively, in the opposed, upper and lower sections of a container housing. Each coil comprises three heater elements; and each element comprises a plurality of convolutions extending generally transversely of the housing axis. The longitudinally center or middle element of each coil has fewer convolutions, and its convolutions are spaced further apart than are the convolutions of the two outer elements of each coil, so that when the coils are energized, less heat is developed at the center of the housing than at its ends. At each end the housing has a plurality of holes therein for venting the housing interior so heat from inside the housing may flow over opposite ends of the container to maintain its temperature uniform.

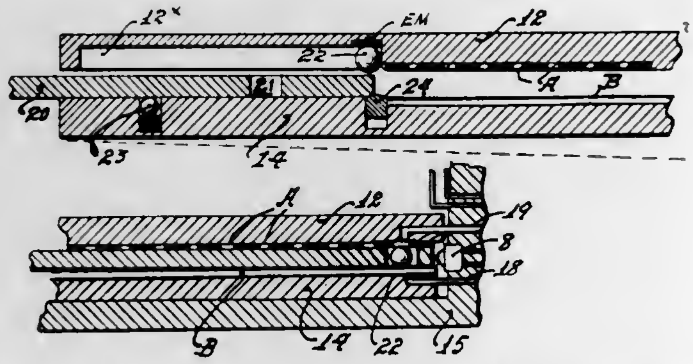
3,531,625
AUTOMATIC TICKET GATE

Yukio Mizuta, Shizuya Ano, Toshio Tanaka, and Takeo Asada, Kyoto, Japan, assignors to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan
Filed Mar. 3, 1967, Ser. No. 620,503
Claims priority, application Japan, Mar. 10, 1966, 41/15,003
Int. Cl. G05b *1/00;* **G06k** *5/00;* **G07f** *1/06*
U.S. Cl. 235—61.7 **10 Claims**

An automatic ticket gate for rapid examination and return of passenger tickets. The tickets, appropriately coded, may be inserted successively into a ticket inlet and examined by a genuineness tester. A solenoid-operated bell-crank draws the tickets into the gate in response to a signal from the genuineness tester. This signal also actuates driving rollers which convey the tickets past a ticket reader, onto a conveyor belt, and thence to a guide plate which returns the tickets in the order of insertion under control of a solenoid. The signal from the ticket reader is stored, then supplied to an information testing circuit which provides an output signal in response to the signal from the genuineness tester which may be a no ticket, valid ticket or invalid ticket signal. This output signal is gated to a memorizing circuit in response to a signal from a first passenger detector, and supplied from the memorizing circuit to a collation circuit. In response to a gating signal from a second passenger detector, the collation circuit may provide an output signal to either the solenoid for the guide plate, or a warning means, or both. If a valid ticket signal has been memorized, the guide plate is actuated to dispense the ticket. If an invalid ticket signal has been memorized, the ticket is dispensed but the collation circuit additionally actuates the warning means. If no ticket has been inserted, the collation circuit actuates the warning means.

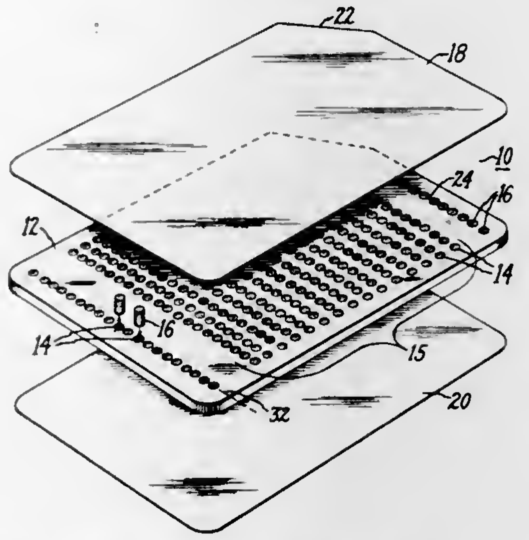


3,531,626
ELECTRICAL DEVICE FOR VISUALLY CHECKING CREDIT CARDS
Anthony Olff, 1490 Pacific St., Brooklyn, N.Y. 11213, and John Lapl, 5 Nagle Lane, Commack, N.Y. 11725
Filed May 29, 1967, Ser. No. 641,789
Int. Cl. G06k *5/00;* **H01h** *43/08*
U.S. Cl. 235—61.11 7 Claims



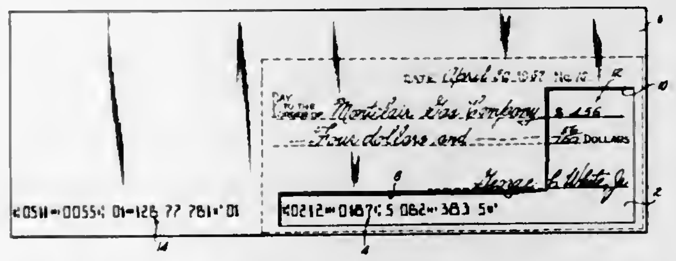
The invention is adapted to reduce the fraudulent use of lost or counterfeited credit cards, by use of apertured, i.e. punched, cards, each placed in the respective card to identify the holder. In use at a retail outlet of goods, the clerk places the card in a compartment and slides it forwardly. As the card is thus moved the holes will each come into register with contact closing movable elements such as metal balls, and the filaments of at least two electrical lamps will be illuminated by the circuit-closing action of said movable elements, as for example, one lamp in accordance with a code marking printed on the card, and a second lamp in accordance with a second code designation which may be one required to be memorized by the card holder. The invention enables use of multi-filament electric lamps, each filament representing a special code designation.

3,531,627
TRANSIT TICKET HAVING FARE CODING MEANS FOR AUTOMATIC FARE COLLECTION SYSTEMS
Donald M. Ham, Rochester, N.H., assignor to General Electric Company, a corporation of New York
Filed May 6, 1965, Ser. No. 453,714
Int. Cl. G06k *19/06;* **H04q** *3/02*
U.S. Cl. 235—61.12 2 Claims



A transit ticket for use in automatic fare collection systems. The transit ticket has a core portion provided with a plurality of magnetic inserts adapted to be encoded with fare collection information. In one form, the magnetic inserts are grouped to provide fare coding to each station on the transit system. In another form, some inserts are used to represent prepaid fare and are adapted to be punched out as increments of the prepaid fare are used.

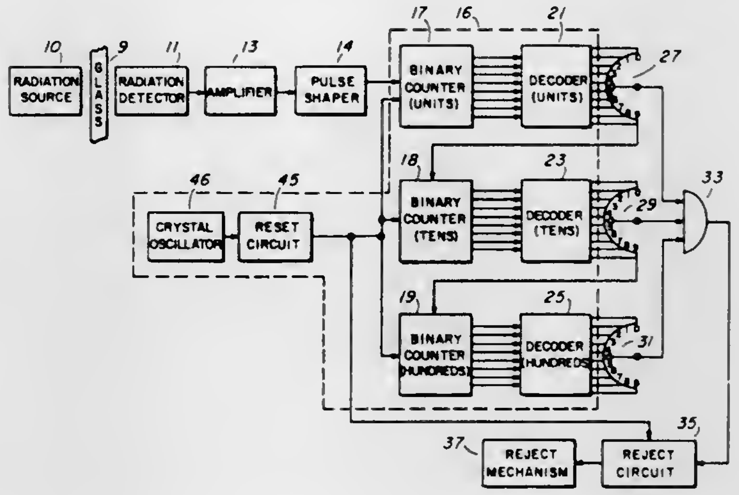
3,531,628
MACHINE READABLE DOCUMENTS
George C. White, Jr., 95 Gordonhurst Ave., Upper Montclair, N.J. 07043
Filed May 25, 1967, Ser. No. 641,292
Int. Cl. G06k *19/08*
U.S. Cl. 235—61.12 4 Claims



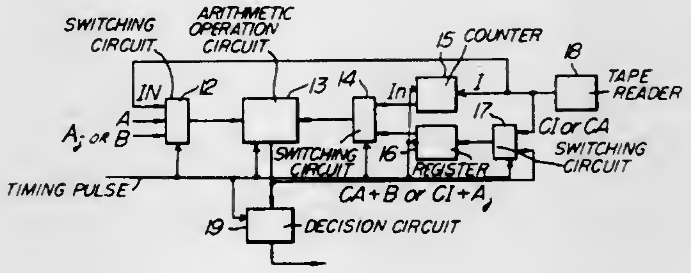
An envelope or attachable tab for a check having machine readable indicia identifying the payor's account, the envelope having a window exposing the indicia on the check and also having machine readable indicia identifying an account into which the amount of the check is to be paid, the tab being attachable to the check and having machine readable indicia like that on the envelope.

3,531,629
RAPID READOUT WALL THICKNESS MEASURING APPARATUS
Richard M. Quinn, Muncie, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
Filed Dec. 20, 1966, Ser. No. 603,212
Int. Cl. C03b; C03c; G06f *7/38;* **G06g** *7/00*
U.S. Cl. 235—92 3 Claims

This apparatus rapidly measures the thickness of the wall of a glass container through utilization of a binary counter to count pulses received from a radiation detector positioned at the side of a glass wall opposite to that of a radiation source, the binary counter producing a binary combination output which is translated to decimal form by decoders and a preselected decimal output from the decoders being utilized to cause an indication of the presence of a thin wall in the container under test.



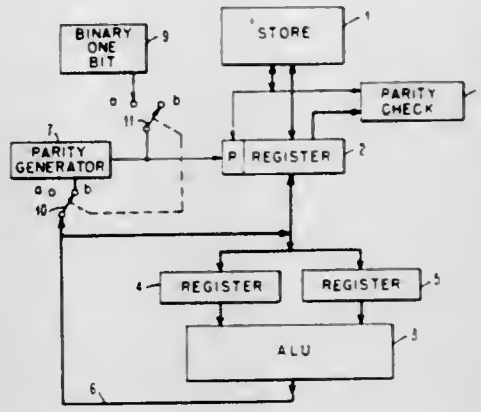
3,531,630
NUMERICAL CONTROL DEVICE
Yasumasa Narikiyo, Nagoya, and Yutaka Maeda, Aichi-ken, Japan, assignors to Okuma Machinery Works, Ltd., Nagoya, Japan, a corporation of Japan
Filed Dec. 30, 1966, Ser. No. 606,269
Claims priority, application Japan, Jan. 12, 1966, 41/1,928
Int. Cl. G06f *15/46*
U.S. Cl. 235—151.11 1 Claim



The invention relates to a positioning control device in which is provided a selective switching of two modes of control, an absolute value instruction system and an increment instruction system. In operation, a value of absolute value instruction, a value of increment instruction and an increment instruction signal are stored in an instruction tape, the device being automatically switched to the absolute value system or to the increment instruction system depending on the presence or absence of the increment instruction signal.

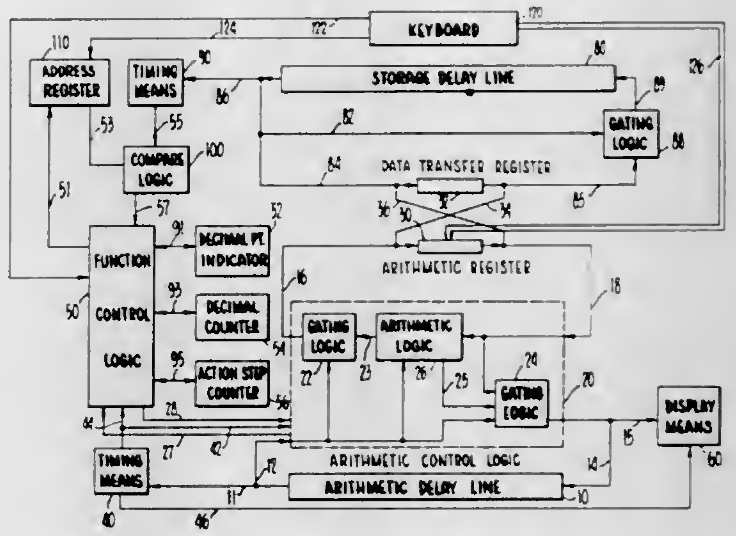
3,531,631
PARITY CHECKING SYSTEM
Gordon Stewart Burgess, Fareham Hants, England, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 11, 1967, Ser. No. 608,627
Int. Cl. G06f *11/10*
U.S. Cl. 235—153 13 Claims

Apparatus for checking a logic circuit which has no means built into the circuit for checking. Normally the circuit performs a function, such as adding operands, without checking. Test operands are applied to the circuit which should produce a result of known parity if the circuit operates correctly. A parity checker is connected



to the output of the circuit. A parity check of the result produces an error indication if the logic circuit did not function properly.

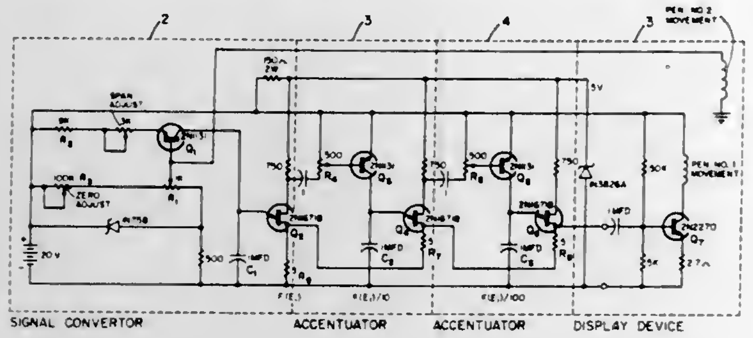
3,531,632
ARITHMETIC SYSTEM UTILIZING RECIRCULATING DELAY LINES WITH DATA STORED IN POLISH STACK FORM
Joseph R. Herr, Los Altos Hills, Calif., assignor to The Singer Company, a corporation of New Jersey
Filed June 30, 1967, Ser. No. 650,313
Int. Cl. G06f *7/38*
U.S. Cl. 235—176 5 Claims



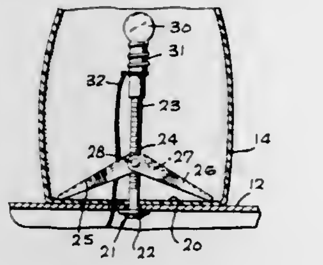
Apparatus for arithmetically combining digits which appear sequentially on a recirculating data train by recirculating the data train through a one-digit shift register and as a predetermined digit is being shifted out of the shift register, adding or subtracting it to a digit subsequent to it on the data train, with the result being inserted onto the data train.

3,531,633
INTEGRATING APPARATUS USING VOLTAGE TO FREQUENCY CONVERTER
Irvin D. Johnson, Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed June 29, 1965, Ser. No. 468,040
Int. Cl. G06g *7/18*
U.S. Cl. 235—183 9 Claims

The integral of an electrical signal can be displayed by apparatus comprising a signal converter means for converting the signal into a series of pulses each of which have equal amplitude, with a number of such pulses occurring within a given time being proportional to the integral of the electrical signal during the same period of time, together with display means for displaying the pulses arranged with respect to time.

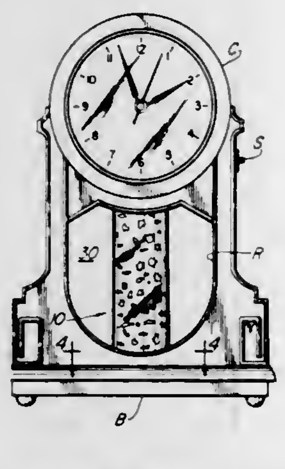


3,531,634
FIGURINE MOUNT
Cecil W. Plouch, 1031-A Cumberland Road, Glendale, Calif. 91202
Filed Oct. 25, 1967, Ser. No. 678,021
Int. Cl. B60q *1/00*
U.S. Cl. 240—7.1 **6 Claims**



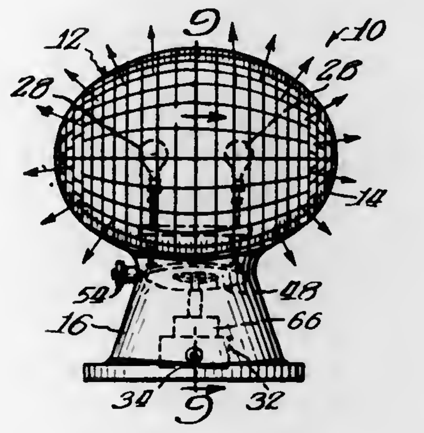
A figurine mount fixedly or rotatably supports a figurine which has a base section constructed to receive either a blind fastener or a bearing assembly for coupling the figurine to a stationary base. An illumination device may be provided for selectively lighting the figurine.

3,531,635
ORNAMENTAL CONVECTION LAMP
John L. Hancock, Villa Park, Ill., assignor to Mastercrafters Clock Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 19, 1967, Ser. No. 676,508
Int. Cl. A47g *33/16;* **F21p** *1/02*
U.S. Cl. 240—10 **8 Claims**



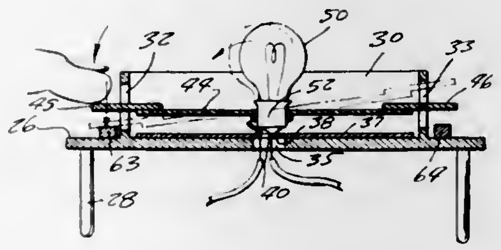
A transparent container holding a liquid and a plurality of discrete metallic flakes is positioned in close proximity to an incandescent electric light bulb. When the bulb is energized, convection currents are created in the liquid so that the metallic flakes travel and give off a shimmering attractive effect.

3,531,636
ORNAMENTAL LIGHT FIXTURE
William B. Birch, 405 Broome St., New York, N.Y. 10013
Filed June 26, 1968, Ser. No. 740,275
Int. Cl. F21p *3/00;* **F21s** *3/12*
U.S. Cl. 240—10.1 **22 Claims**



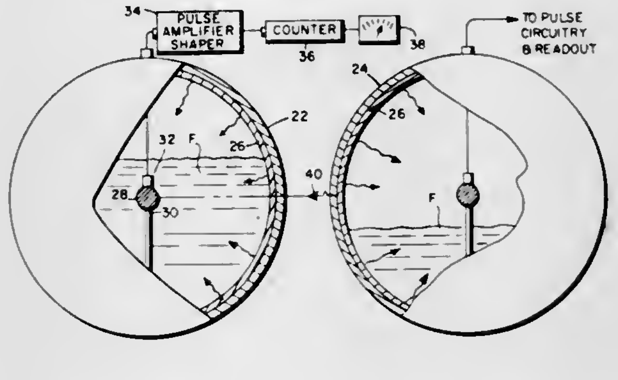
An ornamental light fixture having a plurality of illuminating devices contained within a translucent enclosure. The illuminating devices are moved continuously and simultaneously in a first and second path which gives an effect of random movement. There is also provided an apparatus for varying the intensity of the illuminating devices in response to an audio signal.

3,531,637
TOUCH OPERATED ELECTRIC LIGHT
Albert Nathanson, 75—60 199th St., Flushing, N.Y. 11366
Filed May 6, 1968, Ser. No. 726,963
Int. Cl. F21l *7/00, 9/00*
U.S. Cl. 240—10.6 **7 Claims**



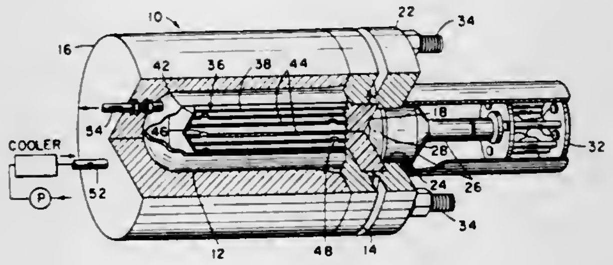
An electric light unit embodying a housing having a closed bottom and an open top supporting a detachable friction held cover plate. An annular collar on the cover plate contains an insulator tilt plate having diametrically opposed metal handle bars projecting through openings in the collar. The tilt plate carries an electric light bulb. A central opening in the cover plate carries a contact point and an inclined contact strip both connected by conductors to a source of electric supply within the housing. The lower terminal contact of the bulb is always seated on the contact point and tilting of the tilt plate in one direction will cause the contact side of the base of the bulb to engage the contact strip to close the circuit and light the bulb. A pair of magnets exteriorly of the collar seated on the cover plate are provided such that when the tilt plate is tilted by finger pressure on one handle bar the same will engage its associated magnet to cause closure of the circuit. Tilting of the tilt plate in the opposite direction by finger pressure on the other handle bar will cause the latter to engage its associated magnet to hold the tilt plate in inoperative position. Carried by the closure plate is a removable transparent dome.

3,531,638
RADIATION FILL GAUGE
Charles O. Badgett, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Oct. 23, 1965, Ser. No. 503,887
Int. Cl. G01n *23/10;* **G01t** *1/17*
U.S. Cl. 250—43.5 **5 Claims**



A nucleonic material fill gauge for a vessel is provided by mounting a radiation detector responsive to radiation from any direction in the center of the vessel. A coating of radioactive material is deposited around the inside walls of the vessel to direct radiation through the material, regardless of its orientation, toward the centrally-located detector. In a specific embodiment, the detector comprises a sphere of scintillating material coupled to a photomultiplier to provide a signal indicative of material fill.

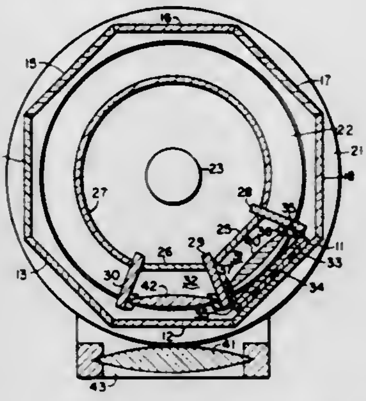
3,531,639
PRESSURIZED GAS MONITOR FOR LOW LEVEL RADIOACTIVE GASES
John W. Baum, Patchogue, N.Y., and Peter S. Littlefield, Rockland, Mass., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 10, 1968, Ser. No. 782,563
Int. Cl. G01n *23/12;* **G01t** *1/20*
U.S. Cl. 250—43.5 **1 Claim**



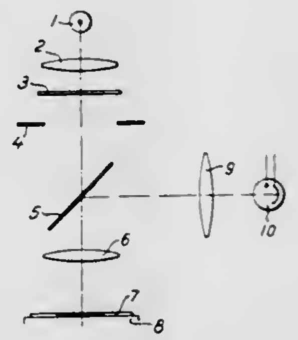
A monitor for continuously measuring low concentrations of radioactive gases. A pressure vessel contains a labyrinth formed by scintillating material. A photomultiplier tube adjacent a window in the pressure vessel measures the light emitted by the scintillating material.

3,531,640
IMAGE STORAGE AND DISPLAY APPARATUS USING PHOTOCHROMIC MATERIALS
William E. Eichelberger and Gerhard K. Megla, Raleigh, N.C., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 31, 1967, Ser. No. 642,418
Int. Cl. G03b *29/00*
U.S. Cl. 250—65 **8 Claims**

An apparatus is disclosed which produces an image contrast inversion such as that which occurs in a negative to positive printing process. Light which passes through a photographic negative impinges upon one of a plurality of connected photochromic glass plates and exposes an image therein. The plurality of photochromic plates is then rotated so that the previously exposed plate occupies a position where the positive image exposed therein can be viewed. Thereafter, the image in the exposed plate may be erased by rotating the plurality of plates so that the exposed plate occupies a plurality of positions at which the image is bleached therefrom.



3,531,641
THERMOLUMINESCENT DOSIMETER FOR REPETITIVE ANALYSIS
Gustav Weissenberg, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar (Lahn), Germany
Filed Dec. 21, 1966, Ser. No. 603,515
Claims priority, application Germany, Dec. 23, 1965, L 52,466
Int. Cl. G01t *1/11*
U.S. Cl. 250—83 **8 Claims**

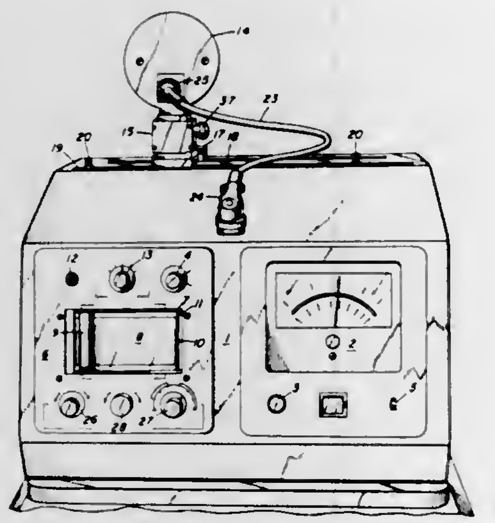


A dosimeter for repeated use for the measurement of ionized radiation, such as beta and gamma rays, formed of a foil of thermoluminescent and synthetic material, by changing the energy level of a portion of the foil exposed to such radiation by heat. The foil when heated, by infra-red rays directed to the portion thereof desired, produces thermoluminescent light which can be evaluated to quantitively determine the original ionized irradiation. The same foil can be used repeatedly for evaluation of a single dose of ionized irradiation by subsequently heating single portions while heat-insulating the other parts of the foil.

The synthetic material must tolerate the temperature at which the foil is heated by the infra-red rays and must possess at least one strong absorption band in or adjacent the infra-red spectral region.

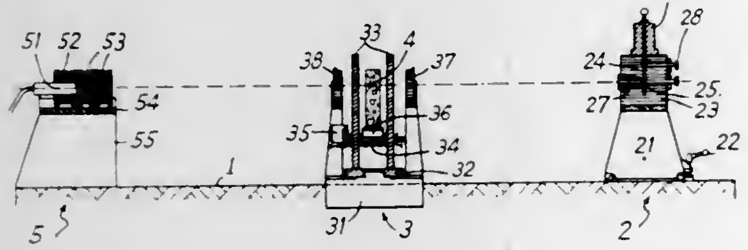
3,531,642
THERMOGRAPHIC SCANNER AND RECORDER
Robert Bowling Barnes, Stamford, and Nelson E. Engborg, Greenwich, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed June 14, 1968, Ser. No. 737,047
Int. Cl. A61b *6/00;* **G01t** *1/16*
U.S. Cl. 250—83.3 **8 Claims**

An improved thermographic scanner and recorder provides an infrared radiometer mounted on a carriage which can be moved back and forth along a predetermined guided path. This permits scanning across a portion of a patient's body, for example a forehead, and is provided with an improved means for recording in graph form the scan, calibrating for particular ranges so that the full width of the recording paper can measure the particular range of temperature or scanning without recording, or moving paper without recording. The compact device permits scanning from the device itself or remote control scanning, and all functions, including calibration functions, utilize the radiometer temperature meter for such functions. When a record is produced, the device also provides for marker signals on the paper to designate certain portions of the scan with respect to the location of the scan on a patient's body.



3,531,643
METHOD AND APPARATUS FOR MEASURING APPARENT DENSITY BY GAMMA RADIATION

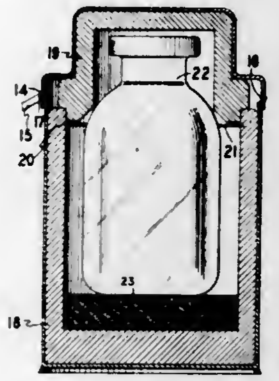
Serge Bretonniere, Chatillon-sous-Bagneux, Jean-Pierre Chevrier, Fontenay-aux-Roses, and Yves Gabilly, Angers, France, assignors to Etat Francais, represente par le Ministere de l'Equipement, Laboratoire Central des Ponts et Chaussees, Paris, France
Filed Oct. 26, 1967, Ser. No. 678,401
Claims priority, application France, Nov. 25, 1966, 85,123
Int. Cl. G01t *1/16*
U.S. Cl. 250—83.3 **5 Claims**



A method and apparatus for measuring the apparent density of a solid body by gamma rays. An emitter of an incident beam of gamma rays is mounted on a frame with an adjustable support for the sample to be measured placed on the axis of the emitted beam and a receiver for the emergent beam placed after the support on the same axis; adjustable collimating means are placed between the emitter and the sample support for forming the incident beam into a narrow pencil of substantially parallel rays in the axis of the incident beam; and a discriminating device is incorporated with the receiver to determine the energy of the photons received thereby.

3,531,644
PACKAGING ASSEMBLY FOR RADIOACTIVE MATERIALS

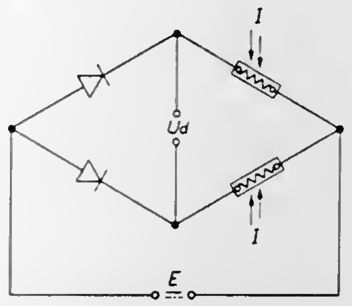
Curtis P. Koster, Suffern, N.Y., assignor, by mesne assignments, to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri
Filed Jan. 31, 1967, Ser. No. 612,871
Int. Cl. G21f *5/00*
U.S. Cl. 250—106 **9 Claims**



A packaging assembly for radioactive materials having an outer container and cap, an inner radioactive shielding receptacle and cap, and a vessel retained within the receptacle for radioactive material.

3,531,645
LINEAR OUTPUT PHOTOELECTRIC CIRCUIT WITH PHOTOELECTRIC AND LOGARITHMIC CELLS IN SERIES

Eduard B. Marie de Jong, Tilburg, Netherlands, assignor to Technicon Corporation, Ardsley, N.Y., a corporation of New York
Filed Dec. 4, 1967, Ser. No. 691,919
Int. Cl. G01j *1/16;* **G01n** *21/22;* **H01j** *1/16*
U.S. Cl. 250—210 **4 Claims**



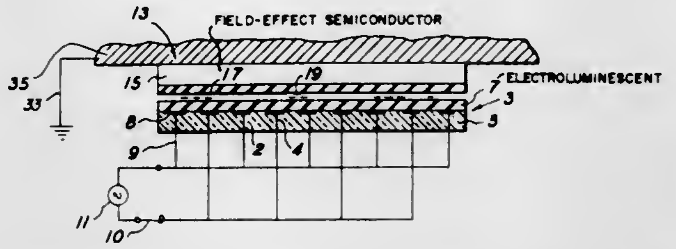
Series coupled photo-resistors and logarithmic diodes connected across a direct current power source are used to provide an electrical output proportional to the logarithm of the intensity of light to which the photoresistor is exposed. For comparison of different light sources successively, a single series coupled photo-resistor and logarithmic diode circuit is employed with the output representing the logarithm of the intensity of each light source being taken from the voltage drop across the photoresistor. For the simultaneous comparison of the intensity of two light sources on a logarithmic basis, two such series coupled circuits are employed in a Wheatstone bridge configuration with the potential between apices of the bridge representing the logarithmic difference in intensity of the two light sources.

3,531,646
ENHANCEMENT OF ELECTROSTATIC IMAGES

Benjamin Kazan, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 29, 1966, Ser. No. 582,858
Int. Cl. H01l *17/00;* **G03g** *5/00*
U.S. Cl. 250—213 **15 Claims**

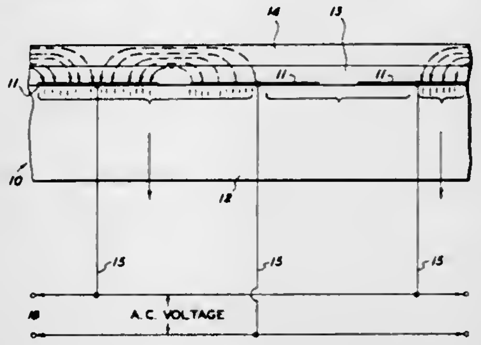
The application relates to a method for amplifying charge variations in a latent electrostatic charge image

wherein the latent electrostatic image, during amplification, is contiguous to a field-effect semiconductor layer, the conductivity of portions thereof varying in accordance with the configuration of the latent electrostatic image; forming a sandwich structure with an amplifying element; and applying an electrical potential across the sandwich structure whereby electroluminescence from the amplifying element serves, by feed-back action, to amplify the charge variations in the latent electrostatic charge image.



3,531,647
DEVICE AND PROCESS FOR REDUCTION OF BACKGROUND LIGHT IN SOLID STATE STORAGE PANELS

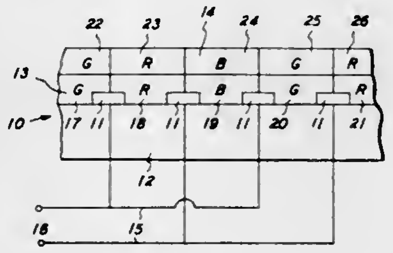
Benjamin Kazan, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 29, 1966, Ser. No. 582,860
Int. Cl. H01l *17/00*
U.S. Cl. 250—213 **19 Claims**



This application relates to a process for reducing the background light emitted from solid state storage panels wherein the electroluminescent material is aged by subjecting said material to a high frequency alternating current voltage to reduce light emission from those portions of the electroluminescent material adjacent the electrode edges. Optionally, to accelerate the aging process, the electroluminescent material may be simultaneously exposed to a high humidity environment.

3,531,648
SOLID STATE STORAGE PANEL FOR COLOR REPRODUCTION

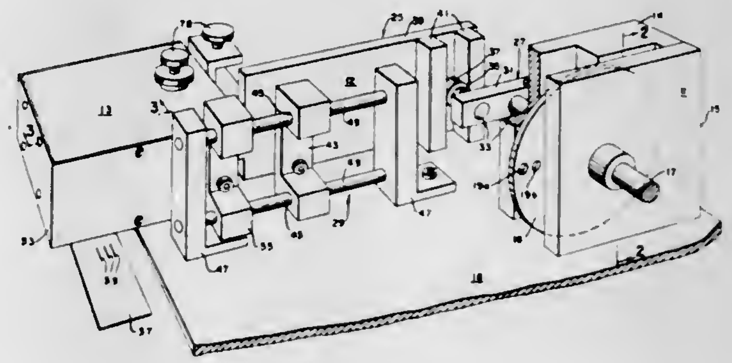
Benjamin Kazan, Pasadena, and Bernd Ross, Arcadia, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 29, 1966, Ser. No. 582,910
Int. Cl. H01l *17/00*
U.S. Cl. 250—213 **24 Claims**



This application relates to a solid state storage panel for color reproduction wherein each of a plurality of electrodes are in contact with at least two segments of electroluminescent material, each of which emit primary radiation in different portions of the electromagnetic spectrum. A layer of variable impedance material overlies the segmented electroluminescent material and is utilized to control the output obtained from the panel.

3,531,649
SCANNING APPARATUS HAVING PULSE GENERATING SYNCHRONIZER TO INDICATE POSITION OF SCANNER

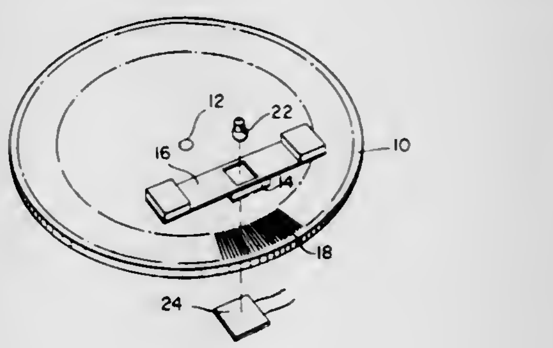
Eugene Sather, Washington, N.J., assignor to Bell & Howell Company, Chicago, Ill.
Filed Dec. 28, 1966, Ser. No. 605,482
Int. Cl. G06k *7/10*
U.S. Cl. 250—219 **9 Claims**



There is herein disclosed a document scanning apparatus having a movable scanning probe to generate signals in response to marks on a scanned document. The scanner is mechanically coupled to a synchronizer which generates pulses indicating the position of the scanner relative to the document.

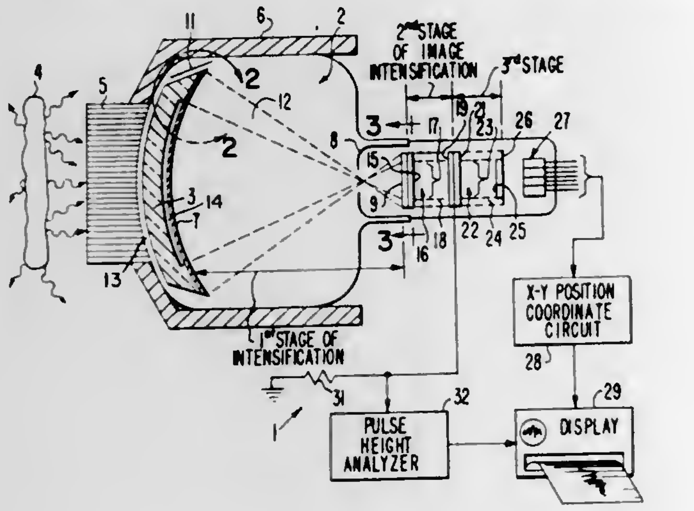
3,531,650
ELECTRO-OPTICAL TRANSDUCERS HAVING FLUIDIC SUPPORT

David V. Cronin, West Peabody, Mass., assignor to Dynamics Research Corporation, Wilmington, Mass., a corporation of Massachusetts
Filed Oct. 11, 1968, Ser. No. 766,779
Int. Cl. G08c *9/06*
U.S. Cl. 250—219 **8 Claims**



A precision and relatively low cost electro-optical transducer in which irregularities in movement of a code member do not materially affect the electrical output signal. A movable code member is supported in precise spaced-apart relationship with a stationary member by means of a fluidic compliant structure operative to permit one of the members to follow spurious movement of the other, such that a precise gap is maintained between the members and distortion of the output signal minimized.

3,531,651
GAMMA-RAY CAMERA EMPLOYING AN ELECTRO-OPTIC BYPASS FOR ENERGY SELECTION
Albert J. Lieber and Michael A. Trump, Palo Alto, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 21, 1967, Ser. No. 692,380
Int. Cl. G01t *1/20*
U.S. Cl. 250—71.5 **10 Claims**


2nd STAGE OF IMAGE INTENSIFICATION
3rd STAGE
1st STAGE OF INTENSIFICATION
X-Y POSITION COORDINATE CIRCUIT
PULSE HEIGHT ANALYZER
DISPLAY
11
6
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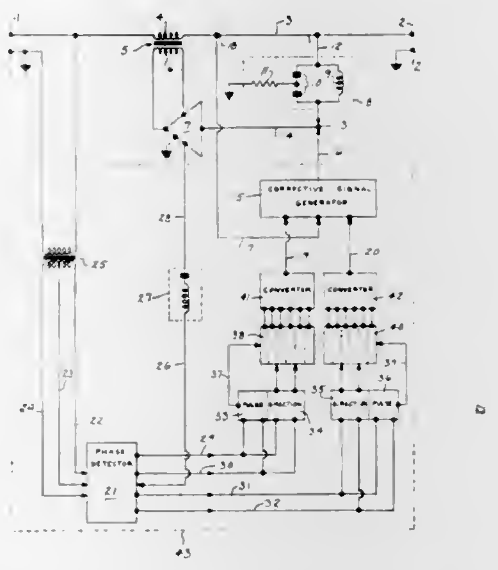
1

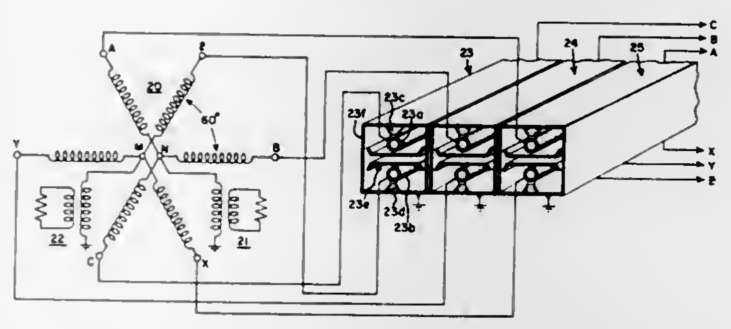
A gamma-ray camera is disclosed. The camera includes a gamma-ray image intensifier tube which views a source of gamma rays such as a tumor doped with a radioactive material, such as technetium 99 having a relatively short half-life of six hours and emitting primary gamma rays of approximately 140 kev. energy. A multi-bore lead collimator is disposed between the source of gamma rays and the image intensifier tube for collimating the emitted gamma radiation into the γ-ray pickup crystal made of a relatively thick curved slab of gamma-ray scintillating material, such as an alkali metal halide. The pickup crystal converts the collimated gamma-ray image into an optical image which excites a photo-cathode of the image intensifier tube to produce a stream of electrons having an electron image carried therein corresponding to the original gamma-ray image. The electron image is then accelerated to relatively high velocity and focused onto a fluorescent screen to produce an intensified optical image of the gamma-ray image under observation. Additional stages of electro-optical amplification are employed for further intensifying the optical image. An X–Y position co-ordinating device, such as an array of photo tubes, views the intensified optical image to convert the image into an electrical output which is employed for producing a display corresponding to the original γ-ray image on a recording medium, such as an oscilloscope or photographic film. A relatively large fraction of the liberated optical photons produced in the scintillation process are trapped within the slab of scintillating material and are light-piped to the outer periphery of the curved slab. These trapped photons are picked up at the periphery of the slab and converted into an annular stream of electrons which are accelerated and focused upon the fluorescent screen in a region around the outer periphery of the γ-ray image, which is also intensified in the central region of the fluorescent screen. The electron current of the intensified γ-ray image and the electron current represented by the bypassed optical photons are summed and the sum is employed in a pulse-height analyzer for discriminating the energy of scintillating events. The output of the pulse-height analyzer is employed in the display, such that only those events falling within a predetermined relatively narrow energy range corresponding to a primary gamma-ray radiation are displayed. In this manner, undesired background due to Compton scattering and the like is eliminated from the display thereby producing relatively high resolution in the display.

3,531,652
ACTIVE NARROW NOTCH FILTER
Peter F. Aemmer, Monroeville, Pa., and Hans Mueller, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 20, 1968, Ser. No. 714,727
Int. Cl. H02m *1/12*
U.S. Cl. 307—105 **3 Claims**



An active filter circuit that is adapted for connection between a power source, such as a commercial 60 Hertz source, and a load, which filter functions to pass the power source frequency with very little attenuation while attenuating other frequencies appearing between the power source lines. The pass band of the device is very narrow, and the circuit has a stop-band notch filter connected to the series line of the circuit which feeds an amplifier that in turn delivers a signal to one winding of a correction transformer. The other winding of the transformer is in the power source line extending through the amplifier, and this transformer presents a voltage in the line that is in phase opposition to interference frequencies and which cancels such frequencies, to thereby provide substantially interference free power source voltage to the load. Additional circuit components are also provided to correct for any shift in power source frequency or any shift in the stop-band of the notch filter.

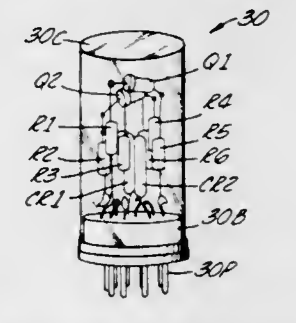
3,531,653
MULTIPHASE GENERATOR AND BUS SYSTEM
David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 29, 1969, Ser. No. 820,243
Int. Cl. H01b *11/02*
U.S. Cl. 307—147 **7 Claims**



A polyphase generator has more than one set of three phase windings each having its own neutral point separately connected to ground through a current responsive impedance. Leads from different phase sets which are in substantial phase opposition may be led through isolated bus sections without danger of excessive currents in the event of a fault and recombined into three phase power

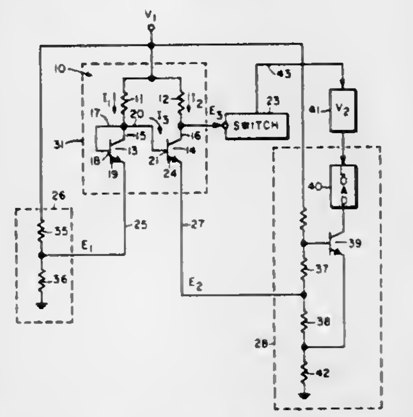
by transformers. Although particularly illustrated for a six phase generator with paired conductors in isolated bus sections, the invention applies to other polyphase generation and bus systems.

3,531,654
SOLID STATE SUBSTITUTE FOR A DUAL TRIODE ELECTRON TUBE
Robert L. Eby, 1325 E. Altadena Drive, Altadena, Calif. 91001
Filed Mar. 6, 1967, Ser. No. 620,804
Int. Cl. G10h *5/04;* **H02h** *7/20*
U.S. Cl. 307—202 **3 Claims**



A plug-in solid state unit including transistors, diodes, and resistors mounted on a base inside an envelope adapted to be inserted into a mounting socket for a conventional glass dual triode electron tube of an electronic organ oscillator as a replacement therefor.

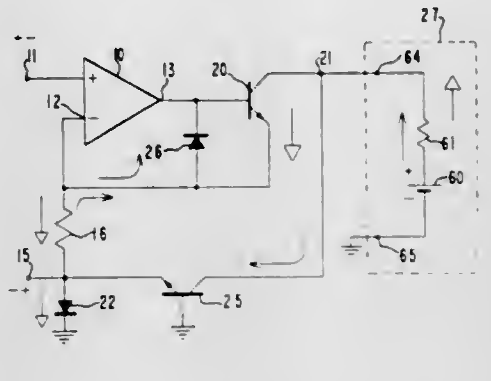
3,531,655
ELECTRICAL SIGNAL COMPARATOR
Douglas W. Taylor, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 2, 1968, Ser. No. 702,715
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **8 Claims**



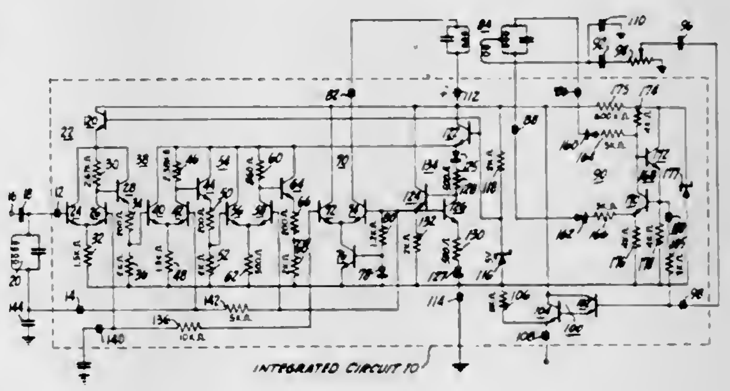
An integrated circuit having two transistors of identical geometries with the base of a first one connected to its collector and, in turn, connected to the base of the second transistor. A pair of identical resistors connect the collectors of both transistors to a power supply. The emitter electrodes of the two transistors form inputs such that the circuit compares the relative voltage magnitudes on the emitters very accurately near a zero difference potential. An output signal is supplied from the collector of the second transistor. The comparator is temperature stable over a very wide temperature range.

3,531,656
PRECISION RECTIFIER CIRCUIT
Stephan K. Ammann, Cupertino, Calif., assignor, by mesne assignments, to Systron-Donner, Concord, Calif., a corporation of Delaware
Filed Oct. 6, 1967, Ser. No. 673,431
Int. Cl. H03k *5/20, 5/00*
U.S. Cl. 307—235 **10 Claims**

A rectifying circuit having high accuracy (0.01 percent) and high input impedance (on the order of kilomegohms) produces an output current that is a linear representation of the absolute value of a corresponding input signal. The circuit needs fewer and less costly components compared to other designs, it is relatively inexpensive to assemble, and it needs fewer adjustments. In addition, the circuit eliminates the need for a second differential amplifier, a second zero adjust means, and a pair of matched precision resistors.



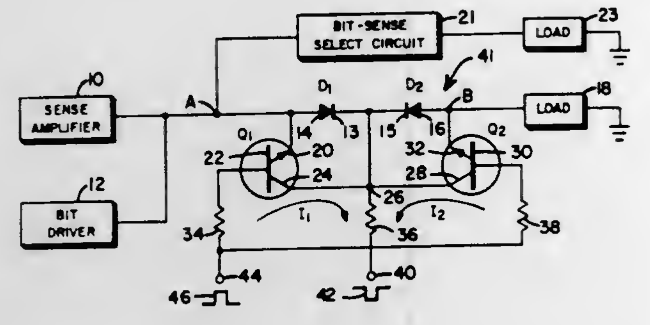
3,531,657
INTEGRATED CIRCUIT AMPLIFIER BIASING ARRANGEMENT
Jack Avins, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,335
Int. Cl. H03k *5/08;* **H03f** *3/04*
U.S. Cl. 307—237 **8 Claims**



A pair of resistors are provided for use in an integrated circuit amplifier configuration of the type having a plurality of cascade-connected transistor stages, each of which includes an emitter-coupled amplifier driving an emitter follower. The first of the resistors serves to couple a bias voltage to one of the emitter-coupled transistors in each of the first and second stages of the cascade-connected plurality, and the second of the resistors serves to couple a feedback voltage to the other of the emitter-coupled transistors in the first cascaded stage, the resistors being so proportioned that substantially equal direct current voltage drops are developed across the one as is developed across the other.

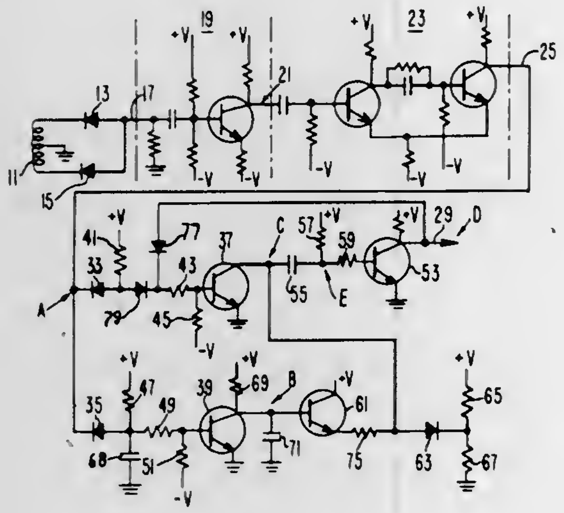
3,531,658
BIT-SELECT MATRIX CIRCUIT SUITABLE FOR INTEGRATION
Carlos F. Chong, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1967, Ser. No. 627,244
Int. Cl. H03k *17/66, 17/72*
U.S. Cl. 307—248 **12 Claims**

The invention relates to a bit-sense matrix circuit which provides a low impedance path for switching purposes and a dual direction current amplification path for signal driving purposes. The circuit is further characterized in that the amplification elements are of the same type so that they are suitable for being integrated.



3,531,659
PULSE GENERATOR PULSE-TIME CONTROL SYSTEM

John A. McAvoy, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 11, 1967, Ser. No. 659,971
Int. Cl. H03k *1/18*
U.S. Cl. 307—265 **3 Claims**

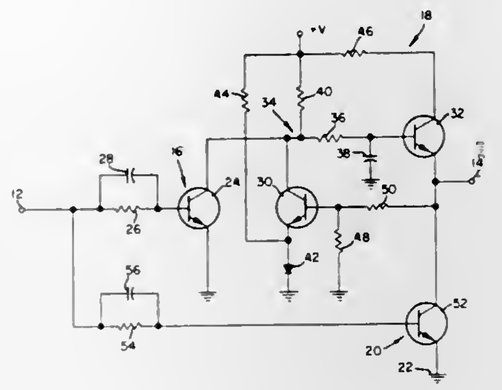


A monostable multivibrator having an external timing circuit coupled thereto for controlling the pulse output time in a predetermined relationship to the pulse repetition rate of the input pulse. The timing circuit comprises a transistor controlled extremely long RC network which is transistor-coupled to the timing circuit of the multivibrator. A one cycle response of the multivibrator to the variations in the interval between input pulses is the dominant feature of the disclosure.

3,531,660
DIGITAL COAXIAL LINE DRIVER

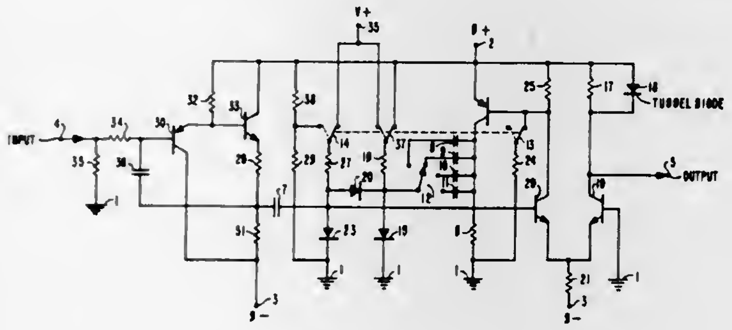
Edwin W. Engberg, San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 21, 1967, Ser. No. 684,870
Int. Cl. H03k *1/02*
U.S. Cl. 307—270 **4 Claims**

A driver circuit for providing a signal output to a terminated coaxial line wherein the output is unaffected by the addition of more terminated lines. A low output impedance feedback amplifier is coupled to the coaxial line and when the input thereto is at a low level, any error in the output is fed back to maintain the output signal at a constant high level. When the input is high, the output of the feedback amplifier falls to a low state, and any capacitive load at the output is discharged.



3,531,661
MONOSTABLE MULTIVIBRATOR CIRCUIT FOR GENERATING VOLTAGE VARIABLE PULSE WIDTHS OVER WIDE RANGES

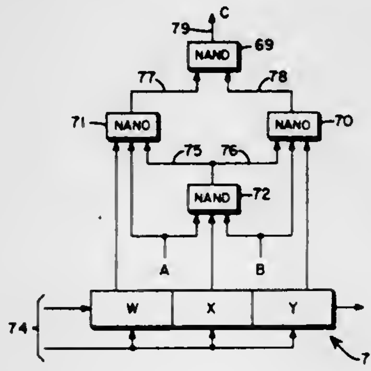
Willis Guild Boyden, 24 Press Ave., Norwood, Mass. 02062
Continuation-in-part of application Ser. No. 604,804, Dec. 27, 1966. This application July 14, 1969, Ser. No. 851,533
Int. Cl. H03k *3/10*
U.S. Cl. 307—273 **9 Claims**



A triggering pulse is applied through an input amplifier to charge a small input capacitor that is connected through a diode switching arrangement to one of the control elements of a differential amplifier output stage. In a first mode of operation for producing very short duration pulses of variable width, this input capacitor is connected through a first discharge path to be discharged by current from a selectively variable control voltage. When the input triggering pulse ceases, the voltage across the small capacitor is applied as a negative potential through a diode switching arrangement to reverse the state of the differential amplifier output stage, thus generating an output pulse lasting until the input capacitor has been discharged at a rate proportional to the level of the control voltage. In the second mode for producing longer duration pulses, the small capacitor and one side of the diode switching arrangement is connected through the discharge path to a very small fixed voltage, instead of to the control voltage. One or more large feedback capacitors is charged through a normally open gating circuit and through a second discharge path to the control voltage. In this mode, upon receipt of the triggering pulse, the small capacitor charges as before to reverse the state of the differential amplifier output stage, which generates a feedback signal that closes the gating element to cut off the flow of charging current. The voltage across the charged, larger capacitor is applied through the diode switching arrangement to keep the differential amplifier in its reverse state until the larger capacitor has discharged through the second discharge path at a rate proportional to the level of the control voltage.

3,531,662
BATCH FABRICATION ARRANGEMENT FOR INTEGRATED CIRCUITS

Lester M. Spandorfer, Cheltenham, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 10, 1967, Ser. No. 629,679
Int. Cl. H03k *19/36*
U.S. Cl. 307—303 **1 Claim**

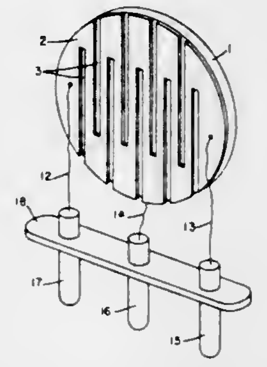


W	X	Y	C
0	1	0	0
0	1	1	$\bar{A}B$
1	0	1	$A+B$
1	1	0	$A\bar{B}$
1	1	1	$\bar{A}B+A\bar{B}$

The present invention provides an arrangement whereby logic elements can be fabricated in relatively large numbers on a semiconductor wafer and thereafter connected together in some standard fashion to accomplish a plurality of logic functions depending upon the presence of certain control signals. The invention provides a shift register, with or without the combination of a decoder, to provide the control signals to the logic elements. The use of the shift register enables a minimum number of lead-in wires to be connected to the wafer. Because of the nature of the combination of the shift register, with or without the decoder, a large number of control signals can be generated and therefore a large number of combinations of logic functions can be accomplished by one standard set of logic elements.

3,531,663
INTEGRAL HEATER PIEZOELECTRIC DEVICES

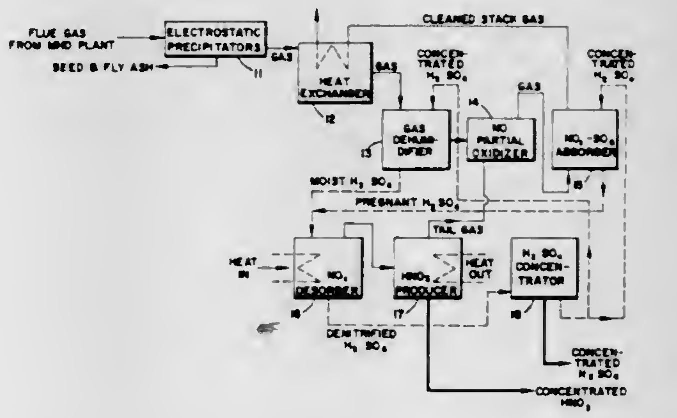
William H. King, Jr., Florham Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Original application July 29, 1965, Ser. No. 475,649, now Patent No. 3,478,573, dated Nov. 18, 1969. Divided and this application Nov. 26, 1968, Ser. No. 778,930
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.9 **5 Claims**



Piezoelectric crystals having integral heaters thereon are suitable for use in various measuring devices such as gas analyzers, thermal conductivity detectors, wattmeters, voltmeters, ammeters, etc.

3,531,664
MEANS FOR AND METHOD OF REMOVING POLLUTANTS FROM PRODUCTS OF COMBUSTION

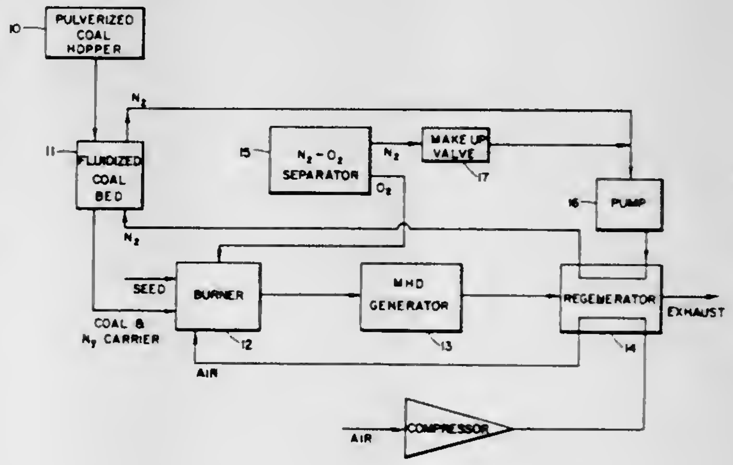
Finn A. Hals, Lexington, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 7, 1968, Ser. No. 774,135
Int. Cl. H02n *4/02*
U.S. Cl. 310—11 **9 Claims**



In a magnetohydrodynamic power generating system means for and a method of removing oxides of nitrogen and oxides of sulfur from the combustion of fossil fuel comprising partial oxidation of nitric oxide (NO) in the gas to nitrous oxide (NO_2) and oxidation of SO_2 to SO_3 with the nitrogen oxides in the gas, subsequent absorption of the oxides of sulfur and nitrogen in sulfuric acid and final conversion into concentrated sulfuric acid and nitric acid.

3,531,665
COAL PREHEATING SYSTEM FOR MAGNETOHYDRODYNAMIC DEVICES

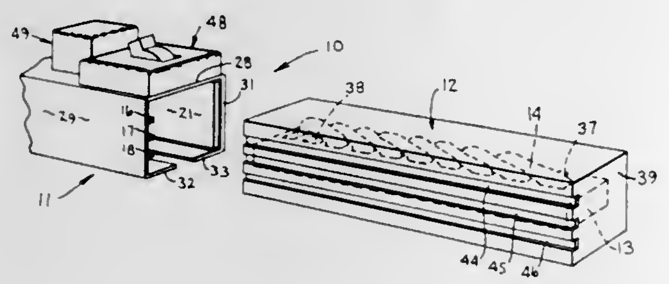
Richard J. Rosa, Reading, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,703
Int. Cl. H02n *4/02*
U.S. Cl. 310—11 **4 Claims**



A coal preheating system for magnetohydrodynamic devices is described which includes a separation plant for providing oxygen (O_2) and nitrogen (N_2). The N_2 is used as a heat transfer medium to preheat coal contained in a fluidized or loosely packed coal bed and as a carrier to transfer the preheated coal to a burner or combustion chamber. The O_2 is also supplied to the burner for achievement of maximum possible flame temperatures.

3,531,666
LINEAR INDUCTION MOTOR ACTUATOR

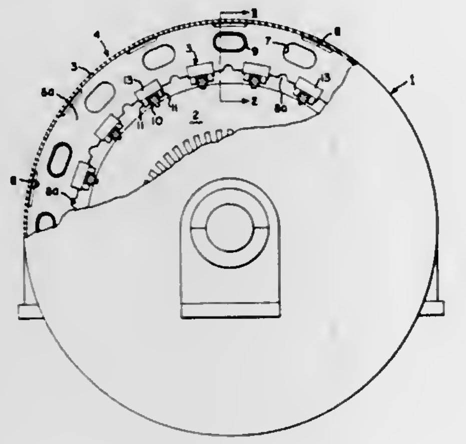
James A. Ford, Sturgis, Mich., assignor to Kirsch Company, Sturgis, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 614,473, Feb. 7, 1967, which is a continuation-in-part of application Ser. No. 375,276, June 15, 1964, now abandoned. This application Mar. 18, 1968, Ser. No. 713,739
Int. Cl. H02k *41/02*
U.S. Cl. 310—13 **22 Claims**



A linear motor construction having a stator member movable along an elongated and hollow track on the interior thereof, said track having an armature and energizable conductor elements extending therealong and fixed with respect thereto. Sliding contact elements are provided on said stator member for engaging said conductor elements to energize the field windings of said stator member so that the magnetic field produced by said stator member will create a reaction of said stator member with the armature member to cause said stator member to move longitudinally of the track.

3,531,667
LOW FREQUENCY STATOR FRAMES FOR DYNAMOELECTRIC MACHINES

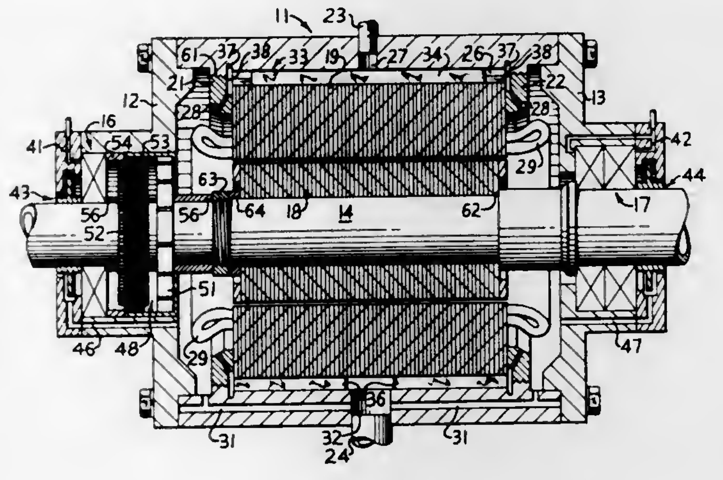
Sterling C. Barton, Scotia, Edward E. Gibbs, Schenectady, and Allan C. Shartrand, Scotia, N.Y.; said Barton and said Gibbs assignors to General Electric Company, a corporation of New York
Filed May 12, 1969, Ser. No. 823,638
Int. Cl. H02k *5/24*
U.S. Cl. 310—51 **8 Claims**



In a large electric generator with a cylindrical frame supporting the electromagnetic core on horizontal spring bars, the frame is caused to have a fundamental natural frequency below the 120 Hertz core vibration forcing frequency by tuning individual sections of the frame to a common low frequency. This is accomplished by selectively employing individual mounting pads for the spring bars, cutouts in the section plates, flexible end shield supports, and otherwise varying the mass and stiffness of the individual sections.

3,531,668
INDUCTION MOTOR HAVING COOLING ARRANGEMENT

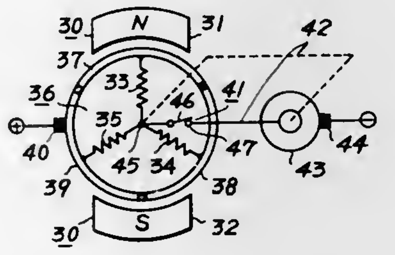
Jimmie J. Cathey, Longview, Tex., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 10, 1969, Ser. No. 797,736
Int. Cl. H02k *9/00*
U.S. Cl. 310—58 **9 Claims**



An induction motor suitable for high speed, high efficiency operation having a rotor assembly surrounded by a stator assembly, the stator assembly being spaced apart from a housing for the housing to define an annular cavity for receiving cooling fluid, the axial ends of the cavity being closed by annular members which define orifices for directing cooling fluid from the cavity onto end portions of the stator assembly.

3,531,669
DC MOTOR WITH SPEED CONTROL ARRANGEMENT

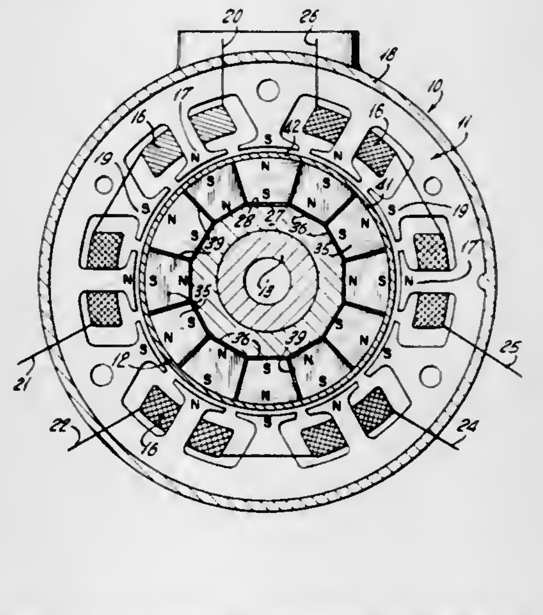
Osamu Samuta, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan
Filed Sept. 6, 1968, Ser. No. 757,988
Claims priority, application Japan, Sept. 9, 1967, 42/57,793
Int. Cl. H02k *11/00*
U.S. Cl. 310—68 **7 Claims**



A DC motor with centrifugal governor comprising a laminated iron core having armature coils wound around respective pole pieces of said core, a plurality of commutator segments connected with one end of each armature coil, said armature coils being connected together at the other ends to form a connecting point, a single governor contact point and a slip ring, said connecting point being connected to said slip ring through said governor contact point whereby supply of an armature current across a brush held in sliding contact with said commutator segments and a second brush held in sliding contact with said slip ring rotates a rotor at a constant rotational speed with respect to a stator having magnetized positive and negative poles.

3,531,670
ROTARY ELECTRICAL APPARATUS HAVING METALLIC SLEEVE FOR EMBRACING THE PERIPHERAL SECTIONS OF PERMANENT MAGNET ROTOR

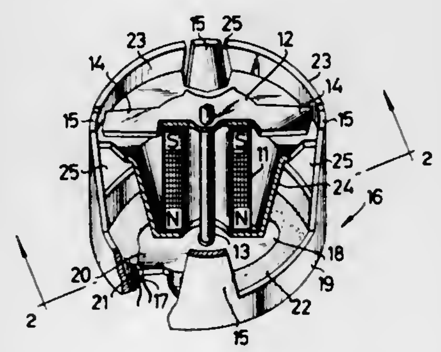
Donald C. Loudon, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 759,834
Int. Cl. H02k *21/12*
U.S. Cl. 310—156 **23 Claims**



An electric generator or motor comprising a multipole, wound stator and a multi-pole rotor having an equal number of poles fabricated from a plurality of circumferentially-arranged, radially-magnetized permanent magnets secured, such as by an adhesive, to each other, to an inner flux conducting ring and to a supporting rotary structure, the rotor being further structurally stabilized against centrifugal forces by a sleeve tightly embracing the outer peripheral surface thereof. Adjacent magnets are of opposite polarity and coils are wound on alternate poles of the stator and connected to provide a plurality of sources of electrical energy.

3,531,671
INDUCTOR-TYPE SIGNAL GENERATOR

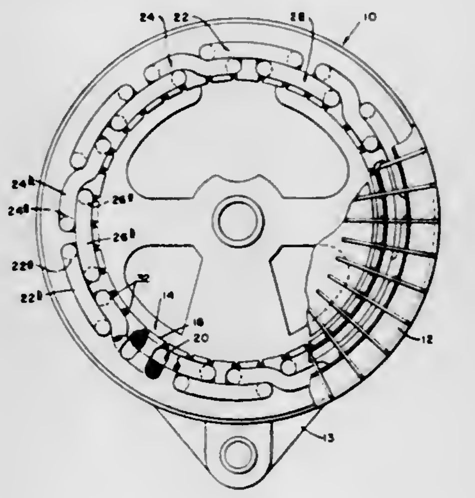
Gerd Höhne, Ludwigsburg, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany
Filed July 29, 1968, Ser. No. 748,356
Claims priority, application Germany, Aug. 12, 1967, B 93,949
Int. Cl. H02k *17/42*
U.S. Cl. 310—168 **10 Claims**



A signal generator having a cylindrical permanent magnet one pole of which is connected with a first section of a ferromagnetic stator. A second section of the stator has four equidistant pole shoes and is separated from the first section by a semiconductor, such as a Hall effect generator. The crankshaft of an internal combustion engine drives a ferromagnetic rotor which is adjacent to the other pole of the magnet and has equidistant pole shoes which travel seriatim past successive pole shoes of the stator. The electrical resistance of the semiconductor changes abruptly when the pole shoes of the rotor register with the pole shoes of the stator.

3,531,672
STATOR WINDING HAVING MAXIMUM OF TWO ADJACENT END TURNS

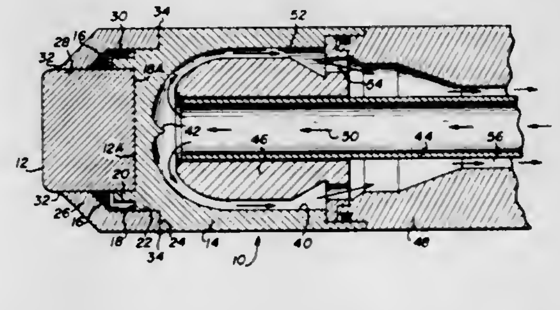
William L. King, Springfield, Oreg., assignor to Nathan E. Knecht, Springfield, Oreg.
Filed Dec. 10, 1968, Ser. No. 782,675
Int. Cl. H02k *3/00*
U.S. Cl. 310—180 **4 Claims**



A dynamoelectric machine including a stator ring having plural substantially parallel axially extending slots distributed circumferentially of the ring. Mounted on the stator ring are three windings each including a series of axially extending runs disposed in every third slot in the ring, and a series of circumferentially extending reaches joining with ends of the runs and producing a wave pattern for the winding. The runs of a winding occupy slots different from the slots occupied by the runs of the other windings. The windings are positioned relative to one another whereby at each axial end of the stator ring no more than two reaches extend past one another at any point.

3,531,673
TWO-PIECE ARC ELECTRODE HAVING A PLURALITY OF HEAT-CONDUCTING PATHS BETWEEN THE ARC TIP AND THE TIP HOLDER

Raymond E. Paquette, Saratoga, Calif., assignor, by mesne assignments, to Varo, Inc., Garland, Tex., a corporation of Texas
Filed June 4, 1968, Ser. No. 734,269
Int. Cl. H01j *1/42, 17/10*
U.S. Cl. 313—32 **11 Claims**

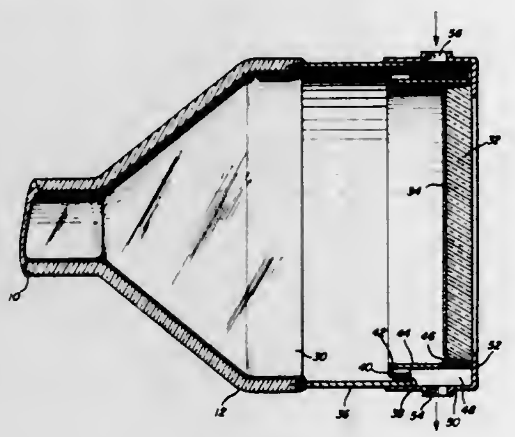


An arc electrode with a reduced diameter tungsten electrode tip welded to the end face of a water cooled molybdenum electrode tip holder. The arc electrode also has an annular ring member which has one of its end portions welded to the hot end of the electrode tip and its other end portions welded to the end face of the electrode tip holder for providing an additional heat path to improve the flow of thermal energy from the tip to the cooled tip holder.

3,531,674
CATHODE RAY TUBE WITH COOLING MEANS FOR THE FLUORESCENT SCREEN

Gordon R. Spencer, Westwood, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,874
Int. Cl. H01j *7/26*
U.S. Cl. 313—44 2 Claims

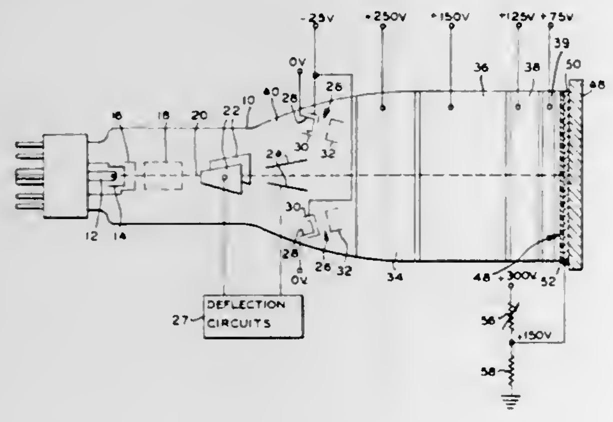


A cathode ray tube having an optically transparent faceplate of high thermal conductivity material such as sapphire and means for cooling the faceplate whereby the operating temperatures of the faceplate and consequently of luminescent phosphor on the inner side thereof are reduced to a level where the phosphor retains efficient brightness capability when subjected to intense electron bombardment and is less susceptible to deterioration from heating effects.

3,531,675
CATHODE RAY STORAGE TUBE HAVING A TARGET DIELECTRIC WITH COLLECTOR ELECTRODES EXTENDING THERETHROUGH

Roger A. Frankland, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Feb. 28, 1967, Ser. No. 619,904
Int. Cl. H01j *31/48, 29/10*
U.S. Cl. 313—68 18 Claims



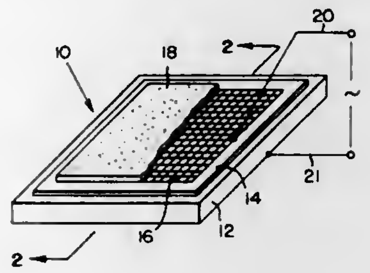
A cathode ray storage tube provided with a storage target having a multiplicity of collector electrodes extending through the storage target's dielectric layer. These collector electrodes act to collect secondary electrons and control the electric field configuration near the surface of the storage target for the prevention of trace shadowing.

3,531,676
ELECTROLUMINESCENT CELL FOR LARGE AREA ILLUMINATION

Bessie A. Robinson, East Aurora, N.Y., assignor to Astronics Luminescent, Inc., Gardenville Industrial Park, N.Y., a corporation of New York

Filed Apr. 2, 1968, Ser. No. 718,158
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—108 11 Claims

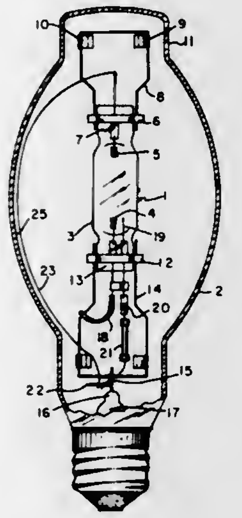
The cell comprises a lower electrode and an upper electrode. The two electrodes are separated by a layer of dielectric material, and the upper electrode is an electrically conductive screen or grid which is coated with an electroluminous phosphor, such as zinc sulphide doped with copper and chlorine etc. When an AC voltage is applied across the two electrodes, the phosphor layer becomes luminescent. The cell may be made in large, flat sections from which portions of predetermined shape are punched; and one electrode may be movable relative to the other.



3,531,677
QUARTZ GLASS ENVELOPE WITH RADIATION-ABSORBING GLAZE

Frederick A. Loughridge, Manchester, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 14, 1966, Ser. No. 601,643
Int. Cl. H01j *61/40;* **H01k** *1/32*
U.S. Cl. 313—112 1 Claim

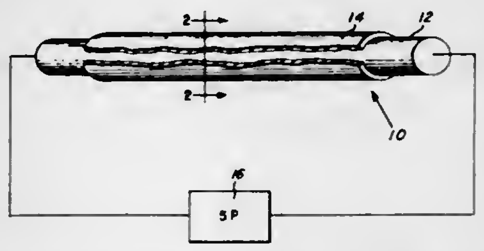


In order to reduce hydrogen emission from the inner surface of a glass bulb containing a high-pressure mercury arc, an ultraviolet-absorbing glaze is provided on the quartz. The glaze is made of finely-divided silica frit, with about 2 to 10% by weight of finely-divided alumina, and about 0.05 to 10% of a powdered material such as titanium, cerium, chromium or iron oxide, which absorbs ultraviolet. A coloring material, such as cobalt oxide or vanadium oxide, can be used instead of all or part of the ultraviolet-absorbing material, if color is desired.

3,531,678
HEATER WITH BORON NITRIDE COATING

Frank J. Schiavone, Burlington, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware

Filed June 24, 1968, Ser. No. 739,399
Int. Cl. H01j *1/20, 19/14*
U.S. Cl. 313—337 3 Claims

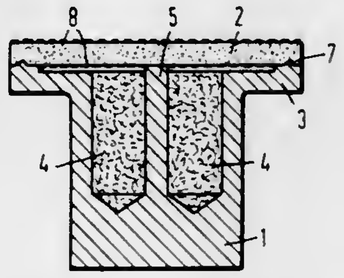


A heater for devices such as electron discharge devices comprising a wire or similar substrate having thereon an electrically insulating thermally conductive coating of boron nitride.

3,531,679
DISPENSER CATHODE, PARTICULARLY AN MK CATHODE HAVING EXTENDED STORAGE LIFE

Helmut Katz, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Feb. 7, 1968, Ser. No. 703,759
Claims priority, application Germany, Feb. 88, 1967, S 108,460; Oct. 27, 1967, S 112,589
Int. Cl. H01j *1/14, 19/06*
U.S. Cl. 313—346 6 Claims

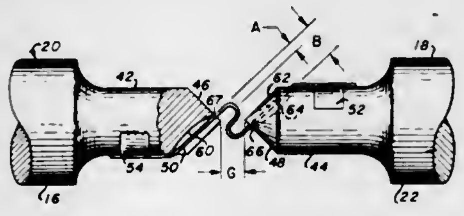


A storage cathode, particularly an MK cathode utilizing an emission-promoting supply covered by a porously sintered tungsten disk, in which the supply material comprises an earth alkali carbonate immune to moisture, particularly barium carbonate, in which the inner and outer active surfaces of the porous disk of tungsten is coated with a metal, particularly rhenium, which is relatively non-reactive with gases released during disintegration of the carbonate and which in the presence of a barium film yields practically the same work function as that of barium or tungsten.

3,531,680
SELF-STARTING ARC LAMP

Raymond E. Paquette, Saratcga, Calif., assignor, by mesne assignments, to Varo, Inc., Garland, Tex., a corporation of Texas

Filed Feb. 24, 1967, Ser. No. 618,438
Int. Cl. H05b *31/06*
U.S. Cl. 314—34 21 Claims

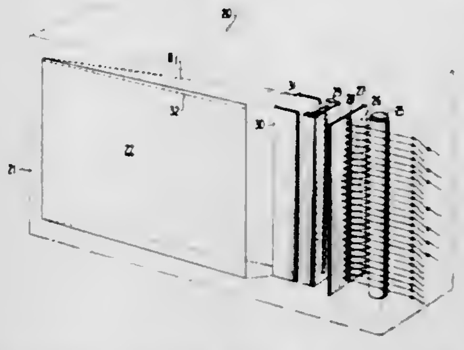


A self starting short arc lamp in which a consumable bridgewire is connected across the arc ends of the electrodes to fuse when normal arc sustaining power is applied to the electrodes to first establish and thereafter maintain the arc. The free length portion of the bridgewire is looped for urging the ends of the free length portion into resilient contact with the electrodes, beyond the electrode tip, to increase the environmental survival capability of the arc lamp and to stabilize the arc under all operating conditions.

3,531,681
FLAT DISPLAY TUBE AND METHOD

Joseph T. Harden, Jr., 14 Kemper Court, Sandston, Va. 23150

Filed June 25, 1968, Ser. No. 739,819
Int. Cl. H01j *29/50, 29/72*
U.S. Cl. 315—13 20 Claims

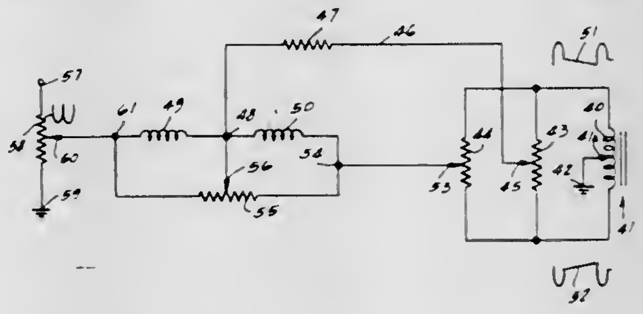


A thin flat display tube in which a plurality of individual electron beams corresponding in number to the number of horizontal lines desired in a display are sequentially projected into a flat narrow space and deflected onto a display screen. Such individual beams are produced by an elongated or linear cathode capable of controlled emission of electrons from selected points to form beams, each of which is controlled by electrostatically and sequentially controlling the acceleration and focusing of the pencil beam segments. Each beam is intensity modulated in accordance with image information contained in a received television signal, for example, or by other data to be displayed and/or controlled. Consult the specification for other features and details.

3,531,682
VERTICAL CONVERGENCE CIRCUIT

George J. Jarosz, Chicago, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

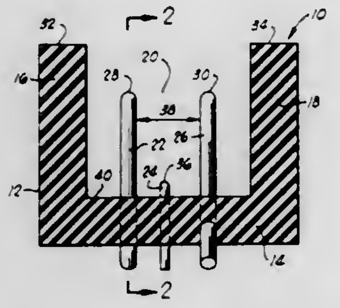
Filed Aug. 15, 1969, Ser. No. 850,438
Int. Cl. H01j *29/50*
U.S. Cl. 315—13 10 Claims

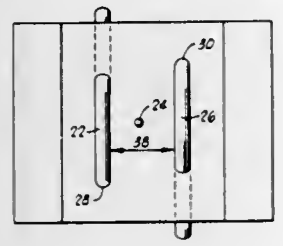


A vertical convergence circuit having a single winding coupled to the vertical output transformer and having a pair of resistances coupled in parallel with the winding. One of the resistances has a coupling to the center tap of the red and green convergence coils, and the other resistance has a coupling to one end of the series combination of red and green coils. The red and green coils as a series combination have a resistance coupled in parallel therewith. A movable contact associated with the resistance is coupled to the center tap of the two convergence coils. The vertical output transformer has a pulse voltage coupled thereto from the prior stages of the television receiver, and the convergence winding integrates this pulse to form a sawtooth current. This sawtooth current is then applied differentially and in series to the convergence windings. Parabolic currents are also coupled to the coils through a master parabola amplitude control and through a differential amplitude parabola control which extends between the center tap of the convergence coils and the resistance which is in parallel with the convergence coils.

3,531,683
HIGH ENERGY PULSE SWITCH IN WHICH A SPIRAL MAGNETIC FIELD IS ESTABLISHED AROUND EACH POWER ELECTRODE

William B. Huckabay, 4225 Greenbrier, Dallas, Tex. 75225
Filed Aug. 27, 1968, Ser. No. 755,624
Int. Cl. H01j *7/44, 13/46*
U.S. Cl. 315—36 **10 Claims**

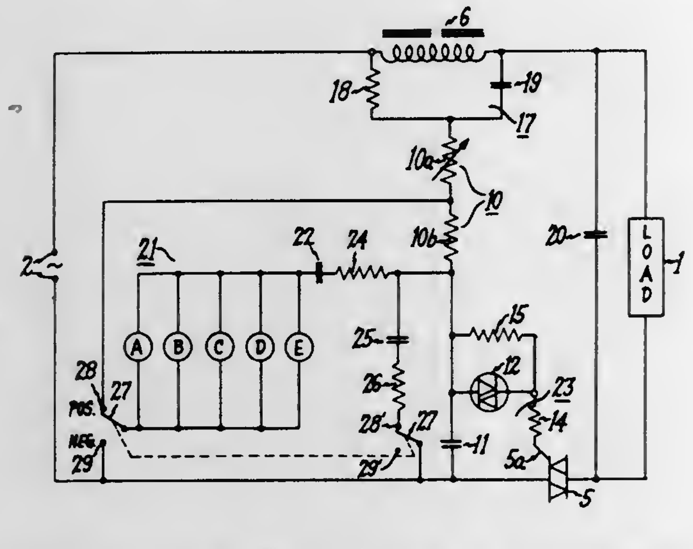




An improved high energy pulse switch wherein the power electrodes are supported in a spaced, crossing relation to each other and the trigger electrode is located below said cross point, thus when power is transferred between the power electrodes, a spiral magnetic field is established around each power electrode, forcing the resulting arc discharge up the length of the electrodes and dissipating the arc off the ends of the power electrodes, thereby distributing the wear over the length of the power electrodes and providing a switch capable of performing separate switching functions in rapid succession.

3,531,684
DISCHARGE LAMP CIRCUIT FOR CONTROL OF LIGHT INTENSITY

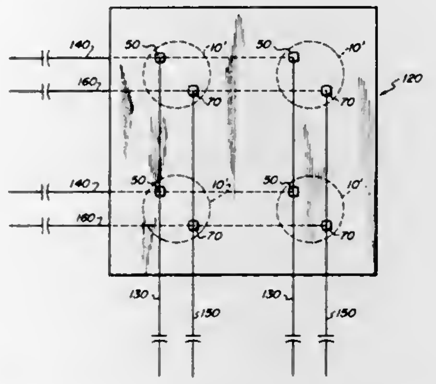
Joe A. Nuckolls, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Dec. 31, 1968, Ser. No. 788,237
Int. Cl. G05f *1/40, 5/00;* **H05b** *41/392*
U.S. Cl. 315—155 **9 Claims**



Circuit for controlling operation of gaseous discharge lamp in response to various ambient conditions includes phase control switch and actuating circuit therefor for controlling operation of the lamp load, a plurality of sensor devices in parallel connected across the switch actuating circuit for operating the same at desired power level in response to differing ambient conditions and switch means for alternatively connecting the parallel sensor devices across different portions of the actuating circuit for selectively providing responses of the switching circuit in opposite senses to variations in ambient conditions detected by the sensor devices.

3,531,685
GAS DISCHARGE STORAGE AND DISPLAY MATRIX

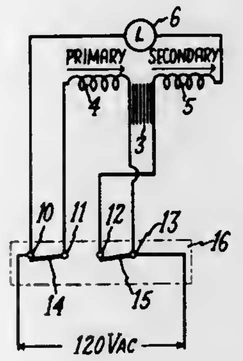
George E. Holz, North Plainfield, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Sept. 29, 1967, Ser. No. 672,682
Int. Cl. G11c *11/28;* **H01j** *65/04;* **H05b** *41/02*
U.S. Cl. 315—169 **6 Claims**



A cell formed of insulating material and comprising a side wall and end walls and containing an ionizable gas which can be caused to produce visible light output when properly energized by an electrical potential applied between electrodes on the end walls of the cell. The gas is such that the energized state is maintained or stored after the energizing signal is removed, and it may be sustained by the intermittent application of an appropriate electrical signal which may be smaller than the initial energizing signal. The cell of the invention includes more than one group of electrodes, between each of which a distinct localized glow may be generated, and these distinct portions of each cell can be used to store intelligence or to register intelligence separately.

3,531,686
LAMP BALLAST CIRCUIT FOR DUAL VOLTAGE SUPPLIES

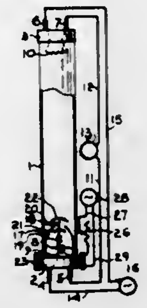
David L. Wood, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York
Filed Apr. 3, 1968, Ser. No. 718,443
Int. Cl. G05f *1/24;* **H05b** *41/323*
U.S. Cl. 315—280 **7 Claims**



Ballast device for starting and operating gaseous discharge lamp for use with either 120 or 240 volt alternating current supply comprises a primary winding and a secondary winding arranged in spaced relation on a closed magnetic core having a magnetic shunt between the windings, the windings being selectively connectible (1) in voltage bucking relation for connection to the 240 volt supply and (2) in voltage additive, autotransformer relation for connection to the 120 volt supply.

3,531,687
GAS DISCHARGE TUBE WITH A MOVABLE BAFFLE BETWEEN THE ELECTRODES

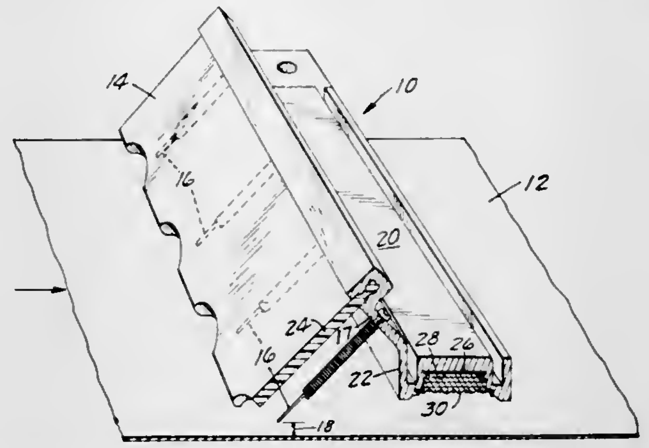
Henry Greber, New York, N.Y.
Filed Oct. 17, 1968, Ser. No. 768,358
Int. Cl. H01j *17/14, 61/92;* **H05b** *41/39*
U.S. Cl. 315—309 **4 Claims**



This invention is related to gas discharge lamps, and in particularity to fluorescent lamps that can operate without ballasts. This is achieved by making the cross sectional area of the gas discharge tube, at one point, dependent on the current passing the lamp, and by dividing the discharge stream of the lamp into pairs of oppositely directed streamlets. When the current in the lamp grows, then the charged particles in the streamlets interfere with each other and reduce the current to its preset value. This value can also be achieved by reduction of the cross section of the tube passed by these streamlets. The preset value of the current can be adjusted, for dimming purposes, by changing the cross-sectional area of the discharge streamlets, by means such as solenoids or permanent magnets operable from outside the gas discharge tube.

3,531,688
STATIC ELIMINATOR DEVICE

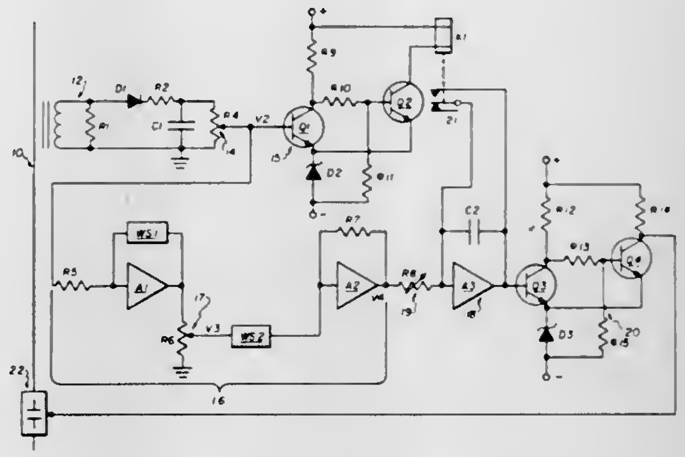
Richard A. Jackson, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 8, 1968, Ser. No. 704,029
Int. Cl. H05x *3/02, 3/06*
U.S. Cl. 317—2 **2 Claims**



A device for eliminating the static charge from moving webs or the like which advantageously utilizes the characteristics of two basic types of static eliminators, i.e. an electrically or radioactivity energized static eliminator having selected relatively limited capacity and a non-energized induction static eliminator in combination. The combination device exhibits a substantially higher ionization current capability than either of the components, which is to an extent self-adjusting. Initially the induction component acts on the web reducing the web potential to a value which does not exceed the threshold potential of the induction component. Next, as the web passes the energized component, the web potential is further reduced to a desired level.

3,531,689
SOLID STATE OVERCURRENT RELAY

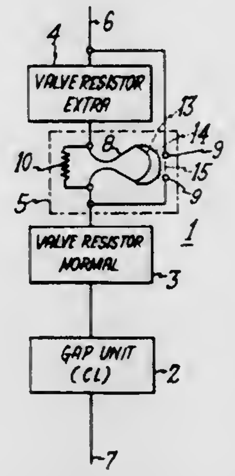
Robert Horn, Richardson, Tex., assignor to Forney Engineering Company, Dallas, Tex., a corporation of Texas
Filed June 10, 1968, Ser. No. 735,876
Int. Cl. H02h *3/08;* **H01h** *47/18*
U.S. Cl. 317—36 **2 Claims**



A solid state overcurrent relay for protecting an alternating current circuit. The relay circuit comprises infinitely adjustable means for selecting any desired one of an infinite number of time versus current functions, whereby the relay is of universal application, being infinitely adjustable to fit the individual characteristics of any circuit with which it is used.

3,531,690
VOLTAGE SURGE DIVERTER

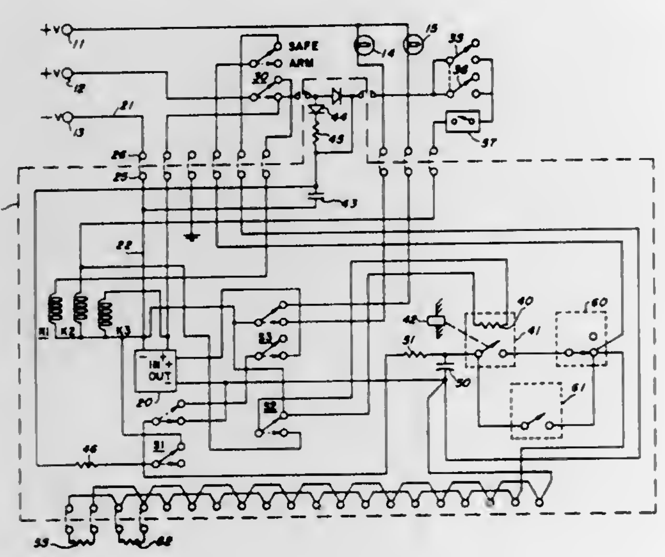
Eugene C. Sakshaug, Lanesborough, and James S. Kresge, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Sept. 16, 1968, Ser. No. 759,844
Int. Cl. H02h *9/06*
U.S. Cl. 317—68 **16 Claims**



A current limiting gap lightning arrester with extra valve resistance for raising the discharge voltage at the beginning of the discharge and time delayed acting means for effectively shunting out the extra valve resistance to lower the discharge voltage at an appropriate time after the start of the discharge. The time delayed acting means may be a magnetic blow out series gap with auxiliary electrodes shunting the extra valve resistance which electrodes are bridged after a time delay by the magnetically blown out arc. The current limiting gaps may be disposed in parallel columns for flip-flop operation and fast acting means may be employed for shunting out the extra series valve resistance in response to impulse discharge current of large value.

3,531,691
DESTRUCTOR ACTUATION CIRCUIT

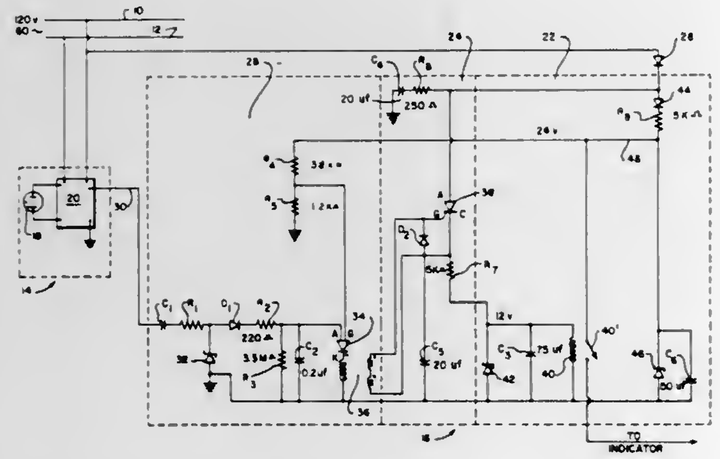
Donald D. Sitler, Phoenix, and William O. Christianson, Litchfield Park, Ariz., assignors to VMC Industries, Inc., a corporation of Missouri
Continuation of application Ser. No. 578,406, Sept. 9, 1966. This application Feb. 23, 1968, Ser. No. 707,748
Int. Cl. F23g *7/02;* **H01h** *47/00*
U.S. Cl. 317—80 **1 Claim**



A destructor actuation circuit including a storage capacitor for storing sufficient charge to energize bridge wires to activate a destructive device. A second capacitor is utilized to store sufficient energy and activate a relay to close a firing switch in the event power failure occurs after the device has been "armed" and before it is "fired."

3,531,692
ACTIVITY DETECTOR HAVING INCREASED ACCURACY OF RESPONSE

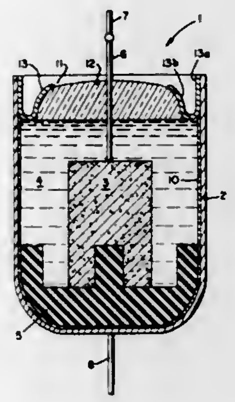
Lyman F. Gilbert, Somers, and John W. Reum, Hartford, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Mar. 3, 1969, Ser. No. 803,532
Int. Cl. H01l *47/26*
U.S. Cl. 317—132 **12 Claims**



In activity detectors, such as an electrical flame detector, a circuit that integrates random signal pulses over a suitable time base and provides a constant time delay responsive to the integrated pulses. The circuit minimizes the effects by noise and false signals on the detectors response.

3,531,693
ELECTROLYTIC CAPACITOR WITH RUTHENIUM METAL CATHODE SURFACE

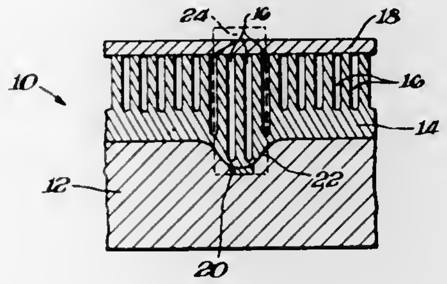
Joel B. Buice, Columbia, S.C., assignor to General Electric Company, a corporation of New York
Filed June 11, 1968, Ser. No. 736,064
Int. Cl. H01g *9/08*
U.S. Cl. 317—230 **7 Claims**



The deposition of a spongy ruthenium layer on the inner surface of the casing cathode of a liquid (or gel) electrolyte porous anode capacitor effectively increases the area of the cathode. The use of ruthenium permits the advantageous utilization of cathode metals such as nickel and titanium with non-corrosive electrolytes. Increased adherence of the deposited ruthenium layer permits a wider variety of operational uses and contributes to long life performance and functional stability.

3,531,694
VOLTAGE-SENSITIVE SWITCH

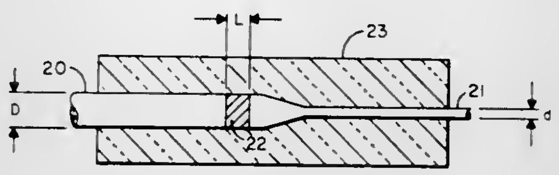
Ernest N. Urfer, North Adams, John J. Randall, Jr., Williamstown, and Henry F. Puppolo, North Adams, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed July 18, 1968, Ser. No. 745,879
Int. Cl. H01g *3/075*
U.S. Cl. 317—230 **15 Claims**



A counterelectrode overlies the anodic oxide layer formed on the surface of an aluminum electrode. The aluminum electrode contains at least one isolated, visible iron-containing impurity site. The voltage-sensitive switch is formed by chemically or electro-chemically cleaning and polishing an aluminum electrode, treating the cleaned and polished electrode with a hydroxyl-containing polar compound, preferably water, for a period sufficient to make the iron-containing impurity site latently visible, anodizing the treated surface in chromic acid to form an anodic oxide layer which reveals said iron-containing impurity site, and applying a counterelectrode. The method can also be employed to determine the presence or absence of iron-containing impurity sites in aluminum.

3,531,695
ELECTROCHEMICALLY VARIABLE CAPACITOR

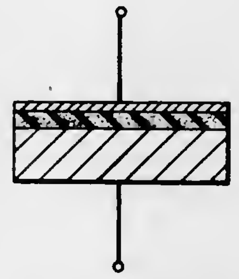
Harry D. Bush, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed June 14, 1968, Ser. No. 737,044
Int. Cl. H01g *9/14*
U.S. Cl. 317—231 **6 Claims**



A hermetically sealed circuit is provided with an electrochemically variable capacitor which allows dimensionally smaller circuit packaging and facilitates circuit tuning. The capacitance of the capacitor is varied by changing plate area and spacing through employment of metal plating techniques.

3,531,696
SEMICONDUCTOR DEVICE WITH HYSTERETIC CAPACITY VS. VOLTAGE CHARACTERISTICS

Yuichi Haneta and Keizo Kobayashi, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan
Filed Sept. 27, 1968, Ser. No. 763,152
Claims priority, application Japan, Sept. 30, 1967, 42/62,974; Aug. 22, 1968, 43/60,321
Int. Cl. H01l *3/12*
U.S. Cl. 317—234 **3 Claims**

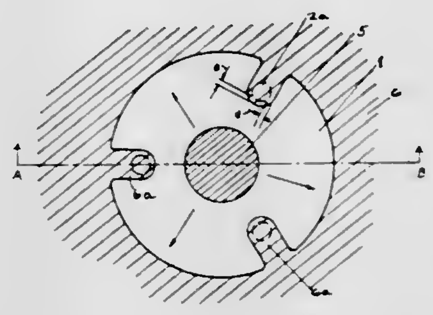


A semiconductor device of the metal insulator semiconductor type (MIS) is given an hysteretic capacitance vs. voltage characteristic by the provision of an insulative film on the semiconductor substrate of a silicon compound including liberated silicon of more than 0.5 percent by weight and a metal layer on the insulative film.

3,531,697
SEMICONDUCTOR ELEMENT FOR SWITCHING PURPOSES

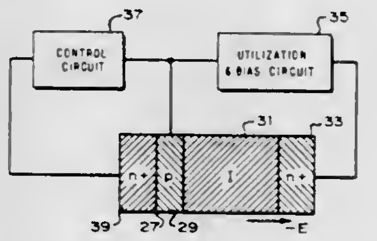
Elmar Müller, Alzey, and Klaus Weimann, Lampertheim, Germany, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed May 23, 1967, Ser. No. 640,729
Claims priority, application Germany, July 2, 1966, B 87,825
Int. Cl. H01l *11/10*
U.S. Cl. 317—235 **1 Claim**

A semiconductor device comprises a semiconductor element divided transversely into at least four zones which alternate in conductivity type. A control electrode is applied to a neighbouring inner zone where this zone reaches to outer surface of one of the outer zones through a perforation in the latter and metallizing is applied to this same surface but set back from the control electrode. The same outer zone also has other perforations distributed therein and the neighboring inner zone extends as far as the metallizing. The perforations in the region of the vicinity of the control electrode are connected to the metallizing either by tongue-shaped metallic strips or by an annular metallic layer. These electrical connections serve to short-circuit the neighboring inner zone to the outer zone and also, upon a flow of anode current after firing, serve to set up a voltage-drop sufficient for firing to spread rapidly at least regionally across the region of the outer zone not covered by the metallizing.



3,531,698
CURRENT CONTROL IN BULK NEGATIVE CONDUCTANCE MATERIALS

Martin M. Atalla, Portola Valley, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed May 21, 1968, Ser. No. 730,714
Int. Cl. H01l *11/00*
U.S. Cl. 317—235 **4 Claims**



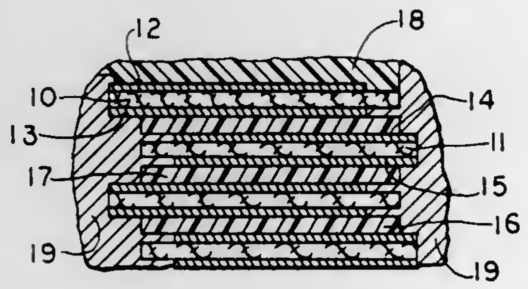
Carrier density is controlled in a sample of bulk negative conductance material such as gallium arsenide by controlled injection of carriers into the sample in a carrier-depleted region established about a p-n rectifying junction or metal-semiconductor barrier at an end of the sample. An electric field is established across the sample by reverse biasing the junction or barrier to extend the depletion region between the end electrodes thereby removing free carriers. The resulting current flow between electrodes is now minimal and corresponds to the usual reverse leakage current through such depletion regions. Current flow in the device now can be obtained and controlled by various means. For example, by illuminating the cathode end of the device, carriers are generated and will flow through the depletion region of the device. This is current control by "optical excitation and injection." Another example is by direct electrical injection of carriers into the depletion region from another forward biased p-n junction located near the depleted region. This is current control by "electrical injection." If now the electric field in the sample exceeds a critical or threshold value beyond which the differential conductivity through the depleted region is negative, and the device is mounted in a proper resonant circuit or cavity, current oscillations at microwave frequencies are produced at a power level which is controlled by the rate of carrier injection.

3,531,699
METALLIZED ELECTRICAL CAPACITOR

David B. Peck, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed May 19, 1969, Ser. No. 825,679
Int. Cl. H01g *3/21, 3/215*
U.S. Cl. 317—258 **5 Claims**

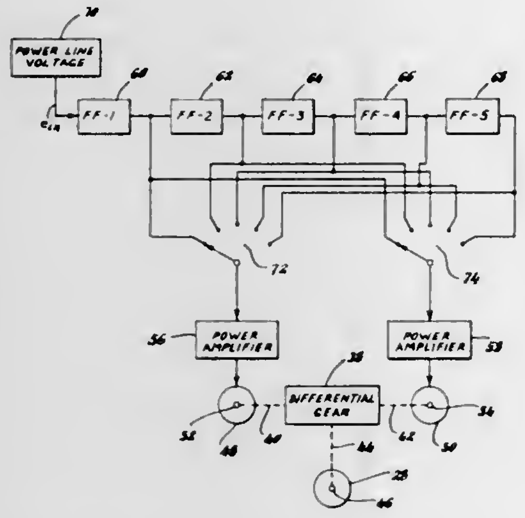
A pair of double-metallized porous electrodes is convolutely wound with dielectric resin film spacers. The winding is impregnated with a liquid hydrocarbon, with the exposed surface layer of the impregnant being converted to a solid state while the impregnant within the winding remains liquid. The winding is encased in a hydrocarbon resin having a coefficient of thermal expansion less than that of the impregnated winding.



3,531,700
VARIABLE SPEED DRIVE ARRANGEMENT FOR AN ANALYTICAL INSTRUMENT

Harry A. Gill, Ridgefield, and Melvin W. Redmond, Jr., West Redding, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Feb. 1, 1967, Ser. No. 613,220
Int. Cl. H02p *5/46*
U.S. Cl. 318—8 **5 Claims**

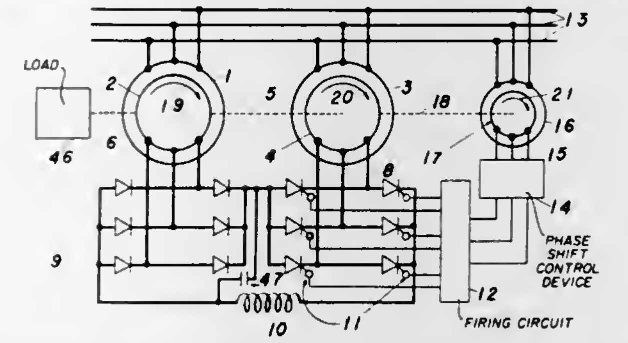


A variable speed drive arrangement in an analytical instrument includes first and second stepping motors coupled to input shafts of a mechanical differential. An output shaft of the differential is coupled to a driven element of the instrument. A motor energizing circuit means is adapted for providing a plurality of output voltages of different frequencies which are derived from a reference frequency and includes means for selectively applying voltages of desired frequency to the individual motors.

3,531,701
ELECTRIC CONTROL SYSTEM FOR INDUCTION MACHINE CONTAINING WINDING ELEMENTS OF TWO WOUND ROTOR INDUCTION MACHINES

Fukuo Shibata, 13 Tokiwa-cho, Hyogo Prefecture, Nishinomiya, Japan

Filed Mar. 14, 1967, Ser. No. 624,119
Claims priority, application Japan, Mar. 14, 1966, 41/16,008; Mar. 31, 1966, 41/20,320
Int. Cl. H02p *7/60*
U.S. Cl. 318—45 **12 Claims**



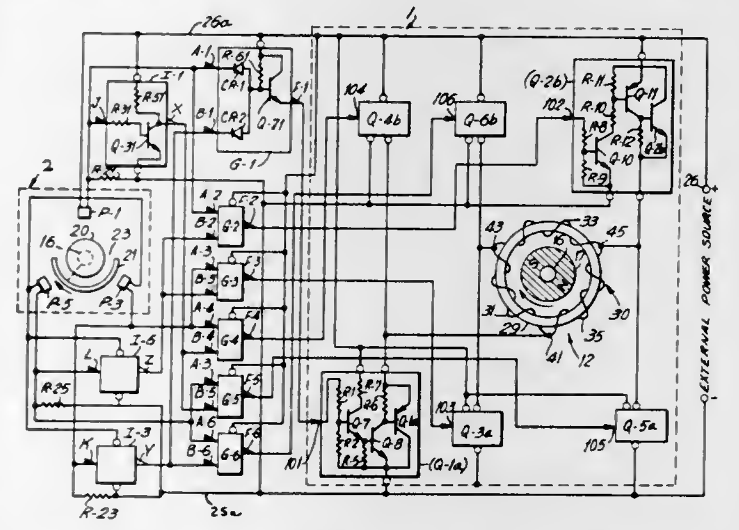
Heretofore, there has been a famous method, called Scherbius, for controlling a wound rotor induction machine by an inverter composed of controlled rectifiers and a transformer which are electrically connected with the secondary circuit of the induction machine through a converter such as a diode rectifier. The above transformer is electrically connected with an alternating current bus with which the primary winding of the induction machine is connected electrically.

In an induction machine arrangement which contains two stator and two rotor windings rotating mechanically together with each other, controlled rectifiers are connected electrically between terminals of the two rotor windings; an alternating current bus electrically connected respectively with the two stator windings; further a phase shift control device and a firing circuit are electrically connected between the said bus and the control electrode of the said rectifiers; whereby a control system is obtained of a wide speed range when operating as a motor and a constant frequency control system when operating as a generator.

3,531,702
LOGIC CONTROL SYSTEM FOR BRUSHLESS D.C. MOTORS

Roy K. Hill, Bristol, Tenn., assignor to Sperry Rand Corporation, Bristol, Tenn., a corporation of Delaware

Filed Mar. 5, 1968, Ser. No. 710,472
Int. Cl. H02k *29/00*
U.S. Cl. 318—138 **10 Claims**

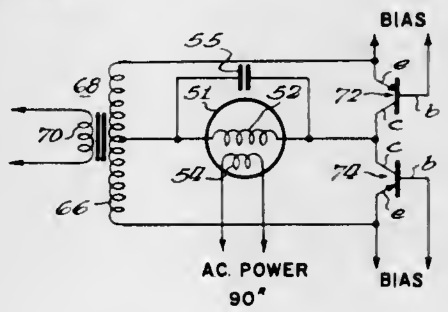


A brushless DC motor is constructed with photo pickup device for detecting rotor position. A logic system consisting of "OR" gates and/or "AND" gates, connected in circuit to receive signals from photo sensitive devices, is utilized to control current switching in the stator winding. The logic system is so constructed that by utilizing three photo sensitive devices current switching in the armature occurs six times for each rotor revolution.

3,531,703
AC MOTOR SPEED CONTROL SYSTEM

William H. Plumpe, Jr., St. Louis, Mo., assignor to Sherwood Medical Industries, Inc., a corporation of Delaware

Filed Mar. 4, 1968, Ser. No. 710,100
Int. Cl. H02p *1/40*
U.S. Cl. 318—203 **5 Claims**

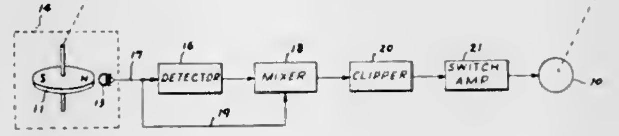


A transistor, having a base electrode, and emitter and collector electrodes which will function as collector and emitter electrodes respectively when opposite polarity voltage is coupled thereacross, is connected with a biasing networn to pass an AC waveform in which the amplitude of one half cycle can be controlled independent of the other half cycle. The transistor circuit is connected with an AC motor to achieve continuous speed control by introducing a variable ratio of AC/DC across the AC motor.

3,531,704
SPEED CONTROL SYSTEM FOR DC MOTORS

Saburo Uemura, Yokohama-shi, Toshiro Nishikawa, Tokyo, and Yasuo Umezawa, Yokohama-shi, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Nov. 25, 1966, Ser. No. 597,108
Claims priority, application Japan, Nov. 26, 1965, 40/72,704
Int. Cl. H02p *5/06*
U.S. Cl. 318—328 **3 Claims**



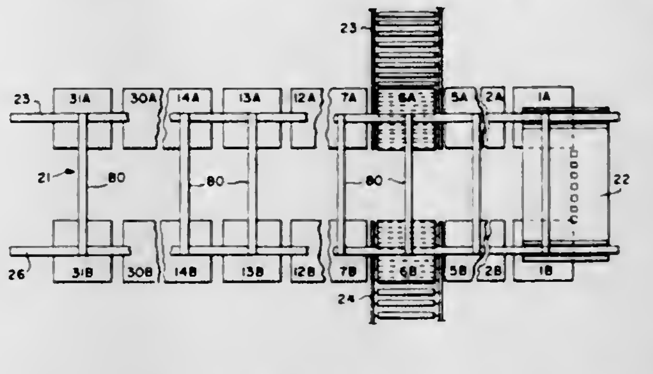
A speed control for a DC motor having a rotatable magnetic element which is used to generate a sine wave in response to the speed of the motor. The sine wave is detected and the detected signal is mixed with a portion of the original sine wave to produce pulses having a pulse width indicative of the frequency of the sine wave. The pulses are then used to control a switching amplifier circuit which, in turn, controls the speed of the motor.

3,531,705
METHOD AND APPARATUS FOR AUTOMATIC LOAD TRANSFER

George C. Rosin, South Euclid, and Ralph W. Spafford, Willowick, Ohio, assignors to Eaton Yale & Towne, Inc., a corporation of Ohio

Filed Nov. 5, 1965, Ser. No. 506,568
Int. Cl. G05b *19/14, 19/28*
U.S. Cl. 318—567 **9 Claims**

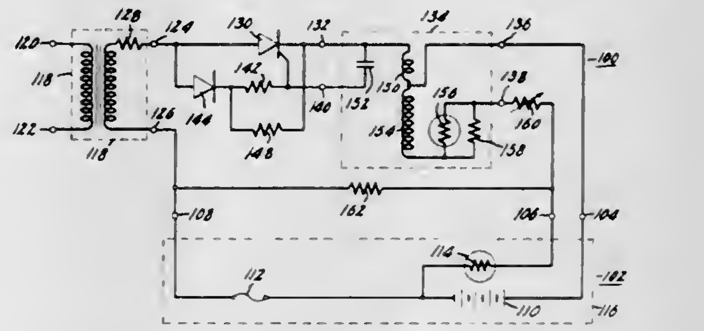
A load transfer system includes apparatus for positioning a load carrier adjacent a particular load support station by detecting the particular station, decelerating the load carrier by motor control and reversing the direction of load carrier travel at reduced speed until the load carrier again detects the particular load support station whereat the load carrier is braked to a rapid stop.



3,531,706
RAPID CHARGE RATES FOR SEALED CELLS

Ferdinand H. Mullersman, Gainesville, Fla., assignor to General Electric Company, a corporation of New York

Filed Apr. 28, 1967, Ser. No. 634,562
Int. Cl. H02j *7/02*
U.S. Cl. 320—20 **21 Claims**



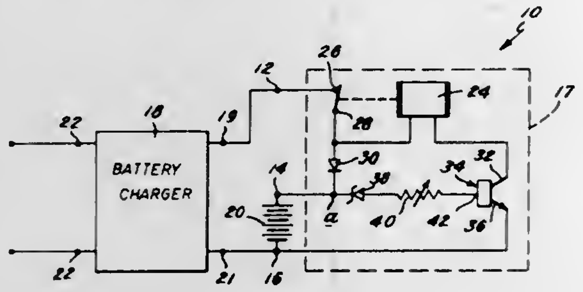
In a charger for a secondary battery of electrochemical cells, wherein pulsed D-C current is supplied to the battery at a rapid charge rate, and a trickle charge current may be supplied at a lower rate, a novel controlling circuit provides for cut off of the rapid charge rate. A signal-responsive controller provided with switch means, which may, for example, be a magnetic-flux controlled reed switch or a solid-state controlling circuit, senses the temperature-compensated battery voltage only during periods of zero charge current and acts, also only during periods of zero charge current, to terminate the flow of high charge rate current as the battery reaches nearly full voltage. A first temperature compensating element having a temperautre sensor located in thermally conductive relation with the battery compensates battery voltage sensed for the actual temperature of the battery and modifies the sensed battery voltage at which the control circuit is activated to operate the switch means. According to another feature of the invention, a second temperature compensating element serves to adjust line voltage for temperature-related variations.

3,531,707
BATTERY CHARGER AND CHARGE TERMINATOR

Francis Finnegan, Wrentham, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

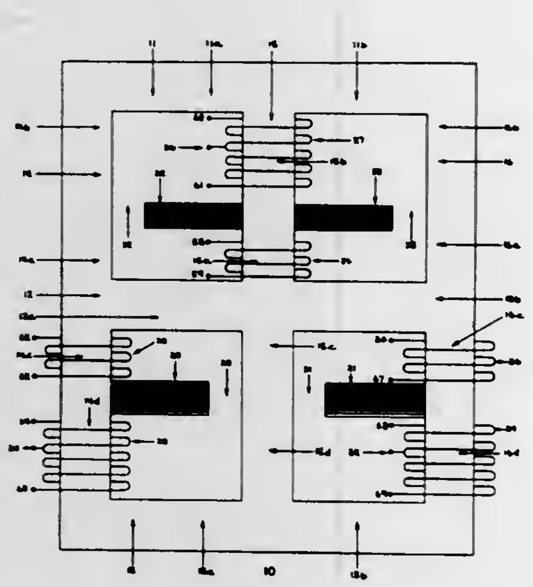
Filed Nov. 28, 1967, Ser. No. 686,210
Int. Cl. H02j *7/04*
U.S. Cl. 320—43 **3 Claims**

A device for charging a battery and for automatically terminating charging when the battery has been charged to a selected potential is shown to incorporate a constant current charging source, a manually operable relay including normally closed contacts in series between the charging source and a battery to be charged and trip coil means adapted to automatically open the relay contacts to terminate charging of the battery in response to a selected current through the trip coil means, transistor means arranged in series with the trip coil means and charging source for controlling current in the trip coil means, Zener diode means regulating the transistor means in response to charging source potential for permitting sufficient current to flow into the trip coil means to automatically open the switch contacts when the battery is charged to the desired battery potential, and a diode interposed between the trip coil means and charging source and the battery for permitting current flow from the charging source to the battery and preventing current flow from the battery through the trip coil means. The relay means are adapted to latch the relay contacts in open circuit position until the contacts are manually reclosed. Preferably, variable resistor means are interposed between the Zener diode and transistor means for adjusting the charge level at which battery charging is terminated. A battery charge terminator connectable to a constant-current charging source and to a battery to be charged is also shown.



3,531,708
INTEGRAL STRUCTURE THREE-PHASE FERRORESONANT TRANSFORMER

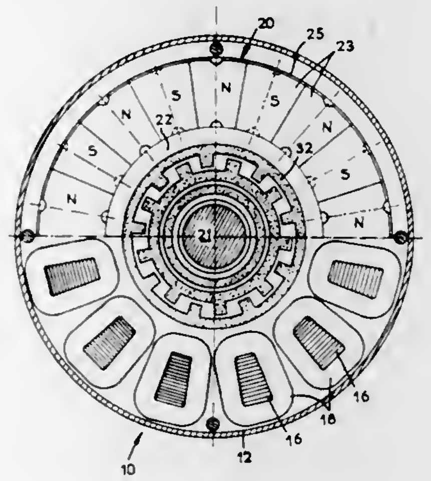
Richard E. Kuba, Kingston, N.Y., assignor to North Electric Company, Galion, Ohio, a corporation of Ohio
Filed Oct. 7, 1968, Ser. No. 765,581
Int. Cl. H02m *7/00*
U.S. Cl. 321—5 **16 Claims**



An integral magnetic core structure for use in supplying regulated output voltages which allows three ferroresonant actions to take place in the integral structure independently of each other as energized from a three-phase source. Identical magnetic paths are used in a sharing mode for the magnetic fluxes of two or more phases of the three phases which energize the transformer.

3,531,709
REVERSIBLE ELECTROMECHANICAL CONVERTER AND DEVICES INCORPORATING SAME

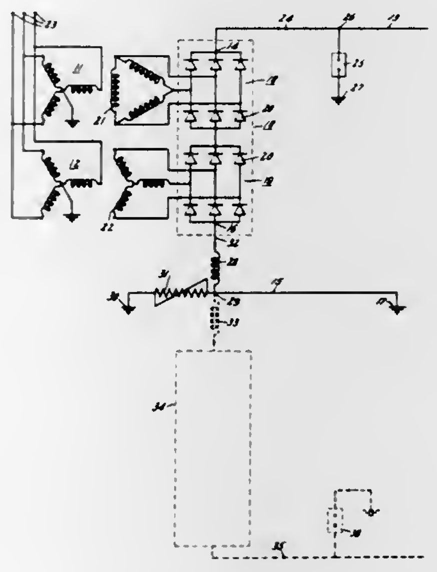
Edgard Nazare, 11 Avenue Gourgaud, Paris, France
Filed Feb. 8, 1968, Ser. No. 704,087
Claims priority, application France, Feb. 8, 1967, 94,188; Apr. 28, 1967, 104,751; May 22, 1967, 107,306
Int. Cl. H02m *7/00*
U.S. Cl. 321—8 **15 Claims**



An electromechanical reversible converter which comprises a rotor in the form of a disk carrying on its periphery a plurality of flat permanent magnets alternately polarized in opposite axial directions, and a stator carrying on each side of said rotor a plurality of angularly spaced pole pieces magnetically coupled to at least one electrical winding. The rotor is made to rotate step-by-step by applying to said winding electrical pulses of alternate polarities. Such a converter can be used in speed, position and/or force transmitting systems.

3,531,710
HIGH VOLTAGE DC TRANSMISSION TERMINAL CIRCUIT

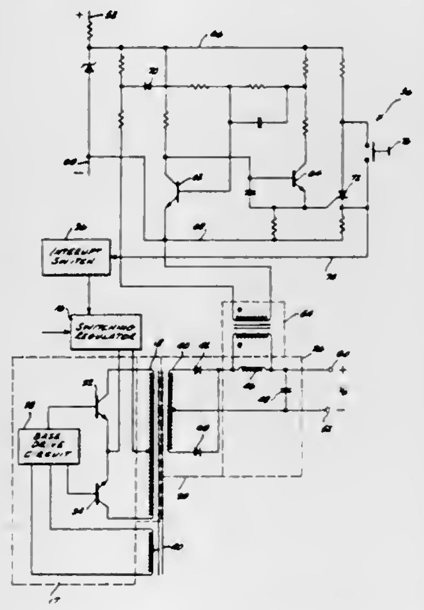
Glenn D. Breuer, Schenectady, N.Y., and Colin M. Stairs, Peterborough, Ontario, Canada, assignors to General Electric Company, a corporation of New York
Filed June 11, 1968, Ser. No. 736,090
Int. Cl. H02m *1/18;* **H02h** *1/04*
U.S. Cl. 321—14 **3 Claims**



The reactor in a converter group is relocated from the line or high voltage end of the terminal to the low voltage or ground end. In so doing it is removed from a position next to a lightning arrester where it is subjected to the high line voltages to a position where the reactor voltage is low permitting a significant reduction in the insulation required for and the cost of the reactor.

3,531,711
OVERLOAD SENSING CIRCUIT FOR INVERTER TRANSFORMER OUTPUT

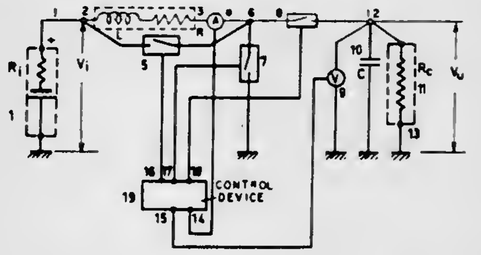
Angelo Fusco, Santa Monica, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Sept. 23, 1968, Ser. No. 761,878
Int. Cl. H02h *7/10;* **H02m** *1/18*
U.S. Cl. 321—14 **4 Claims**



When a square wave transformer output is rectified by semiconductor diodes, the spacing between adjacent pulses is a function of transformer current and recovery time of the diodes. This pulse spacing is detected, and when it exceeds the critical value, it signals overload. This overload signal interrupts supply to the transformer. Even when the transformer has a plurality of secondaries, overload in any one secondary will cause pulse spacing signaling in each secondary circuit so that only one detecting device is necessary for detecting overloads in any one of the plurality of secondaries.

3,531,712
CURRENT STORAGE D-C VOLTAGE CONVERTER

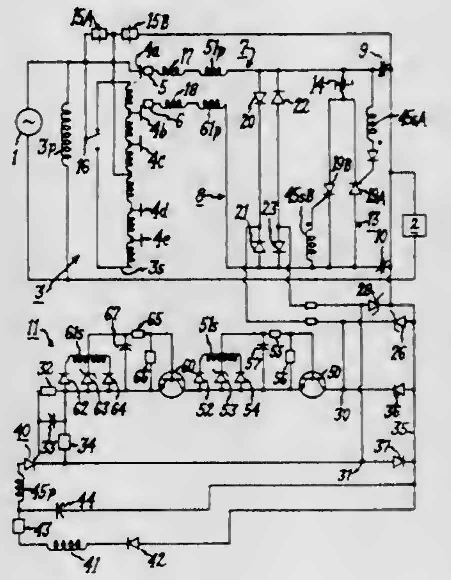
Giuseppe Cecchini, Milan, Italy, assignor to Olivetti-General Electric S.p.A., Caluso, Torino, Italy, a corporation of Italy
Continuation of application Ser. No. 656,793, July 28, 1967. This application June 6, 1969, Ser. No. 833,884
Claims priority, application Italy, July 30, 1966, 17,737/66, Patent 774,432
Int. Cl. G05f *1/56*
U.S. Cl. 323—4 **12 Claims**



A direct current voltage converter wherein voltage stabilization is effected by storage of current in an inductive device, said current being supplied to a load subject to the sensing of voltage and current requirements of the load and through the operation of appropriate switches to make such stored current available at the appropriate time.

3,531,713
NON-ARCING TAP CHANGING SYSTEM

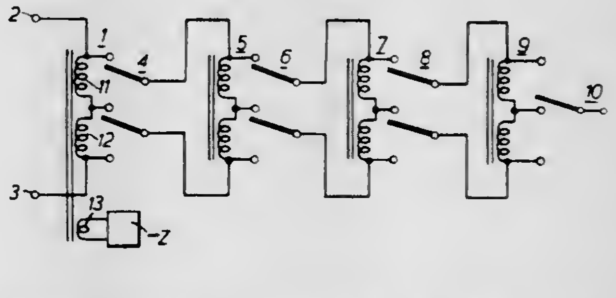
Leon Joseph Goldberg, Schenectady, and Donald L. Watrous, Syracuse, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 16, 1968, Ser. No. 783,811
Int. Cl. H02m *5/12;* **H02p** *13/06*
U.S. Cl. 323—43.5 **8 Claims**



A tap changing system for connection between a source and a load. A solid state interrupter connected between two circuit branches, each of which couple a transformer tap to the load, is closed by a control circuit in response to the opening of a mechanical contactor in one circuit branch, and opens at the next source current zero to electrically remove one branch from the tap changing circuit. The branch circuit including the opened contactor may then be arclessly disconnected from one transformer tap and coupled to another.

3,531,714
TRANSFORMER MEANS FOR A CASCADE-TRANSFORMER TYPE POTENTIAL DIVIDER

Peter Caleb Frederick Wolfendale, Chiltern Close, Great Brickhill, Bletchley, Buckinghamshire, England
Filed Aug. 18, 1967, Ser. No. 661,718
Claims priority, application Great Britain, Aug. 18, 1966, 37,058/66
Int. Cl. H02p *13/06*
U.S. Cl. 323—43.5 **6 Claims**



A potential divider comprising a plurality of cascaded transformers interconnected selectably by switches. Each transformer comprises two or three windings twisted together in a regular and symmetrical configuration to form a rope which is wound on a core, at least two of the windings being electrically connected in series. Where three windings are used, a negative impedance device may be connected across one winding, the other two being connected in series across the input to reduce resistive losses, and otherwise modify the input impedance.

3,531,715

METHODS AND APPARATUS FOR EXAMINATION AND MEASUREMENT BY MEANS OF NUCLEAR MAGNETIC RESONANCE PHENOMENA

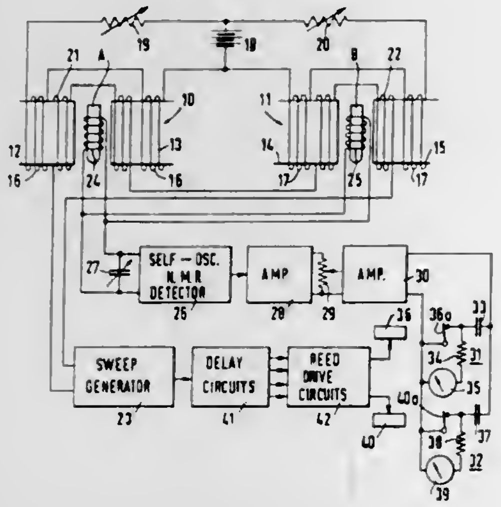
Edward Watson, Hampton, England, assignor to Newport Instruments Limited, Newport Pagnell, Buckinghamshire, England, a British company

Continuation of application Ser. No. 485,034, Sept. 3, 1965. This application Nov. 5, 1968, Ser. No. 774,588

Claims priority, application Great Britain, Sept. 7, 1964, 36,550/64

Int. Cl. G01n *27/78*

U.S. Cl. 324—.5 **4 Claims**



A signal including a plurality of successive and amplified nuclear magnetic resonance pulses obtained from a sample is gated to recording and/or display means only during separated short intervals of time which each embrace the period of occurrence of one of said pulses in order to remove unwanted noise. A measure of the area under said pulses is obtained and is free from any error due to amplifier drift. Two or more material samples, one of which is a comparison standard, may be used with an equivalent gating procedure.

3,531,716

METHOD OF TESTING AN ELECTRONIC DEVICE BY USE OF AN ELECTRON BEAM

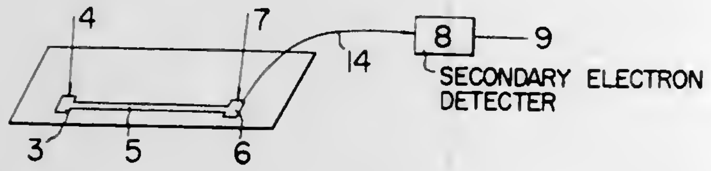
Yasuo Tarui, Kurume-machi, and Seiichi Denda, Hoyashi, Japan, assignors to Agency of Industrial Science and Technology, Ministry of International Trade and Industry, Tokyo-to, Japan, an authority of the Japanese Government

Filed Mar. 13, 1968, Ser. No. 712,762

Claims priority, application Japan, June 16, 1967, 42/38,145, 42/38,146

Int. Cl. G01r *31/02*

U.S. Cl. 324—51 **3 Claims**



A method of testing electric connection or circuit operation and character of an electronic device such as a multilayer wiring plate, semiconductor and thin film type integrated circuit and the like, which comprises projecting an electron beam onto a portion of the electronic device to be tested to generate an electric potential, and detecting the electric potential of a portion of the device under test to obtain an output signal.

3,531,717

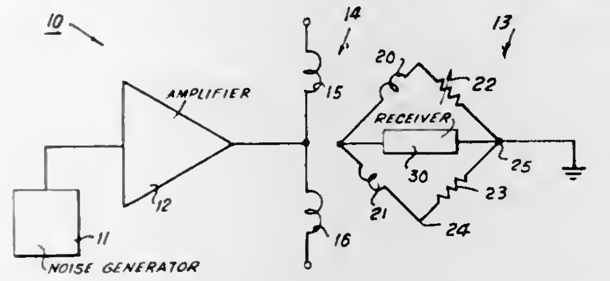
ANTENNA NOISE BRIDGE

Robert T. Hart, Richardson, Tex., assignor to Omega-T Systems Incorporated, Richardson, Tex., a corporation of Texas

Filed Apr. 26, 1968, Ser. No. 724,521

Int. Cl. G01r *27/00*

U.S. Cl. 324—57 **7 Claims**



A device for testing radio and television antennas, receivers, and the like, including a signal source for producing a broad-band spectrum of noise, an amplifier for amplifying the noise, and a bridge circuit coupled with the amplifier and excited by the amplified noise, the bridge having one leg adapted to receive the component to be tested, means for connecting a frequency sensitive detector, and resistance adjustment means whereby balancing the bridge provides a measure of a characteristic of the component being tested at a selected frequency.

3,531,718

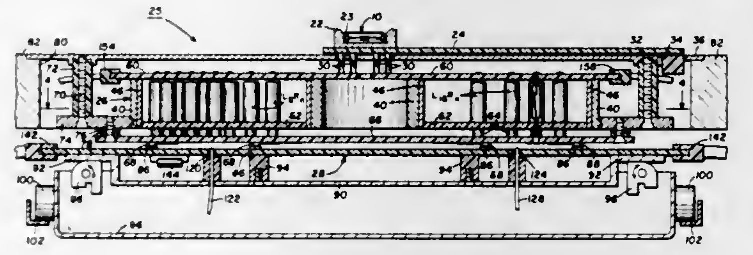
STATION FOR TESTING VARIOUS ELECTRONIC DEVICES

Edward E. Hamilton, Janos J. Lazar, and Leslie L. Jasper, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 7, 1965, Ser. No. 512,080

Int. Cl. G01r *15/12*

U.S. Cl. 324—73 **3 Claims**



A system for automatically making substantially any static or dynamic test on a multilead integrated circuit. The system includes a test station having a plurality of D.C. bias supplies, a plurality of pulse generators for producing repetitive pulse waveforms, a socket for receiving the integrated circuit, switch means for selectively connecting any D.C. bias supply and/or any pulse generator to any lead or leads of the integrated circuit, and sensing means for selectively connecting any lead of the integrated circuit to either a static measuring unit or a dynamic measuring unit. The dynamic measuring unit makes either time or amplitude measurements on the signal at any lead of the integrated circuit and produces a pulse train and a count data signal which are collectively representative of the magnitude of the time or amplitude measurement. The static measuring unit makes either static voltage or current measurements on the signal at any selected lead of the integrated circuit and produces a pulse train signal the frequency of which is representative of the magnitude of the measurement. A data readout system counts the pulses either from the dynamic measuring unit during the count data signal, or the pulses from the static measuring unit during a predetermined reference time period to indicate the results of the measurement. A programmable control means automatically operates the total system to make substantially any selected amplitude, time, voltage or current measurement on the signal occurring at or between substantially any lead or leads of the integrated circuit.

3,531,719

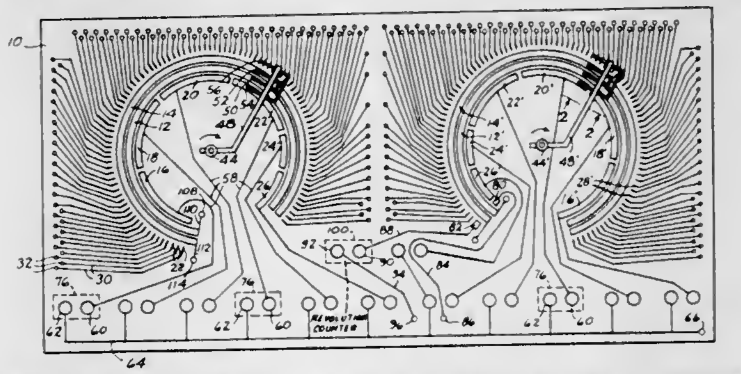
APPARATUS FOR MONITORING THE ACTIVATIONS OF TELEPHONE EXCHANGE EQUIPMENT

Paul M. Arnett, P.O. Box 232, Molalla, Oreg. 97038, and Claude M. Faust, 6017 N. Hudson St., Portland, Oreg. 97203

Continuation-in-part of application Ser. No. 418,826, Dec. 16, 1964. This application June 23, 1966, Ser. No. 564,478

Int. Cl. H04b *3/46*

U.S. Cl. 324—73 **8 Claims**



An electric motor rotates a switch actuator relative to a plurality of spaced switches connected to a plurality of electric circuits the activations of which are to be counted. An electrically actuated counter is connected through the switches to the circuits to be counted and is activated by the latter to count their activations.

3,531,720

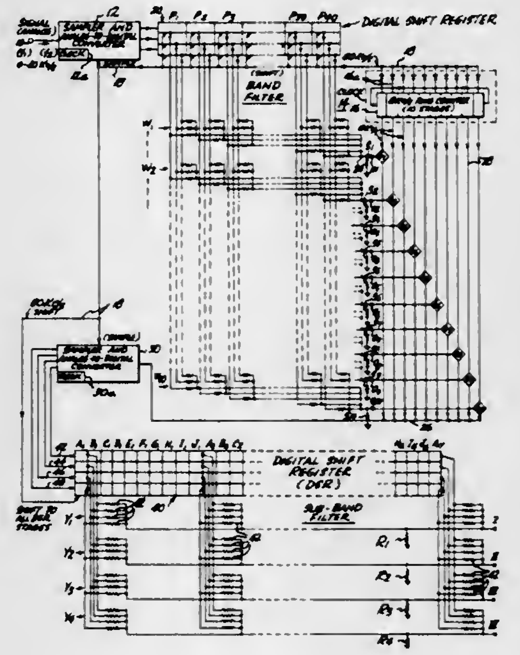
DIGITAL SHIFT REGISTER FILTER WITH CONTINUING FREQUENCY-FOLD SAMPLING AND TIME SHARED SUB-BAND FILTERING

Keith H. Norsworthy, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Continuation of application Ser. No. 578,242. Sept. 9, 1966. This application Sept. 22, 1969, Ser. No. 864,939

Int. Cl. G01r *23/16, 27/02*

U.S. Cl. 324—77 **12 Claims**



In the disclosed filter system an analog signal is recurringly sampled and the samples simultaneously digitized and fed into a digital shift register at a minimum sampling frequency high enough to insure that frequency folding under the sampling or Nyquist theorem is unambiguous over the full signal spectrum. Continuingly with such signal sampling the signal information stored in this digital shift register is filtered into desired frequency bands and converted into analog form by weighting and summation networks connected to the digital elements in the shift register. This analog band information is then itself recurringly sampled, multiplexed and digitized and applied to the input of a second digital shift register at a minimum common recurrence frequency which insures that frequency folding is unambiguous over each of the individual aforesaid bands, said common recurrence frequency effectively causing all of said bands to fold into the same spectrum band. Consequently, weighting and summation networks connected to the digit elements in the second shift register are enabled to serve as sub-band frequency filters shared by all the said frequency bands on a multiplex basis.

3,531,721

ELECTRIC METER HAVING A MAGNIFIED SCALE

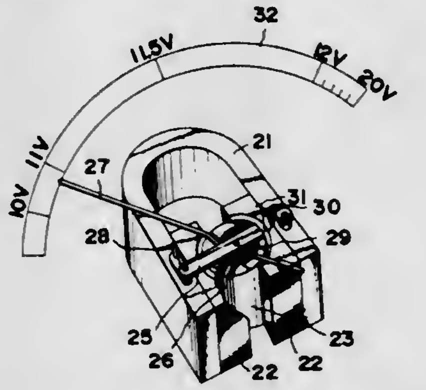
Koto Kasai, 1-9 Yodogawa-cho, Fujimiya-shi, Shizuoka-ken, Japan

Filed Apr. 3, 1968, Ser. No. 718,446

Claims priority, application Japan, May 16, 1967, 42/31,081; Oct. 28, 1967, 42/69,266

Int. Cl. G01r *15/10*

U.S. Cl. 324—132 **2 Claims**



In a deflection type electric meter means is provided to limit the deflection of the pointer to a predetermined range of the magnitude of the electric quantity to be measured to precisely indicate the quantity on a magnified scale. The means to limit the deflection of the pointer may be either a constant voltage diode or a mechanical spring device.

3,531,722

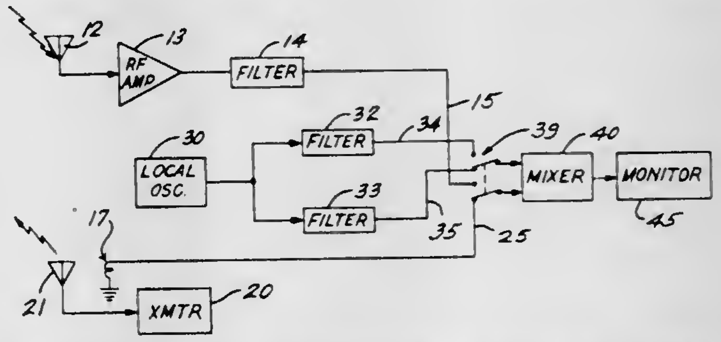
FREQUENCY MONITORING SYSTEM EMPLOYING A LOCAL OSCILLATOR AND FIXED-TUNED MONITOR

Frederick W. Seibold, 600 S. Main St., Tuscola, Ill. 61953

Filed Aug. 11, 1967, Ser. No. 660,050

Int. Cl. G01r *23/14;* **H03b** *3/04;* **H04b** *3/46*

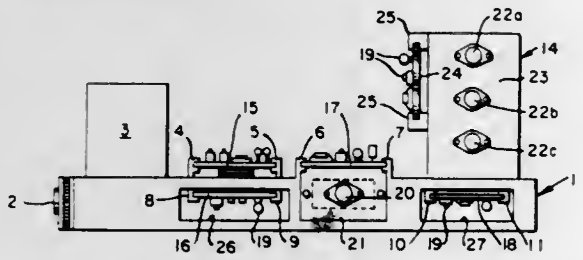
U.S. Cl. 325—134 **6 Claims**



An arrangement for monitoring the operating frequency of a radio transmitter. The arrangement employs a source of a primary reference signal having a predetermined frequency in conjunction with a local oscillator capable of generating harmonic signals. The fundamental operating frequency of the local oscillator is selected such that the frequency of one of its harmonics falls near the reference frequency while a second, different harmonic frequency falls near the operating frequency of the transmitter. By comparing the fixed reference frequency with one harmonic, any change in the frequency of the signal produced by local oscillator may be accurately detected. Hence, by comparing the operating frequency of the transmitter with the local oscillator's other harmonic, any deviation in the transmitting frequency may also be accurately monitored.

3,531,723
CHASSIS CONSTRUCTION FOR TELEVISION RECEIVERS USING CIRCUIT BOARDS

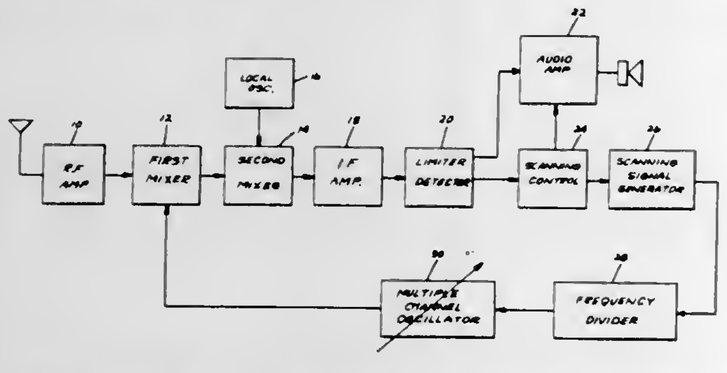
Kazuo Watanabe, Osaka, and Akira Matsui, Osaka-fu, Japan, assignors to Sanyo Electric Co., Ltd., Moriguchi-shi, Japan, a corporation of Japan
Filed Oct. 12, 1966, Ser. No. 586,211
Claims priority, application Japan, Oct. 19, 1965, 40/64,310; Oct. 20, 1965, 40/86,126, 40/86,128; Nov. 6, 1965, 40/90,289
Int. Cl. H04b *1/08*
U.S. Cl. 325—355 4 Claims



A chassis construction for a television receiver in which various components of the television receiver circuit are mounted on circuit boards. Each circuit board has an electrical connector and a respective guide means and a connector are mounted on the chassis for receiving a circuit board and connecting its components into the television circuit. One of the circuit boards has a plate on which is mounted a heat producing element, the plate being in contact with the chassis which serves as a heat sink when the board is mounted to the chassis. In a preferred embodiment two other boards are mounted on opposite sides of a chassis wall with the wall serving as a shield. Also, a fourth board having components of the receiver horizontal deflection section thereon, is mounted beneath a housing containing other horizontal deflection components.

3,531,724
SIGNAL-SEEKING RADIO RECEIVER

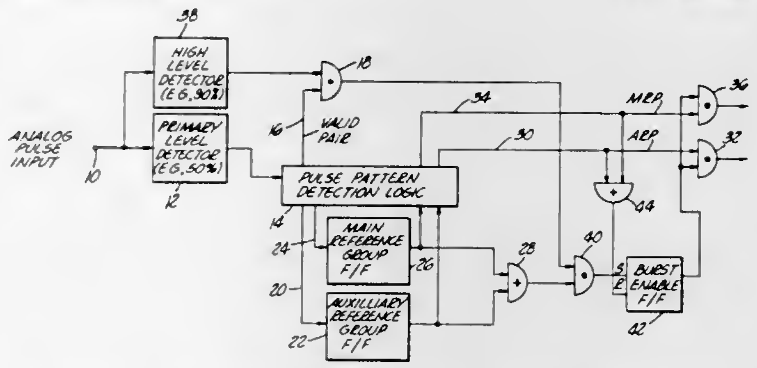
George H. Fathauer, Decatur, Ill., assignor to Electra Corporation, Cumberland, Ind., a corporation of Indiana
Filed Aug. 23, 1968, Ser. No. 754,795
Int. Cl. H04q *3/18*
U.S. Cl. 325—469 37 Claims



The invention is a signal-seeking receiver operable on several discrete preselected frequencies, electronic circuitry being employed for automatically switching the receiver from one of the frequencies to another in sequence until a signal is received on one of them. When such a signal is received, the receiver "locks in" on that frequency and receives the signal. Once the signal carrier terminates, the receiver continues its sequential switching operation until another signal or carrier appears on one of the frequencies.

3,531,725
CO-CHANNEL REJECTION SYSTEM

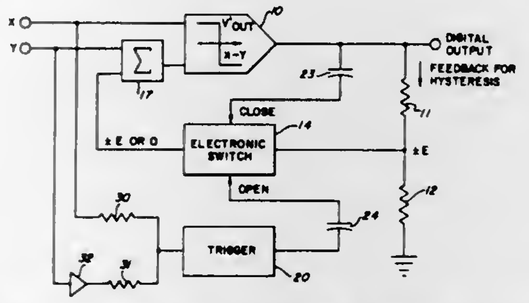
James B. Briggs, La Crescenta, Calif., assignor to Hoffman Electronics Corporation, El Monte, Calif., a corporation of California
Filed July 3, 1967, Ser. No. 650,910
Int. Cl. H03k *5/20*
U.S. Cl. 328—117 11 Claims


ANALOG PULSE INPUT
HIGH LEVEL DETECTOR (E.G. 90%)
PRIMARY LEVEL DETECTOR (E.G. 50%)
VALID PAIR
PULSE PATTERN DETECTION LOGIC
MAIN REFERENCE GROUP F/F
AUXILIARY REFERENCE GROUP F/F
BURST ENABLE F/F
MRP
ARP

A system for rejecting secondary signals received by an airborne Tacan equipment by providing a second having a higher level than the primary threshold circuit threshold circuit and which, when energized by a pulse of a detected reference group, sets a burst enable flip-flop which activates gating circuits and enables an output signal indicating that a group has been received to be passed to the remainder of the system.

3,531,726
ANALOG COMPARATOR

Robert H. Whigham, Houston, Tex., assignor to Burr-Brown Research Corporation, Tucson, Ariz., a corporation of Arizona
Filed Aug. 14, 1967, Ser. No. 660,278
Int. Cl. H03k *17/30*
U.S. Cl. 328—147 1 Claim

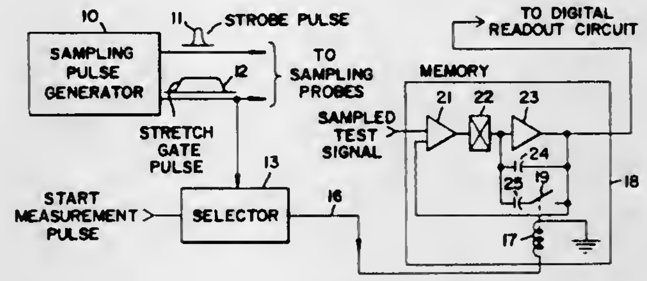


An analog comparator utilizing the output of a conventional analog comparator to develop a feedback hysteresis level. The hysteresis level is switched to the input of the comparator in accordance with the sign and magnitude of the electrical magnitudes at the input of the comparator.

3,531,727
SAMPLING RATE SELECTOR

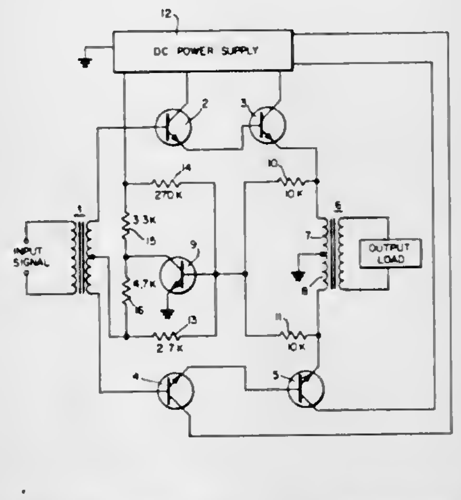
Owen S. Hall, Sunnyvale, Calif., assignor to Automated Measurements Corporation, Los Gatos, Calif., a corporation of California
Filed Dec. 12, 1967, Ser. No. 689,857
Int. Cl. H03k *17/60*
U.S. Cl. 328—151 12 Claims

A sampling rate selector for conditioning the memory of a sampling system for either a fast sampling rate or a slow sampling rate. A switch in the memory switches a feedback capacitor in and out of an amplifier circuit to provide for the two different rates. Selector means actuates this switch and includes a flip-flop circuit responsive to the sampling rate, as represented by stretch pulses, for changing to one state or the other depending on the repetition rate of the stretch pulse. The flip-flop is inhibited for switching except during a start measurement pulse time. In one embodiment an integrating capacitor senses the pulse repetition frequency to set the flip-flop; in another embodiment a one-shot multivibrator sets up a predetermined time in which two of the stretch pulses must occur for switching to the fast rate.



3,531,728
BIAS REGULATED PUSH-PULL AMPLIFIER

Wilbur A. Visher, Ambler, Pa., assignor to Narco Scientific Industries, Inc., Fort Washington, Pa., a corporation of Delaware
Filed Dec. 24, 1968, Ser. No. 786,616
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 6 Claims

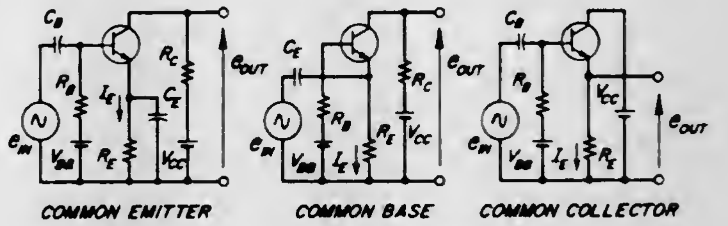


In a push-pull amplifier, the DC voltages developed at each end of the primary of the output transformer are summed and coupled in a feedback loop through a transistor regulator, the output of said transistor regulator being connected to the center tap of the secondary of the input transformer such that a stabilizing DC current is added to the amplifier input.

3,531,729
TRANSISTOR AMPLIFIER WITH CONTROLLED TEMPERATURE-DEPENDENT GAIN

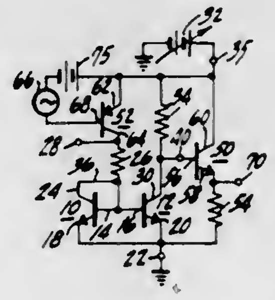
Harry S. Reichard, Princeton Junction, N.J., assignor to Princeton Applied Research Corporation, Princeton, N.J.
Filed Jan. 25, 1967, Ser. No. 611,689
Int. Cl. H03f *1/32, 3/04*
U.S. Cl. 330—23 1 Claim

The method of providing controlled temperature-dependent gain, and temperature stable gain, in a junction transistor amplifier by biasing the transistor amplifier such that the temperature dependence of the transistor's own base-emitter voltage and base current will provide a predetermined variation in emitter current which will in turn provide a forward transadmittance which is within desirable operating limits, and substantially independent of temperature, or predetermined function of temperature.



3,531,730
SIGNAL TRANSLATING STAGE PROVIDING DIRECT VOLTAGE

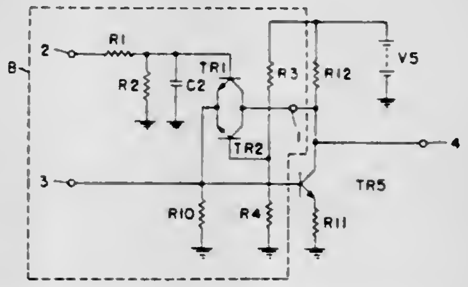
Steven Steckler, Clark, N.J., assignor to RCA Corporation, a corporation of Delaware
Continuation of application Ser. No. 772,245, Oct. 31, 1968, which is a continuation-in-part of application Ser. No. 691,884, Dec. 19, 1967. This application Oct. 8, 1969, Ser. No. 866,122
Int. Cl. H03f *3/10*
U.S. Cl. 330—24 14 Claims



A signal translating stage including a transistor having its base and emitter electrodes connected in parallel with a p-n junction poled in the same direction as the base-emitter diode of the transistor. The collector electrode of the transistor is coupled via a first resistor to a direct voltage source. That source is effective in referencing a developed output signal to a level different from that to which is referenced a corresponding input signal applied to the p-n junction by means of a second resistor.

3,531,731
VARIABLE RESISTANCE CIRCUIT MEANS

Teruaki Matsuura and Kyo Kinoshita, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan
Filed Feb. 25, 1969, Ser. No. 801,940
Claims priority, application Japan, Feb. 29, 1968, 43/12,572
Int. Cl. H03g *3/50*
U.S. Cl. 330—28 7 Claims

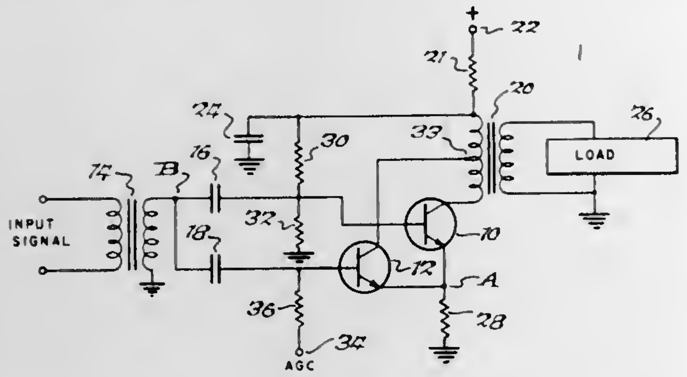


Variable resistance circuit means particularly adapted for direct coupling to transistor amplifier means is provided in accordance with the teachings of the present invention. The variable resistance circuit means provided by the present invention includes a plurality of transistor means whose collector electrodes are commonly connected to a first junction point and whose emitter electrodes are commonly connected to a common emitter resistor. In addition, at least one of said transistor means is connected in a grounded-base configuration while the remainder of said plurality of transistor means have their base electrodes connected to ground through an impedance means which is larger than the base-emitter impedance of said transistor means. A reference D.C. potential is adapted to be applied to the base electrode of at least one of said plurality of transistor means while the base electrode potentials of the other of said plurality of transistor means are controlled. The value of the A.C. resistance manifested by said variable resistance circuit means between said junction point and the commonly connected emitter electrodes or said junction point and ground is thereby controlled while the value of the D.C. voltage and the D.C. current therebetween is maintained at a constant.

3,531,732
DIFFERENTIAL AGC CIRCUIT

Wallace T. Thompson, East Amherst, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 3, 1969, Ser. No. 838,756
Int. Cl. H03g *3/30*
U.S. Cl. 330—29 **9 Claims**



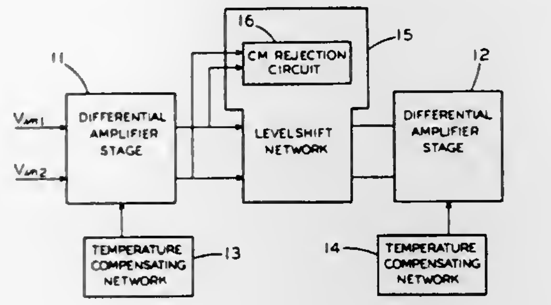
An automatic gain control circuit in which the input terminal of a control amplifier is coupled to the signal source for a circuit amplifier, and the output terminal of the control amplifier is connected to a lower impedance tap of the output load for the circuit amplifier. The gain of the control amplifier is varied in response to a biasing signal to thereby linearly control the gain of the circuit amplifier over an extended dynamic range.

3,531,733
LINEAR AMPLIFIER WITH AC GAIN TEMPERATURE COMPENSATION AND DC LEVELSHIFTING

George W. Haines, Jr., Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Mar. 4, 1968, Ser. No. 710,063
Int. Cl. H03f *1/32, 3/68*
U.S. Cl. 330—30 **9 Claims**

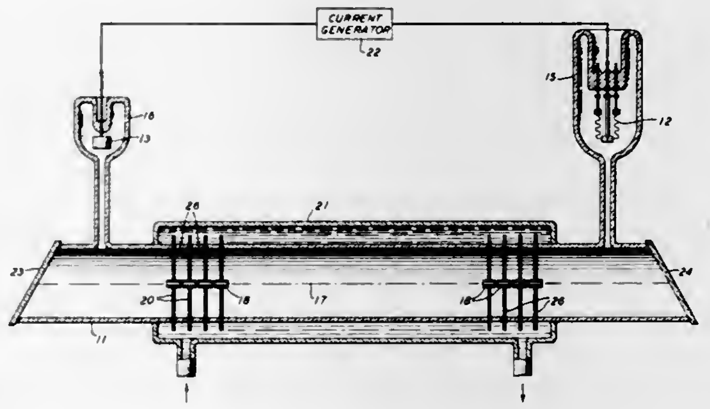
A linear amplifier having direct-coupled differential transistor stages and characterized by a stage voltage gain independent of a variation in ambient temperature, low D.C. offset voltages achieved without loss of bandwidth or efficiency, and rejection of common mode signal components. Each amplifier stage is biased by a temperature compensating network which produces a bias current varying with temperature and having the effect of compensating for changes in temperature-sensitive gain element parameters. An undesirable, cumulative D.C. bias level between direct-coupled amplifier stages is reduced by a levelshift network which employs capacitive feedback to compensate for the bandwidth-inhibiting effects of such a network. A common mode rejection is achieved by causing the D.C. shifting in the levelshift network to increase in response to increases of the common mode voltage.


16
15
CM REJECTION CIRCUIT
11
12
Vin1
Vin2
DIFFERENTIAL AMPLIFIER STAGE
LEVELSHIFT NETWORK
DIFFERENTIAL AMPLIFIER STAGE
TEMPERATURE COMPENSATING NETWORK
13
14
TEMPERATURE COMPENSATING NETWORK

3,531,734
ION LASER HAVING METAL CYLINDERS TO CONFINE THE DISCHARGE

Eugene I. Gordon, Convent Station, and Edward F. Labuda, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 15, 1965, Ser. No. 439,657
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **2 Claims**

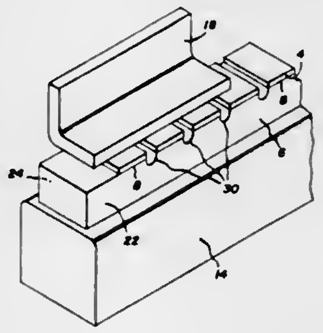


1. An ion laser comprising:
means comprising an envelope for confining a quantity of gas which is capable of population inversion in an ionized condition;
means for establishing a gas discharge through said gas;
means for maintaining a sufficiently high current flow through said gas to ionize a significant portion of said gas and to establish a population inversion of component ions, thereby initiating the stimulated emission of coherent optical radiation from at least part of the component ions of said gas;
means for constraining the gas discharge to follow a linear path portion comprising an array of flat electrically and thermally conduction members each having a central aperture and being successively and axially arranged along the path portion;
each of said members extending substantially to the inner surface of the envelope, thereby segmenting the volume within the envelope;
and each of the members including an opening which interconnects the two adjacent volume segments which are separated by the member;
the openings in successive members being located at different angular positions with respect to the linear paths, whereby successive openings describe a tortuous gas path for equalizing gas pressure within the envelope.

3,531,735
SEMICONDUCTOR LASER HAVING GROOVES TO PREVENT RADIATION TRANSVERSE TO THE OPTICAL AXIS

Neil Eugene Collins, Liverpool, Elwyn W. Kerber, Phoenix, and James M. Smith, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York

Filed June 28, 1966, Ser. No. 561,184
Int. Cl. H01s *3/18*
U.S. Cl. 331—94.5 **4 Claims**

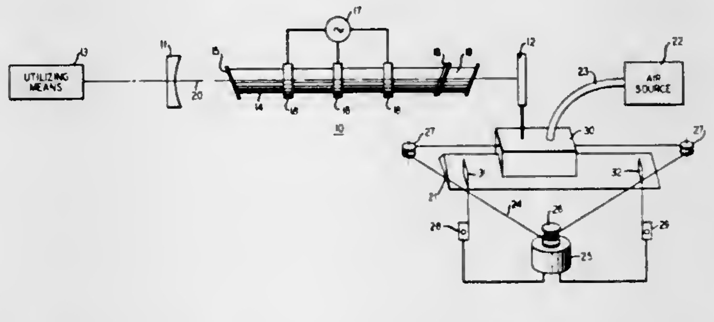


This invention relates to a high power PN junction semiconductor device with spurious transverse radiation minimized by dividing the junction into a plurality of increments, each having a transverse width which is substantially smaller than the longitudinal spacing of the Fabry-Perot reflection faces. The junction increments are defined by gaps or slots in the semiconductor material having non-parallel side walls and extending between the Fabry-Perot faces and deep enough to intersect the plane of the junction.

3,531,736
PHASE-LOCKED LASER WITH MOVING REFLECTOR

Peter W. Smith, Little Silver, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed July 25, 1967, Ser. No. 655,899
Int. Cl. H01s *3/10*
U.S. Cl. 331—94.5 **2 Claims**



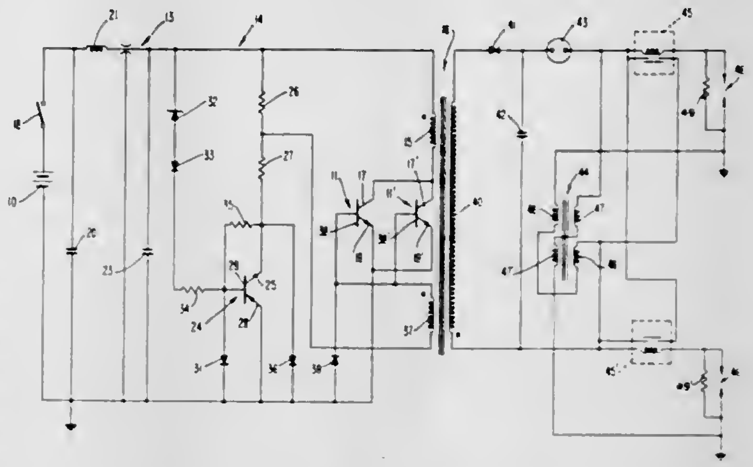
A phase-locked laser characterized by stable output pulses produced by translating one end mirror of a laser cavity resonator at a constant velocity over a time period *t* which is long compared with the time taken from the light energy to make a round trip in the laser cavity. The constant velocity is greater than a critical value, which is an increasing function of the ratio of laser gain to cavity loss.

3,531,737
REGULATED POWER INVERTER CIRCUIT FOR IGNITION SYSTEM OR THE LIKE

Kaushik H. Thakore, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 24, 1968, Ser. No. 723,727
Int. Cl. H03k *3/30*
U.S. Cl. 331—109 **21 Claims**

Inverter circuit adapted for use as the energizing source for loads such as an ignition circuit, and an ignition circuit powered by such inverter circuit. The inverter circuit is powered by a direct current source, and includes a transformer having inductively coupled primary, secondary, and tertiary or control windings. The inverter circuit includes a transistor, the collector-emitter terminals of which, in series with the primary winding of the transformer, are connected across the terminals of the power source, the primary winding being cyclically energized and de-energized as the transistor alternately becomes conductive and non-conductive upon variation of the base bias of the transistor. Energy is drawn from the current source and stored in the transformer primary during the conduction period of the transistor. Following this, the polarity of the voltage induced in the secondary and tertiary windings reverses, thereby driving the transistor into its non-conductive state. Energy is transferred to the load during the non-conduction period of the transistor. The load circuit includes a diode which open circuits the secondary during the periods of conduction of the transistor. The circuit includes power regulator means which maintains the output power constant despite wide variations in the voltage of the power source.

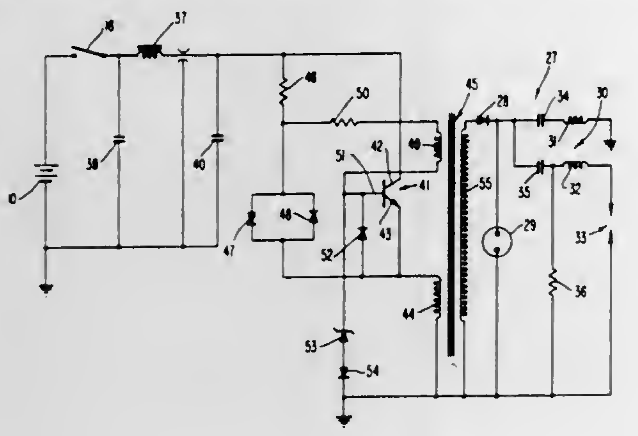


3,531,738
CONTINUOUS DUTY IGNITION SYSTEM

Kaushik H. Thakore, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

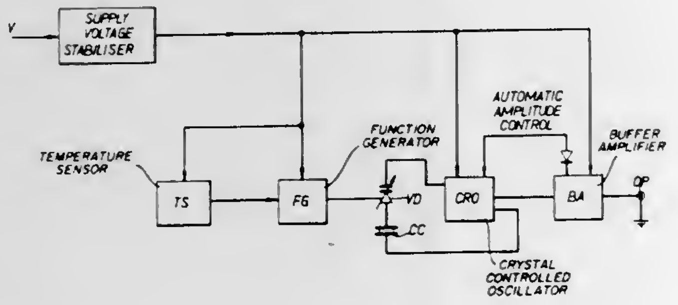
Filed Apr. 24, 1968, Ser. No. 723,740
Int. Cl. H03k *3/30*
U.S. Cl. 331—111 **13 Claims**

Inverter circuit adapted for use as the energizing source for loads such as an ignition circuit, and an ignition circuit powered by such inverter circut. The inverter circuit is powered by a direct current source, and includes a transformer having inductively coupled primary, secondary, and tertiary or control windings. The inverter circuit includes a transistor, the collector-emitter terminals of which, in series with the primary winding of the transformer, are connected across the terminals of the power source, the primary winding being cyclically energized and deenergized as the transistor alternately becomes conductive and non-conductive upon variation of the base bias of the transistor. After the transfer of an energy pulse from the primary to the secondary winding during the conductive period of the transistor, the polarity of the voltage induced in the secondary and tertiary windings reverses, thereby driving the transistor into its non-conductive state. The load circuit includes a diode which open circuits the secondary winding during the periods of conduction of the transistor.



3,531,739
TEMPERATURE COMPENSATED CRYSTAL OSCILLATORS

Charles M. Groves, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed June 12, 1968, Ser. No. 736,466
Claims priority, application Great Britain, June 15, 1967, 27,632/67
Int. Cl. H03b *5/36*
U.S. Cl. 331—116 **7 Claims**


V
SUPPLY VOLTAGE STABILISER
TEMPERATURE SENSOR
TS
FUNCTION GENERATOR
FG
VD
CC
AUTOMATIC AMPLITUDE CONTROL
CRO
BUFFER AMPLIFIER
BA
OP
CRYSTAL CONTROLLED OSCILLATOR

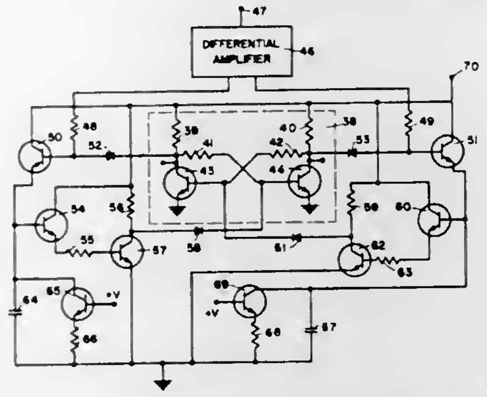
A circuit arrangement for affording temperature compensation of crystal controlled oscillator comprises a temperature sensor including a semiconductor device having a known voltage/temperature characteristic and a voltage function generator which receives the output from the temperature sensor and comprises a number of transistor stages having voltage/temperature characteristics matching the slope at different points on a full compensating characteristic and means for combining the voltage outputs from the transistor stages to provide the full compensating voltage characteristic which is applied to the variable capacitance diode of the crystal controlled oscillator.

3,531,740
PULSE-WIDTH MODULATION CIRCUIT

Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Continuation of application Ser. No. 520,218, Jan. 12, 1966. This application May 13, 1969, Ser. No. 826,075
Int. Cl. H03k *7/08, 3/281*
U.S. Cl. 332—14 **1 Claim**

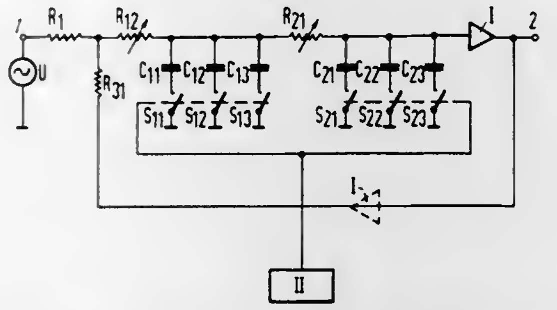
A circuit combination of a differential amplifier and a multivibrator which varies the duty-cycle while maintaining substantially the repetition rate of the multivibrator.

The present application is a continuation of application Ser. No. 520,218, filed Jan. 12, 1966, and now abandoned. The present invention relates to pulse-width modulation circuits and more particularly to the means and methods for producing modulation of the duty-cycle of a square wave without affecting its repetition rate.



3,531,741
N-PATH FILTER

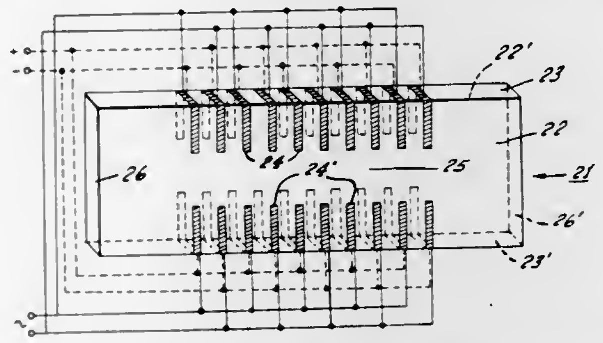
Erik Langer, Munich, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 3, 1968, Ser. No. 742,335
Claims priority, application Germany, July 4, 1967, 1,541,978
Int. Cl. H03h *7/10, 7/28*
U.S. Cl. 333—70 **8 Claims**



An N-path filter utilizing parallel switching, in which at least two RC-low-pass networks are connected in a cascade circuit, and coupled in a feedback circuit, including an amplifier, in which the amplifier and feedback circuit are so constructed that improved relation of band width and selection properties is achieved.

3,531,742
FLEXURAL MODE CERAMIC RESONATOR

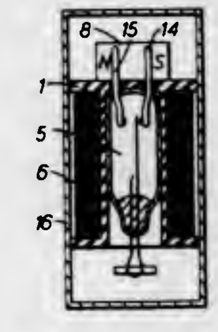
Isao Saito, Kuniichi Nagata, and Takehiro Futami, Tokyo-to, Japan, assignors to Nippon Electric Company, Limited, Tokyo-to, Japan, a corporation of Japan
Filed Sept. 12, 1967, Ser. No. 667,193
Claims priority, application Japan, Sept. 30, 1966, 41/64,553
Int. Cl. H03h *9/04, 9/20;* **H01v** *7/00*
U.S. Cl. 333—72 **4 Claims**



A resonator including a member of ceramic material having a pair of arrays of electrodes on opposed surfaces thereof, which utilizes a flexural mode vibration caused by the piezoelectric longitudinal effect.

3,531,743
ADJUSTABLE POLARIZED REED RELAY

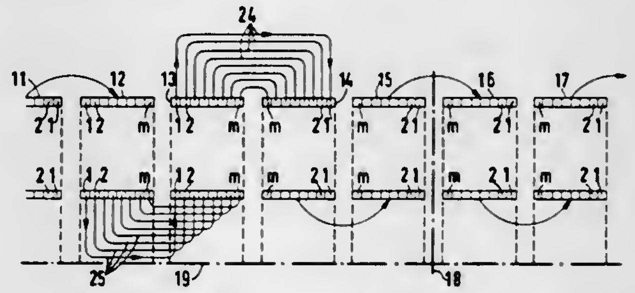
Emanuel Frydman, London, England, assignor to Telephone Manufacturing Company Limited
Filed Apr. 25, 1969, Ser. No. 819,393
Claims priority, application Great Britain, May 2, 1968, 20,892/68
Int. Cl. H01h *51/28*
U.S. Cl. 335—153 **4 Claims**



A polarized relay wherein the polarizing magnet is adjustable relative to the relay pole pieces so as to affect the bias effect on said pole pieces.

3,531,744
SUPERCONDUCTING DIRECT-CURRENT COIL

Wilhelm Kafka, Tennenlohe, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany
Filed Mar. 5, 1969, Ser. No. 804,453
Claims priority, application Germany, Mar. 6, 1968, 1,639,421
Int. Cl. H01f *7/22*
U.S. Cl. 335—216 **6 Claims**

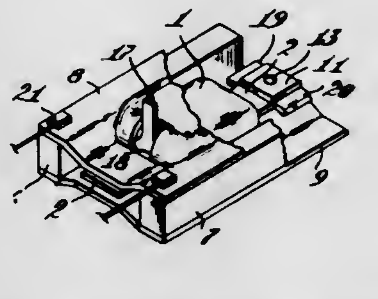


Superconductive direct-current disc coil includes at least two serially connected disc windings, each of the windings being formed of a winding band having a plurality of superconductive filamentary cores embedded therein and extending lengthwise of the band, the cores being spaced and insulated from one another and being connected in parallel at the ends of the band, respective pairs of the cores and the connections thereof forming a main loop, each of the main loops being intertwisted so as to be subdivided into component loops so that production of radial flux in the main loop is substantially avoided and peripheral voltages in the component loops substantially cancel one another during application and removal of excitation from the coil.

3,531,745
MAGNETIC TRANSLATING DEVICE WITH ARMATURE FLUX ADJUSTMENT MEANS

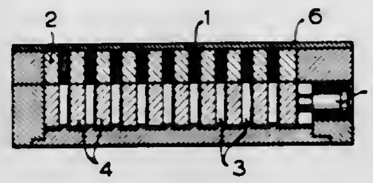
George C. Tibbetts, Camden, Maine, assignor to Tibbetts Industries, Inc., Camden, Maine, a corporation of Maine
Continuation of application Ser. No. 680,753, Aug. 28, 1957. This application Oct. 22, 1969, Ser. No. 868,495
Int. Cl. H01f *7/08*
U.S. Cl. 335—231 **23 Claims**

A magnetic translator of the balanced armature type having magnetic material of opposite polarity on opposite sides of the armature for supplying magnetic flux to it. The armature has a fixed end and a free end, and is provided with adjustment means at the fixed end for varying the reluctance between the armature fixed end and the magnetic material, thereby to adjust the steady magnetic flux passing lengthwise through the armature.



3,531,746
MAGNETIC PLATE AT THE HOLDING SURFACE OF A PERMANENT MAGNET DEVICE

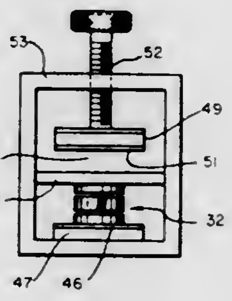
Heinrich Spodig, 4711 Netteberge 84, Bork, Germany
Filed Aug. 7, 1968, Ser. No. 750,834
Claims priority, application Germany, Aug. 9, 1967, 1,627,263
Int. Cl. H01f *7/20*
U.S. Cl. 335—286 **3 Claims**



Permanent magnet holding device comprising a permanent magnet system having pole pieces forming a holding plate, and a secondary plate formed of magnetic material disposed on said holding plate, the said secondary plate having an active cross-section and the said magnetic material having properties relative to the flux of said magnet system to provide for a magnetic stray flux from the plate over and above its magnetic saturation.

3,531,747
TUNABLE INDUCTOR

Vernon E. Dunn, Palo Alto, and Roy W. Roberts, Jr., Mountain View, Calif., assignors to MELABS, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 584,877, Oct. 6, 1966. This application Mar. 7, 1969, Ser. No. 806,047
Int. Cl. H01f *21/08*
U.S. Cl. 336—110 **2 Claims**



A reciprocal low-loss tunable inductor including a coil coupled to a body of ferrite material which is biased above ferromagnetic resonance with a variable magnetic field to tune the inductor.

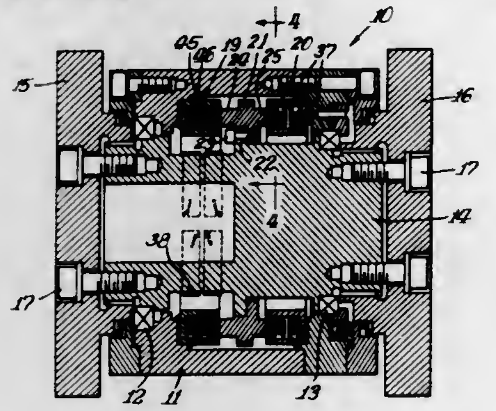
3,531,748
ROTARY TRANSFORMER CONSTRUCTION

Richard S. Tveter, Glenview, and Sydney Himmelstein, Park Ridge, Ill., assignors to S. Himmelstein and Company, a corporation of Illinois

Filed Oct. 23, 1968, Ser. No. 770,044

Int. Cl. H01f *21/06*

U.S. Cl. 336—120 **10 Claims**



A rotary transformer having rotor coils adapted to be mounted on a rotor. Support means are provided for fixedly mounting associated stator coils in coaxial, axially spaced relationship to the rotor coils. The rotor coil support comprises a plurality of annular laminations formed of high strength material such as transformer steel, permitting the use of the rotary transformer with high rotational speed devices.

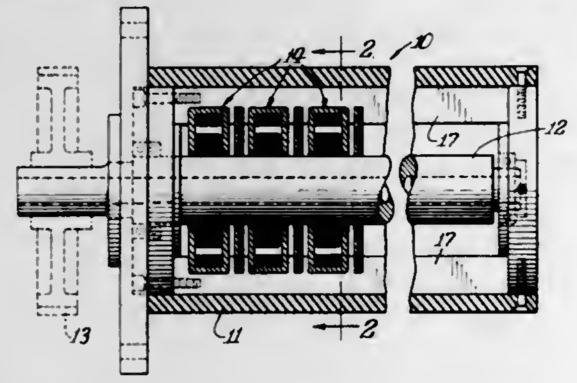
3,531,749
ROTOR STRUCTURE

Richard S. Tveter, Glenview, and Sydney Himmelstein, Park Ridge, Ill., assignors to S. Himmelstein and Company, a corporation of Illinois

Filed Mar. 27, 1969, Ser. No. 811,082

Int. Cl. H01f *21/06*

U.S. Cl. 336—120 **6 Claims**



A rotor structure for use in electrical apparatus such as a rotory transformer. The rotor structure is carried on a rotatable member, such as a shaft, coaxially of a fixed stator coil. The rotor structure includes a coil secured to a rotor core formed of a magnetic material. The rotor coil projects substantially outwardly of the surface of the rotor core toward the stator coil.

3,531,750
VARIABLE RELUCTANCE POSITION TRANSDUCER

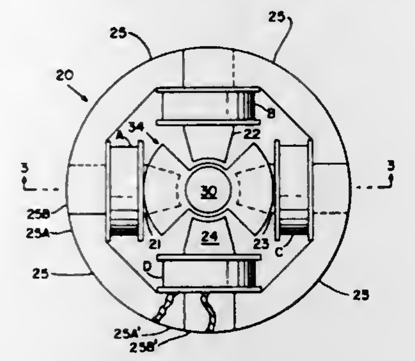
William W. Malcolm, Huntsville, Ala., and Richard L. Moore, Richardson, Tex., assignors, by direct and mesne assignments, to the United States of America as represented by the Secretary of the Army

Original application Apr. 8, 1966, Ser. No. 541,395, now Patent No. 3,483,613, dated Dec. 16, 1969. Divided and this application Oct. 1, 1968, Ser. No. 798,231

Int. Cl. H01f *21/06*

U.S. Cl. 336—135 **1 Claim**

The invention includes a four pole stator composed of a plurality of laminations. Each lamination has a pole portion and an annular portion. The pole portions carry primary and secondary windings. A unitary rotor is located adjacent the poles and varies the coupling between the windings in accord with its angular position. An AC signal applied to series connected primary windings appears at the output of series connected record windings. The secondary windings are wound in alternate bucking pairs.



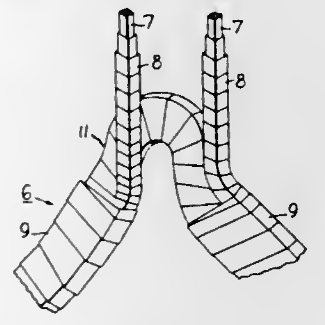
3,531,751
DYNAMOELECTRIC MACHINE COIL AND METHOD OF MAKING SAME

John W. Sargent, New Berlin, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 16, 1968, Ser. No. 783,962

Int. Cl. H01f *27/32*

U.S. Cl. 336—209 **4 Claims**



A dynamoelectric machine coil having conventional ground insulation thereon. An additional layer of an armor insulation is placed about the ground insulation leaving an uncovered area exposing the ground insulation. This uncovered area can be considered a mouth providing access to the space between the ground and armor insulation. The armor insulation is impervious to liquid at atmospheric pressure such that liquid can enter the mouth forcing gas out through the mouth trapping the liquid between the ground and armor insulation.

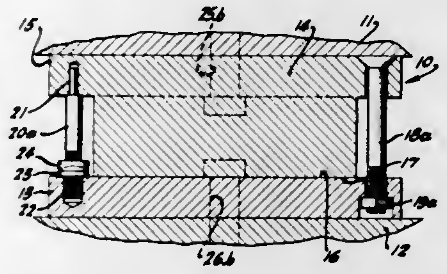
3,531,752
VARIABLE-RESISTANCE THERMAL SWITCH

Darrell L. Gourley, Santa Clara, Calif., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Feb. 9, 1968, Ser. No. 704,483

Int. Cl. H01h *61/06*

U.S. Cl. 337—139 **15 Claims**



A thermal switch operative to provide a heat-flow path of variable thermal resistance between a pair of elements one of which generates heat of varying magnitude requiring dissipation by transmission through such path to the other such element. The switch is a tri-metallic structure in which the different coefficients of thermal expansion of the various metals causes a pair of contacts to move relative to each other through a plurality of positions defining different heat-flow resistances in accordance with the magnitude of the heat to be dissipated, and which positions include an open position in which the absolute value of the resistance to heat transfer between the contacts is high and a closed position in which the absolute value of such resistance is low.

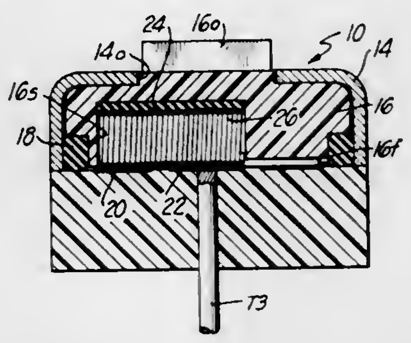
3,531,753
VARIABLE RESISTOR CONTACT DEVICE

Stefan O. Geese, Monterey Park, Calif., assignor to Bourne, Inc., a corporation of California

Filed Mar. 17, 1969, Ser. No. 807,700

Int. Cl. H01c *9/02*

U.S. Cl. 338—157 **3 Claims**



A variable resistor or potentiometer contact device adapted to furnish optimum surface engagement with resistance element and conductor element or return in variable resistor constructions by being of close-wound helical resilient wire form allowing each convolution of the coil across the width of the element to conform to surface irregularities of the element.

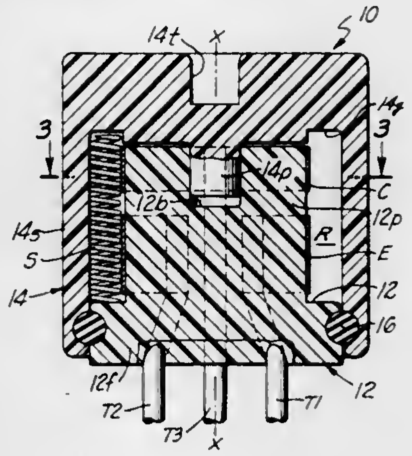
3,531,754
POTENTIOMETER

Stefan O. Geese, Monterey Park, Calif., assignor to Bourns, Inc., a corporation of California

Filed Mar. 17, 1969, Ser. No. 807,698

Int. Cl. H01c *9/00*

U.S. Cl. 338—157 **4 Claims**



A variable resistor of the potentiometer type of very small size having superior resolution, very low contact-resistance and very inexpensive construction permitted by reduction of the number of parts and by utilizing a coil spring as a combined speed-reducer and rolling wiper or contact which provide a maximum number of independently-resilient points of contacts throughout the entire width of a flat-surfaced resistance element.

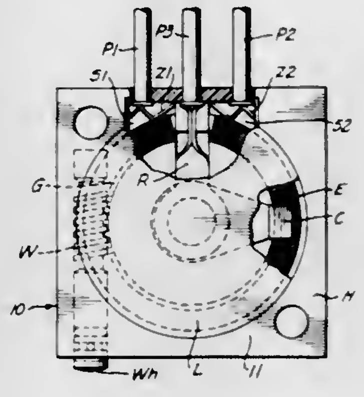
3,531,755
ROTARY POTENTIOMETER TERMINATION SPRING

Robert D. Michik, Riverside, Calif., assignor to Bourns, Inc., a corporation of California

Filed Mar. 28, 1969, Ser. No. 811,284

Int. Cl. H01c *1/14*

U.S. Cl. 338—162 **4 Claims**



An inexpensive simple doubly-bent leaf spring quickly and easily snapped into place between a molded-in pin terminal and an arcuate wirewound resistance element whereby very accurate termination of an arcuate wirewound element is quickly and inexpensively effected.

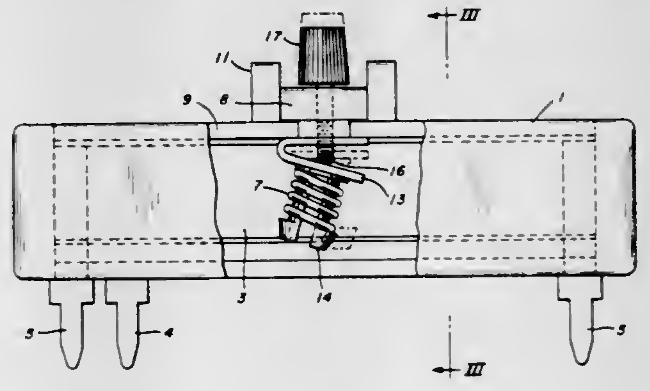
3,531,756
VARIABLE RESISTOR WITH TILTING CONTACT FOR FINE ADJUSTMENT

Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania

Filed May 5, 1969, Ser. No. 821,674

Int. Cl. H01c *5/02, 1/12*

U.S. Cl. 338—181 **6 Claims**



An actuator is movable along the edges of parallel resistance and collector strips mounted in a case. Inside the case behind the actuator there is a plate that has one end resiliently connected to one end of the actuator. This plate holds a rewardly extending bridging contact between the strips. Threaded in the actuator is a screw that has an inner end pressing against the plate and that can be turned to tilt the plate away from the actuator to move the bridging contact lengthwise of the strips slightly.

3,531,757
GROUNDED PLUG

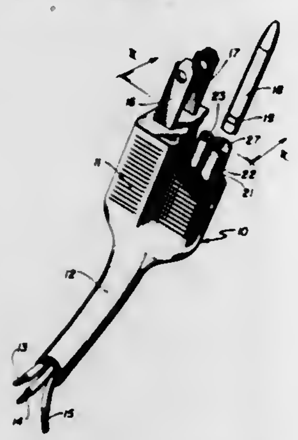
Milton Alden, Needham, Mass., assignor to Alden Research Foundation, Brockton, Mass., a Massachusetts trust

Filed May 15, 1968, Ser. No. 729,365

Int. Cl. H01r *13/08, 13/42*

U.S. Cl. 339—14 **2 Claims**

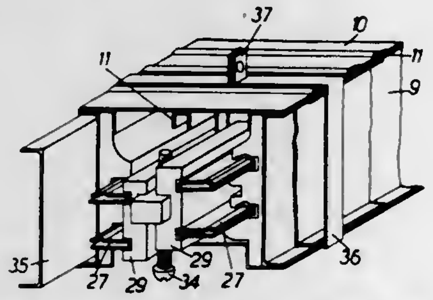
In general, this invention relates to an electrical plug adapted to be used with a convenience outlet and having,



in addition to the usual two prongs, a third prong for connection to a grounding outlet. More specifically, the third prong is removable in those instances where it is not needed or desirable.

3,531,758
BUS BAR ASSEMBLY

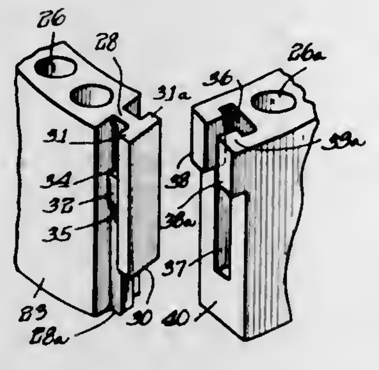
Leon Blumkin, 53 Hanamal St., Haifa, Israel
Filed Mar. 27, 1968, Ser. No. 716,379
Int. Cl. H01r *13/54*
U.S. Cl. 339—22 **10 Claims**



A bus bar assembly unit wherein the bus bars are so embedded in one or more insulating blocks that accidental contact therewith is rendered practically impossible. The units can be combined together into composite assemblies and specially designed plugs are provided which can only be inserted into the assembly in the correct sense.

3,531,759
PLUG AND TWO-PIECE RECEPTACLE

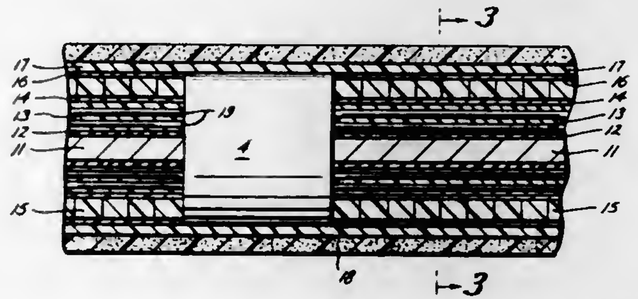
Wallace Hansen, Glen Ellyn, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Mar. 20, 1968, Ser. No. 720,748
Int. Cl. H01r *13/54, 13/46*
U.S. Cl. 339—63 **8 Claims**



A terminal connector including a composite multi-part insulating terminal block with multiple bores therethrough for mounting electrical terminals with attached wire leads and adapted for connection at a predetermined position of installation to another mating terminal block carrying mating electrical terminals; the composite insulating terminal block presenting an elongate cross-section transversely with respect to the width thereof and being divided into plural body parts each having interengageable surface formations along adjacent edges permitting separation thereof for independent threading of each body part and attached wire leads through relatively small and variously shaped spaces normally inaccessible for passage of the assembled composite terminal block, to the position of installation where the proximately located body parts are joined together by interengagement of the surface formations therebetween into the assembled composite terminal block for attachment thereof to a mating terminal block carrying mating terminals.

3,531,760
SOLID SEISMIC STREAMER

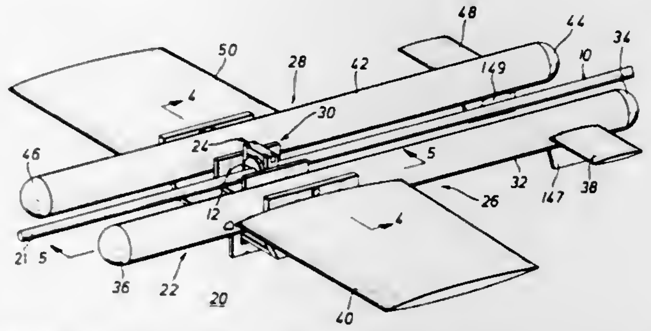
William A. Whitfill, Jr., Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Sept. 12, 1968, Ser. No. 759,448
Int. Cl. G01v *1/38*
U.S. Cl. 340—7 **12 Claims**



Disclosed is a solid streamer cable for use in marine seismic exploration. The solid streamer cable is comprised of a plurality of sections of seismic cable, each section containing a plurality of seismic wave sensitive transducers and coupled in end to end relationship. The body of the solid seismic streamer is composed of a plurality of layers of cable material. From the center of the cable, these layers consist of the following: a torque balanced wire rope forming a central support for the cable, an insulating jacket about the wire rope, a plurality of twisted pair leads for the marine seismic transducers, the leads being embedded in a filler material, a layer of cloth tape, and overlying this structure a layer of cellular filler material wrapped with a layer of plastic tape. Extruded over the last mentioned layer is a water-tight sealant layer. Finally, an outer flotation layer of cellular material is provided to achieve a desired buoyancy.

3,531,761
DEPTH CONTROLLERS FOR SEISMIC STREAMER CABLES

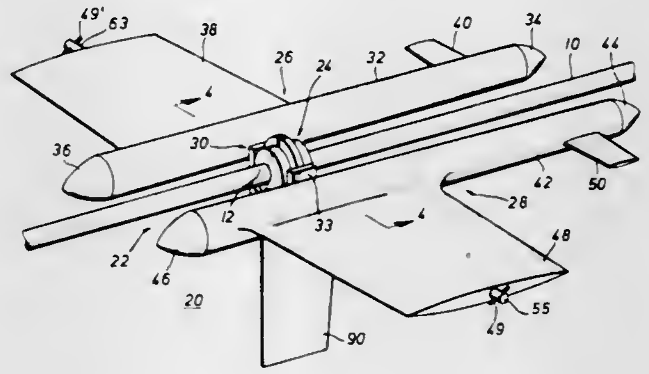
Edward B. Tickell and Gilbert B. Clift, Jr., Houston, Tex., assignors, by mesne assignments, to Numak, Inc., a corporation of Texas
Filed Dec. 26, 1968, Ser. No. 787,084
Int. Cl. G01v *1/38;* **B63b** *21/56*
U.S. Cl. 340—7 **11 Claims**



This invention relates to apparatus for marine seismic surveying and includes a plurality of depth controllers, each suspended from a section of the towed seismic streamer cable for maintaining the cable within predetermined depth levels. The suspension permits the cable and the frame of the depth controller to freely rotate relative to each other and to swing relative to each other in a limited arc. Depth regulating means on the frame effectively maintain the controller within predetermined water depth levels.

3,531,762
DEPTH CONTROLLERS FOR SEISMIC STREAMER CABLES

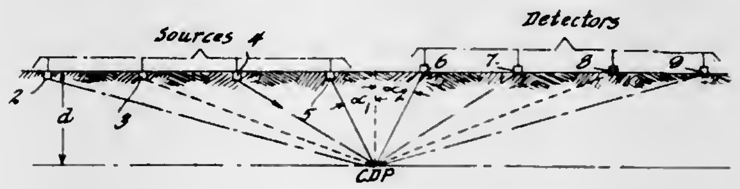
Edward B. Tickell, Houston, Tex., assignor, by mesne assignments, to Numak, Inc., a corporation of Texas
Filed Dec. 26, 1968, Ser. No. 787,085
Int. Cl. G01v *1/38;* **B63b** *21/56*
U.S. Cl. 340—7 **13 Claims**



This invention relates to apparatus for marine seismic surveying and includes a plurality of depth controllers, each suspended from a section of the towed seismic streamer cable for maintaining the cable within predetermined depth levels. The suspension permits the cable and the frame of the depth controller to freely rotate relative to each other and to swing relative to each other in a limited arc. Depth regulating means on the frame effectively maintain the controller within predetermined water depth levels.

3,531,763
RESTRICTED STACKING ON SHALLOW REFLECTIONS

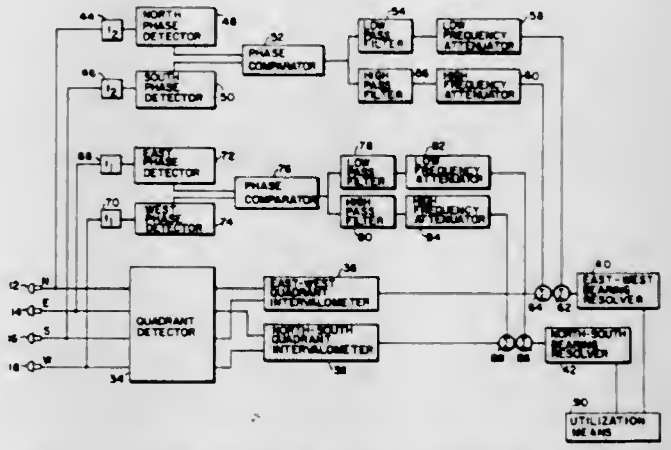
William H. Mayne, San Antonio, and JLee Davis, Dallas, Tex., assignors, by mesne assignments, to Atlantic Richfield Company, New York, N.Y., a corporation of Pennsylvania
Filed June 2, 1965, Ser. No. 460,659
Int. Cl. G01v *1/32, 1/36*
U.S. Cl. 340—15.5 **2 Claims**



1. A method of seismic surveying comprising the steps of, locating a series of seismic sources and a series of seismic detectors in spaced relationship to produce a plurality of seismic signal channel paths of progressively greater lengths, the paths from respective ones of said sources passing to corresponding ones of said detectors by way of a common region of a reflective boundary, modifying the seismic signals in each of the channels corresponding to said paths passing through a common reflective region by eliminating from each signal only that initial time portion during which the rate of change of moveout with time exceeds a maximum preselected value, and combining the modified signals to produce a summation signal.

3,531,764
WIND COMPENSATED ACOUSTIC DIRECTION FINDER

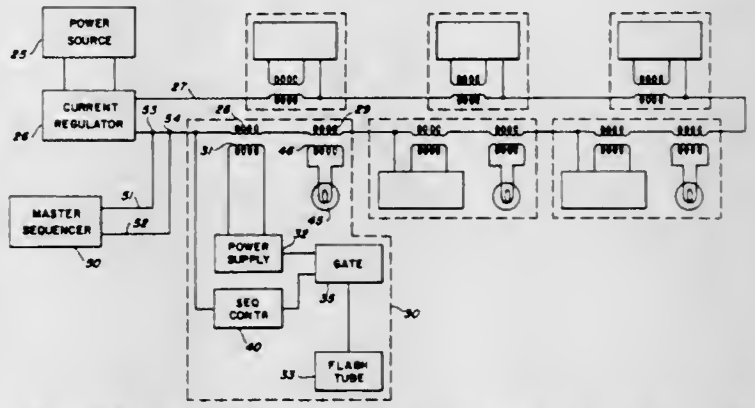
Jacques A. F. Hill, Lincoln, Mass., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed May 12, 1969, Ser. No. 823,567
Int. Cl. G01s *3/00*
U.S. Cl. 340—16 **11 Claims**



A wind compensated acoustic direction finder comprises an orthogonal array of acoustic sensors and at least two cooperating acoustic energy sources at known bearings from said array. Each source emits a narrow band continuous wave signal at a preselected frequency. The cooperative source signal phase shift across individual microphone pairs due to steady state winds and local air turbulence is computed and applied as a corrective signal to the direction finder output signal which is representative of the relative bearing of a remote uncooperative acoustic source.

3,531,765
AIRCRAFT APPROACH LIGHTING SEQUENCING SYSTEM

William O. Christianson, Litchfield Park, and Conrad Dean Helliker, Phoenix, Ariz., assignors to UMC Industries, Inc., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,961
Int. Cl. B64f *1/18*
U.S. Cl. 340—26 **4 Claims**

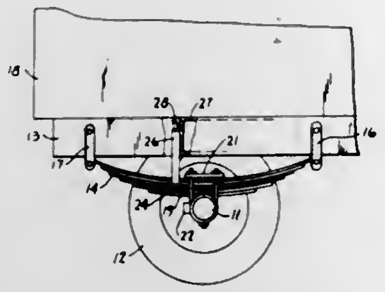


A system for sequencing approach lights for aircraft utilizing a first frequency for counting and lighting power and a second frequency for controlling counters positioned at each flashing light location.

3,531,766
OVERLOAD INDICATOR FOR VEHICLES

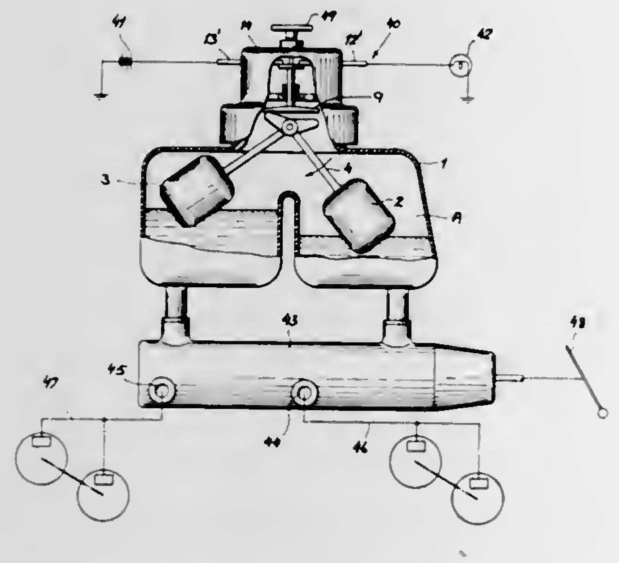
Leo Henzel, North Miami Beach, Fla., assignor to Techmatic Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 27, 1967, Ser. No. 671,036
Int. Cl. B60q *1/00*
U.S. Cl. 340—52 **6 Claims**

An overload indicator for trucks and the like comprising an electromagnet, a magnetically operated switch, a relay and indicating circuit means. Either the magnet or the switch is mounted on an axle and the other is mounted on the body adjacent to the axle-mounted unit. Excessive loading of the vehicle will compress its springs sufficiently to bring the magnet and the switch close enough to each other to allow the field of the electromagnet to actuate the switch. The switch is connected to the coil of a relay in such a way that operation or the switch will actuate the relay, which is connected to the electromagnet, to change the condition of the electromagnet, causing it to reverse the condition of the switch, and thereby the relay, to produce an oscillating indication of an overloaded condition.



3,531,767
DUAL-COMPARTMENT MASTER CYLINDER LIQUID-LEVEL INDICATOR

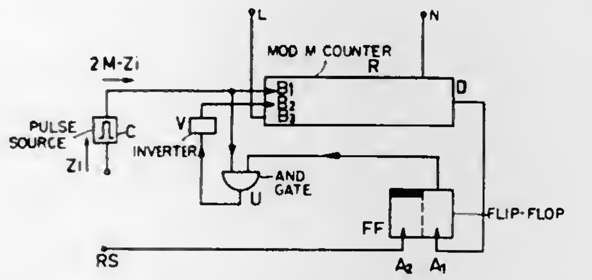
Hans-Christof Klein, Hattersheim am Main, and Gert Schrader, Walldorf, Hessen, Germany, assignors to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed Oct. 26, 1967, Ser. No. 678,302
Claims priority, application Germany, Nov. 5, 1966, T 32,453
Int. Cl. B60q *1/00*
U.S. Cl. 340—52 **10 Claims**



A dual-compartment receptacle, especially a master-cylinder reservoir for the tandem master-cylinder assembly of a vehicular-brake system with dual fluid-transmission network, having a level-indicating assembly with a pair of floats in the respective compartments having arms swingably mounted on a common shaft and provided with cam extensions acting upon a common force-transmission plate attached to a rod extending from the receptacle and cooperating with contacts to provide an indication to the operator of the vehicle of liquid-level drop in either compartment.

3,531,768
CIRCUIT ARRANGEMENT FOR CALCULATING CONTROL CHARACTERS FOR SAFEGUARDING SERIES OF INFORMATION CHARACTERS

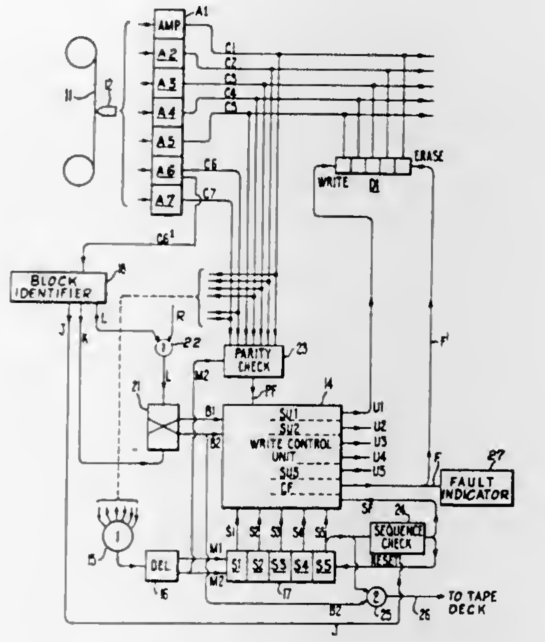
Jürgen Schröder, Hamburg-Niendorf, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,794
Claims priority, application Germany, Jan. 27, 1965, P 35,953
Int. Cl. G08c *25/00;* **G06f** *11/10;* **H04l** *1/10*
U.S. Cl. 340—146.1 **3 Claims**



A check circuit having a pulse source for generating a series of pulses in accordance with information characters, a modulo M counter responsive to said pulses, and a flip-flop responsive to the counter carry for causing said modulo M counter to double in response to said pulses.

3,531,769
APPARATUS FOR READING MAGNETIC TAPE

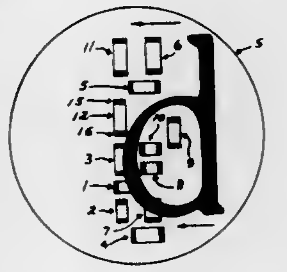
John Young Condie Montgomery, Arthur Owen Stanesby, and Donald Ferguson Walker, Edinburgh, Scotland, assignors to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland
Filed July 31, 1968, Ser. No. 749,081
Claims priority, application Great Britain, Aug. 8, 1967, 36,260/67
Int. Cl. G06k *5/00*
U.S. Cl. 340—146.1 **2 Claims**



Apparatus for reading magnetic tape whilst the tape is in motion, where the tape is of the kind in which each item of data is recorded with a parity-check digit as a digital word across the tape and the words are grouped in pairs of successive first and second blocks of the same number of supposedly identical words. The apparatus includes a parity-check stage so cooperating with a write-control unit as to pass to a store each word as read from each first block if the word is parity-correct, but replace any parity-faulted word of a first block by the corresponding word of the associated second block if parity correct. The apparatus also including a sequence-check stage so cooperating with the write-control unit to sequence-fault any first block if without the correct number of words and replace it by the associated second block if parity and sequence correct.

3,531,770
SCANNING AND TRANSLATING APPARATUS

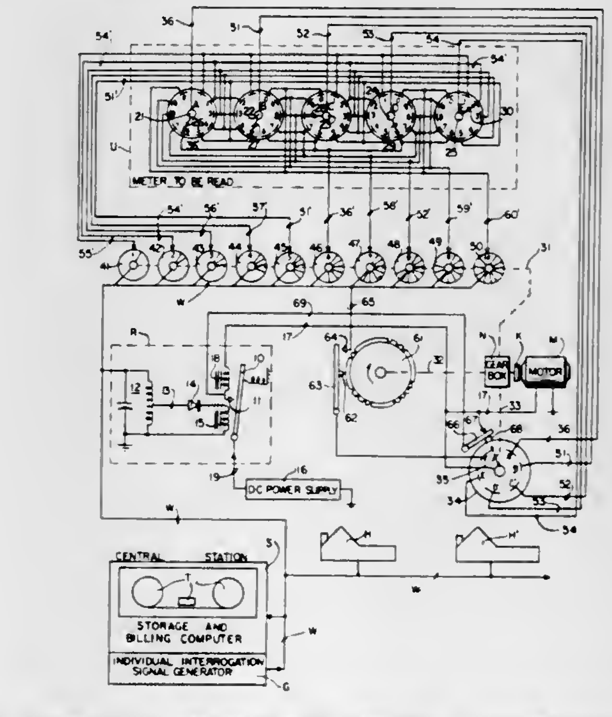
Hans A. Mauch and Glendon C. Smith, Dayton, Ohio, assignors to Mauch Laboratories, Inc., Moraine, Ohio, a corporation of Ohio
Filed Nov. 12, 1965, Ser. No. 507,308
Int. Cl. G06k *9/12*
U.S. Cl. 340—146.3 **11 Claims**



Apparatus for scanning and translating discrete objects into identifying signals including a screen and means for projecting the image of an object scanned onto the screen while providing for relative movement therebetween and characterized by means in connection with the screen rendered operative at spaced intervals under the influence of successive portions of the image to measure electrically the instantaneous light values of each of said portions, the intervals being controlled by the configuration and the relative movement of the object scanned. There are further means for receiving and storing the results of each successive measurement functioning to summarize the interim results and in conclusion to release an identifying signal predicated thereon when the scanning of an object is complete.

3,531,771
AUTOMATIC REMOTE-METER READING SYSTEM FOR DIAL TYPE METERS

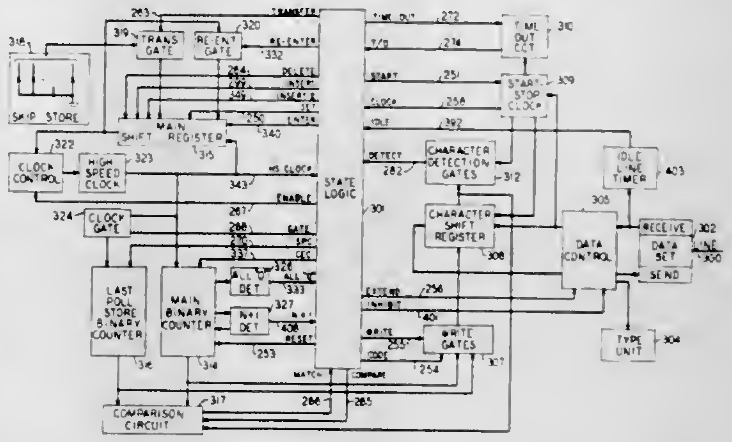
William W. Jaxheimer, 139 Wall St., Kingston, N.Y. 12401, and Joseph R. Mizerek, Woodstock, N.Y.; said Mizerek assignor to said Jaxheimer
Filed Mar. 4, 1968, Ser. No. 710,378
Int. Cl. H04g *9/10*
U.S. Cl. 340—151 **8 Claims**


METER TO BE READ
DC POWER SUPPLY
MOTOR
CENTRAL STATION
STORAGE AND BILLING COMPUTER
INDIVIDUAL INTERROGATION SIGNAL GENERATOR

A system for sequentially reading a large number of remotely located meters from a central station or business office which is connected by a single wire to all of said meters and has means for storing the incoming meter readings, for instance in the illustrated embodiment as part of a utilities billing function. Each remote location has an activating circuit sensitive to a unique interrogating signal generated at the central station, upon receipt of which signal the selected meter reading system is set into operation. The reading unit in each remote location includes a series of digital contactors, each attached for rotation with a corresponding dial of the remote meter being read, and each numerical position of the digital contactors is connected to a corresponding pulsating switch of the same numerical value. A motor in the remote meter-reader selects the digital contactors one at a time and then sweeps through the pulsating switch positions thereby to deliver to the wire from the central station a series of pulses representing the then position of the selected digital contactor. Thereafter, the motor moves on to select the next digital contactor, and repeats the sweeping of the pulsating switches until all digital contactors have been read. Finally the remote unit reads out a code confirming its identity to the central station, and then turns itself off.

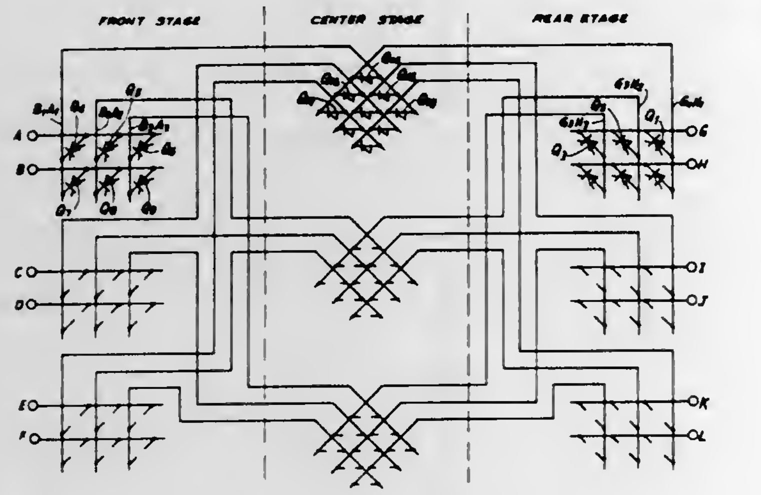
3,531,772
SELECTIVE CALLING LINE CONTROLLER FOR DETECTING AND GENERATING CODE CHARACTERS

Stephen A. Dalyai, Old Bridge, Alfonso V. Gallina, Freehold, Clarence J. Votaw, Elberon, and Peter S. Warwick, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Feb. 16, 1968, Ser. No. 706,056
Int. Cl. H04q *9/00;* **H04i** *15/00*
U.S. Cl. 340—163 **12 Claims**



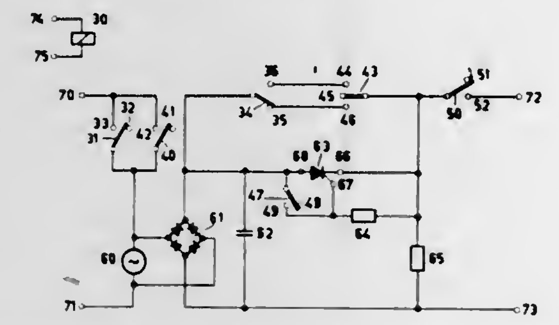
A controller in a selective calling line selectively starts remote state transmitters and unblinds remote station receivers. The controller provides a polling cycle for calling station transmitters which answer back by indicating the condition of the transmitter (i.e., whether a message is available) and by starting the transmitter when it contains a message. The controller stores the address signals in the heading of the message by marking individual stages of a shift register, which, in turn, controls a binary counter to retransmit the corresponding address codes back over the multistation line sequentially and repeatedly until all addressee stations respond that they are ready to receive the message. If one or more addressee stations fail to respond, the heading with the code addresses of the stations failing to respond are sent to an intercept receiver. The addressee receivers are then unblinded to record the message text. The controller also monitors the various answerback signals and the message heading and text. In the event that the polled station fails to respond an improper answerback or message heading is received or a message text interruption occurs, a test poll cycle is initiated wherein the stations are polled to determine conditions thereat without starting the message transmitter. Proper responses will now restore the polling cycle.

3,531,773
THREE STAGE SWITCHING MATRIX
Ronald Beebe, St. Petersburg, Fla., assignor to Electronic Communications, Inc.
Filed Feb. 26, 1968, Ser. No. 708,216
Int. Cl. H04q *9/00, 3/00*
U.S. Cl. 340—166 **7 Claims**



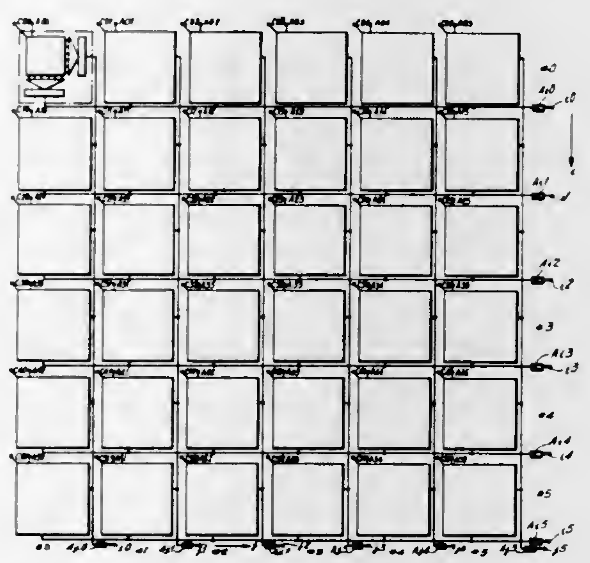
A three stage non-blocking switching array includes two terminating matrices each arranged in groups and having silicon controlled rectifiers at the individual crossover points. A center stage matrix group, including two terminal negative resistance elements at the crossover points, serves to couple the terminating matrices. The switching array is double end-fired with a path being chosen by the breakover potential of the center stage elements. By marking one of the terminating stages with a ramp voltage the chance of cross-firing, that is, the selection of a number of paths simultaneously is reduced considerably.

3,531,774
METHOD AND APPARATUS FOR SELECTIVELY EVALUATING PULSE IMAGES IN SUPERHETERODYNE RIPPLE-CONTROL RECEIVERS
Eduard Baumann, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a corporation of Switzerland
Filed Nov. 4, 1966, Ser. No. 592,120
Claims priority, application Switzerland, Nov. 30, 1965, 16,537/65
Int. Cl. H04q *9/00;* **H03k** *5/20*
U.S. Cl. 340—164 **12 Claims**



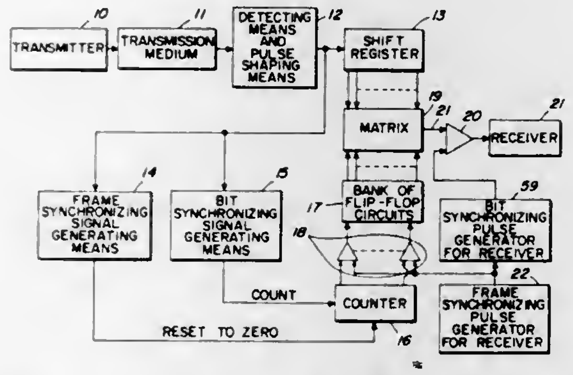
The apparatus is designed to selectively evaluate pulse images in receivers for remote control installations in order to carry out a control command. The apparatus includes a semiconductor element having two conditions. A switch moves the semiconductor element from its initial condition to a second condition while a control element which produces a pulse image corresponding to a control command is used to selectively influence the condition of the semiconductor element. The evaluation circuit either enables a control command to be transmitted or not.

3,531,775
MEMORY APPARATUS FOR RAPID WRITE-IN AND READ-OUT OF INFORMATION
Yasuo Ishii, Tokyo, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Sept. 27, 1967, Ser. No. 670,933
Claims priority, application Japan, Sept. 30, 1966, 41/64,478, 41/64,479
Int. Cl. G06f *7/00*
U.S. Cl. 340—172.5 **4 Claims**



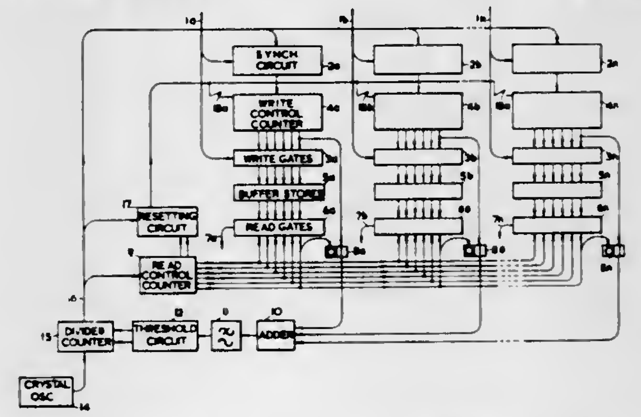
Each of a plurality of storage units comprises a plurality of memory elements. Each of the memory elements comprises at least a bit of information. The storage units as a whole have a plurality of addresses. A write-in and read-out control circuit includes an arithmetic circuit for selecting one of the addresses of the storage units in a manner whereby a plurality of storage units having the selected address are selected.

3,531,776
MEANS FOR SYNCHRONIZING EQUAL BUT UNSYNCHRONIZED FRAME RATES OF RECEIVED SIGNAL AND RECEIVER
Mark A. Sloate, Costa Mesa, Calif., assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Oct. 9, 1967, Ser. No. 673,903
Int. Cl. H04j *3/06*
U.S. Cl. 340—172.5 **2 Claims**


TRANSMITTER
TRANSMISSION MEDIUM
DETECTING MEANS AND PULSE SHAPING MEANS
SHIFT REGISTER
MATRIX
RECEIVER
FRAME SYNCHRONIZING SIGNAL GENERATING MEANS
BIT SYNCHRONIZING SIGNAL GENERATING MEANS
BANK OF FLIP-FLOP CIRCUITS
BIT SYNCHRONIZING PULSE GENERATOR FOR RECEIVER
COUNT
COUNTER
FRAME SYNCHRONIZING PULSE GENERATOR FOR RECEIVER
RESET TO ZERO

Means for synchronizing the frame rates of a received signal and the receiver when both frame and bit rates are equal, comprising shift register means to which are supplied the received data bits. A counter counts the number of bits received in each frame. A matrix, including storage means, responds to each receiver frame synchronizing pulse to momentarily become connected to the counter output to store therein the count existing at that moment and to establish a path through said matrix from the corresponding shift register stage to the output of the matrix. Logic means at the matrix output responds to each receiver bit synchronizing pulse to supply the bit stored in said stage to a utilization means. Since the bit rates of the received signal and receiver are equal, successive bits of any given frame will be advanced to the addressed shift register stage alternately with the receiver bit synchronizing pulses.

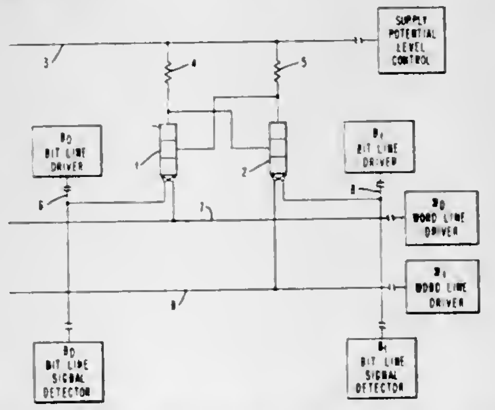
3,531,777
SYNCHRONISING ARRANGEMENTS IN DIGITAL COMMUNICATIONS SYSTEMS
Norman West, Christchurch, Hampshire, England, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Oct. 3, 1968, Ser. No. 764,818
Claims priority, application Great Britain, Nov. 21, 1967, 52,999/67; Feb. 28, 1968, 9,613/68
Int. Cl. H04j *3/06, 7/04*
U.S. Cl. 340—172.5 **8 Claims**



To avoid corruption of digital messages in a complex communications system, it is desirable to write incoming messages into separate buffer stores at each exchange. Inputs to the buffer stores are synchronised with the various incoming messages, while subsequent message transfers and transmissions are synchronised with a local oscillator at each exchange.

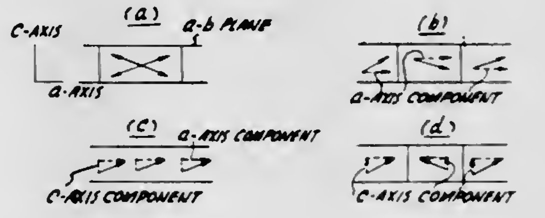
Apparatus is described for controlling the local oscillators in a non-linear and bounded manner to ensure a satisfactory relationship between writing and reading operations at each buffer store in the system, and advantages of the arrangement are explained.

3,531,778
DATA STORAGE DEVICES USING CROSS-COUPLED PLURAL EMITTER TRANSISTORS
Peter A. E. Gardner, Winchester, and Michael H. Hallett, Chandlers Ford, England, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 3, 1968, Ser. No. 695,377
Int. Cl. G11c *11/40;* **H03k** *3/286, 4/82*
U.S. Cl. 340—173 **7 Claims**



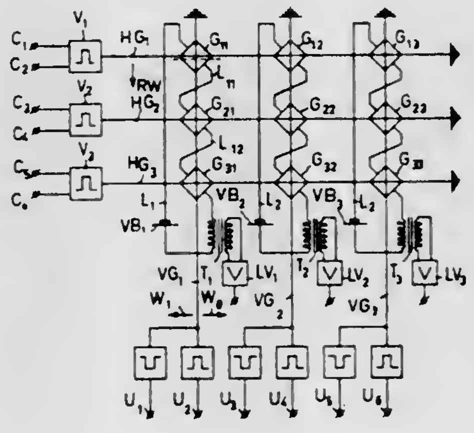
This specification describes a transistor storage cell which can be used to perform storage, associative storage and/or logical functions. The cell contains two double emitter semiconductor elements with their base and collector electrodes cross-coupled to form a bistable circuit. Each element has one emitter electrode connected to a bit line and another emitter electrode connected to a word line. There is a separate level control for each of the bit and word lines connected to the cell and for the line supplying excitation for powering the storage cell. These level controls are for changing the information stored in the cell and for determining what information is stored in the cell.

3,531,779
METHOD FOR POLING BISMUTH TITANATE
Maxwell M. Hopkins, Kendall Park, and Arthur Miller, Princeton Junction, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Nov. 1, 1968, Ser. No. 772,761
Int. Cl. G11c *11/22*
U.S. Cl. 340—173.2 **9 Claims**



A method for orienting ferroelectric domains about the *a*-axis of a bismuth titanate crystal comprises heating the crystal to a temperature somewhat below the Curie temperature and subjecting the heated crystal to a pulsed electric field by means of offset electrodes on opposite major faces of the crystal.

3,531,780
MAGNETORESISTIVE READOUT OF MAGNETIC THIN FILM MEMORIES
Pieter Huijer, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 13, 1961, Ser. No. 151,618
Claims priority, application Netherlands, Dec. 1, 1960, 258,618
Int. Cl. G11c *5/02, 11/14*
U.S. Cl. 340—174 **12 Claims**

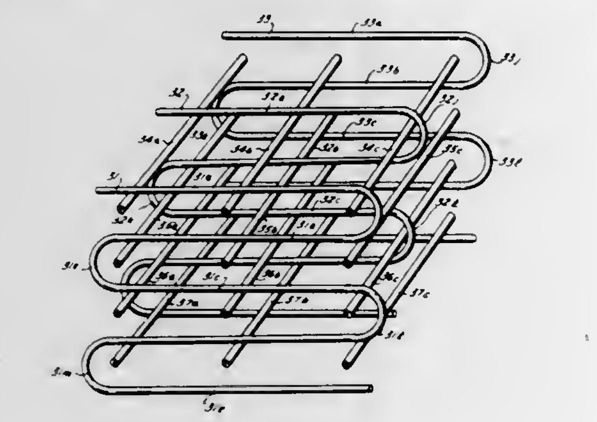


A storage array having a plurality of magnetic elements with magnetoresistive properties is provided with a conductor electrically passing a current flow thru each of said elements. Magnetic fields are applied to a selected element for varying the effects of the magnetoresistance relative to the current flow thru the element. The resultant variation across the selected element is an indication of the stored condition of the element selected.

3,531,781

THIN FILM MATRIX MEMORY SYSTEM

Toshihiro Hoshi and Akio Izumi, Kawasaki-shi, and Sukeyoshi Sakai, Tokyo, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Jan. 21, 1965, Ser. No. 427,188
Claims priority, application Japan, Jan. 22, 1964, 39/2,812
Int. Cl. G11c *11/14*
U.S. Cl. 340—174 **16 Claims**

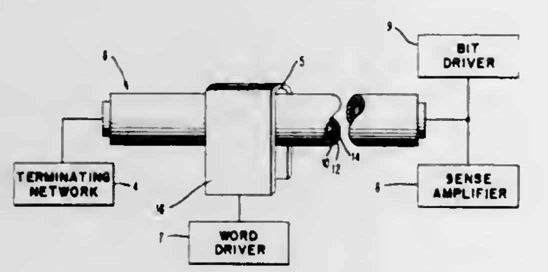


A matrix memory system includes a plurality of parallel spaced electrical conductors each formed in a uniplanar geometric pattern. A plurality of parallel spaced independent linear electrical conductors are positioned in operative proximity with the electrical conductors in a plane perpendicular to that of the electrical conductors, each of the plurality of linear conductors having a ferromagnetic thin film thereon. The linear conductors are positioned in a matrix form in rows and columns and the electrical conductors are positioned in a manner whereby a magnetic field produced by a current in an electrical conductor and a magnetic field produced by a current in the linear conductors are substantiallly perpendicular to each other. Each of the electrical conductors is rectilinearly positioned in the spaces between the linear conductors of a group in a plane and provides a magnetic flux to the linear conductors on both sides thereof.

3,531,782

THIN FILM KEEPERED MEMORY ELEMENT

..xander Turczyn, Philadelphia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,866
Int. Cl. G11c *11/14*
U.S. Cl. 340—174 **6 Claims**

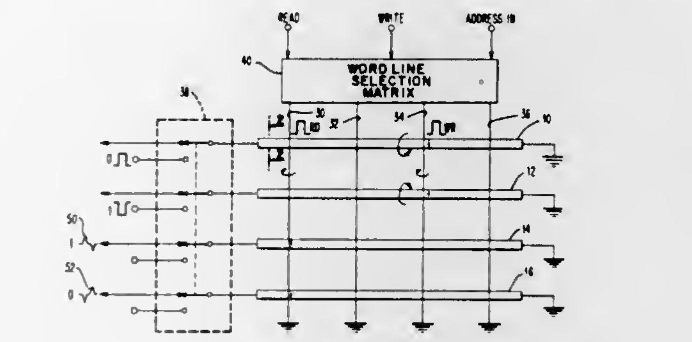


A magnetic keeper is positioned around a small diameter wire. A magnetic coating which has the property of uniaxial anisotropy is plated over the keeper. A drive line juxtaposed and positioned orthogonally to the wire comprises a location whereat binary information is stored. The keeper plated directly on the wire provides a high permeability path for free magnetic poles formed during the read and write processes.

3,531,783

MULTILAYER MAGNETIC WIRE MEMORY

William D. Doyle, Dresher, and Norman Goldberg, Ambler, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1965, Ser. No. 478,340
Int. Cl. B23p *3/20;* **C23b** *5/50;* **G11c** *11/14*
U.S. Cl. 340—174 **11 Claims**

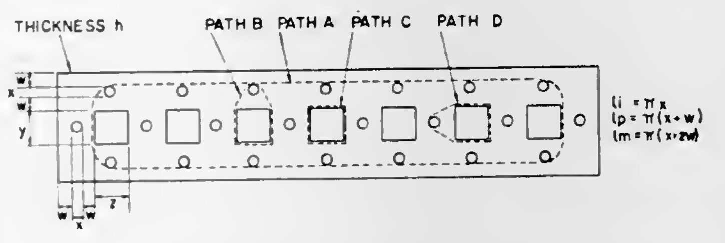


A multilayer film memory is disclosed which utilizes two films wherein one film has a large anisotropy field, H_k, whereas the second has a small anisotropy field. The two magnetic films are separated by a film of non-magnetic material. During the interrogation mode, a HARD axis field applied to the films causes the magnetization of the small H_k film to rotate through a relatively large angle removed from the EASY axis whereas the large H_k film rotates through only a small angle. In view of the exchange coupling between the films in view of the intermediate non-magnetic layer, the large H_k film brings the small H_k film back to its original direction thereby enabling the memory to operate at low currents and make it less susceptible to creep (i.e., domain wall movement).

3,531,784

MAGNETIC LADDIC CORE DEVICE

Michael James Underhill, Ifield, Crawley, England, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 23, 1965, Ser. No. 489,525
Claims priority, application Great Britain, Oct. 14, 1964, 41,890/64, 41,891/64, 41,892/64, 41,893/64
Int. Cl. G11c *11/06, 19/00*
U.S. Cl. 340—174 **8 Claims**



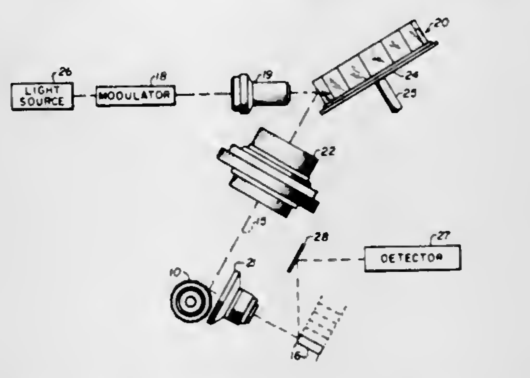
A laddic core element comprised of ferromagnetic material and having a plurality of main apertures defined by rails and rungs with an auxiliary aperture on each side of each main aperture. The laddic element can be wired for carry generation by threading coils through a rail aperture, a rung aperture and a main aperture, and sensing an output on a non-threaded aperture. The laddic can be used as a bistable switching device, or as a pulse converter.

3,531,785

HIGH-DENSITY STORAGE OPTICAL REGISTER

John W. Corcoran, Redwood City, Calif., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,860
Int. Cl. G11c *11/42*
U.S. Cl. 340—174 **2 Claims**

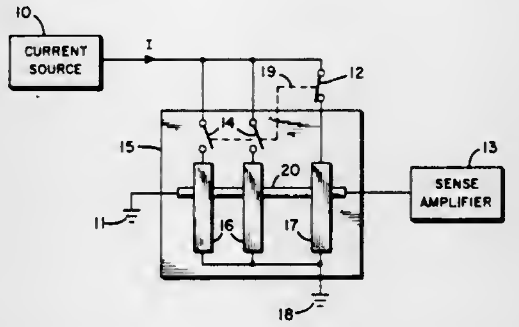
A high-density optical register for storing data in binary form wherein Kerr-magneto-optical material (magnetic film) having the property of changing its light reflecting characteristic with a change in its domain orientation is operatively associated with a coil driven by a photodiode whereby the domain orientation of the magnetic film can be controlled by a light beam, and the orientation of the beam can be determined by the reflection characteristics of the magnetic film in response to a light beam.



3,531,786

MEMORY DRIVE SYSTEM

Carlos F. Chong, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 21, 1967, Ser. No. 662,136
Int. Cl. G11c *11/14, 11/50*
U.S. Cl. 340—174 **8 Claims**



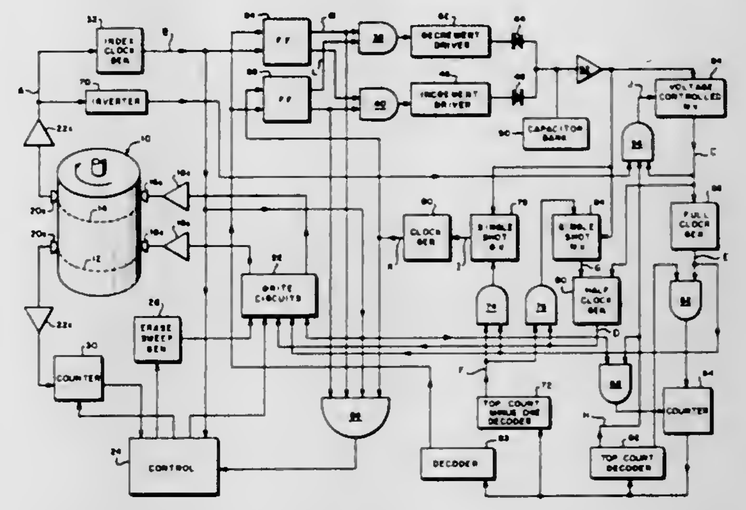
This invention relates to a memory drive system which provides improved noise cancellation. This is accomplished by utilizing the dummy word line in conjunction with the regular word line. Quiescently, the dummy word line is always in an energized condition. When a certain word is to be read out of the memory, the regular word line is energized and the dummy word line is simultaneously turned off. Therefore, the noise induced in the memory element adjacent the regular word line is of one polarity, whereas the noise induced in the memory element near the dummy line is of an opposite polarity and accordingly they cancel one another.

In another mode of operation, the memory drive system of this invention can provide a double output signal for a "1" (or a "0") and no signal for a "0" (or a "1"). This is accomplished by storing a "0" (or a "1") under the dummy word line. Therefore, if the memory element is one that gives a positive output for a "1" and a negative output for a "0," then the output detected by an associated sense amplifier will be doubled for a "1" (or a "0") and nothing for a "0" (or a "1").

3,531,787

AUTOMATIC MAGNETIC DRUM CLOCK TRACK RECORDER

Horace T. Fuller, Los Angeles, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 20, 1967, Ser. No. 648,190
Int. Cl. G11b *5/00, 5/76, 23/36*
U.S. Cl. 340—174.1 **14 Claims**

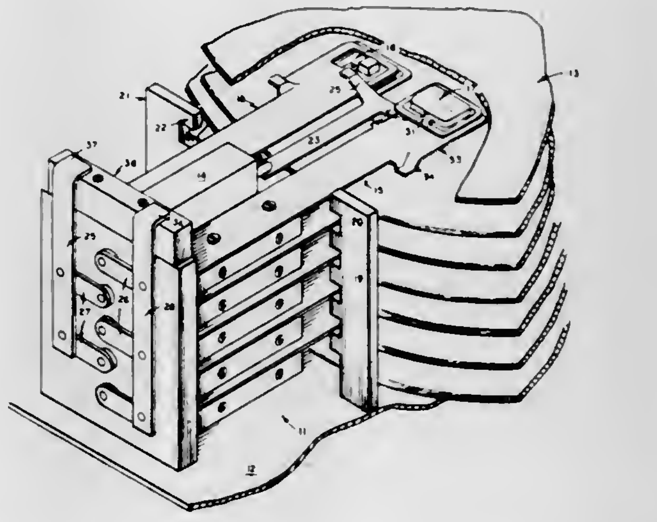


A recording apparatus for recording selected numbers of precisely spaced full and half clock pulses on a clock track of a revolving magnetic drum type storage device. The apparatus includes circuitry for writing an index pulse on a spare track of the drum, a voltage controlled multivibrator for producing a square wave of adjustable frequency from which is derived a series of full and half clock pulses and circuitry responsive to improper time spacing of the clock pulses relative to the index pulse for making changes in a control voltage applied to change the frequnecy of the multivibrator. The frequency changes are specifically related to both the direction and the degree of the improper time displacement of the clock pulses from the index pulse.

3,531,788

APPARATUS FOR LOADING AND UNLOADING A SLIDER ASSEMBLY

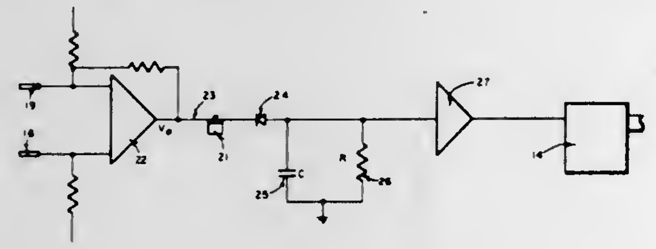
Stanley F. Brown and Steven J. MacArthur, San Jose, Calif., assignors to Information Storage Systems, Inc., San Jose, Calif., a corporation of California
Filed Sept. 30, 1968, Ser. No. 763,595
Int. Cl. G11b *5/54, 5/60*
U.S. Cl. 340—174.1 **5 Claims**



Loading and unloading apparatus for an array of slider assemblies including permanently-torqued rods for loading the assemblies in pairs and an inclined plane associated with each slider assembly for unloading the assembly against the force exerted by the rod.

3,531,789
TEMPERATURE COMPENSATION FOR DATA STORAGE DEVICE

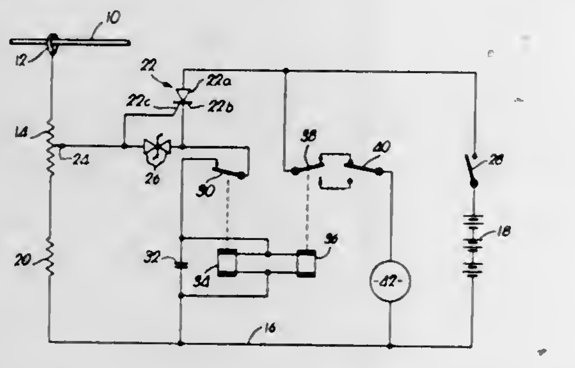
Martin O. Halfhill and Charles R. Wilford, San Jose, Calif., assignors to Information Storage Systems, Inc., San Jose, Calif., a corporation of California
Filed Sept. 30, 1968, Ser. No. 763,596
Int. Cl. G11b *5/56, 21/02*
U.S. Cl. 340—174.1 **6 Claims**



In magnetic disk recording devices, apparatus for reducing radial tolerances attributable to head-to-disk temperature variations, including a detector for producing an output proportional to the head-to-disk temperature differential, and circuitry for converting the output to an offset signal with a predetermined decay characteristic for correction of the head position relative to the disk.

3,531,790
ENERGIZED LINE INDICATOR

Jerry A. Staley, Centralia, Mo., assignor to A. B. Chance Company, Centralia, Mo., a corporation of Missouri
Filed Dec. 16, 1966, Ser. No. 602,393
Int. Cl. G08b *21/00*
U.S. Cl. 340—248 **10 Claims**

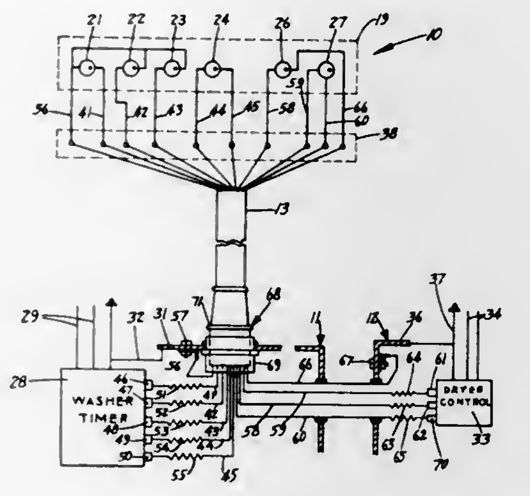


A silicon controlled rectifier senses the electrical condition of a high voltage power line, i.e., whether the line is dead or live, and initiates an audible alarm when the line changes from live to dead status or vice versa. A pickup element is connected to the gate of the SCR and is attached to the line at the site of use. A relay configuration repeatedly momentarily breaks the cathode-anode circuit of the SCR to permit the latter to assume its non-conductive state when the line changes from live to dead status.

3,531,791
REMOTE INDICATING DEVICE

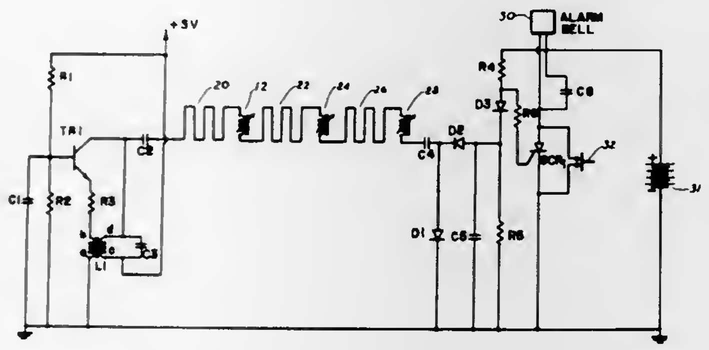
Richard C. Wells, 8457 Sunset Road, Minneapolis, Minn. 55432
Filed June 10, 1968, Ser. No. 735,865
Int. Cl. G08b *21/00*
U.S. Cl. 340—255 **9 Claims**

A remotely located indicator connected to the timer of a washer and electric control of a dryer provide a visual light indication of the cycle of operation of the washer and the ON or OFF conditions of the washer and dryer. Current limiting resistors located in the power lines to all the lamps of the indicator provide the indicator with low safe power. The lamps of the indicator are separately grounded to the washer and dryer so that the washer lamps will only operate when the washer is correctly grounded and the dryer lamps will only operate when the dryer is correctly grounded.



3,531,792
ALARM SYSTEM USING SATURABLE CONTACTS

Samuel M. Bagno, 18 Columbus Ave., Belleville, N.J. 07109, and Peter M. Joyce, Pacifica, Calif.; said Joyce assignor to said Bagno
Filed Dec. 6, 1966, Ser. No. 599,585
Int. Cl. G08b *13/08;* **H01f** *21/00;* **H03k** *17/80*
U.S. Cl. 340—274 **8 Claims**



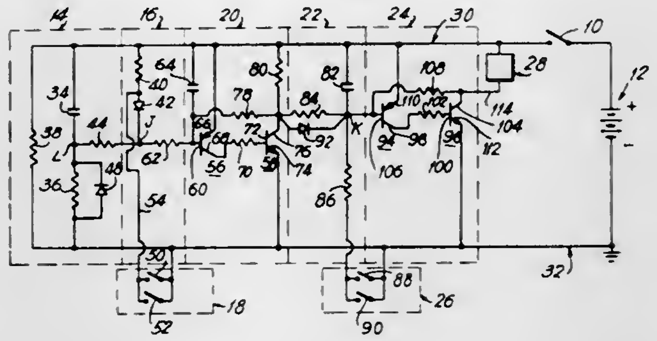
The alarm system has the usual continuity circuit including contacts on doors and/or windows, but the continuity circuit is supplied with alternating current, and the contacts are low impedance coils having high permeability cores each normally saturated by a permanent magnet which is separated from the core when the door or window is opened, thereby making the impedance so high as to act much like an open contact.

3,531,793
BURGLAR ALARM SYSTEM

Richard Shottenfeld, 85—77 Chevy Chase St., Jamaica, N.Y. 11432
Filed June 13, 1967, Ser. No. 645,815
Int. Cl. G08b *13/08*
U.S. Cl. 340—276 **4 Claims**

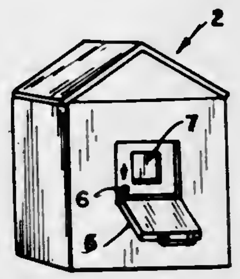
An alarm system suitable for protection of automobiles against burglary has a first intruder switch suitable for

the driver's door, and a second intruder switch for the passenger doors, trunk or hood. When a control switch, which is located in the vehicle interior, energizes the system by connection thereof to the battery, a time delayed signal is applied to a first inhibit circuit controlled by the first intruder switch. The output of the first inhibit circuit is applied to a second time delay circuit whose output is applied to a trigger circuit which is controlled by the second intruder switch, with the output of the trigger circuit energizing a suitable alarm.



3,531,794
FALSE FIRE ALARM CONTROL

John J. Goerner, 1052 Mulberry St., Reading, Pa. 19604
Filed Apr. 26, 1968, Ser. No. 724,483
Int. Cl. G08b *25/00*
U.S. Cl. 340—297 **5 Claims**



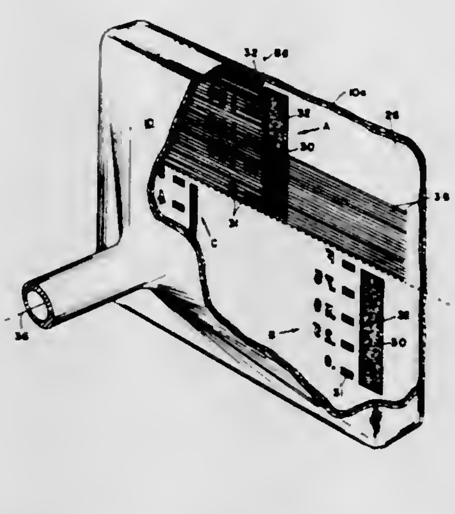
The invention relates to a control system for exposing the sender of a false fire alarm. It comprises a fire alarm box having a door, which, when opened, actuates a local alarm means to indicate the presence of the sender, and which opened door exposes to view a shutter which is normally held closed. A timer allows opening of the shutter only after lapse of a predetermined or preset time period to delay access to the fire alarm switch. The local alarm may be audible and a light to illuminate a sender and perhaps a camera to take his picture.

If the person is sincere in sending in the alarm, he will still be at the box to send the alarm to bring the apparatus to the scene. However, if he intends to send in a false alarm, he must wait for the time delay (which can be set to any amount of seconds) depending upon whether the alarm box is located at a heavy populated district or a sparsely populated district. With this time delay he will be exposed to the noisemaker and the well lighted area around the alarm box.

3,531,795
BAR-TYPE DISPLAY

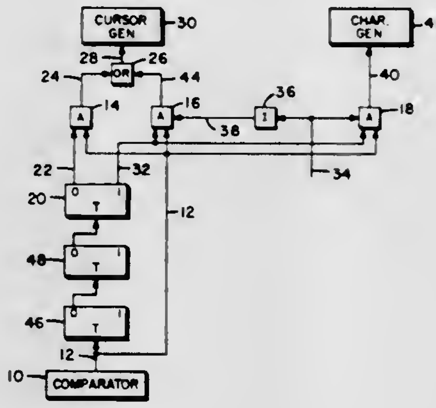
John H. Gassler, Nashua, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,182
Int. Cl. H01j *31/08*
U.S. Cl. 340—324 **14 Claims**

An opaque mask is applied to a cathode ray tube screen. Portions of the mask are removed to form shaped windows defining a fixed set of bar indicators with number scales and a phosphor coating is applied to the exposed screen portions. A sweep system associated with the tube develops deflection fields to move its electron beam through a raster-like scan. An associated intensity control system turns the beam off at appropriate times so that it only scans those windows corresponding to selected indicators from the set. Also, the latter system responds to signals representing the parameters chosen for indication so that their present values are displayed as graphs by the selected indicators.



3,531,796
BLINKING CURSOR FOR CRT DISPLAY

Charles A. Kiesling, Minnneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,049
Int. Cl. G08b *23/00;* **H01j** *29/52*
U.S. Cl. 340—324 **4 Claims**

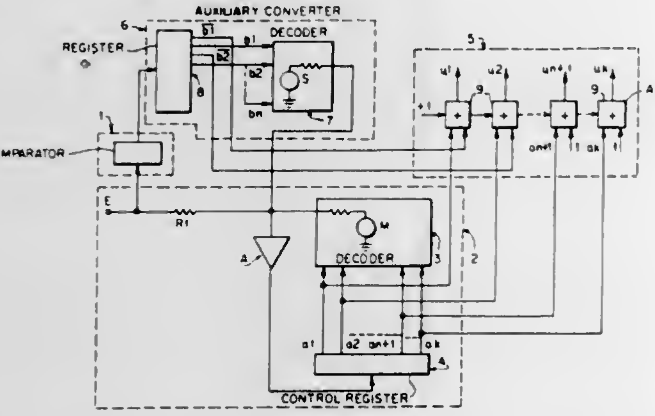


Circuitry for facilitating the visual location of a point-of-entry cursor on a CRT screen when it is positioned over a character. The invention is accomplished by alternately painting the cursor symbol and the character over which it is positioned.

3,531,797
APPARATUS FOR IMPROVING THE DIFFERENTIAL LINEARITY OF ANALOG-TO-DIGITAL CONVERTERS

Umberto Pellegrini, Milan, Italy, assignor to LABEN Laboratori Elettronici e Nucleari S.r.l., Milan, Italy
Filed Feb. 23, 1966, Ser. No. 538,130
Claims priority, application Italy, Feb. 23, 1965, 3,887/65
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **4 Claims**

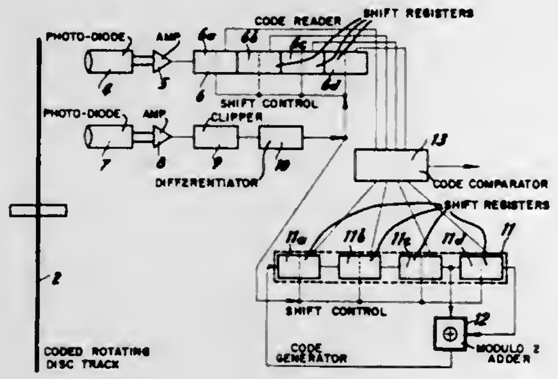
Described is an analog-to-digital converter provided with an additional circuitry for improving its differential linearity by classification of pulses depending on amplitude through introduction of pairs of thresholds relating to a plurality of the channels of the converter for the classification in each single channel. The converter comprises: a single decoding circuit for generating, in a first operation of the conversion, an auxiliary analog step and for generating, in a second operation of the conversion, an analog comparison sample for the amplitude sum of the amplitude of said auxiliary step plus the amplitude of the input pulse to be classified; a first and a second control circuit associated to said single decoding circuit for actuating it in said two operations, said control circuits generating the digital values corresponding to said auxiliary step and to said amplitude sum; a comparator associated to an analog memory circuit for the storage of said amplitude sum and connected to said first control circuit and to said single decoding circuit for effecting, in said second conversion operation, the comparison of said amplitude sum stored in said analog memory circuit with the output signal of said single decoding circuit; and an output register receiving said digital values generated by said control circuits for effecting their differentation, the result of the differentiation consisting of the digital value corresponding to the input amplitude.



3,531,798
NUMERICAL CODING

Gabriel Henri Léon Dureau, Le Perreux, France, assignor to Société Anonyme: Société Alsacienne de Constructions Atomiques de Telecommunications et d'Electronique "Alcatel," Paris, France, a corporation of France

Filed June 2, 1966, Ser. No. 554,839
Claims priority, application France, June 4, 1965, 19,687
Int. Cl. G08c *9/00*
U.S. Cl. 340—347 1 Claim

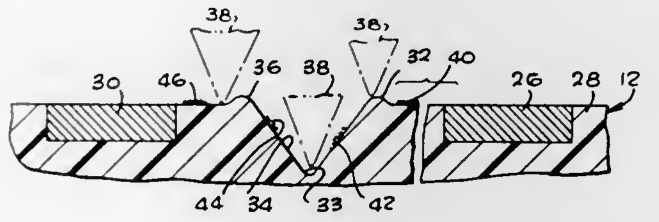


A position-coded track is read precisely at the center of code digits by employing digital transitions on an auxiliary track for precisely controlling timing reading of the main track and shifting of a shift register. The position code of the first shift register is constantly compared with self-generated codes in a second shift register which is keyed by transitions on the auxiliary track.

3,531,799
PARTICLE REMOVING IMPROVEMENT FOR ENCODERS

Kenneth Frederick Rendler, La Crescenta, Calif., assignor to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware

Filed Dec. 19, 1967, Ser. No. 691,766
Int. Cl. G08c *9/08;* **H01h** *1/60*
U.S. Cl. 340—347 3 Claims

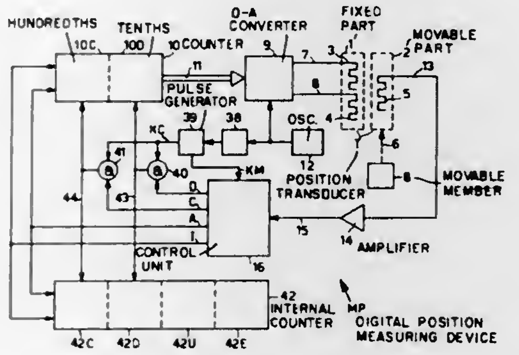


An analog-to-digital encoder having uneven surface regions in its tracks to remove undesired material which may accumulate at the point of contact between a sensor and a track.

3,531,800
DIGITAL POSITION MEASURING DEVICE

Riccardo Brescia and Elia Baratto, Ivrea, Italy, assignors to Ing. C. Olivetti & C. S.p.A., Ivrea, Italy, an Italian corporation

Continuation of application Ser. No. 493,336, Oct. 6, 1965. This application Sept. 22, 1969, Ser. No. 860,116
Claims priority, application Italy, Oct. 8, 1964, 21,769/64
Int. Cl. H03k *13/17;* **H02p** *5/00*
U.S. Cl. 340—347 4 Claims



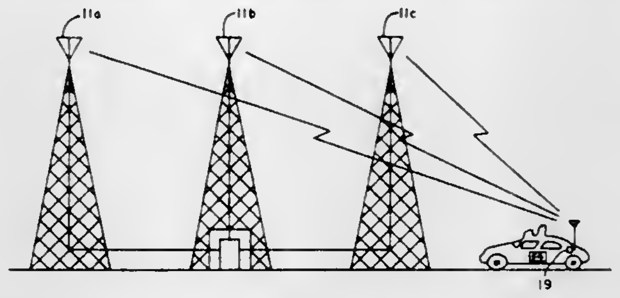
A device for measuring in digital form the position of a movable element with respect to a fixed element, such as in a machine tool. A single transducer provides a voltage varying with the magnitude and sign of a displacement, which voltage is analyzed and then used to control a counter. The counter provides a digital output which is converted into analog form and supplied to the fixed element of the transducer to reduce the voltage output of the transducer to a null.

3,531,801
SIGNAL PROCESSING APPARATUS

Herbert Huebscher, New Hyde Park, N.Y., assignor, by mesne assignments, to Hazeltine Corporation

Filed May 29, 1968, Ser. No. 732,944
Int. Cl. G01s *9/06*
U.S. Cl. 343—15 10 Claims

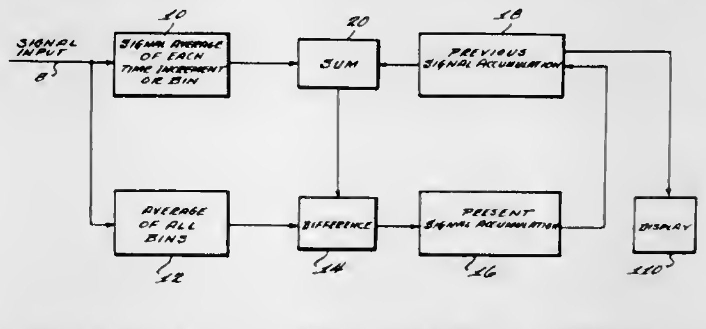
Signal processing apparatus is disclosed which includes two or more non-scanning omnidirectional antennas that receive reply signals from interrogated transponders in a position monitoring system. Circuitry detects and distinguishes the reply signals received from each transponder. A data processor derives equations representative of hypothetical functions corresponding to possible positions of a system transponder and solves the equations to determine the points of intersection of the functions, thereby ascertaining the transponder position. Other embodiments are also covered.



3,531,802
CUMULATIVE ENHANCEMENT SIGNAL PROCESSOR

Buck C. Brown and Hugh C. Williams, Rockville, Md., assignors to Presearch Incorporated, Silver Spring, Md., a corporation of Maryland

Filed Sept. 16, 1968, Ser. No. 759,991
Int. Cl. G01s *7/28;* **H03k** *5/20;* **H04b** *15/00*
U.S. Cl. 343—17.1 12 Claims


SIGNAL INPUT
8
10
SIGNAL AVERAGE OF EACH TIME INCREMENT OR BIN
20
SUM
18
PREVIOUS SIGNAL ACCUMULATION
AVERAGE OF ALL BINS
12
DIFFERENCE
14
PRESENT SIGNAL ACCUMULATION
16
DISPLAY
110

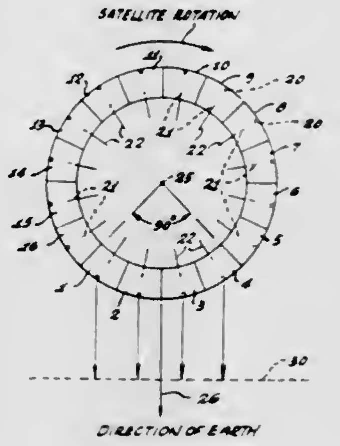
A signal processor for enhancing the identification of repetitive and similar signals which briefly exist during each of a plurality of repetition intervals and wherein a noise component exists for the duration of each repetition interval. A quantitative average value of each input signal to the processor during a complete repetition interval is determined, and the average value of the input signal is also determined within a predetermined number of time increments. The overall input signal average for each repetition interval is then subtracted from each of the time increment averages to result in a residual signal and this procedure is repeated for each repetition interval. Because the total energy in time intervals containing the repetitive signal plus noise is almost always greater than the energy in time intervals containing noise only, the atypical presence of a repetitive signal during each repetition interval is detected by accumulating the residual and exaggerated signals thus obtained.

3,531,803
SWITCHING AND POWER PHASING APPARATUS FOR AUTOMATICALLY FORMING AND DESPINNING AN ANTENNA BEAM FOR A SPINNING BODY

Harold A. Rosen, Santa Monica, Boris T. Subbotin, Van Nuys, and Thomas Hudspeth, Malibu, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 2, 1966, Ser. No. 546,875
Int. Cl. H04b *7/00*
U.S. Cl. 343—100 6 Claims

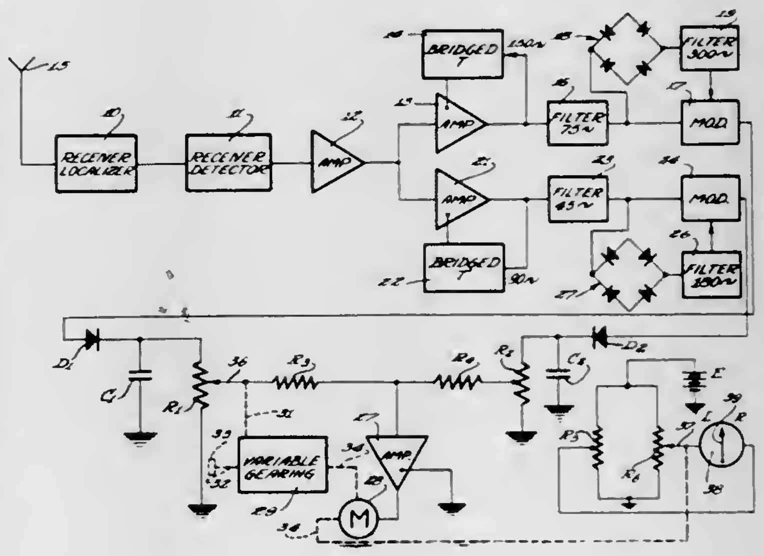
A system operable on a spinning body providing a plurality of individually excitable antenna elements with means for both switching and phasing power to individually operable elements so as to develop optimum gain and directivity. Selected power amplifiers are switched to a selected number of adjacent elements during each predetermined fraction of the spacecraft revolution. As the body rotates, phase shifters adjust the RF phase so that the main beam is pointed in the same direction. After the body has revolved the predetermined fraction, one of the power amplifiers is switched to another element at a time when the RF phase shift is proper for continuous operation.



3,531,804
INSTRUMENT LANDING SYSTEMS

Earl Stuart Perkins, Oak Brook, Ill., assignor to Butler National Corporation, Minneapolis, Minn., a corporation of Delaware

Filed May 23, 1968, Ser. No. 731,456
Int. Cl. G01s *1/16*
U.S. Cl. 343—108 5 Claims



An improved instrument landing system using localizer and glide slope in which responses to spurious frequencies that can give rise to errors are removed. Bridged T network filters are used in negative feedback loops for amplifiers to improve the accuracy of the system and a servo motor in a closed loop with variable gear ratio is used to improve the response of the system. The spurious frequencies are removed by passing the intelligence signal through a full wave rectifier and then through a filter which is tuned to block frequencies at twice the frequencies of the intelligence carrying signal and applying the output of this filter to a modulator into which the intelligence signal is fed to remove the undesired spurious frequencies.

3,531,805
HIGH GAIN ALL CHANNEL TELEVISION ANTENNA

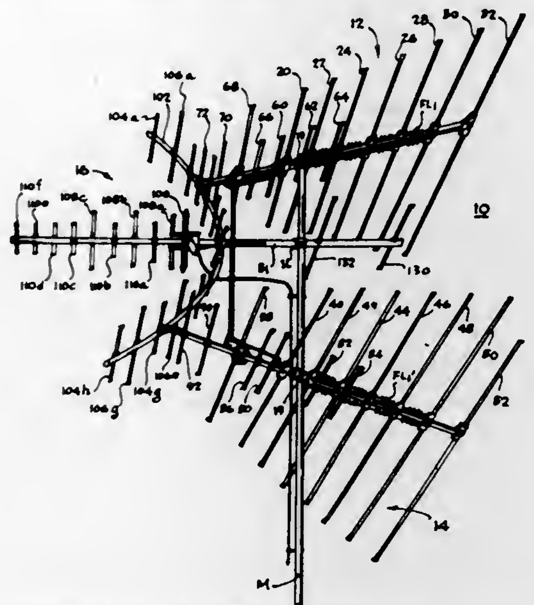
John R. Winegard and Carey W. Shelledy, Burlington, Iowa, assignors to Winegard Company, Burlington, Iowa, a corporation of Iowa

Filed June 28, 1968, Ser. No. 741,064

Int. Cl. H01q *21/00, 9/26, 19/12*

U.S. Cl. 343—727 **9 Claims**

An improved all-channel television antenna characterized by exceptionally high gain and uniform response over the entire operating range with a compactness in overall size heretofore not obtainable. The structure includes a VHF section comprising interconnected dual VHF antenna bays selectively spaced from one another to provide vertical beam phasing for all VHF television channels for optimum reception, and a UHF section having a multi-element reflector system of interspersed half and full wave resonant elements arranged in a paraboloidal shaped configuration above and below a common broad band collector element.



DESIGNS

SEPTEMBER 29, 1970

218,794
SKI BOOT

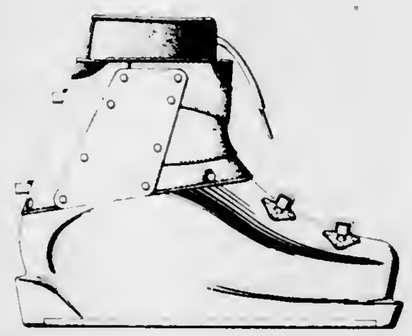
Willy Kaufmann, Kreuzlingen, Switzerland, assignor to Raichle Boot Company, Ltd., Kreuzlingen, Switzerland

Filed Sept. 4, 1968, Ser. No. 13,398

Term of patent 14 years

Int. Cl. D2—*04*

U.S. Cl. D2—276



218,795
ENCLOSED CHILD'S CRIB OR SIMILAR ARTICLE

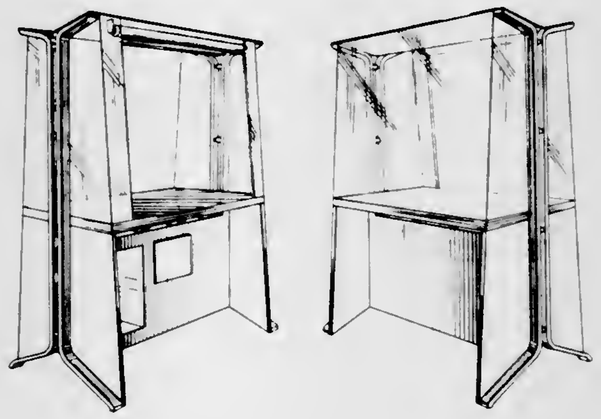
Gloria Caranica, Monroe, Conn., assignor to Universal Education Corporation, New York, N.Y., a corporation of New York

Filed June 16, 1969, Ser. No. 17,719

Term of patent 14 years

Int. Cl. D6—*01*

U.S. Cl. D5—5



218,796
HANDLES FOR SECATEURS

Edward A. Rogers, London, England, assignor to Wilkinson Sword Limited, London, England, a British company

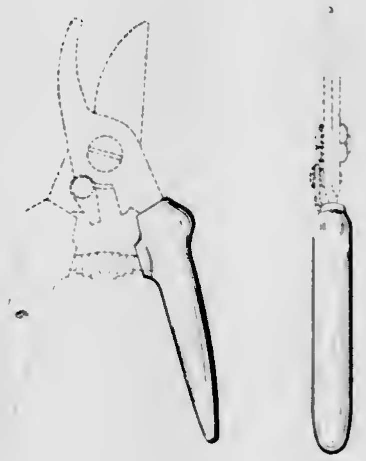
Filed Mar. 17, 1969, Ser. No. 16,273

Claims priority, application Great Britain Sept. 18, 1968

Term of patent 14 years

Int. Cl. D8—*01*

U.S. Cl. D8—5



218,797
WRENCH

Rudolf H. Herrgen, Wermelskirchen, Germany, assignor to Dowidat-Werke, Willi Dowidat, Remscheid-Luttringhausen, Germany

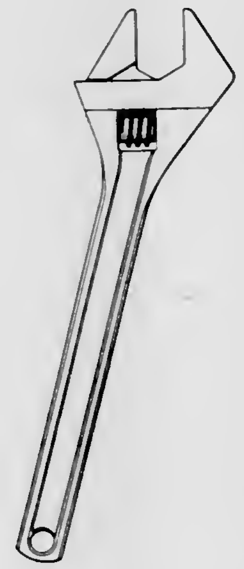
Filed Dec. 18, 1968, Ser. No. 15,046

Claims priority, application Germany June 28, 1968

Term of patent 14 years

Int. Cl. D8—*02*

U.S. Cl. D8—22

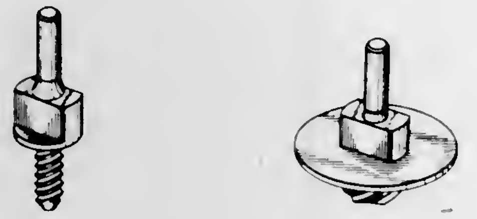


218,798
SCREW MANDREL

Dale W. Keller, Oakdale Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Aug. 6, 1968, Ser. No. 13,045
Term of patent 14 years
Int. Cl. D8—*04*

U.S. Cl. D8—267

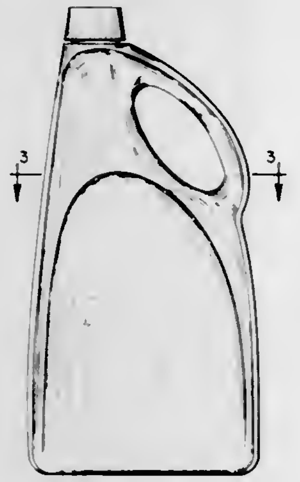


218,799
JUG

David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Sept. 24, 1969, Ser. No. 19,274
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—41

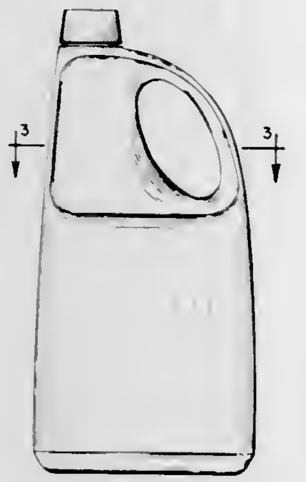


218,800
JUG

David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Sept. 24, 1969, Ser. No. 19,275
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—42

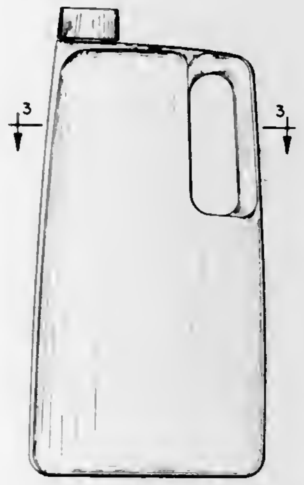


218,801
JUG

David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Sept. 24, 1969, Ser. No. 19,283
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—42

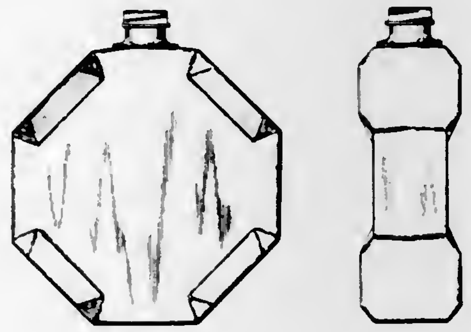


218,802
BOTTLE OR SIMILAR ARTICLE

Joseph George Ferraro, Wyckoff, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

Filed Sept. 12, 1969, Ser. No. 19,130
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—130

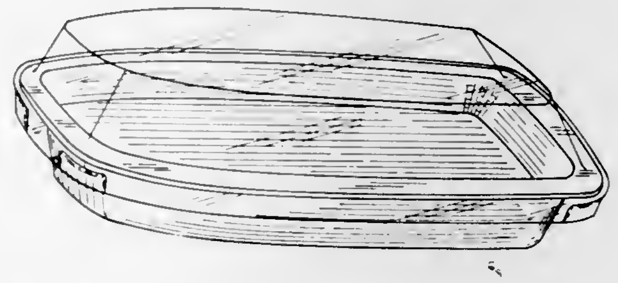


218,803
COMBINED PACKAGING TRAY AND COVER

Kenneth W. Artz, Mohnton, Pa., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Dec. 17, 1968, Ser. No. 15,020
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—219

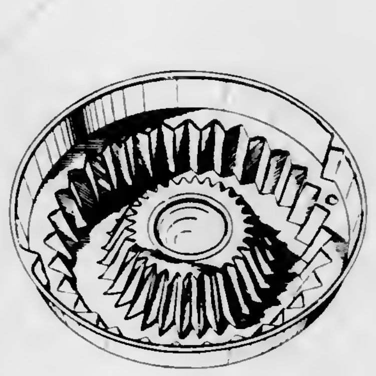


218,804
SILICON WAFER TRAY

Christopher Bryant Doubleday, Stanway, England, assignor to The Marconi Company Limited, London, England, a British company

Filed Dec. 19, 1969, Ser. No. 20,575
Claims priority, application Great Britain Dec. 5, 1969
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—220

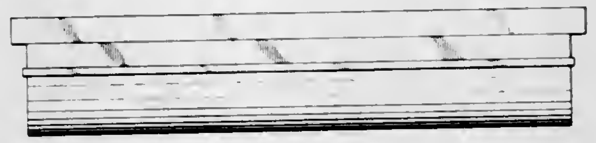


218,805
DEVELOPER POWDER CONTAINER

Stanford C. Stone, South St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 20, 1969, Ser. No. 19,645
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—224

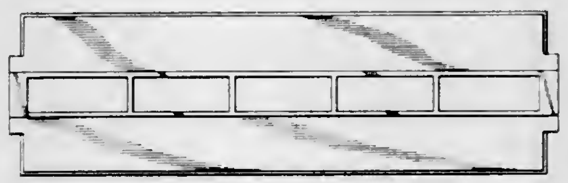


218,806
DEVELOPER POWDER CONTAINER

Richard C. Berg, Bloomington, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 20, 1969, Ser. No. 19,646
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—224

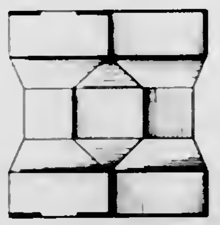


218,807
PACKAGING CARTON FOR FOOD OR THE LIKE

Herbert W. Rieke, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Filed Mar. 2, 1970, Ser. No. 21,707
Term of patent 14 years
Int. Cl. D9—*04*

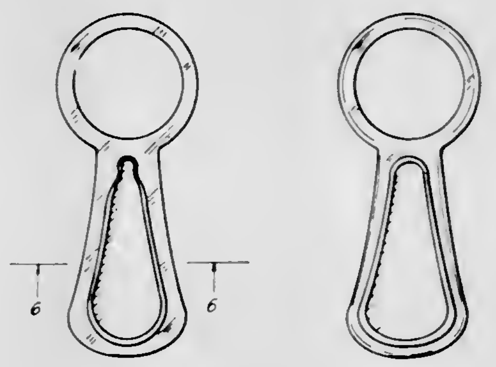
U.S. Cl. D9—231



218,808
RESEALER FOR A CAN OR THE LIKE

Major E. Weber, R.R. 5, Brookville, Ind. 47012
Filed May 20, 1969, Ser. No. 17,240
Term of patent 14 years
Int. Cl. D9—*02*

U.S. Cl. D9—281

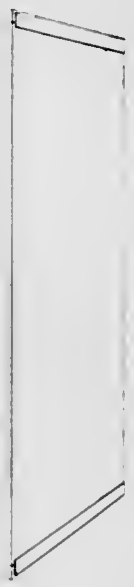


218,809
GLASS DOOR

William J. Horgan, Jr., Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm of Pennsylvania

Filed Feb. 1, 1968, Ser. No. 10,403
Term of patent 14 years
Int. Cl. D25—*02*

U.S. Cl. D13—1

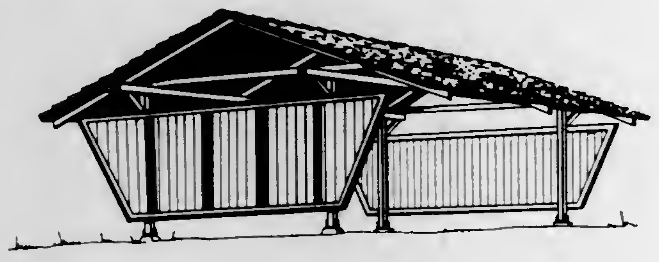


218,810

CARPORT

Einar Svensson, 2248 NW. 190th Place,
Seattle, Wash. 98177
Continuation-in-part of design application Ser. No. 12,557, July 1, 1968. This application June 25, 1969, Ser. No. 17,874
Term of patent 14 years
Int. Cl. D25—*04*

U.S. Cl. D13—1

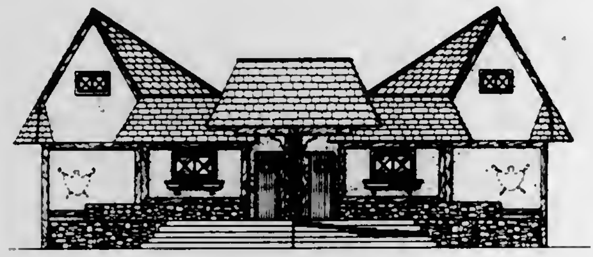


218,811

RESTAURANT

William M. Friedman, 4557 Ponce de Leon Blvd.,
Coral Gables, Fla. 33146
Filed July 25, 1969, Ser. No. 18,404
Term of patent 14 years
Int. Cl. D25—*04*

U.S. Cl. D13—1

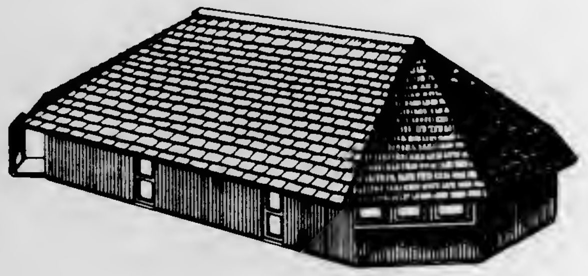


218,812

STORE BUILDING WITH MANAGER'S QUARTERS FOR CAMPGROUNDS

Charles W. Brady, Columbia, Mo., assignor to Safari Camps of America, Inc., Columbia, Mo., a corporation of Missouri
Filed Sept. 16, 1969, Ser. No. 19,176
Term of patent 14 years
Int. Cl. D25—*04*

U.S. Cl. D13—1

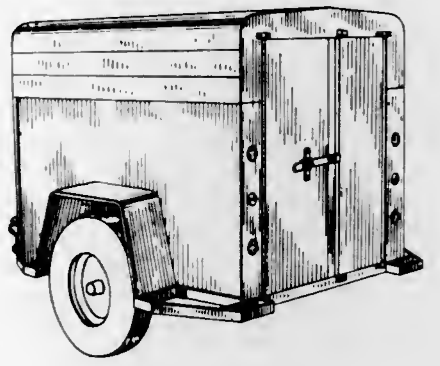


218,813

TRAILER

William R. Parkhurst, Sedalia, Mo., assignor to Parkhurst Manufacturing Co., Inc., Sedalia, Mo., a corporation of Missouri
Filed Jan. 8, 1969, Ser. No. 15,250
Term of patent 14 years
Int. Cl. D12—*10*

U.S. Cl. D14—3

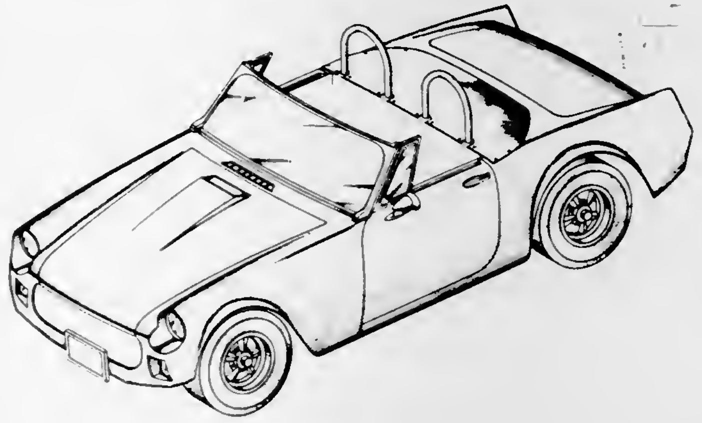


218,814

ROADSTER

Monte Markham, 10329 Whipple,
North Hollywood, Calif. 91602
Filed Oct. 3, 1969, Ser. No. 19,611
Term of patent 14 years
Int. Cl. D12—*08*

U.S. Cl. D14—3

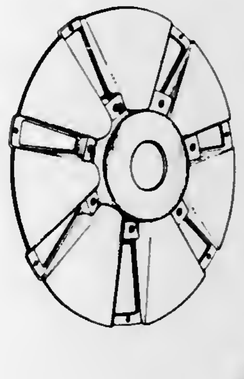


218,815

COVER FOR SPOKED CYCLE WHEEL

Robert T. Powell, 1682 Grasscreek Drive,
San Dimas, Calif. 91773
Filed Feb. 13, 1970, Ser. No. 21,431
Term of patent 7 years
Int. Cl. D12—*14*

U.S. Cl. D14—30

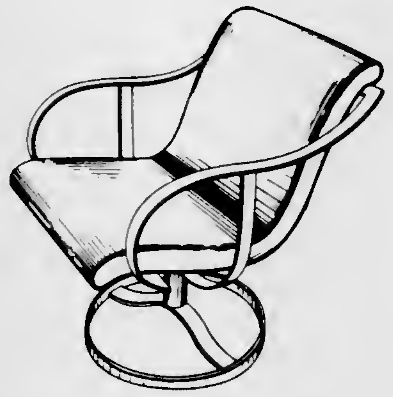


218,816

CHAIR

Gardner Leaver, New York, N.Y., assignor to Steelcase Inc., Grand Rapids, Mich., a corporation of Michigan
Continuation-in-part of design application Ser. No. 14,253, Oct. 31, 1968. This application Mar. 20, 1969, Ser. No. 16,351
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1

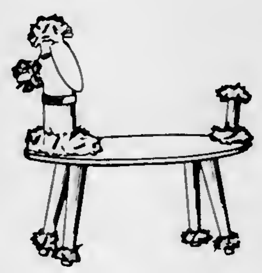


218,817

DECORATIVE STOOL

Mary J. Schildknecht, 6202 Upper Hunter Trace Road, Louisville, Ky. 40216
Filed June 11, 1969, Ser. No. 17,656
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—8

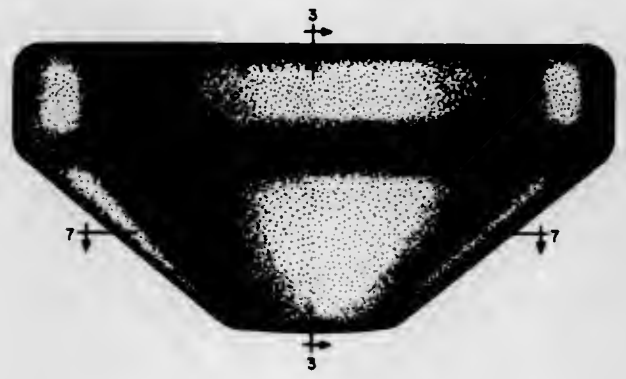


218,818

MOLDED HEADREST

Sylvan Yavner, 412 Bradford Ave.,
Norfolk, Va. 23505
Filed Nov. 26, 1969, Ser. No. 20,280
Term of patent 14 years
Int. Cl. D6—*02*

U.S. Cl. D15—8

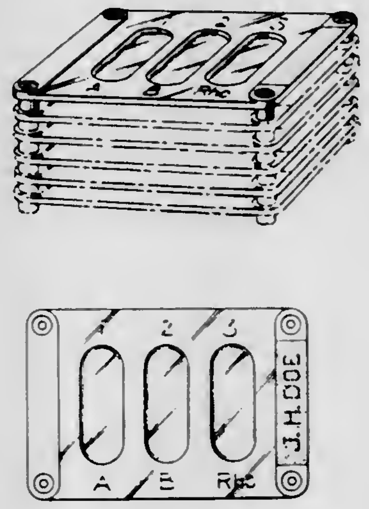


218,819

BLOOD GROUPING TEST SLIDE

Jack R. Rubin, 1433 Franklin St., Santa Monica, Calif. 90404, and Arnaldo Peralta, 1426 Crestview Court, Los Angeles, Calif. 90024
Filed Dec. 12, 1968, Ser. No. 14,945
Term of patent 14 years
Int. Cl. D24—*02*

U.S. Cl. D16—1

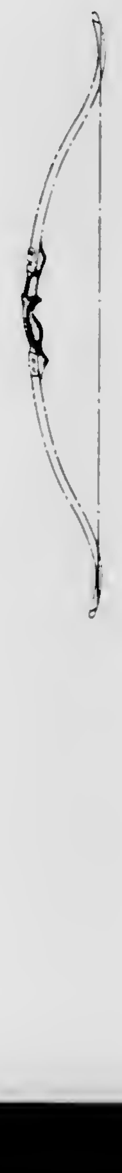


218,820

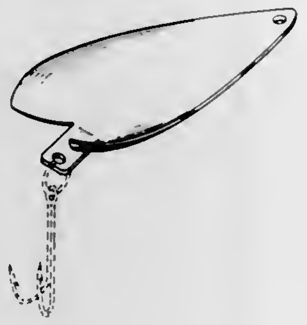
HANDLE FOR ARCHERY BOW

Robert M. Gray, South Bend, Ind., assignor to Plas-Steel Products, Inc., Walkerton, Ind., a corporation of Indiana
Filed Aug. 15, 1969, Ser. No. 18,699
Term of patent 14 years
Int. Cl. D22—*02*

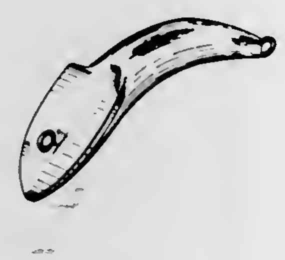
U.S. Cl. D22—5



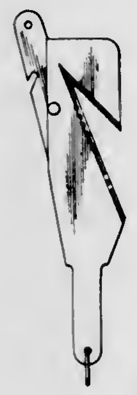
218,821
FISHING LURE
Thomas W. Drake, 323 Lindale, Houston, Tex. 77022
Filed Dec. 20, 1968, Ser. No. 15,073
Term of patent 14 years
Int. Cl. D22—*08*
U.S. Cl. D22—29



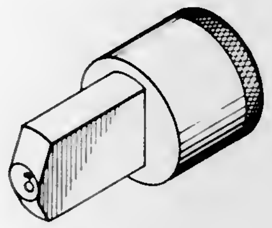
218,822
FISH LURE
Melkiah E. Pope, 2527 Community Ave., Montrose, Calif.
Filed July 18, 1969, Ser. No. 18,258
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—28



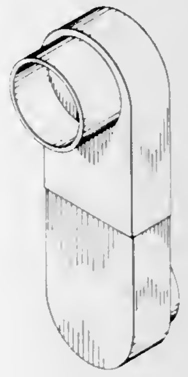
218,823
FISHING FLY RETRIEVER
Charles A. Richins, 8104 Peerless Ave., Orangevale, Calif. 95622
Filed July 3, 1969, Ser. No. 18,047
Term of patent 14 years
Int. Cl. D22—*08*
U.S. Cl. D22—31



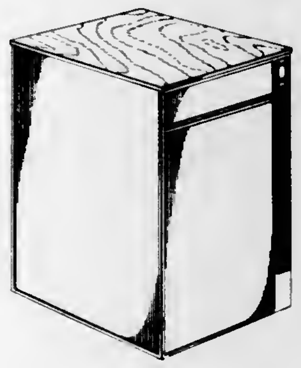
218,824
NOZZLE
Robert C. Lawrence, Sr., 708 Bubbling Well, Glendora, Calif. 91740, and Robert C. Lawrence, Jr., 1943 Barrington Court, Claremont, Calif. 91711
Filed July 18, 1969, Ser. No. 18,277
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—34



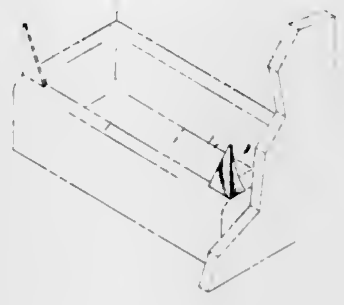
218,825
ADJUSTABLE VENT FOR DRIERS OR SIMILAR ARTICLE
Ben R. Blumer, 201 S. Fillmore, Kennewick, Wash. 99336
Filed July 10, 1969, Ser. No. 18,171
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—40



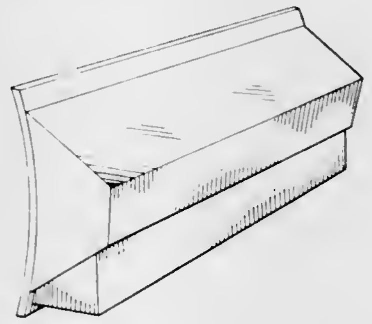
218,826
SANITARY DISPOSAL UNIT
William J. Gorman, Raytown, Mo., and John G. Markert, Overland Park, and James S. Reed, Lawrence, Kans., assignors to GMR, Inc., Lawrence, Kans., a corporation of Kansas
Filed May 5, 1969, Ser. No. 17,022
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—48

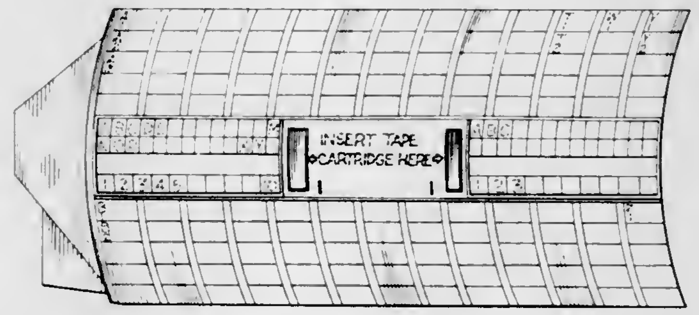


218,827
TUB SHOWER WATER GUARD OR SIMILAR ARTICLE
Var Selle Weaver, 9230 Ustick Road, Boise, Idaho
Filed Feb. 10, 1969, Ser. No. 15,716
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—69

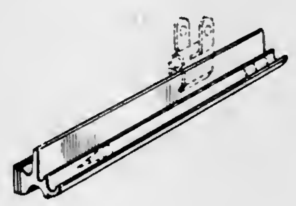


218,828
COMBINED TAPE RECORDER AND CARTRIDGE SELECTOR THEREFOR
Richard V. McCool, 9852 Fairfax Square, Fairfax, Va. 22030
Filed Sept. 27, 1968, Ser. No. 13,741
Term of patent 14 years
Int. Cl. D14—*01*
U.S. Cl. D26—14

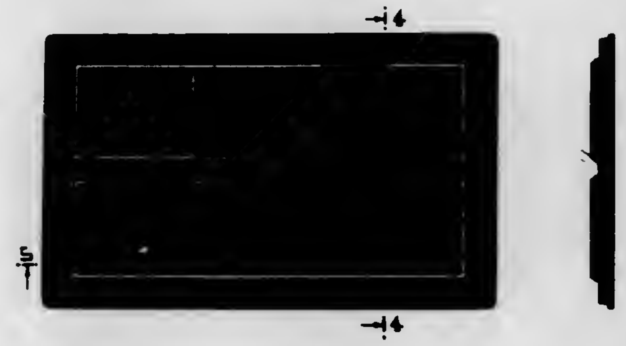




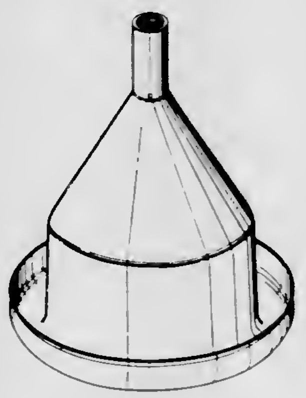
218,829
INVERTIBLE PENCIL AND CLIP HOLDER FOR A TELEPHONE SWITCHBOARD OR THE LIKE
John V. Cull, 832 Sylvania Drive 75218, and James D. Crownover, 4206 Goodfellow 75234, both of Dallas, Tex.
Filed July 15, 1969, Ser. No. 18,212
Term of patent 14 years
Int. Cl. D14—*99*
U.S. Cl. D26—14



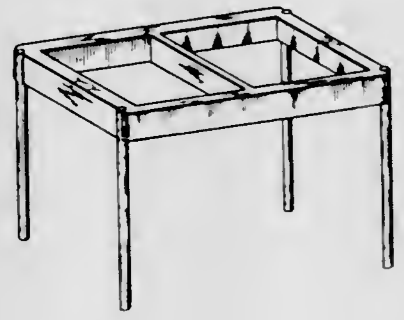
218,830
SPEAKER GRILL
John Anchel, Milford, Pa., assignor to Sparkomatic Corporation, Milford, Pa., a corporation of Pennsylvania
Continuation of design application Ser. No. 12,894, July 25, 1968. This application Oct. 13, 1969, Ser. No. 19,792
Term of patent 14 years
Int. Cl. D14—*01, 99*
U.S. Cl. D26—14



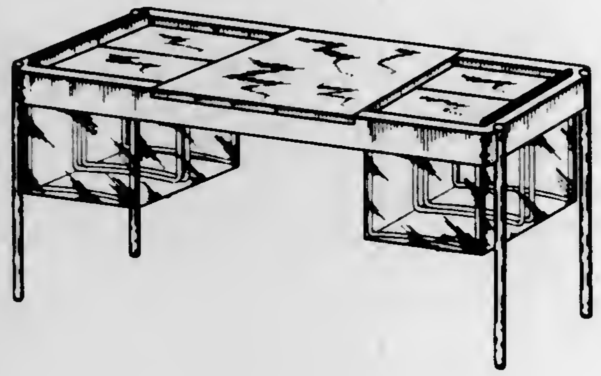
218,831
DRINKING TROUGH FOR POULTRY
David Christopher Leeming, Hill House, 22a Bereweeke Ave., Winchester, England
Filed May 5, 1969, Ser. No. 17,019
Claims priority, application Great Britain Dec. 4, 1968
Term of patent 14 years
Int. Cl. D30—*02*
U.S. Cl. D30—16



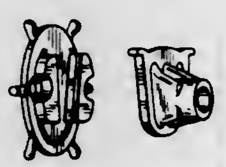
218,832
SUPPORT STAND FOR FILE RACKS
David Woods, Quakertown, Pa., assignor to JG Furniture Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1969, Ser. No. 15,184
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—3



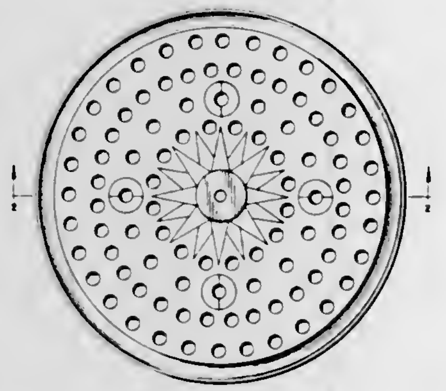
218,833
DESK
David Woods, Quakertown, Pa., assignor to JG Furniture Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 2, 1969, Ser. No. 15,181
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—7



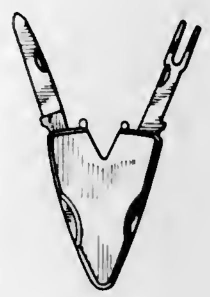
218,834
MOUNTING CLIP FOR A RECEPTACLE HOLDER
Robert W. Smith and Donald E. Wintz, Minneapolis, Minn., assignors to Aladdin Manufacturing Company, Minneapolis, Minn., a corporation of Minnesota
Filed Dec. 26, 1968, Ser. No. 15,113
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D33—29



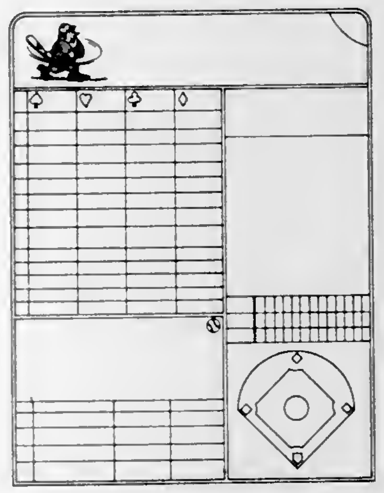
218,835
GAME BOARD OR SIMILAR ARTICLE
Elmer W. Swanberg, 1420 E. 58th Ave. 99203, and Frank R. Drury, E. 12023 19th 99206, both of Spokane, Wash.
Filed June 23, 1969, Ser. No. 17,796
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



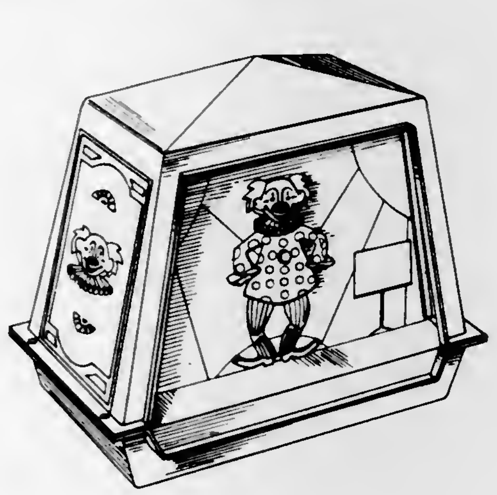
218,836
GOLFER'S TOOL OR THE LIKE
Etsuo Watanabe, Seki-shi, Japan, assignor to Arthur Salm Inc., Chicago, Ill., a corporation of Illinois
Filed July 17, 1969, Ser. No. 18,254
Claims priority, application Japan Jan. 28, 1969
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



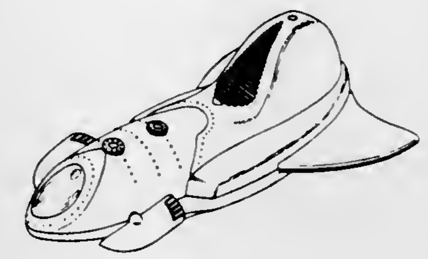
218,837
GAME BOARD
Bernard L. Ekman, 4A E. Broadway, Derry, N.H. 03104
Filed Aug. 11, 1969, Ser. No. 18,623
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



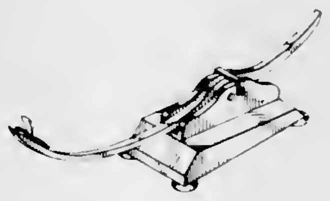
218,838
DANCING FIGURE TOY
Sidney A. Tarrson, 777 S. Tripp, Chicago, Ill. 60624
Filed May 5, 1969, Ser. No. 17,012
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



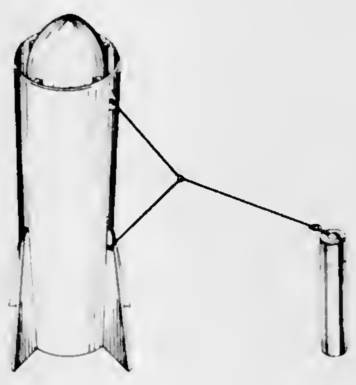
218,839
TOY SUBMARINE
Duncan Tong, Hong Kong, assignor to Decorart & Playart Limited, a company of Hong Kong
Filed July 7, 1969, Ser. No. 18,071
Claims priority, application Great Britain Feb. 25, 1969
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



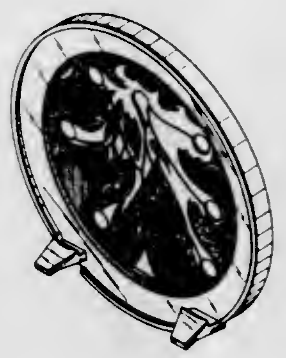
218,840
BALL PROJECTOR TOY
Harry L. Bischoff, P.O. Box 218, Rte. 1, Chattaroy, Wash. 99003
Filed July 18, 1969, Ser. No. 18,260
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



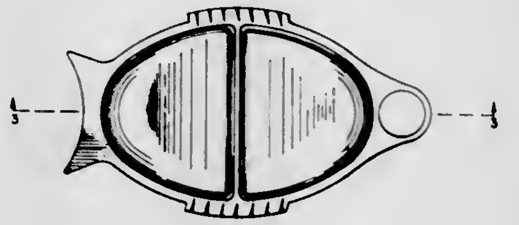
218,841
WHIRLING MUSICAL TOY OR SIMILAR ARTICLE
Elmer W. Swanberg, 1420 E. 58th Ave., Spokane, Wash. 99203
Filed July 23, 1969, Ser. No. 18,350
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



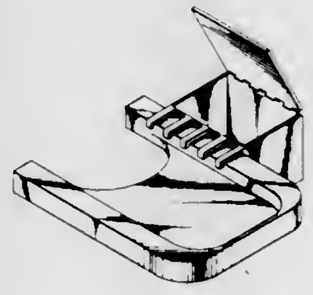
218,842
SIMULATED FIRE HOOP FOR TOY VEHICLES OR THE LIKE
William R. Baynes and Harvey W. La Branche, Palos Verdes Peninsula, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Oct. 9, 1969, Ser. No. 19,483
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



218,843
PLATTER
Edwin G. Melich, Chicago, Ill., assignor to Melco Foundry & Manufacturing Company, a corporation of Illinois
Filed Jan. 6, 1969, Ser. No. 15,230
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



218,844
WHEELCHAIR TRAY
Leona L. Davis, 912 S. 17th Ave., Yakima, Wash. 98902
Filed Jan. 7, 1970, Ser. No. 20,795
Term of patent 14 years
Int. Cl. D7—*99*; D24—*99*
U.S. Cl. D44—10



218,845
WATCH BRACELET OR SIMILAR ARTICLE

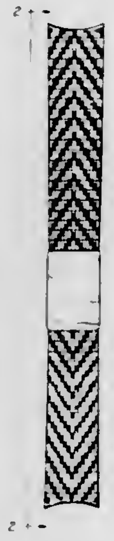
Ananta Uengsakul, Bangkok, Thailand, assignor to Stelux Manufacturing Company, Ltd., San Po Kong, Kowloon, Hong Kong, a corporation of Hong Kong

Filed July 3, 1968, Ser. No. 12,608

Term of patent 14 years

Int. Cl. D11—*01*

U.S. Cl. D45—4



218,846
BEAM LIGHT HOUSING

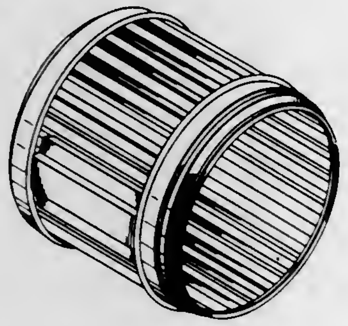
Fred M. Wolff, Montclair, N.J., assignor, by mesne assignments, to Century Strand, Inc., Clifton, N.J., a corporation of New York

Continuation-in-part of design application Ser. No. 13,498, Sept. 11, 1969. This application July 8, 1969, Ser. No. 18,107

Term of patent 14 years

Int. Cl. D26—*02*

U.S. Cl. D48—20



218,847
DRYING FRAME

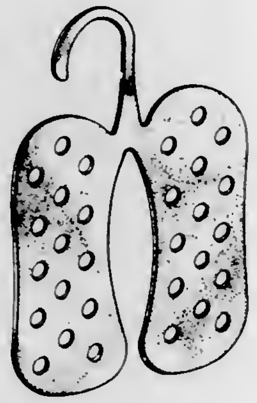
Mildred C. Specht, 704 S. Ward Ave., Compton, Calif. 90221

Filed Aug. 25, 1969, Ser. No. 18,832

Term of patent 7 years

Int. Cl. D7—*06*

U.S. Cl. D49—1



218,848
HOLDER FOR GARBAGE CANS

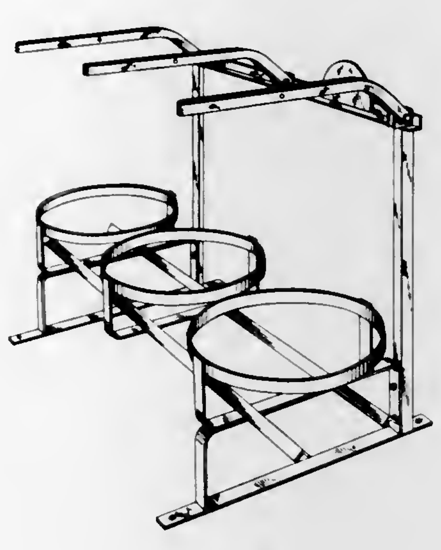
Lewis J. Woods, 2328 W. Vliet St., Milwaukee, Wis. 53205

Filed June 30, 1969, Ser. No. 17,979

Term of patent 14 years

Int. Cl. D7—*99*

U.S. Cl. D49—33



218,849
ELECTRONIC THERMOMETER

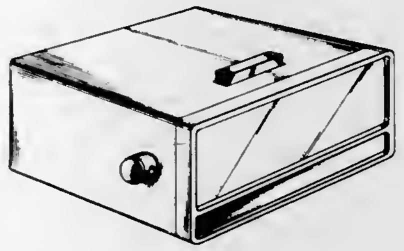
Stephens N. Sato, San Diego, Calif., assignor to Ivac Corporation, San Diego, Calif., a corporation of California

Filed June 2, 1969, Ser. No. 17,433

Term of patent 14 years

Int. Cl. D10—*09*

U.S. Cl. D52—7



218,850
TEMPERATURE PROBE

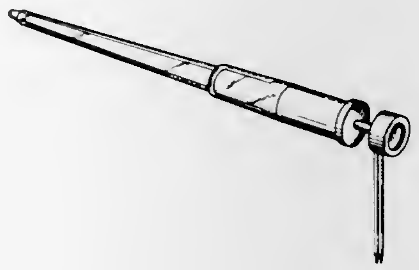
Stephens N. Sato, San Diego, Calif., assignor to Ivac Corporation, San Diego, Calif., a corporation of California

Filed June 2, 1969, Ser. No. 17,477

Term of patent 14 years

Int. Cl. D10—*09*

U.S. Cl. D52—7



218,851
PROBE COVER

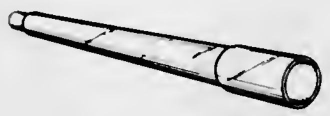
Stephens N. Sato, San Diego, Calif., assignor to Ivac Corporation, San Diego, Calif., a corporation of California

Filed Aug. 4, 1969, Ser. No. 18,535

Term of patent 14 years

Int. Cl. D10—*09*

U.S. Cl. D52—7



218,852
MIXER FOR LIQUIDS OR THE LIKE

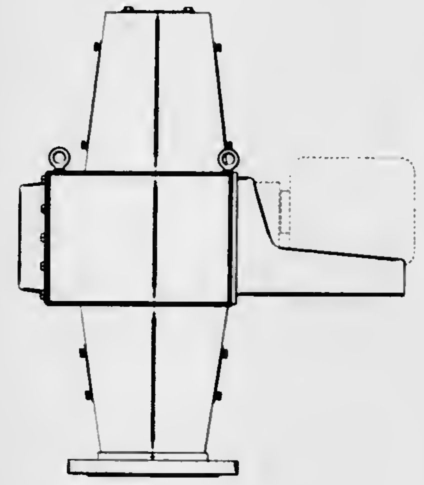
John J. Hughes, Jr., Milwaukee, Wis., assignor to Mixing Equipment Co., Inc., Rochester, N.Y., a corporation of New York

Filed June 23, 1969, Ser. No. 17,808

Term of patent 14 years

Int. Cl. D15—*05*

U.S. Cl. D55—1



218,853
MIXER FOR LIQUIDS OR THE LIKE

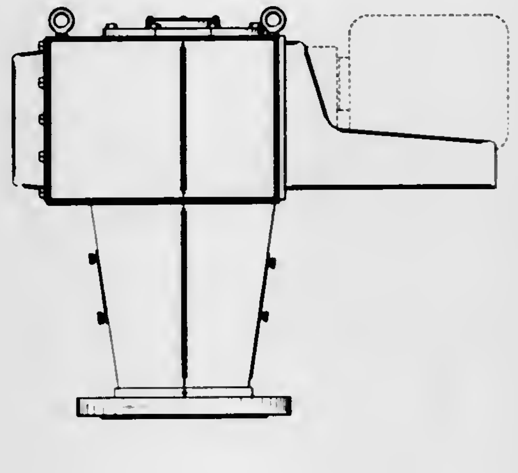
John J. Hughes, Jr., Milwaukee, Wis., assignor to Mixing Equipment Co., Inc., Rochester, N.Y., a corporation of New York

Filed June 23, 1969, Ser. No. 17,809

Term of patent 14 years

Int. Cl. D15—*05*

U.S. Cl. D55—1



218,854
SNARE DRUM

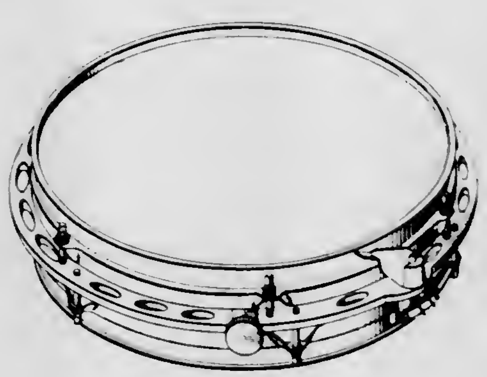
Josephus B. Thompson, deceased, late of Covington, Ohio, by K. E. Stade, administrator, Covington, Ohio, assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York

Filed June 19, 1969, Ser. No. 17,826

Term of patent 14 years

Int. Cl. D17—*04*

U.S. Cl. D56—1



218,855
COPYING MACHINE OR THE LIKE

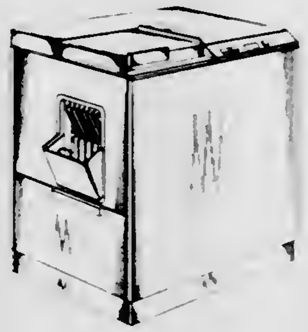
Eliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 30, 1969, Ser. No. 19,846

Term of patent 14 years

Int. Cl. D16—*05*

U.S. Cl. D61—1



218,856
AIRCRAFT

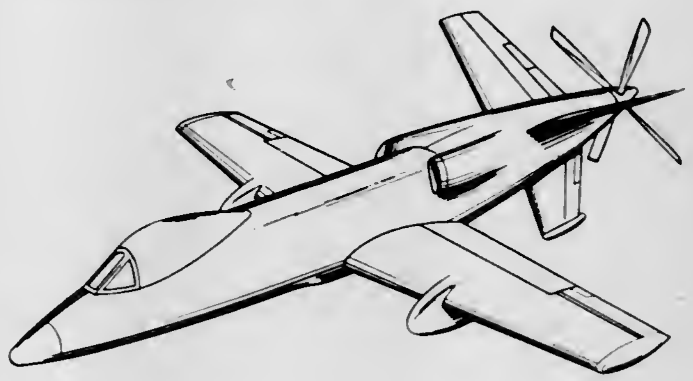
Walter E. Fellers, Los Angeles, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed June 30, 1969, Ser. No. 17,938

Term of patent 14 years

Int. Cl. D12—*07*

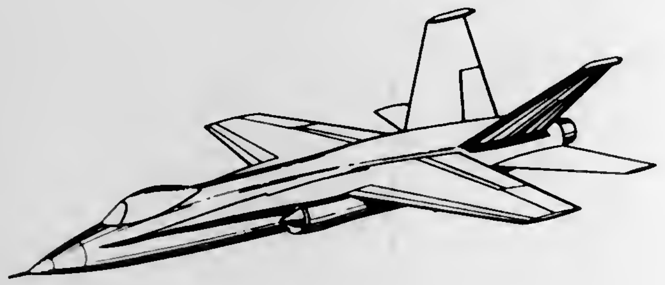
U.S. Cl. D71—1



218,857
AIRCRAFT

Walter E. Fellers, Los Angeles, Leon F. Begin, Pasadena, John W. Patierno, Huntington Beach, Michael G. Huben, Los Angeles, Adam L. Roth, Palos Verdes Estates, Hans W. Grellmann, Torrance, and Vernon L. White, Los Angeles, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed June 30, 1969, Ser. No. 17,969
Term of patent 14 years
Int. Cl. D12—*07*

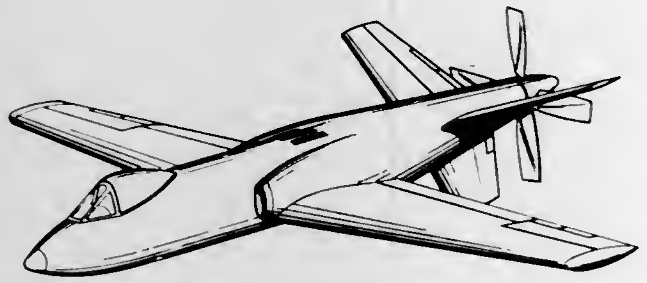
U.S. Cl. D71—1



218,858
AIRCRAFT

Walter E. Fellers, Los Angeles, Ronald M. Beattie, Camarillo, and Michael G. Huben and Don M. Heinze, Los Angeles, Calif., assignors to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed June 30, 1969, Ser. No. 17,976
Term of patent 14 years
Int. Cl. D12—*07*

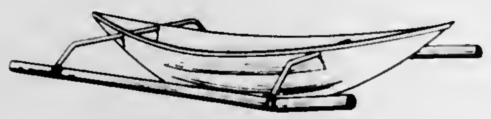
U.S. Cl. D71—1



218,859
OUTRIGGER CANOE

Fred J. Gallagher, 704 E. Thompson St., Princeton, Ill. 61356
Filed July 17, 1969, Ser. No. 18,247
Term of patent 14 years
Int. Cl. D12—*06*

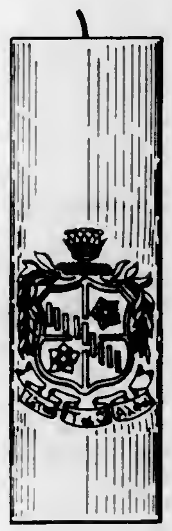
U.S. Cl. D71—1



218,860
CANDLE

Martha A. Madden, 1604 Shannon St., Monroe, La. 71201
Filed May 22, 1969, Ser. No. 17,366
Term of patent 14 years
Int. Cl. D26—*05*

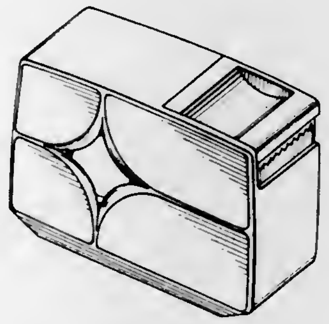
U.S. Cl. D73—1



218,861
TAPE DISPENSER

Charles Castelli, New Brunswick, and Earl E. Hoyt, Northvale, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed June 3, 1969, Ser. No. 17,490
Term of patent 14 years
Int. Cl. D19—*02*

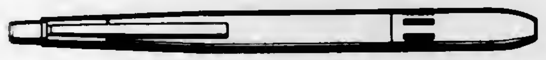
U.S. Cl. D74—1



218,862
CASING FOR A WRITING INSTRUMENT

Alan E. Sherman, St. Louis County, Mo., assignor to Penn Corporation, Princeton, N.J., a corporation of Delaware
Filed June 13, 1969, Ser. No. 17,701
Term of patent 14 years
Int. Cl. D19—*06*

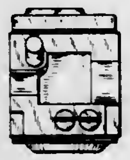
U.S. Cl. D74—17

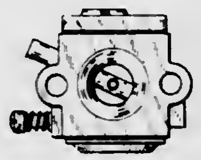


218,863
CARBURETOR

Robert L. Van Camp and Bernard C. Phillips, Toledo, Ohio, assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed July 5, 1968, Ser. No. 12,628
Term of patent 14 years
Int. Cl. D15—*01*

U.S. Cl. D77—1

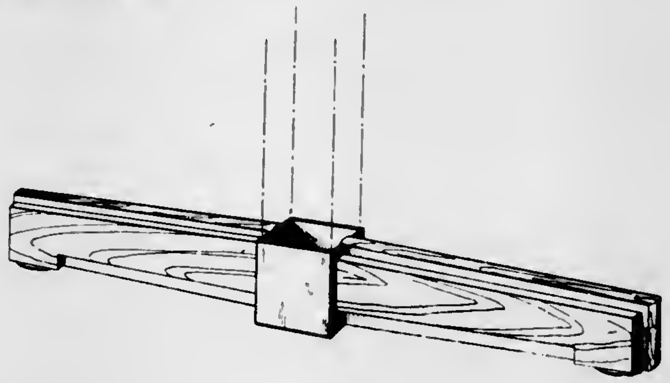




218,864
COLUMN-SUPPORTING BASE

Charles J. Held, Jr., San Jose, Calif., assignor to W. R. Ames Company, Milpitas, Calif., a corporation of California
Filed July 3, 1969, Ser. No. 18,055
Term of patent 14 years
Int. Cl. D6—*01*

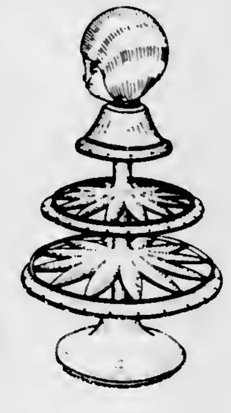
U.S. Cl. D80—1



218,865
JEWELRY DISPLAY STAND

Helen Zolkower, 13342 Hart, Huntington Woods, Mich. 48070, and Norman G. Wachler, 19384 James Couzen, Detroit, Mich. 48235
Filed Feb. 27, 1969, Ser. No. 15,943
Term of patent 14 years
Int. Cl. D6—*01*

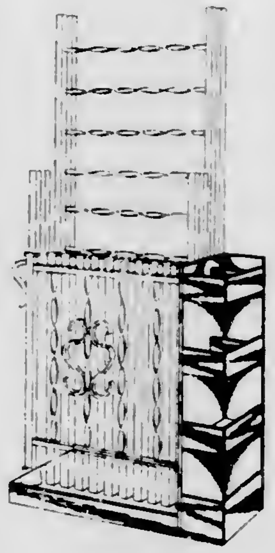
U.S. Cl. D80—9



218,866
DISPLAY STAND

Paul G. Schwesinger, Akron, Ohio, assignor to Locke Manufacturing Company
Filed May 23, 1969, Ser. No. 17,301
Term of patent 14 years
Int. Cl. D6—*01*

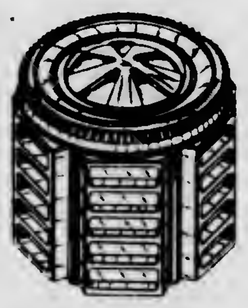
U.S. Cl. D80—9



218,867
DISPLAY CASE FOR TOY VEHICLES

Martin I. Sheps, Palos Verdes Peninsula, and Harold E. Steinberg, Culver City, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed May 15, 1969, Ser. No. 17,173
Term of patent 14 years
Int. Cl. D6—*01*

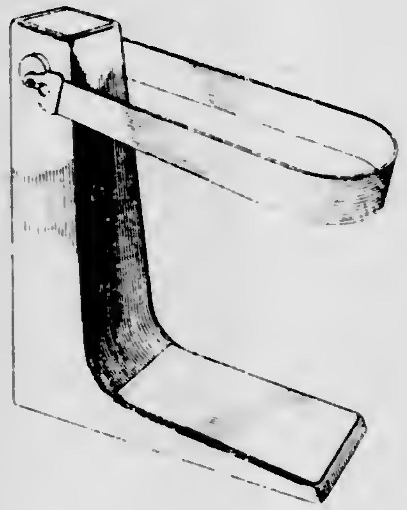
U.S. Cl. D80—11



218,868
BELT MASSAGE MACHINE

David W. Cosper, Mishawaka, Ind., assignor to De Lucien, Inc., South Bend, Ind., a corporation of Indiana
Filed Jan. 26, 1970, Ser. No. 21,075
Term of patent 14 years
Int. Cl. D21—*03*

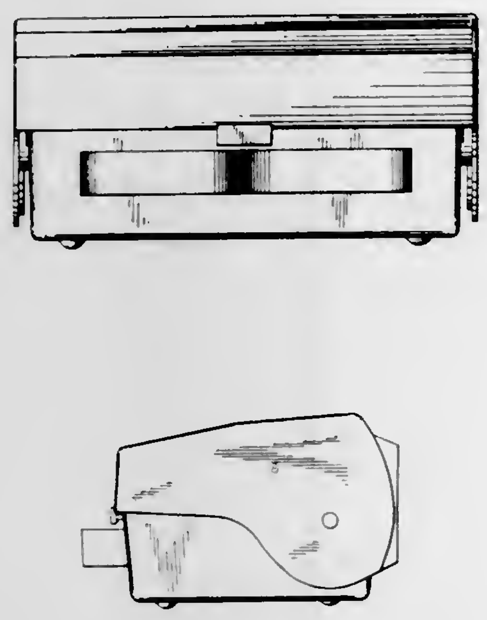
U.S. Cl. D85—1



218,869
CASING FOR HAIR CURLING MACHINE

**Norman J. Mercer, 42 Broadway,
New York, N.Y. 10004
Filed Jan. 28, 1969, Ser. No. 15,536
Term of patent 14 years
Int. Cl. D28—*03***

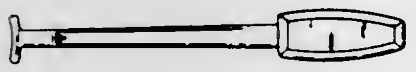
U.S. Cl. D86—10



218,870
FALSE EYELASH APPLICATOR

**David Howard Aylott, Welwyn Garden City, England, assignor to Eylure Limited, Welwyn Garden City, England, a British company
Filed Apr. 18, 1969, Ser. No. 16,803
Claims priority, application Great Britain Dec. 17, 1968
Term of patent 14 years
Int. Cl. D28—*02***

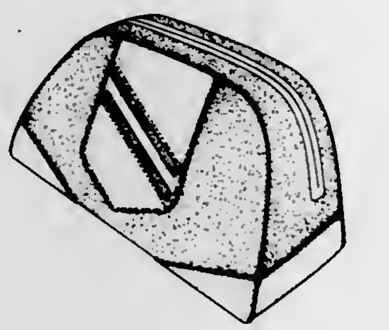
U.S. Cl. D86—10



218,871
BAG BODY

**Marvin Schneider, Bryn Mawr, Pa., assignor to Rapid-American Corporation, Clayton, Del., a corporation of Ohio
Filed May 8, 1969, Ser. No. 17,076
Term of patent 14 years
Int. Cl. D3—*01***

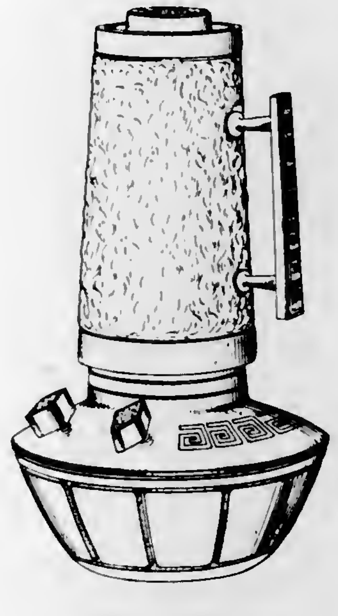
U.S. Cl. D87—5



218,872
BLENDER OR THE LIKE

**Walter May Weichsel, Mexico City, Mexico, assignor to Motores y Aparatos Electricos, S.A. de C.V., Mexico City, Mexico, a corporation of Mexico
Filed Aug. 28, 1968, Ser. No. 13,302
Claims priority, application Mexico Feb. 29, 1968
Term of patent 14 years
Int. Cl. D7—*05***

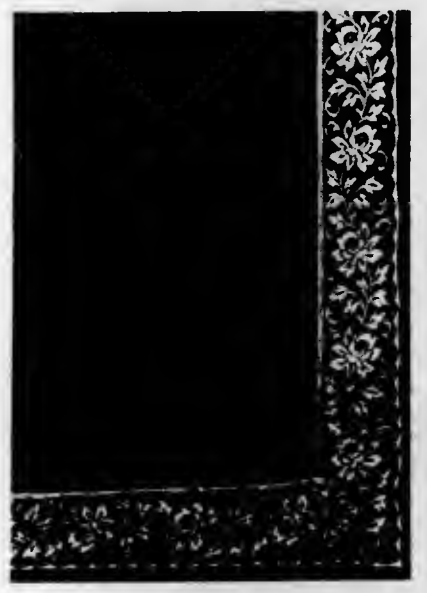
U.S. Cl. D89—1



218,873
TABLECLOTH

**Richard A. Fees, Ardsley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Feb. 13, 1970, Ser. No. 21,428
Term of patent 7 years
Int. Cl. D6—*09***

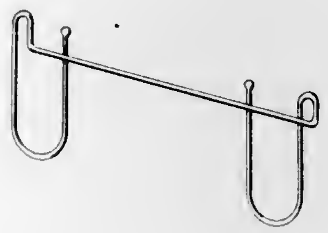
U.S. Cl. D92—26



218,874
MUSIC PAGE HOLDER OR SIMILAR ARTICLE

**Billie Neal Whittaker, Roy, Utah
(Rte. 3, Lawrenceville, Ill. 62439)
Filed Aug. 4, 1969, Ser. No. 18,538
Term of patent 14 years
Int. Cl. D19—*99***

U.S. Cl. D97—2



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 29TH DAY OF SEPTEMBER, 1970

Note.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Aagard, Roger L., to Honeywell Inc. Light beam deflector. 3,531,183, Cl. 350-160.
- AB Skanska Cementgjuteriet: *See—*
  - Pulk, Elgas, 3,531,054.
- AB Tetra Pak: *See—*
  - Rausing, Hans Anders, Rausing, Gad Anders, Lindh, Torsten Lennartson, and Ekstrom, Karl-Erik, 3,531,350.
- Abbott Laboratories: *See—*
  - Miczka, Lothar, 3,530,857.
- Abbott, Willard Ray, and LeBron, Roderick L., to LeBron, Inc. Hot canned food vending machine. 3,531,017, Cl. 221-93.
- Abe, Akiko: *See—*
  - Miyano, Seiji, and Abe, Akiko,3,531,476.
- Abel, Etiennette: *See—*
  - Abel, Louis,3,530,525.
- Abel, Louis, deceased (by Abel, Etiennette, executrix). Heated windshield wiper. 3,530,525, Cl. 15-250.07
- Abercrombie, Bolling A.: *See—*
  - McMurry, Everett D., Bruun, Knud I., and Abercrombie, Bolling A.,3,530,566.
  - McMurry, Everett D., Bruun, Knud I., and Abercrombie, Bolling A.,3,530,770.
- Abex Corporation: *See—*
  - Dillon, Leo H., 3,531,080.
- Ablteta Pak: *See—*
  - Carlsson, Inge Lennart, and Lydig, Knut Gosta Verner, 3,531,043.
- Abraham, Stanley Charles, and Moeck, Edward Otto, to Atomic Energy of Canada Limited. Two-phase homogenizer. 3,531,050, Cl. 239-427.3
- Abramson, Franz W. Radial-driven, multistage jet pump. 3,531,214, Cl. 415-68.
- Accary-Venet, Anne-Marie, and Pouradier, Jacques, to Eastman Kodak Company. Preparation of direct positives by development with leuco derivatives. 3,531,283, Cl. 96-54.
- Achabal, Oscar R., Schmidt, Edward, and Uroshevich, Miroslav. Safety closures for containers. 3,531,008, Cl. 215-9.
- Ackermann, Hans, Bossard, Werner, Voltz, Jacques, and Wegmuller, Hans, to Geigy, J. R., A.G. 5-Arylazo-pyrimidine monoazo dyestuffs. 3,531,456, Cl.
- Ackermann, Hans, Bossard, Werner, Voltz, Jacques, and Wegmuller, Hans, to Geigy, J. R., A.G. 5-Arylazo-pyrimidine monoazo dyestuffs. 3,531,457, Cl. 260-154.
- Ackermann, Hans, Bossard, Werner, Voltz, Jacques, and Wegmuller, Hans, to Geigy, J. R., A.G. 5-Arylazo-pyrimidine monoazo dyestuffs. 3,531,458, Cl. 260-154.
- Acme-Cleveland Corporation: *See—*
  - Bourassa, Hugh A., Emser, Arthur H., and Ptak, Edward J., 3,530,994.
- Acton, Edward M.: *See—*
  - Ryan, Kenneth J., Acton, Edward M., and Goodman, Leon,3,531,464.
- Adams Brothers Plastic: *See—*
  - Adams, Gerald F., 3,530,634.
- Adams, Clark E., and House, William T., to Esso Research and Engineering Company. Hydrodesulfurization of heavy petroleum distillates. 3,531,398, Cl. 208-216.
- Adams, Gerald F., to Chariot Manufacturing Company, d/b/a Adams Brothers Plastic. Plastic support bracket for concrete reinforcing rods. 3,530,634, Cl. 52-687.
- Adler, Franklin P., to Pullman Incorporated. Lightweight hopper gate. 3,530,803, Cl. 105-282.
- Adler, Robert, to Zenith Radio Corporation. Monochromatic light beam deflection apparatus having two trains of frequency scanned acoustic waves for effecting Bragg diffraction. 3,531,184, Cl. 350-161.
- Admiral Corporation: *See—*
  - Jarosz, George J., 3,531,682.
- Adolph, Horst G., to United States of America, Navy. Bisfluorodinitro ethers and their preparation. 3,531,534, Cl. 260-614.
- Adolphi, Heinrich, Steimmig, Anna, and Spaenig, Hermann. Monohydroxy alkyl imidazoles. 3,531,494, Cl. 260-309.
- Aemmer, Peter F., and Mueller, Hans, to Allen-Bradley Company. Active narrow notch filter. 3,531,652, Cl. 307-105.
- Aerospace Tools: *See—*
  - Carpenter, Richard D., Schad, Jerry L., Delozier, Jess M., Brown, John H., and Roy, WIlliam G., 3,531,323.
- Agfa-Gevaert Aktiengesellschaft: *See—*
  - Burger, Theodor, Hellmig, Erhard, Vanheerentals, Jacques Leon, Natens, Luc Yves, and Breidenbach, Gert, 3,531,199.
- Airtex Products: *See—*
  - Phillips, Claude F., 3,530,991.
- Aitken, Robert William, and Keen, Ian Montgomery, to British Petroleum Company, The. Preparation of mordenite. 3,531,243, Cl. 23-113.
- Aizawa, Tsuneo: *See—*
  - Washio, Kanichi, Fukugami, Goro, and Aizawa, Tsuneo,3,530,752.
  - Okamoto, Miyoshi, Watanabe, Koji, Nukushina, Yasuhiko, and Aizawa, Tsuneo,3,531,368.
- Akeley, Lloyd T., to Foxboro Company, The. Target flowmeter. 3,530,714, Cl. 73-228.
- Akin, Alfred A., Jr., to Bushnell, David P. Binocular construction using plastic foam and magnets. 3,531,177, Cl. 350-36.
- Aktiebolaget Astra: *See—*
  - Bamberg, Peter, Ekstrom, Bertil Ake, and Sjoberg, Berndt Olof Harald, 3,531,469.
- Aktiebolaget Bahco: *See—*
  - Berglund, Lars Goran Gabriel, 3,531,229.
- Aktiebolaget Kanthal: *See—*
  - Magnusson, Bengt, and Bizzarri, Venanzio, 3,531,275.
- Aktiebolaget Karlstads Mekaniska Werkstad: *See—*
  - Jordansson, Lars, Larsson, Karl O., and Wahlstrom, Per Borje, 3,531,371.
- Aktiengesellschaft: *See—*
  - Hildebrand, Helmut, 3,531,576.
  - Muller, Elmar, and Weimann, Klaus, 3,531,697.
- Akutsu, Hideo, Yoshioka, Kazuhiko, and Tsunoda, Naomi, to Power Reactor and Nuclear Fuel Development Corporation. Process for producing UO_2-PuO_2 oxide compositions. 3,531,416, Cl. 252-301.1
- Alamprese, Leo, to Honeywell Inc. Damper apparatus and mounting clip to hold an inflatable sealing member. 3,530,783, Cl. 98-110.
- Alberghini, Alfred C.: *See—*
  - Richardson, Henry M., Alberghini, Alfred C., Wiley, Fred E., and Larson, Wesley S.,3,530,901.
- Albert, William C., to Singer-General Precision, Inc. Liquid metal support (LMS) accelerometer. 3,530,727, Cl. 73-516.
- Albrecht, William L., and Fleming, Robert W., to Richardson-Merrell Inc. Bis-basic esters and thioesters of fluoranthene. 3,531,489, Cl. 260-294.3
- Alden, Milton, to Alden Research Foundation. Grounded plug. 3,531,757, Cl. 339-14.
- Alden Research Foundation: *See—*
  - Alden, Milton, 3,531,757.
- Alexander, Hazel L.: *See—*
  - Sherman, Benjamin F., and Alexander, Hazel L.,3,531,113.
- Alexander, Robert A. Batting practice device. 3,531,115, Cl. 273-26.
- Allen, Alton K. Precision gear and blank for manufacture of the same. 3,530,735, Cl. 74-446.
- Allen, Dee Dexter, and Comber, William R., to U.S. Industries, Inc., mesne. Animal feeder with safety shut-off. 3,530,833, Cl. 119-51.
- Allen, Louis Lynn. Device for the support of seated persons. 3,531,158, Cl. 297-340.
- Allen, Richard E., to Corning Glass Works. Heated delivery tip for liquid glass. 3,531,268, Cl. 65-12.
- Allen-Bradley Company: *See—*
  - Aemmer, Peter F., and Mueller, Hans, 3,531,652.
- Allis-Chalmers Manufacturing Company: *See—*
  - Callahan, Thomas R., 3,531,216.
  - Frans, Robert D., 3,531,095.
  - Rossi, Eugene F., 3,530,973.
  - Sargent, John W., 3,531,751.
- Alofs, John W. Three-dimensional photography. 3,530,779, Cl. 95-18.
- Alt, Gunter. Hammer crusher. 3,531,055, Cl. 241-192.
- Altfillisch, Michael D., to Electrosyn Technology Laboratories, Inc. Pressure transducers. 3,530,719, Cl. 73-398.
- Alvarez, Edgardo J.: *See—*
  - MacDonald, Donald M., and Alvarez, Edgardo J.,3,531,560.
- Alvarez, Jose A., Upchurch, Edward F., and Wolfe, Charles C., to Esso Research and Engineering Company. Glycol drying in a methyl chloride dehydration plant. 3,531,449, Cl. 260-85.3
- Amada, Iwao, Inowaki, Ikuji, and Uchino, Shin-Ichi, to Eisai Kabushiki Kaisha. Apparatus for continuously packing articles into container. 3,530,646, Cl. 53-236.
- Ambrose, Jere B., to Northern Fibre Products Company. Seaming lace assembly filler and method of forming same. 3,531,366, Cl. 161-89.
- American Cement Corporation: *See—*
  - Walker, Larry D., and Jorgensen, Clarence H., Jr., 3,530,555.
- American Chain & Cable Co.: *See—*
  - Donahue, Simeon J., and Kosowicz, EDWARD J., 3,531,607.
- American Cyanamid Company: *See—*
  - Becker, Robert Harbes, and Mogensen, Allan Olaf, 3,531,557.
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  - Hardy, William Baptist, and Bennett, Robert Putnam, 3,531,512.
  - Li, Tsi Tieh, Mino, Guido, and Kaizerman, Samuel, 3,531,527.
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- American Cyanimid Company: *See—*
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  - Freed, Meier E., , Spencer, George W., and Herlein, Richard F., 3,531,485.
  - Rees, Richard W., and Smith, Herchel, 3,531,570.
- American Machine & Foundry Company: *See—*
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  - Andrews, Raymond J., Fields, Gary C., and Thompson, Harold K., 3,531,597.
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- Ametek: *See—*
  - Harland, Philip W., 3,530,720.
  - Harland, Philip W., and Waite, Ralph D., 3,530,724.
- Ammann, Stephan K., to Systron-Donner, mesne. Precision rectifier circuit. 3,531,656, Cl. 307-235.
- Amore, Charles J., and Murphy, James F., to Olin Corporation. Method of improving the corrosion resistance of oxidized metal surfaces. 3,531,381, Cl. 204-35.
- Ampex Corporation: *See—*
  - Engberg, Edwin W., 3,531,660.
- Anderson Bros. Mfg. Co.: *See—*
  - Bergstrom, Roger C., 3,530,641.
  - Weprin, Harry W., Villemure, Fred W., and Stohlquist, Roger H., 3,530,636.
- Anderson, Irving W.: *See—*
  - Hoffmann, Carter Clifford, and Anderson, Irving W.,3,531,169.
- Anderson, Kathryn E.: *See—*
  - Anderson, Viletta O., Anderson, Kathryn E., and Anderson, Marion M.,3,531,121.
- Anderson, Marion M.: *See—*
  - Anderson, Viletta O., Anderson, Kathryn E., and Anderson, Marion M.,3,531,121.
- Anderson, Robert Leo. Impression gun. 3,530,587, Cl. 32-60.
- 6330 3 Anderson, Roland M.: *See—*
  - Klein, Paul E., and 6330 3 Anderson, Roland M.,3,530,583.
- Anderson, Viletta O., Anderson, Kathryn E., and Anderson, Marion M. Game of show ring competition. 3,531,121, Cl. 273-134.
- Andrew, John. Auxiliary carburetor. 3,531,094, Cl. 261-23.
- Andrews, Raymond J., Fields, Gary C., and Thompson, Harold K., to American Telephone and Telegraph Company. Telephone reporting set. 3,531,597, Cl. 179-5.
- Anello, Anthony P. Golf practicing apparatus. 3,531,125, Cl. 273-197.
- Angell, Robert. Quick-draw gun holster. 3,531,031, Cl. 224-2.
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- Yoshimoto, Toshio, Kaneko, Seiya, Narumiya, Tsuneaki, and Yoshii, Hiroshi, to Budgestone Tire Company Limited. Three component hydrogenation catalysts and a process for hydrogenating polmers by the use of them. 3,531,450, Cl. 260-85.1
- Yoshimoto, Toshio, Kaneko, Seiya, Yoshii, Hiroshi, and Sasaki, Takashi, to Bridgestone Tire Company Limited. Process for hydrogenating polymers. 3,531,445, Cl. 260-80.7
- Yoshioka, Kazuhiko: *See—*
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- Young, Niels O., to Block Engineering, Inc. Accelerometer. 3,530,726, Cl. 73-516.
- Youngdale, Gilbert A., to Upjohn Company, The. 2,4,5-triphenyl-(and substituted triphenyl)- 3-acetonitriles of pyrrole. 3,531,497, Cl. 260-326.5
- Youngstown Sheet and Tube Company: *See—*
  - Cullen, Roy H., 3,530,564.
  - Hoadley, Cyrus E., 3,530,911.
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- Zammit, Frank X., to Lamb, Joseph F., Company. Electrical discharge machining with step driven electrode. 3,531,615, Cl. 219-69.
- Zar, Jacob L., to Avco Corporation. Foil wrapped superconducting magnet. 3,530,682, Cl. 62-65.
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- Zimmermann, Hans G., to Bodenseewerk Perkin-Elmer & Co., G.m.b.H. Analytical instrument. 3,530,707, Cl. 73-23.1
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- Corbin, Horace R., Jr., and H. H. Vickers. Universal clamp for splicing inner tubes. T878,015, 9-29-70, Cl. 269—43.
- Czarnikow, George K. Image forming methods and means. T878,014, 9-29-70, Cl. 355—17.
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  - Oftedahl, Edwin N., and De Seyn. T878,013.
- Deverell-Smith, Raymond: *See*—
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  - Finch, Neil L. T878,012.
- Finch, Neil L., to E. I. du Pont de Nemours and Co. Finish composition for textile fibers. T878,012, 9-29-70, Cl. 252—8.9.
- Gilman, Paul B., and J. Y. Kaukeinen. Electrophotographic process in which a charged and image-wise exposed photoconductor contacts a photosensitive silver halide emulsion and forms a developable image therein. T878,016, 9-29-70, Cl. 96—1.
- Goffe, Charles A. Use of polycarboxylic acids and acid derivatives as antifoggants for certain emulsions. T878,021, 9-29-70, Cl. 96—109.
- Goffe, Charles A., and R. L. Schneider. Enhanced film hardening by ultrasonic treatment. T878,024, 9-29-70, Cl. 96—111.
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- Hunt, William E. Electrophoretic charging method and apparatus. T878,019, 9-29-70, Cl. 204—181.
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- Jackson, Winston J., Jr., and J. R. Caldwell. Process for insolubilizing polycarbonates and polyesters. T878,018, 9-29-70, Cl. 260—860.
- Kaukeinen, Joseph Y.: *See*—
  - Gilman, Paul B., and Kaukeinen. T878,016.
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- Rauner, Frederick J. Photographic physical development utilizing a silver-organic complex. T878,020, 9-29-70, Cl. 96—50.
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- Taylor, Robert J., R. Deverell-Smith, and C. W. Greenhalgh, to Imperial Chemical Industries, Ltd. Polyolefine composition. T878,023, 9-29-70, Cl. 260—41.
- Trachtenberg, William. Selective stripping of photoconductive material to make a printing master. T878,022, 9-29-70, Cl. 96—1.
- Vickers, Herbert H.: *See*—
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- Lazrus, Julian, L. H. Strauss, and W. P. Canning, to Benrus Corp. Electronic timepiece. Re. 26,958, 9-29-70, Cl. 58—23.
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- Artz, Kenneth W., to W. R. Grace & Co. Combined packaging tray and cover. 218,803, 9-29-70, Cl. D9—219.
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- Caranica, Gloria, to Universal Education Corp. Enclosed child's crib or similar article. 218,795, 9-29-70, Cl. D5—5.
- Castelli, Charles, and E. E. Hoyt, to Johnson & Johnson. Tape dispenser. 218,861, 9-29-70, Cl. D74—1.
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CLASSIFICATION OF PATENTS

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Design Patents

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U.S. DEPARTMENT OF COMMERCE
Official Gazette of the United States Patent Office
September 29, 1970 Volume 878 Number 5

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755** (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** July 24, 1970, D.C. Colo. (Denver), Doc. C–2456, *The Coca-Cola Company* v. *Mile-Hi Service & Supply Co., Inc.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg. No. 226,173 (DAWN DONUT), Dawn Donut Company, Inc., Doughnuts and doughnut mixture; **Reg. No. 227,939** (DAWN), same, **filed** Mar. 16, 1970, D.C., N.D. Okla. (Tulsa), Doc. 70–C–77, *Dawn Donut Company* v. *William T. Day, doing business as Daylight Donut Flour Company.*

Reg. No. 227,939. (See Reg. No. 226,173.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 356,751 (PARTAGAS), Cifuentes y Compania, Cigars; **Reg. No. 440,817**, same; **Reg. No. 543,257** (DESIGN OF ENTIRE LABEL), same; **Reg. No. 544,239** ("PARTAGAS" AND LABEL), same; **Reg. No. 545,830** (EXPOSITION UNIVERSELLE DE 1878, ETC. AND LABEL DESIGN), same, **filed** July 9, 1970, D.C., S.D. Fla. (Miami), Doc. 70–1010–C–TC, *Rafael Cifuentes et al.* v. *LaRoma Cigar Co., Inc.*

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 440,817. (See Reg. No. 356,751.)

Reg. No. 543,257. (See Reg. No. 356,751.)

Reg. No. 544,239. (See Reg. No. 356,751.)

Reg. No. 545,830. (See Reg. No. 356,751.)

Reg. No. 603,047 (LONDON FOG), The Londontown Manufacturing Company, Raincoats for men, women and children, **filed** Nov. 21, 1968, D.C., S.D.N.Y., Doc. 68–C–4604, *The Londontown Manufacturing Co.* v. *Passaic Apparel Industries, Inc.* Consent judgment, defendant enjoined perpetually, July 1, 1970.

Reg. No. 611,148 (CURLEY'S FAMOUS HICKORY BURGER AND DESIGN), Christa M. Atwood, Sandwiches, **filed** July 14, 1970, D.C. Kans. (Wichita), Doc. W–4399, *Curley's Famous Hickory Burgers, Inc.* v. *Douglas Miller, doing business as Tastee Freeze.*

Reg. No. 661,163 (EXECUTIVE TRAVEL), Executive Travel Service, Inc., Travel ticket agency services, *filed* July 8, 1970, D.C., E.D. Mich. (Detroit), Doc. 35093, *Daniel J. McCarthy and Executive Travel Services, Inc.* v. *Milford Boersma, Diners Fugazy Travel, Inc.*

Reg. No. 762,023 (FLOATERS), Bates Shoe Company, Men's shoes, **filed** Apr. 24, 1970, D.C.N.J. (Newark), Doc. C–508–70, *Wolverine World Wide, Inc.* v. *Frier Industries et al.* Consent judgment for permanent injunction, June 5, 1970.

Reg. No. 764,543 (CITCO), Cities Service Oil Company, Lubricating oils; **Reg. No. 798,036**, same, Gasoline, **filed** June

CONDITION OF TRADEMARK APPLICATIONS AS OF AUGUST 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	20, 135
Date of oldest new application	June 27, 1969
Date of oldest amended application (filing date)	January 28, 1966

C. M. WENDT, Director, Trademark Examining Operation TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	11-5-69	11-7-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	11-1-69	1-28-66
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	1-12-70	4-7-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-27-69	12-19-66
Renewals (All Classes)	7-6-70	....
Sec. 12(c) Publications (All Classes)	7-16-70	....

Applications filed during the month of August 1970—2666

Registrations Issued	521—No. 899,440 to No. 899,960
Renewals Issued	120

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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15, 1967, D.C., N.D. Ohio (Cleveland), Doc. C-67-415, *Citco, Inc.* v. *Cities Service Oil Company.* Final order, parties entered into settlement agreement; all issues and all claims and demands for relied in complaint against Cities Service Oil Co. dismissed with prejudice, July 1, 1970.

Reg. No. 771,737 (SHIELD DESIGN), Tenneco Corporation, Petroleum products—namely, gasoline, lubricating oil and grease, diesel fuel and furnace oils, **filed** Aug. 16, 1967, D.C.N.J. (Newark), Doc. 868-67, *Tenneco Inc.* v. *Raritan Oil Co., Inc.* Order of dismissal of action, June 25, 1970.

Reg. No. 798,036. (See Reg. No. 764,543.)

Reg. No. 851,947 (CORIN TELLADO), Editorial America, S.A., Magazine in the Spanish language containing illustrated and non-illustrated stories, **filed** July 27, 1970, D.C., S.D. Fla. (Miami), Doc. 70-1105-C-TC, *Editorial America, S.A.* v. *Goyescas Corp. of Florida.*

Reg. No. 859,703 (POLYGLAS), The Goodyear Tire & Rubber Company, Tires, **filed** May 5, 1970, D.C., S.D.S.C. (Charleston), Doc. 70-373, *The Goodyear Tire & Rubber Company* v. *Public Wholesale Tire, Inc., doing business as Public Wholesale Tire Outlet and Tire Outlet.* Final judgment, defendant permanently enjoined, June 30, 1970.

Reg. No. 884,489 (MAKO AND DESIGN), Mako Marine, Inc., Boats and parts thereof, **filed** July 9, 1970, D.C., S.D. Fla. (Miami), Doc. 70-1008-C-CA, *Mako Marine, Inc.* v. *Mako, Inc.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 296,361. Julianna Tisza, d.b.a. Dipl, Ing. Bela Tisza & Co., Vienna, Austria. Filed Apr. 23, 1968.

FONDER

Owner of Austrian Reg. No. 17,425, dated Feb. 21, 1950.

Class 1—Raw or Partly Prepared Materials

For Molding Sand Additives, Foundry Parting Compounds, Pattern Coating Compounds for Foundry Use Core Wash, and Foundry Facings (Int. Cl. 1).

Class 5—Adhesives

For Foundry Core Binders (Int. Cl. 1).

Class 6—Chemicals and Chemical Compositions

For Chemical Compounds for Use in Foundry and Casting Work—Namely, Deoxidizing, Purifying, Degassing, and Hardening Agents (Int. Cl. 1).

Class 14—Metals and Metal Castings and Forgings

For Metal Powder for Foundry Use—Namely, Metallic Casting Powder (Int. Cl. 6).

Class 7—Cordage

For Narrow Fabric Tapes, Ribbons and Bows for Gift Wrapping Purposes (Int. Cl. 26).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Zippers (Int. Cl. 26).

Class 40—Fancy Goods, Furnishings, and Notions

For Rick Rack, Narrow Lace Trimming, Narrow Fabric Tapes, Bias Tapes, Seam Bindings, Rufflings, Braid, Piping, Frillings, Novelty Trims, Hem Facings and Ribbons (Int Cl. 26).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Fabric Ribbon (Int. Cl. 24.

First use Nov. 15, 1915.

SN 306,293. Jak-Pak, Inc., Milwaukee, Wis. Filed Aug. 30, 1968

TINY TEEN

Class 37—Paper and Stationery

For Miniature Desk Set or Kit, Consisting of a Memo Pad, a Pencil, an Erasure, a Pencil Sharpener, Paper Clips and Rubber Bands (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Miniature Sun Set or Kit, Consisting of Sunglasses, Sun Tan Lotion and Hair Clips; Miniature Hair Set or Kit, Consisting of a Comb, a Brush, Hair Curlers, Hair Clips and Shampoo; Miniature Bath Set or Kit, Consisting of Soap, a Sponge, Body Powder, Powder Puff and Cologne; Miniature Clean Up Kit, Consisting of Soap, a Toothbrush, Toothpaste, a Comb and a Sponge; and a Miniature Launderette Set or Kit, Consisting of Clothespins, Soap and a Clothesline (Int. Cls. 20 and 21).

Class 51—Cosmetics and Toilet Preparations

For Miniature Manicure Set or Kit, Consisting of Nail Polish With Applicator, Polish Remover, a Cotton Pad, an Emery Board and Finger Cleaning Sticks; and Miniature Make-Up Kit, Consisting of Lipstick, Face Powder, Rouge, a Powder Puff and Perfume (Int. Cl. 3).

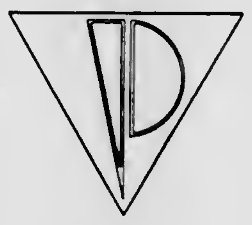
First use 1969.

SN 313,366. Wm. E. Wright Co., West Warren, Mass., by change of name from Wm. E. Wright & Sons Co., West Warren, Mass. Filed Nov. 29, 1968.

WRIGHTS

Owner of Reg. Nos. 385,536, 815,024, and others.

SN 313,923. Firma Dr. Ing. h.c. F. Porsche KG, Stuttgart-Zuffenhausen, Germany. Filed Dec. 9, 1968.



Owner of German Reg. No. 824,731, dated Oct. 7, 1966.

Class 19—Vehicles

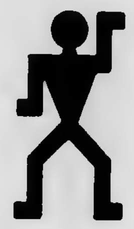
For Automobiles and Structural Parts Thereof (Int. Cl 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Engines for Automobiles and Parts Thereof (Int. Cl. 12).

First use Apr. 16, 1968; in commerce Apr. 16, 1968.

SN 323,617. J. A. Henckels Zwillingswerk AG, Solingen, Germany. Filed Apr. 4, 1969.



Owner of German Reg. No. 704,820, dated May 17, 1956; and U.S. Reg. Nos. 652,020, 867,787, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Magnetic Knife Holders (Int. Cl. 21).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Cutlery and Manually operated Tools of Nonprecious Metal—Namely, Tongs, Hammers, Screw Spanners, Files, Milling Tools, Borers, Awl, Sawblades, Ladles; Bar Sets, Table Flat Ware, Knives of nonprecious Metal, Including Bar Knives, Butcher Knives, Boning Knives, Bread Knives, Carving Knives, Steak Knives, Cheese Knives, Decorating Knives, Kitchen Knives Electricians' Knives, Gardeners' Knives, Hunting Knives, Pocket Knives, Scrapers, Skinning Knives, Saddlers' Knives, Woodcarving Knives, Knives for Industrial Applications; Serving Forks, Fondue Forks, Pot Forks, Carving Forks; Serving Spoons, Long Drink Spoons, Jam Spoons, Sugar Spoons, Ice Cream Spoons, Baby Food Pushers, Cake Turners and Lifters; Barbers' Sscissors, Candle Scissors, Dressmaker Shears, Embrodiery Scissors, Kitchen Shears, Nose Scissors, Paper Shears, Pinking Shears, Pocket Scissors, Poultry Shears, Sewing Scissors, Silhouette Scissors, Scissors for Industrial Use, Tailors' Scissors; Household Steels; Nutcrackers; Corkscrews, Can Openers; Cigar Cutters, Cigar Box Openers; Razors, Razor Blades, Sabers, Foils, Machetes; Letter Openers, Bottle Openers, Knife Sharpeners, Cleavers, Hair Clippers; Woodcarving Tools; Wrenches; Counter-Sink Drills, Pane Cutters, Screw Vises; Ice Cream Servers, Food Servers (Int. Cls. 8 and 21).

Class 44—Dental, Medical, and Surgical Appliances

For Devices for Body and Beauty Care—Namely, Nail Files, Nail Scissors, Nail Nippers, Nail Pliers, Skin Scissors, Cuticle Scissors, Tweezers, Pincers, Nail Cleaners, Nail Scrapers, Corn Knives, Nail Clips, Cuticle Nippers, Cuticle Clippers and Manicure Sets (Int. Cl. 8).

SN 326,577. DCA Food Industries, Inc., New York, N.Y. Filed May 7, 1969.

Applicant disclaims the word "Coffee" apart from the mark as shown.

COFFEE HUTCH

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Coffee Maker and Hot Water Dispensing Unit (Int. Cl. 21).

Class 46—Foods and Ingredients of Foods

For Coffee, Sugar, Sugar Substitute, and Cream Substitute (Int. Cls. 29 and 30).

First use Jan. 20, 1969.

SN 329,402. Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. Filed June 9, 1969.

FLEX-O-GRIP

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Tie-Down Clamps (Int. Cl. 27).
First use Dec. 6, 1968.

Class 20—Linoleum and Oiled Cloth

For Plastic Floor Runners (Int. Cl. 20).
First use Apr. 30, 1969.

SN 329,921. Northwestern Refining Co., St. Paul Park, Minn. Filed July 29, 1969.

The drawing is lined to indicate the colors red and blue. Owner of Reg. No. 123,572.

Class 6—Chemicals and Chemical Compositions

For Anti-Freeze Radiator Solutions, and De-Icing Preparations (Int. Cl. 1).

Class 15—Oils and Greases

For Refined Petroleum Products—Namely, Gasoline, Lubricating Oils and Greases, Kerosene, Diesel Fuel, Fuel Oil, Anti-Freeze Additives Used as Ingredients Incorporated in Gasoline (Int. Cls. 1 and 4).

Class 103—Construction and Repair

For Gas Station Services—Namely, Automotive Supply, Repair and Maintenance Service, Including Truck and Car Washing and Cleaning Services (Int. Cl. 37).

First use July 1962.

SN 332,789. American Data Corporation, Huntsville, Ala. Filed July 17, 1969.

AMERICAN DATA CORPORATION

The expression "Data Corporation" is disclaimed apart from the mark as a whole.

Class 21—Electrical Apparatus, Machines, and Supplies

For Audio Distribution Amplifier, Audio Monitor Amplifier, Special Effects Generator, EIA Sync Generator, Color Sync Generator (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Test Instruments—Namely, Power Supply Calibrator, Bar-Dot Generator, Multiburst Generator, and Staircase Generator; and Digital Clock (Int. Cl. 9).

First use Feb. 20, 1969.

SN 333,993. Yardley of London, Inc., New York, N.Y. Filed July 31, 1969.

SOUL EYES

No claim to exclusive rights to the word "Eyes" is made apart from the mark as shown.

Class 51—Cosmetics and Toilet Preparations

For Cologne, Foam Bath, and Mascara (Int. Cl. 3).
First use May 27, 1969.

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).
First use July 7, 1969.

SN 335,815. Lincoln Security Corp., Minneapolis, Minn. Filed Aug. 21, 1969.

LINCOLN SECURITY

Applicant disclaims the word "Security" apart from the mark as shown.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electronic Domestic Burglar, Fire and Emergency Alarm Systems and Component Parts Therefor (Int. Cl. 9).

Class 100—Miscellaneous

For Residential and Commercial Security and Alarm System Services (Int. Cl. 35).

First use September 1967.

SN 343,457. British-American Tobacco Company Limited, London, England. Filed Nov. 14, 1969.

JUNGLE GARDENIA

Without prejudice to applicant's rights now existing or hereafter arising, applicant disclaims the word "Gardenia," apart from the mark as shown. Owner of Reg. No. 334,173.

Class 51—Cosmetics and Toilet Preparations

For Perfumes, Body Lotion, Dusting Powder, and Bath Oil (Int. Cl. 3).
First use in or prior to 1961.

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).
First use in or prior to 1964.

SN 344,610. Pacific Fire Extinguisher Company, San Francisco, Calif. Filed Nov. 26, 1969.

ABA

Class 21—Electrical Apparatus, Machines, and Supplies

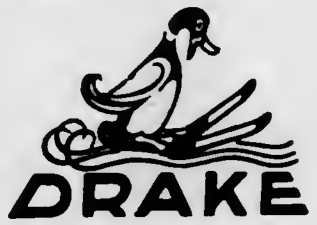
For Automatic Electrically Operated Burglar Alarm Systems (Int. Cl. 9).

Class 103—Construction and Repair

For Installation, Maintenance and Servicing of Automatic Burglar Detection and Protection Equipment (Int. Cl. 37).

First use at least as early as January 1957; at least as early as 1947 in a modified form.

SN 350,441. Woolsey Marine Industries, Inc., New York, N.Y. Filed Feb. 4, 1970.



Class 19—Vehicles

For Boat Paddles and Boat Hooks (Int. Cl. 12).

Class 50—Merchandise Not Otherwise Classified

For Boarding Ladders (Int. Cl. 20).

First use June 1957.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 302,639. Raybestos-Manhattan, Inc., Passaic, N.J. Filed July 12, 1968.

REFSET

For Fluoroelastomer Fireproofing Compound Sold in Sheets, Slabs, and Liquid Form, for General Use in the Industrial Arts (Int. Cl. 17).
First use Apr. 5, 1968.

SN 306,550. Centrala Importowa-Eksportowa Przemyslu Skorzanego "Skorimpex," Lodz, Poland. Filed Sept. 4, 1968.

SYRENA
SELECTED POLISH FUR

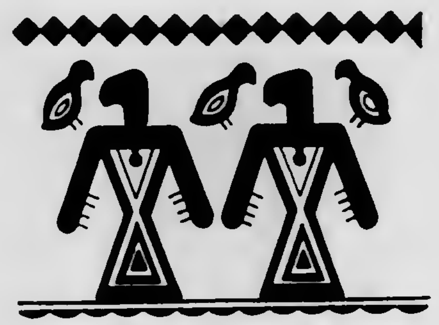
The English translation of "Syrena" is "siren." No Claim is made to the words "Selected Polish Fur" apart from the mark as shown. Owner of Polish Reg. No. 47,050, dated Mar. 22, 1967.
For Mink and Fox Furs (Int. Cl. 18).

SN 316,075. Kee-Wah-Din Farms, Montrose, Mich. Filed Jan. 8, 1969.

KEE-WAH-DIN

"Ke-Wah-Din" is a Chippewa term meaning "fresh breeze."
For Horses (Int. Cl. 31).
First use Mar. 18, 1968.

SN 316,076. Kee-Wah-Din Farms, Montrose, Mich. Filed Jan. 8, 1969.



For Horses (Int. Cl. 31).
First use Mar. 18, 1968.

SN 349,376. Oil-Dri Corporation of America, Chicago, Ill. Filed Jan. 22, 1970.

ROCKEEZ

For Decorative Ground Cover in the Form of Rocks (Int. Cl. 19).
First use Nov. 20, 1969.

SN 349,817. Balamundi-Nederland N.V., Huizen N.H., Netherlands. Filed Jan. 28, 1970.

BALAN

Owner of Dutch Reg. No. 170,580, dated Feb. 19, 1969.
For Artificial Leather and Synthetic Leather (Int. Cl. 18).

Class 2 — Receptacles

SN 327,020. Manfred Hlob, d.b.a. H & W Imports, New York, N.Y. Filed May 12, 1969.

INDISPENSABLE DISPENSER

The word "Dispenser" is disclaimed except in connection with the entire mark.
For Clamp-Like Holder and Dispenser for Collapsible Tubes, Such as to Hold Toothpaste, Glues and Paints (Int. Cl. 21).
First use on or about Sept. 17, 1968.

SN 338,573. Intercraft Industries Corporation, Chicago, Ill. Filed Sept. 22, 1969.

TRES AMOUR

The word "Tres" means "very" and "Armour" means "love."
For Vanity Trays (Int. Cl. 20).
First use July 14, 1969.

SN 349,194. Masonite Corporation, Chicago, Ill. Filed Jan. 21, 1970.

Protect-O-Glass

For Plastic Material in the Form of Containers or Packages for Burial Caskets, Electrical Transformers, and Various Other Industrial Products (Int. Cl. 20).
First use Aug. 3, 1960.

SN 351,152. Societe d'Emballages Plastiques, 92 Neuilly-sur-Seine, France. Filed Feb. 11, 1970.

PACFILM

Owner of French Reg. No. 752,456, dated Oct. 18, 1968.
For Plastic Sheets, Rods, Plates, Sections, and Tubes for General Use in the Industrial Arts; and Plastic Sheet Material for Packaging Purposes (Int. Cl. 17).

SN 356,673. W. R. Grace & Co., Duncan, S.C. Filed Apr. 13, 1970.

AIRMOLD

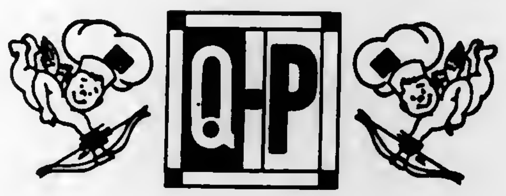
For Plastic Cases for Carrying and Displaying Goods Sold at Retail Such as Tools, Artist Supplies, Wigs and the Like (Int. Cl. 20).
First use at least as early as 1964.

SN 357,441. Union Carbide Corporation, New York, N.Y. Filed Apr. 20, 1970.

GLAD

Owner of Reg. Nos. 738,875 and 811,542.
For Plastic Bag Holders (Int. Cl. 21).
First use on about Nov. 24, 1969.

SN 357,635. Q-P, Inc., Saddle Brook, N.J. Filed Aur. 22, 1970.



For Plastic Food Containers (Int. Cl. 20).
First use Jan. 20, 1970.

SN 358,703. Continental Can Company, New York, N.Y. Filed May 4, 1970.

WAMPUM

For Paper Bags (Int. Cl. 16).
First use Mar. 31, 1970.

SN 359,816. Brown Company, New York, N.Y. Filed May 15, 1970.

DURA-CUP

For Drinking Cups Made from Foamed Plastic (Int. Cl. 21).
First use on or before Aug. 12, 1963.

SN 360,662. Aerosol Containers, Inc., Bound Brook, N.J. Filed May 25, 1970.

AERO WELD

For Cans (Int. Cl. 6).
First use Apr. 29, 1970.

SN 361,084. Acme Backing Corporation, Stamford, Conn. Filed May 28, 1970.

STERIFIELD

For Bags of Composite Paper and Plastic Film for Packaging Sterile Items (Int. Cl. 16).
First use May 13, 1970.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 332,702. Faircraft Engineering, Inc., Porter, Ind. Filed July 16, 1969.

NOT SO BRIEF CASE

Without relinquishing any of its common law rights, applicant disclaims the words "Brief Case" apart from the mark as shown.
For Brief Cases and Attaché Cases (Int. Cl. 18).
First use June 1969.

SN 342,899. Reliable Luggage, Inc., West Pittsburg, Pa. Filed Nov. 6, 1969.

MARQUIS

For Suitcases, Valises, and Travelling Bags (Int. Cl. 18).
First use July 8, 1969.

Class 4 — Abrasives and Polishing Materials

SN 350,684. Certified Laboratories, Inc., Fort Worth, Tex. Filed Feb. 6, 1970.

PLATENE

For Cleaner, Waxer and Polisher (Int. Cl. 3).
First use May 26, 1967.

Class 6 — Chemicals and Chemical Compositions

SN 286,535. International Salt Company, Clarks Summit, Pa. Filed Dec. 8, 1967.

R-100

For Salt for Use in Chemical Industries (Int. Cl. 1).
First use on or about Jan. 28, 1958.

SN 296,763. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

For Printing Ink Ingredients—Namely, Pigments, Dyes, Dyestuffs, and Solvents for General Industrial Use (Int. Cls. 1 and 2).
First use Nov. 6, 1967.

SN 296,774. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

EXXON

For Defoliants (Int. Cl. 1).
First use Oct. 13, 1967.

SN 306,020. The Pavelle Corporation, New York, N.Y., assignee of Pavelle Limited, Epsom, Surrey, England. Filed Aug. 19, 1968.

PAVELLE

For Photographic Chemicals (Int. Cl. 1).
First use July 1966; in commerce July 1966.

SN 306,112. The Ansul Company, Marinette, Wis. Filed Aug. 28, 1968.

SUCKER-STUFF

For Chemical Compositions for Retarding the Growth of Plants (Int. Cl. 5).
First use June 8, 1968.

SN 317,696. Allied Chemical Corporation, New York, N.Y. Filed Jan. 28, 1969.

A-C MIREX

For Insecticides for Ants (Int. Cl. 5).
First use at least as early as Sept. 23, 1968.

SN 323,730. Premier Industrial Corporation, Cleveland, Ohio. Filed Apr. 4, 1969.

CURON

For Chemical Compound for Curing and Hardening Concrete Surfaces, Such as Floors, Pavements, Decks, Docks and Concrete-Formed Structures (Int. Cl. 1).
First use Mar. 25, 1969.

SN 337,274. Continental Oil Company, Ponca City, Okla. Filed Sept. 8, 1969.

CONOCO WBA

Owner of Reg. No. 884,427.
For Foaming Agents (Int. Cl. 1).
First use Dec. 10, 1968.

SN 340,368. The Cincinnati Milling Machine Company, Cincinnati, Ohio. Filed Oct. 10, 1969.

CIMCOOL

Owner of Reg. Nos. 415,093 and 782,291.
For Bactericide Concentrates for Use as Additives to Cooling and Lubricating Compounds in Machine Tools (Int. Cl. 5).
First use Nov. 1, 1957.

SN 346,413. Thuron Industries, Inc., Dallas, Tex. Filed Dec. 6, 1969.

KEMIC

For Insecticides for Pets—Namely, Flea and Tick Powder and Liquid (Int. Cl. 5).
First use June 1959.

SN 347,413. Shaw Mudge & Company, Stamford, Conn. Filed Dec. 30, 1969.

ALLERDERM

For Combination of Essential Oils for Use in the Manufacture of Perfumes, Soaps and Flavors (Int. Cl. 3).
First use Dec. 4, 1969.

SN 352,767. CPC International Inc., Englewood Cliffs, N.J. Filed Mar. 2, 1970.

ESTERCOTE

For Chemically Modified Starches (Int. Cl. 1).
First use at least as early as Dec. 4, 1969.

SN 353,436. Continental Oil Company, Ponca City, Okla. Filed Mar. 9, 1970.

PHOSPHODUST

Owner of Reg. No. 512,010.
For Carrier Material for Pest Control Compounds, Said Material Consisting of Natural Phosphate in Finely Powdered Form (Int. Cl. 1).
First use Mar. 27, 1947.

SN 353,854. Chevron Chemical Company, San Francisco, Calif. Filed Mar. 12, 1970.

HYJET

For Phosphate Esters Useful As Fire Resistant Aircraft Hydraulic Fluids (Int. Cl. 1).
First use June 26, 1968.

SN 354,031. The Sherwin-Williams Company, Cleveland, Ohio. Filed Mar. 13, 1970.

TIDOX

For Titanium Dioxide Pigments (Int. Cl. 2).
First use Feb. 3, 1970.

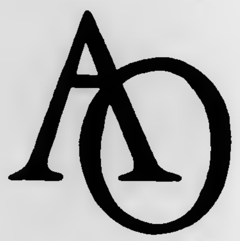
Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 330,704. Baumritter Corporation, New York, N.Y. Filed June 23, 1969.

ETHAN ALLEN

"Ethan Allen" is the name of the early American patriot who is now deceased. Owner of Reg. Nos. 381,746 and 737,146.
For Ash Trays, Cigarette and Cigar Lighters (Int. Cl. 34).
First use during October 1968.

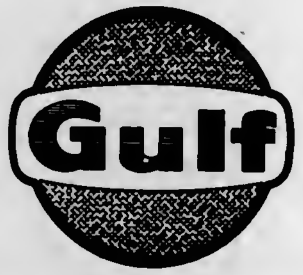
SN 335,654. American Optical Corporation, Southbridge, Mass. Filed Aug. 19, 1969.



Owner of Reg. Nos. 268,217, 855,168, and others.
For Cigarette Cases (Int. Cl. 34).
First use 1955.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 347,861. Gulf Oil Corporation, Pittsburgh, Pa. Filed Jan. 7, 1970.



The drawing is lined for the colors orange and blue. Owner of Reg. Nos. 710,757, 710,758, and others.
For Blasting Agents, High Explosives, Explosive Boosters, and Initiators Therefor (Int. Cl. 13).
First use on or about Feb. 10, 1966.

SN 356,621. Centuri Engineering Company, Inc., Phoenix, Ariz. Filed Apr. 13, 1970.

SURE-SHOT

For Model Rocket Engine Igniters (Int. Cl. 18).
First use June 15, 1966.

Class 10 — Fertilizers

SN 327,494. A. H. Hoffman, Inc., Landisville, Pa. Filed May 16, 1969

TRANS-PLANT

For Hormone and Fertilizer Preparations (Int. Cl. 1).
First use Oct. 31, 1969.
Subj. to Intf. with SN 328,196.

SN 328,196. Pacific Agro Company, Seattle, Wash. Filed May 23, 1969.

TRANSPLANTER

For Fertilizer (Int. Cl. 1).
First use November 1957.
Subj. to Intf. with SN 327,494.

SN 344,581. Puregro Company, Los Angeles, Calif. Filed Nov. 25, 1969.

MARCO

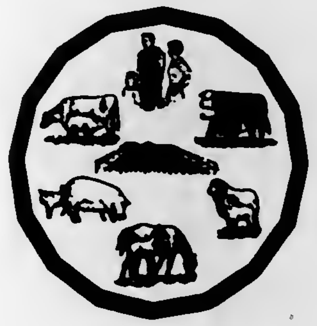
For Fertilizers (Int. Cl. 1).
First use June 1962.

SN 346,094. Man-An-So Corporation, Nevada, Iowa. Filed Dec. 12, 1969.

MAN-AN-SO

For Fertilizer (Int. Cl. 1).
First use Apr. 1, 1966.

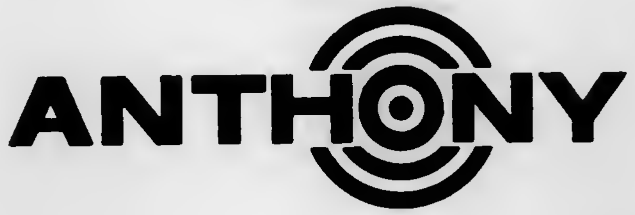
SN 346,096. Man-An-So Corporation, Nevada, Iowa. Filed Dec. 12, 1969.



For Fertilizer (Int. Cl. 1).
First use Apr. 1, 1966.

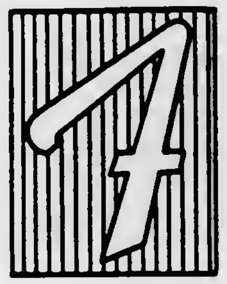
Class 12 — Construction Materials

SN 312,417. Anthony Forest Products Company, El Dorado, Ark. Filed Nov. 18, 1968.



For Wood Products—Namely, Lumber, Poles, Laminated Beams, Laminated Roofing, Wood Parts and Laminated Wood Parts as Components for Manufactured Products, Such as Bases for Table Tops, Park Benches, Toy Parts and the Like, and Plywood (Int. Cl. 19).
First use Apr. 23, 1965.

SN 314,328. Farmaster Products, Inc., Shenandoah, Iowa. Filed Dec. 12, 1968.



The drawing is lined for the color red.
For Farm Gates—Namely, Bull Pens, Hog Gates, Custom Made Gates, Wire, Wood, Steel and Aluminum Gates, Ornamental Walk and Drive Gates; Do-It-Yourself Gate Construction Packages, Including Gate Panels for Uprights, Gate Panels for Diagonal Braces, Strap Hinges, Hinge Hooks, Chain Latches, Stove Bolts With Washers, and Directions for Assembly; Hog Farrowing Stalls and Equipment and Accessories Therefor, Gate Lifts, Gate Irons, Anchor Stakes (Int. Cls. 6 and 19).
First use Jan. 2, 1963.

SN 322,889. Miraclefoam Products, Inc., Bloomington, Ind. Ind. Filed Mar. 26, 1969.

MIRACLEBOND
CHEMICAL #150

No claim is made to the word "Chemical." Owner of Reg. No. 881,961.
For Bonding Adhesive for Plaster, Stucco, Masonary, Concrete, and Mortars (Int. Cl. 1).
First use Nov. 14, 1967.

SN 325,908. The Upco Company, Cleveland, Ohio. Filed Apr. 29, 1969.

UPCO

For Cements, Grouts, Mortars and Primers and Hardeners for the Same (Int. Cls. 1 and 19).
First use on or before Sept. 29, 1937.

SN 331,585. The Celotex Corporation, Tampa, Fla. Filed July 2, 1969.

EVERLASTIC

For Felt Roofing and Sheathing, and Building Paper and Roofing Adhesive Cement (Int. Cl. 19).
First use Mar. 5, 1908.

SN 335,349. Adler Kay Co., Inc., Wayne, Mich. Filed Aug. 14, 1969.
For Plastic Laminated Wood for Use in the Manufacture

AKALON

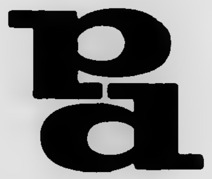
of Kitchen Cabinets (Int. Cl. 19).
First use on or before July 11, 1969.

SN 342,275. Kalman Floor Company Inc., White Plains, N.Y. Filed Oct. 31, 1969.

CHEM-GROUND

For Terrazzo Ground Finish Chemical Resistant Epoxy Floor Topping (Int. Cl. 19).
First use July 1, 1969.

SN 345,198. Peachtree Doors, Inc., Atlanta, Ga. Filed Dec. 3, 1969.



For Sliding Glass Doors and Bathtub Enclosures (Int. Cl. 11).
First use May 4, 1959.

SN 346,331. United Paint Manufacturing, Inc., Spokane, Wash. Filed Dec. 15, 1969.

MARAGEMS

For Building Surface Coatings Combining Crystals Within a Resin Binder (Int. Cl. 19).
First use Sept. 30, 1968.

SN 350,392. Leek-Proof, Inc., Chicago, Ill. Filed Feb. 3, 1970.

GUMBO

For Glazers' Putty (Int. Cl. 2).
First use 1932.

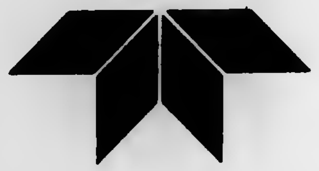
SN 351,655. General Refractories Company, Philadelphia, Pa. Filed Feb. 18, 1970.

BUBBALITE

For High Alumina Refractory Castable for Use as a Furnace Lining (Int. Cl. 19).
First use Dec. 4, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 312,241. Teledyne, Inc., Los Angeles, Calif. Filed Nov. 14, 1968.



Owner of Reg. No. 819,762.
For Flow Control Valves, and Gas Lift Valves (Int. Cl. 6).
First use September 1967.

SN 323,894. United States Brass Corp., Los Angeles, Calif. Filed Apr. 1, 1969.

NEOFLON-D

For Specialized Bibb Washer and Bonnet Material Particularly Adapted for Use With Valves (Int. Cl. 17).
First use June 1967.

SN 333,074. All-Steel Equipment Inc., Aurora, Ill. Filed July 22, 1969.

C

Owner of Reg. No. 365,386.
For Brackets for Mounting Electrical Boxes on Metal Studs (Int. Cl. 6).
First use at least as early as September 1968.

SN 335,315. Beckett-Harcum Company, Wilmington, Ohio. Filed Aug. 14, 1969.

AIR-PAL

For Pneumatic and Hydraulic Valves (Int. Cl. 6).
First use Jan. 2, 1963.

SN 338,222. CPF Plastics Limited, Montreal, Quebec, Canada. Filed Sept. 18, 1969.

DUALAM

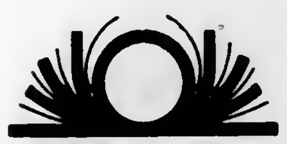
Priority claimed under Sec. 44(d) on Canadian Application Filed Mar. 19, 1969; Reg. No. 167,858, dated Feb. 27, 1970.
For Plastic Pipe, Particularly Rigid P.V.C. Pipe Reinforced With Polyester Fibre Glass Bonded Externally to the Pipe, Pipe Fittings, Tanks and Towers Used in Chemical Processing, and Fittings Associated With Said Tanks and Towers in Which a Combination of Rigid Unplasticized P.V.C. and Polyester Fibre Glass Is Used (Int. Cl. 17).

SN 343,890. Youngstown Sheet and Tube Company, Youngstown, Ohio. Filed Nov. 18, 1969.

TOPGRIP NUT

Applicant disclaims any exclusive right to the use of the word "Nut" except when used as a component of the mark.
For Fasteners (Int. Cl. 6).
First use in or about September 1968.

SN 349,885. Olin Corporation, East Alton, Ill. Filed Jan. 28, 1970.



For Metal Tubing (Int. Cl. 6).
First use on or about Dec. 10, 1969.

SN 350,213. Borg-Warner Corporation, Chicago, Ill. Filed Feb. 2, 1970.

MICRO-POR

For Plastic Pipe (Int. Cl. 17).
First use on or prior to Sept. 29, 1969.

SN 350,255. James H. Gehring, d.b.a. Cap Systems, Fairview Park, Ohio. Filed Feb. 2, 1970.

CAPSERT

For Fasteners for Plastics (Int. Cl. 6).
First use Mar. 9, 1966.

SN 350,390. J. O. King, Inc., Atlanta, Ga. Filed Feb. 3, 1970.

ACRES

For Metal Sleeves for Enlarging the Diameter of Fasteners (Int. Cl. 6).
First use on or about Nov. 12, 1969.

SN 352,541. Threadline Fastener Corporation, Covina, Calif. Filed Feb. 26, 1970.

THREADLINE

For Self-Locking Bolts or Screws (Int. Cl. 6).
First use Mar. 30, 1966.

SN 352,634. Gibraltar Fence Company, Inc., Houston, Tex. Filed Feb. 27, 1970.

WAC-A-BRAC

For Bracket for Fastening Wood Fencing and the Like to Posts (Int. Cl. 6).
First use at least as early as Nov. 26, 1967.

SN 352,643. Leslie Co., Parsippany, N.J. Filed Feb. 27, 1970.

LESLIE
AIRMATE

Owner of Reg. Nos. 560,044, 808,856, and others.
For Pressure-Reducing Valves (Int. Cl. 7).
First use Jan. 16, 1968.

SN 352,799. Fairchild Hiller Corporation, Germantown, Md. Filed Mar. 2, 1970.

SEETRU

For Pressure Relief Valves (Int. Cl. 7).
First use at least as early as July 1967.

SN 353,188. Glens Engineering Works (Proprietary) Limited, Germiston, Transvaal, Republic of South Africa. Filed Mar. 5, 1970.

GLEN

Owner of South African Reg. No. 319/46, dated Feb. 12, 1946.
For Fluid and Gas Valves and Cocks (Int. Cl. 6).
First use during 1931; in commerce during 1968.

SN 355,925. Valley-Todeco, Inc., Sylmar, Calif. Filed Apr. 3, 1970.

SINE-LOK

For Threaded Fasteners (Int. Cl. 6).
First use Jan. 14, 1970.

SN 357,289. Spray Clean Products Corp., Minneapolis, Minn. Filed Apr. 20, 1970.

CERJET

For Ceramic Spray Nozzles (Int. Cl. 6).
First use Aug. 20, 1968.

SN 358,157. Garlock Inc., Palmyra, N.Y. Filed Apr. 28, 1970.

GARFLEX

For Expansion Joints, Flexible Couplings, and Connectors (Int. Cl. 17).
First use Mar. 26, 1970.

Class 14—Metals and Metal Castings and Forgings

SN 359,957. Hudson Wire Company, Ossining, N.Y. Filed May 18, 1970.

hud stat

For Antistatic Carpet Wire (Int. Cl. 6).
First use Sept. 5, 1969.

Class 15—Oils and Greases

SN 312,784. Lubrication Engineers, Inc., Fort Worth, Tex. Filed Nov. 21, 1968.

MONOPLEX

Owner of Reg. No. 822,257.
For Lubricant for Central Lubrication Systems of Heavy Industrial Machinery (Int. Cl. 4).
First use Aug. 15, 1968.

SN 329,686. Baxter-King Corporation, Brooklyn, N.Y. Filed June 11, 1969.

ZIP UP

For Device Comprising a Wafer of Wax Between two Wafers of Plastic or Other Suitable Material for Lubricating Small Objects Such as Zippers, Fishing Lines, Keys, Locks, and the Like (Int. Cl. 4).
First use May 3, 1969.

SN 347,511. International Scientific Labs, Inc., Philadelphia, Pa. Filed Dec. 31, 1969.

PERM-O-TREAT

For Mold Release Agent for Concrete (Int. Cl. 4).
First use Oct. 26, 1969.

SN 364,350. Universal Motor Oils Co., Inc., Witchita, Kans. Filed July 6, 1970.

DYNA-PLEX

For Lubricating Gear Oil and Grease (Int. Cl. 4).
First use June 1, 1969.

Class 16—Protective and Decorative Coatings

SN 293,054. Saldarriaga Hnos y Cia., Medellin, Colombia. Filed Mar. 12, 1968.

PINTUCO

Owner of Colombian Reg. No. 20,593, dated Dec. 3, 1946.
For Paints, Varnishes and Lacquers (Int. Cl. 2).

SN 333,912. The Egyptian Lacquer Manufacturing Company, Kearny, N.J. Filed July 30, 1969.

EGYPTIAN

Owner of Reg. Nos. 187,538 and 545,500.
For Cellulose Derivative and Synthetic Resin Base Finishes and Coatings, and Associated Finishing and Coating Materials—Namely, Lacquers, Varnishes, Enamels, Clears, Primers, Glazes, Sealers, Fillers, Thinners, Reducers, and Paint Solvents (Int. Cl. 2).
First use September 1892 on lacquers, enamels and thinners.

SN 334,367. Petrolite Corporation, St. Louis, Mo. Filed Aug. 4, 1969.

KACI

For Corrosion Inhibitor Coating (Int. Cl. 2).
First use May 16, 1969.

SN 346,314. Somay Products, Inc., Miami, Fla. Filed Dec. 15, 1969.

SOMAY

Owner of Reg. No. 522,676.
For Varnishes (as Distinguished from Varnish Stains); Sealers in the Nature of a Paint; Acrylic, Latex, Alkyd and Vinyl Paints; Special Base and Finish Paint-Like Surface Coatings, Undercoatings and Conditioners; and Road and Marking Paints Known as Traffic, Zone-Marking and Highway Paints (Int. Cl. 2).
First use about Mar. 21, 1950.

SN 363,496. Stonetree Corp., Chicago, Ill. Filed June 24, 1970.

WINDY CITY

For Paint (Int. Cl. 2).
First use Mar. 17, 1970.

Class 17—Tobacco Products

SN 332,741. St. Regis Tobacco Corporation Limited, Zurich, Switzerland. Filed July 16, 1969.

CLAREMONT

For Cigarettes (Int. Cl. 34).
First use June 10, 1969; in commerce June 10, 1969.

SN 340,151. Imperial Tobacco Group Limited, Bedminister, Bristol, England. Filed Oct. 8, 1969.

MINATELIA

Owner of British Reg. No. 775,608, dated Mar. 20, 1958.
For Cigars (Int. Cl. 34).

SN 357,276. R. G. Dun Cigar Corporation, Lima, Ohio. Filed Apr. 20, 1970.

CORDIAL

For Cigars (Int. Cl. 34).
First use Apr. 13, 1970.

SN 357,507. Conwood Corporation, Memphis, Tenn. Filed Apr. 21, 1970.

HUSKY

For Snuff (Int. Cl. 34).
First use Mar. 13, 1970.

SN 358,234. R. G. Dun Cigar Corporation, Lima, Ohio. Filed Apr. 29, 1970.

LIQUEUR

For Cigars (Int. Cl. 34).
First use Apr. 13, 1970.

SN 359,471. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

BREAKTHROUGH

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

SN 359,474. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

CHATEAU

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

SN 359,476. Consolidated Cigar Corporation, New York, N.Y. Filed May 12, 1970.

SCIMITAR

For Cigars (Int. Cl. 34).
First use Apr. 28, 1970.

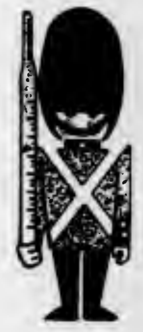
Class 18—Medicines and Pharmaceutical Preparations

SN 324,469. Joseph Laboratories, Inc., Los Angeles, Calif. Filed Apr. 14, 1969.

CUPID'S QUIVER

For Douche for Feminine Hygiene (Int. Cl. 5).
First use Apr. 18, 1968.

SN 331,675. Plough, Inc., Memphis, Tenn. Filed July 2, 1969.



The stippling on the drawing represents contrast in color; applicant makes no claim as to color.
For Safety Caps for Pharmaceutical Containers Sold Filled (Int. Cl. 20).
First use Apr. 9, 1969.

SN 341,574. Carter-Wallace, Inc., New York, N.Y. Filed Oct. 24, 1969.

NULSA

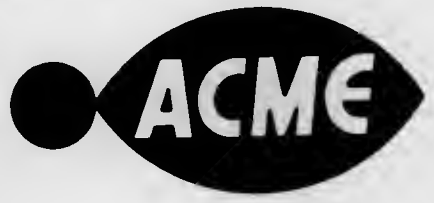
For Preparation for the relief of Gastrointestinal Disturbances (Int. Cl. 5).
First use Sept. 25, 1969.

SN 347,389. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed Dec. 30, 1969.

SEPTRA

For Antimicrobial Agent for the treatment of Infections (Int. Cl. 5).
First use Dec. 16, 1969.

SN 362,307. Acme Markets, Inc., Philadelphia, Pa. Filed June 11, 1970.



Owner of Reg. No. 779,354.
For Vitamin Tablets for Adults and Children and Family (Int. Cl. 5).
First use October 1968; Oct. 30, 1963, as to "Acme."

SN 362,625. Puritan-Bennett Corporation, Kansas City, Mo. Filed June 15, 1970.

PURITAN MAID

Owner of Reg. Nos. 127,471, 714,939, and others.
For Compressed Gases for Medicinal Use (Int. Cl. 5).
First use Sept. 15, 1934.

SN 363,500. The Upjohn Company, Kalamazoo, Mich. Filed June 24, 1970.

MOTRIN

Owner of Reg. No. 713,798.
For Antiinflammatory Agent (Int. Cl. 5).
First use Apr. 13, 1970.

SN 364,187. The Dow Chemical Company, Midland, Mich. Filed July 2, 1970.

MUMPCINE

For Mumps Vaccine (Int. Cl. 5).
First use June 11, 1970.

SN 364,189. The Dow Chemical Company, Midland, Mich. Filed July 2, 1970.

LIRUBEL

For Measles Vaccine (Int. Cl. 5).
First use June 11, 1970.

SN 364,857. E. R. Squibb & Sons, Inc., New York, N.Y. Filed July 10, 1970.

VALADOL

For Analgesic (Int. Cl. 5).
First use Mar. 6, 1970.

Class 19—Vehicles

SN 300,563. Compagnie Francaise Telma, Paris, France. Filed June 17, 1968.

FOCAL

Priority claimed under Sec. 44(d) on French Reg. No. 733,790, dated Dec. 21, 1967.
For Brakes and Retarders, More Particularly Hydrodynamic Brakes and Retarders and Eddy Current Brakes and Retarders for Use in Vehicles and Parts Thereof (Int. Cl. 12).

SN 321,968. The McLeans, Kelowna, British Columbia, Canada. Filed Mar. 17, 1969.

TRAILER CRUISER

Priority claimed under Sec. 44(d) on Canadian application filed Feb. 21, 1968; Reg. No. 158,742, dated Oct. 11, 1968.
For Watercraft Adapted to Receive a Camping Vehicle. (Int. Cl. 12).

SN 336,818. Leisuredyne, Inc., Morristown, N.J. Filed Sept. 2, 1969.

AQUA-DART

For Motorized Water Sled (Int. Cl. 12).
First use June 13, 1963.

SN 347,607. Imodco Inc., Los Angeles, Calif. Filed Jan. 2, 1970.

IMODCO

For Buoy to Anchor a Ship (Int. Cl. 6).
First use beginning of October 1958.

Class 20—Linoleum and Oiled Cloth

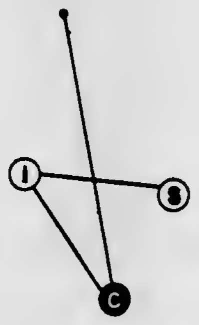
SN 329,386. Sears, Roebuck and Co., Chicago, Ill. Filed June 6, 1969.

LEXINGTON BRICK

The word "Brick" is disclaimed apart from the mark as shown, with no waiver of applicant's common law rights.
For Simulated Brick Wall Covering—Namely, Textured Plastic Plate Resembling Brick Face, Including Mortar Line on Sides, for Building Interiors (Int. Cl. 27).
First use on or about Aug. 19, 1968.

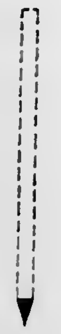
Class 21—Electrical Apparatus, Machines, and Supplies

SN 282,590. Instrumentation & Control Systems, Inc., Villa Park, Ill. Filed Oct. 16, 1967.



For Solid State Time/Delay Relays (Int. Cl. 9).
First use Jan. 2, 1964.

SN 284,596. A. M. Byers Company, Ambridge, Pa. Filed Nov. 13, 1967.



The drawing is lined for the color red.
For Galvanized Wrought Iron Grounding Rods (Int. Cl. 9).
First use Apr. 24, 1967.

SN 287,666. Oshino Electric Lamp Works, Ltd., Shinagawa-ku, Tokyo, Japan. Filed Dec. 27, 1967.

Oshino Lamps

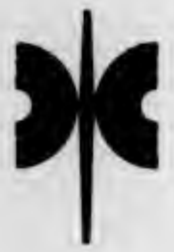
Applicant disclaims the word "Lamp" apart from the mark as shown.
For Miniature Electric Lamps (Int. Cl. 11).
First use Feb. 1, 1967; in commerce Apr. 1, 1967.

SN 298,434. Dazey Products Company, Kansas City, Mo. Filed May 17, 1968.

MEALS IN MINUTES

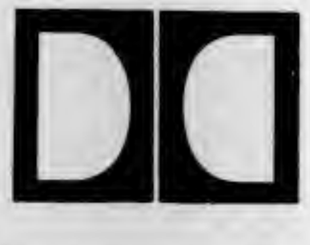
For Electric Machines for Heat Sealing Plastic Bags (Int. Cl. 7).
First use Apr. 12, 1968.

SN 321,545. Steigerwald Strahltechnik Gesellschaft mit beschrankter Haftung, Munich, Germany. Filed Mar. 12, 1969.



Owner of German Reg. No. 822,489, dated July 8, 1965.
For Machines and Machine Tools for the Treatment of Materials by Means of Beamed Energy-Carrying Rays—Namely, Electron Beam Welding Machines, Electron Beam Cutting Machines, Electron Beam Drilling and Boring Machines, Electron Beam Milling Machines, and Electron Beam Hardening Machines (Int. Cl. 7).

SN 326,861. Dolby Laboratories Inc., New York, N.Y. Filed May 9, 1969.



The mark consists of a double "D" design.
For Noise Suppressor Which Combats Noise in Transmission or Recording Systems (Int. Cl. 9).
First use Oct. 30, 1966.

SN 327,088. Nytronics, Inc., Pelham Mannor, N.Y. Filed May 12, 1969.

WEE LINE

Applicant disclaims the word "Line" apart from the mark as shown.
For Electrical Delay Lines (Int. Cl. 9).
First use 1961.

SN 327,090. Nytronics, Inc., Pelham Manor, N.Y. Filed May 12, 1969.

NYTcap

For Electrical Capacitors (Int. Cl. 9).
First use 1966.

SN 329,395. Tech Laboratories, Inc., Palisades, Park, N.J. Filed June 6, 1969.

TECH-LAB

For Radio Transmitting and Receiving Instruments and Parts—Namely, Attenuators, Faders, Fixed Pads, Gain Sets, Impedance Matching Networks, Multivibrators, Oscillators, Rheostats, Power Supply Amplifiers, Tap Switches, Decade Resistance Boxes, Precision Resistors, Line Equalizers, and Photoelectric Relays (Int. Cl. 9).
First use October 1933.

SN 329,538. Thomas & Betts Corporation, Elizabeth, N.J. Filed June 9, 1969.

COLOR-KEYED

Owner of Reg. Nos. 665,533 and 666,982.
For Electrical Connectors—Namely, Compression Sleeves, Lugs, Taps and Two-Way Connectors (Int. Cl. 9).
First use on or about June 6, 1956.

SN 330,047. Birns & Sawyer Cine Equipment Co., Inc., d.b.a. Birns & Sawyer International, Birns & Sawyer-Hollywood, and Birns & Sawyer, Los Angeles, Calif. Filed June 16, 1969.

HALODYNE

For Electric Floodlights and Spotlights for Photographic, Underwater, Observation and Scientific Illumination Purposes (Int. Cl. 11).
First use June 6, 1969.

SN 332,624. McWilliams Associates, Inc., Vincentown, N.J. Filed July 15, 1969.

AIR VENTURE

For Electrical Apparatus—Namely, Transient Eliminators for Protecting Electronic Equipment Used in Aviation (Int. Cl. 9).
First use June 2, 1969.

SN 337,527. Dek Inc., Bloomingdale, Ill. Filed Sept. 10, 1969.

dek

For Cable Clamps, Wire Ties, Saddle Clips, Strap Holders, Spindle Clips Used for Electrical Applications (Int. Cl. 9).
First use in or about May 1966.

SN 337,536. General Battery Corporation, Reading, Pa., by change of name from General Battery and Ceramic Corp., Reading, Pa. Filed Sept. 10, 1969.

SEALED FURY

For Storage Batteries (Int. Cl. 9).
First use Aug. 13, 1969.

SN 338,401. Jetco Electronic Industries, Inc., Huntsville, Tex. Filed Sept. 19, 1969.

DART

For Hand-Held, Beat Frequency Oscillator, Electronic Metal Detector Which, by Means of an Audio Signal and/or a Meter, Indicates the Proximity of Metal Objects Such as Coins or Pipes Buried Beneath the Earth (Int. Cl. 9).
First use June 1, 1969.

SN 339,919. The Muter Company, Chicago, Ill., Filed Oct. 6, 1969.

stereo 1

Applicant disclaims the word "Stereo" apart from the mark as shown.
For Loudspeaker Systems (Int. Cl. 9).
First use July 28, 1969.

SN 343,928. Arrow Trading Co., Inc., New York, N.Y. Filed Nov. 19, 1969.

ARROW

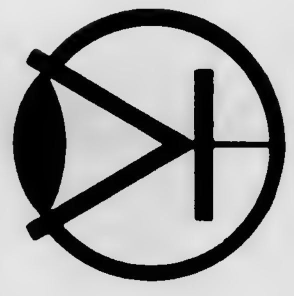
For Radios, Transistor Radios, Electric Toasters, AC Adaptors, Batteries, Battery Chargers, Battery Powered Fans, Burglar Alarms, and Electric Floor and Table Lamps (Int. Cls. 9 and 11).
First use Nov. 15, 1966.

SN 350,834. Sterling Electronics Corporation, Houston, Tex. Filed Feb. 9, 1970.

TEMPO

For Radios, Tuners, Receivers, and Transceivers in the Nature of Intercom Systems (Int. Cl. 9).
First use at least as early as about Feb. 19, 1966.

SN 352,033. Optron, Inc., Carrollton, Tex. Filed Feb. 24, 1970.



For Opto-Electronic Devices—Namely, Light Sensitive Transistors and Diodes (Int. Cl. 9).
First use at least as early as June 1969.

SN 352,716. Bishop Graphics, Inc., North Hollywood, Calif. Filed Mar. 2, 1970.

CIRCUIT ZAPS

Applicant disclaims the exclusive use of the word "Circuit" apart from the mark as shown.
For Electronic Circuit Board Components—Namely, Pre-Etched Pressure-Sensitive Patterned Copper Components, Pads and Conductor Paths, Terminals, and Conductor Wires (Int. Cl. 9).
First use Feb. 10, 1970.

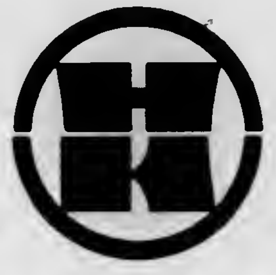
Class 22 — Games, Toys, and Sporting Goods

SN 305,570. Sifo Company, Minneapolis, Minn. Filed Aug. 20, 1968.

KINDER

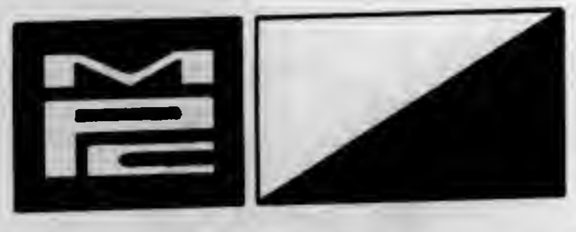
Owner of Reg. Nos. 641,681, 773,127, and others.
For Games—Namely, Toy Village Building Pieces and Sets of Building Blocks, and Table Game Equipment, Namely, Dominoes (Int. Cl. 28).
First use Mar. 7, 1951 on game equipment.

SN 311,495. Harmon Killebrew Enterprises, Inc., Salt Lake City, Utah. Filed Nov. 6, 1968.



The mark consists of the fanciful representation of the letters "H" and "K" and design.
For Athletic Equipment Comprising Baseball Batting Trainers for Tossing a Baseball Substantially Vertically Into the Air (Int. Cl. 28).
First use Sept. 19, 1968.

SN 320,964. Model Products Corporation, Mount Clemens, Mich. Filed Mar. 6, 1969.



For Toys, Comprising Model Cars, Boats, Aircraft, Military and Space Veehicles and Equipment; and Hobby Kits for Assembling Such Products (Int. Cl. 28).
First use Jan. 1, 1968.

SN 322,594. Igloo Import & Supply Co., Ltd., Ste. Agathe des Monts, Quebec, Canada. Filed Mar. 24, 1969.

SNO-VUE

Owner of Canadian Reg. No. 163,399, dated June 6, 1969.
For Ski Goggles (Int. Cl. 9).

SN 330,408. Plan-It-Kit, Inc., Westport, Conn. Filed June 18, 1969.

YANKEE DOODLE DANCER

The word "Danger" is disclaimed apart from the mark as shown.
For Toy—Namely, a Doll-Like Puppet or Marionette With Segmented Limbs Designed for Rhythmic Movements (Int. Cl. 28).
First use May 15, 1969.

SN 343,531. Faberge, Incorporated, New York, N.Y. Filed Nov. 14, 1969.

Lift·Tru

For Wrist Support for Use by Bowlers (Int. Cl. 28).
First use Sept. 1, 1969.

SN 343,921. Spare-Time Products, Inc., Minneapolis, Minn. Filed Nov. 19, 1969.

GOLF WRISTERS

For Wrist Supporting Bands for Use by Golfers (Int. Cl. 28).
First use Oct. 18, 1969.

SN 345,553. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

GEM DANDIES

Applicant makes no claim of exclusive right to the word "Gem" apart from the mark.
For Toy Jewelry Making Kit (Int. Cl. 28).
First use Oct. 9, 1969.

SN 345,562. Mattel, Inc., Hawthorne, Calif. Filed Dec. 8, 1969.

DIABLO

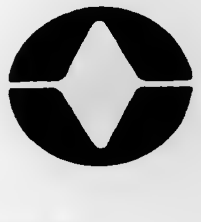
Owner of Reg. No. 867,480.
For Toy Miniature Automobile (Int. Cl. 28).
First use Oct. 30, 1969.

SN 355,090. Wham-O Mfg. Co., San Gabriel, Calif. Filed Mar. 26, 1970.

FIRETRON

For Sport and Toy Balls (Int. Cl. 28).
First use at least as early as Mar. 17, 1970.

SN 360,430. Olin Corporation, Stamford, Conn. Filed May 21, 1970.



For Snow Skis (Int. Cl. 28).
First use Mar. 25, 1970.

SN 363,829. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

FLIRTY FLOATY

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use May 18, 1970.

SN 363,830. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

EASTERN OVAL

For Toy Automobile Racing Set (Int. Cl. 28).
First use May 18, 1970.

SN 363,831. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

PET

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use May 18, 1970.

SN 363,834. Mattel, Inc., Hawthorne, Calif. Filed June 29, 1970.

CONTINENTAL OVAL

For Toy Automobile Racing Set (Int. Cl. 28).
First use May 18, 1970.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 293,015. The Ansul Company, Marinette, Wis. Filed Mar. 12, 1968.

MAGNUM

For Stationary and Mobile All Purpose Fire Fighting Apparatus, Namely, Engine Driven Fire Extinguishing Apparatus; Engine Driven Fire Securing Apparatus; Dry Chemical Fire Extinguisher Apparatus; Liquid Agent Fire Extinguishing and Securing Apparatus; Dual Agent Engine Driven Fire Extinguishing and Securing Units; Vehicular Fire Extinguishing and Securing Apparatus; Trailer-Mounted Fire Extinguishing and Securing Apparatus; Skid-Mounted Fire Extinguishing and Securing Apparatus; Crash Rescue Fire Control Trucks; and Liquid Agent Fire Extinguishers (Int. Cl. 9).
First use Sept. 8, 1967.

SN 307,839. Hardware and Industrial Tool Company, Inc. Philadelphia, Pa. Filed Sept. 20, 1968.

Shear Magic

No claim is made to the term "Shear" apart from the mark as shown. Owner of Reg. No. 543,937.
For Cutting Tools—Namely, Tinners' Snips, Aviation Shears, Cutting Pliers, Scissors, Manually Operated and Power Operated Shears, Grass Shears, and Hedge Shears (Int. Cls. 7 and 8).
First use Feb. 1, 1948.

SN 310,899. North American Rockwell Corporation, Reading, Pa., by merger from Wildman Jacquard Co., Norristown, Pa. Filed Oct. 30, 1968.

WILDMAN JACQUARD

Owner of Reg. No. 576,904.
For Knitting Machines and Parts Thereof, and Pattern Tape Punching and Duplicating Machines (Int. Cl. 7).
First use December 1956.

SN 325,114. Toro Manufacturing Corporation, Minneapolis, Minn. Filed Mar. 17, 1969.

SUPER PRO

Owner of Reg. No. 576,343.
For Mowers (Int. Cl. 7).
First use Aug. 27, 1965.

SN 325,243. United Silver and Cutlery Company, Los Angeles Calif., Filed Apr. 22, 1969.

MOSAIC

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, Serving Pieces, and the Like (Int. Cl. 8).
First use Nov. 8, 1967.

SN 325,246. United Silver and Cutlery Company, Los Angeles Calif., Filed Apr. 22, 1969.

ROCK GARDEN

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, Serving Pieces, and the Like (Int. Cl. 8).
First use Jan. 10, 1969.

SN 325,248. United Silver and Cutlery Company, Los Angeles Calif., Filed Apr. 22, 1969.

SERRANO

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, Serving Pieces, and the Like (Int. Cl. 8).
First use Jan. 10, 1969.

SN 325,249. United Silver and Cutlery Company, Los Angeles Calif., Filed Apr. 22, 1969.

TROPICALE

For Stainless Steel Flatware—Namely, Knives, Forks, Spoons, Serving Pieces, and the Like (Int. Cl. 8).
First use Nov. 8, 1967.

SN 325,250. United Silver and Cutlery Company, Los Angeles Calif., Filed Apr. 22, 1969.

FLORENTINA

For Stainless Steel Flatware (Int. Cl. 8).
First use Jan. 10, 1969.

SN 329,444. Dependable Shell Core Machines, Inc., Portland, Oreg. Filed June 9, 1969.

Dependable

For Machines for the Production of Molds and Cores of Resin Bonded Sands (Int. Cl. 7).
First use 1958.

SN 329,463. Anthony J. Fries and Son Company, Cincinnati, Ohio. Filed June 9, 1969.

FRIEMARK

For Marking Machines and Tools of Hand Held and Machine Part Type for Marking Metal, Plastic, Soap and Other Markable Materials—Namely, Branding Dies, Code Markers, Coining Dies, Debossing Dies, Engraved Dies, Embossing Dies, Embossing Machines, Flat Roll Dies, Hand Stamps, Hobs, Holders, Inserts, Inspection Marking Stamps, Marking Hammers, Marking Machines, Nameplate Markers, Numbering Heads, Press Style Stamps, Roll Carrriages, Roller Dies, Roll Leaf Dies, Semi-Coining Dies, Soap Dies, Spring Return Holders, Stamping Dies, Steel Type, Steel Type Band Marking Holders, Steel Type Press Holders, and Symbol Stamps (Int. Cls. 7 and 8).
First use on or about Sept. 30, 1968.

SN 329,539. Thomas & Betts Corporation, Elizabeth, N.J. Filed June 9, 1969.

COLOR-KEYED

Owner of Reg. Nos. 665,533 and 666,982.
For Compression Hand Tools and Machines and Dies Therefor for Applying Electrical Connectors and Terminals (Int. Cls. 7 and 8).
First use on or about June 6, 1956.

SN 333,075. Alloway Manufacturing & Distributing Co., Fargo, N. Dak. Filed July 22, 1969.

ALLOWAY

For Straw Cutters, Corn Cutters, Rice Cutters, Tension Device for Hay Balers, Dual Cultivator Discs, Dual Cultivator Knife Holders, Combination Dual Cultivator Discs and Knife Holders, Weeder Knife Adapters, Row Crop Cultivator, Row Cultivator Guides, Cultivator Flex Unit or Gang, C-Section Pulleys, Herbicide Applicator, Boom Hoist, Beet Topper, Beet Scalper Unit, Combination Rotary Beater and Power Driven Scalper Unit Machine for Topping Sugar Beets, and Tractor Hitch (Int. Cl. 7).
First use in about January 1940.

SN 337,255. Van F. Belknap Company, Detroit, Mich. Filed Sept. 8, 1969.

VB

For Torque-Limiting Wrenches (Int. Cl. 8).
First use May 1, 1969.

SN 338,715. The Gillette Company, Boston, Mass. Filed Sept. 24, 1969.

PLATINUM-PLUS

For Razor Blades (Int. Cl. 8).
First use Aug. 12, 1969.

SN 341,208. Ernest Scragg & Sons Ltd., Macclesfield, England. Filed Oct. 20, 1969.

BUILDMASTER

Owner of British Reg. No. 913,003, dated Aug. 9, 1967.
For Yarn Winding, Twisting Machines, and Parts Therefor (Int. Cl. 7).

SN 341,788. Buehler Ltd., Evanston, Ill. Filed Oct. 27, 1969.

PNEUMET

Owner of Reg. Nos. 673,832 and 761,893.
For Pneumatically Operated Press for Molding Metallurgical Samples in Thermosetting or Thermoplastic Materials (Int. Cl. 7).
First use Sept. 16, 1969.

SN 342,473. Interpace Corporation, Parsippany, N.J. Filed Nov. 3, 1969.

ROTAFRAM

For Diaphragm Transfer Pumps (Int. Cl. 7).
First use July 10, 1964.

SN 344,130. Oneida Ltd., Oneida, N.Y. Filed Nov. 20, 1969.

TENDER ROSE

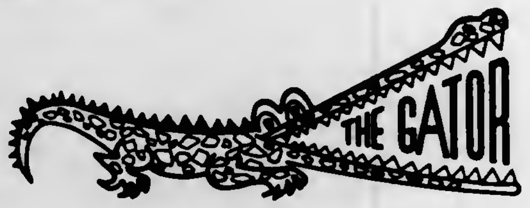
Applicant disclaims the word "Rose" apart from the mark as shown.
For Flatware Made of Non-Precious Metal (Int. Cl. 8).
First use Nov. 7, 1969.

SN 348,095. Edlund Company, Inc., Burlington, Vt. Filed Jan. 9, 1970.

AUTOLOCK

For Serving and Kitchen Tongs (Int. Cl. 8).
First use Jan. 2, 1970.

SN 351,114. Compaction Equipment Co., Inc., Bladensburg, Md. Filed Feb. 11, 1970.



For Stationary Trash Packer (Int. Cl. 7).
First use Feb. 1, 1969.

SN 351,853. Western Select, Inc., Monrovia, Calif. Filed Feb. 19, 1970.

DIAL-X SHARPENER

The word "Sharpener" is disclaimed apart from the mark as shown.
For Knife Sharpeners (Int. Cl. 8).
First use Oct. 20, 1969.

SN 364,324. Engel Industries, Inc., Ballwin, Mo. Filed July 6, 1970.

BENDALL

For Bending Brakes for Sheet Metal and the Like (Int. Cl. 7).
First use in or before February 1959.

Class 24—Laundry Appliances and Machines

SN 326,656. H. Kohnstamm & Co., Inc., New York, N.Y. Filed May 7, 1969.

THERMO-PAK

Owner of Reg. No. 437,335.
For Combination Cover and Pad for a Laundry and/or Dry Cleaning Press Machine (Int. Cl. 7).
First use Feb. 4, 1969.

Class 25—Locks and Safes

SN 350,121. P. L. Porter Co., Los Angeles, Calif. Filed Jan. 30, 1970.

HYDROLOK

Owner of Reg. No. 729,282.
For Remotely Actuated Devices for Locking Relatively Movable Seat Elements in Selected Positions of Adjustment and Control Elements Therefor (Int. Cl. 6).
First use June 1959.

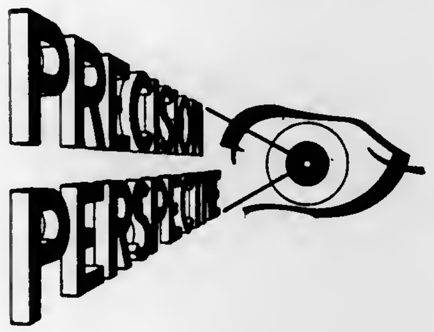
SN 352,854. The Paneloc Corporation, Collinsville, Conn. Filed Mar. 2, 1970.

PANELOC

Owner of Reg. No. 821,875.
For Latches (Int. Cl. 6).
First use in or about August 1955.

Class 26—Measuring and Scientific Appliances

SN 259,150. Perspective, Inc., Seattle, Wash. Filed Nov. 21, 1966.



The words "Precision Perspective" are disclaimed apart from the mark.
For Perspective Grids for Isometric Drawings (Int. Cl. 16).
First use September 1955.

SN 300,813. Feinpruf, Feinmess- und Prufgerate, G.m.b.H., Postfach, Germany. Filed June 19, 1968.

MILLIPNEU

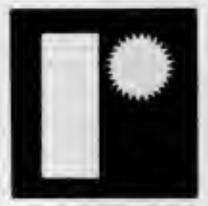
For Pneumatic Length Measuring and Control Equipment—Namely, Dial Gauges, Column Type Pneumatic Gauges, Thickness Gauges, Cylinder Measuring Gauges, Bore Measuring Gauges, Height Gauges, Gap Measuring Gauges, Taper Gauges, Diameter and Eccentricity Gauges, Mating Gauges, Pneumatic Gauging Nozzles, Plug and Ring Gauges, Plunger Gauges, Snap Gauges, Adjustable Snap Gauges; and Calibration Control Equipment for the Aforementioned Goods (Int. Cl. 9).
First use Nov. 18, 1966; in commerce Nov. 18, 1966.

SN 300,814. Feinpruf, Feinmess- und Prufgerate, G.m.b.H., Postfach, Germany. Filed June 19, 1968.

MILLIPILOT

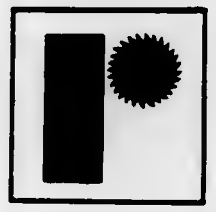
For Electronic Measuring, Gauging and Indicating Equipment That Monitors Work Piece Surface Dimensions for Controlling Tool Machining Processes (Int. Cl. 9).
First use Oct. 23, 1967; in commerce Oct. 23, 1967.

SN 313,205. Radiation Limited, London, England. Filed Nov. 27, 1968.



Owner of British Reg. No. 848,592, dated May 2, 1963.
For Time-Delay Devices; Automatic Temperature Regulators; Thermostats; Glass Prisms and Prism Lenses; Timers; Programmers; Thermal and Pressure Switches; Gas Governors; and Spare Parts for Use With Any of the Foregoing (Int. Cl. 9).

SN 313,210. Radiation Limited, London, England. Filed Nov. 27, 1968.



Owner of British Reg. No. 848,598, dated May 2, 1963.
For Time-Delay Devices; Automatic Temperature Regulators; Thermostats; Glass Prisms and Prism Lenses; Timers; Programmers; Thermal and Pressure Switches; Gas Governors; and Spare Parts for Use With any of the Foregoing (Int. Cl. 9).

SN 316,425. The Bin-Dicator Company, Detroit, Mich., by mesne assignment, of Fluid Data Inc., Hauppauge, N.Y. Filed Jan. 13, 1969.

BREAKDATA

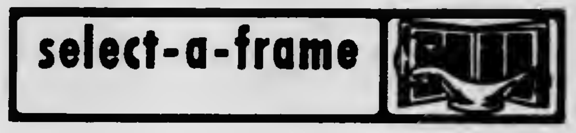
For Ultrasonic Transducers and related control Equipment for Use in Monitoring or Detecting the Presence of an Object or Material and/or the Level of a Bulk Material in Liquid and/or Solid Form (Int. Cl. 9).
First use on or about Oct. 14, 1968.

SN 317,004. Datamax Corporation, Ann Arbor, Mich. Filed Jan. 21, 1969.

DATAMAX

For Electronic Data Transmission Equipment—Namely, Error Detecting and Correcting Encoders and Decoders, Modems, Modulators, Demodulators, and Equalizers (Int. Cl. 9).
First use Dec. 29, 1968.

SN 321,896. Serge A. Birn Company, Inc., Louisville, Ky. Filed Mar. 17, 1969.



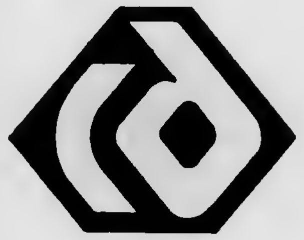
For Teaching Apparatus of the type Employing Manipulatable Question and Answer Sheets (Int. Cl. 9).
First use on or about May 13, 1968.

SN 322,312. Medidata Sciences, Inc., Waltham, Mass. Filed Mar. 20, 1969.

PROFILE 320

For Automated Medical History Taking Consoles (Int. Cl. 9).
First use Nov. 21, 1968.

SN 324,180. Coulter Diagnostics, Inc., Miami Springs, Fla. Filed Apr. 10, 1969.



For Standard Deviation Calculating Charts for Use in Hematology (Int. Cl. 16).
First use Mar. 14, 1969.

SN 326,215. Robert Eckholm, New York, N.Y. Filed May 2, 1969.

PANISPHERE

For Projector and at Least One Screen for Visual Presentations, the Screen Being Substantially Hemispherical Surrounding the Field of View and Being Adapted for the Rear Projection of Images Thereon (Int. Cl. 9).
First use before Apr. 10, 1969.

SN 326,224. Geo Space Corporation, Houston, Tex. Filed May 2, 1969.

FLEX-O-GUN

For Seismic Energy Sources Used To Generate Seismic Energy in Connection With Land and Marine Geophysical Explorations (Int. Cl. 9).
First use Mar. 30, 1969.

SN 326,225. Geo Space Corporation, Houston, Tex. Filed May 2, 1969.

FLEX-O-PULSE

For Seismic Energy Sources Used To Generate Seismic Energy in connection With Land and Marine Geophysical Explorations (Int. Cl. 9).
First use Mar. 30, 1969.

SN 331,397. Lehigh Valley Electronics, Inc., Fogelsville, Pa. Filed June 30, 1969.

TALKIE TOYS

For Electronic Communication Transceivers for Use in Communication With and Teaching of Children (Int. Cl. 9).
First use May 14, 1969.

SN 331,734. Delta Design, Inc., La Mesa, Calif. Filed July 3, 1969.

DELTA DESIGN

No claim is made to the word "Design" apart from the mark as a whole.
For Temperature and Shock Environmental Test Chambers and Rate Programmers, Temperature Monitors and Controllers for Use With Environmental Test Chambers (Int. Cl. 9).
First use July 15, 1960.

SN 332,618. Fred W. Hoch Associates, Inc., New York, N.Y. Filed July 15, 1969.

UNIPICA

For Rule for Estimating and Pricing Composition (Int. Cl. 9).
First use Mar. 19, 1969.

SN 336,698. Information Control Systems, Inc., Ann Arbor, Mich. Filed Aug. 29, 1969.

ASTROCOMP

For Computer System for Preparing Input Data for Photocomposition Equipment (Int. Cl. 9).
First use on or before Apr. 17, 1969.

SN 339,554. Cole-Parmer Instrument & Equipment Co., Chicago, Ill. Filed Oct. 2, 1969.

MAGNE-4

Owner of Reg. No. 805,158.
For Magnetic Stirrers (Int. Cl. 9).
First use June 2, 1969.

SN 339,877. General Electric Company, Schenectady, N.Y. Filed Oct. 6, 1969.

For Mechanical to Electrical Transducers for Sensing Fluid Pressures and Generating Proportional Electrical Signals (Int. Cl. 9).
First use December 1968.

SN 340,141. Glasfirn, Giessen-Wieseck, Germany. Filed Oct. 8, 1969.

PI·PUMP

For Laboratory Instrument—Namely, Polyethylene Color Coded Pipetting Cylinder (Int. Cl. 9).
First use 1963; in commerce 1967.

SN 344,282. Eaton Yale & Towne Inc., Cleveland, Ohio, assignee of Digital Identification Systems, Inc., Anaheim, Calif. Filed Nov. 24, 1969.

IDENTI PRINT

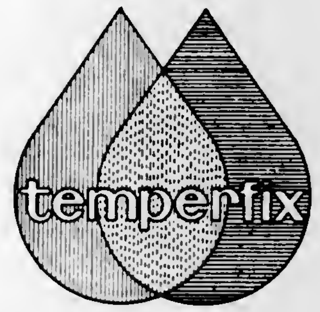
Applicant disclaims the word "Print" apart from the mark as shown.
For Printer Recording Equipment for Recording Data of Locking System (Int. Cl. 9).
First use at least as early as Mar. 7, 1969.

SN 344,687. Datadyne Corporation, King of Prussia, Pa. Filed Nov. 26, 1969.

DATADYNE

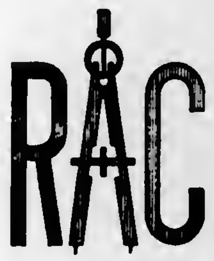
For High Speed Digital Printers (Int. Cl. 9).
First use in about 1966.

SN 344,941. Albert Lins, Kusnacht, Zurich, Switzerland. Filed Dec. 1, 1969.



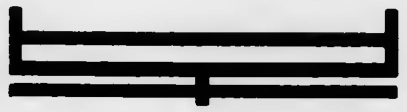
Priority claimed under Sec. 44(d) on Swiss Reg. No. 238,676, dated May 30, 1969. The drawing is lined for the colors red, blue and purple.
For Temperature-Controlled Safety Valves for Pressurized Vessels, Especially Boilers, and Temperature-Controlled Radiator Valves—Namely, Automatic Regulators for the Radiators of Central Heating Systems (Int. Cl. 9).

SN 345,203. Research Appliance Company, Allison Park, Pa. Filed Dec. 3, 1969.



The drawing is lined for the color red, but color is not claimed as a feature of the mark. Owner of Reg. No. 545,600.
For Scientific Laboratory Equipment—Namely, Pumps, Air Samplers, Timers, Furnaces, Tap Testers, and Hydraulic Fluid Testers (Int. Cl. 9).
First use July 22, 1963.

SN 345,718. Computer Transceiver Systems, Inc., Upper Saddle River, N.J. Filed Dec. 9, 1969.



For Digital Data Terminals (Int. Cl. 9).
First use May 1969.

SN 345,985. Signal Analysis Industries Corp., Hauppauge, N.Y. Filed Dec. 11, 1969.

The drawing is lined for the color green, but applicant claims no specific color.
For Electronic Equipment—Namely, Spectrum Analyzers, Digital Integrators, Correlators and Translators (Int. Cl. 9).
First use June 1967.

SN 347,096. The Great Western Sugar Company, Denver, Colo. Filed Dec. 24, 1969.

CS-FLOW

For Weighing Scales (Int. Cl. 9).
First use Nov. 14, 1969.

SN 348,100. Analog Devices, Inc., Cambridge, Mass. Filed Jan. 9, 1970.

MINIDAC

For Electrical Digital to Analog Signal Converter Module (Int. Cl. 9).
First use Mar. 18, 1968.

SN 350,770. Gary E. Raymond, Kenvil, N.J. Filed Feb. 6, 1970.

For Photo Copier (Int. Cl. 9).
First use on or about Sept. 25, 1969.

SN 352,113. FMC Corporation, San Jose, Calif. Filed Feb. 24, 1970.

COUNT-A-LOT

For Fresh Fruit and Vegetable Counters (Int. Cl. 9).
First use Mar. 11, 1968.

SN 352,972. Monsanto Company, St. Louis, Mo. Filed Mar. 3, 1970.

CURETRON

For Electronic Data Acquisition Unit for Use in Recording Physical Property Data on Elastomeric Compounds (Int. Cl. 9).
First use Nov. 4, 1969.

SN 354,283. Audio Devices, Inc., Glenbrook, Conn. Filed Mar. 17, 1970.

For Computer Tape (Int. Cl. 9).
First use January 1970.

SN 364,848. Fuji Photo Film Co., Ltd., Ashigara-Kamigun, Kanagawa, Japan. Filed July 10, 1970.

FUJIBROMIDE

Owner of Japanese Reg. No. 699,888, dated Feb. 21, 1966; and U.S. Reg. Nos. 614,791 and 689,864.
For Photographic Paper (Int. Cl. 1).

Class 29—Brooms, Brushes, and Dusters

SN 331,035. Fuller-O'Brien Corporation, Menlo Park, Calif. Filed June 26, 1969.

FULCOATER

Owner of Reg. Nos. 190,750, 808,031, and others.
For Paint Rollers, Paint Roller and Tray Sets, and Paint Brushes (Int. Cl. 16).
First use 1950.

SN 333,497. Delta Brush Mfg. Corp., Mount Vernon, N.Y. Filed July 25, 1969.

Owner of Reg. Nos. 399,954 and 511,368.
For Brushes Used by Artists, Ceramists, Decorators and Hobbyists; Brushes Used in Industry and Laboratories; Brushes Used in Drafting, Lettering, Marking, Photography, Sign Making and Stenciling; and Brushes Used for Typewriters, Radiators, Glue, Paste and Acids (Int. Cl. 16).
First use July 1, 1941 on brushes used by artists.

Class 30—Crockery, Earthenware, and Porcelain

SN 325,700. George Ash, Chicago, Ill. Filed Apr. 28, 1969.

SOUL FOOD DISHES

For purposes of registration only, and not in derogation of any common law rights, applicant disclaims the word "Dishes" apart from the mark as shown.
For Chinaware—Namely, Plates, Dishes, Saucers, Cups, Bowls, and Platters (Int. Cl. 21).
First use Mar. 29, 1969.

Class 31—Filters and Refrigerators

SN 320,890. Zeks Industries, Inc., Malvern, Pa. Filed Mar. 5, 1969.

THERMAL MASS

Applicant disclaims the term "Thermal" apart from the mark as shown.
For Refrigerated Compressed Air Dryers (Int. Cl. 11).
First use July 15, 1968.

Class 32 — Furniture and Upholstery

SN 333,669. Broyhill Furniture Industries, Lenoir, N.C. Filed July 28, 1969.

LEGEND

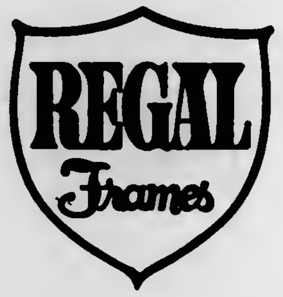
For Bedroom and Dining Room Furniture (Int. Cl. 20).
First use Apr. 15, 1969.

SN 335,350. Adler Kay Co., Inc., Wayne, Mich. Filed Aug. 14, 1969.

CORTINA

For Kitchen Cabinets To Be Permanently Installed in Buildings (Int. Cl. 20).
First use on or before July 11, 1969.

SN 335,581. Intercraft Industries Corporation, Chicago, Ill. Filed Aug. 18, 1969.



The word "Frames" is disclaimed apart from the mark as shown. Owner of Reg. No. 746,619.
For Photo Frames, Picture Frames, Framed Pictures, and Framed Wall Mirrors (Int. Cls. 16 and 20).
First use Apr. 26, 1962.

SN 335,609. Reflector Hardware Corporation, Melrose Park, Ill. Filed Aug. 18, 1969.

MASTER-KOTE

For Finish Sold as a Component of Metal Store Equipment—Namely, Sheet Metal Shelving, Store Fixtures and Library Book Stacks (Int. Cl. 20).
First use July 1, 1969.

SN 336,717. W. & J. Sloane, Inc., New York, N.Y. Filed Aug. 29, 1969.

gramercy

For Upholstered Sofas, Chairs and Sleep-Sofas (Int. Cl. 20).
First use Aug. 13, 1967.

SN 337,340. Vivian C. Orensten & Henry E. Orensten (joint owners), d.b.a. Vivienne Originals, Minneapolis, Minn. Filed Sept. 8, 1969.

VIVIENNE ORIGINALS

Applicant disclaims any priority or ownership on the word "Originals" apart from the mark as shown.
For Composit Art Works Manufactured From Pressed Flowers in the Form of Framed Pictures (Int. Cl. 16).
First use Jan. 29, 1969.

SN 342,835. Conwed Corporation, St. Paul, Minn. Filed Nov. 6, 1969.

RESPOND

For Cushioning Material for Upholstered Furniture and Mattresses, Sold Both in Rolled Sheet Form and Cut to Size (Int. Cl. 20).
First use on or about Aug. 8, 1968.

SN 353,855. Dart Industries Inc., d.b.a. Crestyle, Los Angeles, Calif. Filed Mar. 12, 1970.

CRESTYLE

Owner of Reg. No. 825,420.
For Sconces, Mirrors, and Tables (Int. Cls. 20 and 21).
First use Dec. 3, 1969.

SN 363,622. Uniroyal, Inc., New York, N.Y. Filed June 25, 1970.

KOYLON

Owner of Reg. Nos. 434,622, 543,318, and others.
For Mattresses (Int. Cl. 20).
First use Nov. 9, 1946.

SN 363,623. Uniroyal, Inc., New York, N.Y. Filed June 25, 1970.

SAPPHIRE

For Mattresses (Int. Cl. 20.
First use May 17, 1965

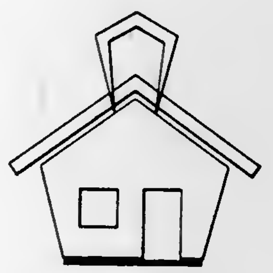
SN 364,314. B. Altman & Co., New York, N.Y. Filed July 6, 1970.

COUNTRY SHOP

Applicant disclaims the word "Shop" apart from the mark as shown.
For Living Room, Dining Room and Bedroom Furniture—Namely, Chairs, Tables, Desks, Sofas, Chests, Cabinets, and Beds (Int. Cl. 20).
First use in or prior to 1948.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 312,235. Stephens Manufacturing Company, Inc., Muskogee, Okla. Filed Nov. 14, 1968.



For Combination Heating, Ventilating and Cooling Units for Commercial and Institutional Use (Int. Cl. 11).
First use Aug. 11, 1967.

SN 320,173. The Patterson-Kelley Co., Inc., East Stroudsburg, Pa. Filed Feb. 26, 1969.

ANTICIPATOR

For Heat Input Control Elements Responsive to High Water Draw Rates, for Use in Water Heating and Storage Systems (Int. Cl. 11).
First use on or about Oct. 15, 1962.

SN 321,645. Eutectic Corporation, Flushing, N.Y. Filed Mar. 13, 1969.

NUCLEO-C

For Welding Electrodes, Welding Wires and Flame Spray and Welding Metallic Powder (Int. Cls. 1 and 9).
First use Nov. 18, 1968.

SN 321,646. Eutectic Corporation, Flushing, N.Y. Filed Mar. 13, 1969.

ULTRALEC

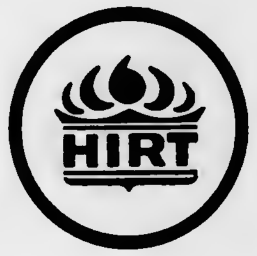
For Welding Electrodes, Welding Wires and Flame Spray and Welding Metallic Powder (Int. Cls. 1 and 9).
First use Nov. 18, 1968.

SN 335,442. Dunham-Bush, Inc., Harrisonburg, Va. Filed Aug. 15, 1969.

SPACE CONDITIONING

Applicant disclaims the term "Conditioning" apart from the mark as shown.
For Radiant Heating Systems (Int. Cl. 11).
First use Apr. 18, 1962.

SN 340,789. Hirt Combustion Engineers, Montebello, Calif. Filed Oct. 15, 1969.



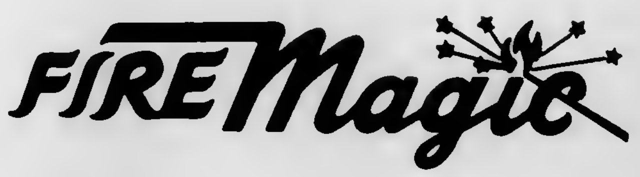
For Heating and Combustion Equipment—Namely, Incinerators, Fume Incinerators, Liquid Incinerators, Gas Generators, Gas Burners, Air Heaters, Gas Heaters, Furnaces, Dryers, Heat Exchangers, and Combustion Safeguard Systems for Gas Control (Int. Cl. 11).
First use on about Dec. 8, 1965.

SN 341,950. Ronson Corporation, Woodbridge, N.J. Filed Oct. 28, 1969.

CAMP-N-GLO

For Butane Camping Lanterns (Int. Cl. 11).
First use Sept. 2, 1969.

SN 342,094. Whittier Steel & Mfg., Inc., Santa Fe Springs, Calif. Filed Oct. 29, 1969.



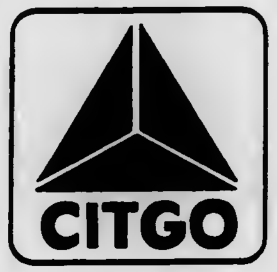
Exclusive right to use of the mark "Fire" is disclaimed apart from the mark as shown.
For Barbecues and Components Thereof (Int. Cl. 11).
First use on or about June 1, 1969.

SN 342,312. Van Pelt Corporation, Bloomingdale, Ill. Filed Oct. 31, 1969.

PLY-VENT

For Vented Duplex Tubes or Heat Exchanger Tubes for Petroleum and Petrochemical Manufacturing Installations (Int. Cl. 11).
First use Mar. 11, 1969.

SN 345,796. Cities Service Oil Company, Tulsa, Okla. Filed Dec. 10, 1969.



Owner of Reg. Nos. 819,916, 844,353, and others.
For Oil Burners (Int. Cl. 11).
First use May 21, 1969.

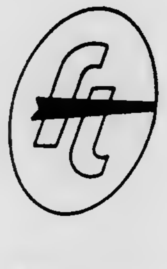
SN 346,971. Skuttle Manufacturing Company, Milford, Mich. Filed Dec. 22, 1969.

AUTO-MOIST

For Humidifiers and Component Parts Thereof (Int. Cl. 11).
First use June 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 282,347. Automation Industries, Inc., El Segundo, Calif. Filed Oct. 12, 1967.



Owner of Reg. No. 719,320.
For Flexible Hose for Commercial and Industrial Application (Int. Cl. 17).
First use May 1961.

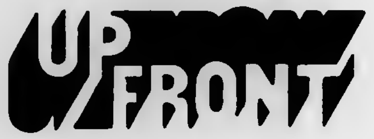
SN 351,524. Oliver Tire & Rubber Company, Oakland, Calif. Filed Feb. 16, 1970.

PRO TRED

Applicant disclaims exclusive use to the word "Tred" apart from the mark as shown.
For Tire Tread Rubber (Int. Cl. 12).
First use Jan. 15, 1970.

Class 36 — Musical Instruments and Supplies

SN 324,246. Springboard International Records, Inc., New York, N.Y. Filed Apr. 10, 1969.



For Phonograph Records and Phonograph Record Albums (Int. Cl. 9).
First use on or about Dec. 9, 1968.

SN 335,481. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Aug. 15, 1969.

GOLDEN T

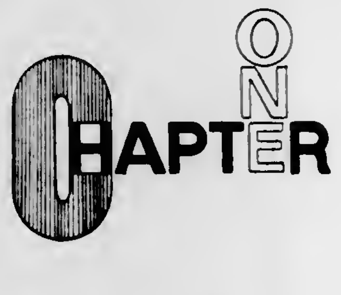
Owner of Reg. Nos. 849,417, 890,712, and others.
For Tape Recorders (Int. Cl. 9).
First use Nov. 6, 1967.

SN 340,639. Adele Zidowecki, d.b.a. Magic Music, Kearny, N.J. Filed Oct. 13, 1969.

MAGIC MUSIC

For the purposes of registration, the applicant disclaims the terminology "Music" apart from the mark as shown, but the applicant does not waive any common law or other right in the mark as shown or any part thereof.
For Music Boxes and Musical Ceramic Figurines (Int. Cl. 15).
First use May 1968.

SN 342,204. Decca Limited, London, England. Filed Oct. 31, 1969.



The drawing is lined for the color red, but no claim is made to color as an essential feature of the mark.
For Phonograph Records and Prerecorded Tapes (Int. Cl. 9).
First use July 9, 1968; in commerce July 9, 1968.

SN 348,979. Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan. Filed Jan. 19, 1970.

YAMAHA SUPERIO

Owner of Reg. No. 678,446.
For Woodwind Musical Instruments (Int. Cl. 15).
First use Apr. 1, 1967; in commerce June 1, 1969.

SN 359,569. Nightingale-Conant Corporation, Chicago, Ill. Filed May 13, 1970.

CASETCOM

For Pre-Recorded Magnetic Tapes and Wires, and Phonograph Records (Int. Cl. 9).
First use Oct. 2, 1969.

Class 37 — Paper and Stationery

SN 326,919. Service Business Forms, Inc., Wichita, Kans. Filed May 9, 1969.

MICRO-LINE

For Business Forms Interconnected End to End and Fastened Together at One Margin (Int. Cl. 16).
First use during January 1969.

SN 328,370. Twinpak Ltd., Lachine, Quebec, Canada. Filed May 26, 1969.

TWINFILM

Priority claimed under Sec. 44(d) on Canadian application filed Apr. 17, 1969; Reg. No. 168,045, dated Mar. 6, 1970.
For Plastic Film for the Packaging of Milk and Other Liquids (Int. Cl. 16).

SN 329,228. Cory Corporation, Chicago, Ill. Filed June 5, 1969.

PERFECTO

For Cartridges or Refills for Ball Point Pens (Int. Cl. 16).
First use Oct. 4, 1968.

SN 344,398. The Mead Corporation, Dayton, Ohio. Filed Nov. 24, 1969.

BARTER

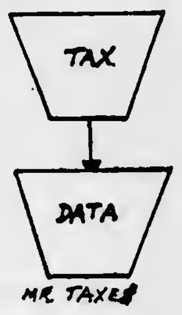
The mark is used as a watermark on the goods.
For Writing Papers and Bond Paper (Int. Cl. 16).
First use Sept. 18, 1934.

SN 347,033. Moore Business Forms, Inc., Niagara Falls, N.Y. Filed Dec. 23, 1969.

MOOREMAILER

Owner of Reg. Nos. 835,121, 627,324, and others.
For Business Envelopes on Carrier Sheet for Use With High Speed Printer (Int. Cl. 16).
First use May 21, 1968.

SN 347,829. Eugene Charles Egan, d.b.a. Mr. Taxe$ and Tax Data, Roslindale, Mass. Filed Jan. 6, 1970.



Applicant disclaims the words "Tax," "Data" and "Taxes" apart from the mark as a whole.
For Forms for Financial Record Keeping To Be Used by Small Businesses to Accumulate Data for Preparation of Tax Returns (Int. Cl. 16).
First use Oct. 1, 1969.

SN 348,148. The Gillette Company, d.b.a. The Paper Mate Company, Boston, Mass. Filed Jan. 9, 1970.

RALLY

For Writing Instruments—Namely, Pens (Int. Cl. 16).
First use Dec. 10, 1969.

SN 348,447. Ponderosa Paper Products, Inc., Flagstaff, Ariz. Filed Jan. 13, 1970.

FRONTIER

For Paper Towels (Int. Cl. 16).
First use May 6, 1969.

SN 350,183. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 2, 1970.

DOUBLE DIPS

For Facial Tissue (Int. Cl. 16).
First use Jan. 15, 1970.

Class 38 — Prints and Publications

SN 295,493. American Express Company, New York, N.Y. Filed Apr. 12, 1968.

GO

For Newsletter (Int. Cl. 16).
First use May 6, 1966.
Subj. to Intf. with SN 254,607.

SN 301,019. Scott, Foresman and Company (Delaware corporation), Glenview, Ill., assignee of Scott, Foresman and Company (Illinois corporation), Glenview, Ill. Filed June 21, 1968.

SF

Owner of Reg. No. 550,035.
For Books (Int. Cl. 16).
First use at least as early as 1940; at least as early as 1896 in a different form.

SN 320,819. Infograph Incorporated, Northfield, Ill. Filed Mar. 5, 1969.

SPOTTER

For Dial Charts for Correlating the Names of Personnel With the Numeric Designations Assigned Thereto; and, Particularly, for Use in Connection With Sporting Events (Int. Cl. 16).
First use Sept. 11, 1967.

SN 331,841. Air Bird Publications, Van Nuys, Calif. Filed July 7, 1969.

AVIATION MART

For Printed Matter and Publications—Namely, a Periodical Carrying Advertising on Clip-Out Postcards for Return to Advertiser (Int. Cl. 16).
First use on or about June 23, 1969.

SN 334,125. Scholastic Magazines, Inc., New York, N.Y. Filed July 31, 1969.

REACHING BEYOND

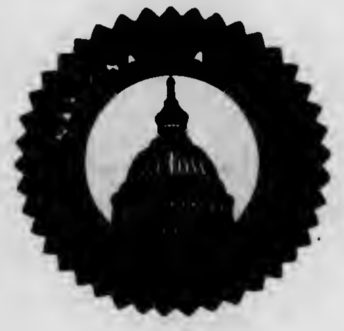
For Printed Teaching Materials Used in Courses for the Instruction of Young Children—Namely, Printed Instruction Books for Teachers, Printed Notebooks and Looseleaf Notebook Sheet Books for Recording Pupil Activities, Skills, Abilities and the Like, Printed Work Sheets, Printed Activity Cards, Conference Cards and Skill Cards Used as Teaching Aids (Int. Cl. 16).
First use Mar. 20, 1969.

SN 334,414. Woodmen of the World Life Insurance Society and/or Omaha Woodmen Life Insurance Society, Omaha, Nebr. Filed Aug. 4, 1969.

OMAHA WOODMEN LIFE

For Magazine (Int. Cl. 16).
First use Jan. 1, 1967.

SN 345,657. National Label Company, Lafayette Hill, Pa. Filed Dec. 8, 1969.



For Printed Labels (Int. Cl. 16).
First use in 1918.

SN 347,118. Pantone, Inc., New York, N.Y. Filed Dec. 24, 1969.

TINT-TAK

For Acetate Film Sheets Top Printed With Patterns, Screens and Rules, as Well as Miscellaneous Effects (Int. Cl. 16).
First use Nov. 26, 1969.

SN 347,159. Hoffmann-La Roche Inc., Nutley, N.J. Filed Dec. 29, 1969.

ROCOM

For Health and Medical Educational Publications—Namely, Instruction Manuals, Reference Source Material, Student Texts and Testing Materials, i.e., Pre-Course and Post-Course Examinations and Instructors' Evaluation Books; Developed Motion Picture Films and Film Strips (Int. Cls. 9 and 16).
First use Aug. 1, 1969.

SN 348,292. Indian Head Inc., New York, N.Y. Filed Jan. 12, 1970.

HOT SPECS

For Microfilmed Catalogs and Indices Therefor (Int. Cl. 16).
First use Mar. 1, 1969.

SN 349,018. Union Oil Company of California, Los Angeles, Calif. Filed Jan. 19, 1970.

SPIRIT OF SEVENTY SIX

For Magazine (Int. Cl. 16).
First use Nov. 25, 1969.

SN 349,682. The Plusfactor Group, Ltd., New York, N.Y. Filed Jan. 26, 1970.

MARSITES

For Trade Magazine (Int. Cl. 16).
First use Nov. 10, 1969.

SN 349,685. Scholastic Magazines, Inc., New York, N.Y. Filed Jan. 26, 1970.

REACHING HIGHER

For Printed Teaching Materials Used in Courses for the Instruction of Young Children—Namely, Printed Instruction Books for Teachers, Printed Notebooks and Loose-Leaf Notebook Sheets for Recording Pupil Activities, Skills, Abilities and the like, Printed Activity Cards and Conference Cards Used as Teaching Aids, and Printed Reading Logs for Children (Int. Cl. 16).
First use Nov. 18, 1969.

SN 351,053. Edward H. Owens, d.b.a. The Muse, Sarasota, Fla. Filed Feb. 10, 1970.

THE MUSE

For Periodic Magazine (Int. Cl. 16).
First use June 1, 1969.

SN 360,035. Computing Efficiency, Inc., Bohemia, N.Y. Filed May 18, 1970.

COMPUMETER

For Computer Programs, Particularly Programs for Gathering, Analyzing and Reporting Data on Computer System Utilization (Int. Cl. 16).
First use on or before Aug. 13, 1969.

SN 362,743. Putman Publishing Company, Chicago, Ill. Filed June 15, 1970.

The drawing is lined for yellow, but color is not an essential feature of the mark. Owner of Reg. Nos. 781,016 and 814,736.
For Magazine (Int. Cl. 16).
First use Feb. 26, 1965.

SN 363,240. Theodore Sullivan, New Rochelle, N.Y. Filed June 22, 1970.

DRIVE-IN THEATRE

Owner of Reg. No. 772,532.
For Regularly Issued Monthly Periodical (Int. Cl. 16).
First use Jan. 18, 1963.

Class 39 — Clothing

SN 334,725. Kids in Gear Limited, London, England. Filed Aug. 7, 1969.

KIDS IN GEAR

For Children's Clothing—Namely, Skirts, Trousers, Jackets, Shirts, and Blouses (Int. Cl. 25).
First use May 1967; in commerce February 1969.
Subj. to Intf. with SN 331,255.

SN 338,205. Wyno Productions, Inc., Cleveland, Ohio. Filed Sept. 17, 1969.

GENERATION GAP

For Men's, Boys', and Women's Suits, Coats, Jackets, Slacks, Shirts, Ties, and Hats (Int. Cl. 25).
First use May 1, 1968.
Subj. to Intf. with SN 341,963.

SN 345,364. Jack McConnell, New York, N.Y. Filed Dec. 4, 1969.

STYLED BY
Jack McConnell

The term "Styled by" is disclaimed apart from the mark as shown.
For Millinery; Ladies' Hats; Men's Shirts; Women's Shirts and Slacks and Jump Suits (Int. Cl. 25).
First use May 1, 1954.
Subj. to Intf. with SN 343,360.

SN 352,492. Neely, Ltd., Statesville, N.C. Filed Feb. 26, 1970.

PINTAIL

For Sweaters (Int. Cl. 25).
First use Feb. 5, 1970.

SN 353,258. Parke, Davis & Company, Detroit, Mich. Filed Mar. 6, 1970.

SUPPORTABLES

For Men's Hosiery (Int. Cl. 25).
First use on or before Feb. 7, 1970.

SN 353,408. S. Augstein & Co., Inc., New York, N.Y. Filed Mar. 9, 1970.

SACONY

Owner of Reg. No. 536,669.
For Women's Misses' and Children's Dresses, Suits, Skirts, Jackets, Coats, Slacks, Playsuits, Shorts, Blouses, Outer and Under Shirts and Snow Suits Made of Knitted or Woven Fabrics (Int. Cl. 25).
First use on or about May 25, 1920.

SN 353,655. The Green Shoe Manufacturing Co., Boston, Mass. Filed Mar. 10, 1970.

wipperkickers

For Boys' Shoes (Int. Cl. 25).
First use no later than July 16, 1969.

SN 353,656. The Green Shoe Manufacturing Co., Boston, Mass. Filed Mar. 10, 1970.

WIPPERKICKERS

For Boys' Shoes (Int. Cl. 25).
First use no later than July 16, 1969.

SN 353,657. The Green Shoe Manufacturing Co., Boston, Mass. Filed Mar. 10, 1970.

dollystompers

For Girls' Shoes (Int. Cl. 25).
First use no later than July 16, 1969.

SN 353,658. The Green Shoe Manufacturing Co., Boston, Mass. Filed Mar. 10, 1970.

DOLLYSTOMPERS

For Girls' Shoes (Int. Cl. 25).
First use no later than July 16, 1969.

SN 354,130. The William Carter Company, Needham Heights, Mass. Filed Mar. 16, 1970.

REMIRA

For Children's Underwear, Outerwear and Sleepwear—Namely, Shirts, Shorts, Blouses, Jumpers, Dresses, Creepers, Sun Suits, Slacks and Pajamas (Int. Cl. 25).
First use Jan. 5, 1970.

SN 363,711. The Lovable Company, Atlanta, Ga. Filed June 26, 1970.

STRETCHCATS

For Panty Hose (Int. Cl. 25).
First use June 9, 1970.

SN 364,206. White Stag Manufacturing Co., Portland, Oreg. Filed July 2, 1970.

Thermofleece
White Stag

Owner of Reg. Nos. 369,881, 893,352, and others.
For Ski Parkas (Int. Cl. 25).
First use Feb. 3, 1970.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 300,550. Bishop Industries Inc., Union, N.J. Filed June 17, 1968.

DACHELLON

Owner of Reg. No. 758,961.
For Wigs and Hair Pieces (Int. Cl. 26).
First use May 17, 1968.

SN 331,460. Ronald Weiner, d.b.a. Ronnie Hair Goods, New York, N.Y. Filed June 30, 1969.

"TOP" FASHION

For Wigs and Hair Pieces (Int. Cl. 26).
First use in August 1966.

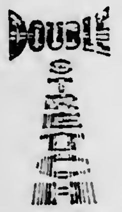
SN 342,775. Wyomissing Corporation, Reading, Pa. Filed Nov. 5, 1969.

La-ce-edge

Owner of Reg. Nos. 519,358 and 574,104.
For Narrow Woven and Braided Edgings and Trimmings (Int. Cl. 26).
First use May 23, 1947.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 339,600. Silco Knitting Mills, Inc., Gloversville, N.Y. Filed Oct. 2, 1969.



Owner of Reg. No. 829,317.
For Flat Knit Fabric Used for Making Gloves, Brassieres, Panty Girdles, Swimwear, Stretch Pants, Dresses, Suits, Sportswear, and Upholstery (Int. Cl. 24).
First use June 10, 1964.

SN 341,192. Pepper, Lee & Co. Limited, Saltaire, Shipley, England. Filed Oct. 20, 1969.

PELECIA

Owner of British Reg. No. 538,370, dated Jan. 18, 1933.
For Piece Goods Made Wholly or Principally of Wool (Int. Cl. 24).

SN 341,502. Angelica Corporation, St. Louis, Mo. Filed Oct. 23, 1969.

PINE-CLOTH

For Sheets, Linens, Pillow Cases and Sheeting (Int. Cl. 24).
First use Sept. 23, 1969.

SN 341,834. Monsanto Company, St. Louis, Mo. Filed Oct. 27, 1969.

ASTROGRASS

For Surface Coverings of Synthetic Fibers and Filaments for Indoor and Outdoor Use (Int. Cl. 27).
First use Oct. 17, 1969.

SN 341,963. Waumbec Mills, Incorporated, New York, N.Y. Filed Oct. 28, 1969.

GENERATION GAP

For Knitted Textile Fabrics Made of Natural and/or Synthetic Fibers and/or Blends Thereof (Int. Cl. 24).
First use Sept. 11, 1969.
Subj. to Intf. with SN 338,205.

SN 341,966. Waumbec Mills, Incorporated, New York, N.Y. Filed Oct. 28, 1969.

MOON DOT

For Knitted Textile Fabrics Made of Natural and/or Synthetic Fibers and/or Blends Thereof (Int. Cl. 24).
First use Sept. 20, 1969.

SN 342,247. Edmos Products Corporation, Glen Cove, N.Y. Filed Oct. 31, 1969.

SPIRISTRETCH BY EDMOS

Owner of Reg. No. 811,766.
For Knitted Piece Goods (Int. Cl. 24).
First use Aug. 4, 1969.

SN 342,248. Edmos Products Corporation, Glen Cove, N.Y. Filed Oct. 31, 1969.

SPIRISPUN BY EDMOS

Owner of Reg. No. 811,766.
For Knitted Piece Goods (Int. Cl. 24).
First use Aug. 4, 1969.

SN 342,249. Edmos Products Corporation, Glen Cove, N.Y. Filed Oct. 31, 1969.

SPONTESSA BY EDMOS

Owner of Reg. No. 811,766.
For Knitted Piece Goods (Int. Cl. 24).
First use Aug. 4, 1969.

SN 342,278. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

GRANOVA

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers, and Man-Made Fibers (Int. Cl. 24).
First use at least as early as July 1932.

SN 342,281. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

TANGELO

Owner of Reg. No. 508,078.
For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Dec. 4, 1946.

SN 342,282. Klopman Mills, Inc., Rockleigh, N.J. Filed Oct. 31, 1969.

SNAPCORD

For Fabrics in the Piece, Composed of Man-Made Fibers, and Fabrics in the Piece, Composed of Blends of Cotton Fibers and Man-Made Fibers (Int. Cl. 24).
First use at least as early as Apr. 9, 1969.

SN 349,529. Tressard Fabrics, Inc., New York, N.Y. Filed Jan. 26, 1970.

TRESSĀRD

For Drapery and Upholstery Fabrics (Int. Cl. 24).
First use 1958.

SN 363,803. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

MIDNIGHT MAGIC

Owner of Reg. No. 638,109.
For Textile Rugs, Carpets and Carpeting (Int. Cl. 27).
First use Oct. 28, 1969.

SN 363,804. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

MILLI-MIST

For Elastic Fabrics (Int. Cl. 24).
First use June 13, 1970.

SN 363,805. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

LIVELY

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Oct. 28, 1969.

SN 363,806. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

LAVISH

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Oct. 28, 1969.

SN 363,807. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

SWING 'N SWAY

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Dec. 30, 1969.

SN 363,808. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

SPRING BREEZE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Nov. 28, 1969.

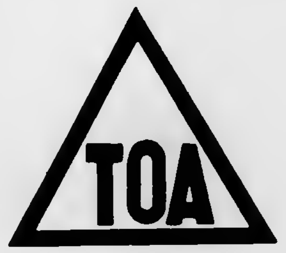
SN 363,809. Deering Milliken, Inc., New York, N.Y. Filed June 29, 1970.

NEW FEATURE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use Dec. 8, 1969.

Class 43 — Thread and Yarn

SN 341,957. Toa Wool Spinning & Weaving Co., Ltd., Higashi-ku, Osaka, Japan. Filed Oct. 28, 1969.



For Threads and Yarns (Int. Cl. 23).
First use June 1941; in commerce January 1960.

SN 364,537. United Merchants and Manufacturers, Inc., New York, N.Y. Filed July 7, 1970.

JONTILLE

For Yarns (Int. Cl. 23).
First use on or about Feb. 2, 1970.

Class 44 — Dental, Medical, and Surgical Appliances

SN 304,509. Surgitube Products Corporation, Bronx, N.Y. Filed Aug. 6, 1968.

"A Twist And It Fits"

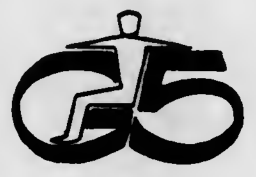
For Tubular Gauze Bandages, in Particular, Bandages Enclosing Body Members (Int. Cl. 5).
First use in 1942.

SN 305,131. Fritz Hellige & Co., GmbH, Freiburg im Breisgau, Germany. Filed Aug. 14, 1968.

HELCOGRAPH

Owner of German Reg. No. 805,055, dated Mar. 20, 1964.
For Instruments for the Recording of Biological, Electrical Muscle Action Potential and Other Physiological Data—Namely, Electrocardiographs and Electro-Encephalographs (Int. Cl. 10).
First use May 31, 1964.

SN 325,585. Henri Cuinier, Marmande, Lot-et-Garonne, France. Filed Apr. 25, 1969.



Priority claimed under Sec. 44(d) on French Reg. No. 754,329, dated Dec. 10, 1968.
For Instruments and Apparatus for Massage, Kinesitherapy and for Functional Re-Education of the Limbs (Int. Cl. 10).

SN 328,176. Hoffmann-La Roche Inc., Nutley, N.J. Filed May 23, 1969.

ENTEROTUBE

For Diagnostic Devices Containing One or More Reagents for Identifying Enteric Organisms in Patients (Int. Cl. 10).
First use May 16, 1969.

SN 341,776. Applied Radiation Corporation, Walnut Creek, Calif. Filed Oct. 27, 1969.

MEVATRON

For Electronic Devices, Including Electron Linear Accelerators, for Use in Medical Radiation Therapy (Int. Cl. 10).
First use August 1966.

SN 343,243. Dental Drug Supply Co., San Jose, Calif. Filed Nov. 12, 1969.

ENZO

For Root Canal Powder and Root Canal Liquid (Int. Cl. 5). First use Oct. 6, 1969.

SN 345,193. Niagara Therapy Manufacturing Corporation, Brocton, N.Y. Filed Dec. 3, 1969.

ROLLA-SSAGE

For Motor Operated Massage Devices in the Form of Lounge Chairs (Int. Cl. 10).
First use at least as early as February 1967.

SN 352,612. Burnett Instrument Company, Lawrence, Kans. Filed Feb. 27, 1970.

COLOSCOPE

For Sigmoidoscopes and Parts Therefor (Int. Cl. 10).
First use Jan. 16, 1970.

SN 352,682. Sybron Corporation, Rochester, N.Y. Filed Feb. 27, 1970.

SPHER-A-CAPS

Owner of Reg. No. 824,985.
For Dental Amalgam Capsules (Int. Cl. 5).
First use on or before Jan. 26, 1970.

SN 352,804. The Foregger Company, Inc., Smithtown, N.Y. Filed Mar. 2, 1970.

DISPOSATUBE

For Endotracheal Tubes (Int. Cl. 10).
First use Feb. 9, 1970.

SN 354,106. Affiliated Hospital Products, Inc., St. Louis, Mo. Filed Mar. 16, 1970.

X-AM

For Physicians' Gloves (Int. Cl. 10).
First use Sept. 1, 1961.

SN 354,442. Johnson & Johnson, d.b.a. Jelco Laboratories, New Brunswick, N.J. Filed Mar. 18, 1970.

POLYCATH IV

For Catheter Placement Unit (Int. Cl. 10).
First use Jan. 9, 1970.

Class 45 — Soft Drinks and Carbonated Waters

SN 324,279. Davis Beverage Company, Incorporated, Harrisburg, Pa. Filed Apr. 11, 1969.

Cola-DeLite

For Low Calorie Cola-Flavored Soft Drink (Int. Cl. 5).
First use May 1, 1963.

SN 329,997. Music Mountain Mineral Water Incorporated, Hot Springs National Park, Ark. Filed June 13, 1969.

MUSIC MOUNTAIN

For Soft Drink in Powdered Mix Form and in Liquid Form
First use June 4, 1969.

SN 342,438. Don Hall Laboratories, Portland, Oreg. Filed Nov. 3, 1969.

REBOUND

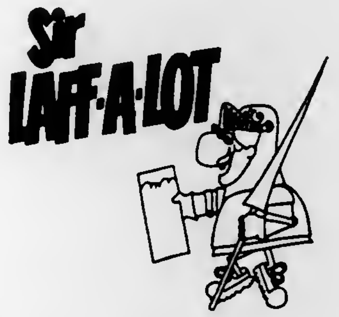
For Soft Drink in Powdered Mix Form and in Liquid Form (Int. Cl. 32).
First use Sept. 15, 1969.

SN 350,810. The Coca-Cola Company, Atlanta, Ga. Filed Feb. 9, 1970.

SOAR

For Orange Flavored Soft Drink and Syrup for Making Same (Int. Cl. 32).
First use Jan. 27, 1970.

SN 352,013. The Coca-Cola Company, Atlanta, Ga. Filed Feb. 24, 1970.



For Artificially Flavored Punch, Orange Flavored Drink, Grape Flavored Drink, and Artificially Flavored Strawberry Drink (Int. Cl. 32).
First use Jan. 16, 1970.

SN 358,238. General Mills, Inc., Minneapolis, Minn. Filed Apr. 29, 1970.

"13"

For Carbonated Soft Drinks (Int. Cl. 32).
First use on or about Mar. 25, 1970.

Class 46 — Foods and Ingredients of Foods

SN 249,989. Home Town Foods, Inc., d.b.a. Pixieland Frozen Treats Co., Jacksonville, Fla. Filed July 11, 1966.

PIXIE KRUNCHIE

Applicant waives exclusive right to the word "Krunchie" apart from the mark as shown.
For Ice Cream With an Edible Coating (Int. Cl. 30).
First use Mar. 28, 1966.

SN 299,261. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed May 28, 1968.

DOPEY BOOKS

The word "Books" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein.
For Combination Package Consisting of Chewing Gum and Humorous Leaflets (Int. Cl. 30).
First use Nov. 3, 1967.

SN 299,262. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed May 28, 1968.

NUTTY TICKETS

The word "Tickets" is disclaimed apart from the mark as shown, without disclaiming any common law rights therein. Owner of Reg. No. 796,076.
For Combination Package Consisting of Chewing Gum and Humorous Cards (Int. Cl. 30).
First use Feb. 13, 1967.

SN 299,264. Topps Chewing Gum, Incorporated, Brooklyn, N.Y. Filed May 28, 1968.

NASTY NOTES

For Combination Package Consisting of Chewing Gum and Multi-Fold Leaflet Containing Humorous Sayings and Cartoons (Int. Cl. 30).
First use Nov. 13, 1967.

SN 323,884. Balch Flavor Co., Pittsburgh, Pa. Filed Apr. 2, 1969.

IMAGE

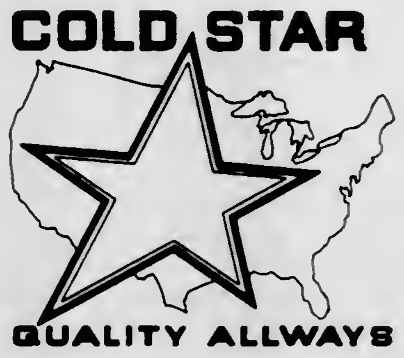
For Butter Substitute Containing Milk Solids and Butter (Int. Cl. 29).
First use March 1968.
Subj. to Intf. with SN 328,994.

SN 327,931. LTL Enterprises, Inc., Cuyahoga Falls, Ohio. Filed May 21, 1969.

COLD STAR

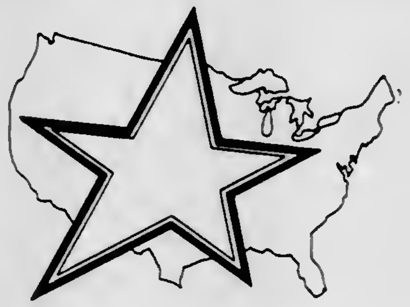
The word "Cold" is disclaimed apart from the mark as shown.
For Frozen Sea Food, Frozen Poultry, Frozen Meats, and Frozen Fruits for Use in Making Pies (Int. Cl. 29).
First use May 13, 1969.

SN 327,932. LTL Enterprises, Inc., Cuyahoga Falls, Ohio. Filed May 21, 1969.



For Frozen Sea Food, Frozen Poultry, Frozen Meats, and Frozen Fruits for Use in Making Pies (Int. Cl. 29).
First use May 13, 1969.

SN 327,933. LTL Enterprises, Inc., Cuyahoga Falls, Ohio. Filed May 21, 1969.



Applicant disclaims the representation of the map of the United States apart from the mark as shown.
For Frozen Sea Food, Frozen Poultry, Frozen Meats, and Frozen Fruits for Use in Making Pies (Int. Cl .29).
First use May 13, 1969.

SN 328,994. Lehigh Valley Cooperative Farmers, d.b.a. Lehigh Valley Dairy, Allentown, Pa. Filed June 3, 1969.

IMAGE

For Milk Food Products—Namely, Low Fat Liquid Milk and Cottage Cheese (Int. Cl. 29).
First use Feb. 28, 1969, on low fat liquid milk.
Subj. to Intf. with SN 323,884.

SN 333,286. McCormick & Company, Incorporated, Cockeysville, Md. Filed July 23, 1969.

GARDENFARE

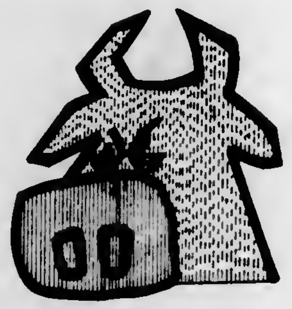
For Salad Dressings (Int. Cl. 29).
First use June 20, 1969.

SN 337,168. Grimes Poultry Processing Corporation, Fredericksburg, Pa. Filed Sept. 5, 1969.

GRIMES DUTCH TREAT

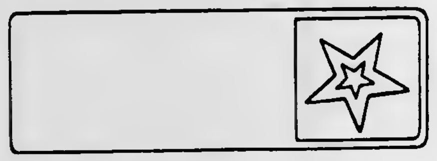
For Further Poultry Items—Namely, Frozen, Pre-Cooked Chicken Products With Barbecue or Cream Sauces for Both Retail and Institutional Use (Int. Cl. 29).
First use May 1, 1969.

SN 338,941. Taylor Food Products, Inc., El Segundo, Calif. Filed Sept. 25, 1969.



The drawing is lined for the colors red or pink and violet or purple.
For Smoked Beef Sausage (Int. Cl. 29).
First use Jan. 3, 1969.

SN 340,057. Universal Foods Corporation, Milwaukee, Wis. Filed Oct. 7, 1969.



Owner of Reg. Nos. 55,768, 861,081, and others.
For Yeasts for Food Purposes, Brewing, Distilling and Wine Making; Baking Powder; Malt in Syrup and Powdered Form for Food Purposes; a Blend of Starch and Sodium Acid Phosphate for Use as an Ingredient in Bakery Products; Tablets Containing Thiamin Hydrochloride, Riboflavin, Niacin and Iron for Use as an ingredient (Enrichener) in Bakery Products; Dry Cake and Pastry Mixes; Anti-Oxidants for Use With Food Products; Cheese; Soup and Gravy Bases; an Acidifying Salt Mixture for Use in the Production of Bakery Products; Amylease and Protease Fungal Enzyme Tablets for Use as an Ingredient in Bakery Products; Barbecue Sauce; Paprika; Dough Improver in Powdered Form Consisting of Mineral Salts and Cereal Filler; Emulsifier for Cakes and Sweet Doughs; Gelatin Desserts; Liquid and Dry Meat Tenderizers; Yeast Nutrients Used as an Ingredient in Bakery Products; and Shredded Chicken (Int. Cls. 1, 29, and 30).
First use on or about June 1, 1967.

SN 347,102. Horlicks Corporation, Racine, Wis. Filed Dec. 24, 1969.

HORLICKS MUNCHIES

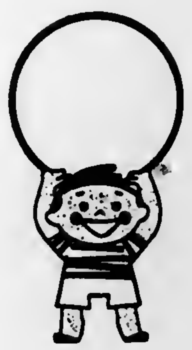
Applicant disclaims any exclusive right in the word "Munchies" apart from the mark as shown. Owner of Reg. No. 515,854.
For Malted Milk in Tablet Form (Int. Cl. 30).
First use Dec. 1, 1969.

SN 353,197. Hollymatic Corporation, Park Forest, Ill. Filed Mar. 5, 1970.

SPC

For Vegetable Protein Concentrate (Int. Cl. 29).
First use Feb. 1, 1970.

SN 353,301. Godchaux-Henderson Sugar Co., Inc., Mobile, Ala. Filed Mar. 6, 1970.



For Sugar (Int. Cl. 30).
First use April 1962.

SN 353,853. Chattanooga Bakery, Inc., Chattanooga, Tenn. Filed Mar. 12, 1970.

NU-MOON

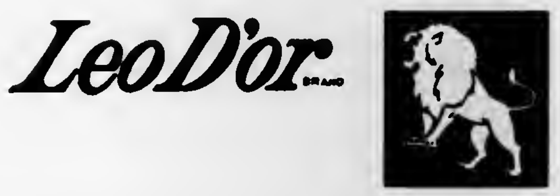
For Icing Coated Cocoanut Cookies (Int. Cl. 30).
First use Feb. 11, 1970.

SN 355,223. General Foods Corporation, White Plains, N.Y. Filed Mar. 27, 1970.

HOT 'N HEALTHY

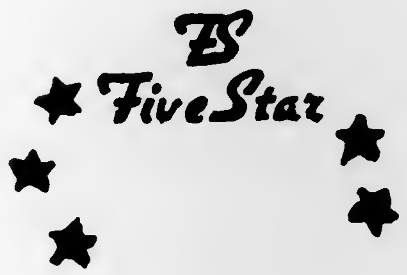
For Instant Breakfast Drink (Int. Cl. 5).
First use Mar. 5, 1970.

SN 362,881. Omstead Fisheries 1961 Limited, Wheatley, Ontario, Canada. Filed June 17, 1970.



The name "Leo D'Or" is Fanciful. Applicant makes no claim of exclusive right to use of the word "Brand" separate and apart from the mark shown. Owner of Reg. No. 877,504.
For Frozen Onion Rings and Frozen Mushrooms (Int. Cl. 29).
First use on or about June 25, 1966, on frozen onion rings; in commerce on or about June 25, 1966.

SN 364,202. Purity Supreme Super Markets, Inc., North Billarca, Mass. Filed July 2, 1970.



For Olives (Int. Cl. 31).
First use February 1969.

SN 364,609. Cargill, Incorporated, Minneapolis, Minn. Filed July 8, 1970.

CATFISH FLOATER

The word "Catfish" is disclaimed apart from the mark as a whole.
For Feed for Fish (Int. Cl. 31).
First use May 1, 1970.

SN 364,617. The Quaker Oats Company, Chicago, Ill. Filed July 8, 1970.

CELESTE

Owner of Reg. Nos. 554,043 and 743,089.
For Canned Tomatoes, Tomato Puree, Tomato Sauce, and Catsup; and Frozen Prepared Foods—Namely, Pizza, Lasagna, Ravioli, Cavatelli, Manicotti, Noodles and Italian Tomato Sauce (Int. Cls. 29 and 30).
First use Oct. 25, 1942 on canned tomato puree.

Class 47 — Wines

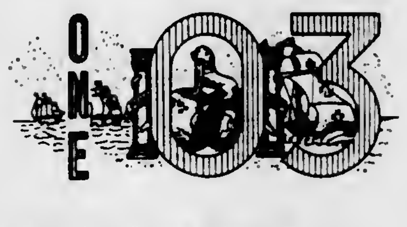
SN 341,960. Veuve Clicquot-Ponsardin, Maison Fondee en 1772, Reims (Marne), France. Filed Oct. 28, 1969.

LA GRANDE DAME

Priority claimed under Sec. 44(d) on French Reg. No. 769,368, dated July 31, 1969. The French words "La Grande Dame" mean "the great lady."
For Champagne Wines (Int. Cl. 33).

Class 49 — Distilled Alcoholic Liquors

SN 331,631. Manuel Fernandez Sociedad Anonima Jerez de la Frontera, Cadiz, Spain. Filed July 2, 1969.



The drawing is lined for the color red.
For Brandy (Int. Cl. 33).
First use Nov. 13, 1956; in commerce June 1, 1956.

SN 337,770. George Ballantine & Son Limited, Dumbarton, Scotland. Filed Sept. 12, 1969.

THE EPIC SERIES

Without waiver of common law rights, applicant disclaims the word "Series" apart from the mark as shown.
For Bottles Containing Scotch Whisky (Int. Cl. 33).
First use July 25, 1969; in commerce Aug. 1, 1969.

SN 339,484. Crown Distillers Limited, London, England, by change of name from Scoda Distillers Limited, London, England. Filed Sept. 23, 1969.

LEOPARD'S HEAD

Priority claimed under Sec. 44(d) on British Reg. No. 943,945, dated June 11, 1969.
For Gin, Vodka, and Scotch Whisky (Int. Cl. 33).

SN 340,610. T. W. Samuels Distillery, Inc., Deatsville, Ky. Filed Oct. 13, 1969.

KENBROOK DELUXE

No exclusive claim is made to the term "Deluxe" apart from the mark as shown.
For Whiskey (Int. Cl. 33).
First use Mar. 11, 1955.

SN 348,416. Foreign Vintages, Inc., New York, N.Y. Filed Jan. 13, 1970.

RON SANCHO

No exclusive claim is made to the word "Ron" apart from the mark as shown.
For Rum (Int. Cl. 33).
First use Nov. 7, 1969.

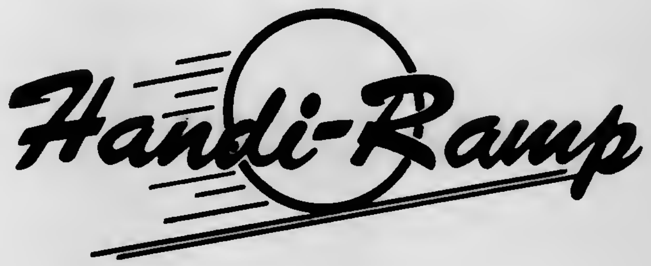
SN 357,515. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Apr. 21, 1970.

JOHNNY APPLESEED

"Johnny Appleseed" is not the name of a particular individual.
For Liqueurs (Int. Cl. 33).
First use Apr. 8, 1970.

Class 50 — Merchandise Not Otherwise Classified

SN 308,581. Handi-Ramp, Inc., Mundelein, Ill. Filed Oct. 3, 1968.



For Loading and Unloading Ramps (Int. Cl. 20).
First use Jan. 15, 1962.

SN 332,930. Florence Paper Company, Inc., Florence, S.C. Filed July 18, 1969.

SPOOLIES

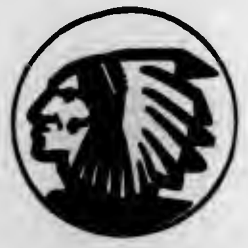
For End Caps To Keep Paper Spools Assembled (Int. Cl. 20).
First use on or about Feb. 20, 1968.

SN 346,445. Anchor Hocking Corporation, Lancaster, Ohio. Filed Dec. 17, 1969.

GRIP LOCK

For Closures for Jars and Bottles (Int. Cl. 20).
First use Sept. 15, 1969.

SN 346,657. Rubberfabriek Indiana N.V., Bredaseweg, Netherlands. Filed Dec. 18, 1969.



For Rubber Cowmats (Int. Cl. 27).
First use Jan. 31, 1940; in commerce December 1962.

SN 347,198. Atlas Tool & Manufacturing Co., St. Louis, Mo. Filed Dec. 29, 1969.

HOLLY-TIME

For Christmas Tree Stands (Int. Cl. 28).
First use June 1966.

SN 347,768. Tom T. Morodomi, Pleasant Hill, Calif. Filed Jan. 5, 1970.

Guardian

For Traps for Gophers and Other Rodents (Int. Cl. 21).
First use March 1969.

Class 51 — Cosmetics and Toilet Preparations

SN 322,556. Jacqueline Cochran, Inc., New York, N.Y. Filed Mar. 24, 1969.

BLEU MARINE

The words "Bleu Marine" is the French Equivalent of "navy blue."
For Perfumes, Toilet Water and After-Shave Lotion (Int. Cl. 3).
First use Apr. 23, 1963.

SN 331,084. William R. White, d.b.a. Grand Prix Ltd., Simi, Calif. Filed June 26, 1969.

WINTER PALACE

For Women's Cosmetics—Namely, Perfume, Bath Powder, and Cologne (Int. Cl. 3).
First use Jan. 2, 1969.

SN 331,195. Herba Corporation, New York, N.Y. Filed June 27, 1969.

CALYPSO

For Perfumes and Toilet Water (Int. Cl. 3).
First use Aug. 27, 1945.

SN 332,045. Revlon, Inc., New York, N.Y. Filed July 8, 1969.

CYCLE

For Hair Spray (Int. Cl. 3).
First use Oct. 23, 1967.

SN 333,085. Judy Bean, Ltd., St. Louis, Mo. Filed July 22, 1969.

Judy Bean

The mark is in the name of the president of the applicant corporation who gives her consent.
For Skin Cream and Lotions, Rouge, Lipstick, Eye Shadow, Eyebrow and Eyelash Preparations (Int. Cl. 3).
First use November 1968.

SN 333,125. Givaudan Corporation, Clifton, N.J. Filed July 22, 1969.

C'EST BLEU

The English translation of the mark is "it is blue."
For Cologne, Toilet Water, Perfume, Personal Sachet, Dusting Powder and Bath Oil (Int. Cl. 3).
First use July 1, 1969.

SN 338,362. John H. Breck, Inc., Wayne, N.J. Filed Sept. 19, 1969.

SIMPLY GREAT

For Hair Conditioner and Hair Creme Rinse (Int. Cl. 3).
First use Aug. 28, 1969.

SN 339,811. Parfums Marcel Rochas, Inc., New York, N.Y. Filed Oct. 6, 1969.

**monsieur
ROCHAS**

Owner of Reg. Nos. 529,403, 734,683, and 861,480.
For Colognes, Aftershave Lotions and Toilet Waters (Int. Cl. 3).
First use July 1969.

SN 341,040. Koscot Interplanetary, Inc., Winter Park, Fla. Filed Oct. 17, 1969.

HI-DIDDLE DIDDLE

For Body Talc and Bubble Bath (Int. Cl. 3).
First use at least as early as Oct. 3, 1969.

SN 341,649. Givaudan Corporation, Clifton, N.J. Filed Oct. 24, 1969.

FOAM GLOVE

The term "Foam" is disclaimed apart from the mark as shown.
For Cosmetic Cream for Use on Skin (Int. Cl. 3).
First use Aug. 13, 1969.

SN 342,161. HVZ Consultants Inc., Brooklyn, N.Y. Filed Oct. 30, 1969.

Diane

For Skin Creams and Lotions, Hair Spray, Nail Polish, Polish Remover, Lipstick, Mascara, Face Powder, Rouge, Liquid Eye Liner, Bath Oil, Perfume, Cologne, After Shave Cologne, Hand Cream, and Foot Cream (Int. Cl. 3).
First use December 1968.

SN 354,259. Michael Duval, Inc., New York, N.Y. Filed Mar. 17, 1970.

LOCK-IN

For Hair Conditioning Preparation (Int. Cl. 3).
First use Jan. 12, 1970.

SN 357,565. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Apr. 22, 1970.

OJALA

The English translation of the mark is "would be to God" or "God Grant."
For Toilet Water (Int. Cl. 3).
First use Nov. 13, 1968.

SN 361,076. Sea & Ski Corporation, Reno, Nev. Filed May 28, 1970.

TANFASTIC

Owner of Reg. Nos. 686,462 and 771,601.
For Suntan Lotions, Oils and Butter (Int. Cl. 3).
First use Dec. 8, 1958.

SN 364,332. Imperial Toiletries, Ltd., New York, N.Y. Filed July 6, 1970.

ASTRIN

For Cosmetic Cream (Int. Cl. 3).
First use Aug. 12, 1968.

Class 52 — Detergents and Soaps

SN 307,425. Colgate-Palmolive Company, New York, N.Y. Filed Sept. 16, 1968.

AT ONCE

For Hair Shampoo (Int. Cl. 3).
First use Sept. 6, 1968.

SN 327,390. Joni Lowrie Inc., New York, N.Y. Filed May 15, 1969.

Joni Lowrie

"Joni Lowrie" is the name of a living individual whose consent is of record.
For Toiletry Soaps (Int. Cl. 3).
First use 1956.

SN 331,651. Scannon, Ltd., Morristown, N.J. Filed July 2, 1969.

Ø

For Men's Soap (Int. Cl. 3).
First use July 16, 1965.

SN 334,085. The Hosiery Mate Company, Chicago, Ill. Filed July 31, 1969.

HOSIERY MATE

Applicant claims the exclusive right to use the term "Hosiery" as part of its mark, but not otherwise.
For Combined Preparation for Washing Hosiery and for Treating Synthetic Fibers To Increase Their Strength and wear (Int. Cl. 3).
First use Jan. 11, 1962.

SN 341,041. Koscot Interplanetary, Inc., Winter Park, Fla. Filed Oct. 17, 1969.

HI-DIDDLE DIDDLE

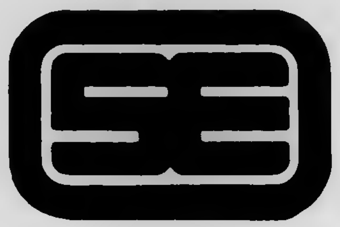
For Toiletry Soap and Hair Shampoo (Int. Cl. 3).
First use at least as early as Oct. 3, 1969.

SN 346,564. Lever Brothers Company, New York, N.Y. Filed Dec. 18, 1969.

100 STROKES

For Hair Shampoo (Int. Cl. 3).
First use Dec. 2, 1969.

SN 351,261. Sterling Electronics Corporation, Houston, Tex. Filed Feb. 13, 1970.



For Tuner and Control Cleaner, Cleaning Composition for Cleaning Records, and Tape Cartridge Cassette Player Cleaning Kit (Int. Cl. 3).
First use at least as early as about July 27, 1969, on tuner and control cleaner.

SN 353,717. Armour-Dial, Inc., Chicago, Ill. Filed Mar. 11, 1970.

SOUND OFF

For Hair Shampoo (Int. Cl. 3).
First use on or prior to Feb. 12, 1970.

SN 353,718. Armour-Dial, Inc., Chicago, Ill. Filed Mar. 11, 1970.

NITROGLYCERINE

For Hair Shampoo (Int. Cl. 3).
First use on or prior to Feb. 12, 1970.

SN 357,516. Sterling Drug Inc., New York, N.Y. Filed Apr. 21, 1970.

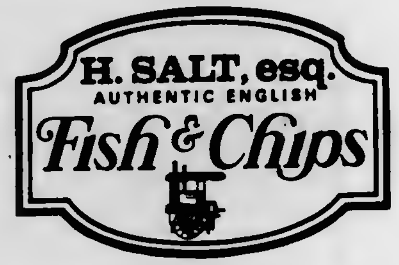
COUNT DOWN

For Medicated Hand Soap and Surgical Scrub (Int. Cl. 3).
First use Nov. 18, 1969.

SERVICE MARKS

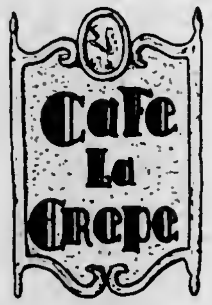
Class 100 — Miscellaneous

SN 307,505. Salt's Enterprises, San Rafael, Calif. Filed Sept. 16, 1968.



Applicant disclaims exclusive right in the words "Authentic English Fish & Chips" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on about Jan. 2, 1967.

SN 313,400. Cajun Enterprises, Inc., Chicago, Ill. Filed Dec. 2, 1968.



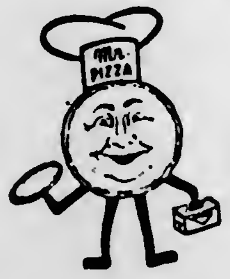
The term "Cafe la Crepe" may be translated into English as "the pancake cafe." The term "Cafe la Crepe" is disclaimed apart from the mark as shown.
For Restaurant and Food Services (Int. Cl. 42).
First use on or about Nov. 4, 1968.

SN 317,214. Earthworm Tractor Co., Inc., d.b.a. Earthworm Tractor Co., New York, N.Y. Filed Jan. 22, 1969.

EARTHWORM

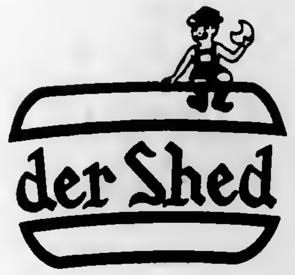
For Second Hand Tractor Attachment Outlet Services (Int. Cl. 42).
First use Oct. 1, 1968.

SN 324,923. Mr. Enterprises, Inc., Raleigh, N.C. Filed Apr. 18, 1969.



Without waiving its common law rights and for purposes of this registration only, applicant makes no claim to the word "Pizza" apart from the mark as shown.
For Limited Menu Type Restaurant Services (Int. Cl. 42).
First use at least as early as June 26, 1967.

SN 325,987. Morning Glory Corporation, Thomasville, N.C. Filed Apr. 30, 1969.



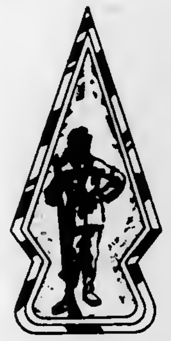
For Restaurant Services (Int. Cl. 42).
First use Nov. 30, 1965.

SN 328,539. Dollar-A-Day Rent-A-Car Systems, Inc., Los Angeles, Calif. Filed May 28, 1969.

DOLLAR SYSTEMS

Applicant makes no claim to the word "Systems" alone.
Owner of Reg. No. 823,789.
For Automotivve Vehicle Renting and Leasing Services (Int. Cl. 42).
First use Mar. 1, 1966.

SN 334,817. Daniel Boone Fried Chicken Inc., Lexington, Ky. Filed Aug. 8, 1969.



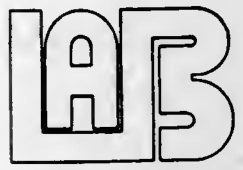
For Restaurant and Carry Out Food Services (Int. Cl. 42).
First use Aug. 17, 1968.

SN 335,858. Federated Waste & Pollution Control Corporation, Hoboken, N.J. Filed Aug. 21, 1969.

FEDWAY

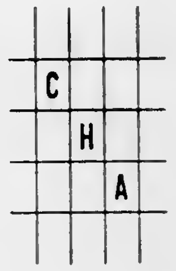
For Technical Advice in Connection With the Design and Operation of Waste Disposal Equipment (Int. Cl. 42).
First use May 15, 1968.

SN 336,127. Libros de Latino America, Inc., New York, N.Y. Filed Aug. 25, 1969.



For Services in Selecting and Recommending to Others Publications of Special Interest to Them (Int. Cl. 42).
First use Apr. 7, 1969.

SN 342,414. Clark-Hackett & Associates, Inc., Stamford, Conn. Filed Nov. 3, 1969.



For Consulting Services for Real Estate and for Land and Right of Way Acquisitions (Int. Cl. 42).
First use February 1968.

SN 342,625. Doubletree Inns, Inc., Phoenix, Ariz. Filed Nov. 4, 1969.

BOOJUM TREE

For Restaurant Services (Int. Cl. 42).
First use June 28, 1969.

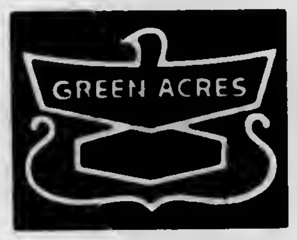
SN 354,317. MCA Entertainment, Inc., Universal City, Calif. Filed Mar. 17, 1970.

FRANK N' STEIN

For Restaurant Services (Int. Cl. 42).
First use August 1967.

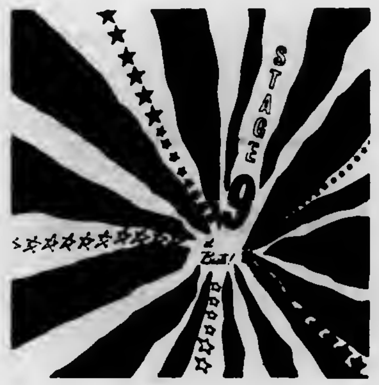
Class 101 — Advertising and Business

SN 316,431. Green Acres of America, Inc., Chattanooga, Tenn. Filed Jan. 13, 1969.



For Rendering Technical Assistance in the Establishment and/or Operation of Mobile Home Parks for Others (Int. Cl. 35).
First use June 20, 1968.

SN 316,807. McCrory Corporation, New York, N.Y. Filed Jan. 16, 1969.



For Retail Department Store Services (Int. Cl. 35).
First use Sept. 19, 1968.

SN 320,052. Eastern Employment Service, Inc., Baltimore, Md. Filed Feb. 25, 1969.

EASTERN EMPLOYMENT SERVICE

The words "Employment Service" are disclaimed apart from the mark as shown.
For Personnel Consultant and Employment Agency Services (Int. Cl. 35).
First use May 1963.

SN 320,065. Leasco Systems & Research Corporation, Bethesda, Md. Filed Feb. 25, 1969.

DISCLOSURE

For Providing Microfilm Copies of Corporate Financial Data Received by the Securities and Exchange Commission (Int. Cl. 35).
First use Jan. 6, 1969.

SN 320,069. Mnemotech Computer Systems, Inc., New York, N.Y. Filed Feb. 25, 1969.

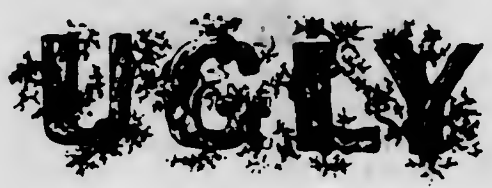
MNEMOTECH

For Computer Programming Services (Int. Cl. 35).
First use at least as early as December 1968.

SN 321,907. Ann G. Collier, Reseda, Calif. Filed Mar. 17. 1969.

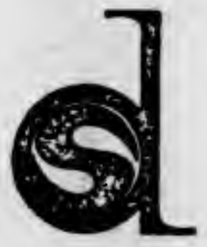
The mark consists of a stylized symbol similar to a horizontal figure eight.
For Public Relations, Marketing Research, and Marketing Planning Services (Int. Cl. 35).
First use at least as early as July 18, 1968.

SN 327,524. Ugly Enterprises Limited, London, England. Filed May 16, 1969.



For Model Agency Services (Int. Cl. 35).
First use Feb. 1, 1969; in commerce Mar. 7, 1969.

SN 328,040. Datronic Service Corporation, Chicago, Ill. Filed May 22, 1969.



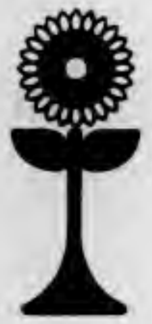
For Computer Software Development, Programming and Document Design (Int. Cl. 35).
First use Apr. 1, 1968.

SN 328,765. Fuller & Dees Marketing Group, Inc., d.b.a. Parent & Child Institute, Montgomery, Ala. Filed June 2, 1969.

Parent & Child INSTITUTE

For Mail Order Book Sale Services (Int. Cl. 35).
First use Mar. 10, 1969.

SN 335,205. Contemporaries International, Inc., Cleveland, Ohio. Filed Aug. 13, 1969.



For Temporary Personnel Placement Services (Int. Cl. 35).
First use June 1, 1969.

SN 335,206. Contemporaries International, Inc., Cleveland, Ohio. Filed Aug. 13, 1969.

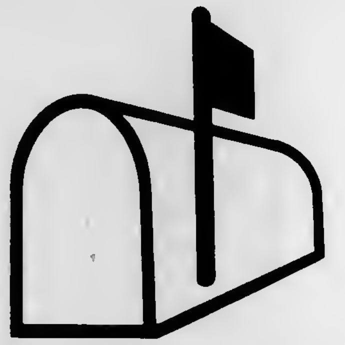
YOU CAN COUNT ON CONTEMPORARIES

For Temporary Personnel Placement Services (Int. Cl. 35).
First use June 1, 1969.

SN 339,972. United Refrigerated Vendors Corp., Pittsburgh, Pa. Filed Oct. 7, 1969.

For Vending Machine Services Specializing in Dispensing Ice Cubes, Crushed Ice, and Blocks of Ice (Int. Cl. 35).
First use Sept. 5, 1969.

SN 340,067. Mark A. Wood, Indianapolis, Ind. Filed Oct. 7, 1969.



For Wrapping, Packing and/or Mailing Services (Int. Cl. 35).
First use on or about Aug. 17, 1969.

SN 342,777. Premium Corporation of America, Inc., Minneapolis, Minn. Filed Nov. 3, 1969.

AMERICAN HERITAGE

For Promoting the Sale of the Goods and Services of Others Through the issuance and redemption of Trading Stamps, Coupons and Devices (Int. Cl. 35).
First use Sept. 29, 1969.

SN 345,835. Life Employment Services, Inc., Boston, Mass. Filed Dec. 10, 1969.

LIFE

For Employment Agency Services (Int. Cl. 35).
First use June 1964.

SN 346,720. The Christmas Dove, Rockport, Mass. Filed Dec. 19, 1969.

The Christmas Dove

For Retail Gift Store Services (Int. Cl. 35).
First use June 25, 1968.

SN 352,026. International Productions, Inc., Jacksonville, Fla. Filed Feb. 24, 1970.

WORLD-A-RAMA

For Providing Convention and Trade Show Facilities (Int. Cl. 35).
First use Jan. 28, 1970.

SN 357,290. Profile Communications, Inc., Maynard, Mass. Filed Apr. 20, 1970.

PRO-COM

For Collecting and Disseminating Information on Subjects Designated by Subscribers (Int. Cl. 35).
First use Aug. 29, 1969.

Class 102 — Insurance and Financial

SN 296,181. Muller and Company, New York, N.Y. Filed Apr. 22, 1968.

ALERT

For Stock Market Brokerage Service (Int. Cl. 36).
First use October 1967.

SN 309,913. Silvey Corporation, Columbia, Mo. Filed Oct. 17, 1968.

S Silvey Companies

The drawing is lined for the color orange.
For Underwriting Accident and Health Insurance, and Fire, Casualty, and Automobile Insurance (Int. Cl. 36).
First use Dec. 1, 1965.

SN 311,163. North American Company for Life and Health Insurance, Chicago, Ill. Filed Nov. 1, 1968.

Retirement Reserve

No claim is made to any exclusive rights to the use of the word "Retirement" or "Reserve."
For Underwriting of Group Retirement Annuity and Death Benefit Insurance (Int. Cl. 36).
First use Nov. 30, 1961.

SN 313,956. The Ministers Life and Casualty Union, Minneapolis, Minn. Filed Dec. 9, 1968.

SERVING THOSE WHO SERVE

For Underwriting Insurance (Int. Cl. 36).
First use during April 1965.

SN 316,533. Harleysville Life Insurance Company, Harleysville, Pa. Filed Jan. 14, 1969.

HI-LIFE

For Life Insurance Underwriting Services (Int. Cl. 36).
First use June 17, 1968.

SN 334,413. Woodmen of the World Life Insurance Society and/or Omaha Woodmen Life Insurance Society, Omaha, Nebr. Filed Aug. 4, 1969.

O.W.L.

For Underwriting of Insurance (Int. Cl. 36).
First use Oct. 1, 1937.

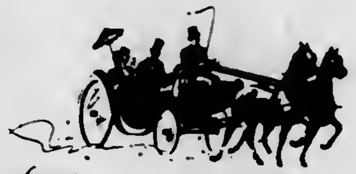
SN 360,201. Hagerstown Trust Company, Hagerstown, Md. Filed May 19, 1970.

CAR-KING

For Auto Financing Services (Int. Cl. 36).
First use Apr. 27, 1970.

Class 103 — Construction and Repair

SN 234,231. Russell Pierce, d.b.a. Congress Springs Development Company, San Jose, Calif. Filed Dec. 8, 1965.



Congress Springs

For Development, Construction, Maintenance and Repair of Residential Communities—Namely, Houses, Public Buildings, Swimming Pools, Apartments, Golf Courses, and Shopping Centers (Int. Cl. 37).
First use Dec. 2, 1965.

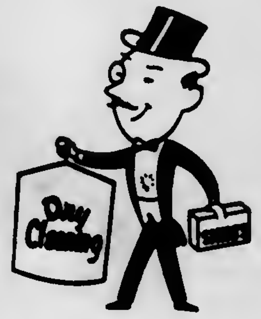
SN 297,473. Westinghouse Electric Corporation, Pittsburgh, Pa. Filed May 6, 1968.

SURE SERVICE

Applicant disclaims the word "Service" apart from the mark as shown.
For Servicing of Major Electrical Appliances—Namely, Refrigerators, Washing Machines, Clothes Dryers, Dishwashers, Freezers, Radios, Phonographs, Tape Recorders, Electric Ranges, Water Heaters, Dehumidifiers, Room Air Conditioners, Food Waste Disposals, Water Coolers, Television Sets and Stereo Equipment (Int. Cl. 37).
First use on or about June 26, 1967.

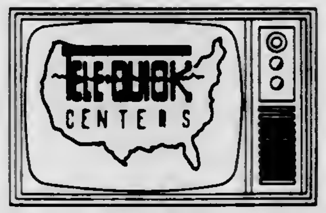
SN 318,559. Mr. Nifty Cleaners, Inc., Baltimore, Md. Filed Feb. 6, 1969.

MR. NIFTY



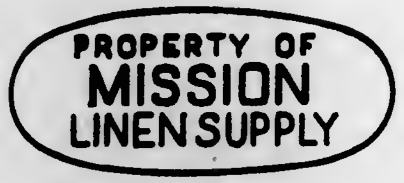
The words "Dry Cleaning" and "Shirts," as well as the representation of a dry cleaning bag and shirt container, are hereby disclaimed apart from the mark as shown, although applicant reserves his common law rights in the mark as a whole.
For Laundry and Dry Cleaning Services (Int. Cl. 37).
First use October 1965.

SN 322,496. Tele-Quick, Inc., New Haven, Ind. Filed Mar. 21, 1969.



The word "Centers" and the representation of the television set are disclaimed, when used separate and apart from the mark as shown. Owner of Reg. No. 866,644.
For Television Repair Service (Int. Cl. 37).
First use Feb. 22, 1967.

SN 327,656. Montecito Manufacturing Company, Santa Barbara, Calif. Filed May 19, 1969.



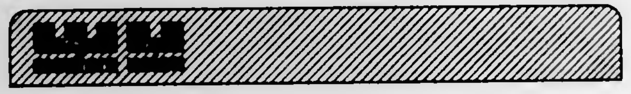
Applicant disclaims the words "Linen Supply" and the phrase "Property of" apart from the mark as shown. Owner of Reg. No. 859,476.

For Linen Supply Services (Int. Cl. 37).

First use Jan. 1, 1956.

Class 104 — Communication

SN 342,338. The Western Union Telegraph Company, New York, N.Y. Filed Oct. 31, 1969.



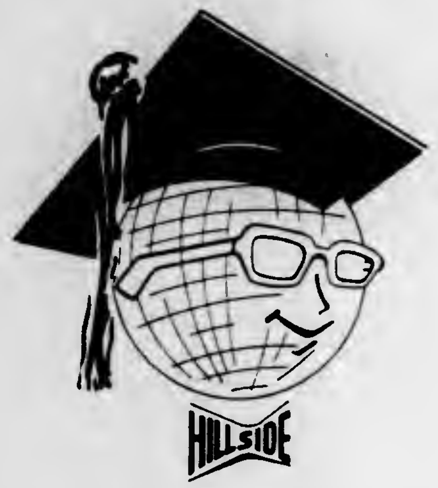
The drawing is lined for the colors brown and yellow. Owner of Reg. Nos. 779,247 and 781,578.

For Telegraphic Communication Services (Int. Cl. 38).

First use on or about Mar. 1, 1969.

Class 105 — Transportation and Storage

SN 310,779. Hillside Van Lines Inc., East Northport, N.Y. Filed Oct. 29, 1968.



For Transportation Services—Namely, Transporting the Goods of Others by Motor Vehicle (Int. Cl. 39).

First use Jan. 1, 1958.

SN 344,926. American Union Transport Forwarding, Inc. New York, N.Y. Filed Dec. 1, 1969.

For Packing and Shipping of Merchandise of Others (Int. Cl. 39).

First use Nov. 21, 1969.

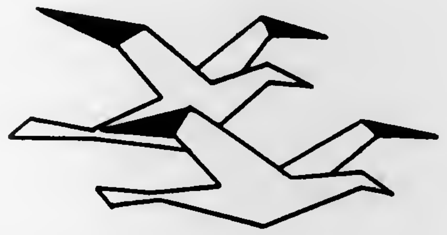
SN 361,082. Windward Travel Center, Camp Hill, Pa. Filed May 28, 1970.

WINDWARD

For Travel Agency Services (Int. Cl. 39).

First use May 1960.

SN 361,083. Windward Travel Center, Camp Hill, Pa. Filed May 28, 1970.



For Travel Agency Services (Int. Cl. 39).

First use May 1960.

Class 106 — Material Treatment

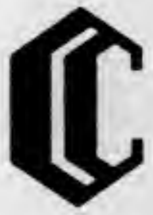
SN 314,794. Industrial Magnetics, Inc., Canton, Mass. Filed Dec. 18, 1968.

HYDRO-DYNAMIC

For Welding Services (Int. Cl. 40).

First use May 1967.

SN 322,144. Central Chemical Corporation, Hagerstown, Md. Filed Mar. 19, 1969.



For Formulating, Grinding, and Mixing of Chemical Products for Others (Int. Cl. 40).

First use March 1967.

Class 107 — Education and Entertainment

SN 324,306. Photo Magnetic Systems, Inc., Beltsville, Md. Filed Apr. 11, 1969.

COMPUTERMATION

For Providing Seminar and Instruction Courses on Systems Comprising Computers and Pushbutton Telephone Systems (Int. Cl. 41).

First use September 1965.

SN 325,091. Stretch & Sew of Oregon, Inc., Eugene, Oreg. Filed Apr. 21, 1969.

S-T-R-E-T-C-H & SEW

For Educational Program—Namely, a Course of Instruction in Sewing Stretch Materials (Int. Cl. 41).

First use Jan. 6, 1967.

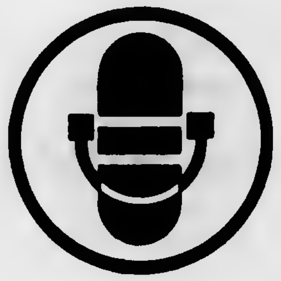
SN 326,019. Jean Martin, Tampa, Fla. Filed Apr. 30, 1969.

THE OPPOSITE SEXES

For Entertainment Services Provided by a Rock and Roll Band (Int. Cl. 41).

First use Jan. 24, 1968.

SN 327,469. Donald G. Bennet, d.b.a. Broadcast Academy, Colorado Springs, Colo. Filed May 16, 1969.



For Educational Correspondence Courses in Broadcasting (Int. Cl. 41).

First use Dec. 5, 1968.

SN 340,449. Woodstock Ventures, Inc., d.b.a. Woodstock Music & Art Fair, New York, N.Y. Filed Oct. 10, 1969.

AN AQUARIAN EXPOSITION

Without waiving its common law rights therein, applicant makes no claim to the word "Exposition" apart from the mark as shown.

For Entertainment Services—Namely, the conducting of Music and Dramatic Productions (Int. Cl. 41).

First use Aug. 15, 1969.

SN 346,165. The Bellingrath-Morse Foundation, d.b.a. Bellingrath Gardens, Mobile, Ala. Filed Dec. 15, 1969.

BELLINGRATH GARDENS

Without waiver of any of its common law rights, applicant disclaims exclusive right to use of the word "Gardens" except in the combination shown. Owner of Reg. Nos. 856,223 and 857,948.

For Operation of a Garden and Home as a Tourist Attraction (Int. Cl. 41).

First use at least as early as 1933.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

899,440. GRANUSAT. Saat- und Erntetechnik GmbH. SN 310,250. Pub. 7–14–70. Filed 10–22–68.

899,441. FFP–C (DESIGN). Free-Flow Packaging Corporation. SN 317,026. Pub. 7–14–70. Filed 1–21–69.

899,442. FIOR. Standard Oil Company. SN 326,262. Pub. 7–14–70. Filed 5–2–69.

899,443. CORCEL. Interpace Corporation. SN 327,628. Pub. 7–14–70. Filed 5–19–69.

899,444. FROTH-PAK. Insta-Foam Products, Inc. SN 329,987. Pub. 7–14–70. Filed 6–13–69.

899,445. STAR. The Conard-Pyle Company. SN 333,682. Pub. 7–14–70. Filed 7–28–69.

899,446. ASTRO - FOAM. The Baxter Corporation. SN 346,024. Pub. 7–28–70. Filed 12–12–69.

899,447. MOLDORO. F. E. Knight Inc. SN 347,282. Pub. 7–28–70. Filed 12–29–69.

899,448. APOLLO XII. Emba Mink Breeders Association, assignee of Larry Moore-Gilbert Tuttle Mink Ranch. SN 346,389. Pub. 7–14–70. Filed 12–16–69.

899,449. BAYDUR. Farbenfabriken Bayer Aktiengesellschaft. SN 346,471. Pub. 7–14–70. Filed 12–17–69.

899,450. APOLLO XIII. Emba Mink Breeders Association, assignee of Larry Moore-Gilbert Tuttle Mink Ranch. SN 346,494. Pub. 7–14–70. Filed 12–17–69.

899,451. APOLLO XIV. Emba Mink Breeders Association, assignee of Larry Moore-Gilbert Tuttle Mink Ranch. SN 346,533. Pub. 7–14–70. Filed 12–17–69.

899,452. APOLLO XI. Emba Mink Breeders Association, assignee of Larry Moore-Gilbert Tuttle Mink Ranch. SN 346,535. Pub. 7–14–70. Filed 12–17–69.

899,453. FYBRAZINE. Albert Zollinger Inc. SN 346,544. Pub. 7–14–70. Filed 12–17–69.

899,454. SUPREX. J. M. Huber Corporation. SN 346,739. Pub. 7–14–70. Filed 12–19–69.

899,455. VIPATHENE. Societe d'Emballages Plastiques. SN 351,154. Pub. 7–14–70. Filed 2–11–70.

899,456. GRACE AND DESIGN. W. R. Grace & Co. MULTIPLE CLASS (Classes 1, 2, 4, 6, 12, 16, 20, 37, and 52). SN 354,056. Pub. 7–14–70. Filed 3–16–70.

899,457. DU PONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 355,715. Pub. 7–14–70. Filed 4–2–70.

899,458. VISPOSE. Ethyl Corporation. SN 357,031. Pub. 7–14–70. Filed 4–16–70.

899,459. SUPER PRO. Northrup, King & Company. SN 357,285. Pub. 7–14–70. Filed 4–20–70.

Class 2 — Receptacles

899,456. (See Class 1 for this trademark.)

899,460. FARMASTER. Farmaster Products, Inc. SN 337,290. Pub. 7–14–70. Filed 9–8–69.

899,461. F. Farmaster Products, Inc. SN 337,916. Pub. 7–14–70. Filed 9–15–69.

899,462. SHOP-R. CTP Industries Inc. SN 339,842. Pub. 7–14–70. Filed 10–6–69.

899,463. VISI-ROL. Deering Milliken, Inc. SN 340,705. Pub. 7–14–70. Filed 10–15–69.

899,464. FLEX-A-TOP. Shaw-Clayton Plastics Incorporated. SN 343,009. Pub. 7–14–70. Filed 11–7–69.

899,465. DURA-TECH. Schenuit Industries, Inc. MULTIPLE CLASS (Classes 2 and 35). SN 345,504. Pub. 7–14–70. Filed 12–5–69.

899,466. UNION MFG. CO. ETC. AND DESIGN. Union Manufacturing Company. MULTIPLE CLASS (Classes 2 and 23). SN 346,020. Pub. 7–14–70. Filed 12–12–69.

899,467. INSULITE. Sani-Gard Manufacturing Co. SN 346,776. Pub. 7–14–70. Filed 12–19–69.

899,468. CORKER. David Douglas Co., Inc. SN 347,728. Pub. 7–14–70. Filed 1–5–70.

Class 4 — Abrasives and Polishing Materials

899,456. (See Class 1 for this trademark.)

899,469. PELLITE. Pelletronics, Inc. SN 331,528. Pub. 7–14–70. Filed 7–1–69.

899,470. PELL-A-CUT. Pelletronics, Inc. SN 331,529. Pub. 7–14–70. Filed 7–1–69.

899,471. HYLON. Gem, Incorporated. MULTIPLE CLASS (Classes 4, 6, 15, 51, and 52). SN 343,034. Pub. 7–14–70. Filed 11–10–69.

899,472. POLYSHARP. J & M Mfg. Company. SN 346,252. Pub. 7–14–70. Filed 12–15–69.

Class 5 — Adhesives

899,473. NATCOL. Natcol Crafts, Inc., d.b.a. Natcol Plastics. MULTIPLE CLASS (Classes 5, 6, 16, 22, 28, and 50). SN 330,551. Pub. 7–14–70. Filed 6–20–69.

899,474. SPEC TRACHEM AND DESIGN. Spectrachem Corporation. MULTIPLE CLASS (Classes 5 and 11). SN 339,655. Pub. 7–14–70. Filed 10–3–69.

Class 6 — Chemicals and Chemical Compositions

899,456. (See Class 1 for this trademark.)

899,471. (See Class 4 for this trademark.)

899,473. (See Class 5 for this trademark.)

899,475. SANISUN. Faultless Starch Company. SN 298,221. Pub. 7–14–70. Filed 5–15–68.

899,476. PITNEY-BOWES. Pitney-Bowes, Inc. MULTIPLE CLASS (Classes 6, 11, 23, 26, and 32). SN 300,862. Pub. 7–14–70. Filed 6–20–68.

899,477. HAKUBAI AND SYMBOLS. Masanori Konaka. SN 306,254. Pub. 7–14–70. Filed 8–29–68.

899,478. GOLD EAGLE. Gold Eagle Products Co. MULTIPLE CLASS (Classes 6 and 52). SN 309,133. Pub. 7–14–70. Filed 10–8–68.

899,479. AMEROYAL. Drew Chemical Corporation. SN 309,554. Pub. 6–9–70. Filed 10–14–68.

899,480. BETANAL. Nor-Am Agricultural Products, Inc., assignee of Schering Aktiengesellschaft. SN 320,383. Pub. 7–14–70. Filed 2–28–69.

899,481. AGRI-OIL PLUS. PBI-Gordon Corporation, by change of name from Private Brands, Inc. SN 321,269. Pub. 7–14–70. Filed 3–10–69.

899,482. BAZAR AND DESIGN. Bazâr, Inc. SN 321,755. Pub. 7–14–70. Filed 3–14–69.

899,483. CAL DRY. Caled Products Company, Inc. SN 322,828. Pub. 7–14–70. Filed 3–26–69.

899,484. LIQUI RASE AND DESIGN. Moore Business Forms, Inc. SN 326,675. Pub. 7–14–70. Filed 5–7–69.

899,485. FACT. Interstate Foods Corporation. SN 326,882. Pub. 7–14–70. Filed 5–9–69.

899,486. SE-FLY-GO. National Service Industries, Inc. SN 330,177. Pub. 7–14–70. Filed 6–16–69.

899,487. AUTO PRIDE. The Kroger Co., d.b.a. Jubilee Products Inc. SN 331,392. Pub. 7–14–70. Filed 6–30–69.

899,488. ND–68. Haviland Products Company. SN 337,931. Pub. 7–14–70. Filed 9–15–69.

899,489. KERB. Rohm and Haas Company. SN 338,267. Pub. 7–14–70. Filed 9–18–69.

899,490. ACETOL. Malmstrom Chemical Corp. SN 340,405. Pub. 7–14–70. Filed 10–10–69.

899,491. TRISOLAN. Malmstrom Chemical Corp. SN 340,409. Pub. 7–14–70. Filed 10–10–69.

899,492. DEW PEARL. R.I.T.A. Organics, Inc. SN 344,884. Pub. 7–14–70. Filed 11–28–69.

899,493. VERTAN. The Dow Chemical Company. SN 345,314. Pub. 7–14–70. Filed 12–4–69.

899,494. NORABEN. Hercules Incorporated. SN 348,942. Pub. 7–14–70. Filed 1–19–70.

899,495. LIQUA-SECT. Certified Laboratories, Inc. SN 350,700. Pub. 7–14–70. Filed 2–6–70.

899,496. MISCELLANEOUS DESIGN. Continental Oil Company. SN 350,721. Pub. 7–14–70. Filed 2–6–70.

899,497. NEPOL. A. E. Staley Manufacturing Company. SN 350,966. Pub. 7–14–70. Filed 2–9–70.

899,498. URIFINE. First Mississippi Corporation. SN 354,832. Pub. 7–14–70. Filed 3–23–70.

899,499. FEATHER. Colgate-Palmolive Company. SN 356,552. Pub. 7–14–70. Filed 4–13–70.

899,500. DARTMOUTH. Kingston Marketing Co., assignee of The Kingston Company. SN 356,569. Pub. 7–14–70. Filed 4–13–70.

Class 7 — Cordage

899,501. N NORCROSS. Norcross, Inc. MULTIPLE CLASS (Classes 7 and 37). SN 305,594. Pub. 7–14–70. Filed 8–21–68.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

899,502. IRECO AND DESIGN. Ireco Chemicals. MULTIPLE CLASS (Classes 9 and 103). SN 269,990. Pub. 7–14–70. Filed 4–25–67.

Class 10 — Fertilizers

899,503. STYROMULL. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 341,779. Pub. 7–14–70. Filed 10–27–69.

Class 11 — Inks and Inking Materials

899,474. (See Class 5 for this trademark.)

899,476. (See Class 6 for this trademark.)

899,504. USM AND DESIGN. USM Corporation. SN 324,253. Pub. 7–14–70. Filed 4–10–69.

899,505. KLEEN-PAK. The Carter's Ink Company. SN 333,371. Pub. 7–14–70. Filed 7–24–69.

Class 12 — Construction Materials

899,456. (See Class 1 for this trademark.)

899,506. OLD WORLD. Georgia-Pacific Corporation. SN 336,285. Pub. 7–14–70. Filed 8–12–69.

899,507. DECK-SHIELD. United States Mineral Products Company. SN 340,747. Pub. 7–14–70. Filed 10–15–69.

899,508. DURA-MOR AND DESIGN. Morgan Company. SN 347,112. Pub. 7–14–70. Filed 12–24–69.

899,509. SOUNDSPAN. The Soundlock Corporation. SN 347,124. Pub. 7–14–70. Filed 12–24–69.

899,510. DENSCAL. Georgia-Pacific Corporation. SN 348,420. Pub. 7–14–70. Filed 1–13–70.

899,511. ECON-O-SHIM. Sonoco Products Company. SN 348,691. Pub. 7–14–70. Filed 1–15–70.

899,512. PAVTEX AND DESIGN. Pavco Industries, Inc. MULTIPLE CLASS (Classes 12 and 42). SN 348,715. Pub. 7–14–70. Filed 1–16–70.

899,513. ROYAL OAK. Georgia-Pacific Corporation. SN 348,933. Pub. 7–14–70. Filed 1–19–70.

899,514. CRESTWALL. Masonite Corporation. SN 349,878. Pub. 7–14–70. Filed 1–28–70.

899,515. MISCELLANEOUS DESIGN. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 355,723. Pub. 7–14–70. Filed 4–2–70.

899,516. TIGER. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 355,724. Pub. 7–14–70. Filed 4–2–70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

899,517. ATE AND DESIGN. Alfred Teves GmbH. MULTIPLE CLASS (Classes 13, 14, 19, 21, 23, 26, 31, 34, and 35). SN 293,450. Pub. 7–14–70. Filed 3–18–68.

899,518. AFCO. American Fence Construction Company, d.b.a. AFCO Fences. SN 313,392. Pub. 7–14–70. Filed 12–2–68.

899,519. CORDOVA. Cordova Creations, Inc. SN 321,471. Pub. 7–14–70. Filed 3–12–69.

899,520. SABLE. Vistron Corporation. SN 336,881. Pub. 7–14–70. Filed 9–2–69.

899,521. MONOVA. The Steel Company of Canada, Limited. SN 349,700. Pub. 7–14–70. Filed 1–26–70.

899,522. SURFASHOWER. Leonard Valve Company. SN 349,775. Pub. 7–14–70. Filed 1–27–70.

899,523. MARSCAR. Marscar Limited. SN 350,496. Pub. 7–14–70. Filed 2–4–70.

899,524. FINEWELD. Olin Corporation. SN 350,604. Pub. 7–14–70. Filed 2–5–70.

899,525. AQUARIUS COLLECTION. Ajax Hardware Corporation. SN 350,842. Pub. 7–14–70. Filed 2–9–70.

899,526. CROSS-TRIM. Emhart Corporation. SN 351,440. Pub. 7–14–70. Filed 2–16–70.

899,527. NICOPLY. Mechanized Science Seals, Inc. SN 351,621. Pub. 7–14–70. Filed 2–17–70.

899,528. SUPER GOLDEN JET. Celanese Corporation. SN 352,451. Pub. 7–14–70. Filed 2–26–70.

Class 14 — Metals and Metal Castings and Forgings

899,517. (See Class 13 for this trademark.)

899,529. CU·CHOPS. Diversified Industries, Inc. SN 344,689. Pub. 7–14–70. Filed 11–26–69.

899,530. MINIBRIQ. Diversified Industries, Inc. SN 344,690. Pub. 7–14–70. Filed 11–26–69.

899,531. ELECTROPAK. Diversified Industries, Inc. SN 344,692. Pub. 7–14–70. Filed 11–26–69.

899,532. ALUMAPAK. Diversified Industries, Inc. SN 344,696. Pub. 7–14–70. Filed 11–26–69.

899,533. AL·GRAINS. Diversified Industries, Inc. SN 344,697. Pub. 7–14–70. Filed 11–26–69.

899,534. AL·CHOPS. Diversified Industries, Inc. SN 344,698. Pub. 7–14–70. Filed 11–26–69.

899,535. DUXTAL. Youngstown Sheet and Tube Company. SN 349,414. Pub. 7–14–70. Filed 1–22–70.

Class 15 — Oils and Greases

899,471. (See Class 4 for this trademark.)

899,536. PUBLIX AND DESIGN. Publix Oil Company, Incorporated. SN 321,079. Pub. 7–14–70. Filed 3–7–69.

899,537. ADVAWAX. Carlisle Chemical Works, Inc. SN 326,628. Pub. 7–14–70. Filed 5–7–69.

899,538. OTTAWA. Sun Oil Company. SN 337,704. Pub. 7–14–70. Filed 9–11–69.

899,539. GEARTRAN. Sun Oil Company. SN 337,707. Pub. 7–14–70. Filed 9–11–69.

899,540. GENMAC. Sun Oil Company. SN 337,717. Pub. 7–14–70. Filed 9–11–69.

899,541. GOLDEN BORON. The Standard Oil Company. SN 349,512. Pub. 7–14–70. Filed 1–23–70.

Class 16 — Protective and Decorative Coatings

899,456. (See Class 1 for this trademark.)

899,473. (See Class 5 for this trademark.)

899,542. CREATABILITY. The Studio-Creative Crafts, Inc. SN 321,694. Pub. 7–14–70. Filed 3–13–69.

Class 17 — Tobacco Products

899,543. CYTREL. Celanese Corporation. SN 337,152. Pub. 7–7–70. Filed 9–5–69.

899,544. SWISS CHALET. Lane Limited. SN 350,391. Pub. 7–14–70. Filed 2–3–70.

899,545. COUNT CHRISTOPHER. Camacho Cigars, Inc. SN 350,416. Pub. 7–14–70. Filed 2–4–70.

899,546. MISCELLANEOUS DESIGN. R. J. Reynolds Tobacco Company. SN 351,878. Pub. 7–14–70. Filed 2–20–70.

899,547. JESTERS. Bayuk Cigars Incorporated. SN 355,609. Pub. 7–14–70. Filed 4–1–70.

899,548. DELLWOOD. R. J. Reynolds Tobacco Company. SN 356,584. Pub. 7–14–70. Filed 4–13–70.

899,549. PUB. R. J. Reynolds Tobacco Company. SN 356,585. Pub. 7–14–70. Filed 4–13–70.

899,550. JUNIOR MEMBER AND DESIGN. Senior Service (Overseas) Limited. SN 356,589. Pub. 7–14–70. Filed 4–13–70.

Class 18 — Medicines and Pharmaceutical Preparations

899,551. NEOTREX. Bristol-Myers Company. SN 297,526. Pub. 7–14–70. Filed 5–7–68.

899,552. RHIVAX. Johnson & Johnson, assignee of The Dow Chemical Company. SN 308,773. Pub. 7–14–70. Filed 10–3–68.

899,553. ZESTABS. Hoffmann-La Roche Inc. SN 324,458. Pub. 7–14–70. Filed 4–14–69.

899,554. CHLORPETS. Alfa Pet, Inc. SN 329,421. Pub. 7–14–70. Filed 6–9–69.

899,555. ERA STRAIN. The Governors of the University of Toronto, d.b.a. Connaught Medical Research Laboratories. SN 330,833. Pub. 7–14–70. Filed 6–24–69.

899,556. MILIFERIN. Smith, Miller & Patch, Inc. (New Jersey corporation), assignee of Smith, Miller & Patch, Inc. (New York corporation). SN 330,856. Pub. 7–14–70. Filed 6–24–69.

899,557. GOURMET. Noxell Corporation. SN 330,947. Pub. 7–14–70. Filed 6–25–69.

899,558. PALVITE. Southwestern Drug Corporation, d.b.a. Truett Laboratories. SN 332,264. Pub. 7–14–70. Filed 7–10–69.

899,559. WITHDRAWN.

899,560. KANAPEN. Bristol-Myers Company. SN 340,767. Pub. 7–14–70. Filed 10–15–69.

899,561. B-MAJOR. Barth Vitamin Corp. SN 343,490. Pub. 7–14–70. Filed 11–14–69.

899,562. HEMALIVE. Barth Vitamin Corp. SN 343,496. Pub. 7–14–70. Filed 11–14–69.

899,563. SEA MASTER. Barth Vitamin Corp. SN 343,498. Pub. 7–14–70. Filed 11–14–69.

899,564. BUSY GIRL. Chesebrough-Pond's Inc. SN 343,517. Pub. 7–14–70. Filed 11–14–69.

899,565. N·DUR. Uni-Products Corporation. SN 350,551. Pub. 7–14–70. Filed 2–5–70.

Class 19 — Vehicles

899,517. (See Class 13 for this trademark.)

899,566. AM AUTOMASTER PRODUCTS. Sidney M. Fields, d.b.a. Fields International. MULTIPLE CLASS (Classes 19, 21, and 23). SN 250,144. Pub. 3–7–67. Filed 7–13–66.

899,567. CONQUEROR. Seedman International Corp. SN 310,805. Pub. 9–16–69. Filed 10–29–68.

899,568. LEVELAIR Universal Oil Products Company. SN 333,507. Pub. 7–14–70. Filed 7–25–69.

Class 20 — Linoleum and Oiled Cloth

899,456. (See Class 1 for this trademark.)

899,569. ROULETTE. American Biltrite Rubber Co., Inc. SN 345,279. Pub. 7–14–70. Filed 12–4–69.

899,570. ECLAT. American Biltrite Rubber Co., Inc. SN 349,059. Pub. 7–14–70. Filed 1–20–70.

899,571. ULTRA TEX. Dwoskin, Inc. SN 350,378. Pub. 7–14–70. Filed 2–3–70.

Class 21 — Electrical Apparatus, Machines, and Supplies

899,517. (See Class 13 for this trademark.)

899,566. (See Class 19 for this trademark.)

899,572. GALAXIE. John Oster Manufacturing Co. SN 267,058. Pub. 12–10–68. Filed 3–17–67.

899,573. AUTOTRONIC. Triple-A Specialty Co. SN 290,667. Pub. 8–19–69. Filed 2–8–68.

899,574. GREEK LETTER DESIGN. Kybe Corporation, by change of name from Cybetronics, Inc. MULTIPLE CLASS (Classes 21, 26, and 103). SN 304,731. Pub. 7–14–70; Filed 8–9–68.

899,575. DUMONT AND DESIGN. National Union Electric Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 322,609. Pub. 7–14–70. Filed 3–24–69.

899,576. MULTILOX. E. I. du Pont de Nemours and Company. SN 331,111. Pub. 7–14–70. Filed 6–27–69.

899,577. PRESENTATION STRUCTURE. John J. Horan, d.b.a. Horan Design Studios. SN 331,756. Pub. 7–14–70. Filed 7–3–69.

899,578. REGAL AND THREE CROWN DESIGN. Regal Ware, Inc. SN 334,120. Pub. 7–14–70. Filed 7–31–69.

899,579. LEWYT. Proctor-Silex Incorporated. SN 337,971. Pub. 7–14–70. Filed 9–15–69.

899,580. LIFELONG. Proctor-Silex Incorporated. SN 338,063. Pub. 7–14–70. Filed 9–16–69.

899,581. ELECTROVIT. Electrovit International, Inc. SN 340,088. Pub. 7–14–70. Filed 10–8–69.

899,582. VIRDEN LIGHTING. The Scott & Fetzer Company. SN 341,062. Pub. 7–14–70. Filed 10–17–69.

Class 22 — Games, Toys, and Sporting Goods

899,473. (See Class 5 for this trademark.)

899,583. CINECARD. Kinorello Verlag, G.m.b.H. MULTIPLE CLASS (Classes 22 and 38). SN 301,077. Pub. 7–14–70. Filed 6–21–68.

899,584. GYM-EE. Gym Dandy, Inc. SN 335,449. Pub. 7–14–70. Filed 8–15–69.

899,585. WORDMASTER. E. S. Lowe Company, Inc. SN 336,131. Pub. 7–14–70. Filed 8–25–69.

899,586. ASTRON. Wilson Sporting Goods Co. SN 337,996. Pub. 7–14–70. Filed 9–15–69.

899,587. TRAPPER. "Automatic" Sprinkler Corporation of America. SN 338,214. Pub. 7–14–70. Filed 9–18–69.

899,588. REGENCY. Gentex Corporation. SN 338,903. Pub. 7–14–70. Filed 9–25–69.

899,589. SKI-BOGGAN AND ROPE DESIGN. Formex Corporation. SN 339,172. Pub. 7–14–70. Filed 9–29–69.

899,590. DURA-RANGE. Uniroyal, Inc. SN 339,253. Pub. 7–14–70. Filed 9–29–69.

899,591. DURA-BALL. Abbott Laboratories, d.b.a. The Faultless Rubber Company. SN 339,409. Pub. 7–14–70. Filed 10–1–69.

899,592. DOWNRIGGER. McClellan Industries, Inc. SN 339,740. Pub. 7–14–70. Filed 10–3–69.

899,593. GINTY. Stan Thompson Golf Club Co. SN 339,755. Pub. 7–14–70. Filed 10–3–69.

899,594. TEACH-N-PLAY. Knickerbocker Toy Company, Inc. SN 340,166. Pub. 7–14–70, Filed 10–8–69.

899,595. SUPER TIGER AND TIGER AND DESIGN. Champion Glove Mfg. Co., Inc. SN 340,247. Pub. 7–14–70. Filed 10–9–69.

899,596. CANDUIT. Richard Shubert. SN 340,285. Pub. 7–14–70. Filed 10–9–69.

899,597. MINI DUNKER. Aaron A. Johnson. SN 340,559. Pub. 7–14–70. Filed 10–13–69.

899,598. MINI HOOPSTER. Aaron A. Johnson, SN 340,560. Pub. 7–14–70. Filed 10–13–69.

899,599. FUN 'N FIT. Rainbow Crafts, Inc. SN 340,680. Pub. 7–14–70. Filed 10–14–69.

899,600. OPTICAL-POPTICALS. The Saalfield Publishing Company. SN 340,945. Pub. 7–14–70. Filed 10–16–69.

899,601. ETA. A. Daigger and Company, Inc. SN 341,370. Pub. 7–14–70. Filed 10–22–69.

899,602. MINNIE MITE. Challanger Manufacturing Corporation. SN 349,732. Pub. 7–14–70. Filed 1–27–70.

899,603. AVALON. Pittman Products, Inc., d.b.a. Sportsways. SN 321,074. Pub. 5–19–70. Filed 3–7–69.

899,604. SWINGIN' WING. Mattel, Inc. SN 353,828. Pub. 7–14–70. Filed 3–12–70.

899,605. ICE T. Mattel, Inc. SN 353,830. Pub. 7–14–70. Filed 3–12–70.

899,606. EYE TRY. Mattel, Inc. SN 355,574. Pub. 7–14–70. Filed 4–1–70.

899,607. GREAT HUFF. Mattel, Inc. SN 355,575. Pub. 7–14–70. Filed 4–1–70.

899,608. WORLD'S WILDEST WHIRLER. Mattel, Inc. SN 355,576. Pub. 7–14–70. Filed 4–1–70.

899,609. REVWAY. Mattel, Inc. SN 355,974. Pub. 7–14–70. Filed 4–6–70.

899,610. SPEED STEED. Mattel, Inc. SN 355,976. Pub. 7–14–70. Filed 4–6–70.

899,611. ROMA M70. Mattel, Inc. SN 355,977. Pub. 7–14–70. Filed 4–6–70.

899,612. 868 LADY BICYCLE. The United States Playing Card Company. SN 356,926. Pub. 7–14–70. Filed 4–15–70.

899,613. TINY TICKLISH. Mattel, Inc. SN 357,174. Pub. 7–14–70. Filed 4–17–70.

899,614. STREET FIGHTER. Mattel, Inc. SN 357,920. Pub. 7–14–70. Filed 4–27–70.

899,615. CHERRY BOMB. Mattel, Inc. SN 357,921. Pub. 7–14–70. Filed 4–27–70.

899,616. DUNE RAT. Mattel, Inc. SN 357,922. Pub. 7–14–70. Filed 4–27–70.

899,617. BABY LAUGHTER. Mattel, Inc. SN 357,923. Pub. 7–14–70. Filed 4–27–70.

899,618. BABY LAUGH 'N LAUGH. Mattel, Inc. SN 357,924. Pub. 7–14–70. Filed 4–27–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

899,466. (See Class 2 for this trademark.)

899,476. (See Class 6 for this trademark.)

899,517. (See Class 13 for this trademark.)

899,566. (See Class 19 for this trademark.)

899,619. TRIM-EZY. Seymour Smith and Son, Incorporated. SN 261,528. Pub. 2–27–68. Filed 12–27–66.

899,620. WESTERN. Douglas Dynamics Corporation. SN 305,642. Pub. 7–14–70. Filed 8–21–68.

899,621. TRIMOTION. Husqvarna Vapenfabriks Aktiebolag. SN 312,042. Pub. 7–14–70. Filed 11–13–68.

899,622. BARREIROS. Barreiros Diesel, S.A. SN 317,268. Pub. 7–14–70. Filed 6–19–68.

899,623. BINDEX. Abildgaard Laboratories, Inc., d.b.a. Bindex Company. SN 331,298. Pub. 7–14–70. Filed 6–30–69.

899,624. GROUTMASTER. American Olean Tile Company, Inc. SN 335,837. Pub. 7–14–70. Filed 8–21–69.

899,625. MULTI-TAK. Spotnails, Inc. SN 351,392. Pub. 7–14–70. Filed 2–16–70.

Class 24 — Laundry Appliances and Machines

899,626. MIR-A-CLE-NER. Charles E. McCutcheon, Jr., d.b.a. Miraclean Co. SN 348,441. Pub. 7–14–70. Filed 1–13–70.

Class 26 — Measuring and Scientific Appliances

899,476. (See Class 6 for this trademark.)

899,517. (See Class 13 for this trademark.)

899,574. (See Class 21 for this trademark.)

899,627. BENDIX AND DESIGN. The Bendix Corporation. SN 306,875. Pub. 7–14–70. Filed 9–9–68.

899,628. WAVETRAK. Edo Western Corporation. SN 321,785. Pub. 7–14–70. Filed 3–14–69.

899,629. UNIBLITZ. Andrew W. Vincent, assignee of Velmex, Inc. SN 322,203. Pub. 7–14–70. Filed 3–19–69.

899,630. TIGERHOOD. The Fibre-Metal Products Company. SN 324,584. Pub. 7–14–70. Filed 4–15–69.

899,631. WELD-VIEW. American Optical Corporation. SN 326,060. Pub. 7–14–70. Filed 5–1–69.

899,632. VAKUWASH. Bel-Art Products. SN 329,825. Pub. 7-14-70. Filed 6-12-69.

899,633. PT-35. Charles Ajar. SN 331,704. Pub. 7-14-70. Filed 7-3-69.

899,634. MISCELLANEOUS DESIGN. Trylon Incorporated. SN 332,756. Pub. 7-14-70. Filed 7-16-69.

899,635. DE AND DESIGN. Donart Electronics, Inc. SN 333,251. Pub. 7-14-70. Filed 7-23-69.

899,636. BOILERGARD AND SHIELD DESIGN. Boiler Protective Devices, Inc. SN 333,524. Pub. 7-14-70. Filed 7-25-69.

899,637. CPC. Computer Peripherals Corporation. SN 333,535. Pub. 7-14-70. Filed 7-25-69.

Class 27 — Horological Instruments

899,638. PHINNEY-WALKER. Hamilton Watch Company. SN 345,943. Pub. 7-14-70. Filed 12-11-69.

Class 28 — Jewelry and Precious-Metal Ware

899,473. (See Class 5 for this trademark.)

899,639. HANG TEN AND FEET DESIGN. Doris Moore of California, Inc. SN 324,080. Pub. 7-14-70. Filed 4-9-69.

899,640. OBLIQUE. Tortolani-Crislu. SN 325,906. Pub. 7-14-70. Filed 4-29-69.

899,641. SCANDINAVIA Oneida Ltd. SN 340,590. Pub. 7-14-70. Filed 10-13-69.

899,642. FOND-PHOTO. Paul L. Sudlow, d.b.a. Sudlow Photographs. SN 341,429. Pub. 7-14-70. Filed 10-22-69.

899,643. MATINEE. Oneida Ltd. SN 344,129. Pub. 7-14-70. Filed 11-20-69.

899,644. LOGO-LINK. Amtel Arts Inc., assignee of Walter E. Hayward Co., Inc. SN 345,945. Pub. 7-14-70. Filed 12-11-69.

899,645. MIDNIGHT MAGIC. Textron Inc. SN 345,994. Pub. 7-14-70. Filed 12-11-69.

899,646. POTPOURRI. Textron Inc. SN 345,995. Pub. 7-14-70. Filed 12-11-69.

899,647. RHAPSODY. Rhapsody, Inc. SN 346,114. Pub. 7-14-70. Filed 12-12-69.

899,648. DS DESIGN. The Danish Silversmith Incorporated. SN 357,273. Pub. 7-14-70. Filed 4-20-70.

Class 30 — Crockery, Earthenware, and Porcelain

899,649. SIGNA. Interpace Corporation, d.b.a. Shenango China. SN 322,444. Pub. 7-14-70. Filed 3-21-69.

899,650. TAMARA. Societe des Verreries Industrielles, Reunies du Loing. SN 357,130. Pub. 7-14-70. Filed 4-16-70.

Class 31 — Filters and Refrigerators

899,517. (See Class 13 for this trademark.)

Class 32 — Furniture and Upholstery

899,476. (See Class 6 for this trademark.)

899,651. DREAM BEAMS. Restonic Corporation. SN 309,475. Pub. 7-14-70. Filed 10-11-68.

899,652. MARVELOUS MIDDLE. Restonic Corporation. SN 309,477. Pub. 7-14-70. Filed 10-11-68.

899,653. 'LIVE AISLE.' Dexion Inc. SN 324,427. Pub. 7-14-70. Filed 4-14-69.

899,654. BOWL & BOARD. Bowl & Board, Inc. SN 327,585. Pub. 7-14-70. Filed 5-19-69.

899,655. MAGIC CORE. Whiting Manufacturing Company, Inc. SN 329,145. Pub. 7-14-70. Filed 6-4-69.

899,656. ASTROLITE. Herbert Ritts, Inc. SN 336,176. Pub. 7-14-70. Filed 8-25-69.

899,657. COVEY AND DESIGN. The Covey Company, SN 337,435. Pub. 7-14-70. Filed 9-9-69.

899,658. MOORFRAME. The Moore Company. SN 339,344. Pub. 7-14-70. Filed 9-30-69.

899,659. GARDMASTER. Sleepmaster Products Company, Inc. SN 344,445. Pub. 7-14-70. Filed 11-24-69.

Class 33 — Glassware

899,660. HIBERNIA. Waterford Glass Limited. SN 328,478. Pub. 7-14-70. Filed 5-27-69.

899,661. THE ENGINEERED GLASS. Anchor Hocking Corporation. SN 344,663. Pub. 7-14-70. Filed 11-26-69.

Class 34 — Heating, Lighting, and Ventilating Apparatus

899,517. (See Class 13 for this trademark.)

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

899,465. (See Class 2 for this trademark.)

899,517. (See Class 13 for this trademark.)

Class 36 — Musical Instruments and Supplies

899,575. (See Class 21 for this trademark.)

Class 37 — Paper and Stationery

899,456. (See Class 1 for this trademark.)

899,501. (See Class 7 for this trademark.)

899,662. "VISIPOINT." The Joseph Dixon Crucible Company. SN 293,088. Pub. 7-14-70. Filed 3-13-68.

899,663. MASK-R-ADE AND DESIGN. Michigan Carton Co. SN 311,284. Pub. 7-14-70. Filed 11-4-68.

899,664. BETSY ROSS. Fort Howard Paper Company. SN 319,042. Pub. 7-14-70. Filed 2-13-69.

899,665. DURAFIRM. Randomatic Data Systems, Inc. SN 324,096. Pub. 7-14-70. Filed 4-9-69.

899,666. SECRETARY. The Bates Manufacturing Company. SN 333,362. Pub. 7-14-70. Filed 7-24-69.

899,667. SAUNETTE. W. S. Kirkpatrick & Co., Inc. SN 334,237. Pub. 7-14-70. Filed 8-1-69.

899,668. DESIGN STRIPE. Eberhard Faber Inc. SN 334,467. Pub. 7-14-70. Filed 8-5-69.

899,669. ROTOPRIDE. Ethyl Corporation. SN 336,106. Pub. 7-14-70. Filed 8-25-69.

899,670. LONG LETTERS. Creations West Incorporated. SN 342,145. Pub. 7-14-70. Filed 10-30-69.

899,671. LPC (DESIGN). The Lynn Pacific Corporation. SN 342,171. Pub. 7-14-70. Filed 10-30-69.

899,672. CONTOUR. The Dow Chemical Company. SN 342,240. Pub. 7-14-70. Filed 10-31-69.

899,673. UNILOG. E. R. Squibb & Sons, Inc. MULTIPLE CLASS (Classes 37 and 38). SN 343,460. Pub. 7-14-70. Filed 11-14-69.

899,674. INSTAMATIC. Fedtro, Inc. SN 344,781. Pub. 7-14-70. Filed 11-28-69.

899,675. LIGHT WRYTER. Ultra-Violet Products, Inc. SN 350,787. Pub. 7-14-70. Filed 2-6-70.

899,676. SPHINX AND DESIGN. Saxon Industries, Inc. SN 356,344. Pub. 7-14-70. Filed 4-9-70.

Class 38 — Prints and Publications

899,583. (See Class 22 for this trademark.)

899,673. (See Class 37 for this trademark.)

899,677. G.I. COMBAT. National Periodical Publications, Inc. SN 327,041. Pub. 7-14-70. Filed 5-12-69.

899,678. TEACHWARE. Fabri-Tek Incorporated. SN 327,479. Pub. 7-14-70. Filed 5-16-69.

899,679. CHICAGO BUILDING CONTRACTORS REGISTER AND DESIGN. Index Publishing Corp. SN 329,185. Pub. 7-14-70. Filed 8-4-69.

899,680. CONSTRUCTION BUYERS GUIDE AND DESIGN. Index Publishing Corp. SN 329,187. Pub. 7-14-70. Filed 8-4-69.

899,681. PHOTOGRAPHIC SCIENCE AND ENGINEERING. Society of Photographic Scientists and Engineers. SN 331,077. Pub. 7-14-70. Filed 6-26-69.

899,682. ESC. Executive Systems Corporation. SN 333,259. Pub. 7-14-70. Filed 7-23-69.

899,683. STI ETC. AND DESIGN. Steel Tank Institute. SN 334,127. Pub. 7-14-70. Filed 7-31-69.

899,684. CHICAGO TODAY AMERICAN. Chicago Tribune Company, assignee of Chicago American Publishing Company. SN 334,764. Pub. 7-14-70. Filed 8-8-69.

899,685. REP TO REP. CNA Investor Services, Inc. SN 336,973. Pub. 7-14-70. Filed 9-4-69.

899,686. 3-D-CAL. Pilgrim Industries Inc. MULTIPLE CLASS (Classes 38 and 40). SN 337,964. Pub. 7-14-70. Filed 9-15-69.

899,687. STAR STATS. Financialite Corp. SN 339,005. Pub. 7-14-70. Filed 9-26-69.

899,688. EAGLE AND BOOK (DESIGN). The Eagle Library Inc. SN 339,423. Pub. 7-14-70. Filed 10-1-69.

899,689. CE DESIGN. The Reuben H. Donnelly Corporation. SN 339,864. Pub. 7-14-70. Filed 10-6-69.

899,690. A LITTLE GOLDEN BOOK. Western Publishing Company, Inc. SN 340,860. Pub. 7-14-70. Filed 10-15-69.

899,691. TRIP TRAX AND SUNBURST DESIGN. Midland Trading Company. SN 340,891. Pub. 7-14-70. Filed 10-16-69.

899,692. PHD AND GRADUATE CAP DESIGN. Mind, Inc. SN 341,536. Pub. 7-14-70. Filed 10-23-69.

899,693. ALPHABET EXPRESS. The Instructo Corporation. SN 342,975. Pub. 7-14-70. Filed 11-7-69.

899,694. FOAM FACTS. The Dow Chemical Company. SN 343,393. Pub. 7-14-70. Filed 11-13-69.

899,695. BABY MINDER. Sittin' Pretty, Inc. SN 343,763. Pub. 7-14-70. Filed 11-17-69.

899,696. FINISHING HIGHLIGHTS. Spec Tech Publications, Inc. SN 345,772. Pub. 7-14-70. Filed 12-10-69.

899,697. GALTECH SYSTEM. Galtech, Inc. SN 347,402. Pub. 7-14-70. Filed 12-30-69.

899,698. TRP AND DESIGN. Tested Recipe Publishers, Inc. SN 347,562. Pub. 7-14-70. Filed 1-2-70.

899,699. LOUISIANA GRIDWEEK. Gridweek, Inc. SN 348,284. Pub. 7-14-70. Filed 1-12-70.

899,700. "SELLING TOOLS." Joseph Luchs. SN 351,489. Pub. 7-14-70. Filed 2-16-70.

899,701. MPS MICRO-CATALOG FILE AND DESIGN. Micro-Publishing Systems Inc. SN 357,787. Pub. 7-14-70. Filed 4-24-70.

Class 39 — Clothing

899,702. H & H. H & H Plastics Mfg. Co., SN 273,498. Pub. 7-14-70. Filed 6-9-67.

899,703. DESIGN OF A STYLIZED BIRD. M & B Headwear Company, Inc. SN 298,947. Pub. 7-14-70. Filed 5-23-68.

899,704. JWS AND DESIGN. Modern Shoe Company. SN 307,217. Pub. 7-14-70. Filed 9-12-68.

899,705. PALMROTH. Palmroth Shoemanufacturers. SN 314,666. Pub. 7-14-70. Filed 10-28-68.

899,706. TODAY AND DESIGN. Apollo Knitting Mills. SN 324,390. Pub. 7-14-70. Filed 4-14-69.

899,707. SAMPOL. Bas Y Cuguero, S.A. SN 329,429. Pub. 7-14-70. Filed 6-9-69.

899,708. SPHAIRISTIKE FIRST NAME IN TENNIS AND DESIGN. Sphairistike, Ltd. SN 329,895. Pub. 7-14-70. Filed 6-12-69.

899,709. BODY SCULPTURE. V. F. Corporation. SN 330,025. Pub. 7-14-70. Filed 6-13-69.

899,710. BRASS BOOT. Nunn Bush Shoe Company. MULTIPLE CLASS (Classes 39 and 101). SN 332,196. Pub. 7-14-70. Filed 7-10-69.

899,711. ANTON PHILLIPE. Shirt Centre Inc. SN 332,260. Pub. 7-14-70. Filed 7-10-69.

899,712. LACY SMOOTHLINGS. V. F. Corporation. SN 333,315. Pub. 7-14-70. Filed 7-23-69.

899,713. LADY MIST, 12. Worley Sewell Company. SN 333,961. Pub. 7-14-70. Filed 7-30-69.

899,714. MISTER 12. Worley Sewell Company. SN 333,962. Pub. 7-14-70. Filed 7-30-69.

899,715. CHRISTOPHER RAND. Amcrest Corporation, by change of name from Aimcee Wholesale Corporation. SN 335,524. Pub. 7-14-70. Filed 8-18-69.

899,716. ROLL-NO-MORE. Flexnit Company, Inc. SN 336,326. Pub. 7-14-70. Filed 8-26-69.

899,717. HY-TEST ANCHOR FLANGE SAFETY SHOES AND DESIGN. Interco Incorporated. SN 336,937. Pub. 7-14-70. Filed 9-3-69.

899,718. TEXLINE. Texcraft Corporation. SN 337,726. Pub. 7-14-70. Filed 9-11-69.

899,719. TINY MAN TM AND SHIELD DESIGN. Zale Corporation. SN 338,457. Pub. 7-14-70. Filed 9-19-69.

899,720. TINY MAN AND BOY DESIGN. Zale Corporation. SN 338,458. Pub. 7-14-70. Filed 9-19-69.

899,721. MATT ANDREWS AND OVAL DESIGN. Zayre Corp. SN 340,104. Pub. 7-14-70. Filed 10-8-69.

899,722. QUINCY. Gay Gibson, Inc. SN 341,109. Pub. 7-14-70. Filed 10-20-69.

899,723. FREE SPIRIT. International Playtex Corporation. SN 341,246. Pub. 7-14-70. Filed 10-21-69.

899,724. HAND POWER SPORTS GLOVE. Consolidated Foods Corporation. SN 341,974. Pub. 7-14-70. Filed 10-29-69.

899,725. HANDOMETRICS. Consolidated Foods Corporation. SN 343,359. Pub. 7-14-70. Filed 11-13-69.

899,726. BARELY ME. Maidenform, Inc. SN 344,508. Pub. 7-14-70. Filed 11-25-69.

899,727. FASHION MAGIC. International Playtex Corporation. SN 345,896. Pub. 7-14-70. Filed 12-11-69.

899,728. GLO GALS. Wellco Enterprises, Inc. SN 347,665. Pub. 7-14-70. Filed 1-2-70.

899,729. GLO PALS. Wellco Enterprises, Inc. SN 347,667. Pub. 7-14-70. Filed 1-2-70.

899,730. MOON GLO. Wellco Enterprises, Inc. SN 347,670. Pub. 7-14-70. Filed 1-2-70.

899,731. DRI MAGIC. Union Carbide Corporation. SN 352,917. Pub. 7-14-70. Filed 3-3-70.

899,732. DRYDEES. Union Carbide Corporation. SN 352,918. Pub. 7-14-70. Filed 3-3-70.

899,733. JEAN CACHAREL. Jean Bousquet. SN 354,394. Pub. 7-14-70. Filed 3-18-70.

899,734. COUNTRY SOPHISTICATES. Pendleton Woolen Mills. SN 355,722. Pub. 7-14-70. Filed 4-2-70.

899,735. GINESSA. Originala Incorporated. SN 355,843. Pub. 7-14-70. Filed 4-3-70.

899,736. VERT-A-GRIP. The Bali Company, Inc. SN 355,953. Pub. 7-14-70. Filed 4-6-70.

Class 40 — Fancy Goods, Furnishings, and Notions

899,686. (See Class 38 for this trademark.)

899,737. EYE MAGNET. Roland W. Frieder. SN 320,342. Pub. 7-14-70. Filed 2-28-69.

899,738. LOVE COMB. Vulcanized Rubber & Plastics Company. SN 321,559. Pub. 7-14-70. Filed 3-12-69.

899,739. BIKINI WIG. Alfred Klugmann, Inc. SN 331,913. Pub. 7-14-70. Filed 7-7-69.

899,740. SHELLY FALL. Wig Masters Import Company, Ltd., d.b.a. Mode de Paris. SN 337,760. Pub. 7-14-70. Filed 9-12-69.

899,741. KARAN FALL. Wig Masters Import Company, Ltd., d.b.a. Mode de Paris. SN 337,764. Pub. 7-14-70. Filed 9-12-69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

899,512. (See Class 12 for this trademark.)

899,742. VVV AND CIRCLE DESIGN. Frottierweberei Vossen G.m.b.H. SN 320,713. Pub. 7-14-70. Filed 3-4-69.

899,743. FROM THE LOOMS OF MOHAWK. Mohasco Industries, Inc. SN 330,171. Pub. 7-14-70. Filed 6-16-69.

899,744. FLAIRISSIMO. Cone Mills Corporation. SN 331,816. Pub. 7-14-70. Filed 7-7-69.

899,745. TEX-MADE AND DESIGN. Dominion Textile Company Limited. SN 331,878. Pub. 7-14-70. Filed 7-7-69.

899,746. RESOURCEFUL RÈSOURCE. Waumbec Mills, Incorporated. SN 332,271. Pub. 7-14-70. Filed 7-10-69.

899,747. HUG-FREE. Glen Raven Mills, Inc. SN 332,478. Pub. 7-14-70. Filed 7-14-69.

899,748. GOLD GC CIRCLE. Federated Department Stores, Inc. SN 334,702. Pub. 7-14-70. Filed 8-7-69.

899,749. SOFT LIFE. Fieldcrest Mills, Inc. SN 334,833. Pub. 7-14-70. Filed 8-8-69.

899,750. PRINTUFT. Jorges Carpet Mills, Inc. SN 335,038. Pub. 7-14-70. Filed 8-11-69.

899,751. POLY PUNCH. Cavalier Bag Company, Inc. SN 336,279. Pub. 7-14-70. Filed 8-12-69.

899,752. DURETTE. Monsanto Company. SN 336,586. Pub. 7-14-70. Filed 8-28-69.

899,753. TEXLINE. Texcraft Corporation. SN 337,725. Pub. 7-14-70. Filed 9-11-69.

899,754. S. Owens-Corning Fiberglas Corporation. SN 338,173. Pub. 7-14-70. Filed 9-17-69.

899,755. SCI. Sponge-Carpet, Inc. SN 341,288. Pub. 7-14-70. Filed 10-21-69.

899,756. RENARD. Nitto Boseki Co., Ltd. SN 341,757. Pub. 7-14-70. Filed 10-27-69.

899,757. VELVA PLUSH. Textiles Inc. SN 341,759. Pub. 7-14-70. Filed 10-27-69.

899,758. VELVATEX. Textiles Inc. SN 341,760. Pub. 7-14-70. Filed 10-27-69.

899,759. SPRINGCREST. Topco Associates, Inc. SN 355,504. Pub. 7-14-70. Filed 3-31-70.

Class 43 — Thread and Yarn

899,760. ROCCO. Rockford Manufacturing Company. SN 329,385. Pub. 7-14-70. Filed 6-6-69.

899,761. M AND DESIGN. Madison Throwing Company, Inc. SN 332,246. Pub. 7-14-70. Filed 7-10-69.

899,762. GOOD SHEPHERD AND DESIGN. Emile Bernat & Sons Co. SN 356,543. Pub. 7-14-70. Filed 4-13-70.

899,763. MARTESSA. National Spinning Co., Inc. SN 357,403. Pub. 7-14-70. Filed 4-20-70.

Class 44 — Dental, Medical, and Surgical Appliances

899,764. BEAUTELATER. Shirley B. Langham. SN 338,056. Pub. 7-14-70. Filed 9-16-69.

899,765. GRANDE. Beltone Electronics Corporation. SN 339,121. Pub. 7-14-70. Filed 9-29-69.

899,766. MI TOT. The Woltra Company, Inc. SN 340,211. Pub. 7-14-70. Filed 10-8-69.

899,767. FORTICAST. J. F. Jelenko & Co., Inc. SN 341,392. Pub. 7-14-70. Filed 10-22-69.

Class 45 — Soft Drinks and Carbonated Waters

899,768. DAILY'S AND DESIGN. Daily Juice Products, Inc. SN 284,080. Pub. 7-14-70. Filed 11-3-67.

899,769. ASTRO! George Rogers, d.b.a. George Rogers & Co., and Astro! Products Co. SN 307,135. Pub. 7-14-70. Filed 9-11-68.

899,770. VIRGINIA DARE. Virginia Dare Extract Co., Inc. SN 326,356. Pub. 7-14-70. Filed 5-5-69.

899,771. SHING-A-LING. Latino Products Incorporated. SN 329,494. Pub. 7-14-70. Filed 6-9-69.

Class 46 — Foods and Ingredients of Foods

899,772. HAMTOWN'S. Hamtown Foods Co. Inc. SN 303,795. Pub. 7-14-70. Filed 7-29-68.

899,773. BUCHE LORRAINE. Fromageries Henri Hutin S.A. SN 303,905. Pub. 7-14-70. Filed 7-30-68.

899,774. BENJAMIN TWIGGS AND DESIGN. Benjamin Twiggs, Inc. SN 303,938. Pub. 7-14-70. Filed 7-30-68.

899,775. WHOPPER. Burger King Corporation. SN 306,089. Pub. 7-14-70. Filed 9-9-68.

899,776. DISMO. Aktieselskabet Grindstedvaerket. SN 308,447. Pub. 7-14-70. Filed 9-30-68.

899,777. DIMODAN. Aktieselskabet Grindstedvaerket. SN 312,413. Pub. 7-14-70. Filed 11-18-68.

899,778. HILAND. Hiland Potato Chip Co. of Des Moines, d.b.a. Hiland Potato Chip Co. SN 315,910. Pub. 7-14-70. Filed 1-6-69.

899,779. THE CHIPPIEST CHIPS AROUND! Hiland Potato Chip Co. of Des Moines, d.b.a. Hiland Potato Chip Co. SN 315,914. Pub. 7-14-70. Filed 1-6-69.

899,780. BAZAR AND DESIGN. Bazar, Inc. SN 321,759. Pub. 7-14-70. Filed 3-14-69.

899,781. B BAZAR AND DESIGN. Bazar, Inc. SN 321,760. Pub. 7-14-70. Filed 3-14-69.

899,782. WAWEL. Przedsiebiorstwo Handlu Zagranicznego "Agros." SN 322,468. Pub. 7-14-70. Filed 3-21-69.

899,783. LIBBY'S FOOD SERVICE DIVISION AND DESIGN. Libby, McNeill & Libby. SN 323,459. Pub. 7-14-70. Filed 4-2-69.

899,784. GRANNY GOOSE AND DESIGN. Granny Goose Foods, Inc. SN 323,510. Pub. 7-14-70. Filed 4-3-69.

899,785. MISCELLANEOUS DESIGN. Granny Goose Foods, Inc. SN 323,511. Pub. 7-14-70. Filed 4-3-69.

899,786. GRANNY GOOSE. Granny Goose Foods, Inc. SN 323,512. Pub. 7-14-70. Filed 4-3-69.

899,787. HUCK FINN DONUTS AND DESIGN. James C. Sharrow, d.b.a. Huck Finn Donuts. SN 324,241. Pub. 7-14-70. Filed 4-10-69.

899,788. NAPOLEON PRE-COOKED FOODS N AND DESIGN. Napoleon Pre-Cooked Food Products, Inc. SN 325,065. Pub. 7-14-70. Filed 4-21-69.

899,789. TABBIES. Miracle Pet Products, Inc. SN 330,168. Pub. 7-14-70. Filed 6-16-69.

899,790. BOY'S AND GIRL'S FACE AND CIRCLE DESIGN. Vienna Sausage Manufacturing Company. SN 330,438. Pub. 7-14-70. Filed 6-18-69.

899,791. DIXIE LIX. G. & K., Inc. SN 332,476. Pub. 7-14-70. Filed 7-14-69.

899,792. POUR-A-PICKLE. Hunt-Wesson Foods, Inc. SN 334,233. Pub. 7-14-70. Filed 8-1-69.

899,793. ANTOINE'S. Aunt Nellie's Foods, Inc. SN 334,905. Pub. 7-14-70. Filed 8-8-69.

899,794. WILD WEST AND BUILDING DESIGN. Pronto Pacific, Inc. SN 335,058. Pub. 7-14-70. Filed 8-11-69.

899,795. PEOPLE SHOULD STICK TOGETHER NOT SPAGHETTI. San Giorgio Macaroni, Inc. SN 335,063. Pub. 7-14-70. Filed 8-11-69.

899,796. SHENANDOAH, ETC. AND CHICKEN DESIGN. Shenandoah Valley Produce Co., Inc. SN 335,414. Pub. 7-14-70. Filed 8-15-69.

899,797. FLAV-OLEUM. McCormick & Company, Incorporated. SN 336,942. Pub. 7-14-70. Filed 9-3-69.

899,798. COFFEE WORLD. Alexander Cairns & Sons, Ltd. SN 337,632. Pub. 7-14-70. Filed 9-11-69.

899,799. BLUE-BIRD AND DESIGN. Blue Bird Food Products Co., Inc. SN 337,883. Pub. 7-14-70. Filed 9-15-69.

899,800. MISCELLANEOUS DESIGN. Blue Bird Food Products Co., Inc. SN 337,884. Pub. 7-14-70. Filed 9-15-69.

899,801. UNCLE BEN'S, ETC. UB AND DESIGN. Uncle Ben's, Inc. SN 339,406. Pub. 7-14-70. Filed 10-1-69.

899,802. BERNDTS TICKIS. Berndts Bageri Aktiebolag. SN 340,303. Pub. 7-14-70. Filed 8-28-69.

899,803. PARK HALL. G. L. Webster Company, Inc. SN 343,476. Pub. 7-14-70. Filed 11-14-69.

899,804. F P & S AND DESIGN. Swift & Company. SN 344,739. Pub. 7-14-70. Filed 11-26-69.

899,805. WHIP-EE. Vip Foods, Inc. SN 344,753. Pub. 7-14-70. Filed 11-26-69.

899,806. DOGGIE BAG. General Mills, Inc. SN 344,849. Pub. 7-14-70. Filed 11-28-69.

899,807. LOOK MOM! AND DESIGN. Wm. Bolthouse Farms, Inc. SN 345,130. Pub. 7-14-70. Filed 12-3-69.

899,808. NATURAL-FRIES. Ore-Ida Foods, Inc. SN 346,185. Pub. 7-14-70. Filed 12-15-69.

899,809. KITNIC. Armour-Dial, Inc. SN 348,635. Pub. 7-14-70. Filed 1-15-70.

899,810. BILL OF FARE. Armour-Dial, Inc. SN 348,638. Pub. 7-14-70. Filed 1-15-70.

899,811. GOLD BUSTER AND DESIGN. Anthony-Thomas Candy Company. SN 350,447. Pub. 7-14-70. Filed 2-4-70.

899,812. AMORA. Ida Mae Salads, Inc., d.b.a. Amora Foods. SN 356,339. Pub. 7-14-70. Filed 4-9-70.

899,813. COACHELLA QUEEN. Schell Ranch and Packing Co. SN 356,587. Pub. 7-14-70. Filed 4-13-70.

899,814. DIET CARE AND DESIGN. General Mills, Inc. SN 356,913. Pub. 7-14-70. Filed 4-15-70.

899,815. LUNEN. DCA Food Industries, Inc. SN 357,272. Pub. 7-14-70. Filed 4-20-70.

899,816. FLAVOR TRAITS AND DESIGN. Frostie Enterprises, d.b.a. S. Twitchell Company. SN 357,509. Pub. 7-14-70. Filed 4-21-70.

899,817. VANILLY CRUNCH. The Quaker Oats Company. SN 357,792. Pub. 7-14-70. Filed 4-24-70.

899,818. VANILLY MOONS. The Quaker Oats Company. SN 357,793. Pub. 7-14-70. Filed 4-24-70.

Class 48 — Malt Beverages and Liquors

899,819. HAAS. John I. Haas, Inc. SN 302,937. Pub. 7-14-70. Filed 7-17-68.

899,820. BOTTLE DESIGN. Carlsberg Bryggerierne. SN 321,038. Pub. 7-14-70. Filed 3-7-69.

899,821. LION'S HEAD DESIGN. Archipelago Brewery Company (1941) Limited. SN 353,154. Pub. 7-14-70. Filed 3-5-70.

Class 49 — Distilled Alcoholic Liquors

899,822. OLD MR. B. AND DESIGN. Glenmore Distilleries Company, by merger from Mr. Boston Distiller Inc. SN 331,401. Pub. 7-14-70. Filed 6-30-69.

899,823. OLD MR. B. Glenmore Distilleries Company, by merger from Mr. Boston Distiller Inc. SN 331,402. Pub. 7-14-70. Filed 6-30-69.

899,824. OLD MISTER B. Glenmore Distilleries Company, by merger from Mr. Boston Distiller Inc. SN 331,403. Pub. 7-14-70. Filed 6-30-69.

899,825. JEAN LYON. Glenmore Distilleries Company, by merger from Mr. Boston Distiller Inc. SN 331,404. Pub. 7-14-70. Filed 6-30-69.

899,826. OLD MISTER B. AND DESIGN. Glenmore Distilleries Company, by merger from Mr. Boston Distiller Inc. SN 331,405. Pub. 7-14-70. Filed 6-30-69.

899,827. THE PRESIDENTIAL GAVEL. Schenley Distillers, Inc., d.b.a. The Dant Distillery Company. SN 338,932. Pub. 7-14-70. Filed 9-25-69.

899,828. VECCHA. E. Martinoni Co., d.b.a. The Richards Company. SN 349,924. Pub. 7-14-70. Filed 1-29-70.

899,829. SUMMER. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co. SN 357,788. Pub. 7-14-70. Filed 4-24-70.

Class 50 — Merchandise Not Otherwise Classified

899,473. (See Class 5 for this trademark.)

899,830. PLY-STRIP. Plymouth Rubber Company, Inc. SN 323,360. Pub. 7-14-70. Filed 4-1-69.

899,831. PAKHORS AND DESIGN. Eugene W. Knuth. SN 329,792. Pub. 7-14-70. Filed 6-12-69.

Class 51 — Cosmetics and Toilet Preparations

899,471. (See Class 4 for this trademark.)

899,832. LEMON TREE. Amole, Incorporated. SN 307,542. Pub. 7-14-70. Filed 9-17-68.

899,833. COLOGNE X PRESSO. Faberge, Incorporated (Minnesota corporation), assignee of Faberge, Inc. (Delaware corporation). SN 308,197. Pub. 7-14-70. Filed 9-25-68.

899,834. THE UNSNARLER. Clairol Incorporated. SN 321,193. Pub. 7-14-70. Filed 3-10-69.

899,835. SHADES OF THE SUN. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 330,331. Pub. 7–14–70. Filed 6–18–69.

899,836. ALAGANDO. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,023. Pub. 7–14–70. Filed 7–22–69.

899,837. ZAMBUJAL. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 333,038. Pub. 7–14–70. Filed 7–22–69.

899,838. FASHION MAN. Aloe Creme Laboratories, Inc. SN 336,908. Pub. 7–14–70. Filed 9–3–69.

899,839. LARIGMA. Union Carbide Corporation. SN 339,252. Pub. 7–14–70. Filed 9–29–69.

899,840. SURF-SKIN. Broemmel Pharmaceuticals. SN 339,549. Pub. 7–14–70. Filed 10–2–69.

899,841. VALENTINO. VB Creations, Inc. SN 340,999. Pub. 7–14–70. Filed 10–17–69.

899,842. MISCELLANEOUS DESIGN. Ultrasciences, Inc. SN 343,443. Pub. 7–14–70. Filed 11–13–69.

899,843. GREEK ISLE. Chesebrough-Pond's Inc. SN 343,519. Pub. 7–14–70. Filed 11–14–69.

899,844. VICTORY STIX. The Mennen Company. SN 343,571. Pub. 7–14–70. Filed 11–14–69.

899,845. GREAT HANDS. Johnson & Johnson. SN 344,786. Pub. 7–14–70. Filed 11–28–69.

899,846. AFRO-BOLD. Johnson Products Co., Inc. SN 344,864. Pub. 7–14–70. Filed 11–28–69.

899,847. AFRO-TEEN. Johnson Products Co., Inc. SN 344,866. Pub. 7–14–70. Filed 11–28–69.

899,848. AFRO-TIQUE. Johnson Products Co., Inc. SN 344,867. Pub. 7–14–70. Filed 11–28–69.

899,849. SEA GULL. Union Carbide Corporation. SN 345,576. Pub. 7–14–70. Filed 12–8–69.

899,850. SUN DECK. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 346,549. Pub. 7–14–70. Filed 12–18–69.

899,851. FRIVOLE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 346,550. Pub. 7–14–70. Filed 12–18–69.

899,852. STAR BORN. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 349,240. Pub. 7–14–70. Filed 1–22–70.

899,853. STARCASTER. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 349,241. Pub. 7–14–70. Filed 1–22–70.

899,854. ATMOSPHERE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 349,242. Pub. 7–14–70. Filed 1–22–70.

899,855. HEAVEN AND EARTH. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 349,243. Pub. 7–14–70. Filed 1–22–70.

899,856. GOURMET. Noxell Corporation. SN 352,852. Pub. 7–14–70. Filed 3–2–70.

899,857. BRUSH UP. Carter-Wallace, Inc. SN 355,077. Pub. 7–14–70. Filed 3–26–70.

899,858. 900. Aramis, Inc. SN 357,266. Pub. 7–14–70. Filed 4–20–70.

899,859. HELLO SUNSHINE. Colgate-Palmolive Company. SN 357,270. Pub. 7–14–70. Filed 4–20–70.

899,860. ALL OUT. Sterling Drug Inc. SN 357,517. Pub. 7–14–70. Filed 4–21–70.

899,861. C.A.P. Sterling Drug Inc. SN 357,518. Pub. 7–14–70. Filed 4–21–70.

899,862. RESPECT. Sterling Drug Inc. SN 357,519. Pub. 7–14–70. Filed 4–21–70.

Class 52 — Detergents and Soaps

899,456. (See Class 1 for this trademark.)

899,471. (See Class 4 for this trademark.)

899,478. (See Class 6 for this trademark.)

899,836. (See Class 51 for this trademark.)

899,837. (See Class 51 for this trademark.)

899,850. (See Class 51 for this trademark.)

899,851. (See Class 51 for this trademark.)

899,852. (See Class 51 for this trademark.)

899,853. (See Class 51 for this trademark.)

899,854. (See Class 51 for this trademark).

899,855. (See Class 51 for this trademark.)

899,863. ALPHA. Maurice H. Simson, d.b.a. Alpha Chemical Company. SN 276,045. Pub. 12–24–68. Filed 7–14–67.

899,864. DEOXIDE. Heatbath Corporation. SN 303,914. Pub. 5–27–69. Filed 7–30–68.

899,865. ULTRA–E. Burford Auto Finishes, d.b.a. Solar Chemical Company Division. SN 318,628. Pub. 7–14–70. Filed 2–7–69.

899,866. BEE AND CROWN DESIGN. Julius Zalla, d.b.a. Bee-Line Cosmetics of Santa Monica, California. SN 335,633. Pub. 7–21–70. Filed 8–18–69.

899,867. TOPSOL. Vapon, Inc. SN 321,846. Pub. 7–14–70. Filed 3–14–69.

899,868. KLEER-SHEEN. Economics Laboratory, Inc. SN 323,876. Pub. 7–14–70. Filed 4–4–69.

899,869. GUARDIAN AND GROTESQUE FEMALE. Allentown Scientific Associates, Inc. SN 328,795. Pub. 7–14–70. Filed 6–2–69.

899,870. WATER WORKER. John M. Leslie, d.b.a. Proven Products. SN 331,681. Pub. 7–14–70. Filed 7–3–69.

899,871. K2R AND DESIGN. Chemiro A.G. SN 334,045. Pub. 7–14–70. Filed 7–31–69.

899,872. MR. MEARS. Lan-O-Sheen Inc., d.b.a. Lan-O-Sheen. SN 334,238. Pub. 7–14–70. Filed 8–1–69.

899,873. SWITCHCRAFT. Gabel's Cosmetics, Inc. SN 339,385. Pub. 7–14–70. Filed 10–1–69.

899,874. DUMORE. The Diversey Corporation (Delaware corporation), by merger and change of name from The Diversey Corporation (Illinois corporation). SN 340,656. Pub. 7–14–70. Filed 10–14–69.

899,875. VEGESPERM. Caswell-Massey Co., Ltd. SN 342,409. Pub. 7–14–70. Filed 11–3–69.

899,876. ROYALIEN. Lien Chemical Company. SN 347,760. Pub. 7–14–70. Filed 1–5–70.

899,877. FLOOR 'N MORE. Colgate-Palmolive Company. SN 349,543. Pub. 7–14–70. Filed 1–26–70.

899,878. DRIAC. Economics Laboratory, Inc. SN 352,561. Pub. 7–14–70. Filed 2–27–70.

899,879. SWERL. Colgate-Palmolive Company. SN 357,271. Pub. 7–14–70. Filed 4–20–70.

Class 100 — Miscellaneous

899,880. BURGERLAND. Burgerland Home of the Bellybuster. SN 303,852. Pub. 7–14–70. Filed 7–29–68.

899,881. BELLYBUSTER. Burgerland Home of the Bellybuster. SN 303,853. Pub. 7–14–70. Filed 7–29–68.

899,882. BIOSPHERICS AND DESIGN. Biospherics Incorporated, by change of name from Biospherics Research, Incorporated. SN 304,203. Pub. 7–14–70. Filed 8–2–68.

899,883. THE CADCO CORPS. Dayco Corporation. SN 316,629. Pub. 7–14–70. Filed 1–15–69.

899,884. CPR. Center for Political Research. SN 321,768. Pub. 7–14–70. Filed 3–14–69.

899,885. EXPRESSO INTERNATIONAL. Anthony D'Alto. SN 324,893. Pub. 7–14–70. Filed 4–18–69.

899,886. MISCELLANEOUS DESIGN. The Gorton Corporation, d.b.a. Gorton's of Gloucester. SN 326,874. Pub. 7–14–70. Filed 5–9–69.

899,887. INVENTA AND DESIGN. Inventa, A.G. fur Forschung und Patentverwertung. SN 330,388. Pub. 7–14–70. Filed 6–18–69.

899,888. LAUGH-IN AND FLOWER DESIGN. Laugh-In Restaurant Corporation. SN 330,393. Pub. 7–14–70. Filed 6–18–69.

899,889. CHUCKY CHIPMUNK ETC. AND DESIGN. Virginia Federation of Garden Clubs, Inc. SN 331,081. Pub. 7–14–70. Filed 6–26–69.

899,890. PORTRA-COTE. Olan Mills Incorporated of Tennessee. SN 331,934. Pub. 7–14–70. Filed 7–7–69.

899,891. PFBI AND DESIGN. Personalized Family Budgets, Inc. SN 332,520. Pub. 7–14–70. Filed 7–14–69.

899,892. DESIGN OF A SMALL BOY. Rusty's Country Fried Chicken, Inc. SN 333,185. Pub. 7–14–70. Filed 7–22–69.

899,893. GLOBE AND DIAMOND (DESIGN). Association for Children with Learning Disabilities, Inc. SN 338,293. Pub. 7–14–70. Filed 9–19–69.

899,894. MOM 'N' POP'S AND MALE, FEMALE AND DESIGN. Mom "n" Pop's Ham House. SN 342,372. Pub. 7–14–70. Filed 11–3–69.

899,895. ENED. Universal Oil Products Company, d.b.a. UOP Fabsteel Division. SN 343,475. Pub. 7–14–70. Filed 11–13–69.

899,896. ARMAND'S SUBWAY. Armand's, Inc. SN 344,500. Pub. 7–14–70. Filed 11–25–69.

899,897. RR DESIGN. Hotel Corporation of America. SN 356,247. Pub. 7–14–70. Filed 4–8–70.

899,898. WHEELER DEALER. Marriott Corporation, by change of name from Marriott-Hot Shoppes, Inc. SN 223,810. Pub. 7–21–70. Filed 7–20–65.

899,899. EDU TEC AND DESIGN. Education Technology Inc. SN 357,164. Pub. 7–14–70. Filed 4–17–70.

899,900. MARRIOTT. Marriott Corporation. SN 357,170. Pub. 7–14–70. Filed 4–17–70.

Class 101 — Advertising and Business

899,710. (See Class 39 for this trademark.)

899,901. BOOKSELLERS TO THE WORLD. Brentano's Inc. SN 298,168. Pub. 7–14–70. Filed 5–15–68.

899,902. BRC. Builders Resources Corporation. MULTIPLE CLASS (Classes 101 and 102). SN 301,576. Pub. 7–14–70. Filed 6–28–68.

899,903. COBBS CUPBOARD. The Cobbs Company, Inc. SN 306,644. Pub. 7–14–70. Filed 9–5–68.

899,904. ARROW BUILDING CENTER AND DESIGN. Consolidated Lumber Company. SN 308,191. Pub. 7–14–70. Filed 9–25–68.

899,905. GRAND PRIX SPEED SHOPS AND DESIGN. The Whitlock Corporation. SN 316,266. Pub. 7–14–70. Filed 1–9–69.

899,906. GEOMETRIC DESIGN. Quinlan and Tyson, Inc. SN 317,375. Pub. 7–14–70. Filed 1–23–69.

899,907. Q AND T. Quinlan and Tyson, Inc. SN 317,377. Pub. 7–14–70. Filed 1–23–69.

899,908. TDI AND DESIGN. Trans Data, Inc. SN 318,250. Pub. 7–14–70. Filed 2–3–69.

899,909. MALE GROTESQUE DESIGN. Salesmen Unlimited Agency Corp. SN 333,300. Pub. 7–14–70. Filed 7–23–69.

899,910. CLOTHES PEN AND DESIGN. Reid Brothers. SN 334,372. Pub. 7–14–70. Filed 8–4–69.

899,911. FARM JOURNAL RESEARCH SERVICE. Farm Journal, Inc. SN 339,074. Pub. 7–14–70. Filed 9–29–69.

899,912. APPLE/ONE. Howroyd-Wright Employment Agency, Inc. SN 339,435. Pub. 7–14–70. Filed 10–1–69.

899,913. COMMED. Commed, Inc. SN 355,714. Pub. 7–14–70. Filed 4–2–70.

899,914. J. RIGGINGS. The United States Shoe Corporation. SN 356,839. Pub. 7–14–70. Filed 4–14–70.

899,915. IBA. Iba, Inc. SN 357,280. Pub. 7–14–70. Filed 4–20–70.

899,916. SHAREDATA. National Sharedata Corporation. SN 357,283. Pub. 7–14–70. Filed 4–20–70.

Class 102 — Insurance and Financial

899,902. (See Class 101 for this trademark.)

899,917. YOUNG KANSAS CITIANS CLUB. People's Bank of Kansas City. SN 298,756. Pub. 7–14–70. Filed 5–21–68.

899,918. THE "ONE FOR THE MONEY." The Elmhurst National Bank. SN 309,444. Pub. 7–14–70. Filed 10–11–68.

899,919. WHEEL·ESCAPE FINANCING. Commercial Credit Corporation. SN 325,008. Pub. 7–14–70. Filed 4–21–69.

899,920. COAP. COAP Systems Inc. SN 331,866. Pub. 7–14–70. Filed 7–7–69.

899,921. DREYFUS LEVERAGE FUND AND DESIGN. The Dreyfus Leverage Fund, Inc. SN 331,879. Pub. 7–14–70. Filed 7–7–69.

899,922. ZENITH AND GLOBE DESIGN. Zenith Life Insurance Company. SN 333,320. Pub. 7–14–70. Filed 7–23–69.

899,923. E DESIGN. Eastern Life Insurance Company of New York. SN 342,426. Pub. 7–14–70. Filed 11–3–69.

899,924. TARGET. Continental Assurance Company. SN 357,505. Pub. 7–14–70. Filed 4–21–70.

Class 103 — Construction and Repair

899,502. (See Class 9 for this trademark.)

899,574. (See Class 21 for this trademark.)

899,925. COOKIE THE COP. Cook's Pest Control, Inc. SN 332,452. Pub. 7–14–70. Filed 7–14–69.

899,926. AUTOMATIC. A-T-O Inc., by change of name from "Automatic" Sprinkler Corporation of America. SN 334,165. Pub. 7–14–70. Filed 8–1–69.

Class 106 — Material Treatment

899,927. PERMO SIL. Lee J. Anthony, d.b.a. Griffin Furs. SN 317,522. Pub. 7–14–70. Filed 1–27–69.

Class 107 — Education and Entertainment

899,928. DESIGN OF A GIRL'S FACE. The Chicago International Film Festival, Inc. SN 305,312. Pub. 7–14–70. Filed 8–16–68.

899,929. YESTERDAYS CHILDREN. Richard M. Allen. SN 318,016. Pub. 7–14–70. Filed 1–31–69.

899,930. TRIO LOS TROPICANOS. Galmen Production Corporation. SN 325,192. Pub. 7–14–70. Filed 4–22–69.

899,931. WREATH AND TORCH (DESIGN). International Enterprises, Inc., d.b.a. Camp Olympus, and The Olympic Club of America. SN 333,573. Pub. 7–14–70. Filed 7–25–69.

899,932. HOT WHEELS AND DESIGN. Mattel, Inc. SN 339,506. Pub. 7–14–70. Filed 10–2–69.

899,933. FLINTSTONES. Columbia Pictures Industries, Inc., d.b.a. Screen Gems. SN 357,781. Pub. 7–14–70. Filed 4–24–70.

Certification Mark

Class A — Goods

899,934. SAFETY SEAL PTI POWER TOOL INSTITUTE AND DESIGN. Power Tool Institute, Inc. SN 325,778. Pub. 7–14–70. Filed 4–28–69.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

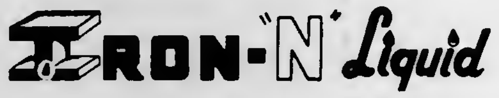
899,935. Mary Helen Robinson, d.b.a. Robinson Mimeo, Alvin, Tex. SN 272,751. Filed P.R. 5–31–67; Am. S.R. 4–13–70.

BLOTTER BOOK

For Portfolios and Manuscript Containers Such as a Group of Sheets of Blotting Paper Bound in Book Form and Adapted to Contain Sheets of Manuscript Paper Loosely Inserted Between the Blotting Paper Pages (Int. Cl. 16).
First use at least as early as Apr. 4, 1967.

Class 10 — Fertilizers

899,936. Edward A. Platz, Cranbury, N.J. SN 324,749. Filed P.R. 4–16–69; Am. S.R. 4–24–70.



For Fertilizer Products—Namely, a Stable Liquid Soluble Fertilizer That is Immediately Available to the Plant (Int. Cl. 1).
First use on or about Mar. 26, 1969.

Class 11 — Inks and Inking Materials

899,937. Formulabs Industrial Inks, Incorporated, Escondido, Calif. SN 346,473. Filed 12–17–69.

"ANY COLOR OVER ANY COLOR"

For Wire Coding Inks (Int. Cl. 16).
First use Aug. 22, 1968.

Class 18 — Medicines and Pharmaceutical Preparations

899,938. Ralston Purina Company, St. Louis, Mo. SN 339,820. Filed P.R. 10–6–69; Am. S.R. 3–12–70.

IRON-PLUS

For Medicated Pig Feed (Int. Cl. 5).
First use November 1965.

Class 24 — Laundry Appliances and Machines

899,939. Super Laundry Machinery Company, Inc., Chicago, Ill. SN 330,430. Filed P.R. 6–18–69; Am. S.R. 6–12–70.

SUPER

For Laundry Equipment for Use in Commercial Laundries—Namely, Washers, Extractors, Ironers and Folders (Int. Cl. 7).
First use July 9, 1958.

Class 26 — Measuring and Scientific Appliances

899,940. Allergan Pharmaceuticals, Santa Ana, Calif. SN 329,951. Filed P.R. 6–13–69; Am. S.R. 6–25–70.

CLEAN-N-SOAKIT

For Contact Lens Case (Int. Cl. 9).
First use Feb. 2, 1969.

Class 27 — Horological Instruments

899,941. Gruen Industries, Inc., d.b.a. The Gruen Watch Company, New York, N.Y. SN 327,274. Filed P.R. 5–14–69; Am. S.R. 7–2–70.

GIVENCHY

For Watches (Int. Cl. 14).
First use Apr. 17, 1969.

Class 32 — Furniture and Upholstery

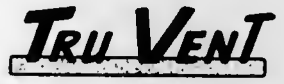
899,942. The Berkline Corporation, West Springfield, Mass. SN 333,088. Filed P.R. 7–22–69; Am. S.R. 7–9–70.

SNAP-ON BACK

For Chairs (Int. Cl. 20).
First use June 17, 1969.

Class 34 — Heating, Lighting, and Ventilating Apparatus

899,943. Creamer and Sons Manufacturers, Denton, Tex. SN 306,887. Filed P.R. 9–9–68; Am. S.R. 4–16–70.



The stippling on the drawing is for shading purposes only.
For Ventilator Hoods for Stoves (Int. Cl. 11).
First use July 1, 1968.

Class 38 — Prints and Publications

899,944. Model Rocketery, Inc., Boston, Mass. SN 325,809. Filed P.R. 4–28–69; Am. S.R. 7–8–70.

MODEL ROCKETRY

For Magazine (Int. Cl. 16).
First use Oct. 1, 1968.

899,945. Rodale Press, Inc., Emmaus, Pa. SN 331,775. Filed P.R. 7–3–69; Am. S.R. 7–17–70.

FITNESS

For Periodical Magazine (Int. Cl. 16).
First use June 13, 1969.

899,946. Boone, Inc., Tuscaloosa, Ala. SN 333,795. Filed P.R. 7–29–69; Am. S.R. 5–5–70.

ANTIQUE MONTHLY

For Newspaper (Int. Cl. 16).
First use Apr. 15, 1969.

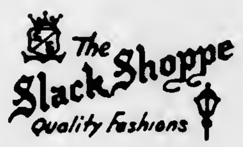
Class 39 — Clothing

899,947. Calzaturificio Magli S.a.S. Di Bruno Magli & C., Bologna, Italy. SN 323,254. Filed P.R. 4–1–69; Am. S.R. 6–26–70.

MISS MAGLI

For Shoes (Int. Cl. 25).
First use Feb. 13, 1969; in commerce Feb. 13, 1969.

899,948. The Slack Shoppe, Inc., Warwick, R.I. SN 347,817. Filed P.R. 1–6–70; Am. S.R. 6–29–70.



For Men's Slacks (Int. Cl. 25).
First use at least as early as June 6, 1969.

Class 40 — Fancy Goods, Furnishings, and Notions

899,949. Vulcanized Rubber & Plastics Company, Morrisville, Pa. SN 293,965. Filed P.R. 3–22–68; Am. S.R. 6–17–70.

SUPERCOMB

For Hair Combs (Int. Cl. 21).
First use on or about Feb. 5, 1968.

Class 44 — Dental, Medical, and Surgical Appliances

899,950. Dentsply International Inc., York, Pa. SN 329,701. Filed P.R. 6–11–69; Am. S.R. 7–1–70.

ROLL-O-WAX

For Dental Waxes and Dental Wax Compositions Generally for Use in Making Wax Patterns of Dentures in the Practice of Prosthetic Dentistry (Int. Cl. 5).
First use Mar. 26, 1969.

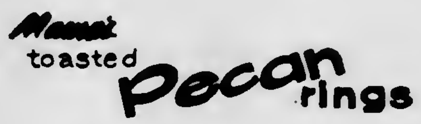
Class 46 — Foods and Ingredients of Foods

899,951. General Foods Corporation, White Plains, N.Y. SN 332,938. Filed P.R. 7–18–69; Am. S.R. 8–19–70.

SHAKE'N CRUMB

For Seasoned Coating Mix for Chicken (Int. Cl. 30).
First use July 1, 1969.

899,952. Mama Cookie Bakeries, Inc., Chicago, Ill. SN 343,144. Filed P.R. 11–10–69; Am. S.R. 5–12–70.



For Cookies (Int. Cl. 30).
First use 1946.

Class 50 — Merchandise Not Otherwise Classified

899,953. Zim's, Inc., Salt Lake City, Utah. SN 313,145. Filed P.R. 11–26–68; Am. S.R. 3–30–70.

DIP-'N-DRAPE

For Chemically Impregnated Fabric (Int. Cl. 24).
First use on or about August 1967.

Class 51 — Cosmetics and Toilet Preparations

899,954. Demert & Dougherty, Inc., Chicago, Ill. SN 300,264. Filed P.R. 6–12–1968; Am. S.R. 7–23–70.

FINI

The English translation of the French word "Fini" is "finished."
For Hair Spray (Int. Cl. 3).
First use on or about May 29, 1968.

899,955. Vincent O'Mara, d.b.a. Ultimate Beauty Products, Los Angeles, Calif. SN 315,636. Filed P.R. 12–26–68; Am. S.R. 6–1–70.

HAIR REPARE

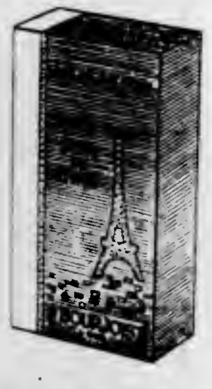
For Pressing Cream (Int. Cl. 3).
First use Sept. 23, 1952.

899,956. Zsa Zsa Limited, New York, N.Y. SN 329,156. Filed P.R. 6–4–69; Am. S.R. 5–19–70.

CREME DE MAUVE

For Make-Up Base (Int. Cl. 3).
First use Apr. 14, 1969.

899,957. Bourjois, Inc., New York, N.Y. SN 331,103. Filed 5-25-70.



The words "Soir De Paris" mean "evening in Paris" in English. The drawing is lined for the colors gold and blue and applicant claims the colors gold, white and blue.

For Eau de Cologne (Int. Cl. 3).

First use Feb. 24, 1969.

899,958. Fantasia Industries Corporation, Hackensack, N.J. SN 348,660. Filed P.R. 1-15-70, Am. S.R. 7-17-70.

THICK'N HAIR

For Hair Conditioner (Int. Cl. 3).

First use Mar. 19, 1969.

Class 101 — Advertising and Business

899,959. Premium Corporation of America, Inc., Minneapolis, Minn. SN. 301,250. Filed P.R. 6-24-68; Am. S.R. 6-29-70.

STAMP GIFT

For Sales Promotional Service Through the Use of Bonus Certificates to Promote the Sale of the Goods and Services of Others (Int. Cl. 35).

First use May 21, 1968.

899,960. The Ralph M. Parsons Company, Los Angeles, Calif. SN 322,327. Filed P.R. 3-20-69; Am. S.R. 8-7-70.

SULF-ORE

For Business Development in the Field of Sulfur Recovery by Solvent Extraction (Int. Cl. 35).

First use Nov. 15, 1968.

TRADEMARK REGISTRATIONS RENEWED

34,668. FLEISCHMANN'S. Cl. 46 (Int. Cl. 30). 5-22-1900.
78,317. TURQUOIS. Cl. 37 (Int. Cl. 16). 6-7-10.
79,060. "ARK" AND REPRESENTATION OF ARK. Cl. 14 (Int. Cl. 6). 8-2-10.
80,157. EVIDENCE. Cl. 46 (Int. Cl. 30). 11-8-10.
80,492. GRAPE-NUTS. Cl. 46 (Int. Cl. 30). 12-27-10.
266,534. "GOBLIN." Cl. 46 (Int. Cl. 30). 1-28-30.
272,100. "EAGLE ERASALL" AND REPRESENTATION OF EAGLE AND DESIGN. Cl. 37 (Int. Cl. 16). 7-1-30.
272,181. SCHOOL MASTER. Cl. 37 (Int. Cl. 16). 7-1-30.
272,741. DELTA PHI DELTA. Cl. 28 (Int. Cl. 14). 7-15-30.
272,857. FARBOIL. Cl. 16 (Int. Cl. 2). 7-15-30.
273,095. "FIXOL" AND DESIGN. Cl. 51 (Int. Cl. 3). 7-22-30.
273,418. "WHITE OAK" AND DESIGN. Cl. 7 (Int. Cl. 22). 8-5-30.
273,568. HYDROCAL. Cl. 12 (Int. Cl. 19). 8-5-30.
273,925. KITCHEN COUNSEL. Cl. 38 (Int. Cl. 16). 8-19-30.
274,071. TEXTURE. Cl. 51 (Int. Cl. 3). 8-19-30.
274,605. "WATZIN" AND DESIGN. Cl. 51 (Int. Cl. 3). 9-2-30.
277,157. YALE. Cl. 21 (Int. Cl. 9). 11-11-30.
277,303. "ROYAL KNIGHT" AND REPRESENTATION OF HELMET. Cl. 39 (Int. Cl. 25). 11-11-30.
277,377. CUSTOMS BOND. Cl. 37 (Int. Cl. 16). 11-11-30.
277,405. "FLS" AND DESIGN. Cl. 34 (Int. Cl. 11). 11-11-30.
277,419. GLEASON. Cl. 23 (Int. Cl. 7). 11-11-30.
277,420. GLEASON. Cl. 26 (Int. Cl. 9). 11-11-30.
277,668. "BIG CHIEF BRAND" AND DESIGN. Cl. 39 (Int. Cl. 25). 11-25-30.
277,825. BERMICO. Cl. 2 (Int. Cl. 6). 11-25-30.
278,452. NUGGET. Cl. 46 (Int. Cl. 29). 12-16-30.
278,638. LUSTRE. Cl. 22 (Int. Cl. 16). 12-23-30.
279,063. NORFORMS. Cl. 18 (Int. Cl. 5). 1-6-31.
443,438. SULFIDAL. Cl. 6 (Int. Cls. 1 and 5). 10-11-49.
444,076. WESTGO. Cl. 23 (Int. Cl. 7). 7-11-50.
444,117. TECHNICOLOR NEWS AND VIEWS. Cl. 38 (Int. Cl. 16). 8-1-50.
444,196. CARBONELL Y CA. Cl. 46 (Int. Cl. 29). 9-5-50.
519,423. LONGHORN AND DESIGN. Cl. 39 (Int. Cl. 25). 1-3-50.
521,293. NORTHERN QUEEN. Cl. 46 (Int. Cl. 29). 2-21-50.
521,320. NYLOFLEX. Cl. 42 (Int. Cl. 24). 2-21-50.
521,378. POWERFLEX. Cl. 42 (Int. Cl. 24). 2-21-50.
524,138. A-S-E. Cl. 21 (Int. Cl. 9). 4-18-50.
524,448. APCOR. Cl. 23 (Int. Cls. 7 and 12). 4-25-50.
524,583. APCOR. Cl. 19 (Int. Cls. 7 and 12). 5-2-50.
524,670. PEPTYNE. Cl. 46 (Int. Cl. 30). 5-2-50.
524,819. CLEAN-O-MATIC. Cl. 100 (Int. Cl. 42). 5-2-50.
525,858. RATION-AYD. Cl. 46 (Int. Cl. 31). 6-6-50.
526,163. REALIME. Cl. 46 (Int. Cl. 6-6-50.
527,456. WOLF. Cl. 21 (Int. Cl. 7). 7-11-50.
527,650. BRANICK MFG. CO. INC. Cl. 23 (Int. Cls. 7 and 8). 7-18-50.
527,695. AMC AND DESIGN. Cl. 23 (Int. Cl. 7). 7-18-50.
527,726. ANTARANE. Cl. 6 (Int. Cl. 1). 7-18-50.
527,911. MONOGRAPH. Cl. 34 (Int. Cl. 11). 7-18-50.
528,169. 24 HOUR CEMENT AND DESIGN. Cl. 12 (Int. Cl. 19). 8-1-50.
528,604. GISMO. Cl. 23 (Int. Cl. 7). 8-8-50.
528,669. ALBERT ROBIN AND DESIGN. Cl. 49 (Int. Cl. 33). 8-8-50.
528,728. WOOD FIX. Cl. 12 (Int. Cl. 17). 8-8-50.
528,801. ANCHORLASTIC. Cl. 42 (Int. Cl. 24). 8-8-50.
528,854. CARNIVAL. Cl. 42 (Int. Cl. 24). 8-8-50.
528,860. SURALINE. Cl. 42 (Int. Cl. 22). 8-8-50.
528,961. ENS-ZEM. Cl. 6 (Int. Cl. 5). 8-15-50.
529,057. SUSAN THOMAS. Cl. 39 (Int. Cl. 25). 8-15-50.
529,061. WARNING. Cl. 51 (Int. Cl. 3). 8-15-50.
529,084. HORSE AND RIDER (DESIGN). Cl. 39 (Int. Cl. 25). 8-15-50.
529,354. REDLER. Cl. 23 (Int. Cl. 7). 8-22-50.
529,399. CUIR DU CANADA. Cl. 51 (Int. Cl. 3). 8-22-50.
529,697. ADMIRATION. Cl. 46 (Int. Cl. 30). 8-29-50.
529,700. WIZZARD. Cl. 23 (Int. Cl. 7). 8-29-50.
529,916. VELVOLEUM. Cl. 32 (Int. Cl. 20). 8-29-50.
529,984. BUDGET WISE. Cl. 38 (Int. Cl. 16). 8-29-50.
530,249. TUNDRA. Cl. 51 (Int. Cl. 3). 7-5-50.
530,377. DREAM. Cl. 42 (Int. Cl. 24). 9-5-50.
530,857. RAY. Cl. 34 (Int. Cl. 11). 9-19-50.
530,858. RAY AND DESIGN. Cl. 34 (Int. Cl. 11). 9-19-50.
530,996. GLEN ROSSIE. Cl. 49 (Int. Cl. 33). 9-19-50.
531,151. CLEAN-O-MATIC. Cl. 32 (Int. Cl. 20). 9-26-50.
531,646. LANCASTER. Cl. 23 (Int. Cl. 7). 10-10-50.
531,726. ORNAM-ETTES. Cl. 46 (Int. Cl. 30). 10-10-50.
531,745. DELTA'S 'JEWEL.' Cl. 29 (Int. Cl. 16). 10-10-50.
531,746. DELTA'S PERMA-EDGE. Cl. 29 (Int. Cl. 16). 10-10-50.
531,812. CARDINAL. Cl. 23 (Int. Cl. 7). 10-10-50.
532,133. BERUBIGEN. Cl. 18 (Int. Cl. 5). 10-17-50.
532,298. KLE-CO. Cl. 46 (Int. Cl. 29). 10-24-50.

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Covey Co., The, Fort Smith, Ark. 899,657, pub. 7–14–70. Cl. 32.
Cramer Products, Inc., Gardner, Kans. 535,365, ren. 9–29–70. Cl. 18.
Creamer & Sons Manufacturers, Denton, Tex. 899,943. Cl. 34.
Creations West Inc., Los Angeles, Calif. 899,670, pub. 7–14–70. Cl. 37.
Cromwell Paper Co., The, Chicago, Ill. 775,004, canc. Cl. 37.
Cybetronics, Inc.: *See*—
  Kybe Corp.
DCA Food Industries, Inc., New York, N.Y. 899,815, pub. 7–14–70. Cl. 46.
Daffin Corp., Hopkins, Minn. 774,922–3, canc. Cl. 23.
Daffin Corp., Hopkins, Minn. 774,950, canc. Cl. 23.
Daigger, A., & Co., Inc., Chicago, Ill. 899,601, pub. 7–14–70. Cl. 22.
Daily Juice Products, Inc., Oakmont, Pa. 899,768, pub. 7–14–70. Cl. 45.
D'Alto, Anthony, New Haven, Conn. 899,885, pub. 7–14–70. Cl. 100.
Danish Silversmith Inc., The, Providence, R.I. 899,648, pub. 7–14–70. Cl. 28.
Dayco Corp., Dayton, Ohio. 899,883, pub. 7–14–70. Cl. 100.
Debs Hospital Supplies, Inc., Chicago, Ill. 534,729, ren. 9–29–70. Cl. 19.
Deena Products Co., Chicago, Ill. 774,886, canc. Cl. 21.
Deering Milliken, Inc., New York, N.Y. 899,463, pub. 7–14–70. Cl. 2.
Delta Brush Mfg. Corp., New York, N.Y. 531,745–46, ren. 9–29–70. Cl. 29.
Delta Phi Delta, Hays, Kans. 272,741, ren. 9–29–70. Cl. 28.
Demert & Dougherty, Inc., Chicago, Ill. 899,954. Cl. 51.
Dentsply International Inc., York, Pa. 899,950. Cl. 44.
Dexion Inc., Woodside, N.Y. 899,653, pub. 7–14–70. Cl. 32.
Diamond Systems, Inc., Southfield, Mich. 774,989, canc. Cl. 37.
Dickson-Jenkins Mfg. Co., Fort Worth, Tex. 519,423, ren. 9–29–70. Cl. 39.
Diversey Corp., The, from The Diversey Corp., Chicago, Ill. 899,874, pub. 7–14–70. Cl. 52.
Diversified Industries, Inc., Clayton, Mo. 899,529–34, pub. 7–14–70. Cl. 14.
Dixon, Joseph Crucible Co., The, Jersey City, N.J. 899,662, pub. 7–14–70. Cl. 37.
Dominion Textile Co. Ltd., Montreal, Quebec, Canada. 899,745, pub. 7–14–70. Cl. 42.
Donart Electronics, Inc., McDonald, Pa. 899,635, pub. 7–14–70. Cl. 26.
Donnelley, Reuben H., Corp., The, New York, N.Y. 899,689, pub. 7–14–70. Cl. 38.
Douglas, David Co., Inc., Manitowac, Wis. 899,468, pub. 7–14–70. Cl. 2.
Douglas Dynamics Corp., Milwaukee, Wis. 899,620, pub. 7–14–70. Cl. 23.
Dow Chemical Co., The: *See*—
  Johnson & Johnson.
Dow Chemical Co., The, Midland, Mich. 899,493, pub. 7–14–70. Cl. 6.
Dow Chemical Co., The, Midland, Mich. 899,672, pub. 7–14–70. Cl. 37.
Dow Chemical Co., The, Midland, Mich. 899,694, pub. 7–14–70. Cl. 38.
Drew Chemical Corp., New York, N.Y. 899,479, pub. 6–9–70. Cl. 6.
Dreyfus Leverage Fund, Inc., The, New York, N.Y. 899,921, pub. 7–14–70. Cl. 102.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 899,457, pub. 7–14–70. Cl. 1.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 899,576, pub. 7–14–70. Cl. 21.
Dwoskin, Inc., Atlanta, Ga. 899,571, pub. 7–14–70. Cl. 20.
EDO Western Corp., Salt Lake City, Utah. 899,628, pub. 7–14–70. Cl. 26.
Eagle Library Inc., The, Brooklyn, N.Y. 899,688, pub. 7–14–70. Cl. 38.
Eastern Life Insurance Co. of New York, New York, N.Y. 899,923, pub. 7–14–70. Cl. 102.
Eaton Yale & Towne Inc., Cleveland, Ohio. 277,157, ren. 9–29–70. Cl. 21.
Eaton Yale & Towne Inc., Cleveland, Ohio. 535,324, ren. 9–29–70. Cl. 23.
Eberhard Faber Inc., Wilkes-Barre, Pa. 899,668, pub. 7–14–70. Cl. 37.
Economics Laboratory, Inc., St. Paul, Minn. 899,868, pub. 7–14–70. Cl. 52.
Economics Laboratory, Inc., St. Paul, Minn. 899,878, pub. 7–14–70. Cl. 52.
Education Technology Inc., San Rafael, Calif. 899,899, pub. 7–14–70. Cl. 100.
Electric Tachometer Corp., The, Philadelphia, Pa., ren. 9–29–70. Cl. 26.
Electrovit International, Inc., Miami, Fla. 899,581, pub. 7–14–70. Cl. 21.
Elmhurst National Bank, The, Elmhurst, Ill. 899,918, pub. 7–14–70. Cl. 102.
Emba Mink Breeders Association, Racine, Wis., from Larry Moore-Gilbert Tuttle Mink Ranch, Salem, Wis. 899,448, pub. 7–14–70. Cl. 1.
Emba Mink Breeders Association, Racine, Wis., from Larry Moore-Gilbert Tuttle Mink Ranch, Salem, Wis. 899,450–2, pub. 7–14–70. Cl. 1.
Emhart Corp., Hartford, Conn. 899,526, pub. 7–14–70. Cl. 13.
Ethyl Corp., Richmond, Va. 899,458, pub. 7–14–70. Cl. 1.
Ethyl Corp., Richmond, Va. 899,669, pub. 7–14–70. Cl. 37.
Evans-Aristocrat Industries, Inc., Elizabeth, N.J. 535,043, ren. 9–29–70. Cl. 3.
Executive Systems Corp., Washington, D.C. 899,682, pub. 7–14–70. Cl. 38.
F & H Feeds, Lathrop, Calif. 775,095, canc. Cl. 46.
Faberge, Inc., from Faberge, Inc., New York, N.Y. 899,833, pub. 7–14–70. Cl. 51.
Fabriche Italo-Americane Montaggi, S.p.A., Rome, Italy. 774,802, canc. Cl. 9.
Fabri-Tek Inc., Minneapolis, Minn. 899,678, pub. 7–14–70. Cl. 38.
Fantasia Industries Corp., Hackensack, N.J. 899,958. Cl. 51.
Farbenfabriken Bayer, Leverkusen-Bayerwerk, Germany. 899,449, pub. 7–14–70. Cl. 1.
Farm Journal, Inc., Philadelphia, Pa. 899,911, pub. 7–14–70. Cl. 101.
Farmaster Products, Inc., Shenandoah, Iowa. 899,460–1 pub. 7–14–70. Cl. 2.
Faultless Starch Co., Kansas City, Mo. 899,475, pub. 7–14–70. Cl. 6.
Federated Department Stores, Inc., Columbus, Ohio. 899,748, pub. 7–14–70. Cl. 42.
Fedtro, Inc., Rockville Centre, N.Y. 899,674, pub. 7–14–70. Cl. 37.
Fibre-Metal Products Co., The, Chester, Pa. 899,630, pub. 7–14–70. Cl. 26.

Fiedler, Dean R., d.b.a. Dean R. Fiedler Co., Portland, Oreg. 775,000, canc. Cl. 37.
Fieldcrest Mills, Inc., Eden, N.C. 899,749, pub. 7–14–70. Cl. 42.
Fields, Sidney M., d.b.a. Fields International, Chicago, Ill. 899,566, pub. 3–7–67. Multiple Class (Classes 19, 21, and 23).
Financialite Corp., Earlton, N.Y. 899,687, pub. 7–14–70. Cl. 38.
Finkel Umbrella Frame Co., Inc., The, New York, N.Y. 534,363, ren. 9–29–70. Cl. 41.
First Mississippi Corp., Jackson, Miss. 899,498, pub. 7–14–70. Cl. 6.
Fisher Controls Co. Inc., Marshalltown, Iowa. 528,604, ren. 9–29–70. Cl. 23.
Fisher Controls Co., Inc., Marshalltown, Iowa. 529,700, ren. 9–29–70. Cl. 23.
Flexnit Co., Inc., New York, N.Y. 899,716, pub. 7–14–70. Cl. 39.
Formex Corp., Elkhart, Ind. 899,589, pub. 7–14–70. Cl. 22.
Formulabs Industrial Inks, Inc., Escondido, Calif. 899,937. Cl. 11.
Fort Howard Paper Co., Greenbay, Wis. 899,664, pub. 7–14–70. Cl. 37.
Free-Flow Packaging Corp., Redwood, City, Calif. 899,441, pub. 7–14–70. Cl. 1.
Freemen & Gossage, Inc., San Francisco, Calif. 775,147, canc. Cl. 46.
Frieder, Roland W., Chicago, Ill. 899,737, pub. 7–14–70. Cl. 40.
Fromageries Henri Hutin S.A., Saint-Mihiel (Meuse), France. 899,773, pub. 7–14–70. Cl. 46.
Frostie Enterprises, d.b.a. S. Twitchell Co., Camden, N.J. 899,816, pub. 7–14–70. Cl. 46.
Frottierweberei Vossen G.m.b.H., Guetersloh, Germany. 899,742, pub. 7–14–70. Cl. 42.
Fuller Co., Catasauqua, Pa. 533,150, ren. 9–29–70. Cl. 23.
GAF Corp., New York, N.Y. 527,726, ren. 9–29–70. Cl. 6.
G. & K., Inc., Cobb, Ga. 899,791, pub. 7–14–70. Cl. 46.
G. & L. Mfg. Co., Inc., Boston, Mass. 532,635, ren. 9–29–70. Cl. 39.
Gabel's Cosmetics, Inc., Los Angeles, Calif. 899,873, pub. 7–14–70. Cl. 52.
Galmen Production Corp., New York, N.Y. 899,930, pub. 7–14–70. Cl. 107.
Galtech, Inc., Fort Myers, Fla. 899,697, pub. 7–14–70. Cl. 38.
Gardner, Theodor K., d.b.a. Syf-O-Matic Products, Pasadena, Calif. 774,984, canc. Cl. 35.
Gem, Inc., Byhalia, Miss. 899,471, pub. 7–14–70. Multiple Class (Classes 4, 6, 15, 51 and 52).
General Fireproofing Co., The, Youngstown, Ohio. 529,916, ren. 9–29–70. Cl. 32.
General Foods Corp., White Plains, N.Y. 80,492, ren. 9–29–70. Cl. 46.
General Foods Corp., White Plains, N.Y. 775,089, canc. Cl. 46.
General Foods Corp., White Plains, N.Y. 899,951. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 899,806, pub. 7–14–70. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 899,814, pub. 7–14–70. Cl. 46.
General Precision, Inc., Little Falls, N.J. 774,875, canc. Cl. 21.
Gentex Corp., New York, N.Y. 899,588, pub. 7–14–70. Cl. 22.
Georgia-Pacific Corp., Portland, Oreg. 899,506, pub. 7–14–70. Cl. 12.
Georgia-Pacific Corp., Portland, Oreg. 899,510, pub. 7–14–70. Cl. 12.
Georgia-Pacific Corp., Crossett, Ark. 899,513, pub. 7–14–70. Cl. 12.
Gibson, Gay, Inc., Kansas City, Mo. 899,722, pub. 7–14–70. Cl. 39.
Gleason Works, The, Rochester, N.Y. 277,419–20, ren. 9–29–70. Cl. 23.
Gleason Works, The, Rochester, N.Y. 533,026, ren. 9–29–70. Cl. 23.
Glen Raven Mills, Inc., Glen Raven, N.C. 899,747, pub. 7–14–70. Cl. 42.
Glenmore Distilleries Co., Louisville, Ky., from Mr. Boston Distiller Inc., Boston, Mass. 899,822–6, pub. 7–14–70. Cl. 49.
Gold Eagle Products Co., Chicago, Ill. 899,478, pub. 7–14–70. Multiple Class (Classes 6 and 52).
Gorton Corp., The, d.b.a. Gorton's of Gloucester, Gloucester, Mass. 899,886, pub. 7–14–70. Cl. 100.
Governors of the University of Toronto, The, d.b.a. Connaught Medical Research Laboratories, Toronto, Ontario, Canada. 899,555, pub. 7–14–70. Cl. 18.
Grace, W. R., & Co., New York, N.Y. 899,456, pub. 7–14–70. Multiple Class (Classes 1, 2, 4, 6, 12, 16, 20, 37, and 52).
Granny Goose Foods, Inc., Oakland, Calif. 899,784–6, pub. 7–14–70. Cl. 46.
Gray, Dorothy, Ltd., New York, N.Y. 274,071, ren. 9–29–70. Cl. 51.
Great Western Foods Co., The, Knoxville, Tenn. 80,157, ren. 9–29–70. Cl. 46.
Greater Iowa Corp., The, Des Moines, Iowa. 775,134, canc. Cl. 102.
Gridweek, Inc., New Orleans, La. 899,699, pub. 7–14–70. Cl. 38.
Gruen Industries, Inc., d.b.a. The Gruen Watch Co., New York, N.Y. 899,941. Cl. 27.
Gym Dandy, Inc., Bossier City, La. 899,584, pub. 7–14–70. Cl. 22.
H & H Plastics Mfg. Co., Grand Rapids, Mich. 899,702, pub. 7–14–70. Cl. 39.
Haas, John I., Inc., Washington, D.C. 899,819, pub. 7–14–70. Cl. 48.
Haleks, Dorothy C., Southington, Conn. 774,912, canc. Cl. 23.
Hamilton Associates, Baltimore, Md. 774,905, canc. Cl. 23.
Hamilton Watch Co., Lancaster, Pa. 899,638, pub. 7–14–70. Cl. 27.
Hamtown Foods Co. Inc., Detroit, Mich. 899,772, pub. 7–14–70. Cl. 46.
Happiness Tours, Inc., Chicago, Ill. 775,153, canc. Cl. 105.
Hardy, James G., & Co., Inc., New York, N.Y. 535,155, ren. 9–29–70. Cl. 42.
Hassenfeld Bros. Inc., Central Falls, R.I. 774,894, canc. Cl. 22.
Hathaway, C. F., Co., Waterville, Me. 775,017, canc. Cl. 39.
Haveg Industries, Inc., Wilmington, Del. 774,760, canc. Cl. 2.
Haviland Products Co., Grand Rapids, Mich. 899,488, pub. 7–14–70. Cl. 6.
Hayward, Walter E., Co., Inc.: *See*—
  Amtel Arts Inc.
Health Insurance Council, New York, N.Y. 775,128, canc. Cl. 102.
Heatbath Corp., Indian Orchard, Mass. 899,864, pub. 5–27–69. Cl. 52.
Hercules Inc., Wilmington, Del. 899,494, pub. 7X14X70. Cl. 6.
Heyden Newport Chemical, New York, N.Y. 774,755, canc. Cl. 1.
Hickok Mfg. Co., Inc., Rochester, N.Y. 774,967, canc. Cl. 28.
Hiland Potato Chip Co. of Des Moines, d.b.a. Hiland Potato Chip Co., Des Moines, Iowa. 899,778–9, pub. 7–14–70. Cl. 46.
Hoffmann-La Roche Inc., Nutley, N.J. 899,553, pub. 7–14–70. Cl. 18.
Hoosier Book & Supply Co., Inc., Indianapolis, Ind. 272,181, ren. 9–29–70. Cl. 37.
Horan, John J., d.b.a. Horan Design Studios, Willow Grove, Pa. 899,577, pub. 7–14–70. Cl. 21.
Hotel Corp. of America, Boston, Mass. 899,897, pub. 7–14–70. Cl. 100.
Howroyd-Wright Employment Agency, Inc., Los Angeles, Calif. 899,912, pub. 7–14–70. Cl. 101.
Huber, J. M. Corp., Borger, Tex. 899,454, pub. 7–14–70. Cl. 1.
Hudson, H. D., Mfg. Co., Chicago, Ill. 531,812, ren. 9–29–70. Cl. 23.
Hudson, H. D., Mfg. Co., Chicago, Ill. 533,179, ren. 9–29–70. Cl. 23.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 899,792, pub. 7–14–70. Cl. 46.
Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden. 899,621, pub. 7–14–70. Cl. 23.
IBA, Inc., Cincinnati, Ohio. 899,915, pub. 7–14–70. Cl. 101.
Ida Mae Salads, Inc., d.b.a. Amora Foods, Brentwood, Md. 899,812, pub. 7–14–70. Cl. 46.
Imea S.A., Neuchatel, Switzerland. 774,898, canc. Cl. 23.
Index Publishing Corp., Chicago, Ill. 899,679–80, pub. 7–14–70. Cl. 38.
Insta-Form Products, Inc., Addison, Ill. 899,444, pub. 7–14–70. Cl. 1.
Instructo Corp., The, Paoli, Pa. 899,693, pub. 7–14–70. Cl. 38.
Integra Corp., The, Chicago, Ill. 774,812, canc. Cl. 12.
Interco Inc., St. Louis, Mo. 899,717, pub. 7–14–70. Cl. 39.
International Enterprises, Inc., d.b.a. Camp Olympus, & The Olympic Club of America, Washington, D.C. 899,931, pub. 7–14–70. Cl. 107.
International Multifoods Corp., Minneapolis, Minn. 266,534, ren. 9–29–70. Cl. 46.
International Playtex Corp., Dover, Del. 899,723, pub. 7–14–70. Cl. 39.
International Playtex Corp., New York, N.Y. 899,727, pub. 7–14–70. Cl. 39.
Interspace Corp., d.b.a. Shenango China, New Castle, Pa. 899,649, pub. 7–14–70. Cl. 30.
Interspace Corp., Parsippany, N.J. 899,443, pub. 7–14–70. Cl. 1.
Interstate Foods Corp., Chicago, Ill. 899,485, pub. 7–14–70. Cl. 6.
Inventa, A.G. fur Forschung und Patentverwertung, Zurich, Switzerland. 899,887, pub. 7–14–70. Cl. 100.
Ireco Chemicals, Salt Lake City, Utah. 899,502, pub. 7–14–70. Multiple Class (Classes 9 and 38).
J & M Mfg. Co., Southport, Ind. 899,472, pub. 7–14–70. Cl. 4.
Jelenko, J. F., & Co., Inc., New Rochelle, N.Y. 899,767, pub. 7–14–70. Cl. 44.
Jessop, William, & Sons Ltd., Sheffield, England. 79,060, ren. 9–29–70. Cl. 14.
Johnson, Aaron A., Baltimore, Md. 899,597–8, pub. 7–14–70. Cl. 22.
Johnson & Johnson, New Brunswick, N.J., from The Dow Chemical Co., Midland, Mich. 899,552, pub. 7–14–70. Cl. 18.
Johnson & Johnson, New Brunswick, N.J. 899,845, pub. 7–14–70. Cl. 51.
Johnson Products Co., Inc., Chicago, Ill. 899,846–8, pub. 7–14–70. Cl. 51.
Jorges Carpet Mills, Inc., Rossville, Ga. 899,750, pub. 7–14–70. Cl. 42.
Karen Industries, Inc., Northbridge, Mass. 775,022, canc. Cl. 39.
Kingston Co., The: *See*—
  Kingston Marketing Co.
Kingston Marketing Co., from The Kingston Co., Skokie, Ill. 899,500, pub. 7–14–70. Cl. 6.
Kinorello Verlag, G.m.b.H., Grosshesselohe/Isartal, Germany. 899,583, pub. 7–14–70. Multiple Class (Classes 22 and 38).
Kirby Lumber Corp., Houston, Tex. 533,315, ren. 9–29–70. Cl. 12.
Kirkpatrick, W. S., & Co., Inc., Upper Montclair, N.J. 899,667, pub. 7–14–70. Cl. 37.
Klopman Mills, Inc., Rockleigh, N.J. 528,854, ren. 9–29–70. Cl. 42.
Klopman Mills, Inc. Rockleigh, N.J. 528,860, ren. 9–29–70. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J. 530,377, ren. 9–29–70. Cl. 42.

Klugmann, Alfred Inc., New York, N.Y. 899,739, pub. 7–14–70. Cl. 40.
Knickerbocker Toy Co., Inc., New York, N.Y. 899,594, pub. 7–14–70. Cl. 22.
Knight, F. E., Inc., New York, N.Y. 899,447, pub. 7–28–70. Cl. 1.
Knuth, Eugene W., Land O'Lakes, Wis. 899,831, pub. 7–14–70. Cl. 50.
Kotake Co., Ltd., Honolulu, Hawaii. 535,449, ren. 9–29–70. Cl. 47.
Kraeuter & Co., Inc., Newark, N.J. 774,955, canc. Cl. 23.
Kraftco Corp., New York, N.Y. 532,298, ren. 9–29–70. Cl. 46.
Kroger Co., The, d.b.a. Jubilee Products Inc., Cincinnati, Ohio. 899,487, pub. 7–14–70. Cl. 6.
Kybe Corp., from Cybetronics, Inc., Waltham, Mass. 899,574, pub. 7–14–70. Multiple Class (Classes 21, 26, and 103).
Lancaster Pump & Mfg. Co. Inc., Lancaster, Pa. 531,646, ren. 9–29–70. Cl. 23.
Lane Ltd., New York, N.Y. 899,544, pub. 7–14–70. Cl. 17.
Langham, Shirley B., Dallas, Tex. 899,764, pub. 7–14–70. Cl. 44.
Lan-O-Sheen Inc., d.b.a. Lan-O-Sheen, St. Paul, Minn. 899,872, pub. 7–14–70. Cl. 52.
Lapoff, Harry S., Paterson, N.J. 775,075, canc. Cl. 46.
Latino Products Inc., Farmingdale, N.Y. 899,771, pub. 7–14–70. Cl. 45.
Lau Inc., Dayton, Ohio. 533,976, ren. 9–29–70. Cl. 34.
Laugh-In Restaurant Corp., Miami, Fla. 899,888, pub. 7–14–70. Cl. 100.
Lazar Co., The, Chicago, Ill. 774,930, canc. Cl. 23.
Lees, James, Sons Co., Bridgeport, Pa. 775,042–7, canc. Cl. 42.
Leonard Valve Co., Cranston, R.I. 899,522, pub. 7–14–70. Cl. 13.
Les Parfums de Dana, Inc., New York, N.Y. 529,399, ren. 9–29–70. Cl. 51.
Les Parfums de Dana, Inc., New York, N.Y. 530,249, ren. 9–29–70. Cl. 51.
Leslie, John M., d.b.a. Proven Products, Peabody, Mass. 899,870, pub. 7–14–70. Cl. 52.
Libby, McNeill & Libby, Chicago, Ill. 899,783, pub. 7–14–70. Cl. 46.
Lien Chemical Co., Franklin Park, Ill. 899,876, pub. 7–14–70. Cl. 52.
Lily of France, Inc., New Haven, Conn. 775,010, canc. Cl. 39.
Lisle Mills Co., Allentown, Pa. 775,034, canc. Cl. 39.
Lowe, E. S., Co., Inc., Long Island City, N.Y. 899,585, pub. 7–14–70. Cl. 22.
Luchs, Joseph, Philadelphia, Pa. 899,700, pub. 7–14–70. Cl. 38.
Lynn Pacific Corp., The, Union City, Calif. 899,671, pub. 7–14–70. Cl. 37.
M & B Headwear Co., Inc., Richmond, Va. 899,703, pub. 7–14–70. Cl. 39.
M & M World Marketing, Inc., Miami, Fla. 774,891, canc. Cl. 22.
Madison Throwing Co., Inc., Madison, N.C. 899,761, pub. 7–14–70. Cl. 43.
Maggio, Joe, Holtville, Calif. 535,139, ren. 9–29–70. Cl. 46.
Maidenform, Inc., New York, N.Y. 899,726, pub. 7–14–70. Cl. 39.
Maison Albert Robin Societe Anonyme, Cognac, France. 528,669, ren. 9–29–70. Cl. 49.
Malmstrom Chemical Corp., Linden, N.J. 899,490–1, pub. 7–14–70. Cl. 6.
Mama Cookie Bakeries, Inc., Chicago, Ill. 899,952. Cl. 46.
March & Mendl, Inc., New York, N.Y. 775,026, canc. Cl. 39.
Marriott Corp., from Marriott-Hot Shoppes, Inc., Washington, D.C. 899,898, pub. 7–21–70. Cl. 100.
Marriott Corp., Washington, D.C. 899,900, pub. 7–14–70. Cl. 100.
Marriott-Hot Shoppes, Inc.: *See*—
  Marriott Corp.
Marscar Ltd., London, England. 899,523, pub. 7–14–70. Cl. 13.
Martin Marietta Corp., New York, N.Y. 528,169, ren. 9–29–70. Cl. 12.
Martinoni, E., Co., d.b.a. The Richards Co., South San Francisco, Calif. 899,828, pub. 7–14–70. Cl. 49.
Masanori Konaka, Tokyo, Japan. 899,477, pub. 7–14–70. Cl. 6.
Masonite Corp., Chicago, Ill. 899,514. pub. 7–14–70. Cl. 12.
Mattel, Inc., Hawthorne, Calif. 899,604–18, pub. 7–14–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 899,932, pub. 7–14–70. Cl. 107.
McClellan Industries, Inc., Traverse City, Mich. 899,592, pub. 7–14–70. Cl. 22.
McCormick & Co., Inc., Cockeysville, Md. 899,797, pub. 7–14–70. Cl. 46.
McCutcheon, Charles E., Jr., d.b.a. Miraclean Co., Fayette, Mo. 899,626, pub. 7–14–70. Cl. 24.
McGraw-Edison Co., Elgin, Ill. 277,825, ren. 9–29–70. Cl. 2.
Means, F. W., & Co., Chicago, Ill. 524,819, ren. 9–29–70. Cl. 100.
Means, F. W., & Co., Chicago, Ill. 531,151, ren. 9–29–70. Cl. 32.
Mechanized Science Seals, Inc., Los Angeles, Calif. 899,527, pub. 7–14–70. Cl. 13.
Mennen Co., The, Morristown, N.J. 899,844, pub. 7–14–70. Cl. 51.
Mercantile Stores Co., Inc., Wilmington, Del. 277,303, ren. 9–29–70. Cl. 39.
Merrill's Photo Studio, Union City, Pa. 529,984, ren. 9–29–70. Cl. 38.
Metco Corp., Miami, Fla. 775,018, canc. Cl. 39.
Meyers, Clarence L., & Co. Inc., Wyncote, Pa. 775,048, canc. Cl. 43.
Michigan Carton Co., Battle Creek, Mich. 899,663, pub. 7–14–70. Cl. 37.
Micro-Publishing Systems Inc., Stamford, Conn. 899,701, pub. 7–14–70. Cl. 38.
Midland Trading Co., Skokie, Ill. 899,691, pub. 7–14–70. Cl. 38.
Millers Falls Co., Greenfield, Mass. 534,581, ren. 9–29–70. Cl. 23.
Mind, Inc., Stamford, Conn. 899,692, pub. 7–14–70. Cl. 38.
Miracle Pet Products, Inc., Jersey City, N.J. 899,789, pub. 7–14–70. Cl. 46.
Miss Penny Foods, Inc., Nashville, Tenn. 775,069, canc. Cl. 46.
Mr. Boston Distiller Inc.: *See*—
  Glenmore Distilleries Co.
Model Rocketry, Inc., Boston, Mass. 899,944. Cl. 38.
Modern Shoe Co., St. Louis, Mo. 899,704, pub. 7–14–70. Cl. 39.
Mohasco Industries, Inc., Amsterdam, N.Y. 899,743, pub. 7–14–70. Cl. 42.
Mom "N" Pop's Ham House, Morganton, N.C. 899,894, pub. 7–14–70. Cl. 100.
Monroe Auto Equipment Co., Monroe, Mich. 534,595, ren. 9–29–70. Cl. 19.
Monsanto Co., St. Louis, Mo. 899,752, pub. 7–14–70. Cl. 42.
Moore, Benjamin, & Co., New York, N.Y. 534,459, ren. 9–29–70. Cl. 5.
Moore Business Forms, Inc., Niagara Falls, N.Y. 899,484, pub. 7–14–70. Cl. 6.
Moore Co., The, Charleston, W. Va. 899,658, pub. 7–14–70. Cl. 32.
Moore, Doris, of California, Inc., Long Beach, Calif. 899,639, pub. 7–14–70. Cl. 28.
Moore, George R., & Philip Adelman, Long Beach, Calif. 775,106, canc. Cl. 50.
Moore, Larry-Gilbert Tuttle Mink Ranch: *See*—
  Emba Mink Breeders Association.
Morgan Co., Oshkosh, Wis. 899,508, pub. 7–14–70. Cl. 12.
Napoleon Pre-Cooked Food Products, Inc., Detroit, Mich. 899,788, pub. 7–14–70. Cl. 46.
Nash Inc., Jersey City, N.J. 774,772–3, canc. Cl. 3.
Natcol Crafts, Inc., d.b.a. Natcol Plastics, Redlands, Calif. 899,473, pub. 7–14–70. Multiple Class (Classes 5, 6, 16, 22, 28, and 50).
National Distillers & Chemical Corp., d.b.a. National Distillers Products Co., New York, N.Y. 899,829, pub. 7–14–70. Cl. 49.
National Gypsum Co., Buffalo, N.Y. 774,808, canc. Cl. 12.
National Periodical Publications, Inc., New York, N.Y. 899,677, pub. 7–14–70. Cl. 38.
National Service Industries, Inc., Atlanta, Ga. 899,486, pub. 7–14–70. Cl. 6.
National Sharedata Corp., Houston, Tex. 899,916, pub. 7–14–70. Cl. 101.
National Spinning Co., Inc., New York, N.Y. 899,763, pub. 7–14–70. Cl. 43.
National Union Electric Corp., Jersey City, N.J. 899,575, pub. 7–14–70. Multiple Class (Classes 21 and 36).
New Jersey Machine Corp., Hoboken, N.J. 774,897, canc. Cl. 23.
Nitto Boseki Co., Ltd., Fukushima, Japan. 899,756, pub. 7–14–70. Cl. 42.
Nor-Am Agricultural Products, Inc., Chicago, Ill., from Shering Aktiengesellschaft, Berlin, Germany. 899,480, pub. 7–14–70. Cl. 6.
Norcross, Inc., New York, N.Y. 899,501, pub. 7–14–70. Multiple Class (Classes 7 and 37).
Northern Packaging Corp., Rochester, N.Y. 774,997, canc. Cl. 37.
Northrup, King & Co., Minneapolis, Minn. 899,459, pub. 7–14–70. Cl. 1.
Norwich Pharmacal Co., The, Norwich, N.Y. 279,063, ren. 9–29–70. Cl. 18.
Noxell Corp., Baltimore, Md. 899,557, pub. 7–14–70. Cl. 18.
Noxell Corp., Baltimore, Md. 899,856, pub. 7–14–70. Cl. 51.
Nuclear Consultants Corp., St. Louis County, Mo. 775,058, canc. Cl. 44.
Nugget Distributors Cooperative of America, Inc., Stockton, Calif. 278,452, ren. 9–29–70. Cl. 46.
Nunn Bush Shoe Co., Milwaukee, Wis. 899,710, pub. 7–14–70. Multiple Class (Classes 39 and 101).
O'Brien Mfg. Co., Temple, Tex. 775,031, canc. Cl. 39.
Olan Mills Inc. of Tennessee, Chattanooga, Tenn. 899,980, pub. 7–14–70. Cl. 100.
Olin Corp., East Alton, Ill. 899,524, pub. 7–14–70. Cl. 13.
O'Mara, Vincent d.b.a. Ultimate Beauty Products, Los Angeles, Calif. 899,955. Cl. 51.
Oneida Ltd., Oneida, N.Y. 535,418, ren. 9–29–70. Cl. 28.
Oneida Ltd., Oneida, N.Y. 899,641, pub. 7–14–70. Cl. 28.
Oneida Ltd., Oneida, N.Y. 899,643, pub. 7–14–70. Cl. 28.
Ore-Ida Foods, Inc., Boise, Idaho. 899,808, pub. 7–14–70. Cl. 46.
Originala Inc., New York, N.Y. 899,735, pub. 7–14–70. Cl. 39.
Oster, John, Mfg. Co., Milwaukee, Wis. 899,572, pub. 12–10–68. Cl. 21.
Oulevay S.A., Morges, Vaud, Switzerland. 775,083, canc. Cl. 46.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 899,754, pub. 7–14–70. Cl. 42.
PBI-Gordon Corp., from Private Brands, Inc., Kansas City, Kans. 899,481, pub. 7–14–70. Cl. 6.
Pall Corp., Glen Cove, N.Y. 774,820, canc. Cl. 13.
Palmedico, Inc., Columbia, S.C. 774,855, canc. Cl. 18.
Palmroth Shoemanufacturers, Tampere, Finland. 899,705, pub. 7–14–70. Cl. 39.
Panacon Corp., Cincinnati, Ohio. 534,131, ren. 9–29–70. Cl. 12.
Parson, Ralph M., Co., The, Los Angeles, Calif. 899,960. Cl. 101.
Pavco Industries, Inc., Pascagoula, Miss. 899,512, pub. 7–14–70. Multiple Class (Classes 12 and 42).

Pelican Cold Storage Co., d.b.a. Pelican Sales Co., Seattle, Wash. 521,293, ren. 9–29–70. Cl. 46.
Pelletronics, Inc., Trenton, N.J. 899,469–70, pub. 7–14–70. Cl. 4.
Pendleton Woolen Mills, Portland, Oreg. 899,734, pub. 7–14–70 Cl. 39.
People's Bank of Kansas City, Kansas City, Mo. 899,917, pub. 7–14–70. Cl. 102.
Perfumeria Gal, S.A., Madrid, Spian. 273,095, ren. 9–29–70. Cl. 51.
Personalized Family Budgets, Inc., Denver, Colo. 899,891. Cl. 100.
Pfizer, Chas., & Co., Inc.: *See*—
  Pfizer Inc.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 899,515–16, pub. 7–14–70. Cl. 12.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 899,835, pub. 7–14–70. Cl. 51.
Piedmont Shirt Co., Greenville, S.C. 775,029, canc. Cl. 39.
Pilgrim Industries Inc., New York, N.Y. 899,686, pub. 7–14–70. Multiple Class (Classes 38 and 40).
Pitney-Bowes, Inc., Stamford, Conn. 899,476, pub. 7–14–70. Multiple Class (Classes 6, 11, 23, 26, and 32).
Pittman Products, Inc., d.b.a. Sportsways, Huntington Park, Calif. 899,603, pub. 5–19–70. Cl. 22.
Platz, Edward A., Cranbury, N.J. 899,936. Cl. 10.
Plymouth Rubber Co., Inc., Canton, Mass. 899,830, pub. 7–14–70. Cl. 50.
Porte Publishing Co., Salt Lake City, Utah. 534,275, ren. 9–29–70. Cl. 38.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 774,872, canc. Cl. 21.
Power Tool Institute, Inc., Evanston, Ill. 899,934, pub. 7–14–70. Cl. A.
Premium Corp., of America, Inc., Minneapolis, Minn. 899,959. Cl. 101.
Private Brands, Inc.: *See*—
  PBI-Gordon Corp.
Proctor-Silex Inc., Philadelphia, Pa. 899,579–80, pub. 7–14–70. Cl. 21.
Pronto Pacific, Inc., Moses Lake, Wash. 899,794, pub. 7–14–70. Cl. 46.
Przedsiebiorstwo Handlu Zagranicznego "Agros", Warsaw, Poland. 899,782, pub. 7–14–70. Cl. 46.
Publix Oil Co., Inc., Morristown, Tenn. 899,536, pub. 7–14–70. Cl. 15.
Quaker Oats Co., The, Chicago, Ill. 899,817–8, pub. 7–14–70. Cl. 46.
Quinlan & Tyson, Inc., Evanston, Ill. 899,906–7, pub. 7–14–70. Cl. 101.
R.I.T.A. Organics, Inc., Chicago, Ill. 899,492, pub. 7–14–70. Cl. 6.
Rainbow Crafts, Inc., Cincinnati, Ohio. 899,599, pub. 7–14–70. Cl. 22.
Ralston Purina Co., St. Louis, Mo. 899,938. Cl. 18.
Randomatic Data Systems, Inc., Trenton, N.J. 899,665, pub. 7–14–70. Cl. 37.
Ray Oil Burner Co., San Francisco, Calif. 530,857–8, ren. 9–29–70. Cl. 34.
Realemon Co., Chicago, Ill. 526,163, ren. 9–29–70. Cl. 46.
Red Owl Stores, Inc., Hopkins, Minn. 775,127, canc. Cl. 102.
Redwing Publishing & Recording Co., Rogersville, Tenn. 774,987, canc. Cl. 36.
Regal Ware, Inc., Kewaskum, Wis. 899,578, pub. 7–14–70. Cl. 21.
Reid Brothers, Corinth, Miss. 899,910, pub. 7–14–70. Cl. 101.
Republic Industries, Inc., Chicago, Ill. 774,824, canc. Cl. 13.
Restonic Corp., Chicago, Ill. 899.651–2, pub. 7–14–70. Cl. 32.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 899,546, pub. 7–14–70. Cl. 17.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 899,548–9, pub. 7–14–70. Cl. 17.
Rhapsody, Inc., Philadelphia, Pa. 899,647, pub. 7–14–70. Cl. 28.
Ritts, Herbert, Inc., Los Angeles, Calif. 899,656, pub. 7–14–70. Cl. 32.
Robinson, A., & Co., Inc., Altoona, Pa. 774,973, canc. Cl. 29.
Robinson, Mary Helen, d.b.a. Robinson Mimeo, Alvin. Tex. 899.935. Cl. 3.
Rockford Mfg. Co., Rockford, Tenn. 899,760, pub. 7–14–70. Cl. 43.
Rodale Press, Inc., Emmaus, Pa. 899.945. Cl. 38.
Rogers, George, & Astro Products Co., d.b.a. George Rogers & Co., Garland, Tex. 899,769, pub. 7–14–70. Cl. 45.
Rohm & Haas Co., Philadelphia, Pa. 899,489, pub. 7–14–70. Cl. 6.
Rossie, Glen Distillers Ltd., Sheffield, England. 530,996, ren. 9–29–70. Cl. 49.
Royal Research Corp., Hayward, Calif. 774,959, canc. Cl. 26.
Rusty's Country Fried Chicken, Inc., Kankakee, Ill. 899,892, pub. 7–14–70. Cl. 100.
S-B Mfg. Co., Milwaukee, Wis. 535,025, ren. 9–29–70. Cl. 23.
Saalfield Publishing Co., The, Akron, Ohio. 899,600, pub. 7–14–70. Cl. 22.
Saat-und Erntetechnik G.m.b.H., Eschwege, Germany. 899,440, pub. 7–14–70. Cl. 1.
Salesmen Unlimited Agency, Corp., New York, N.Y. 899,909, pub. 7–14–70. Cl. 101.
San Giorgio Macaroni, Inc., Lebanon, Pa. 899,795, pub. 7–14–70. Cl. 46.
Sandvikens Jernverks Aktiebolag, Sandviken, Sweden. 534,545, ren. 9–29–70. Cl. 23.
Sani-Gard Mfg. Co., Los Angeles, Calif. 899,467, pub. 7–14–70. Cl. 2.
Sanita Paper Products Co., Inc., Hicksville, N.Y. 535,583, ren. 9–29–70. Cl. 50.
Saxon Industries, Inc., New York, N.Y. 899,676, pub. 7–14–70. Cl. 37.
Schaffner, Hart & Marx, Chicago, Ill. 529,084, ren. 9–29–70. Cl. 39.
Schell Ranch & Packing Co., Indio, Calif. 899,813, pub. 7–14–70. Cl. 46.
Schenley Distillers, Inc., d.b.a. The Dant Distillery Co., New York, N.Y. 899,827, pub. 7–14–70. Cl. 49.
Schenuit Industries, Inc., Baltimore, Md. 899,465, pub. 7–14–70. Multiple Class (Classes 2 and 35).
Schering Aktiengesellschaft: *See*—
  Nor-Am Agricultural Products, Inc.
Schneider, Phillip, A., & Mary Lee, Phoenix, Ariz. 775,051, canc. Cl. 44.
Scott & Fetzer Co., The, Lakewood, Ohio. 899,582, pub. 7–14–70. Cl. 21.
Sears, Roebuck & Co., Chicago, Ill. 532,724, ren. 9–29–70. Cl. 31.
Sears, Roebuck & Co., Chicago, Ill. 774,867, canc. Cl. 19.
Seedman International Corp., Brooklyn, N.Y. 899,567, pub. 9–16–69. Cl. 19.
Senior Service (Overseas) Ltd., London, England. 899,550, pub. 7–14–70. Cl. 17.
Seta, Fabio, d.b.a. Kip-Apparecchiature Brevettate Del Rag, Rome, Italy. 774,764, canc. Cl. 2.
Sharrow, James C., d.b.a. Huck Finn Donuts, Chicago, Ill. 899,787, pub. 7–14–70. Cl. 46.
Shaw-Clayton Plastics Inc., San Rafael, Calif. 899,464, pub. 7–14–70. Cl. 2.
Sheffield Bronze Paint Corp., The, Cleveland, Ohio. 528,728, ren. 9–29–70. Cl. 12.
Shenandoah Valley Produce Co., Inc., New York, N.Y. 899,796, pub. 7–14–70. Cl. 46.
Shirt Centre Inc., New York, N.Y. 899,711, pub. 7–14–70. Cl. 39.
Shubert, Richard, Hawley, Pa. 899,596, pub. 7–14–70. Cl. 22.
Simmon Omega, Inc., Woodside, N.Y. 532,450, ren. 9–29–70. Cl. 26.
Simmon Omega Inc., Woodside, N.Y. 533,711, ren. 9–29–70. Cl. 26.
Simson, Maurice H., d.b.a. Alpha Chemical Co., Baltimore, Md. 899,863, pub. 12–24–68. Cl. 52.
Sittin' Pretty, Inc., Milwaukee, Wis. 899,695, pub. 7–14–70. Cl. 38.
Slack Shoppe, Inc., The, Warwick, R.I. 899,948. Cl. 39.
Sleepmaster Products Co., Inc., Newark, N.J. 899,659, pub. 7–14–70. Cl. 32.
Smidth, F. L., & Co., Cresskill, N.J. 277,405, ren. 9–29–70. Cl. 34.
Smith, James P., & Co., Inc., Carlstadt, N.J. 535,175, ren. 9–29–70. Cl. 46.
Smith, Miller & Patch, Inc., New Brunswick, N.J. from Smith, Miller & Patch, Inc., New York, N.Y. 899,556, pub. 7–14–70. Cl. 18.
Smith, Seymour & Son, Inc., Oakville, Conn. 899,619, pub. 2–27–68. Cl. 23.
Societe d'Emballages Plastiques, Neuilly, S. Seine, France. 899,455, pub. 7–14–70. Cl. 1.
Societe des Verreries Industrielles, Levallois Perret, France. 899,650, pub. 7–14–70. Cl. 30.
Society of Photographic Scientists & Engineers, Washington, D.C. 899,681, pub. 7–14–70. Cl. 38.
Somat Corp., Pomeroy, Pa. 774,899–900, canc. Cl. 23.
Sonoco Products Co., Hartsville, S.C. 899,511, pub. 7–14–70. Cl. 12.
Soundlock Corp., The, Hazlehurst, Ga. 899,509, pub. 7–14–70. Cl. 12.
Southwestern Drug Corp., d.b.a. Truett Laboratories, Dallas, Tex. 899,558, pub. 7–14–70. Cl. 18.
Spec Tech Publications, Inc., Malibu, Calif. 899,696, pub. 7–14–70. Cl. 38.
Spectrachem Corp., Paterson, N.J. 899,474, pub. 7–14–70. Multiple Class (Classes 5 and 11).
Sphairistike, Ltd., New York, N.Y. 899,708, pub. 7–14–70. Cl. 39.
Sponge-Carpet, Inc., Morris, Ill. 899,755, pub. 7–14–70. Cl. 42.
Spotnails, Inc., Rolling Meadows, Ill. 899,625, pub. 7–14–70. Cl. 23.
Springs Mills, Inc., New York, N.Y. 532,918, ren. 9–29–70. Cl. 42.
Squibb, E. R., & Sons, Inc., New York, N.Y. 899,673. pub. 7–14–70. Multiple Class (Classes 37 and 38).
Staley, A. E., Mfg. Co., Decatur, Ill. 899,497, pub. 7–14–70. Cl. 6.
Standard International Corp., Andover, Mass. 533,559, ren. 9–29–70. Cl. 13.
Standard Oil Co., Flemington, N.J. 899,442, pub. 7–14–70. Cl. 1.
Standard Oil Co., The, Cleveland, Ohio. 899,541, pub. 7–14–70. Cl. 15.
Stauffer Chemical Co., New York, N.Y. 528,961, ren. 9–29–70. Cl. 6.
Steel Co. of Canada, Ltd., The, Hamilton, Ontario, Canada. 899.521, pub. 7–14–70. Cl. 13.
Steel Publications, Inc., Pittsburgh, Pa. 534,382, ren. 9–29–70. Cl. 38.
Steel Tank Institute, Chicago, Ill. 899,683, pub. 7–14–70. Cl. 38.
Sterling Drug Inc., New York, N.Y. 899,860–2, pub. 7–14–70. Cl. 51.
Sterling Packing Corp., Garden City Park, N.Y. 531,726, ren. 9–29–70. Cl. 46.
Stevens, J. P., & Co., Inc., New York, N.Y. 528,801, ren. 9–29–70. Cl. 42.
Stonetree Chemical Corp., Chicago, Ill. 775,060, canc. Cl. 44.
Studio-Creative Crafts, Inc., The, Arlington, Va. 899,542, pub. 7–14–70. Cl. 16.
Sudd. Spindelwerke Zinser Dipl. Inc., to Hans Zinser, Ebersbach/Fils, Germany. 774,956, canc. Cl. 23.

Sudlow, Paul L., d.b.a. Sudlow Photographs, Danville, Ill. 899,642, pub. 7–14–70. Cl. 28.
Sun Oil Co., Philadelphia, Pa. 899,538–40, pub. 7–14–70. Cl. 15.
Super Laundry Machinery Co., Inc., Chicago, Ill. 899,939. Cl. 24.
Superior Laminates, Inc., Los Angeles, Calif. 774,836, canc. Cl. 13.
Swift & Co., Chicago, Ill. 899,804, pub. 7–14–70. Cl. 46.
Tall, Joel & Leona Tall, New York, N.Y. 774,880, canc. Cl. 21.
Taubman, Melvin, d.b.a. Melson Jewelry Co., New York, N.Y. 774,966, canc. Cl. 28.
Technicolor, Inc., Hollywood, Calif. 444,117, ren. 9–29–70. Cl. 38.
Temperature Enclosures, Inc., Pennsauken, N.J. 774,890, canc. Cl. 21.
Tenneco Chemicals, Inc., New York, N.Y. 443,438, ren. 9–29–70. Cl. 6.
Tested Recipe Publishers, Inc., Chicago, Ill. 899,698, pub. 7–14–70. Cl. 38.
Teves, Alfred, G.m.b.H., Frankfurt, Germany. 899,517, pub. 7–14–70. Multiple Class (Classes 13, 14, 19, 21, 23, 26, 31, 34, and 35).
Texcraft Corp., Chicago, Ill. 899,718, pub. 7–14–70. Cl. 39.
Texcraft Corp., Chicago, Ill. 899,753, pub. 7–14–70. Cl. 42.
Textiles Inc., Fall River, Mass. 899,757–8, pub. 7–14–70. Cl. 42.
Textron Inc., Providence, R.I. 899,645–6, pub. 7–14–70. Cl. 28.
Thomas, Susan, Inc., New York, N.Y. 529,057, ren. 9–29–70. Cl. 39.
Thompson, Stan Golf Club Co., Culver City, Calif. 899,593, pub. 7–14–70. Cl. 22.
Topco Associates, Inc., Skokie, Ill. 899,759, pub. 7–14–70. Cl. 42.
Tortolani-Crislu, Los Angeles, Calif. 899,640, pub. 7–14–70. Cl. 28.
Trans Data, Inc., Redding, Calif. 899,908, pub. 7–14–70. Cl. 101.
Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. 774,837, canc. Cl. 13.
Triple-A Specialty Co., Chicago, Ill. 899,573, pub. 8–19–69. Cl. 21.
Trylon Inc., Elverson, Pa. 899,634, pub. 7–14–70. Cl. 26.
Twiggs, Benjamin, Inc., Traverse City, Mich. 899,774, pub. 7–14–70. Cl. 46.
USM Corp., Boston, Mass. 899,504, pub. 7–14–70. Cl. 11.
Ullman Co., Inc., The, Brooklyn, N.Y. 775,007, canc. Cl. 38.
Ultrasciences, Inc., Philadelphia, Pa. 899,842, pub. 7–14–70. Cl. 51.
Ultra-Violet Products, Inc., San Gabriel, Calif. 899,675, pub. 7–14–70. Cl. 37.
Uncle Ben's, Inc., Houston, Tex. 899,801, pub. 7–14–70. Cl. 46.
Union Carbide Corp., New York, N.Y. 899,731–2, pub. 7–14–70. Cl. 39.
Union Carbide Corp., New York, N.Y. 899,839, pub. 7–14–70. Cl. 51.
Union Mfg. Co., New Britain, Conn. 899,466, pub. 7–14–70. Multiple Class (Classes 2 and 23).
Union Tank Car Co., Chicago, Ill. 774,907, canc. Cl. 23.
Uni-Products Corp., Omaha, Nebr. 899,565, pub. 7–14–70. Cl. 18.
Uniroyal, Inc., New York, N.Y. 899,590, pub. 7–14–70. Cl. 22.
United States Gypsum Co., Chicago, Ill. 273,568, ren. 9–29–70. Cl. 12.
United States Mineral Products Co., Stanhope, N.J. 899,507, pub. 7–14–70. Cl. 12.
United States Playing Card Co., The, Cincinnati, Ohio. 278,638, ren. 9–29–70. Cl. 22.
United States Plywood Corp., New York, N.Y. 775,105, canc. Cl. 50.
United States Shoe Corp., The, Cincinnati, Ohio. 899,914, pub. 7–14–70. Cl. 101.
Universal Oil Products Co., Des Plaines, Ill. 899,568, pub. 7–14–70. Cl. 19.
Universal Oil Products Co., d.b.a. UOP Fabsteel Division, Des Plaines, Ill. 899,895, pub. 7–14–70. Cl. 100.
Upjohn Co., The, Kalamazoo, Mich. 532,133, ren. 9–29–70. Cl. 18.
VAN MELLE N.V., Rotterdam, Netherlands. 775,085–6, canc. Cl. 46.
VB Creations, Inc., New York, N.Y. 899,841, pub. 7–14–70. Cl. 51.
V.F. Corp., Reading, Pa. 899,709, pub. 7–14–70. Cl. 39.
V.F. Corp., Reading, Pa. 899,712, pub. 7–14–70. Cl. 39.
VIP Foods, Inc., Seattle, Wash. 899,805, pub. 7–14–70. Cl. 46.
Valley Paper Co., Holyoke, Mass. 277,377, ren. 9–29–70. Cl. 37.
Vanity Fair Mills, Inc., Reading, Pa. 775,014, canc. Cl. 39.
Vapon, Inc., West Caldwell, N.J. 899,867, pub. 7–14–70. Cl. 52.
Velmex, Inc.: *See*—
  Vincent, Andrew W.
Velo International, Inc., Birmingham, Mich. 774,863, canc. Cl. 19.
Vienna Sausage Mfg. Co., Chicago, Ill. 899,790, pub. 7–14–70. Cl. 46.
Vincent, Andrew W., from Velmex, Inc., Holcomb, N.Y. 899,629, pub. 7–14–70. Cl. 26.
Virginia Dare Extract Co., Inc., Brooklyn, N.Y. 899,770, pub. 7–14–70. Cl. 45.
Virginia Federation of Garden Clubs, Inc., Richmond, Va. 899,889, pub. 7–14–70. Cl. 100.
Virnelson's Bakery, Inc., Philadelphia, Pa. 34,668, ren. 9–29–70. Cl. 46.
Vistron Corp., Cleveland, Ohio. 899,520, pub. 7–14–70. Cl. 13.
Vulcanized Rubber & Plastics Co., Morrisville, Pa. 899,738, pub. 7–14–70. Cl. 40.
Vulcanized Rubber & Plastics Co., Morrisville, Pa. 899,949. Cl. 40.
Wagner, Samuel & Linda, d.b.a. S & L Wagner Co., Brookfield, Wis. 774,826, canc. Cl. 13.
Wallace-Murray Corp., d.b.a. Simonds Saw & Steel Division, Fitchburg, Mass. 534,987, ren. 9–29–70. Cl. 23.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 524,670, ren. 9–29–70. Cl. 46.
Waterbury Mattress Co., The, Oakville, Conn. 774,978, canc. Cl. 32.
Waterford Glass Ltd., Johnstown, Waterford, Ireland. 899,660, pub. 7–14–70. Cl. 33.
Waumbec Mills, Inc., New York, N.Y. 899,746, pub. 7–14–70. Cl. 42.
Webster, G. L., Co., Inc., Cheriton, Va. 899,803, pub. 7–14–70. Cl. 46.
Welding Equipment & Supply Co., Detroit, Mich. 536,082, ren. 9–29–70. Cl. 14.
Wellco Enterprises, Inc., Waynesville, N.C. 899,728–30, pub. 7–14–70. Cl. 39.
West Fargo Mfg. Co., West Fargo, N.D. 444,076, ren. 9–29–70. Cl. 23.
Western Publishing Co., Inc., Racine, Wis. 899,690, pub. 7–14–70. Cl. 38.
Western Tank & Steel Corp., Lubbock, Tex. 774,946, canc. Cl. 23.
Whiting Mfg. Co., Inc., Cincinnati, Ohio. 899,655, pub. 7–14–70. Cl. 32.
Whitlock Corp., The, New York, N.Y. 899,905, pub. 7–14–70. Cl. 101.
Wig Masters Import Co., Ltd., d.b.a. Mode De Paris, Atlanta, Ga. 899,740–1, pub. 7–14–70. Cl. 40.
Wilk Shirt Corp., New York, N.Y. 533,550, ren. 9–29–70. Cl. 39.
Wilson Sporting Goods Co., River Grove, Ill. 899,586, pub. 7–14–70. Cl. 22.
Wolf Machine Co., The, Cincinnati, Ohio. 527,456, ren. 9–29–70. Cl. 21.
Woltra Co., Inc., The, New York, N.Y. 899,766, pub. 7–14–70. Cl. 44.
Worley Sewell Co., Bremen, Ga. 899,713–4, pub. 7–14–70. Cl. 39.
Wyomissing Corp., West Reading, Pa. 521,320, ren. 9–29–70. Cl. 42.
Wyomissing Corp., West Reading, Pa. 521,378, ren. 9–29–70. Cl. 42.
Youngstown Sheet & Tube Co., Youngstown, Ohio. 899,535, pub. 7–14–70. Cl. 14.
Zale Corp., Dallas, Tex. 899,719–20, pub. 7–14–70. Cl. 39.
Zalla, Julius, d.b.a. Bee-Line Cosmestics of Santa Monica, California, Venice, Calif. 899,866, pub. 7–21–70. Cl. 52.
Zaloom, Jos. A., & Co. Inc., New York, N.Y. 533,551, ren. 9–29–70. Cl. 46.
Zayre Corp., Natick, Mass. 899,721, pub. 7–14–70. Cl. 39.
Zenith Life Insurance Co., Chicago, Ill. 899,922, pub. 7–14–70. Cl. 102.
Zim's, Inc., Salt Lake City, Utah. 899,953. Cl. 50.
Zollinger, Albert, Inc., Downers Grove, Ill. 899,453, pub. 7–14–70. Cl. 1.
Zsa Zsa Ltd., New York, N.Y. 899,956. Cl. 51.

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